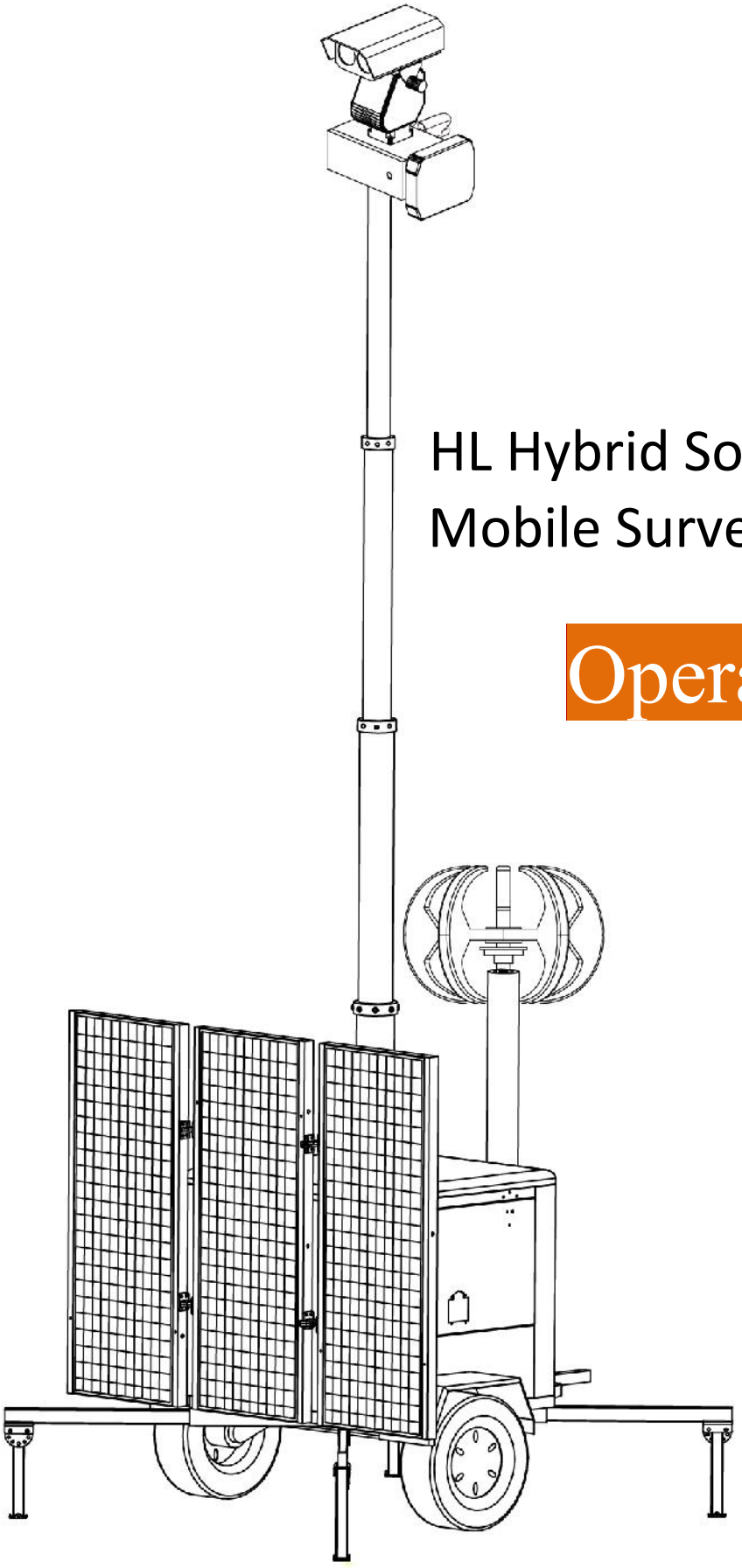
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HL Hybrid Solar-Wind Mobile Surveillance System

Operating Guide

Table of Contents

一、 Vehicle Structure Overview 2

二、Control Panel Overview 3

三、 Parking Brake Instructions 4

四、 Instructions for Use of the Telescopic Fixed Bracket 5
（一） Expand Fixed Bracket Instructions 5
（二） Instructions for Retrieving Fixed Brackets 6

五、 Trailer Hitch Installation Instructions 7

六、 Push Rod Installation and Removal Instructions 8
（一）Pole Top Installation Instructions 8
（二）Method for Removing the Pole Top 10

七、 Equipment Startup Instructions 11

八、 Wind-Solar Hybrid Charging Operation Instructions 12
（一）Solar Charging Operation Instructions 12
（二） Wind Energy Charging Operation Instructions 15

九、 Operating Instructions for the Lift Pole 16
（一）Raising the Pole Operation Instructions 16
（二）Lowering the Boom Operation Instructions 16

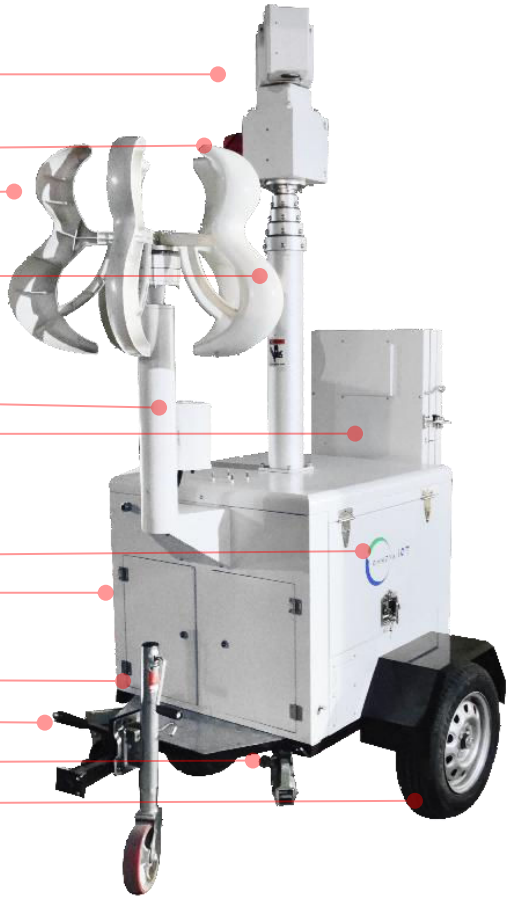
十、 LED Light Operation Instructions Inside the Box 16

十一、Sound Bar and Strobe Light Instructions 17

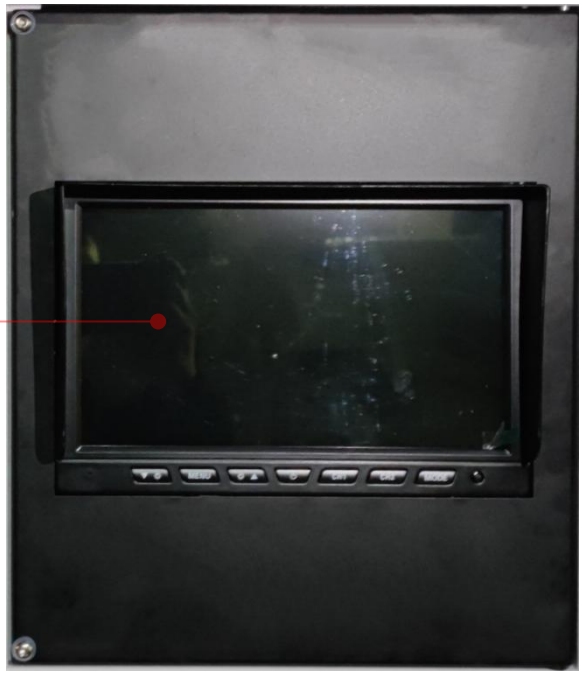
十二、Equipment Shutdown Instructions 18

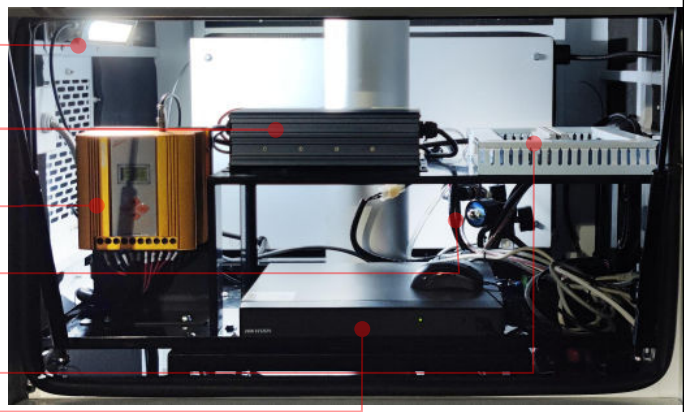
十三、Battery Mains Charging Method Instructions 18

一、Vehicle Structure Overview

Note	Number	Body Diagram
[1]Laser-Guided Pan-Tilt Camera [2] strobe light [3] Fan [4] Lifting pole [5] Sound column [6] Solar panel [7] Control the warehouse door [8] Battery compartment [9] steering wheel [10] Handbrake [11] Fixed Bracket [12] Wheel	[1] [2] [3] [4] [5] [6] [7] [8] [9] [10] [11] [12]	

二、Control Panel Overview

Instruction	Number	Schematic Diagram of Buttons and Screen
[1] Battery Level Indicator [2] Lifting Pole Switch [3] Solar Angle Switch [4] Ethernet port [5] Solar Switch [6] Battery Switch [7] Wind Energy Switch [8] Load Switch	[1] [2] [3] [4] [5] [6] [7] [8]	
[9] Monitoring display	[9]	

[10] LED sensor light inside the box [11] Charger [12] Wind-Solar Hybrid Controller [13] Oil-Water Separator [14] NVR [15] Terminal strip	[10] [11] [12] [13] [14] [15]	

三、Parking Brake Instructions

【Caution】For personnel and equipment safety, ensure the parking brake is fully engaged before arming the system. Release the parking brake only when moving the vehicle. The parking brake location is shown in Figure 3-1:

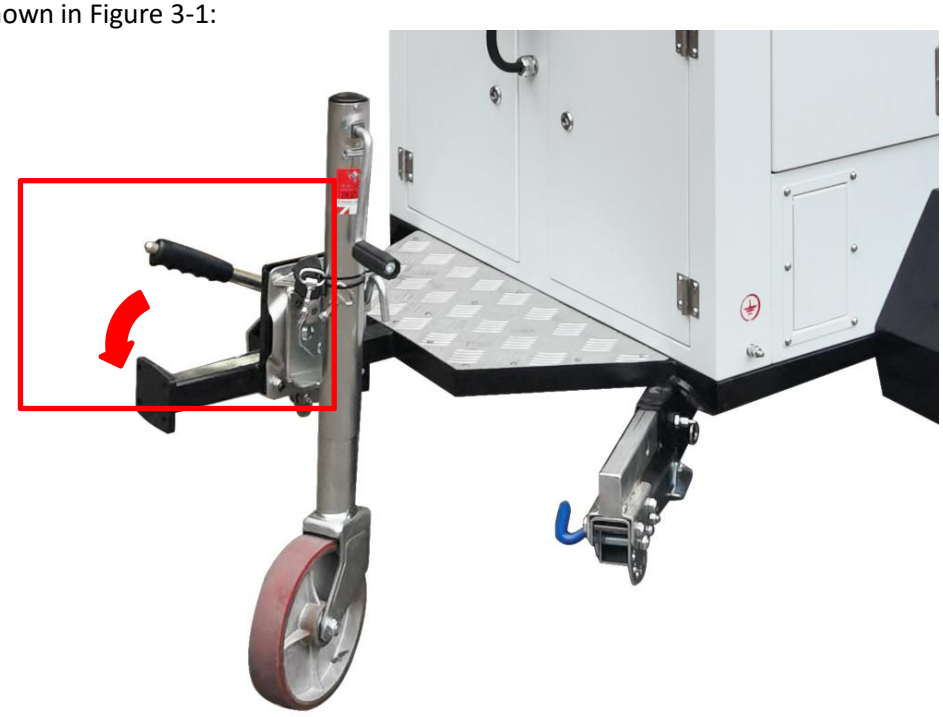


Figure 3-1 Handbrake Operation Diagram

四、Instructions for Use of the Telescopic Fixed Bracket

When installing the equipment, first open the mounting brackets to enhance stability and safety. The specific steps are as follows:

（一）Expand Fixed Bracket Instructions

When deploying the fixed brackets, first extend the two brackets at the rear of the vehicle, then extend the two brackets at the front of the vehicle.

（1）Extend the two fixed brackets at the rear of the vehicle.

1. Shake the front wheel height control lever as shown in Figure 4-1 to lower the front end height.
2. Go to the rear of the equipment and unfold the two mounting brackets. With one hand, pull the locking ring, and with the other hand, pull out the mounting bracket, as shown in Figure 4-2.
3. Pull the blue handle on the side of the support bracket outward while simultaneously pulling the support leg downward with your other hand to ensure the leg rests on the ground, as shown in Figure 4-3;
4. Perform the same operation to fully extend the remaining two fixed brackets.

（2）Extend the two fixed brackets at the front of the vehicle.

1. Reverse the front wheel height control lever to raise the front end height.
2. Perform the same operation to unfold the two front mounting brackets.
3. Reverse the front wheel height control lever again to lower the front end until the front wheels are off the ground, with all weight supported by the outriggers.
4. Insert the matching crank handle into the control valve's fixed bracket. Turn the crank handle to extend the fixed bracket downward until it is securely in place.
5. Perform the same operation to extend all four mounting brackets to the same height in sequence.



Figure 4-1: Control Lever for Adjusting Front Wheel Height

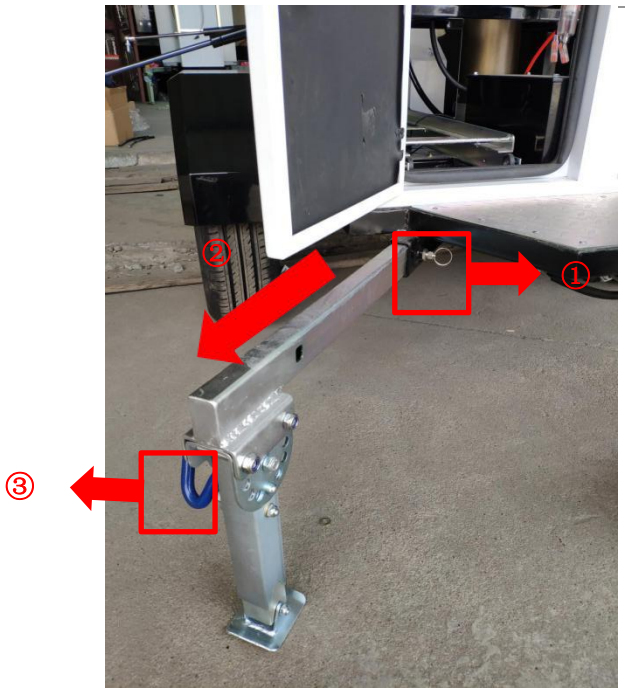


Figure 4-2: Unfolded Fixed Bracket Diagram


Figure 4-3 Joystick Operation Diagram

（二）Instructions for Retrieving Fixed Brackets

When retracting the fixed brackets, first retract the two brackets at the front of the vehicle, then retract the two brackets at the rear of the vehicle.

（1）Retract the two front mounting brackets.

1. Shake the front wheel height control lever to raise the front end, lifting the front support legs off the ground.
2. Insert the matching crank handle into the control valve of the fixed bracket, then turn the crank handle to retract the fixed bracket upward.
3. Pull the blue handle on the side of the support bracket outward, while using your other hand to grasp the support leg and fold it upward until it is horizontal.
4. Pull the bracket's locking ring, then use your other hand to push the mounting bracket into place.

（2）Retract the two rear mounting brackets.

1. Shake the front wheel height control lever to lower the front end height, leaving the rear support legs suspended.
2. Insert the matching crank handle into the control valve of the fixed bracket. Turn the crank handle to retract the fixed bracket upward.
3. Pull the blue handle on the side of the support bracket outward, while using your other hand to grasp the support leg and fold it upward until it is horizontal.
4. Pull the bracket's retaining ring, then use your other hand to push the mounting bracket into place, as shown in Figure 4-4.



Figure 4-4 Equipment Mounting Bracket Retracted View

【Important Notes】

1、Do not step on the equipment when the fixed support bracket is not open.

2、When extending or retracting the fixed bracket, the lifting rod must be lowered before proceeding.

五、Trailer Hitch Installation Instructions

For convenient transportation, the tow bar is shipped separately and requires assembly before use. First, remove the tow bar from the accessory box and assemble it. Then align the tow bar's mounting holes with the frame's mounting holes, install the screws, and tighten them as shown in Figure 5-1.

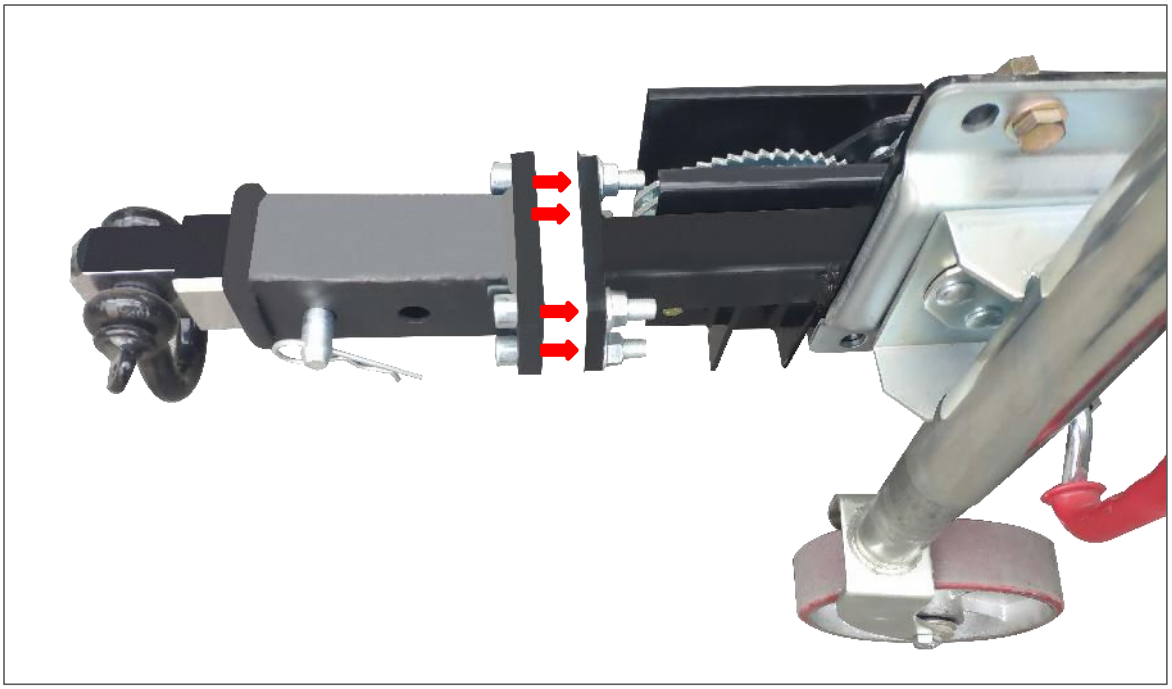


Figure 5-1 Trailer Mounting Instructions Diagram

六、Push Rod Installation and Removal Instructions

（一）Pole Top Installation Instructions

Due to the equipment's height, the pole top box will be disassembled for transportation convenience. When in use, the pole top device must be reinstalled. Before installing the pole top box, turn off the equipment power to ensure both equipment and personnel safety. The specific procedure for connecting the pole top to the pole top box is as follows:

1. The pole-mounted box has pre-installed power cables and network ports for the camera and radar. First, install the camera and radar.
2. Use a tool to remove the retaining nut from the pole top box, as shown in Figure 6-1 below.



6-1 Set-top box key

3. Lift the pole-top box with two people. Locate the pole-top box key in the accessory box and open the pole-top box door. As shown in Figure 6-2, thread the pole-top power quick connector, strobe light cable quick connector, and network cable through the circular hole in the pole top. Plug in the power cable connector, strobe light cable connector, and network cable, as shown in Figure 6-3.

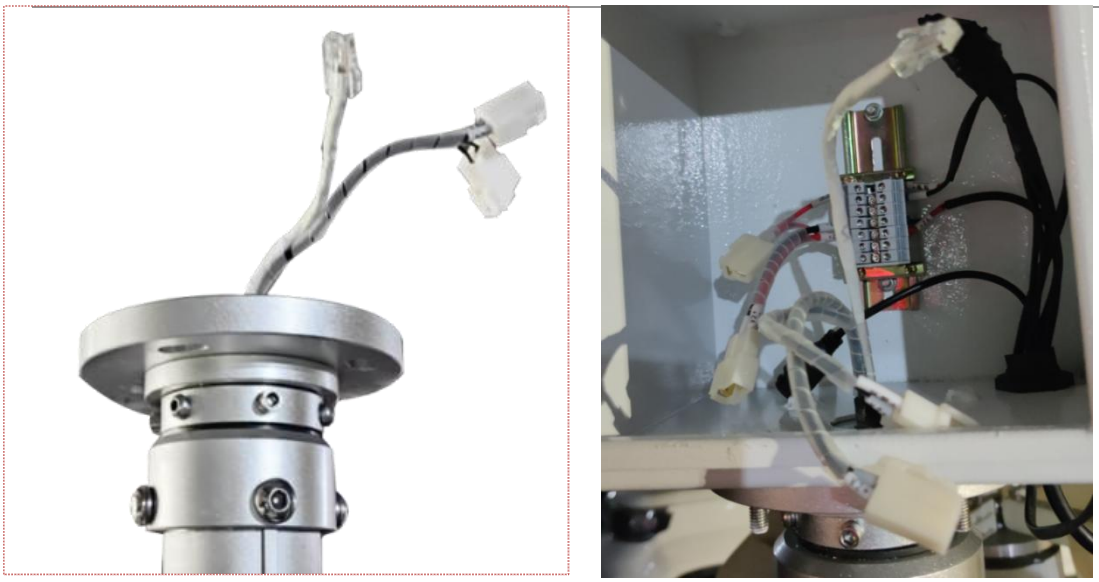


Figure 6-2 Pass the rod top line through the circular hole in the rod top box.

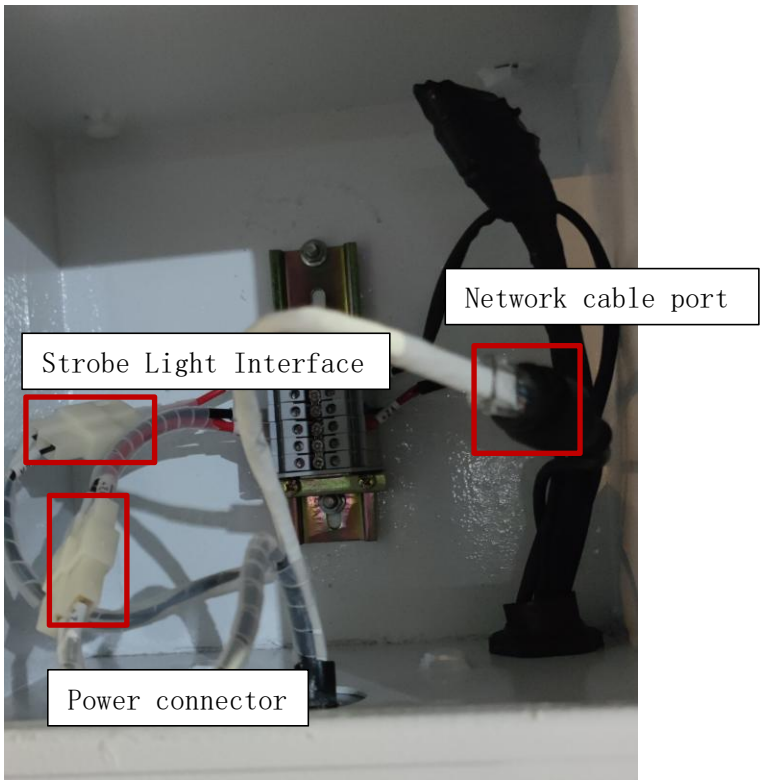


Figure 6-3 Schematic Diagram of Pole-Top Power Supply and Network Connections

4. Align the top screw of the rod with the flange holes on the lifting rod, lower it into place, and secure it with the nut. As shown in Figure 6-4.



Figure 6-4 Rod Top Box and Flange Interface

5. After installation, simply close the door of the pole-mounted set-top box compartment.

（二）Method for Removing the Pole Top

The rod tip generally does not require disassembly. When disassembly is necessary, follow these steps:

（1）Turn off the main power supply to the equipment to ensure operation is performed without electrical current.

（2）Open the top compartment door of the pole-mounted box and disconnect the power supply and network cable connectors.

（3）Use a tool to loosen the four fixing screws connecting the pole top to the lifting pole, then lift the pole top.

（4）Secure the four mounting screws onto the studs at the top of the pole housing to prevent loss.

七、Equipment Startup Instructions

1. Locate the equipment compartment door key in the accessory box. Insert the key into the lock cylinder and unlock the control panel door, as shown in Figures 7-1 and 7-2.



Figure 7-1 Control Hatch



Figure 7-2 Control Bin Door Lock

2. Lift the door handle, gently press the hopper door with one hand, and turn the handle with the other hand to lift the hopper door, as shown in Figures 7-3 and 7-4 below.



Figure 7-3 Turning the Handle

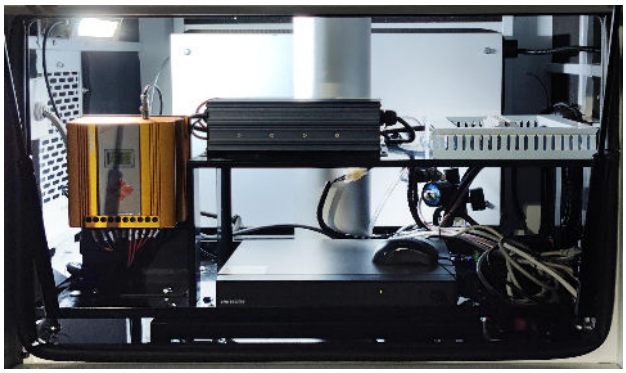


Figure 7-4: Lift the Hatch Door

3. On the control panel, open the following in sequence: Battery → Solar → Wind → Load

(ensure this startup sequence is followed when powering on), as shown in Figure 7-5 below.



Figure 7-5 Control Panel Diagram

八、Wind-Solar Hybrid Charging Operation Instructions

（一）Solar Charging Operation Instructions

When charging with solar power, follow these steps:

1、Turn on the device by opening the following in sequence: Battery → Solar Power → Wind Power → Load.

2、Unfold the collapsed solar panel as follows:

（1）Pull the fixed panels on both sides of the solar panel outward, as shown in Figures 8-1 and 8-2 below;





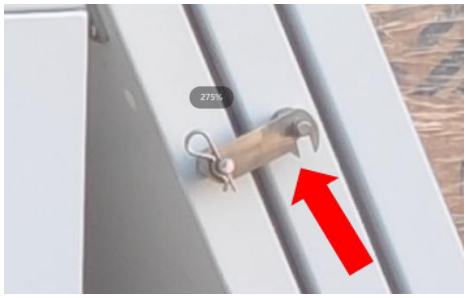


Figure 8-1 Equipment Solar Panel　　**Figure 8-2: Retracting the Solar Fixed Panel**

（2）Unfold the solar panel to the left. Support the solar panel while removing the upper and lower locking pins. Lay the solar panel flat, align the mounting holes, and reinsert the locking pins as shown in Figure 8-3



Figure 8-3 Solar Panel Fixing Pin

（3）Perform the same operation to unfold the solar panel on the right side. Once fully extended, the solar panel will appear as shown in Figure 8-4 below.



Figure 8-4 Solar Panel Unfolded Diagram

3、The angle of the solar panel can be adjusted using the rotary switch on the control panel. Rotate the solar panel angle switch to the “Up” position to automatically raise the solar panel. Once it reaches the desired height, rotate the switch to the “Stop” position to halt the movement, as shown in Figure 8-5.



Figure 8-5 Control Panel Solar Panel Angle Switch

4、The solar charging status can be viewed on the display of the wind-solar hybrid controller. Press the ▼ key on the display, as shown in Figure 8-6, to navigate to Page 3. When the screen displays the solar voltage and current values as shown in Figure 8-6, it indicates that solar charging is functioning normally.



Figure 8-6 Viewing the Controller's Solar Charge Display

Us: Solar panel current voltage
Is: Solar panel charging current

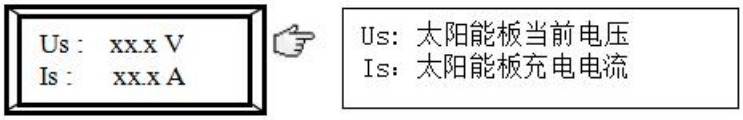


Figure 8-7 Controller Solar Charging Display

5、To retract the solar panel: Rotate the solar panel angle switch to the “Lower” position. The solar panel will automatically descend. Lower the solar panel to its initial height, then rotate the switch to the “Stop” position to halt the movement. Subsequently, refer to the solar panel deployment procedure to retract the solar panel. The retracted solar panel configuration is shown in Figure 8-8 below.



Figure 8-8 Solar Panel Folded State

（二）Wind Energy Charging Operation Instructions

The equipment is equipped with a wind power generation unit that utilizes wind energy to generate electricity for charging the device. The specific operation is as follows:

1、On the control panel, open Battery → Solar → Wind → Load in sequence;

2、Check the wind energy charging status on the display of the wind-solar hybrid controller. Press the ▼ key on the display to navigate to page 2. The screen shown in Figure 8-9 indicates normal wind energy charging.

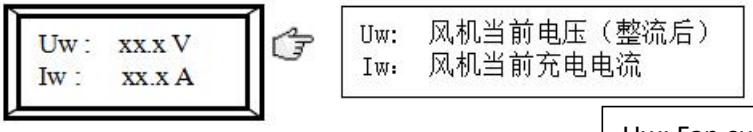


Figure 8-9 Controller Wind Energy Charging Display

Uw: Fan current voltage (rectified)
Iw: Fan current charging current

九、Operating Instructions for the Lift Pole

The lifting rod of this equipment can be operated through multiple methods, including the control panel and remote network operation. Network operation requires specific programming and adaptation to individual circumstances. Therefore, this section primarily explains how to operate the lifting rod via the control panel, as detailed below:

（一）Raising the Pole Operation Instructions

1. Power on the equipment;
2. Rotate the lift knob switch to the “Up” position. After raising to the desired height, rotate the lift switch to the “Stop” position.

（二）Lowering the Boom Operation Instructions

On the control panel, rotate the lift knob switch to the lower position. After fully lowering, rotate the lift switch to the stop position.

【Precautions】

1. When raising or lowering the equipment, ensure the area above is clear of wires and other obstructions to prevent accidents.
2. To ensure stability at height, fully extend the support brackets before raising the mast.
3. When moving the equipment, lower the mast completely before relocating it.
4. Do not raise the mast when the battery voltage falls below the protection threshold; recharge the battery before proceeding.

十、 LED Light Operation Instructions Inside the Box

The equipment compartment is equipped with LED lights and an automatic sensor switch. When the compartment door is opened, the interior LED lights automatically illuminate. When the compartment door is closed, the interior LED lights automatically turn off, as shown in Figure 10-1 below.



Figure 10-1 LED lights inside the box

十一、Sound Bar and Strobe Light Instructions

1、Sound column:

（1）The equipment is equipped with audio columns connected to the NVR. Through cameras and PTZ cameras, the audio columns can be used for intercom announcements, as shown in Figure 11-1.



Figure 11-1 Equipment Sound Column

2、Strobe Light: The device is equipped with a strobe light. The strobe light wiring is pre-installed in the equipment compartment and can be connected to the device for synchronized operation. The strobe light features an audio switch button. When sound is not required, the audio can be turned off, as shown in Figure 11-2 below.



Figure 11-2 Equipment Strobe Light

十二、Equipment Shutdown Instructions

1. Use the panel knob switch to retract the lifting rod.
2. Use the panel knob switch to adjust the solar panel to a vertical angle, fold the solar panel, and secure the locking pin.
3. To disconnect the power supply, follow these steps: Disconnect the load first, then the wind power, followed by the solar power, and finally the battery switch.

十三、Battery Mains Charging Method Instructions

1. Open the charging compartment door: Press down on the charging compartment door, and it will automatically pop up. Lift the door with your hand.
2. Connect the blue end of the dedicated charging cable to the device's charging port.
3. Plug the other end of the charging cable into an AC 220V outlet to begin charging, as shown in Figures 13-1 and 13-2 below.





Figure 13-1 Device Charging Compartment Door Figure 13-2 Power Supply Charging Cable Diagram

4.After charging is complete, first unplug the charging cable from the wall outlet, then disconnect the charging cable from the battery's charging port.

5.Press the charging compartment door to lock it securely.

【Precautions】

System Power-Up and Power-Down:
Industrial equipment startup and shutdown must strictly follow the power-up and power-down sequence for each functional module. Incorrect operation may cause system malfunction. The correct power-up and power-down sequence is as follows:

1． Power-up: On the control panel, activate the following in sequence: battery → solar → wind → load (ensure the battery switch is activated first during power-up).

2． Power Disconnection: On the control panel, sequentially switch off the load → wind power → solar power → battery (ensure the battery switch is the last to be turned off during disconnection).