

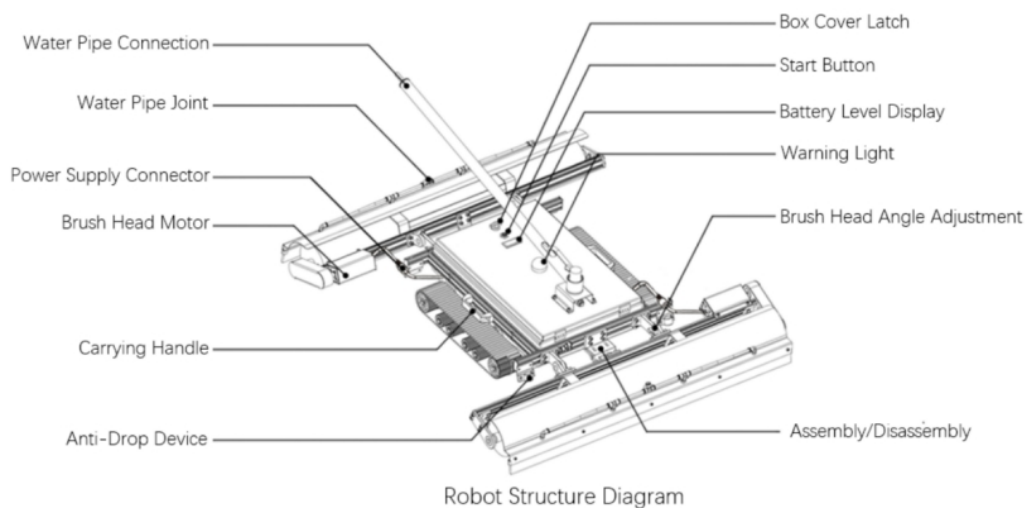
Photovoltaic Cleaning Robot Product Manual

Model: WSE-R01

Product Overview

The remote-controlled tracked photovoltaic cleaning robot is an intelligent device specifically designed for cleaning solar photovoltaic panels. Please read this manual carefully before use and keep it properly stored. Operators can use the remote control to manage the robot's cleaning tasks, significantly reducing labor intensity compared to manual cleaning tools. It addresses cleaning challenges that are difficult to reach with traditional manual methods or telescopic tools, while also greatly improving operational safety.

Overall Machine Diagram:



Product Specifications

- Operating Voltage: 24V
- Power Supply: Lithium Battery (22.2-24V) *2
- Dimensions: 79×74×49cm
- Host Weight: 25.2kg
- Brush Head Weight: 7.8kg×2
- Battery Weight: 3.6kg×2
- Brush Speed: 368 RPM
- Travel Speed: 20 meters/minute
- Runtime: 6-8 hours
- Working Angle: $\leq 20^\circ$
- Cleaning Width: 1.06 meters / 1.40meters (Optional)
- Maximum Span: ≤ 20 cm
- Brush Material: PBT
- Cleaning Type: Dry / Water-based
- Operating Temperature Range: -20°C to 50°C

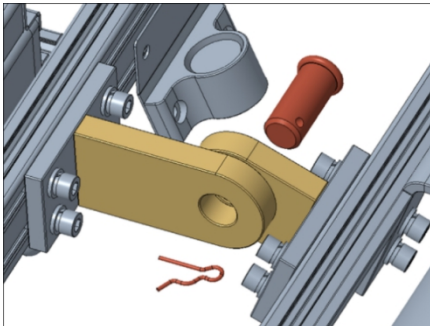
Installation Instructions

1. Water and Power Installation

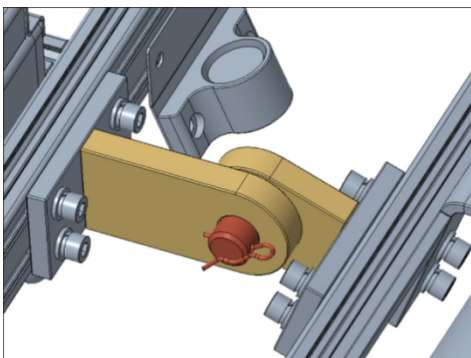
- Power Connection: Open the chassis cover and connect the internal lithium battery to the power connector. Connect the external motor power connector.

- Water Connection: The device is equipped with a water pipe bracket on top. Connect the high-pressure pipe to the water pipe connector. (No water connection is needed for dry cleaning.)

2. Brush Head Assembly Installation



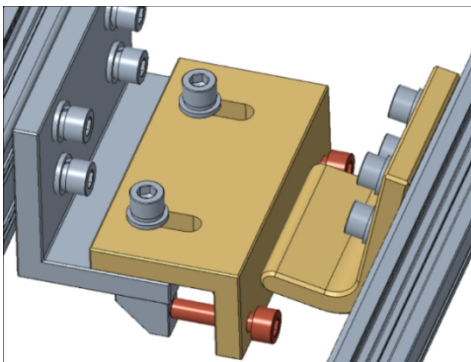
- Align the brush head assembly with the pin holes.



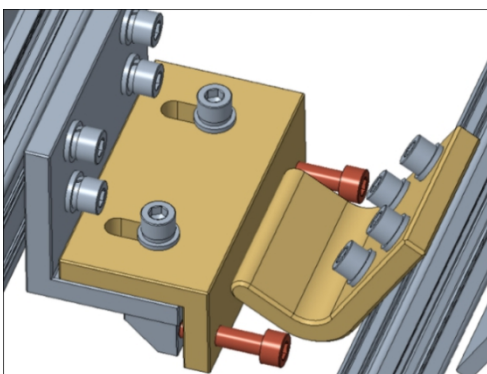
- Insert the pin and then the spring pin.

Note: After installing or removing the brush head assembly, the water pipe and power connectors must also be disconnected or reconnected.

3. Brush Head Angle Adjustment



- Loosen the bolt outward to raise the brush head.



- Tighten the bolt inward to lower the brush head.

Remote Control Instructions



1. Function Description

- Left Joystick: Push up to move forward, push down to move backward.
- Right Joystick: Push left to rotate counterclockwise in place, push right to rotate clockwise in place.
- Lever 1: Push up/down to activate the panel-crossing function in the corresponding direction, which disables the anti-drop protection to allow forced movement.
(Note: This is a temporary function. It will deactivate automatically when the lever is released. Please use with caution!)
- Lever 2: Auto Travel Start/Stop. The default state (down) is off. Push up to turn it on. When active, use the Left Joystick (up/down) to control travel direction and the Right Joystick (left/right) to control steering.
- Lever 3: Dual Brush Control. Push up to activate both front and rear brushes. The default state (down) is off.
- Lever 4: Single Brush Control. Center position activates the front brush. Push up activates the rear brush. The default state (down) is off.
- Knob 1: Manual Mode Speed Adjustment. Rotate clockwise to increase speed.
- Knob 2: Auto Mode Speed Adjustment. Rotate clockwise to increase speed.
- Display Screen:
Top-left shows the lithium battery voltage.
Top-right shows the remote control battery voltage.
The remote features both lithium battery low-voltage alarm and remote control battery low-voltage alarm functions.
The center shows the signal strength.
All other indicators are default settings.

2. Battery Information

- The remote control uses 4 AA batteries.
- Press and hold the power button for 1 second to turn on. Repeat to turn off.
- The remote control will automatically shut down after 15 minutes of inactivity to save power, with an audible alert. A warning sound will indicate low battery voltage.

Precautions and Warnings

1. For safety, ensure all levers are fully pushed down before starting the remote control to prevent accidental activation of other functions.
2. Ensure that only Lever 3 or Lever 4 is activated during operation. The unselected lever must remain in its default off position; otherwise, the brush head cannot be activated.
3. The anti-fall feature reduces the risk of accidental falls but cannot guarantee prevention in all scenarios. Reduce speed when approaching panel edges. The manufacturer is not responsible for damages caused by falls.
4. Maintenance and repairs must be performed under the guidance of professionals.

Battery and Charging Instructions

1. The robot is equipped with a voltage display module on top. Press the power button to check the current battery status. During operation, if the battery voltage is low, a flashing yellow light and warning sound will activate. Operators can monitor the battery voltage in real-time via the remote control display. A voltage below 20V indicates low battery.
2. Dual lithium battery groups provide 5 to 7 hours of runtime, while a single battery group provides approximately 2 to 4 hours. For optimal weight balance and power stability, a dual-battery setup is recommended.
3. Charging Instructions:
 - Red Light: Charging in progress.
 - Green Light: Fully charged.
 - Charging time: 8–10 hours when fully drained.
 - To prolong battery life, recharge when the battery level drops to 20%.

Warranty & Maintenance

- Electrical components (including lithium batteries, chargers, and motors) are covered by a 12-month warranty.
- Note: Consumables such as brush heads, tracks, and belts are not covered under warranty.

Non-Warranty Cases

1. Damage from unauthorized repairs, modifications, misuse, liquid exposure, accidents, or non-original parts.
2. Products exceeding the national warranty period.
3. Damage caused by human error.
4. Damage due to force majeure.