MASON-280L (3.0)
Installation instructions

⚠ 0.Parts list:



Figure 1

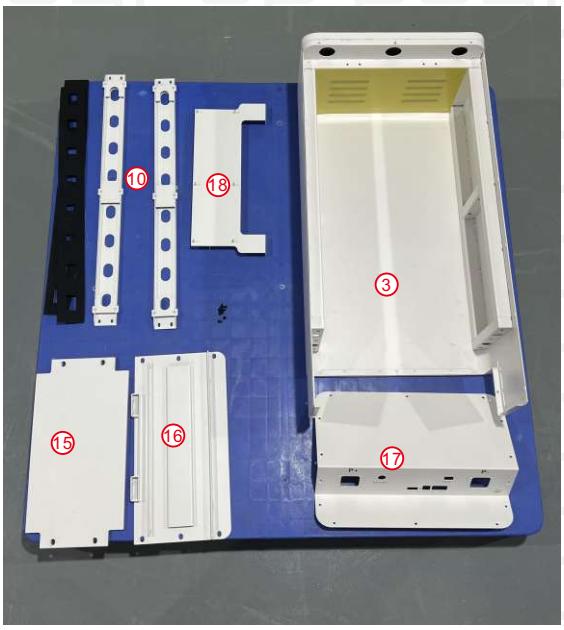


Figure 2

1.Wiring cable 2.Cell(purchase separately) 3.Battery box with top cover 4.Wheel
5.Epoxy board 6.EVA foam 7.PC gasket 8.Busbars
9.PCB board 10.PCB board bracket 11.Fuse 12.LCD screen
13.Active balance board 14.16S200A BMS 15.Middle plate 16.Front panel
17.Balance board plate 18.BMS board plate



Figure 3

Screws

1.M3x8mm 3pcs（Fix BMS）
2.M6x14mm 18pcs（Fix wheel）
3.M4x10mm 9pcs（Fix connector and box）
4.M4X8mm 5pcs（Fix PCB board）
5.M5x8mm 5pcs（Fix PCB board braket）
6.M6 flance 32pcs（Connet cell in series）
7.M8X20mm 6pcs（Fix front panel）
8.M8X35mm 4pcs（Fix middle plate）
9.M4X10mm 31pcs（Fix cover）
10.M8X16mm 4pcs(Fix connector and fuse)

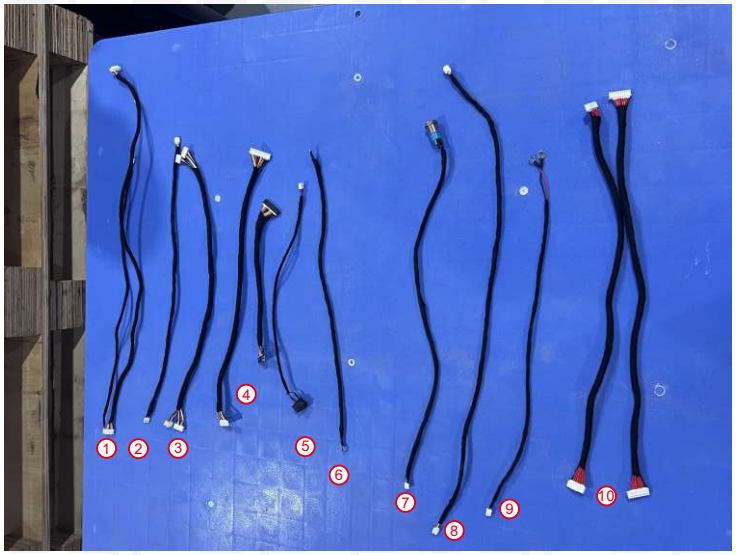


Figure 4

1.Light/comm:Light board and communication board to BMS
2.LCD:Screen to BMS
3.Comm:Communication board to BMS
4.PCB-A1/PCB-B1:PCB board A/B to BMS
5.NO/OFF:Switch to BMS
6.P+:Battery positive to BMS (BMS power supply)
7.Swich:Switch to balance board
8.BMS-ABB:BMS to balance board (communication)
9.B+/B-:Battery positive/negative to balance board (balance board power supply)
10.PCB-A2/PCB-B2:PCB board A/B to balance board

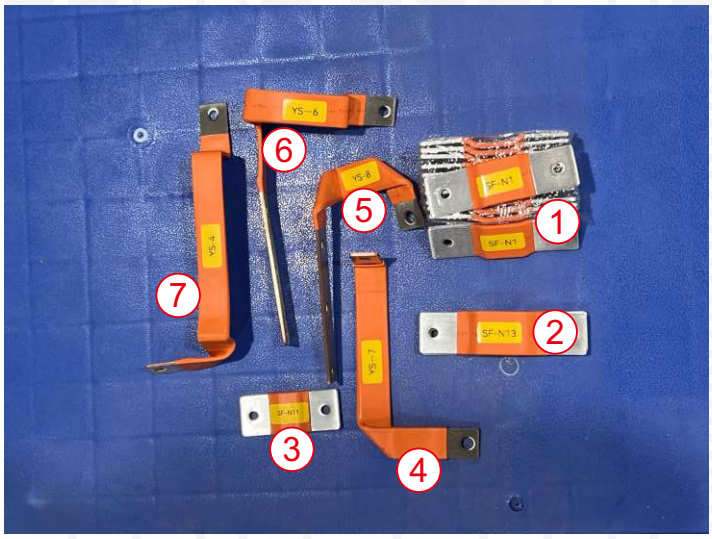


Figure 5

1.SF-N1*12 2.SF-N13 3.SF-N11
4.YS-7 5.YS-8 6.YS-6
7.YS-4

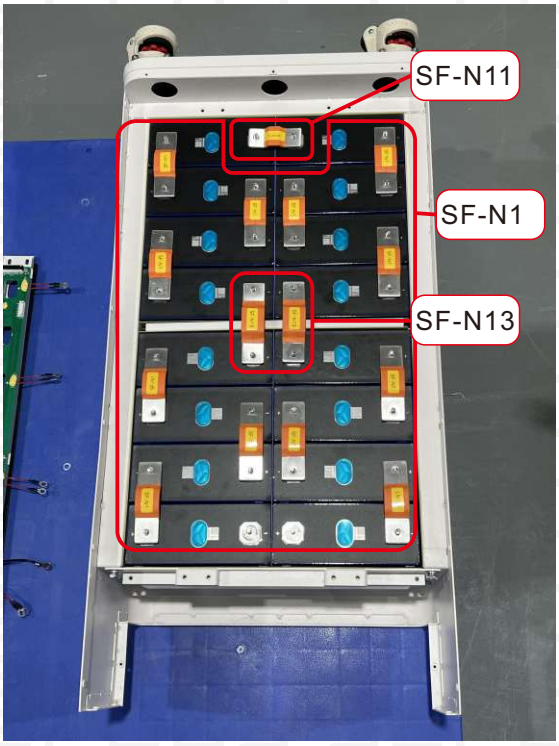


Figure 7

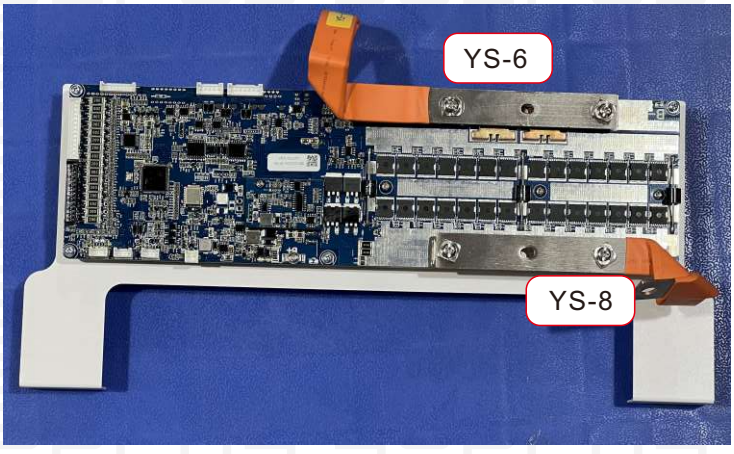


Figure 6

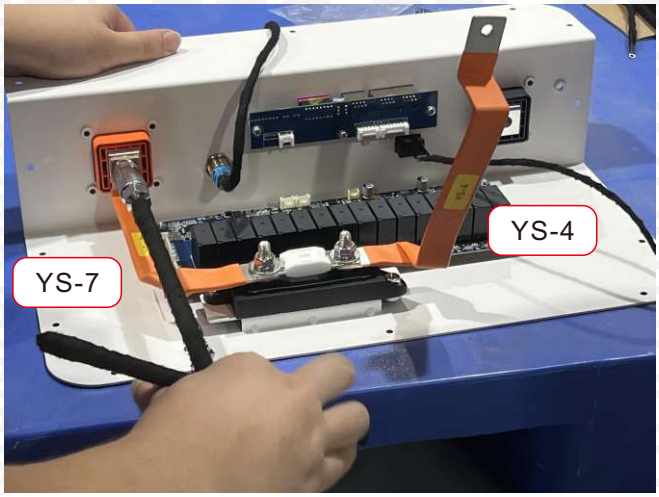


Figure 8

1.Wheel installation

Install the four wheels in corresponding positions using M6X14mm screws.



Figure 9

2.Cell Placement

Step 1: Test the battery cell (Recommend: Voltage difference is within 0.010V, and the internal resistance difference is: 0.15mΩ)

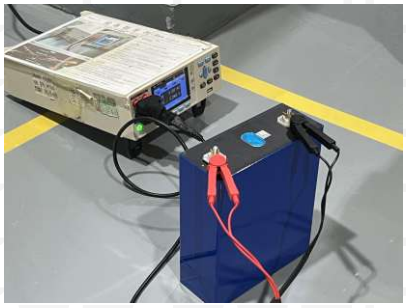


Figure 10

Step 2: Paste Epoxy boards of corresponding size inside the box.



Figure 11

Step 3: Paste the tested cell with EVA foam and PC gasket at the corresponding cell position.



Figure 12

Step 4:Place the eight cells into the box. Position as shown in figure 14/16.

Step 5:Fix with a middle plate with M8X35mm screws.

Don't forget to place Epoxy board on both side of Middle plate.



Figure 13



Figure 14

Step 6: Place the other eight cells into the box as well.

Position as shown in figure 14/16.

Don't forget to place an Epoxy board in the end.

Step 7: Fix the cells with the front panel with M8X20mm screws as shown in figure 15.



Figure 15

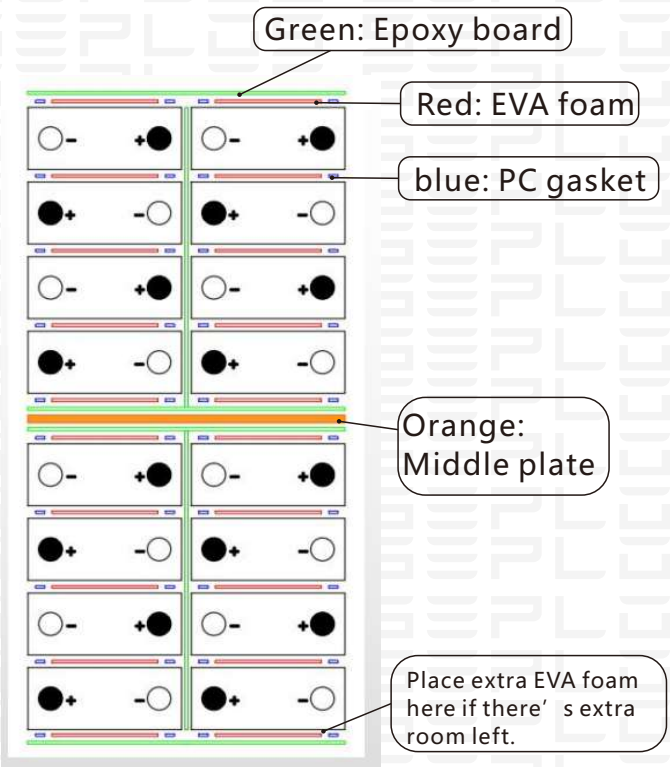


Figure 16

3.Cell connection

Install the Aluminum bus bars to connect cells in series. Each bus bar position as shown in figure 17.

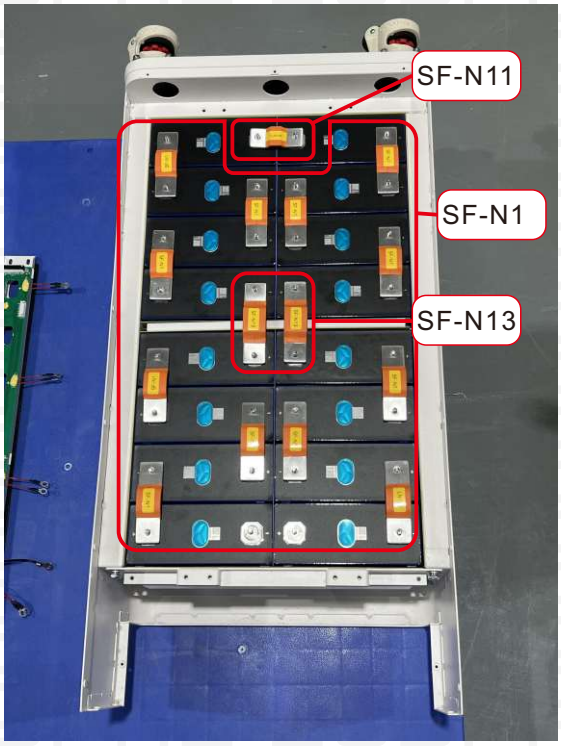


Figure 17

4.PCB board bracket installation

Step 1:Attach the EVA foam onto PCB board bracket.
Pay attention to align the holes when pasting.

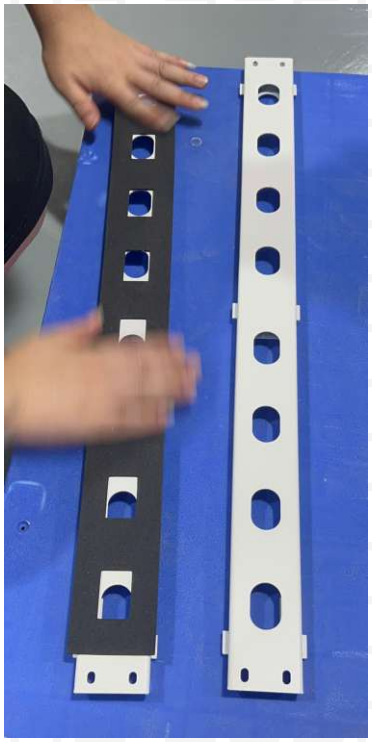


Figure 18

Step 2:Install the PCB board onto bracket, and fix with M4X8mm screws.

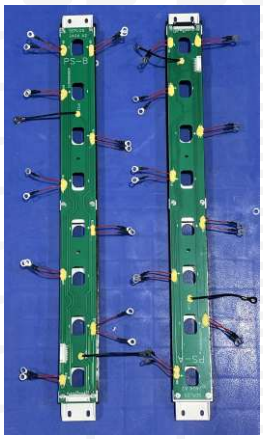


Figure 19

Step 3:Install the integrated bracket onto battery box, pay attention to the positon of PS-A/B board. and fix with M5x8mm screws.

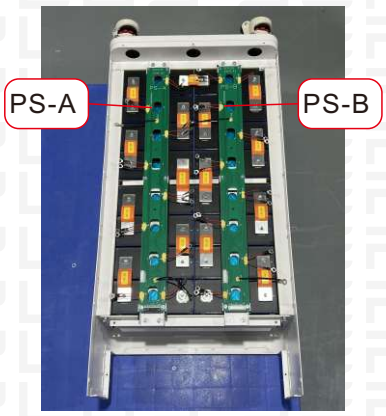


Figure 20

Step 4: Connect each connectors onto cell terminals. And fix with flange nuts.
Leave P+ and P- for BMS connection.



Figure 21

5. BMS board installation

Step 1:Install the BMS onto the BMS plate. And secure with M3x8mm screws.

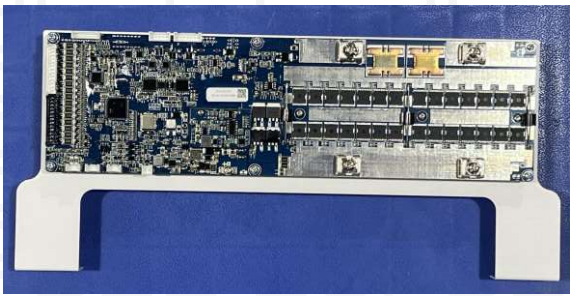


Figure 22

Step 2:Install the YS-6/YS-8 copper bus bar on BMS. And fix with screws.

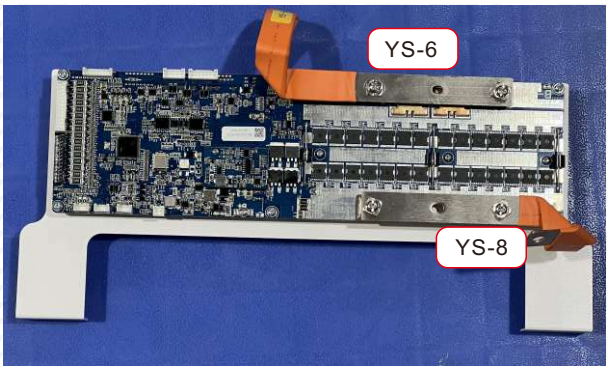


Figure 23

Step 3: BMS cable connection. Insert the corresponding cable to the BMS.

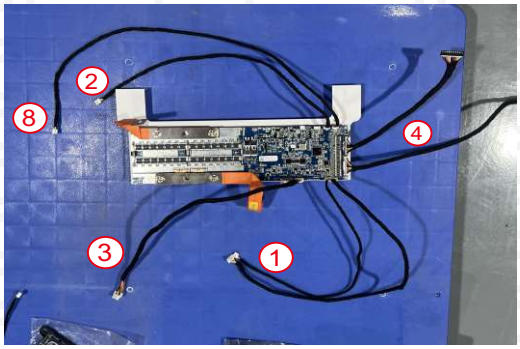
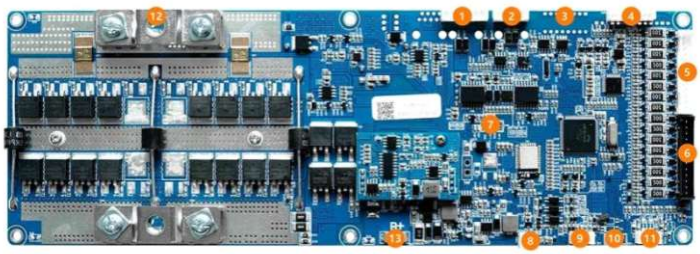


Figure 24



1 Rs485 port small board(Type B/C)
2 CAN port board small board(Type B/C)
3 LED light board small board(Type B/C)
4 Reset button small board(Type B/C)
5 Data cable A
6 Data cable B
7 Heating function(Customize)
8 External trip breaker
9 External power swich
10 Active balance(Customize)
11 LCD screen
12 P-terminals
13 B+ terminals
14 Aerosol fire system
15 BMS board



Figure 25

Step 4: Install the BMS board plate onto battery box. And fix with screws.

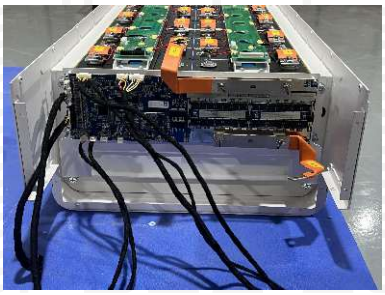


Figure 26

6.Balance board installation

Step 1:Attached a thermal pad to the balance board. Position as shown in the figure 25.

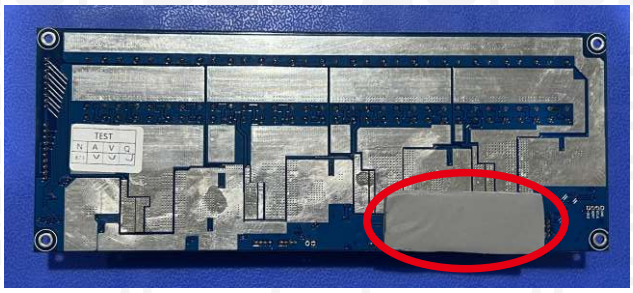


Figure 27

Step 2:Install the balance board, communication board, balance switch and P+/P- terminals to the balance board plate. Don't forget to fix the screws in the middle of each battery terminal.



Figure 28



Figure 29

Step 3: Install fuse, copper bus bar YS-4 and YS-7.

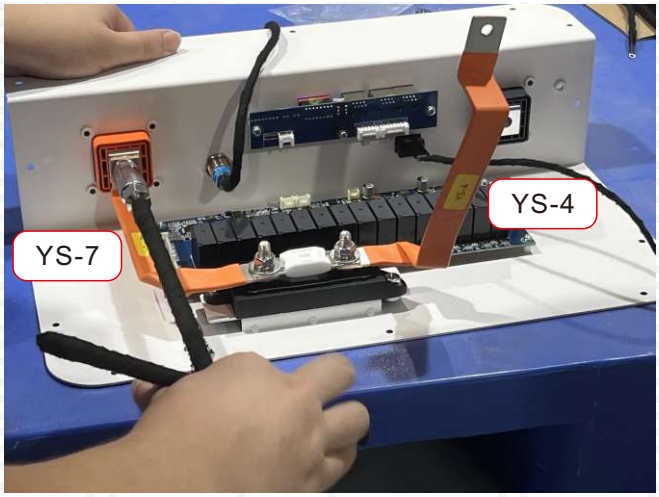


Figure 30

Step 4: Insert the corresponding cable to balance board as shown in figure 31.

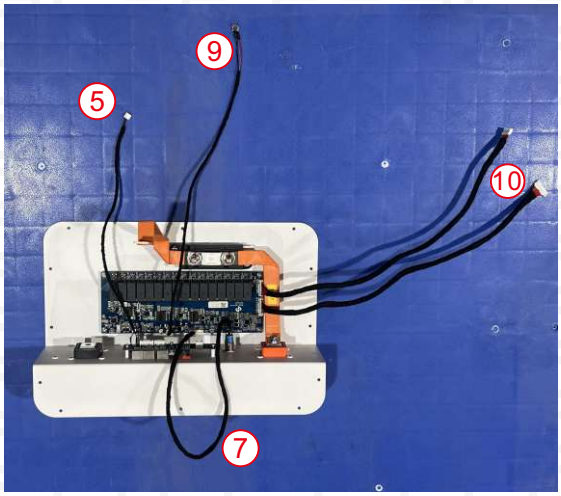


Figure 31

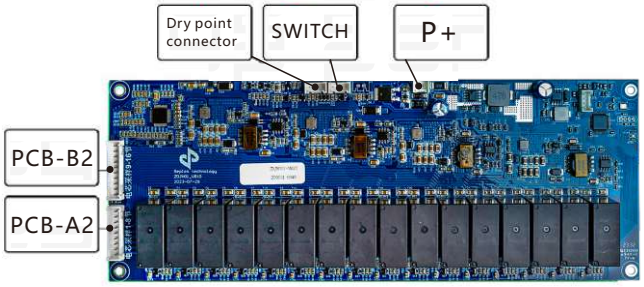


Figure 32

⚠ 7.BMS board and balance board connection

Step 1: Install the balance board plate onto battery box, and fix with screws.



Figure 33

Step 2: Insert the PCB-A1/PCB-B1, PCB-A2/PCB-B2 with PCB board.
Connect bus bar YS-4/YS-6 with B+/B-.
And connect BMS B+ with P+ using P+ cable.



Figure 34

⚠ 8. Top cover installation

Step 1:Install light board, LCD screen onto the cover. And fix with screws.
Step 2: Insert LCD cable and light board cable.

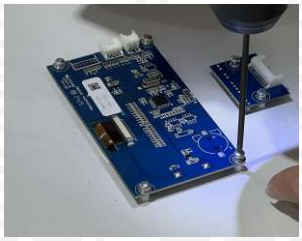


Figure 35



Figure 36

Step 3: Get the top cover in the position. Pay attention to all the cables.

Step 4: Attach LCD sticker and install the button cap.



Figure 37

Step 5:Fix top cover with screws. Then we finished MASON-280L assembly.

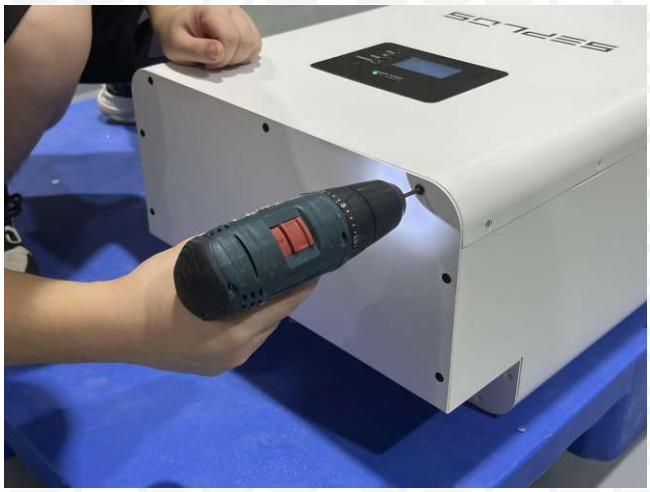


Figure 38

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