USER MANUAL

Lithium Ion Battery 51.2V 100Ah

(Wall Mount)

POWERING HOMES, EMPOWERING FUTURE

HOME STORAGE BATTERY SYSTEMS

CONTENT

1. STATEMENT OF LAW

MANUAL VERSION: V 1.0
MANUAL NO.
REVISION HISTORY

REVISION NO.	REVISION DATE	REVISION REASON
1.0	31.10.2025	First Published

1. ABOUT THE MANUAL

This manual is an integral part of **Genus Innovation Ltd** LFP 51.2 v 100 Ah WM series.
It mainly introduces the assembly, installation, electrical connection, debugging, maintenance and troubleshooting of the products.
The products, services or features purchased are subject to the commercial contracts and terms of **Genus Innovation Ltd.**
All or part of the products, services or features described in this document may not be within the scope of purchase. This document serves only as a guide to use, and all statements, information and recommendations in this document do not constitute any express or implied guarantee.

2.1 HOW TO USE THIS MANUAL

Before installing and using Battery, please read this manual carefully, understand the safety information and be familiar with the functions and characteristics of LFP Battery.

The manual content of subsequent versions of the Battery may be subject to change.

2.2 TARGET GROUPS

This manual is applicable to electrical installers with professional qualifications and

End-users, training for installation and commissioning of the electrical system, as well as dealing with hazards that should have the following skills:

A. Qualified Electrical Installers

a. Experience in working with DC power systems and energy storage solutions
b. Knowledge of the local regulations and directives.
c. The ability to interpret technical documentation, wiring diagrams, and installation procedures

B. System Integrators / Engineers - Personnel who integrate the battery system with inverters, solar PV, or energy management systems. They should possess:

a. Knowledge of system design and load calculations.
b. Expertise in communication protocols (RS485, CAN, etc.) used in energy systems.
c. Ability to configure and monitor BMS and inverter parameters.

C. End Users / Operators - Users who operate and monitor the battery system on a daily basis. They must:

a. Be aware of operational limits, warnings, and indicators.
b. Understand basic troubleshooting steps and when to contact service personnel.

2.3 SYMBOLS IN THIS MANUAL

DANGER	INDICATES A HAZARD WITH A HIGH LEVEL OF RISK THAT, IF NOT AVOIDED, WILL RESULT IN DEATH OR SERIOUS INJURY.
WARNING	INDICATES A HAZARD WITH A MEDIUM LEVEL OF RISK THAT, IF NOT AVOIDED, COULD RESULT IN DEATH OR SERIOUS INJURY.
	INDICATES A HAZARD WITH A LOW LEVEL OF RISK THAT, IF NOT AVOIDED, COULD RESULT IN MINOR OR MODERATE INJURY.
	INDICATES A SITUATION THAT, IF NOT AVOIDED, COULD RESULT IN EQUIPMENT OR PROPERTY DAMAGE, DATA LOSS, EQUIPMENT PERFORMANCE DEGRADATION.
	INDICATES ADDITIONAL INFORMATION, EMPHASIZED CONTENTS OR TIPS THAT MAY BE HELPFUL, e.g., TO HELP YOU SOLVE PROBLEMS OR SAVE TIME.

	INDICATION OF FORBID A SPECIFIC ACTION
KG	INDICATE THE WEIGHT OF OBJECT
	INDICATES A GENERAL WARNING OR ALERT WITH A LOW LEVEL OF RISK THAT, IF NOT AVOIDED, COULD RESULT IN MINOR OR MODERATE INJURY.
	DRAW ATTENTION TO SOMETHING SPECIFIC, ESPECIALLY PARTS THAT MAY CAUSE HARM OR NEED EXTRA CARE.
	WRONG OR NOT ALLOWED
	INDICATES A CORRECT OR APPROVED ACTION.

3 SAFETY INSTRUCTIONS

3.1 WARNING & NOTIFICATION

Installation environment requirements: -51.2 v 100 Ah WM- Series is Designed for Household/Commercial purposes only.
For installation, it must be installed in a location complying with IP20. If the Installation location does not comply with IP20 may cause failure and the product will not be guaranteed for any related accident or damage.

REMINDING -:

- Please do not put the battery into water or fire, in case of explosion or any other situation that might end or danger your life.
- Please connect wires properly while Installation, do not reverse connect.
- To avoid short circuit, please do not connect positive and negative poles with conductor (Wires for instance).
- Please do not stab, hit, trample or strike the battery in any other way.
- Please shut off the power completely when removing the device or Reconnecting wires during the daily use or it could cause the danger of electric shock.
- Please use dry powder extinguisher to put out the flame when encountering a fire hazard, liquid extinguisher could result in the risk of secondary disaster.
- For your safety, please do not arbitrarily dismantle any component in any circumstances unless a specialist or an authorized one from our company, device breakdown due to improper operation will not be covered under warranty

3.2 STATEMENTS

Genus Innovation Ltd has the right not to undertake Quality Assurance in any of the following circumstances:

- Damages caused by improper transportation.
- Damages caused by incorrect storage, installation or use.
- Damages caused by installation and use of equipment by non-professionals or un-trained personnel.
- Damages caused by failure to comply with the instructions and safety warnings in this Doc.
- Damages of running in an environment that does not meet the requirements stated in this document.
- Damages caused by operation beyond the parameters specified in applicable technical specifications.
- Damages caused by unauthorized disassembly, alteration of products or modification of software codes.
- Damages caused by abnormal natural environment (force majeure, such as lightning, earthquake, fire, storm, etc.).
- Any damages caused by the process of installation and operation which don't follow the local standards and regulations.
- Products beyond the warranty period.

4 PRODUCT DESCRIPTION

WM-51.2 v 100 Ah series energy storage battery is mainly used in the field of household power storage. At the same time, it is also suitable for the internal energy storage of temporary buildings. it adopts high-performance and long-life lithium iron phosphate battery as the basic energy storage unit, WM -51.2 v 100 Ah series energy storage battery covers the energy demand of a single machine from the 5.12 kwh to 81.92 kwh, and the rated output voltage is 51.2V. WM -51.2 v 100 series products have wall mounting and Floor Stake function and can support external parallel use function,

4.1 FEATURES OF 51.2 V 100 AH WALL MOUNT LFP BATTERY SERIES

INTERFACE DEFINITION TABLE

ITEM	NAME	DESCRIPTION
1	PRODUCT SPECIFICATION+CAUTION STICKER	Product Specification & caution sticker.
2	RS485 COMMUNICATION PORT	Used for communication with inverter/BMS through RS485 protocol & Battery Parallel
3	RESET SWITCH	BMS Re-Start Button
4	DIP SWITCHES	Indicative no use
5	SOC INDICATION & ALARM LED	Displays Battery status – Power, Alarm & fault indication.
6	MAIN UNIT POWER SWITCH	It must be Switches to the on Position when using the DC Power of Lithium battery
7	LCD DISPLAY SCREEN	User Interface for Battery Status, Parameters, And Settings.
8	NAVIGATION KEYS	Used to navigate & control the Display functions such as system status, settings, and alarms.

9	**CASTORS WHEEL**	Allows easy movement and repositioning of the battery unit.
10	**MINIATURE CIRCUIT BREAKER**	Allows immediate disconnection of power in case of fault, fire, or abnormal condition
11	**BATTERY TERMINALS (+ VE / – VE)**	Main DC output terminals for power connection.
12	**HANDLE GRIP**	Helps in lifting or wall-mounting the battery unit
13	**AIR OUTLET (FAN)**	Active cooling system to exhaust hot air and regulate temperature.

FEATURES OF 51.2 V 100 AH MOUNT LFP BATTERY SERIES.

INTERFACE DEFINITION TABLE

ITEM	NAME	DESCRIPTION
1	LCD Display Screen	User Interface for Battery Status, Parameters, And Settings.
2	Main Unit Power Switch	It must be Switched to the on Position when using the DC Power of Lithium battery
3	Handle Grip	Helps in lifting or wall-mounting the battery unit
4	Air Outlet (Fan)	Active cooling system to exhaust hot air and regulate temperature.
5	Castors Wheel	Allows easy movement and repositioning of the battery unit.
6	Battery Terminals (+ ve / – ve)	Main DC output terminals for power connection.
7	BMS Front Panel	Front-facing control and communication panel of the battery system, containing LEDs, Navigation Keys, DIP Switch, and communication ports (RS485/CAN). It allows users to monitor battery parameters and system status in real-time and interact with the battery during setup and servicing

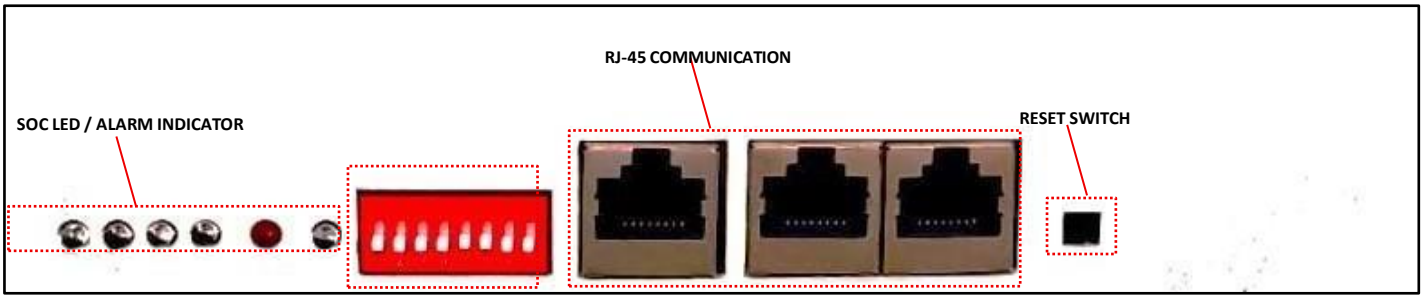
4.2 SIZE AND WEIGHT

PRODUCT SERIES	SPECIFICATION MODEL	NOMINAL VOLTAGE	NOMINAL CAPACITY	DIMENSION (mm)	WEIGHT (Kg)	IP RATING LEVEL
LFP Wall Mount	WK51.2 V 100 Ah	51.2 V	100 Ah	477X183X600	58	IP20

4.3 PERFORMANCE PARAMETER

Main Parameter		WM-51.2 v 100 Ah -51.2 v 100 Ah
BATTERY CHEMISTRY		LIFEPO4
CAPACITY (AH)		100
SCALABILITY		MAX.15 PCS IN PARALLEL (76.80 KWH)
NOMINAL VOLTAGE (V)		51.2
OPERATING VOLTAGE(V)		44~56
CHARGE/DISCHARGE CURRENT (A)	RECOMMEND	50
	MAX.	100
	PEAK (10 SECOND ,25℃)	100
OTHER PARAMETER		
RECOMMEND DEPTH OF DISCHARGE		90%
WORKING TEMPERATURE		CH.: 0℃ ~ +55℃ / DISC.: -20℃ ~ +55℃ (CYCLE LIFE (AT 25°C, 0.5C- >3000)
STORAGE TEMPERATURE		-20℃ ~ +35℃
INSTALLATION		WALL-MOUNTED
BMS PROTECTIONS INCLUDED		OVP, UVP, OCP, OTP, SCP

4.4 BMS PANEL INTERFACE DEFINITION



INTERFACE DEFINITION TABLE

ITEM	DEFINATION
SOC	INDICATES THE REMAINING BATTERY CAPACITY IN PERCENTAGE: **0% / 20% / 40% / 60% / 80% / 100%**.
ALM	**BLINKING**: INDICATES A FAULT OR ABNORMAL CONDITION. **SOLID ON**: ACTIVATES BATTERY PROTECTION MECHANISM.
RUN	**BLINKING**: BATTERY IS OPERATIONAL AND DISCHARGING/CHARGING NORMALLY.
CAN	**RJ45 INTERFACE** FOLLOWING **CAN PROTOCOL**, USED FOR COMMUNICATION WITH BMS,
RS485	**RJ45 INTERFACE** FOLLOWING **RS485 PROTOCOL**, ENABLES REMOTE BATTERY MONITORING OR INTEGRATION WITH ENERGY MANAGEMENT SYSTEMS (EMS).
DIP	INDICATIVE NOT FOR USE
RST	PRESS AND HOLD FOR A FEW SECONDS TO INITIATE **MANUAL RESTART** OF THE BATTERY. USED TO RECOVER FROM FAULT/PROTECTION STATES.

4.5 LED STATUS INDICATORS (TAKE LFP 5.1 kwh/ LV AS AN EXAMPLE)

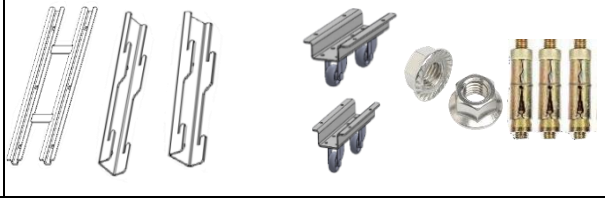
Flashing 1 : 25%
Flashing 2 : 50%
Flashing 3 : 75%
Flashing 4 : 100%

4.6 UNPACKING AND STORAGE

The Device Is Thoroughly Tested and Strictly Inspected Before Delivery. None the less, Damage May Still Occur During Shipping. For This Reason, Please Conduct a Thorough Inspection After Receiving the Device. Contact **Genus Innovation Ltd**) in Case of Any Damage or Incompleteness, And Provide Photos to Facilitate Services.

4.7 PART LIST (Standard Kit 5.12 kwh)

The Package of the Battery includes the following accessories. Please check whether the accessories in the Packing box are complete when receiving the goods.

ITEM	DESCRIPTION	QTY.	REPRESENTATIVE IMAGE	REMARK
WM SEREIS LFP BATTERY	51.2 V 100 AH LiFePO4 BATTTERY	1		ONLY SINGLE SELECTIVE SERIES MODEL IN BOX (WM)
MOUNTING ACCESSORY KIT	WALL CLAMP – 1 NOS. BASE CLAMP – 3 NOS. WHEELS – 4 NOS. FASTNER M8 – 3 NOS. NUT – 12 NOS.	1 SET PER UNIT		MANDATORY WITH EACH UNIT

OPTIONAL ACCESSORIES

POWER CABLES BETWEEN BATTERY & INVERTER	RED (25 Sq. mm) BLACK (25 Sq. mm) / 2 Meter	1	
COMMUNICATION CABLE BEETWEN BATTERY INVERTER	RJ45 / 2 Meter	1	

5 EQUIPMENT INSTALLATION

You Must Wear the Following Protective Equipment's when Installing the Lithium -Ion Battery


Protective Insulating


Protective Goggles


Safety Shoes

Genus Innovation Ltd 51.2 V 100 Ah WM series Battery are designed with IP20 Protection Enclosure for Indoor installations and must be installed in a protected environment.
When selecting a Battery installation location, the following factors should be considered:

- The wall or structure where the unit is to be mounted must be capable of supporting its weight securely.
- The unit should be installed in a **well-ventilated indoor environment**, away from confined or closed areas.
- **Avoid placing the unit near heat sources or under direct sunlight through windows**, as this may lead to overheating.
- Install the unit at **eye level** to allow easy reading of display data and for maintenance access.
- The ambient room temperature should be maintained between **0°C and 40°C** for optimal performance.

- The Surface temperature of the unit may reach up to **60°C** during operation. Do not touch the unit while operating and ensure it is installed **away from children's reach**.
- The installation area should be free from **Dust, Moisture, and Chemical Vapours** to prevent corrosion or damage.

5.1 INSTALLATION LOCATION

Select an optimal mounting location for safe operation, long service life and expected Performance •
Install the Battery at a place Convenient for electrical connection, operation, and maintenance.

- Avoid installation **Near Electromagnetic Sources** (e.g., motors, large transformers, microwave ovens) as they may interfere with the device's performance.
- Maintain a **clearance of at least 20 cm** on all sides of the unit to allow proper airflow and heat dissipation
- Ensure **easy access for maintenance or inspection**, and leave enough space for cable routing and service access

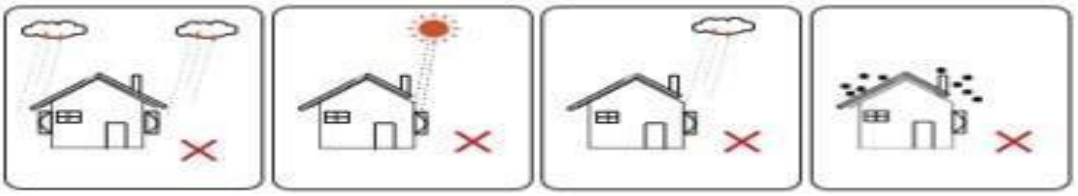


Figure 4.1 Recommended Not installation

WARNING	**DO NOT PUT FLAMMABLE AND EXPLOSIVE ARCTICLES AROUND THE BATTERY.**
NOTE	**The Battery can be installed indoors or Sheltered Location**

5.2 INSTALLATION SPACING

Reserve enough clearance around the Battery to ensure sufficient space for heat dissipation.

5.3 INSTALLATION ANGLE

Install the Battery vertically. Never install the Battery Horizontally, or at forward/backward tilted, or upside down.

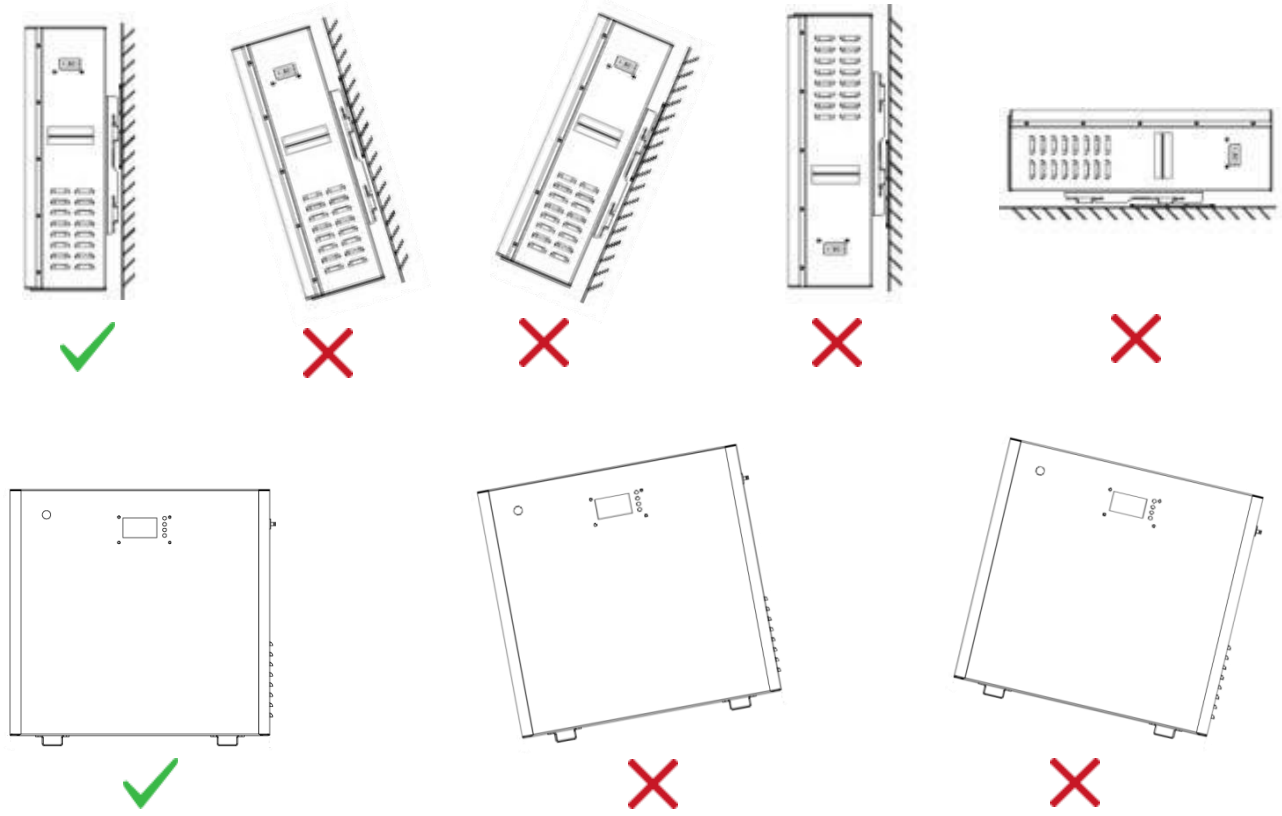
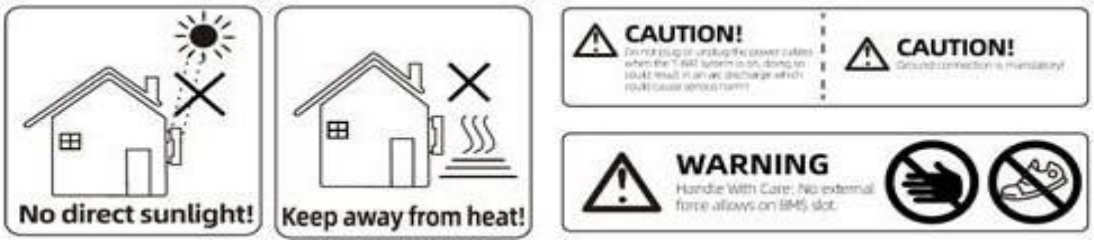


Figure 4-3 Permitted and prohibited mounting positions

5.4 MOUNTING THE BATTERY



5.5 WALL BRACKET INSTALLATION

Dimensions of wall bracket (mm)

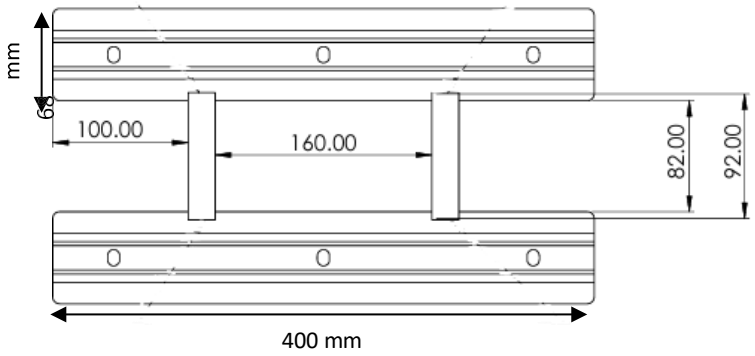


Figure 4-4 Dimensions of wall bracket

- Use the wall bracket as the template to mark the position of 6 holes on the wall.

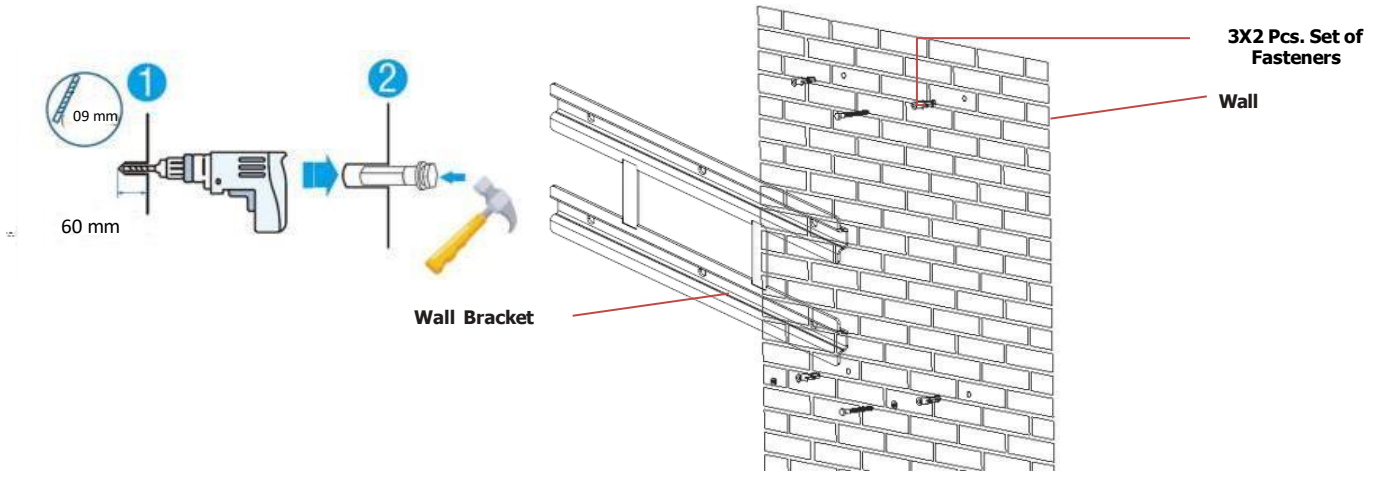


Figure 4.5 Marking hole position using installation bracket

WARNING	**BEFORE DRILLING, MAKE SURE TO AVOID ANY BURIED WATER TUBE AND ELECTRIC WIRES IN THE WALL.**

- Use an electrical Driller with 9 mm diameter bit to drill 6 holes in the wall with 60mm Depth

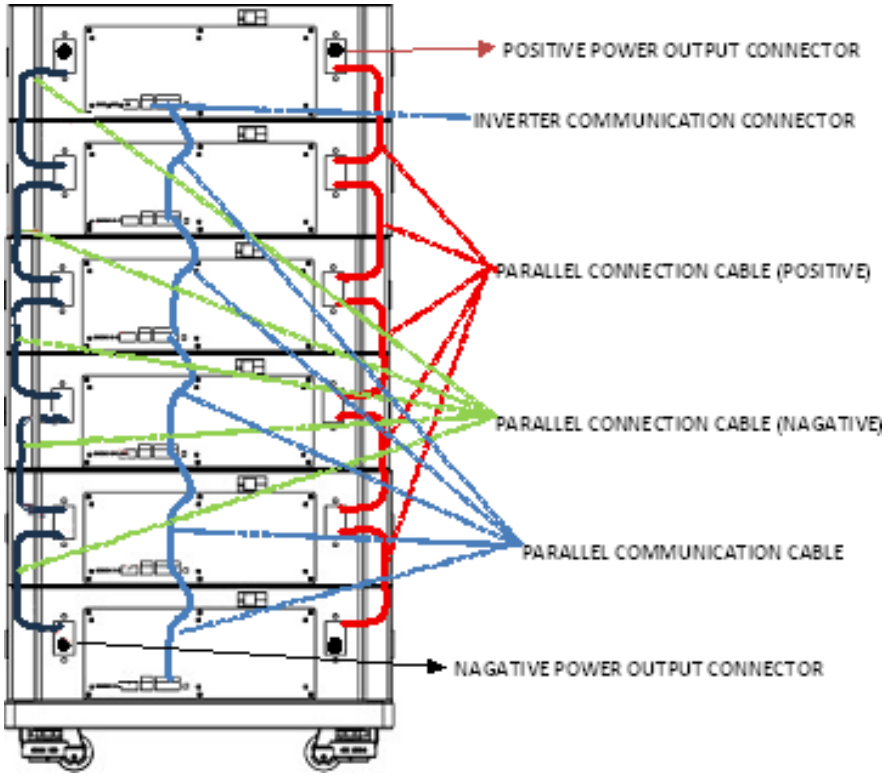
5.6 MOUNTING THE BATTERY

- Remove the hanging rail from the accessory kit provided with the battery.
- Locate the Designated Stud on the back side of the battery, these are meant for the hanging rail installation.
- Tighten the rail using the supplied **M8 bolts**. (Use a torque wrench or Spanner)

6 ELECTRICAL CONNECTIONS

6.1 MULTIPLE USE SETTING (EXAMPLE 6 PARALLEL FOR 51.2 V 100 AH SERIES)

CHECK THE FLOOR MAXIMUM PERMISSIBLE LOAD BEFORE INSTALL THE BATTERIES



NOTE: In multiple parallel connections, it will be suitable for power distribution to connect the power output cables of the lithium battery from the beginning and end of the positive and negative outputs as shown in the figure.

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6.2 ELECTRICAL WIRING DIAGRAM

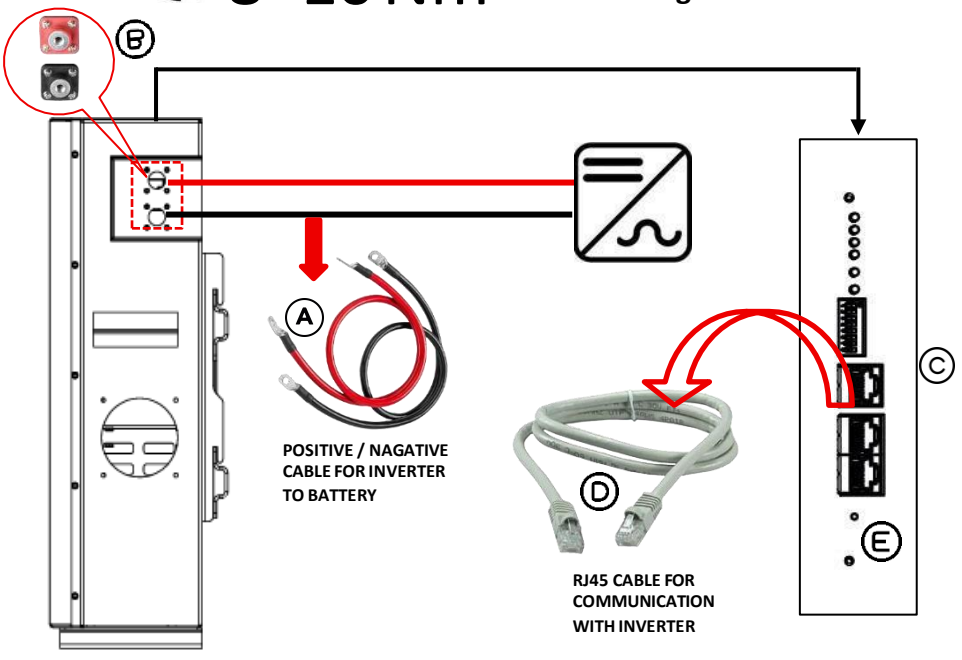
⚠	**A HIGH VOLTAGE IN THE CONDUCTIVE PART OF THE BATTERY MAY CAUSE AN ELECTRIC SHOCK. WHEN INSTALLING THE BATTERY, MAKE SURE THAT THE DC SIDES OF THE BATTERY ARE COMPLETELY DEENERGIZED.**
NOTICE	**DO NOT USE OTHER BRANDS OR OTHER TYPES OF TERMINALS OTHER THAN THE TERMINALS IN THE ACCESSORY PACKAGE. ITP ENERGY HAS THE RIGHT TO REFUSE ALL DAMAGES CAUSED BY THE MIXED-USE OF TERMINALS**
⚠	**MOISTURE AND DUST CAN DAMAGE THE INVERTER, ENSURE THE CABLE GLAND IS SECURELY TIGHTENED DURING INSTALLATION. THE WARRANTY CLAIM WILL BE x INVALIDATED IF THE BATTERY IS DAMAGED AS A RESULT OF A POORLY CONNECTED CABLE CONNECT .**

⚠

POWER CABLE CONNECTION FOR HIGH CURRENT CONNECTION DIAGRAM PLEASE REFERS TO THE SPECIFIC SECTION**, CHARGING CURRENT LIMITATION IS MANDATORY AS PER THIS MANUAL INSTRUCTION.**

Screws and Cables must be installed with diligence and the tighten of the connection terminal must respect the torque mentioned in the manual which is 8-10Nm and the inspection must be performed every 3 months

8~10 Nm **Power cable Tighten**



a) **CONNECT THE RED (POSITIVE) AND BLACK/GREY (NEGATIVE) POWER CABLES FROM THE BATTERY TO THE INVERTER'S DC INPUT TERMINALS.**
b) **ENSURE THE CABLES ARE TIGHTENED SECURELY WITH A TORQUE OF 8–10 NM.**

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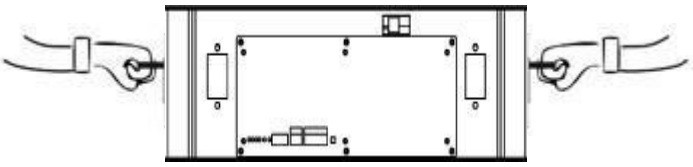
c) LOCATE THE RJ45 COMMUNICATION PORT ON THE TOP COVER OF THE BATTERY.
d) CONNECT THE RJ45 COMMUNICATION CABLE FROM THE BATTERY TO THE DESIGNATED COMMUNICATION PORT ON THE INVERTER.
e) CONFIRM ALL CONNECTIONS ARE SECURE BEFORE POWERING ON THE SYSTEM.

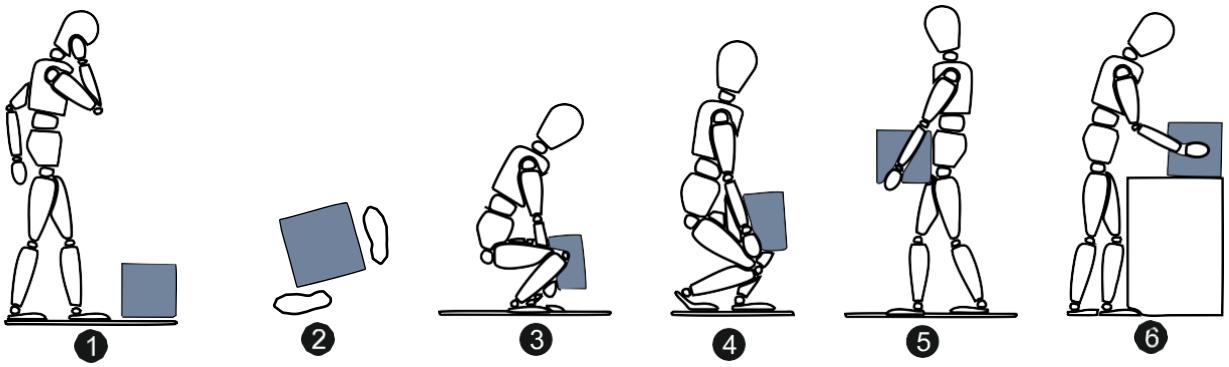
7. TRANSPORATION

- PACK THE LITHIUM BATTERY WITH INSULATION AND SHOCKPROOF MATERIAL TO PREVENT PHYSICAL DAMAGE.
- BE CAREFUL WHEN LOADING AND UNLOADING THE PRODUCT DURING TRANSPORTATION. DO NOT DISCARD THE BATTERIES AND DO NOT EXPOSE THEM TO PHYSICAL IMPACT/COLLISION.
- NEVER TRANSPORT LITHIUM BATTERIES TOGETHER WITH FLAMMABLE OR EXPLOSIVE OBJECTS OR SHARP METAL PRODUCTS.
- TO TRANSPORT LITHIUM BATTERIES, LIFT THEM BY THE HANDLES WITH AT LEAST TWO PEOPLE.
- DO NOT STACK THE BATTERIES



THE BATTERY WEIGHS MORE THAN 55 KG AND MUST BE INSTALLED WITH THE HELP OF A MECHANICAL LIFT, AND / OR WITH AT LEAST TWO PEOPLE EQUIPPED WITH SUITABLE SUCTION CUPS FOR MECHANICAL LIFTING OR LIFTING STRAPS.

FOLLOW THE 6 RULES OF OCCUPATIONAL HEALTH AND SAFETY IN MANUAL LIFTING AND TRANSPORTATION



1. RECOGNIZE THE BURDEN.
2. APPROACH ASYMMETRICALLY.
3. BEND DOWN SPRINGING ON THE KNEES.

4. **GRASP THE LOAD DIAGONALLY AND STAY ON THE KNEES.**
5. **ROTATE WITH THE FEET, KEEPING THE LOAD CLOSE TO THE BODY.**
6. **PUTTING THE LOAD IN PLACE.**

8. MAINTENANCE AND TROUBLESHOOTING

8.1 GENERAL INFORMATION

- If The Lithium Battery Is Rarely Used, Perform A Maintenance Charge or Charge the Battery Regularly.
- If The Lithium Battery Is Not Used for A Long Period of Time, Check the Voltage.
- If The Measured Voltage Is Lower Than the Nominal Operating Voltage, Charge the Battery.
- The Lithium Battery Does Not Need to Be Filled with Any Liquid. Therefore, Never Attempt to Open or Tamper with The Battery. Opened Or Tampered Products Are Not Covered by The Warranty.
- Never Attempt to Open or Dismantle the Battery! The Inside of the Battery Does Not Contain Serviceable Parts.
- Place The Enclosed Protective Caps Over the Terminals Before Cleaning and Maintenance Activities to Avoid the Risk of Contacting the Terminals.

8.2 GENERAL INSPECTION

- Inspect For Loose And/or Damaged Wiring and Contacts, Cracks, Deformations, Leakage, Or Damage of Any Other Kind. If Damage to The Battery Is Found, It Must Be Replaced. Do Not Attempt to Charge or Use a Damaged Battery. Do Not Touch the Liquid from A Ruptured Battery.
- Regularly Check the Battery's State of Charge. Lithium Iron Phosphate Batteries Will Slowly Self-Discharge When Not in Use or Whilst in Storage.
- Consider Replacing the Battery with A New One If You Note Either of The Following Conditions:
  - The Battery Run Time Drops Below 70% Of the Original Run Time.
  - The Battery Charge Time Increases Significantly.

8.3 CLEANING

If Necessary, Clean the Li-Ion Battery with A Soft, Dry Cloth. Never Use Liquids, Solvents, Or Abrasives to Clean the Li-Ion Battery.

8.4 MAINTENANCE

The Li-Ion Battery Is Maintenance Free. Charge The Battery to Approximately > 80% Of Its Capacity At Least Once Every Year to Preserve the Battery's Capacity.

8.5 STORAGE

- The Battery Product Should Be Stored in A Dry and Cool Environment
- The Maximum Storage Period at Room Temperature Is 6 Months
- If The Battery Is Stored for More Than 6 Months, Check the Battery Voltage:
  - If Voltage Is Above 51.2v, Continue Storing and Check Voltage Once a Month.
  - If Voltage Drops Below 51.2v, Charging Is Required.

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DO NOT DISPOSE BATTERY IN FIRE, OR IT MAY EXPLODE.

DO NOT DISMANTLE OR BREAK THE BATTERY. THE ELECTROLYTE INSIDE WOULD BE HARMFUL TO YOUR BODY.

The conditions and solution suggestions given in the table are for general control.

If you cannot find a solution for your lithium batteries after the specified situations, you can contact the our Service team.