51.2V 345/314/280Ah Stackable JK DIY Kits Assembly Instruction

WARNING

If any parts are missing, damaged or worn, stop using this KITS. Repair the KITS with manufacturer supplied parts.

IMPORTANT

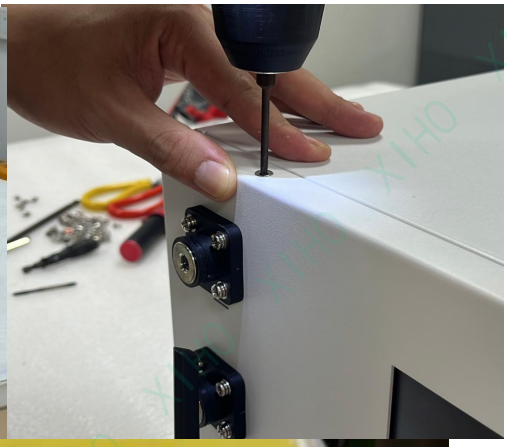
Assembly warnings and packaging inspection align with diesel generator installation guidelines emphasizing safety checks and post-unpacking procedures.

Removing protective layers corresponds to warnings about protective films in equipment handling.

Verifying components mirrors standardized unpacking protocols for technical devices.

ALL DIY Kit accessories are included in the DIY box

Remove all screws from the DIY box and keep them safely for securing the battery during reassembly.

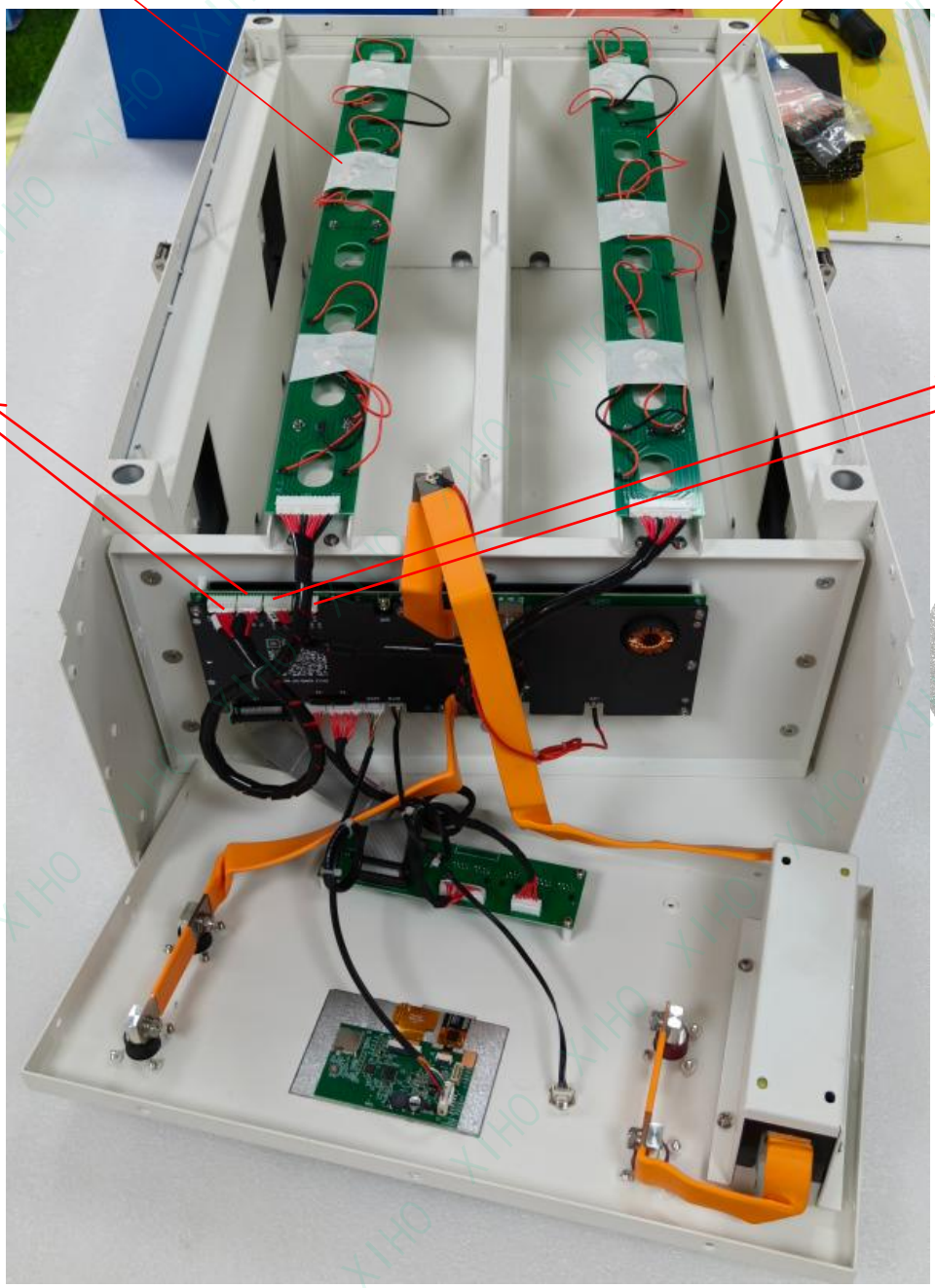


Wire pre-installation

Note： **Please check the PCB board connection line** upon receiving the DIY kit accessories. Incorrect assembly contrary to the manual instructions will void the warranty. Refer to the image below for labels on PCB-A (PS-A) and PCB-B (PS-B) boards.

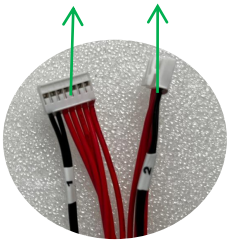
PCB-B(PS-A)
In the left
(In picture direction)

PCB-B(PS-B)
In the right
(In picture direction)



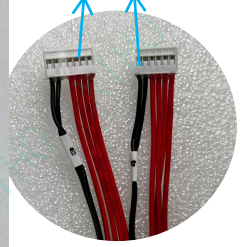
PCB-A Wire
Short Wire
Line number:
#1、#2

Note: Black numbered cable is on the LEFT

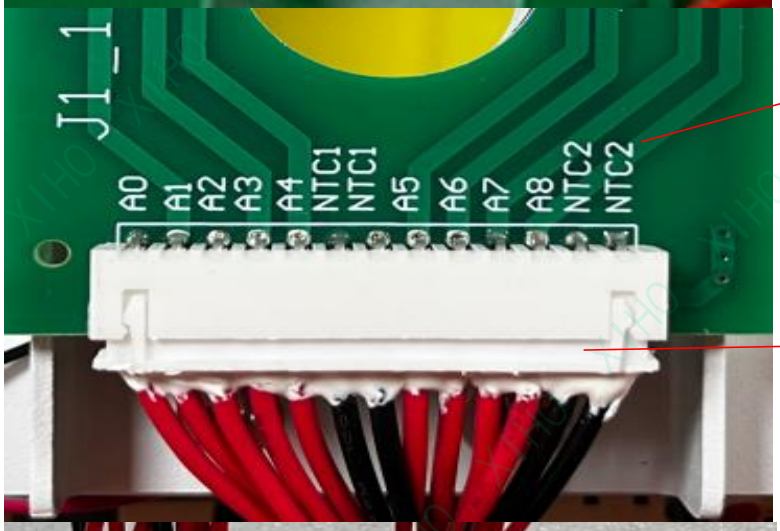


PCB-B Wire
Long Wire
Line number:
#3、#4

Note: Black numbered cable is on the LEFT

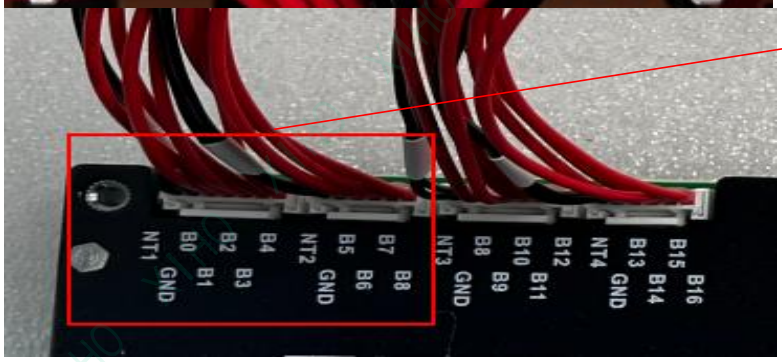


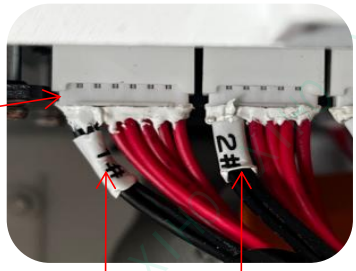
PCB-A (PS-A)



A0,A1,A2,A3,A4，
A5,A6,A7,A8,
NTC1,NTC2

PCB-A Wire
Short Wire
Line number:
#1、#2

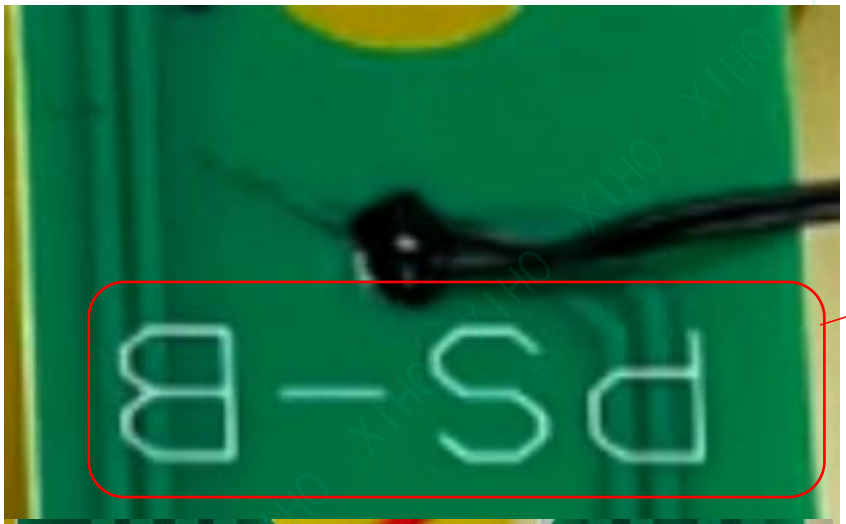




Connection Note: Ensure the black numbered cable is on the LEFT. Incorrect orientation will short-circuit and permanently damage the PCB board.

PCB-A(PS-A) board is marked with wires, they are **A0,A1,A2,A3,A4,A5,A6,A7,A8,NTC1,NTC2**, and there are **11 lines** on the collector terminal;

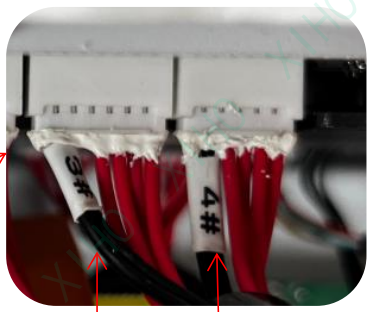
PCB-A(PS-A) connect Line number:#1、#2,It corresponds to the BMS motherboard,you must confirm the wiring before inserting, or else it will damage the BMS, and we won't provide after-sales service.



PCB-B(PS-B)

B8,B9,B10,B11,B12,
B13,B14,B15,B16,
NTC3,NTC4

PCB-B Wire
Long Wire
Line number:
#3、#4



Connection Note: Ensure the black numbered cable is on the LEFT. Incorrect orientation will short-circuit and permanently damage the PCB board.

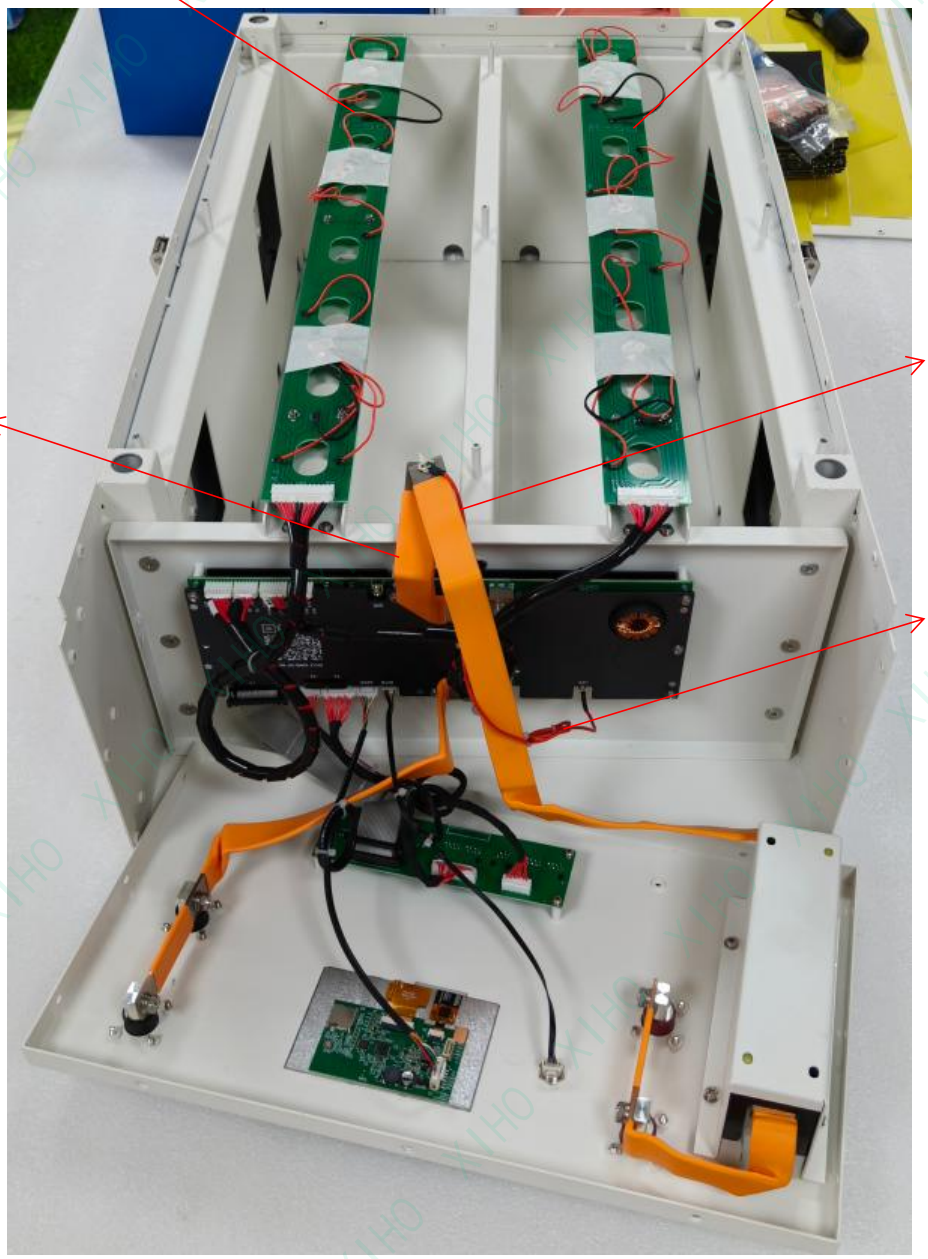
PCB-B(PS-B) board is marked with wires, they are **B8,B9,B10,B11,B12,B13,B14,B15,B16,NTC3,NTC4**, and there are **11 lines** on the collector terminal;

PCB-B(PS-B) connect Line number:#3、#4 , It corresponds to the BMS motherboard,you must confirm the wiring before inserting, or else it will damage the BMS, and we won't provide after-sales service.

Note： Please make sure that the products you receive are as follows. If you receive the products and they are inconsistent with the picture, you should report to our customer service in time. Do not assemble them without permission.

PCB-A(PS-A)
In the left
(In picture direction)

PCB-B(PS-B)
In the right
(In picture direction)



B- Busbar
(Connect to the Battery Pack Main Negative Terminal)

P+ Busbar
(Connect to the Battery Pack Main Positive Terminal)

B+ Wire
(Connect to the Battery Pack Main Positive Terminal)

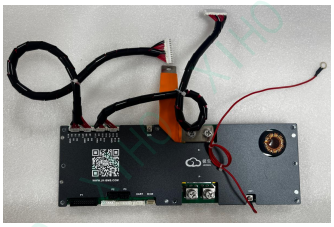
Packing list： Please check the product carefully after receiving it, if any accessories are missed, **please contact XIHO**.

A.(Pre-installed)
Metal Box*1

B.(Pre-installed)
Cover plate*1
Cover Epoxy Board*1

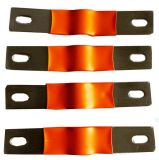
C.(Pre-installed)
PCB Board*2
(PS-A*1,PS-B*1)

D.(Pre-installed)
Middle panel*1



E.(Pre-installed)
BMS Mainboard*1
PCB Wires*2
B+ Wire*1
B- Busbar

F.(Pre-installed)
Front plate*1 / Screen*1
P1/P2/P3 Wires
Switch Wire*1 / Display Wire
Communication Module*1
Positive and negative terminals*4
Circuit Breaker*1



G.Copper Flexiable Busbar*15

H.Screws*32
(Accessory provided with battery purchase)

I.(Pre-installed)
Copper Busbars*4

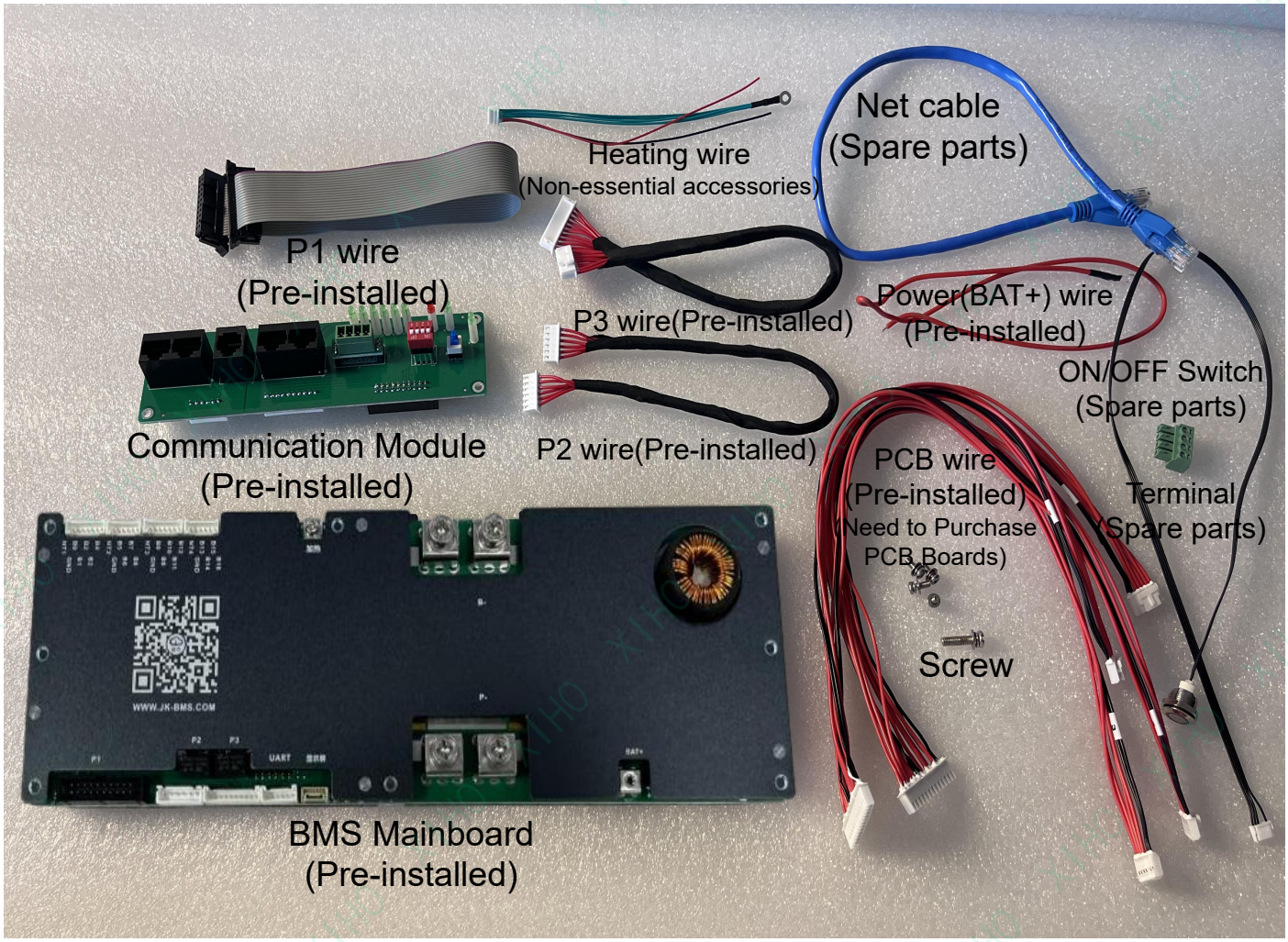
J.EVA Foam*22
Epoxy Board*12

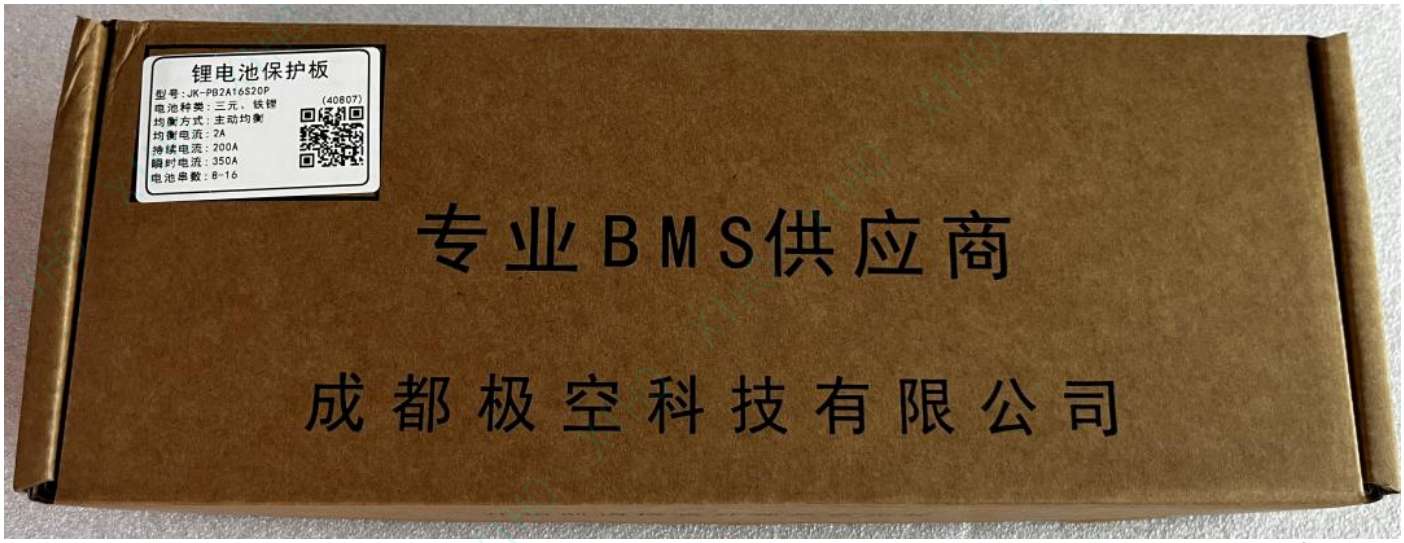
K.Heating pad*2
(Optional)

L.Heating wire*1
Terminal*1
(Spare parts)

JK-PB2A16S-20P List：

Please check the product carefully after receiving it, if any accessories are missed, **please contact XIHO**.



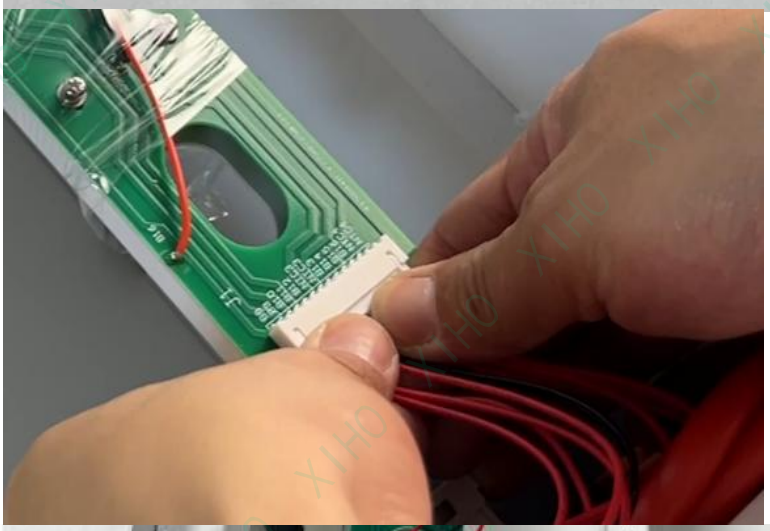


Assembly Steps:

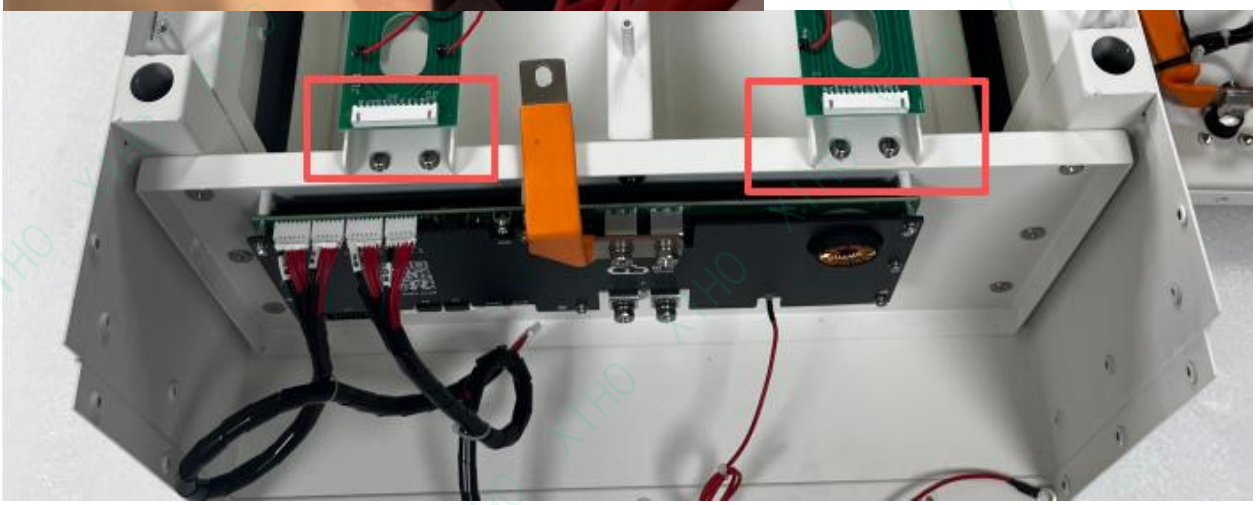
1.Remove Cover plate and Epoxy Cover Plate(B).

Assembly Steps:

2.Disconnect the PCB-A and PCB-B wire.

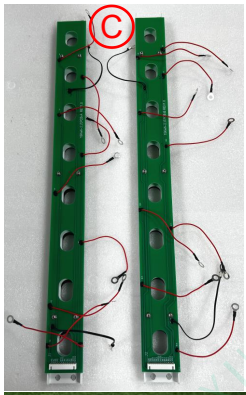


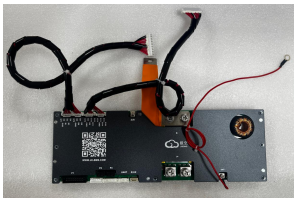
Note:
Gently press both ends inward and squeeze toward the center to release the connector.
Do not pull the cable forcefully to avoid breakage.

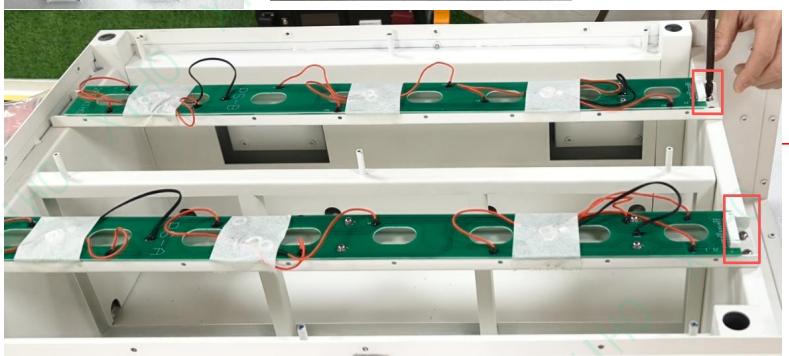


Assembly Steps:

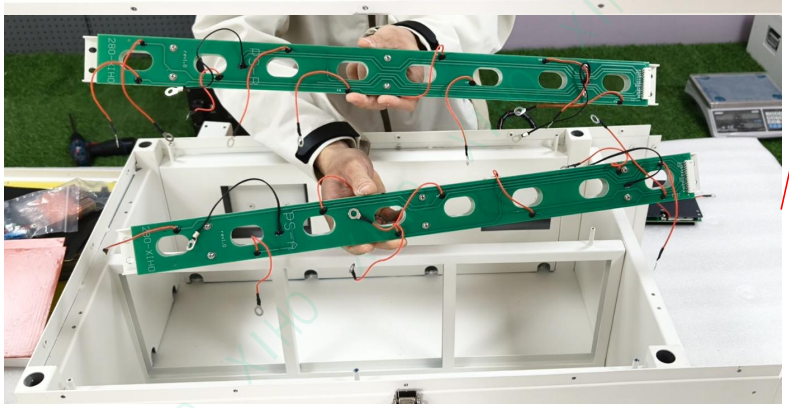
3.Remove PCB Board(C)、Front plate(F)、BMS Mainboard(E)、Middle panel(D),Retain all removed screws securely for reassembly.

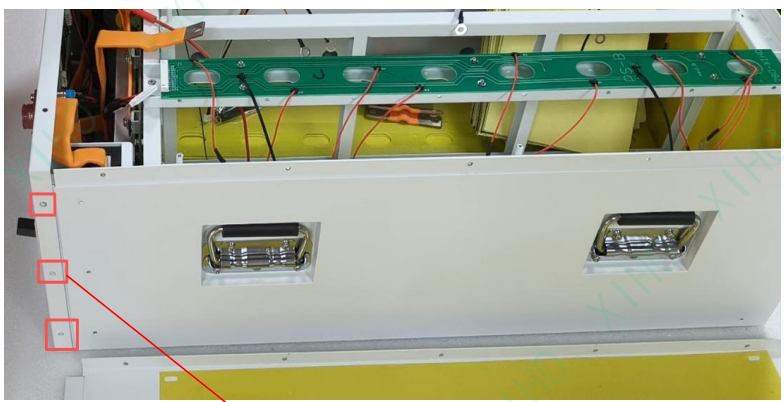






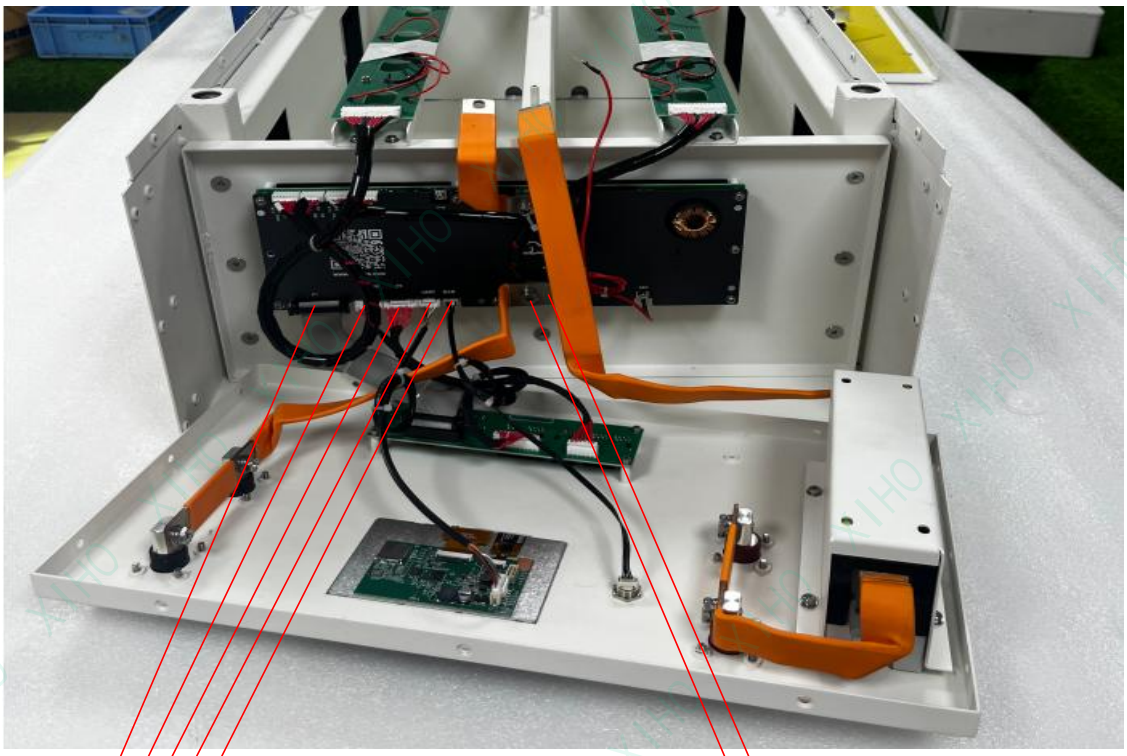
Remove PCB Board(c)





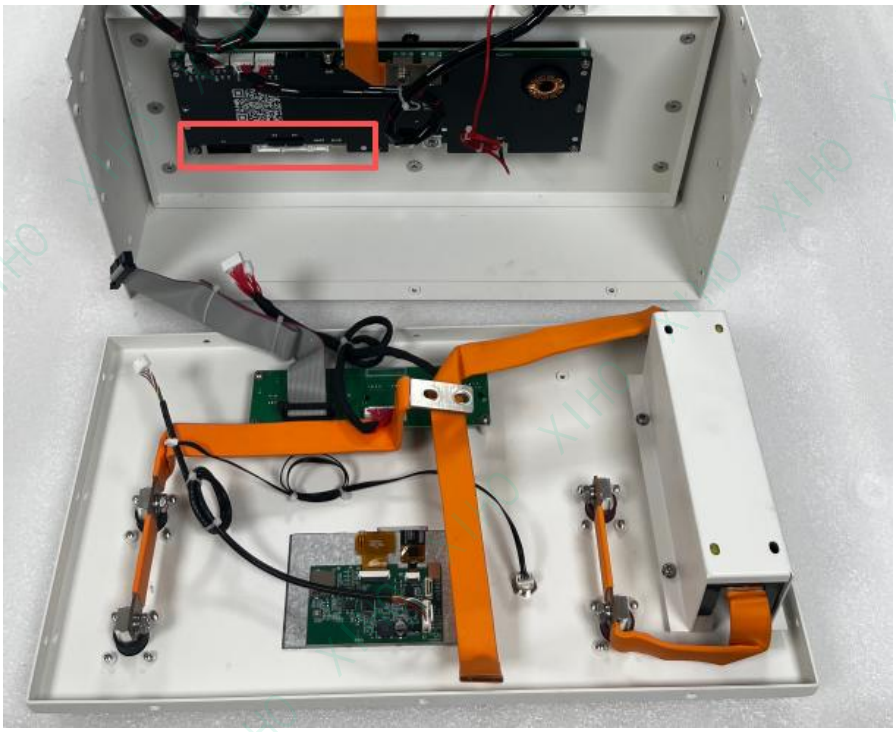
Remove the screws on the front plate, then open the plate.

Assembly Steps:



Remove the P1, P2, P3, URAT and switch wire on the BMS mainboard

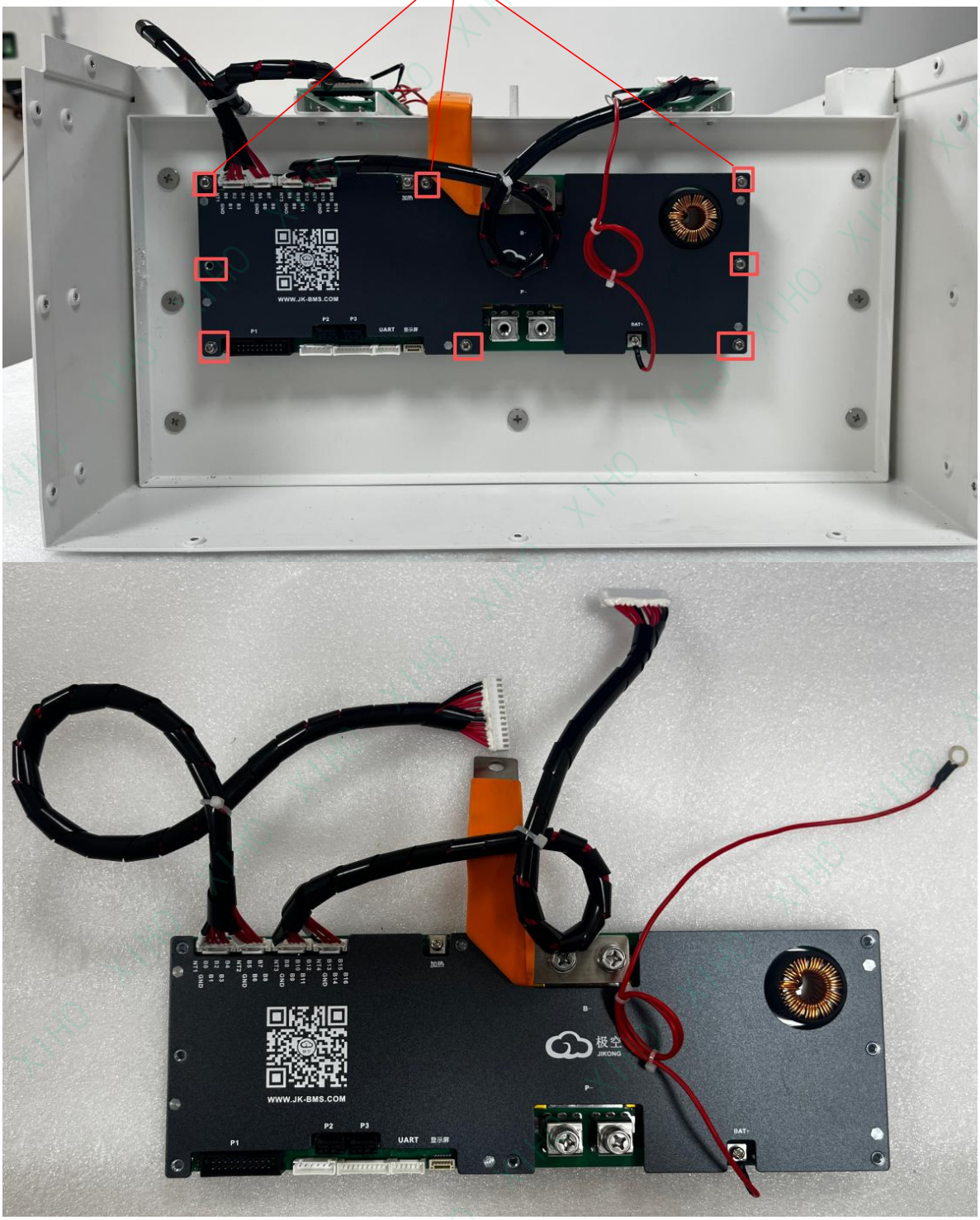
Remove the P- busbar on the BMS mainboard



The front panel(F) has been successfully removed

Assembly Steps:

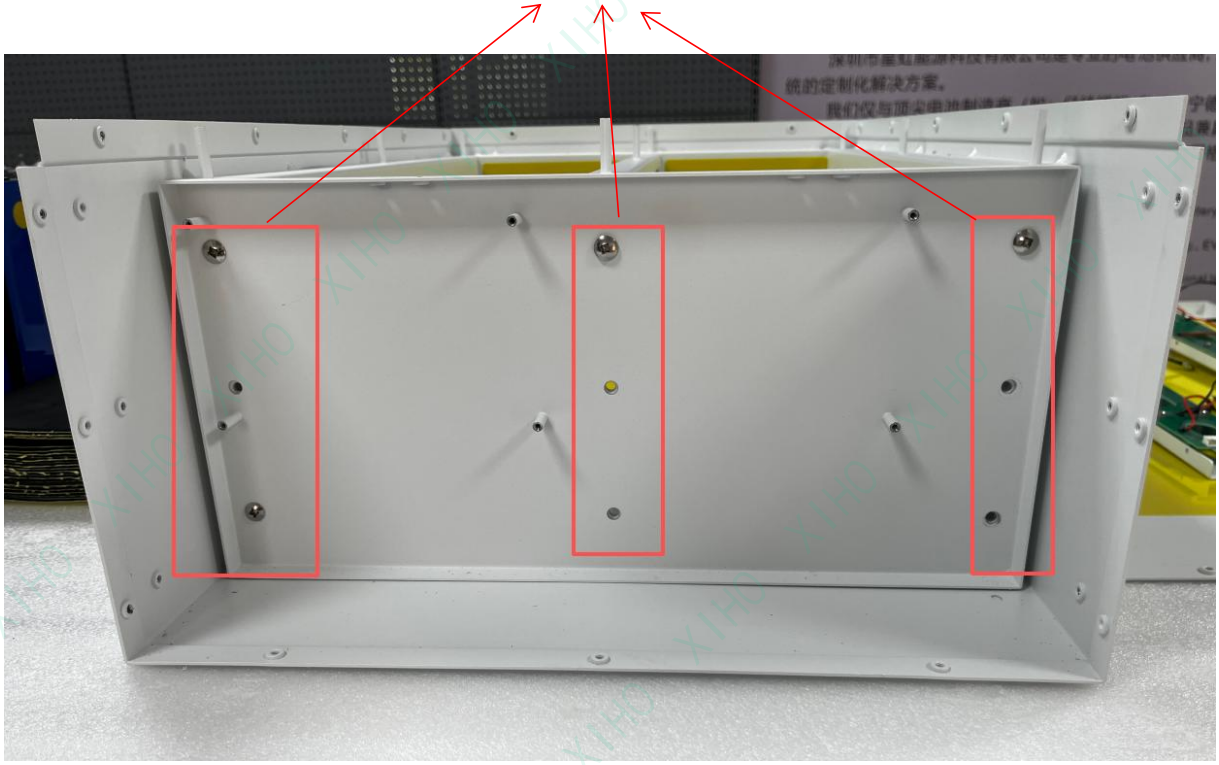
Remove all screws securing the BMS mainboard to the middle panel

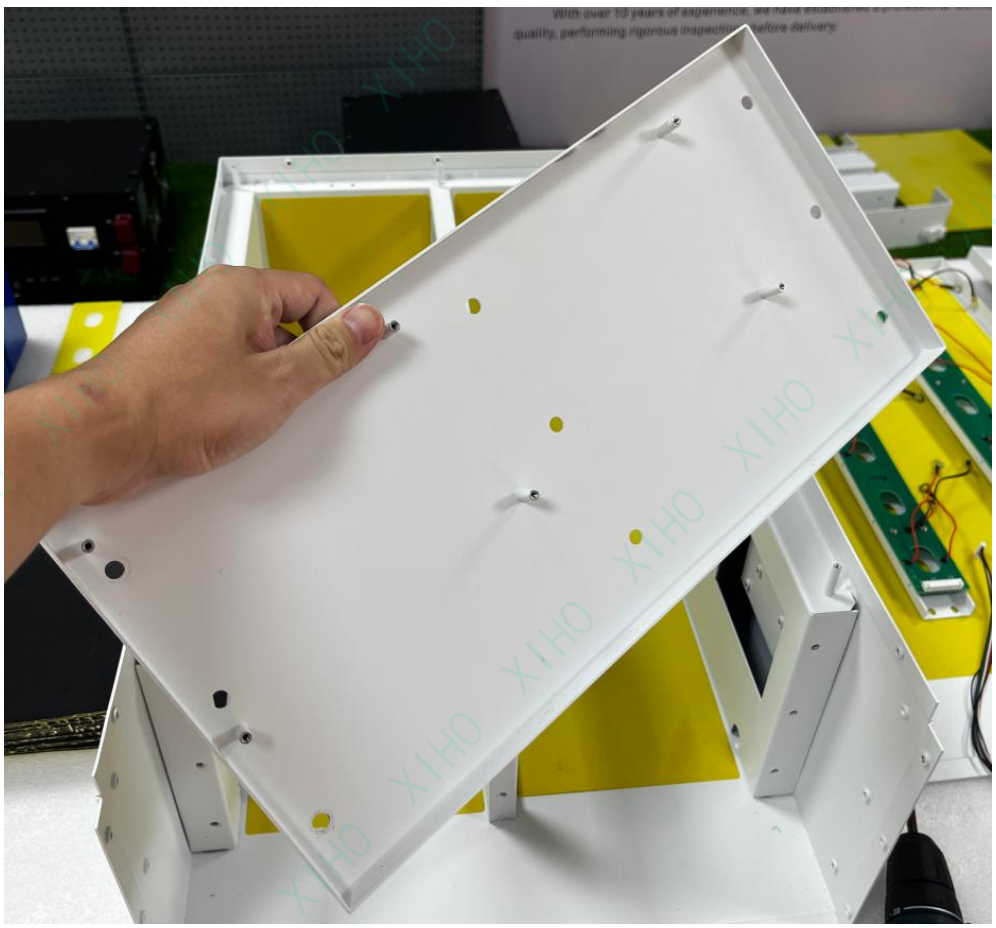


The BMS mainboard(E) has been successfully removed

Assembly Steps:

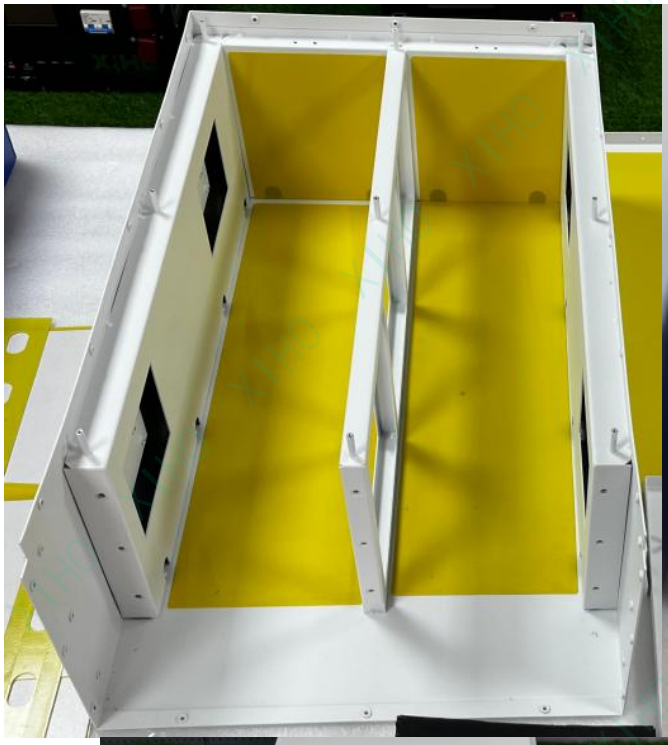
Remove all middle panel(D) screws

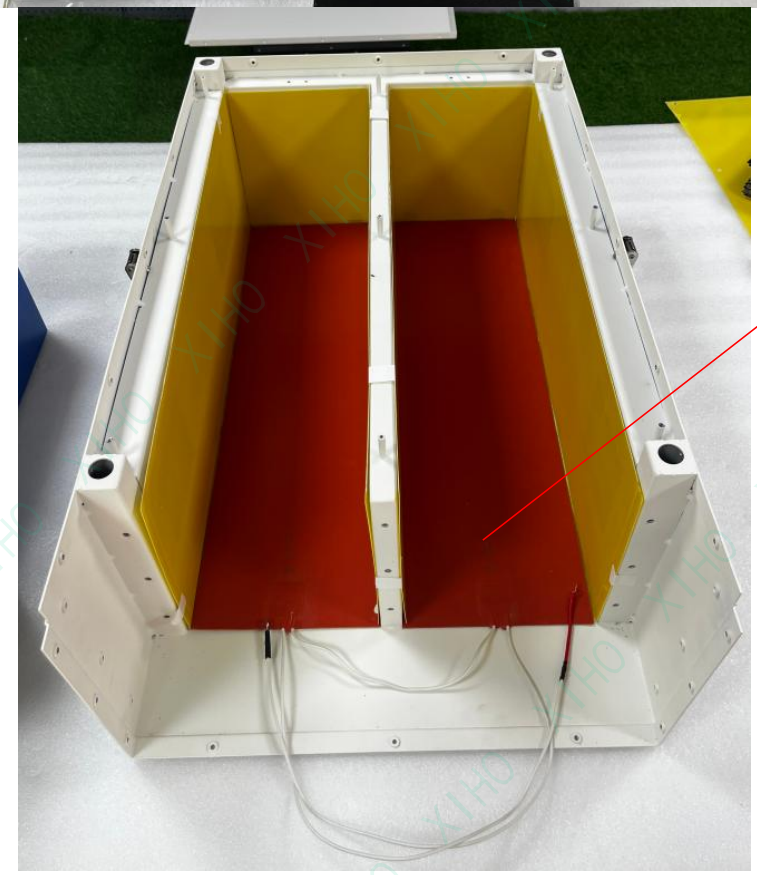




Assembly Steps:

4.Put the epoxy board (J) and attach the EVA foam (J) padding onto the battery cells.



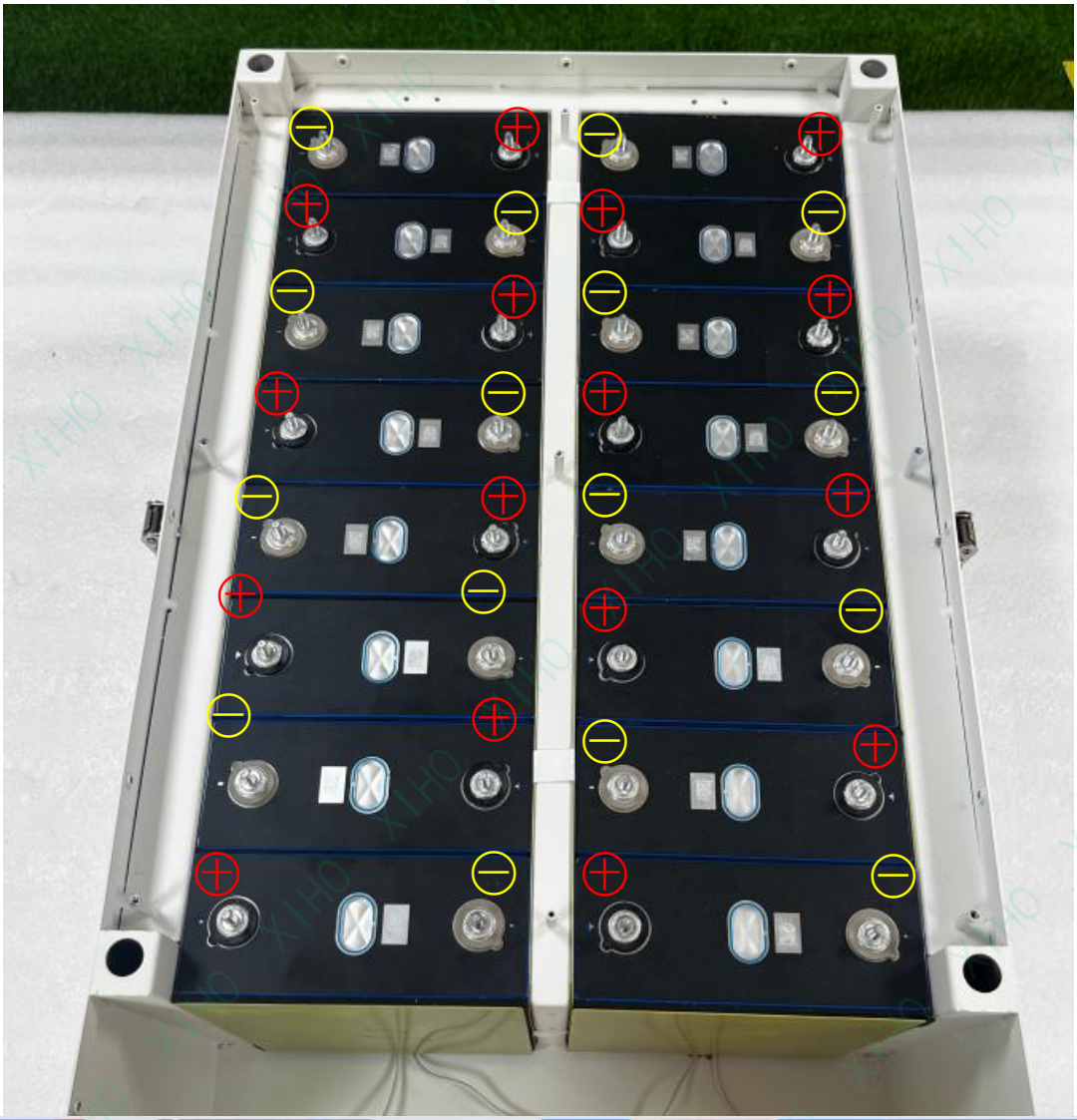


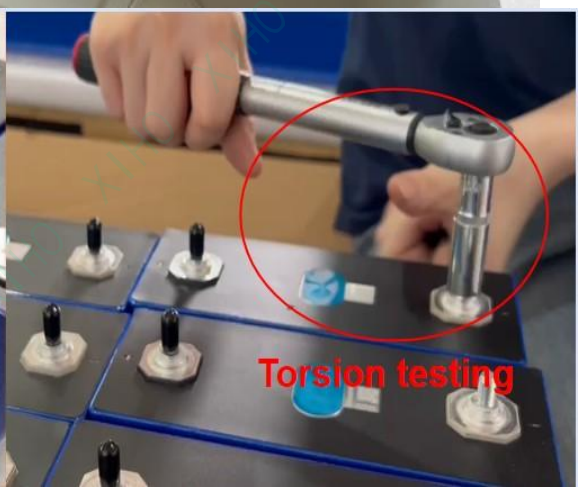
Note:
The heating pad is optional. If installing, place it at the very bottom of the battery.

Assembly Steps:

5.Align the battery cells according to the sequence as showed in following picture.

Pay attention to the 1st and 16th battery cells, the negative and positive terminals cannot be reversed.

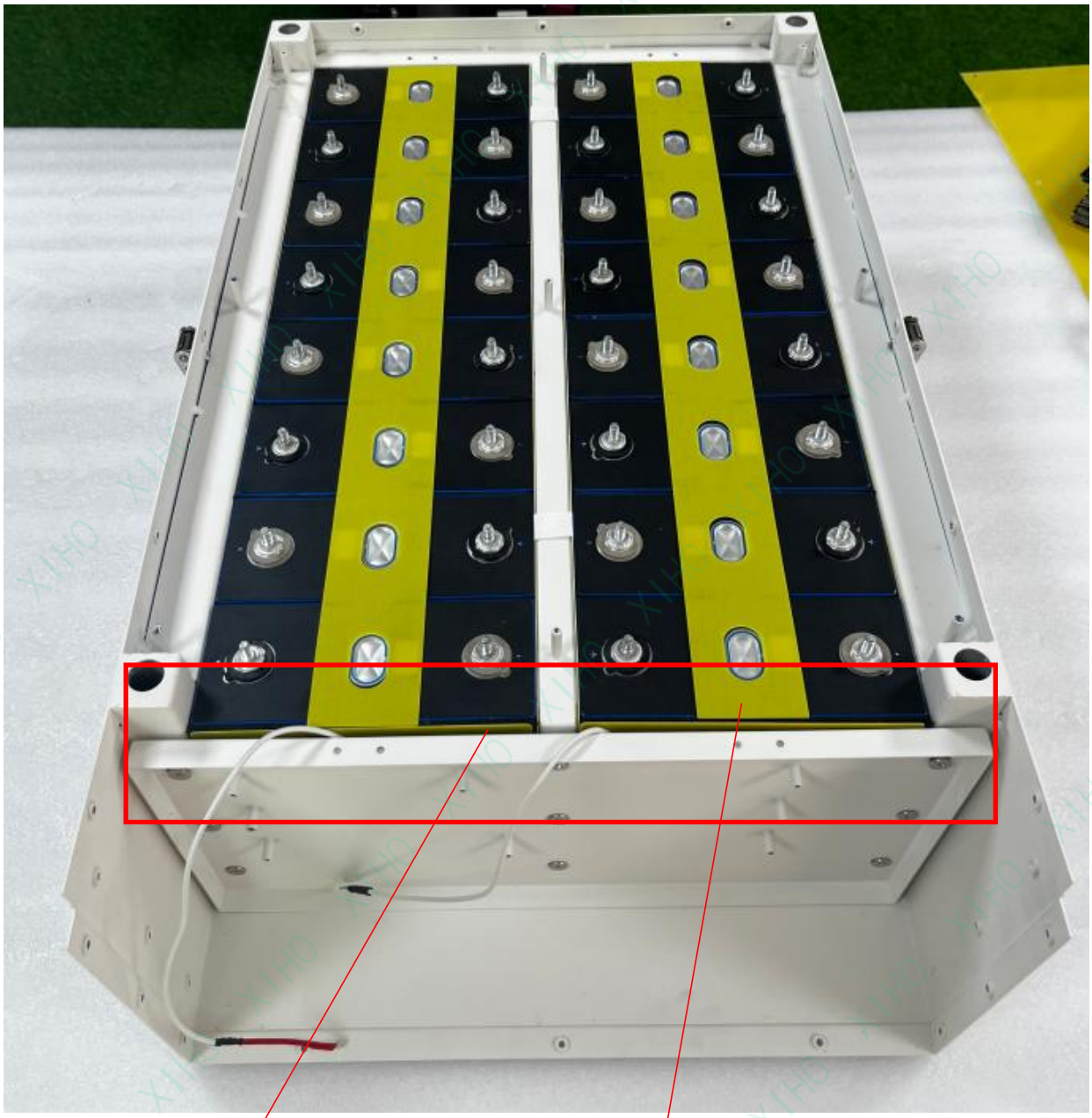


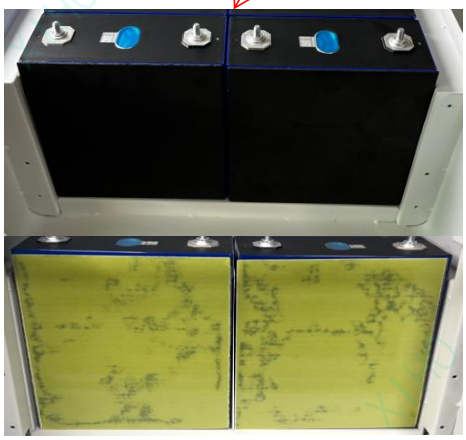


Voltage and internal resistance checking
Cells Voltage difference ≤ 20mV

Assembly Steps:

6.Install the **middle panel (D)** and securely fasten the screws.





Note:

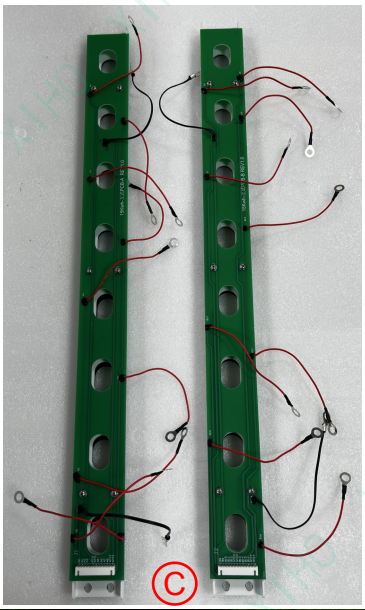
An epoxy board(J) or EVA foam(J) layer must be installed between the front plate and the battery cells to provide electrical isolation and prevent short circuits.

Install the PCB epoxy board.

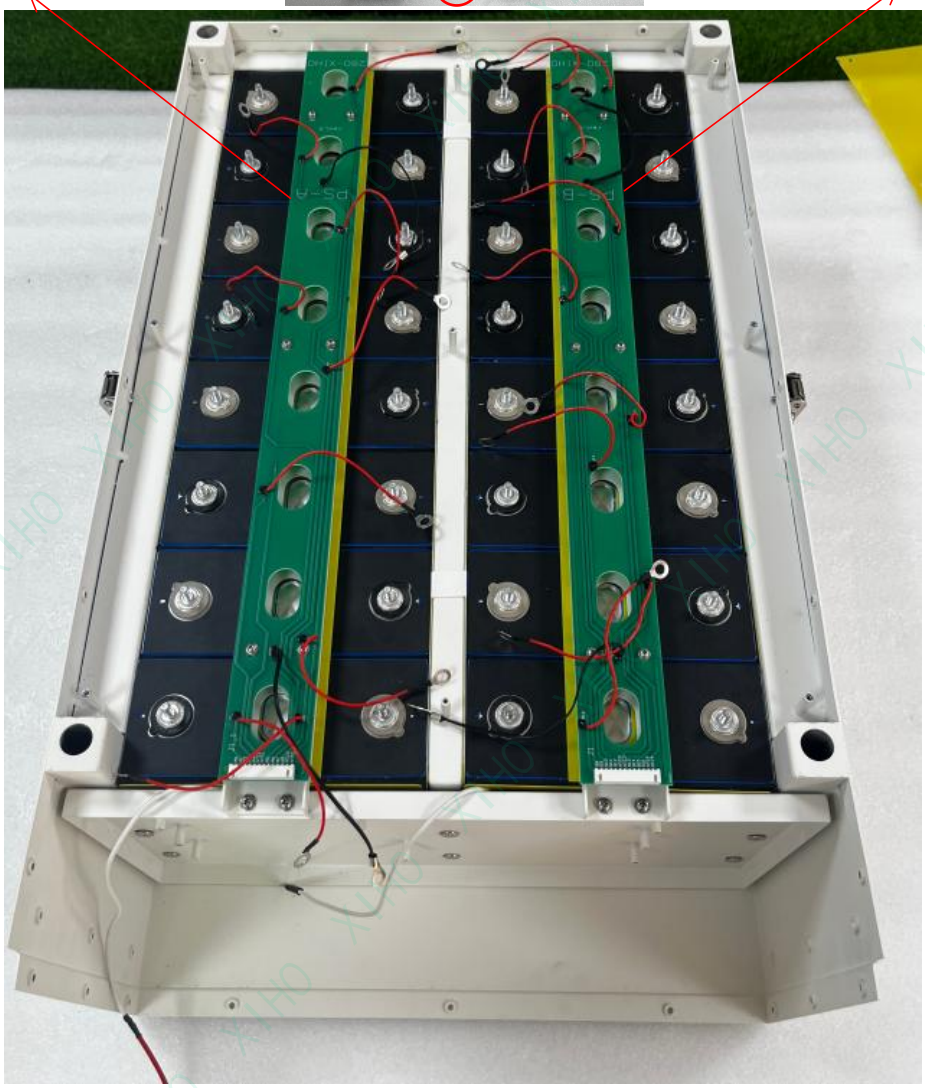
Assembly Steps:

7. Install PCB board(C), **Pay attention to the position.**

PCB-A(PS-A)
In the left
(In picture direction)



PCB-B(PS-B)
In the right
(In picture direction)



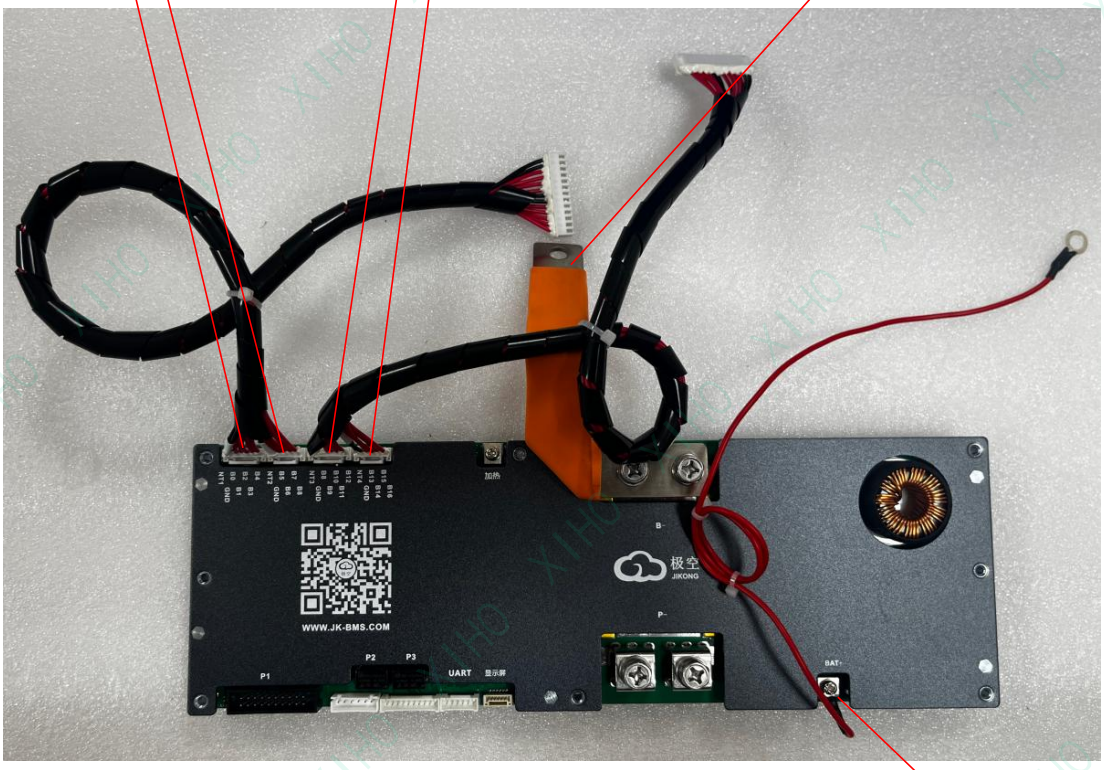
Assembly Steps:

8.Prepare the **BMS mainboard(E)** (removed in Step 3).

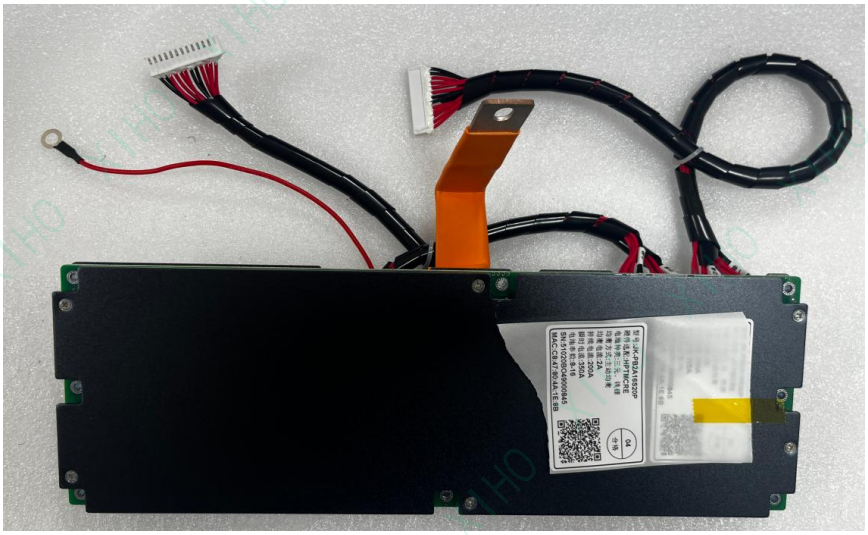
PCB-A
(#1 & #2)Wire
(Connect to the PCB-A Board)

PCB-B
(#3 & #4)Wire
(Connect to the PCB-B Board)

B- Busbar
(Connect to the Battery Pack Main Negative Terminal)



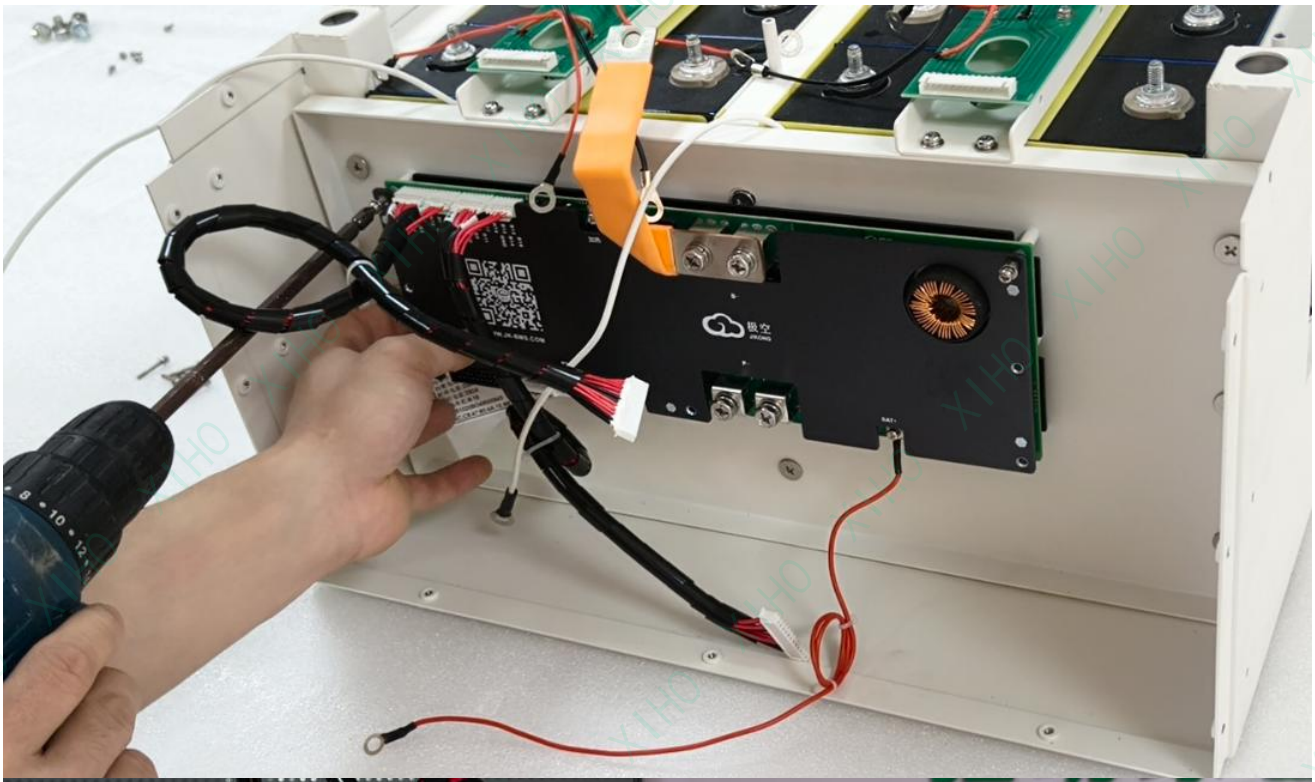
B+ Wire
(Connect to the Battery Pack Main Positive Terminal)

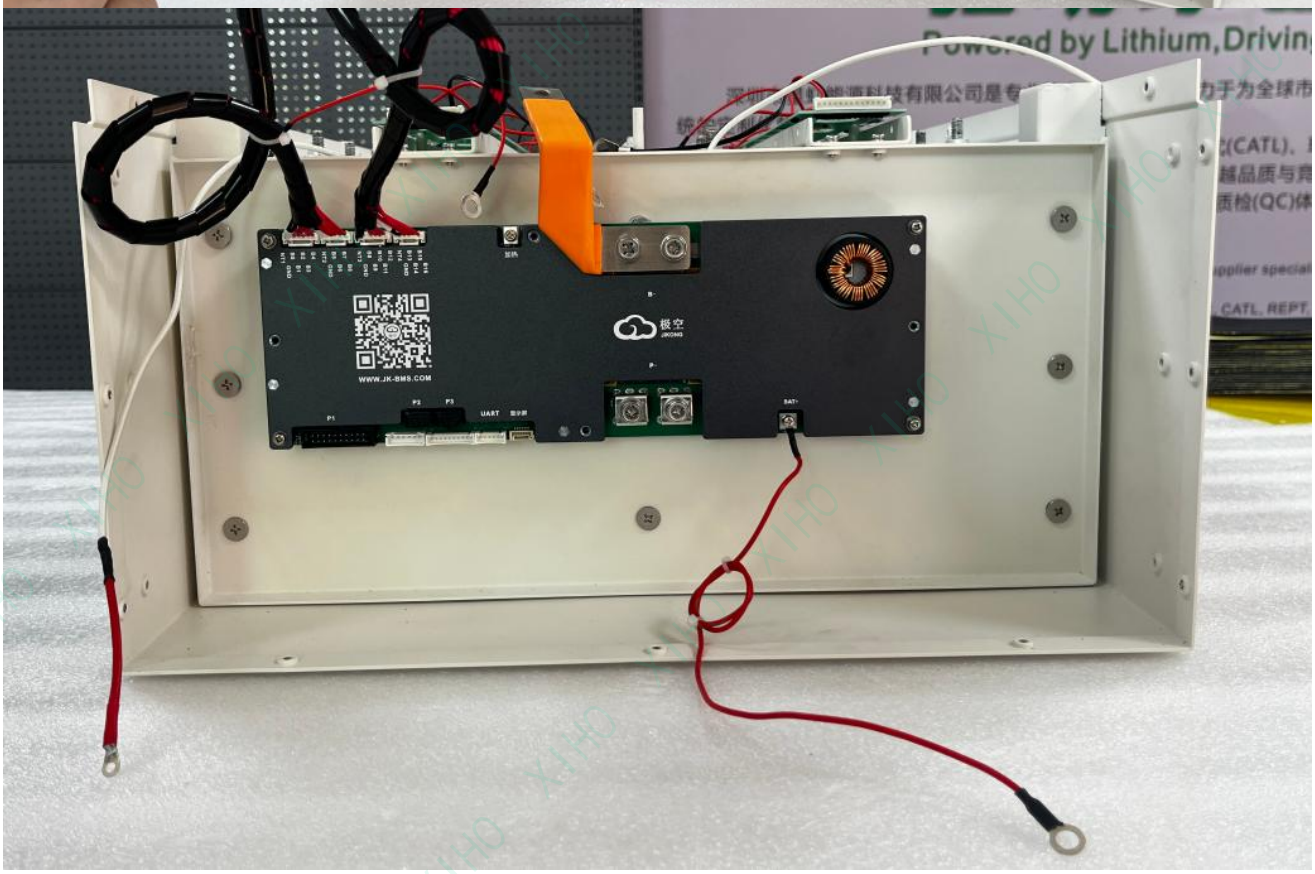


BMS Mainboard Backside

Assembly Steps:

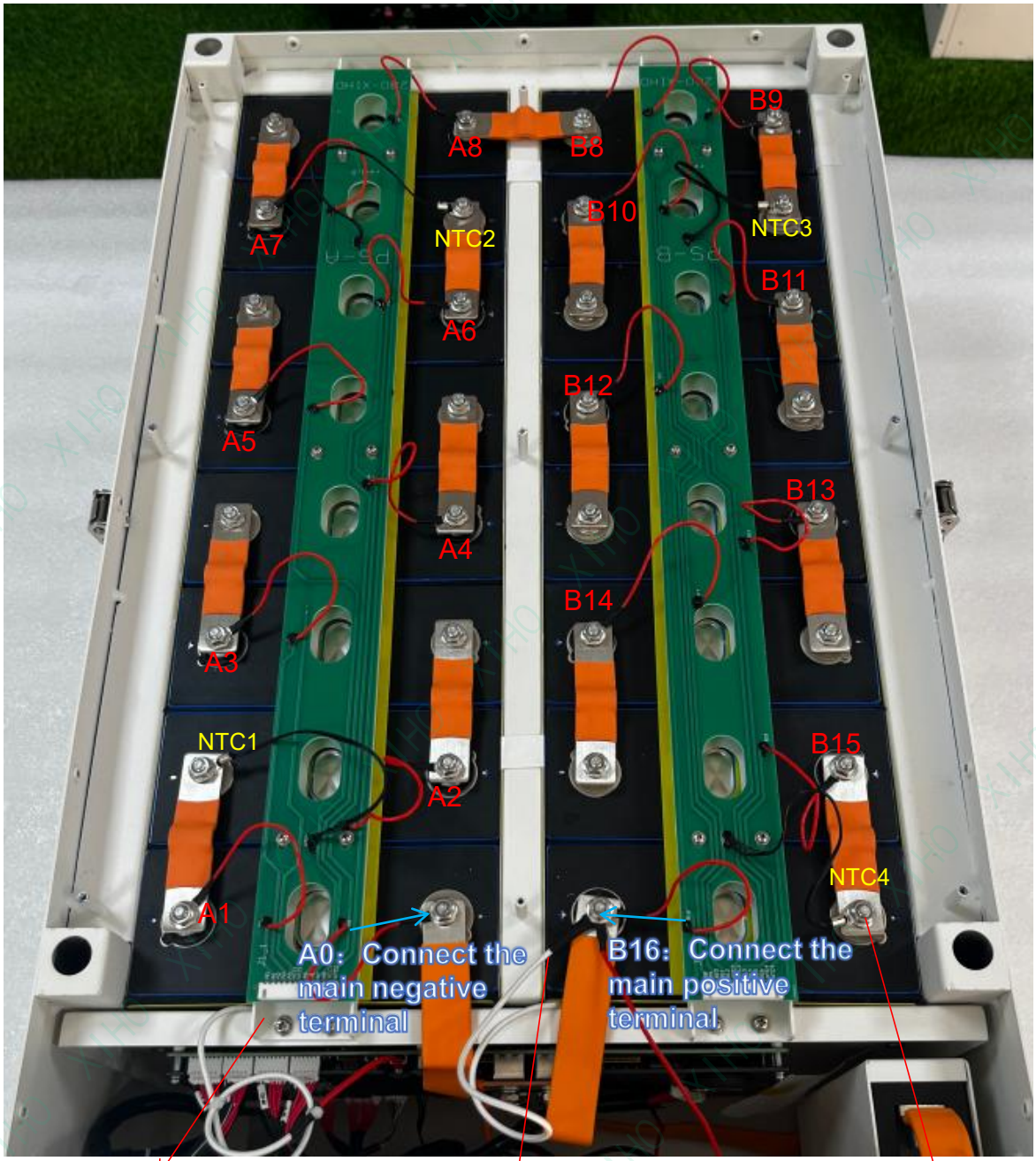
9. Install BMS mainboard(E), **Secure the screws.**

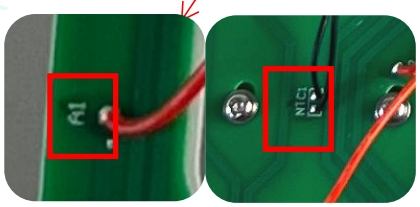




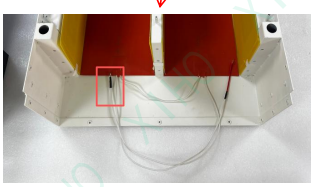
Assembly Steps:

10.Assemble the flexible busbar(G) and PCB bars harness in the sequence shown in the diagram, then torque the screws(H).





*Pay attention to the component designators on the PCB and their connections to the battery terminals

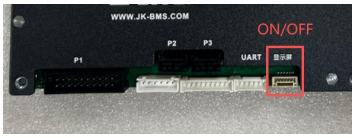


*Please note: if a heating pad is installed, the black connector wire must be connected to the battery pack's total positive terminal

*Screw up(Torque: 5-6 N m)

Assembly Steps:

11.Prepare the front panel(F) (removed in Step 3).

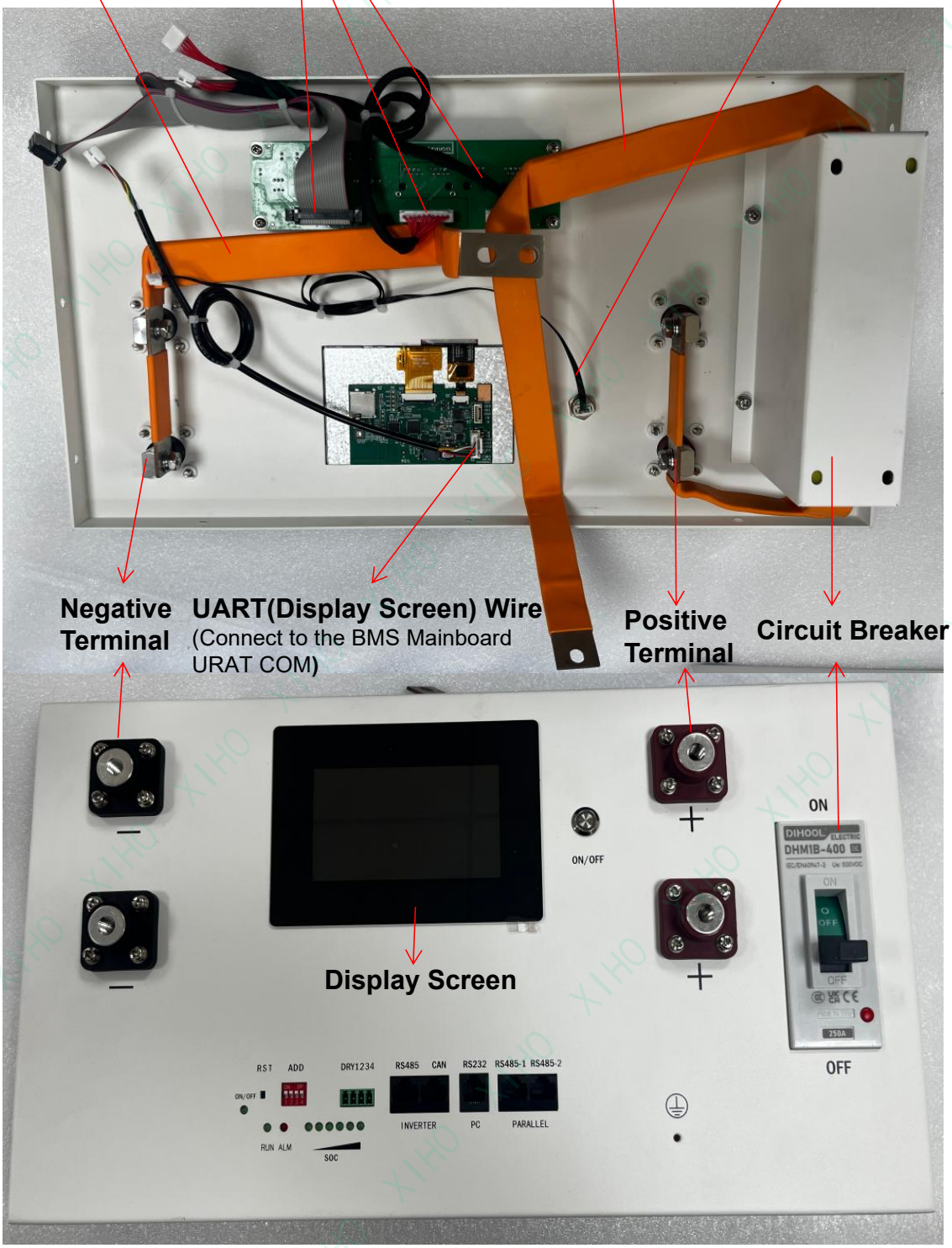


P- Busbar
(Connect to the BMS mainboard)

Communication Module P1 P2 P3 Wire

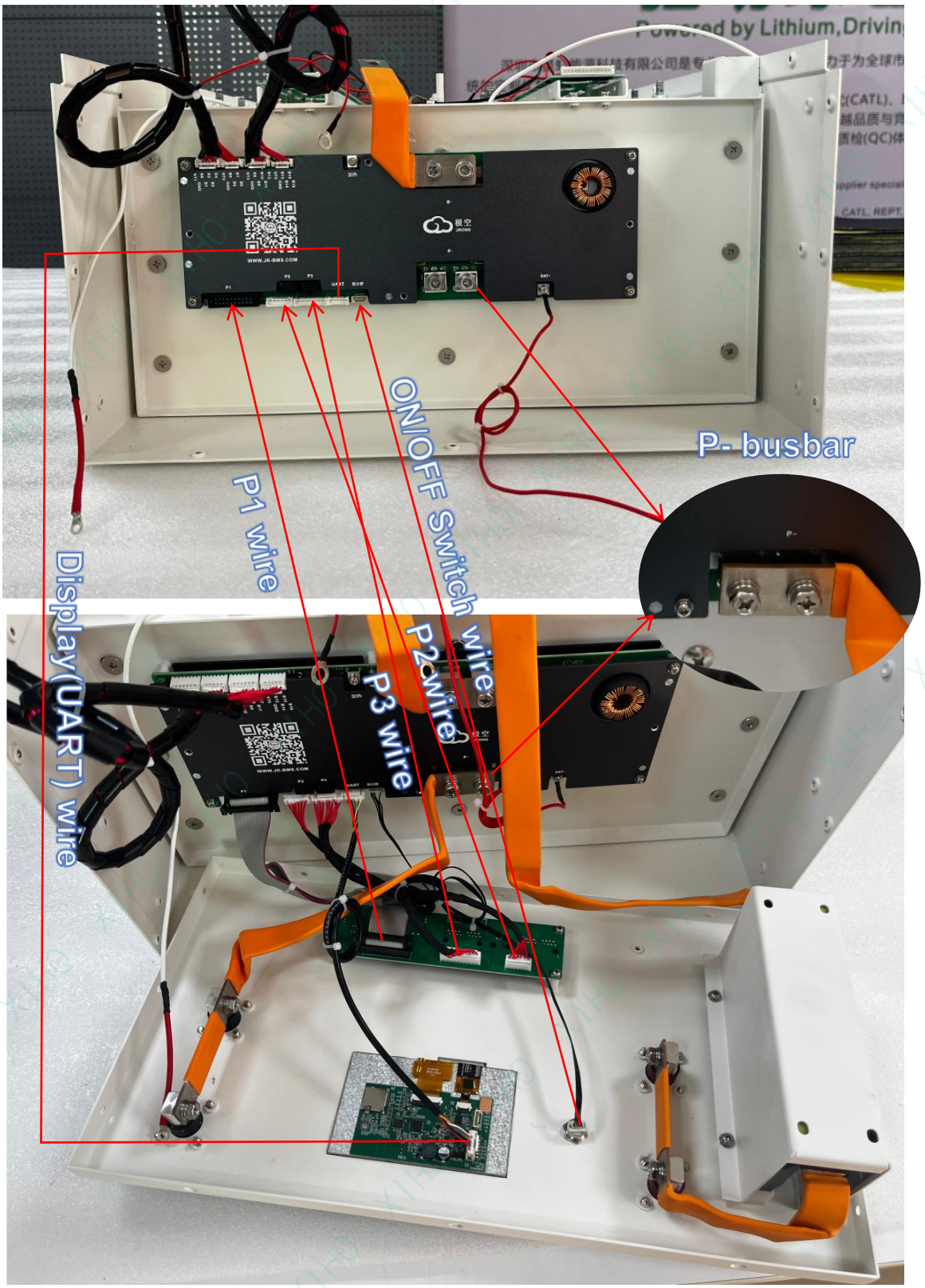
P+ Busbar
(Connect to the Battery Pack Main Positive Terminal)

ON/OFF Switch Wire
(Connect to the BMS Mainboard 显示器 COM)



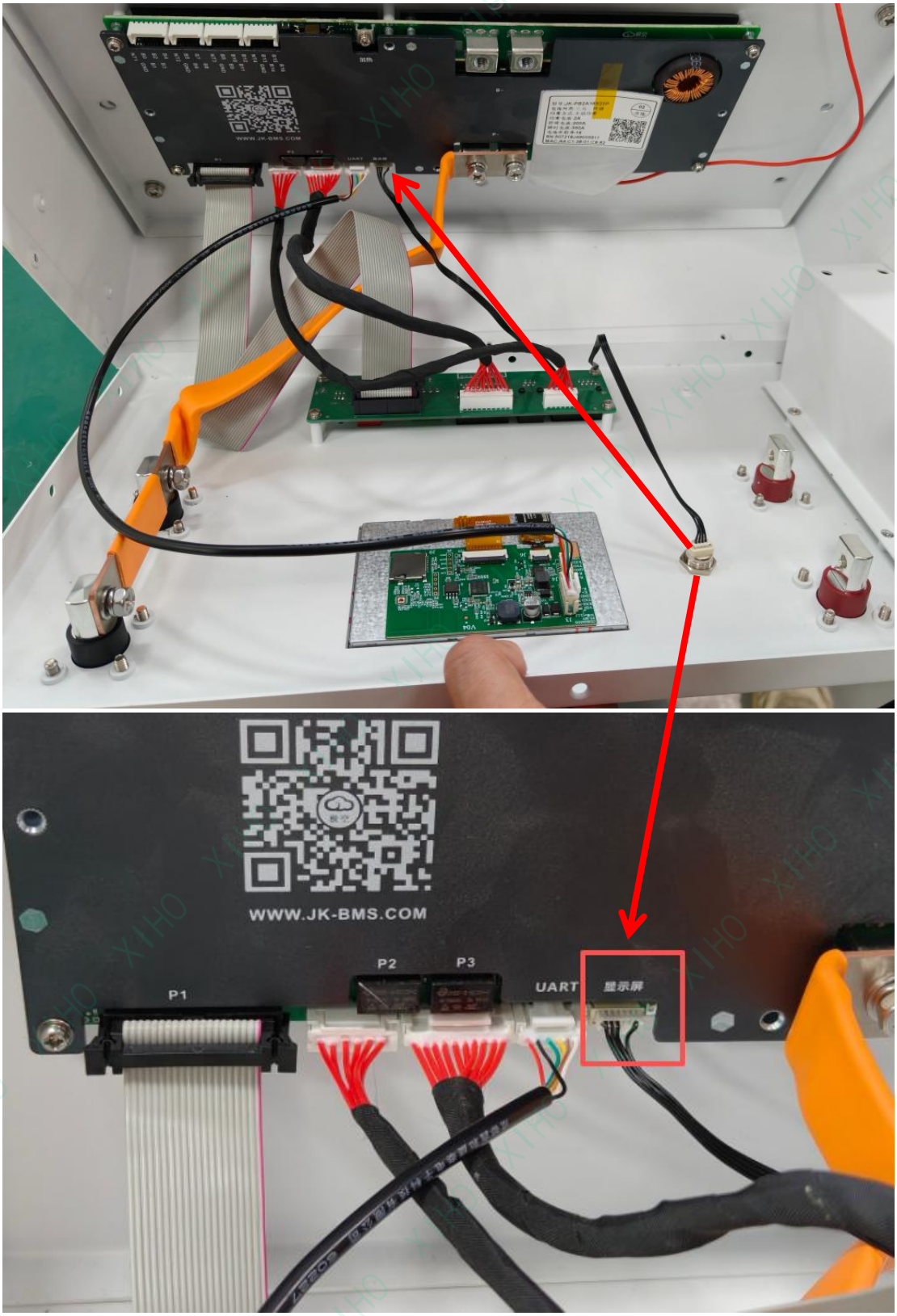
Assembly Steps:

12. As shown in the following image, connect **the front panel(F)** to the **BMS mainboard(E)**, **Connect all wires (P1/P2/P3, Switch, Display) and the P-busbar.**



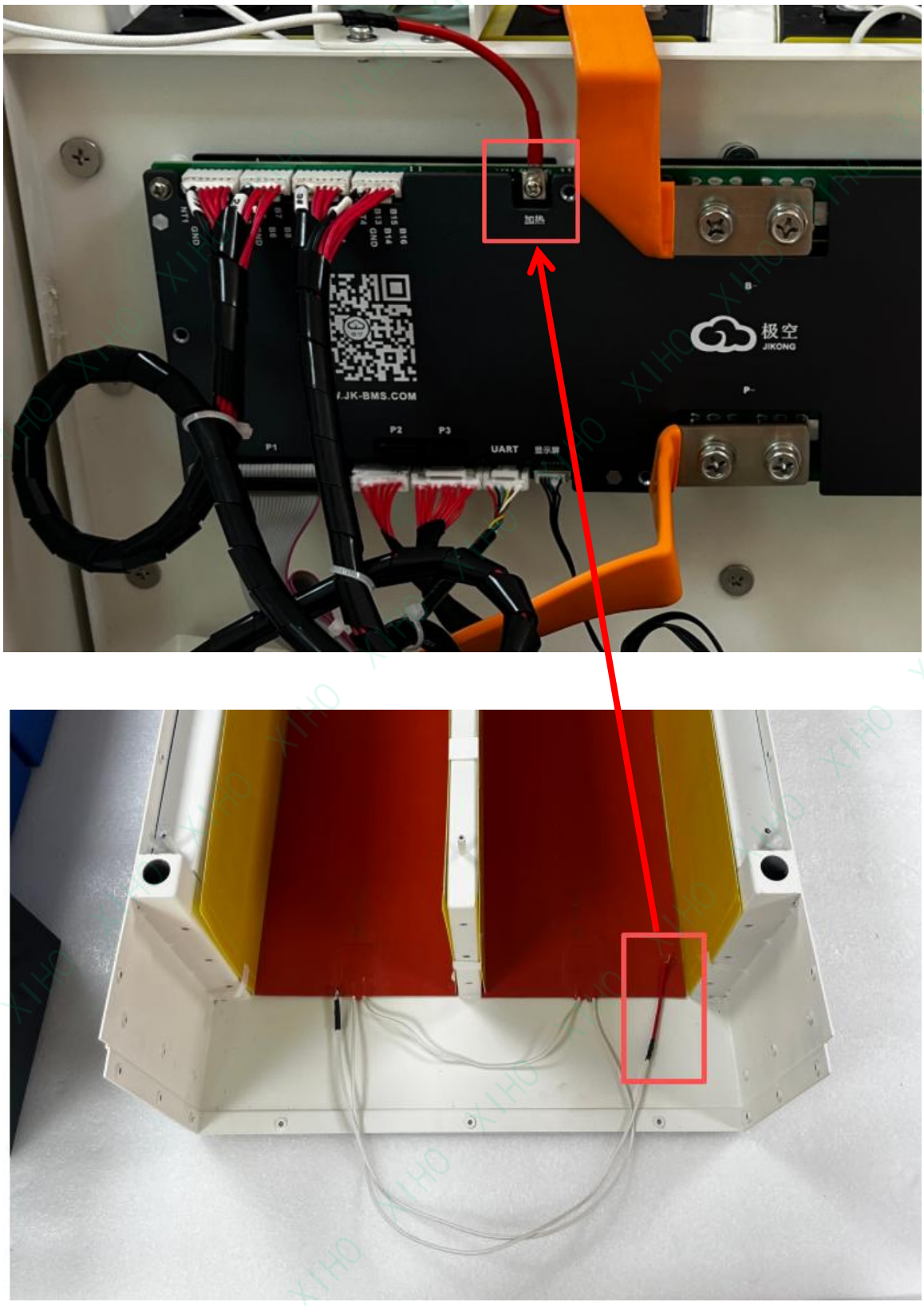
Assembly Steps:

Note: As shown by the red line connection in the image below, connect the ON/OFF switch wire to the COM port of the BMS mainboard display. Failure to do so will result in the device being unable to power on.



Assembly Steps:

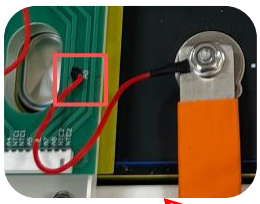
As shown in the figure below: if you have purchased our heating pad, connect the red wire to the terminal marked for heating on the BMS mainboard.

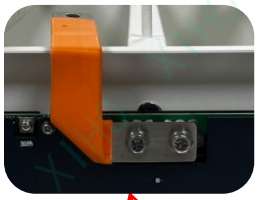


Assembly Steps:

14.Connect the battery pack's main positive and main negative terminals separately, then torque the screws(H).

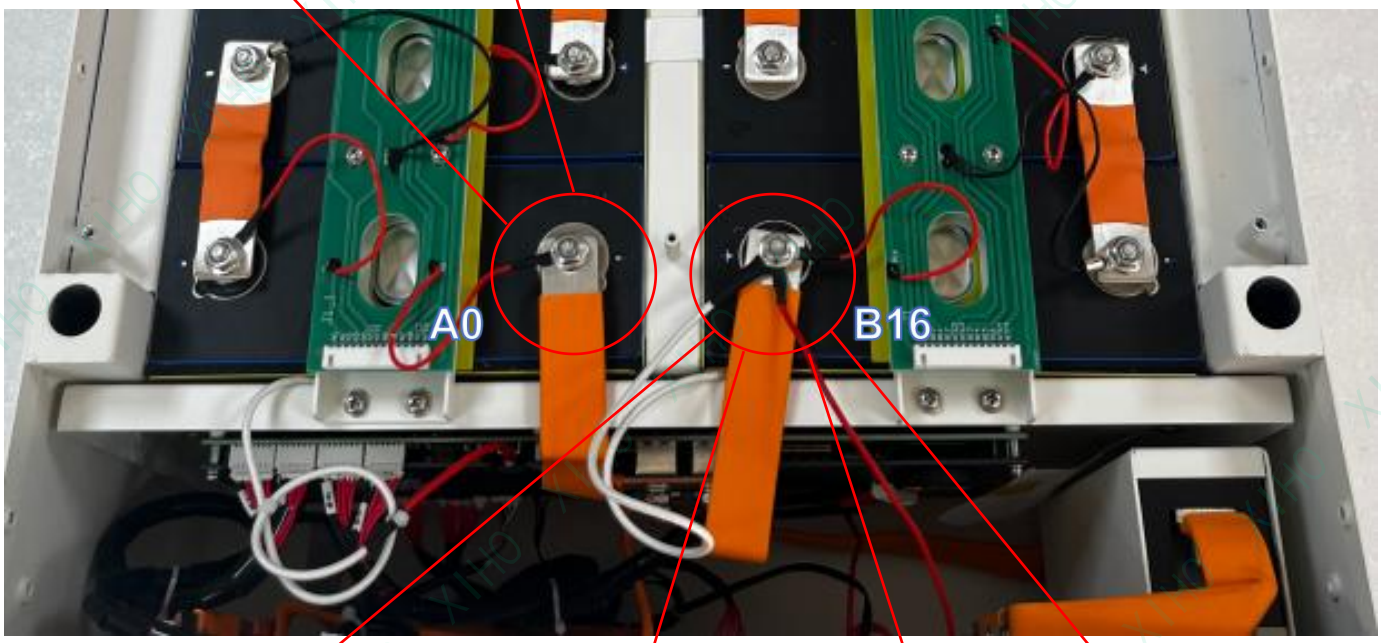
Warning: When connecting, follow the correct sequence — connect the negative terminal first, then connect the positive terminal.

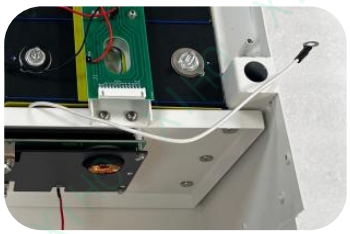


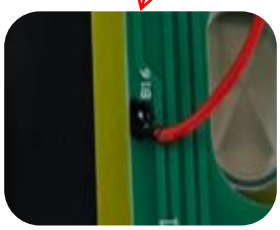


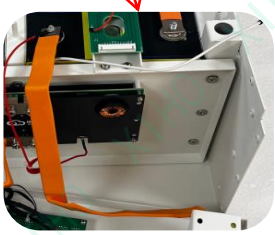
Note：Connect the negative terminal first

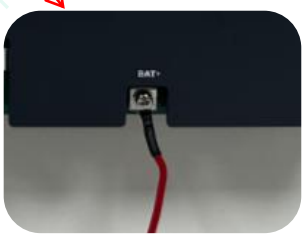
***Connect the B- busbar on the BMS main board to the A0 wire on PCB-A (PS-A) to form the main negative terminal**











***Please note: if a heating pad is installed, the black connector wire must be connected to the battery pack's total positive terminal**

Note:Connect the positive terminal as the second step

***Connect the BAT+ wire on the BMS mainboard, the B16 Wire on PCB-B (PS-B), and the positive busbar from the back plate to form the main positive terminal**

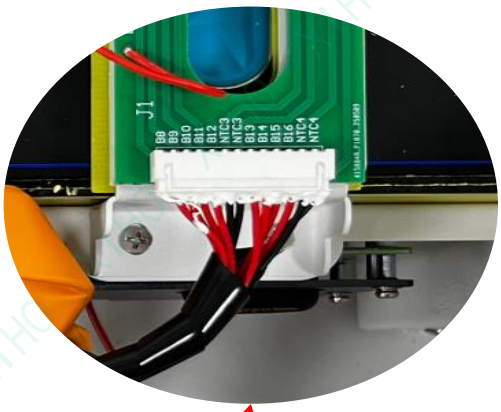
Assembly Steps:

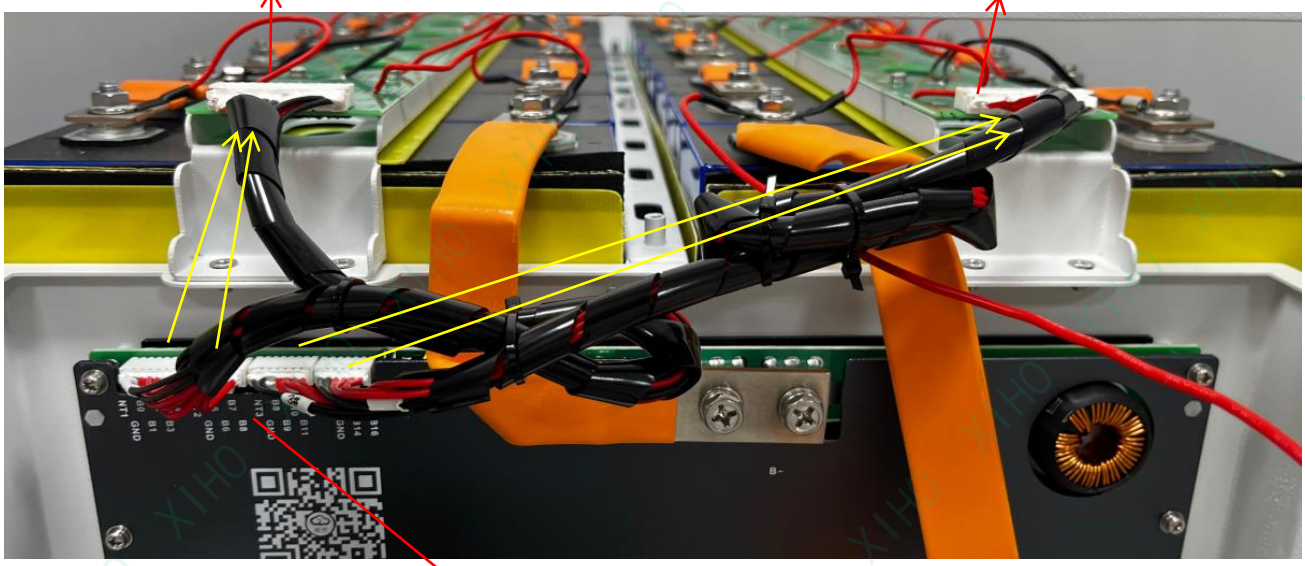
15.Connect the PCB wiring on the BMS mainboard to the PCB board according to the designated wiring sequence numbers**(Please Pay attention to the connection sequence, otherwise it may cause a short circuit).**

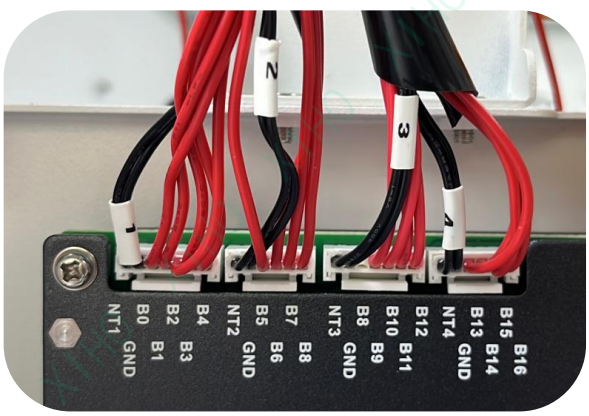
Warning: Connect lines 1 and 2 first, then connect lines 3 and 4. Follow this sequence strictly; otherwise, the BMS may malfunction or fail to operate.

First: #1 #2 Short Wires
Connect PCB-A(PS-A)

Second:#3 #4 Long Wires
Connect PCB-B(PS-B)

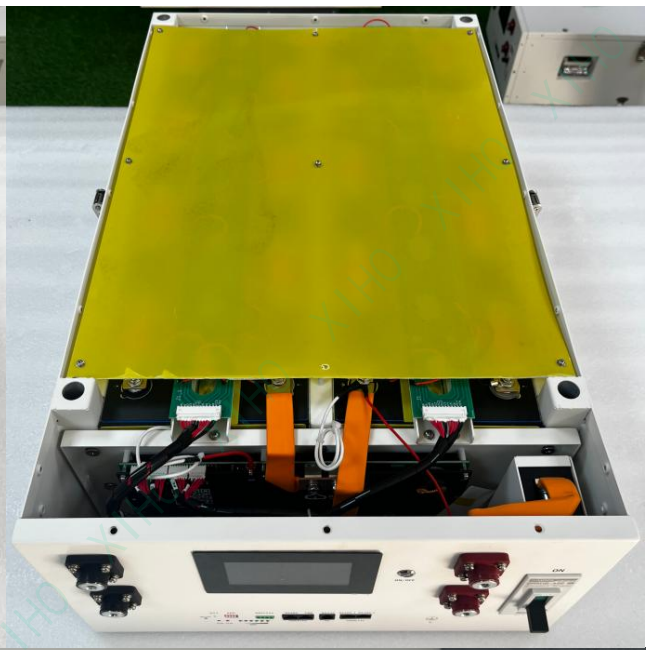






Assembly Steps:

13.Close the front panel(F) and secure the screws.
Install the epoxy plate and tighten the screws.
Close the upper cover plate (B), and tighten the screws to complete the assembly.



Battery Pack Operation

1.Pre-Startup Check

1.1 Check that all positive, negative cables, and communication cables are correctly and securely connected.

1.2 Check that the battery installation is firm, convenient for operation and maintenance, and check ventilation.

1.3 Insulate unused ports.

2. Startup

2.1 Turn on the switch on the battery.

2.2 The green RUN LED should illuminate normally (check the LED indicator status).

2.3 If the battery system cannot be started, check that all electrical connections are correct.

2.4 If the electrical connections are correct but the battery system still cannot start, contact our sales personnel within 48 hours.

Operation of Bluetooth：

DIY KIT is equipped with a Bluetooth function, supports APP monitoring battery statuses. All information available in the battery, such as the state of charge, voltage, operating current, temperature, and other operating information are transmitted in real-time via the Bluetooth transmitter. The parameters can be made visible with the JK BMS App.
Download the mobile app by scanning the QR code in the following image.

Android: "jk bms” in Google Play Store

iOS: "jk bms" in Apple Store

Figure 1 Mobile APP Link QR Code

Operation of Bluetooth：

1.First, turn on the Bluetooth on your phone, then open the app as shown in Figure 2.
2.Click on the icon in the upper left corner to scan the device, wait for the scan to complete, and then click on the name of the device that needs to be connected, such as "JK - B1A24S". When connecting for the first time, the APP will prompt for a password. The default password for
the device is "1234". After the device is connected, the APP will automatically record the
password. There is no need to enter a password for the next connection. After opening the APP, click on the device in the device list to automatically connect. The password input interface is
shown in Figure 3.

Figure 2 Device Scanning

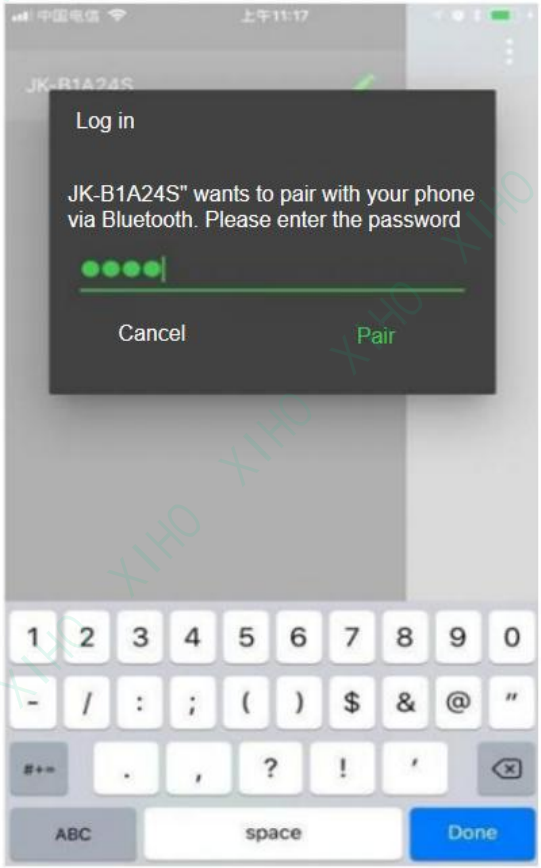


Figure 3 Password Input

Operation of Bluetooth：

3.After connecting the device, click on the "Pen Type" icon on the right side of the device list to modify the device name and password.
4.The device name modification interface is shown in Figure 4. Please note that the device name only supports English or numbers, and does not support Chinese names or Chinese characters.
5.The password modification interface is shown in Figure 5. To change the device password, you must first enter the old password of the device. Only when the current password is correct can you enter the option for entering the new password. After entering the new password twice, click "OK" to complete the device password modification.

Figure 4 Name modification

Figure 5 Password modification

Operation of Bluetooth：

6.Monitoring interface displays: SOC, voltage, current, and temperature, as shown in Figures 6.

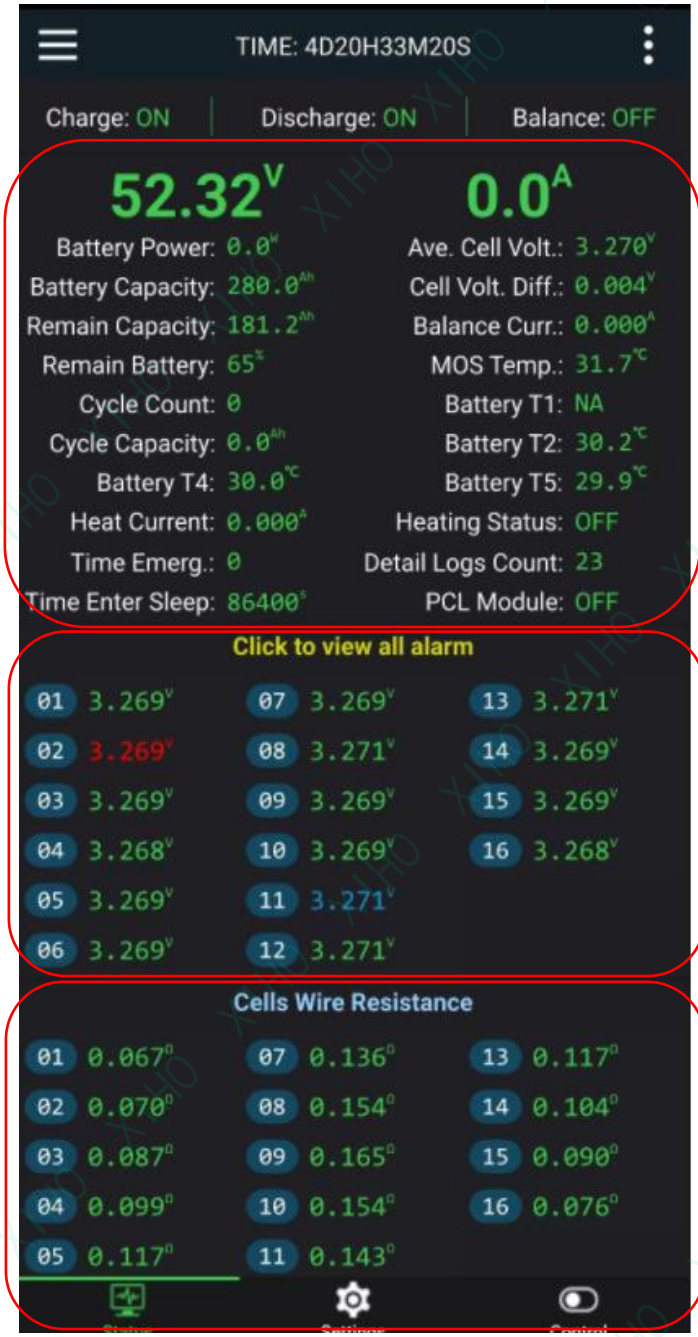


Figure 6 Real time status display

①

Area 1: Battery Information Summary Panel

②

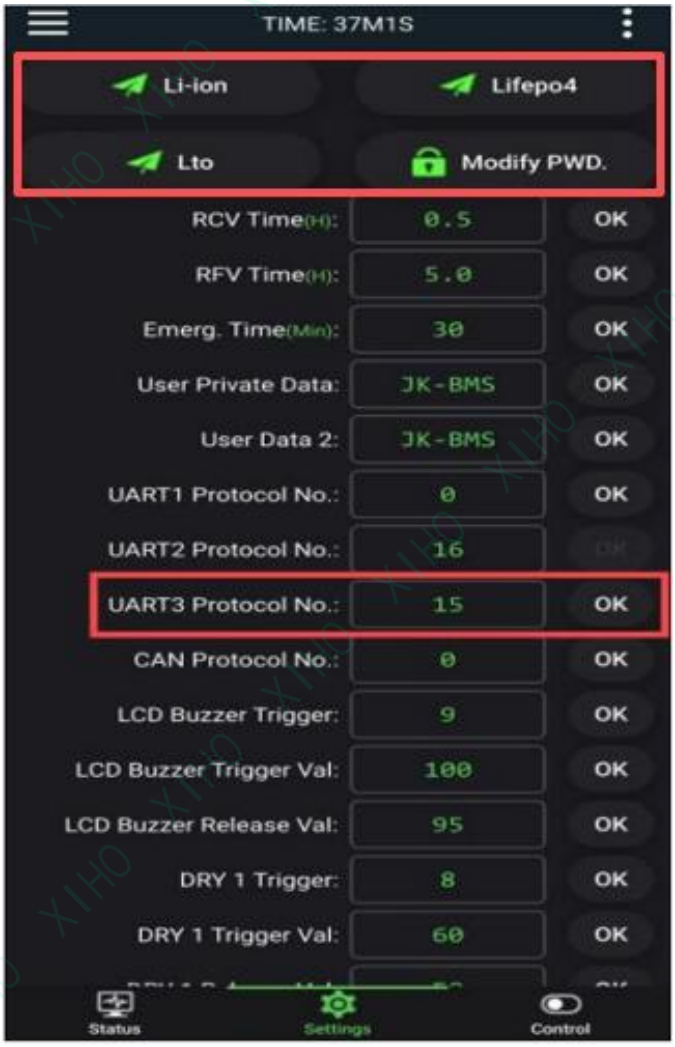
Area 2: Cell Voltage Monitoring Zone
Displays real-time voltage data of each individual cell in the battery pack. The cell with the lowest voltage is highlighted in red, while the highest voltage cell is marked in blue.

③

Area 3: Balancing Line Resistance Zone
Shows the balancing line resistance values calculated through the protection board's self-check. These values provide preliminary detection of wiring errors or poor contact. If the resistance exceeds a predefined threshold, the indicator turns yellow, and balancing functionality is disabled to prevent system instability.

Operation of Bluetooth：

7.If you need to modify the working parameters of the protection board, you must first click the "Authorization setting" button and enter the parameter setting password to verify the parameter setting permission. Parameter Setting The default password is 123456. You can modify the parameters of the protection board only after entering the correct parameters and setting the password. Parameter Setting The password and Bluetooth connection password are independent of each other.

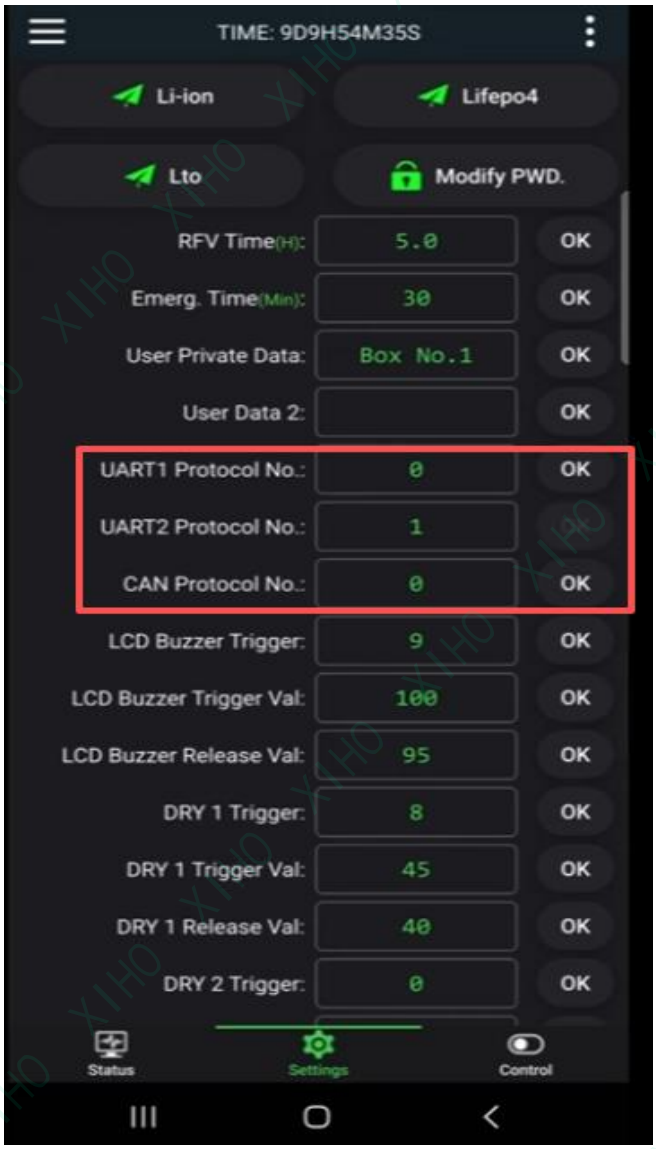


Operation of Bluetooth：

8.Communication Protocol Switching:

8.1 First connect to the Bluetooth APP and complete pairing;

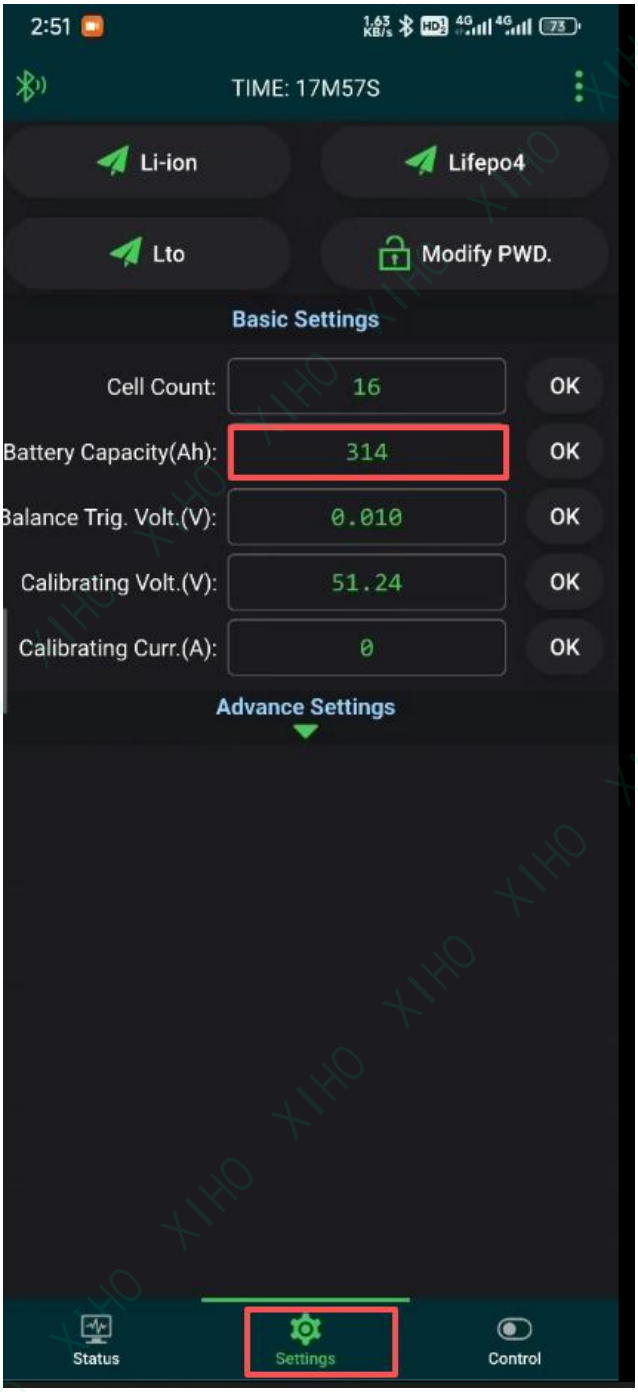
8.2 Select Protocol - Set Successfully - Restart Battery Pack - Setup Complete.

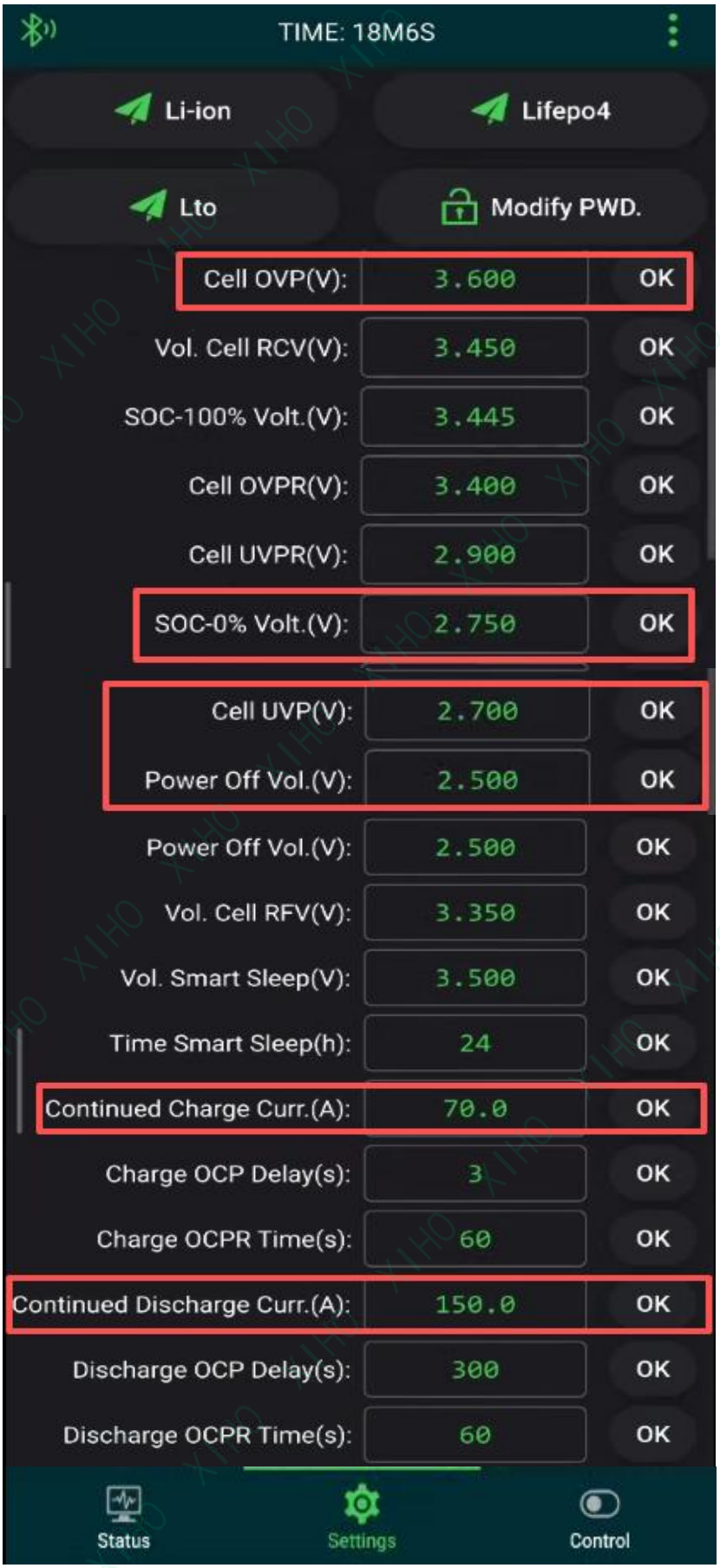


Battery Pack Parameter Settings

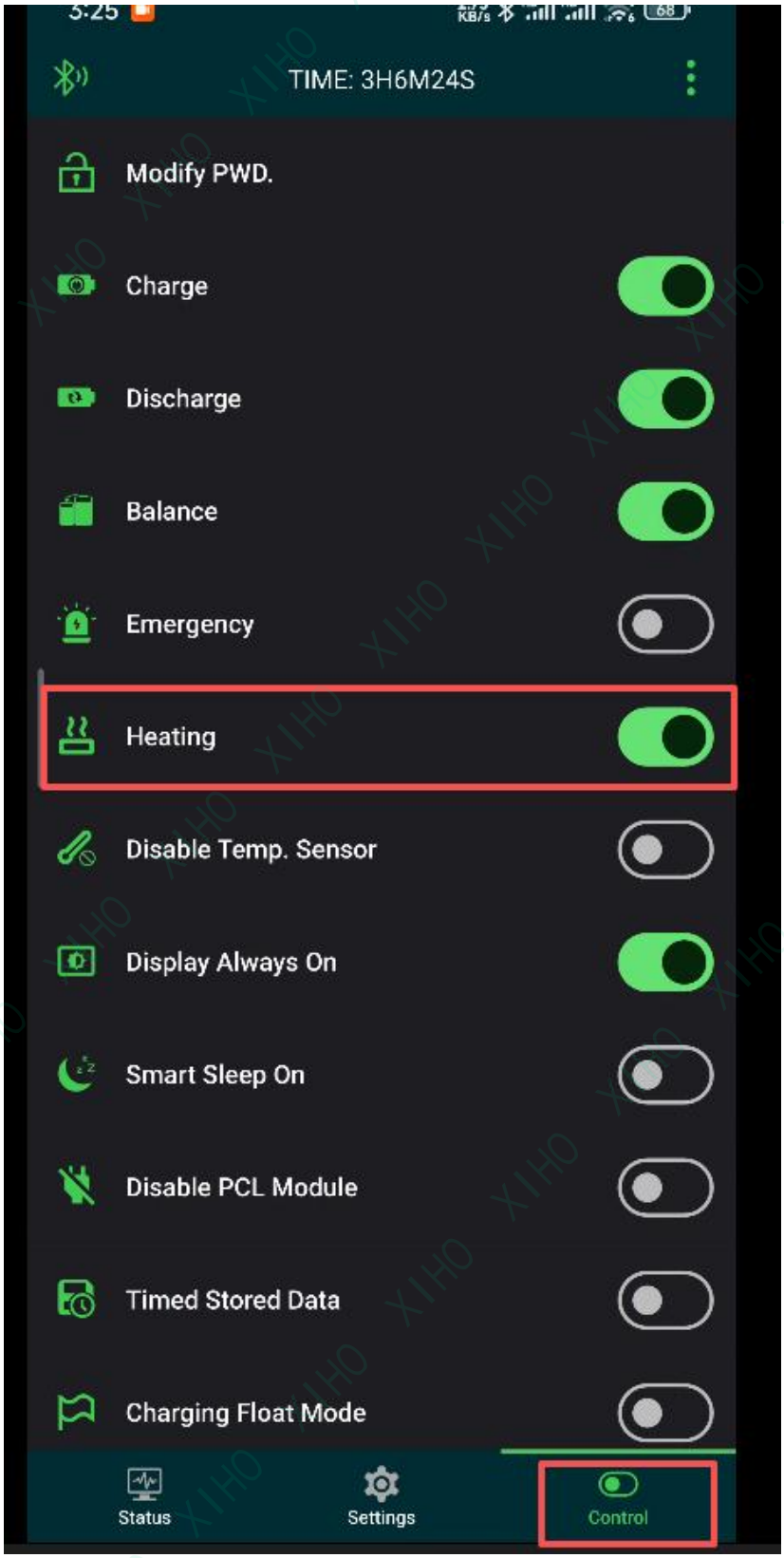
After connecting your phone to Bluetooth and entering the JK APP it is recommended to set the battery pack parameters as follows. Of course, you may also customize the battery pack settings as long as safety is ensured.

Taking the 314AH battery cell as an example, the content marked with the red frame needs to be modified to match the suggested parameters in the image.

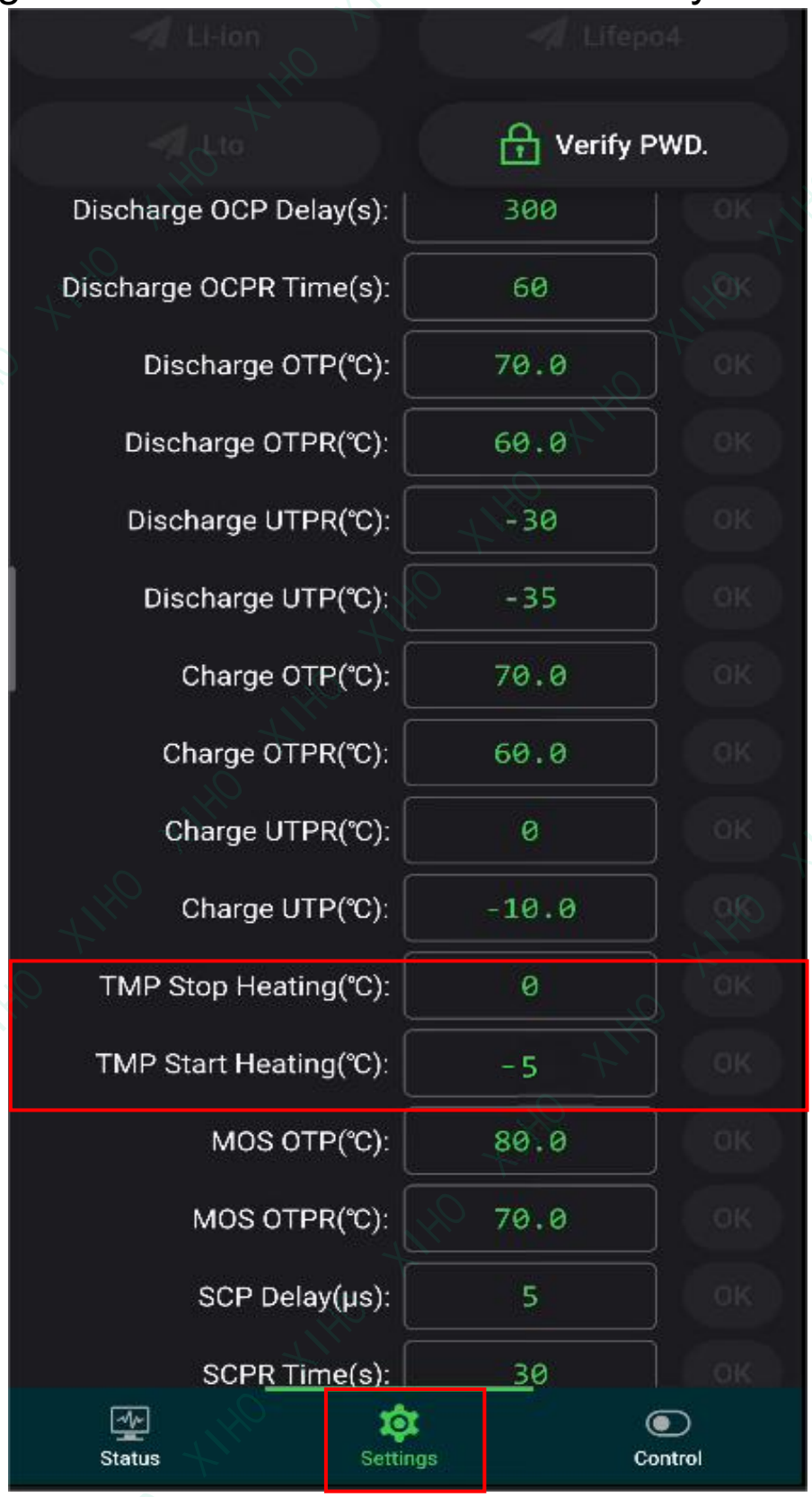



TIME: 18M6S
Li-ion
Lifepo4
Lto
Modify PWD.
Cell OVP(V): 3.600 OK
Vol. Cell RCV(V): 3.450 OK
SOC-100% Volt.(V): 3.445 OK
Cell OVPR(V): 3.400 OK
Cell UVPR(V): 2.900 OK
SOC-0% Volt.(V): 2.750 OK
Cell UVP(V): 2.700 OK
Power Off Vol.(V): 2.500 OK
Power Off Vol.(V): 2.500 OK
Vol. Cell RFV(V): 3.350 OK
Vol. Smart Sleep(V): 3.500 OK
Time Smart Sleep(h): 24 OK
Continued Charge Curr.(A): 70.0 OK
Charge OCP Delay(s): 3 OK
Charge OCPR Time(s): 60 OK
Continued Discharge Curr.(A): 150.0 OK
Discharge OCP Delay(s): 300 OK
Discharge OCPR Time(s): 60 OK
Status
Settings
Control

If you have purchased and installed a heating pad, you need to set the parameters in the BMS as shown in the figure below.



You must set the **"stop heating temperature" higher than the "start heating temperature,"** otherwise the heating function will never activate correctly.



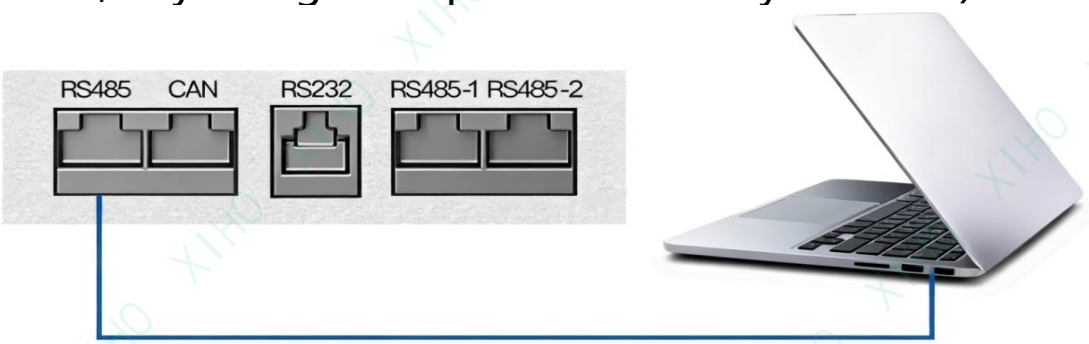
Operation of Upper System：

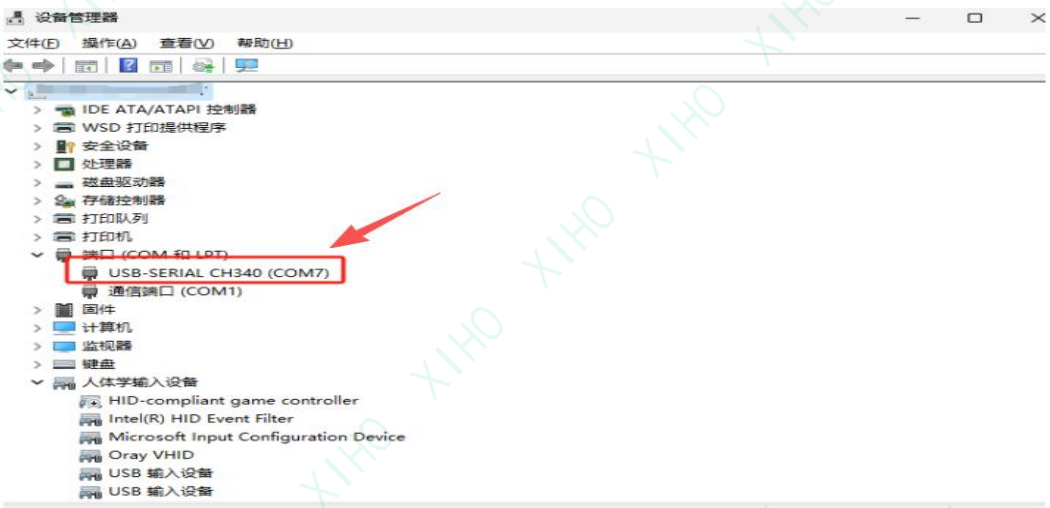
XIHO battery packs support connection to PC software for monitoring battery status and modifying communication protocols. Please contact our sales representative or visit our website to obtain the PC software.

1. Login

1.1 Connect the PC software communication cable to the RS485 port on the battery；

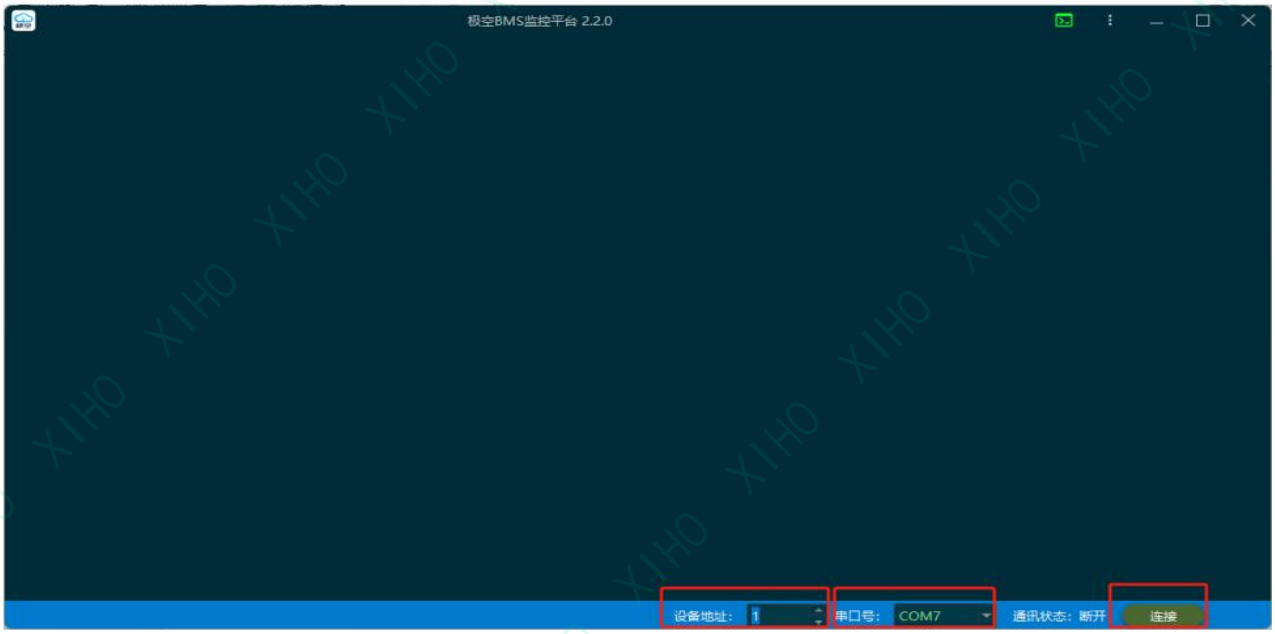
1.2 Insert the other end of the upper computer communication cable into the computer's USB port. Check if the module is working properly in Device Manager and note the COM port number. You must select the correct COM port to establish a connection. (The COM port number may vary on different computers; any recognized port is the one you need.)





Operation of Upper System：

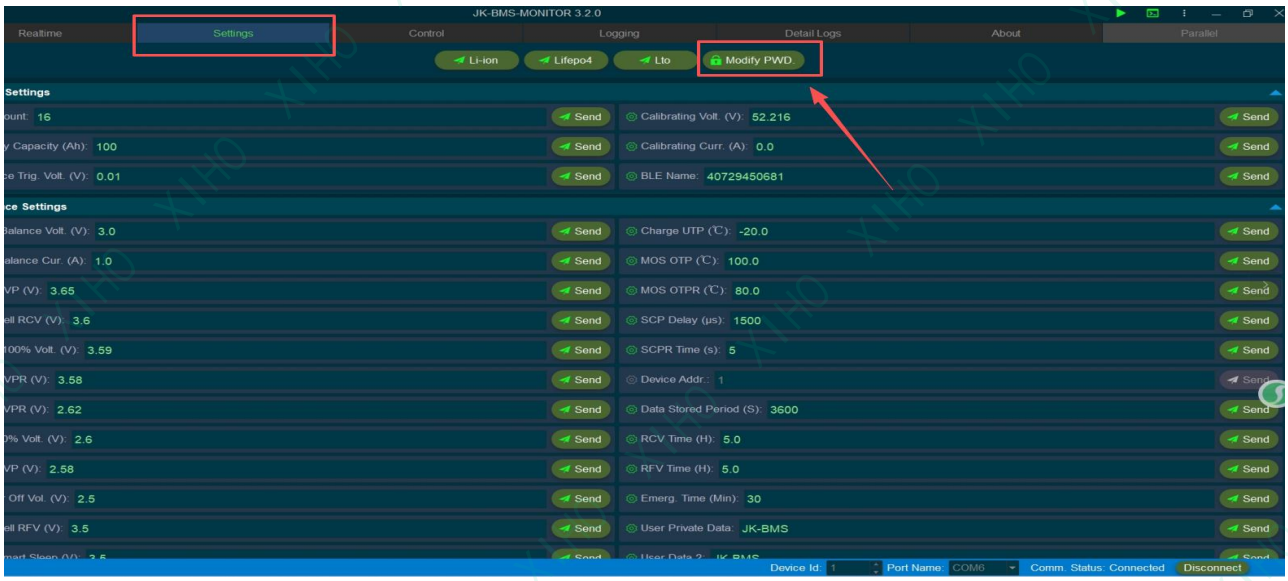
1.3 Open the PC software, enter the device address and COM port number obtained from the previous steps in the bottom right corner, and then click "Connect".



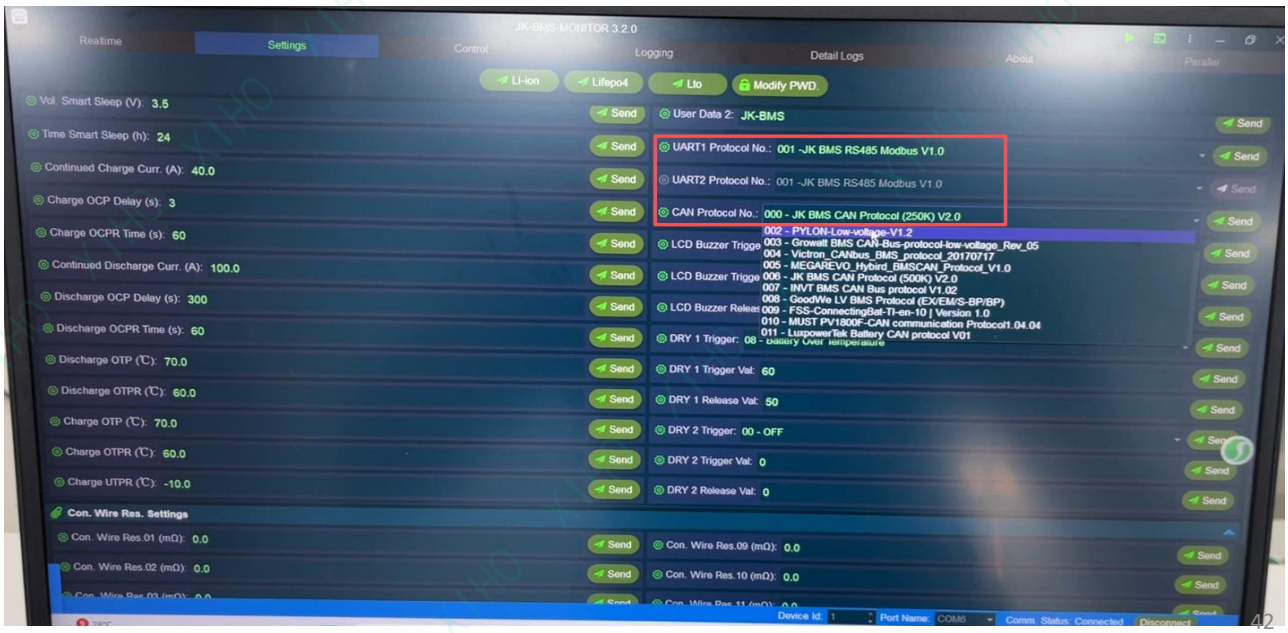
1.4 The real-time status page displays battery voltage, charging current, abnormal warnings, battery status, and equalization line group information.

Operation of Upper System:

1.5 On the parameter settings page, no parameters can be modified by default; changes must be made through the "Authorization Settings". The factory default password for the protection board is "123456".If the connections are correct but the PC software still does not function, contact our sales service department.



1.6 Switching Communication Protocol via PC
Settings - UART1 Protocol No. or CAN Protocol No. - Select Protocol - Send - Setup Complete



Communication Compatibility：

No.	Brand Name	LOGO	Communication
1	PYLON TECH	PYLONTECH	CAN/RS485
2	GROWATT	GROWATT	CAN/RS485
3	DEYE	Deye	CAN
4	LUXPOWER	LUXPOWER TEK	CAN
5	GOODWE	GOODWE	CAN
6	VICTRON	victron energy BLUE POWER	CAN
7	SMA	SMA	CAN
8	MUST	MUST 美世乐	CAN
9	INVENT	invt 英威腾	CAN
10	VOLTRON	Voltronic Power Advancing Power	RS485
11	SRNE	SRNE	RS485

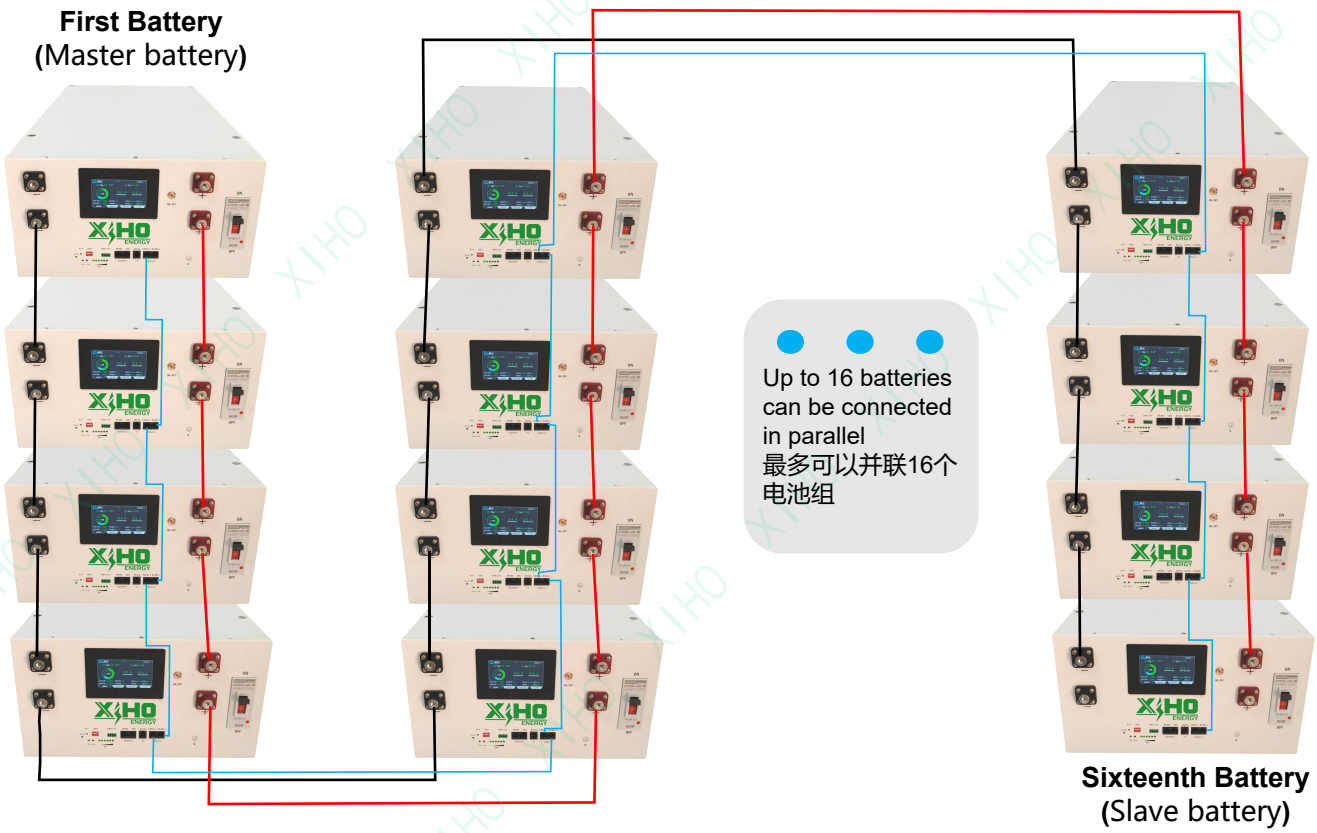
Battery Pack and Inverter Connection：

1.Battery Pack In Parallel (Supports up to 16 battery packs in parallel, see picture example).
1.1 Use a multimeter to measure whether the positive and negative cable connections are conductive, and check if the connections are loose.
1.2 Before wiring, turn off the battery switch to ensure no DC output from the battery.
1.3 First lock the parallel cable to the positive terminal of the battery pack, then connect the other end to the negative terminal (forming a ring connection between batteries).
1.4 Connect the parallel communication cable to the RS485 ports of the battery packs (connections must be made between different ports, e.g., the master battery's RS485-1 connects to the slave battery's RS485-2, and so on).

First Battery
(Master battery)

Second Battery
(Slave battery)

Sixteenth Battery
(Slave battery)



Parallel Example ▲

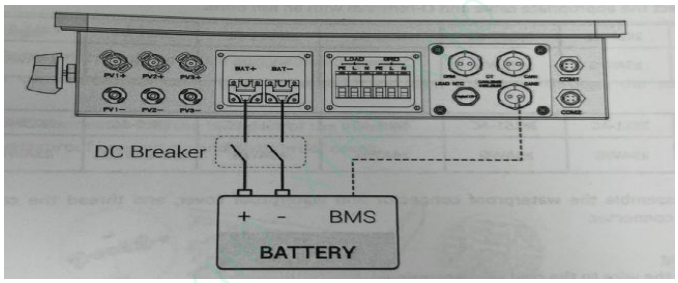
2. Battery Pack and Inverter Connection:

2.1 Use a multimeter to measure whether the positive and negative cable connections are conductive, and check if the connections are loose.

2.2 Before wiring, turn off the battery switch to ensure no DC output from the battery.

2.3 Connect the battery and the inverter's positive terminals with a red power cable, then connect the negative terminals at both ends with a black power cable.

2.4 Connect the battery's communication port (RS485 or CAN) to the inverter's BMS port using a communication cable. The BMS port definitions for different inverter brands may vary; please consult the inverter manual.



Warning：

Make battery pack must get all cells balanced before assembly.If there happens NOT know how to assembled or wrong assembly is not accepted refund.Professionals will detected voltage/resistance/appearance and other issues before every shipment,we can only ensure that the single battery cell is good,when arrival you can test the cells within 15 days after that means batteries have no problem,does not provide return nor refund.**If you found problems you can contact us for return or refund**.Battery can only be unused (the electrode intact,no welding,no wear,the appearance good)to provide return.Any return-behavior buyers need to be responsible for shipping fee.

1).Warranty period:

1 years(from the date of successful delivery)if the single battery capacity less than 80% initial capacity,take the test pictures or video to us,we willreplace it or give satisfied solution.

2).If any miss or damaged for the shipping.Please contact us firstly,then send us the picture or video to check.In case of loss of cargo or the battery is damaged and can not be used or there is a greater risk of use,we wil communicate with buyer if resend it or replace it or refund the product cost.If buyer send back the cells to seller,buyer should pay for the shipping cost.

3).These situations not provide return nor refund

①After the assembly or assembly process happen any problem,such as the protection board connected to the wrong wire burned lead to battery damage,charger failure,the assembly error or unbalanced assembly,etc.

②For damage caused,such as battery bulge/welded,battery pack without protection BMS caused by charging.

Storage

1. The external terminals of the battery pack should be insulated.
2. If the battery pack needs to be stored idle for a long time, it is recommended to charge it to 30%-60% capacity. Storage in a fully discharged state is strictly prohibited.
3. Batteries stored for more than 3 months need to be supplementary charged for 2-3 hours with a current of 0.2C~0.3C.
3. Batteries should be stored in a dry, clean, ventilated, non-corrosive gas environment, away from fire sources and direct sunlight.
4. Long-term storage in high-temperature environments exceeding 60°C is prohibited, as this will lead to performance degradation and shortened lifespan.

Notes

1. Temperature Management: Strictly prohibit exposure to high temperatures (>45°C). Storage temperature must be maintained between 10-45°C.
2. Hazard Avoidance: Keep away from fire sources/strong magnetic fields/strong static electricity. Only use dedicated chargers.
3. Abnormal Handling: If electrolyte enters eyes, immediately rinse with clean water and seek medical attention. If overheating or deformation occurs, stop using immediately and remove the battery.
4. Maintenance Specifications: Maintain storage capacity at 30%-60%. Batteries unused for three months must be recharged.
5. Safety Check: Verify voltage and connector status before use.
6.Disposal & Recycling: Waste batteries must only be handed over to suppliers or designated collection points.

Green Energy

Change Lives

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