MULTIFIT®
众能力电

MULTIFIT

SOLAR PANEL CLEANING ROBOT

MULTIFIT GROUP

0086-010-87227420 0086-0754-81888658 multifit@multifitele.com

Address: 5/F, No.5 Building. RongHuaGuoJi. No.10 Courtyard. Ronghua South Road. Beijing Economic & Technological development Zone 100176,Beijing China

Plant: 3/F, JieSi Bldg., 6 Keji West Road, Hi-Tech Zone 515041, Shantou, Guangdong, China

Shenzhen Branch: No. 241, Southern China Xiyuan Plaza, No. 297 Pingji Avenue, He Hua Community, Pinghu Street, Longgang District, Shenzhen, Guangdong, China

Sichuan Branch: Room 3-2-1, Building 3, Phase II, Zhihe Times Square, Beishan Road, Lixian County, Aba Prefecture, Sichuan Province, China

Contact Us

Download Catalogs

More Power More Life

https://www.vmaxpowerpv.com

COMPANY HONOR























MULTIFIT PROFILE

2009
Since

17+
Years In Solar Industry

CERTS

100+ Patents
40+ CE Certificates
20+ Software Copyrights

CLEAN

In Total **10+GWp**
More Power More Life

Stock Code
280768
Established in 2009

Multifit is a national high-tech enterprise committed to the R&D, manufacturing, and global sales of solar energy technologies, as well as PV power station construction, cleaning, and maintenance services. Headquartered in Beijing with a production base in Shantou and branches in Shenzhen and Sichuan, Multifit owns subsidiaries including Multifit Electrical, Multifit Solar, and Multifit Smart.

Our main products include solar panel cleaning robots, PV inverters, portable solar generators, MPPT controllers, and solar LED lighting systems.

Since 2009, our innovations have earned over 100 patents, and our products have been exported to more than 80 countries across Europe, the Americas, Asia, and Africa. Our company is certified under ISO9001, ISO14001, and OHSMS standards.

Multifit is also recognized as a National High-Tech and "Specialized & Innovative" Enterprise. Guided by the mission "High efficiency & energy saving, delivering green energy", we aim to become a global leader in solar power construction, PV cleaning and maintenance services.

Research and development | **Production** | **Sales**

THE IMPORTANCE OF CLEANING SOLAR PANELS

The effect of power generation efficiency.



① Pollutants & Rust

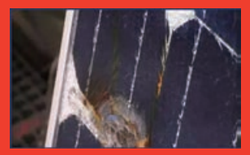


② Bird Droppings

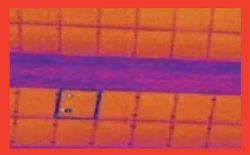


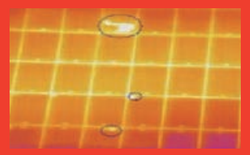
③ Dust

Solar panels covered with pollutants may develop hot spots, which can damage the modules and even cause permanent burnout.

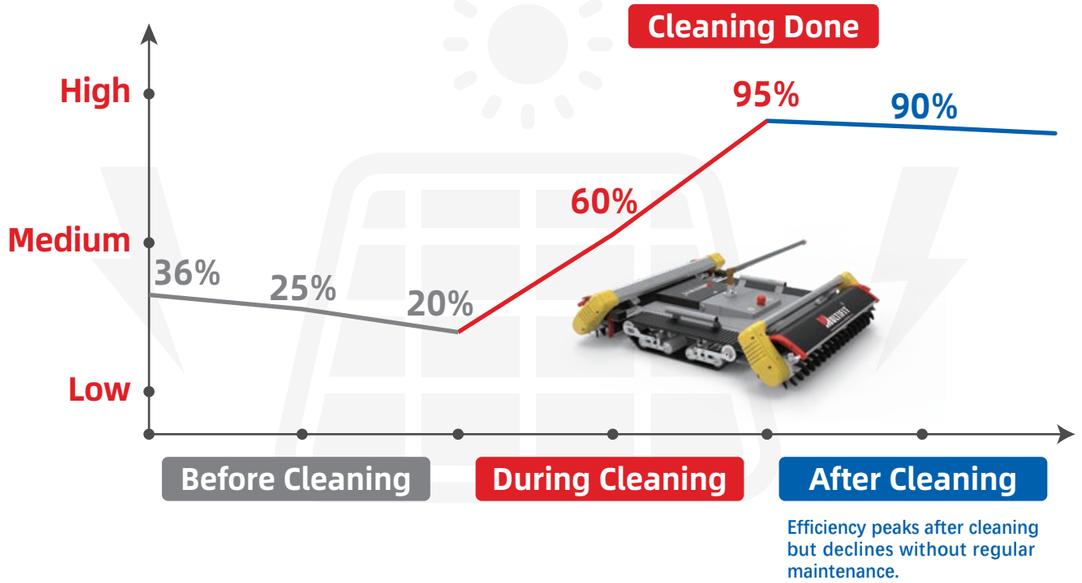








SOLAR PANEL POWER GENERATION EFFICIENCY



Efficiency peaks after cleaning but declines without regular maintenance.

THE ADVANTAGES OF USING SOLAR PANEL CLEANING ROBOT

- Extended Service Life
- Improve Energy Production
- Improve Efficiency

CHOOSING THE CLEANING EQUIPMENT YOU NEED

Cleaning Efficiency Of Cleaning Robot

Module	Reference value	MW	Area (m^2)	Efficiency (m^2/h)	Daily cleaning area (m^2/day)	Required time (d)
MR-G (single panel)	Robot walking speed 12m/min, 550W solar panel	1	4700	1640	13120	0.5
MR-G (double panels)		1	4700	3280	26240	0.5
MR-XY		1	4700	6560	52480	0.5
MR-T1	Robot walking speed 25m/min, 550W solar panel	1	4700	1200	9600	0.5
MR-T1(S)		1	4700	560	4480	1.5
MR-T2		1	4700	780	6240	1
MR-T3		1	4700	1200	9600	0.5

Scene Selection Of Cleaning Robot

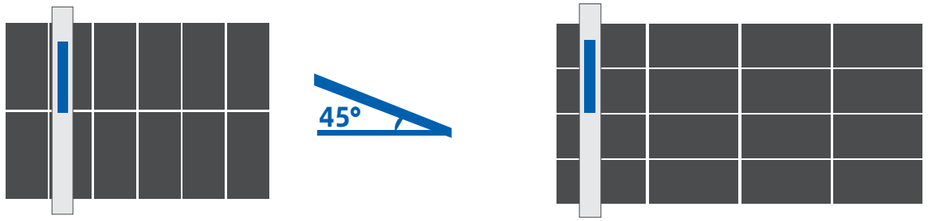
MR-G series, MR-T series, MR-XY series

- **MR-G Series**



Single-panel Robot

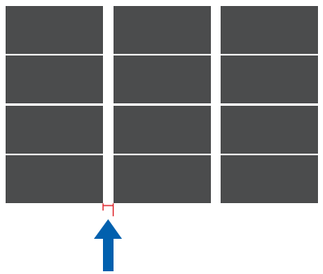
MR-G Series can be applied to common single-panel and double-panel arrays. The single-panel robot is suitable for slopes up to 45°.



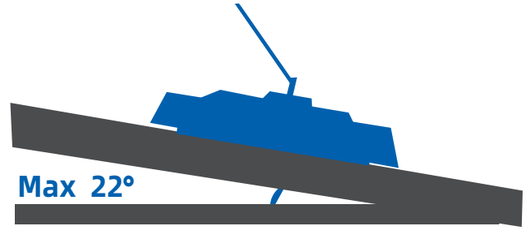
Double-panel Robot

The double-panel robot fits panels with length up to 2384 mm and slope under 45°.
It can also be used for four-panel transverse solar arrays. Customization is required if pressing blocks exist.

- **MR-T Series**

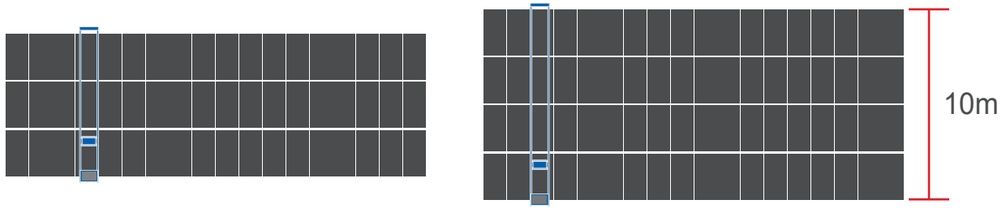


The gap is 100mm.



T1 robot is suitable for the array without panel joints, and angle max 22°.

- **MR-XY Series**



The MR-XY robot can be applied to three-panel and four-panel solar arrays. The panel width can reach up to 10m.

PRODUCT CATEGORY

01 MR-G Series Right & Left Solar Cleaning Robot



Through automatic walking right and left in the aluminum frame to achieve intelligent cleaning of the solar panels .

MR-G1

MR-G2 MR-G2(S)

MR-G3

MR-G-D (Double Brush)

BRIDGE CONNECTION, PARKING APRON, RETURNING POSITION

P5-9

02 MR-AR Series Shuttle Solar Robot Transfer Vehicle

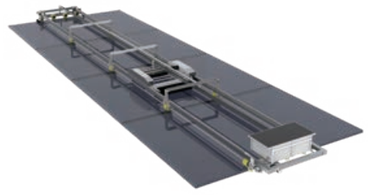


By laying the track on the side of the solar array, the transport vehicle walks on the track automatically, and the automatic transport cleaning robot performs the cleaning task in different solar arrays.

MR-AR (Full-automatic rail-type transfer vehicle)

P10-11

03 MR-XY Series Up&Down Solar Cleaning Robot



Through automatic up and down cleaning to achieve intelligent cleaning of the solar panels.

MR-XY

P12

04 MR-T Series Tracking Solar Cleaning Robot



Through AI algorithm and visual detection to achieve full automatic cleaning of solar panels, cleaning the scene, without missing any dead corners.

MR-T1

MR-T1(S)

MR-T2

MR-T3

P14-19

CLEANING ROBOT

MR-G Series

Right & Left Solar Cleaning Robot

01

Product Introduction

The MR-G series solar panel cleaning robot is an intelligent cleaning device specifically designed for photovoltaic (PV) power plants. By moving left and right along the PV array and utilizing a rotating brush mechanism, it provides efficient, non-abrasive dry or wet cleaning for solar panels. This robot is suitable for various PV power plant environments, including ground-mounted stations and distributed Zsignificantly enhancing the power generation efficiency of PV modules and extending the lifespan of solar panels.

Application Scenarios

- Large-scale Ground-Mounted PV Power Plants
- Fishery-Photovoltaic Complementary PV Power Plants
- Commercial and Industrial Rooftop PV Power Plants
- Agro-Photovoltaic Complementary PV Power Plants
- Centralized PV Power Plants
- Distributed PV Power Plants
- Other Applicable PV Power Plants

Installation Method

Walking along the edge aluminum frame of the photovoltaic panel, fully automatic walking.



1 Generation
MR-G1



2 Generation
MR-G2



3 Generation
MR-G3

PRODUCT FEATURES

Automatic Adjustment

Automatically corrects and adjust to prevent machine deviation and jamming.

Danger avoidance

Adopts automatic edge-sensing technology to prevent the robot from sliding down and avoid hazards.

Strong Adaptability

Suitable for arrays of various layouts and different power stations.

1min Disassembly and Assembly of Brushes

Brushes can be disassembled and assembled within 1 minute for quick maintenance.

Lightweight equipment ≈30kg

The whole machine is about 30kg, which is more than 30% lighter than similar products, and it is convenient to carry.

Intelligent Control Internet of Things Technology Application

Supports independent control and grouping. Cleaning time and modes can be set via mobile devices.

Solar power system

Self-charging-comes with a solar power system, convenient and efficient, can last 4-6 hours.

Stronger Obstacle-crossing Ability

Including slope, step and misalignment, etc. Capable of spanning over 20mm misalignment of flat or end faces.

MR-G-D (Double Brush)

Better cleaning effect with double roller brush, overcome the disadvantage that the single-roller brush cannot clean the edge of the photovoltaic array, and can adapt to the photovoltaic system assembled by multiple rows of solar panels in an array.



Unique Advantages of MR-G3

The third-generation cleaning robot has more advantages than market robots in terms of performance, product design, and intelligent control. It can handle complex terrains and easily cross misalignments, slopes, and steps exceeding 50mm.

• The body sways with movement

The head of the robot can form a certain swing Angle with the body in two directions respectively, and automatically adjust according to the ups and downs of the solar panels to prevent getting stuck during the cleaning process. Even if there are certain angular and height differences between the solar panels, as long as they are connected through bridging, MR-G3 can pass through easily.

• 8-wheel drive system

The head walking wheel, the head end hanging wheel and the tail walking wheel of the robot are all equipped with powerful and uniform power. There is no need to worry about the robot slipping during the walking process. MR-G3 can adapt to large-angle arrays and various complex environmental working conditions.



PRODUCT DETAILS



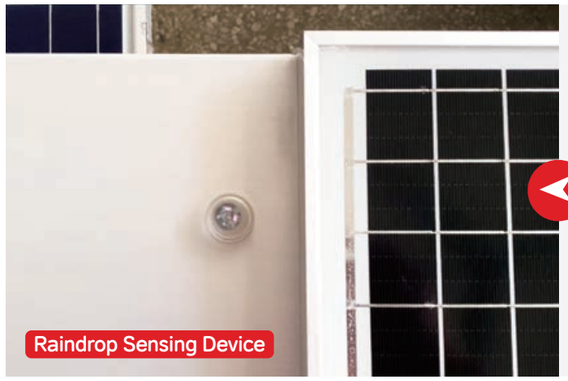
Edge Detection & Automatic Hazard Avoidance

Equipped with a Edge Detection & Automatic Hazard Avoidance, MR-G series is capable of monitoring its surrounding environment in real time and identifying dangerous areas close to the edge. When the robot approaches the edge of the solar panel, the system will automatically activate the avoidance mechanism to prevent the robot from sliding or colliding. In addition, the system can also identify other potential dangerous areas and adjust the route in a timely manner to ensure that the robot always operates within a safe area.

Self-Charging Solar System

The MR-G series is equipped with a solar power supply system and is capable of self-charging during the cleaning process of the photovoltaic power station. The solar panels provide continuous power for the robot. When the robot is working, it can not only clean the photovoltaic panels but also charge and continue its operation. Through the self-charging system, it can operate efficiently for 8 to 10 hours, reduce manual intervention, and is suitable for the demand of long-term operation.





Auto Sensory Mode

The MR-G series is equipped with a self-sensing function and can automatically adjust the cleaning mode according to the weather changes. For instance, on rainy days, the robot will automatically activate the water-washing mode for cleaning to adapt to the cleaning demands brought about by weather changes. This function enables MR-G series to work reliably under various climatic conditions and maintain efficient cleaning.

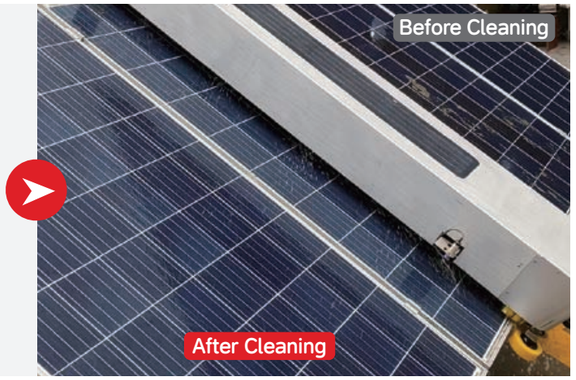


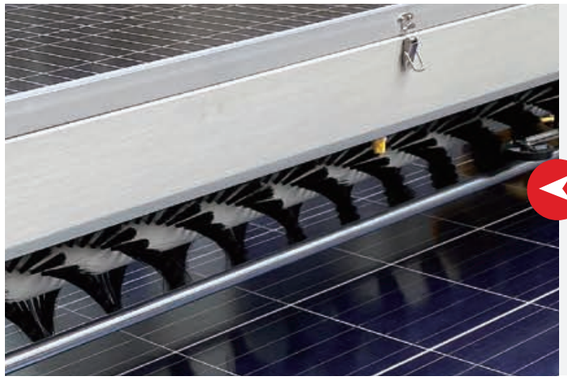
One-Button Start

Just press the start button, and the cleaning robot will start working. The operation is quick and convenient.

Two Cleaning Modes

Dry cleaning and water washing. Even the water-free dry cleaning mode demonstrates remarkable cleaning efficiency.





Specialized Brush

Cleaning is more thorough. The brush can be quickly replaced within 1 minute with simple operations.

UPGRADE AND OPTIMIZATION







MR-G1	MR-G2	MR-G3
Obstacle Crossing Capability Can cross gaps 20mm Non-twisting structure	Obstacle Crossing Capability Can cross gaps 20mm Non-twisting structure	Obstacle Crossing Capability Can cross gaps 50mm With-twisting structure
Deviation Correction Function None	Deviation Correction Function Customizable	Deviation Correction Function Automatically corrects when robot walk skewed
Maximum climbing Angle ⩽8°	Maximum climbing Angle ⩽8°	Maximum climbing Angle ⩽20°
Running Wheel φ 90mm Quantity: 4	Running Wheel φ 90mm Quantity: 8	Running Wheel φ 120mm Quantity: 4
Housing Aluminum	Housing Anti-Corrosion Aluminum Removable	Housing Stainless Steel Wear-resistant
Battery LCo Lithium Battery Cycle Life: 2000 cycles	Battery LFP Lithium Battery Cycle Life: 4000 cycles	Battery LFP Lithium Battery Cycle Life: 6000 cycles
Remote Controller No screen display Control range: 50m	Remote Controller Display: LCD Control range: 100m	Remote Controller Display: Large LCD Control range: 400m
Flexible Solar Panel Rated Power: 27W	Silicon Solar Panel Rated Power: 40W Polycrystalline	Silicon Solar Panel Rated Power: 50W Monocrystalline
Adaptability Only for 1-2 panels array	High Adaptability Meet multiple panels and removable	Strong Adaptability Match most solar projects

INTELLIGENT CONTROL

- WiFi/4G communication module, supporting cloud platform
- Intelligent Management Platform Webpage (Remote)
- Remote control (local)
- Direction control/Speed control/ Return to the parking station
- Customize the cleaning time and frequency
- Robot Group Control System (optional)

OVERVIEW OF BRIDGE CONNECTION, PARKING APRON AND RETURNING POSITION

The purpose of the construction is to make the cleaning robot work faster, start and stop smoothly and reduce the frequency of personnel handling cleaning machines.

Parking Apron ▼

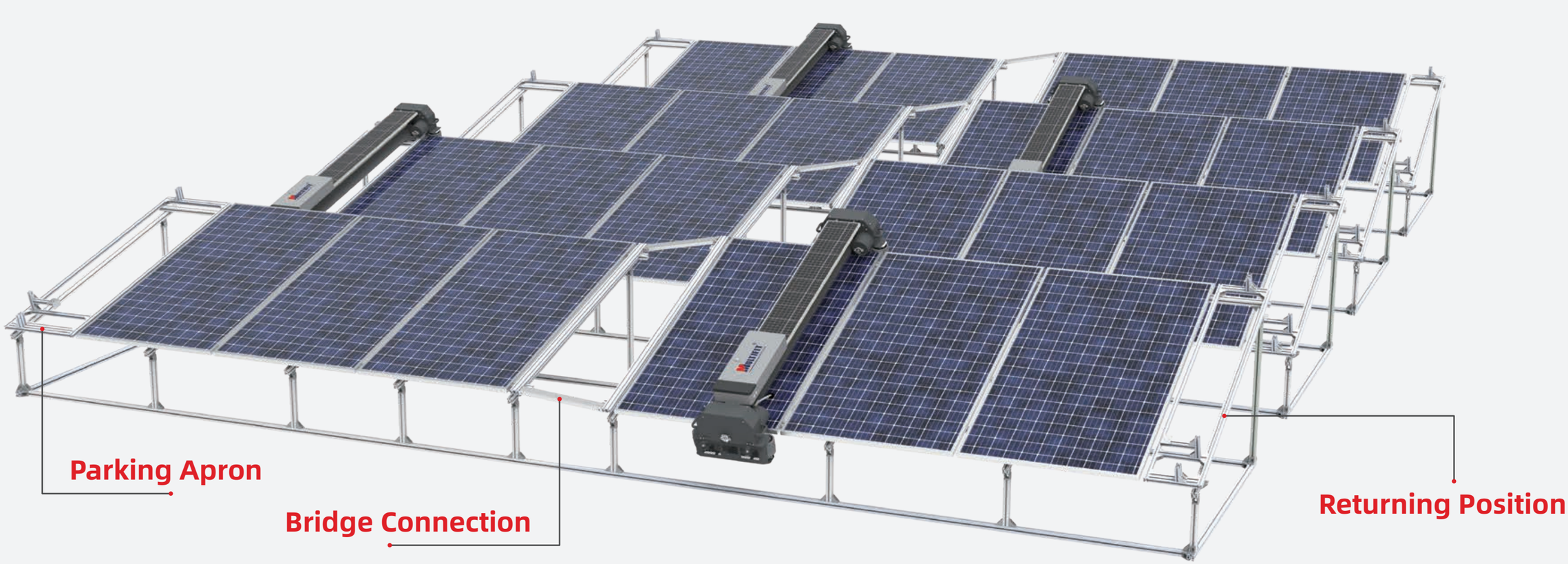
The harbor where the solar cleaning robot is parked.

Bridge Connection ▼

According to the ups and downs of the array, establish a link track to allow the cleaning robot to walk smoothly into the next PV panel cleaning range.

Returning Position ▼

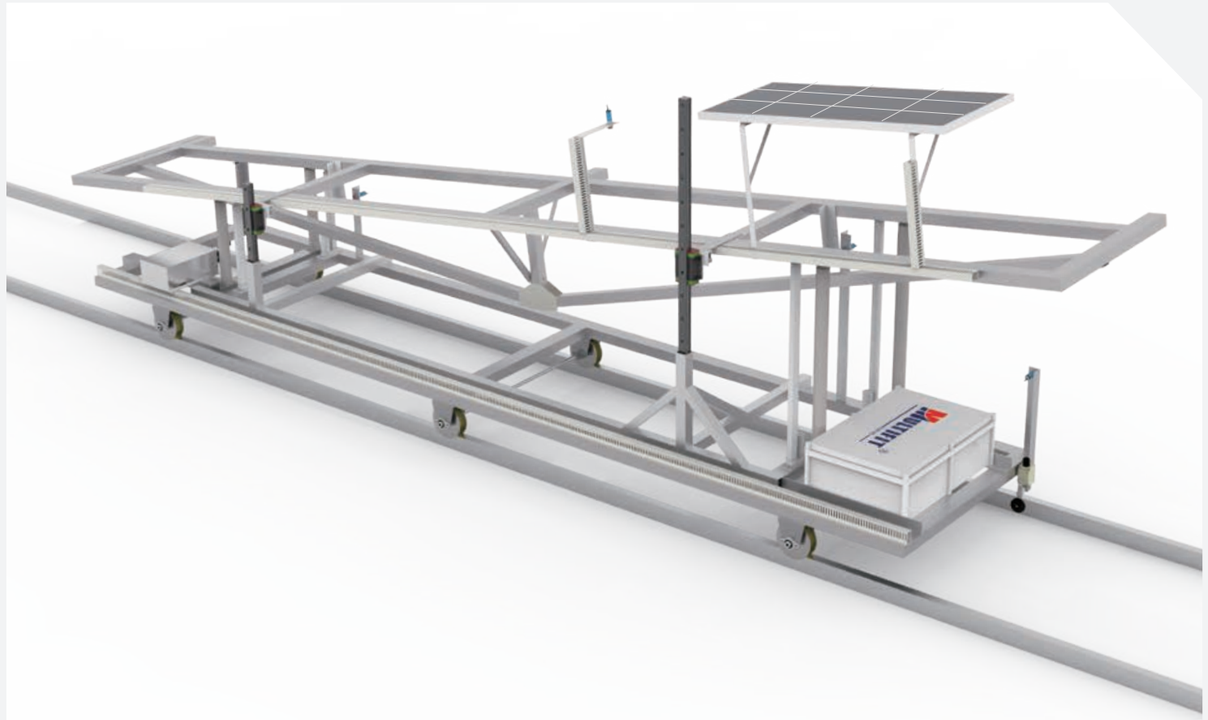
The return position is to allow the cleaning robot to extend the cleaning range and make each solar panel of the photovoltaic array clean in place, in addition,it can protect the cleaning robot from falling when the sensing wheel is out of control.



MR-AR Series

Shuttle Solar Robot Transfer Vehicle

02



Characteristics of MR-AR series

Precise Positioning

Through sensor identification, it achieves precise positioning of photovoltaic arrays, ensuring that MR-G series cleaning robots seamlessly access the cleaning area.

Improve Efficiency

It replaces manual handling, taking only 2-3 minutes for a single transfer, which improves efficiency by over 10 times compared to manual handling.

Adaptive Scenarios

It supports scenarios such as flat ground, rooftops, and gentle mountain slopes.

Intelligent Control

Controlling the transfer vehicle via a remote control saves labor costs and significantly improves cleaning efficiency.

Overview of Transfer Vehicle

PURPOSE OF CONSTRUCTION

It is used for the maintenance of large photovoltaic power station system, reducing the manual handling process, and can clean photovoltaic panels in time.

IMPROVE EFFICIENCY

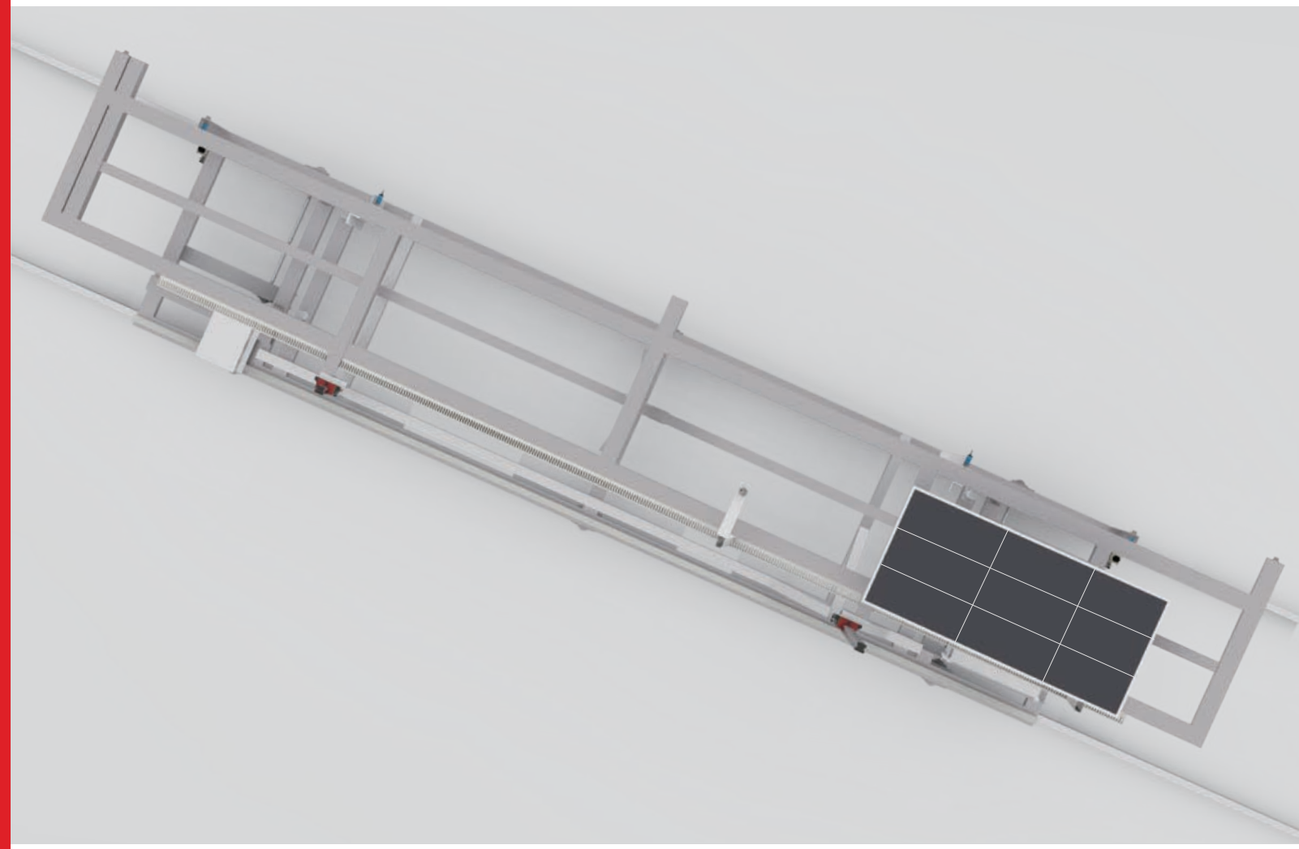
It is time-consuming and laborious to carry the cleaning robot manually. If the photovoltaic power station is built on a flat ground and roof, it is recommended that you equip a transfer vehicle that can walk automatically when purchasing the cleaning robot.

INTELLIGENT WORK

① Press the start switch, the transfer vehicle moves forward, the sensor on the transfer vehicle senses the photovoltaic array and aligns with the array, the transfer vehicle stops moving forward.
② At this time, the front and rear rods are adjusted and lifted to the level of the photovoltaic array, and the G1 solar cleaning robot senses and starts the equipment to start cleaning.
③ After cleaning, the G1 solar cleaning robot moves to the transfer vehicle, and the transfer vehicle moves to the next array to continue cleaning.

Customization of Transfer Vehicle

According to the array data of your photovoltaic power station, the technical department will provide you with the design scheme.



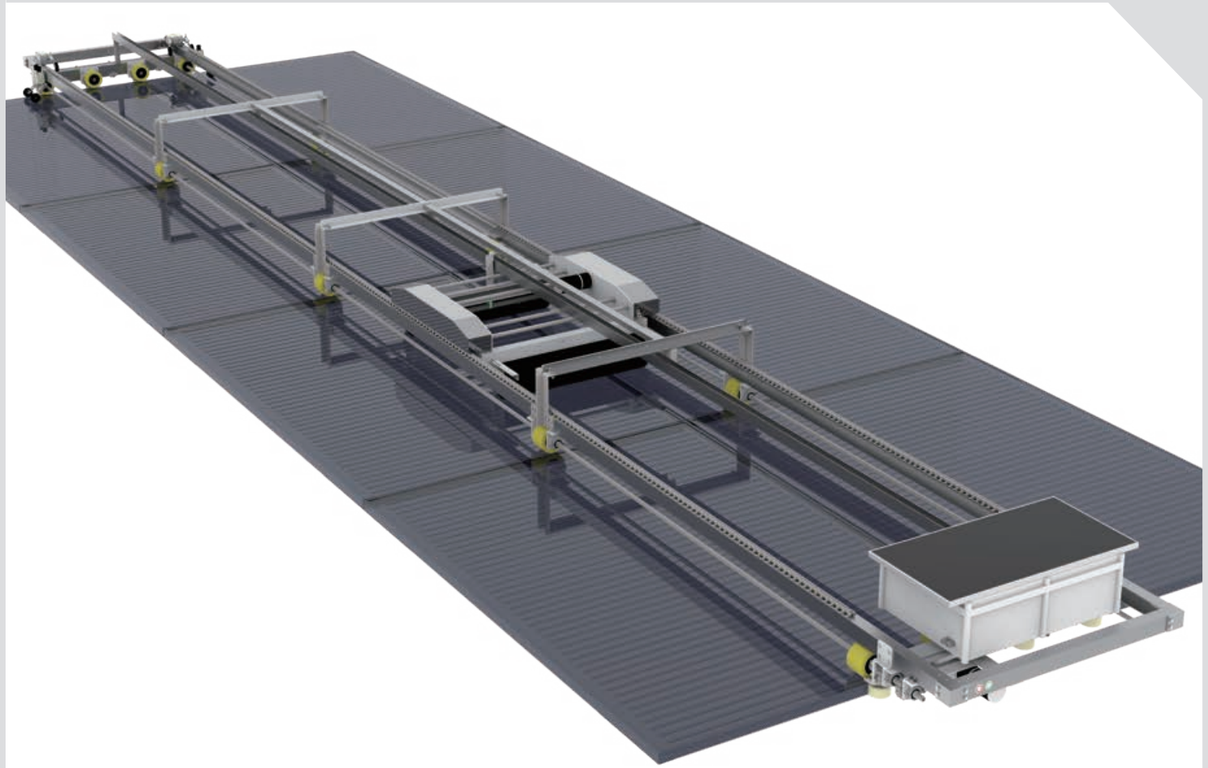
The data required are:

1. Width of solar panel array.
2. The height (maximum and minimum dimensions) of the solar panel array and the angle of the photovoltaic panel.
3. Array drawings and panoramic photos of the photovoltaic power station.

MR-XY Series

Up & Down Solar Cleaning Robot

03



Characteristics of MR-XY series

The cleaning robot can adapt to the photovoltaic system assembled by multiple rows of solar panels in an array.

Convenient to use in different photovoltaic power stations. Remote control with independent power supply.

The aluminum alloy support. The frame part adopts multi segment splicing structure, which is convenient for transportation.

Automatic edge sensing technology to prevent the robot from sliding. Automatic danger avoidance. The length of the equipment can be adjusted according to the size of solar panel.

Without manual cleaning, integrated dry cleaning and water cleaning model.

It adopts lithium battery and brushless motor, which is durable.

Smart Management Control System

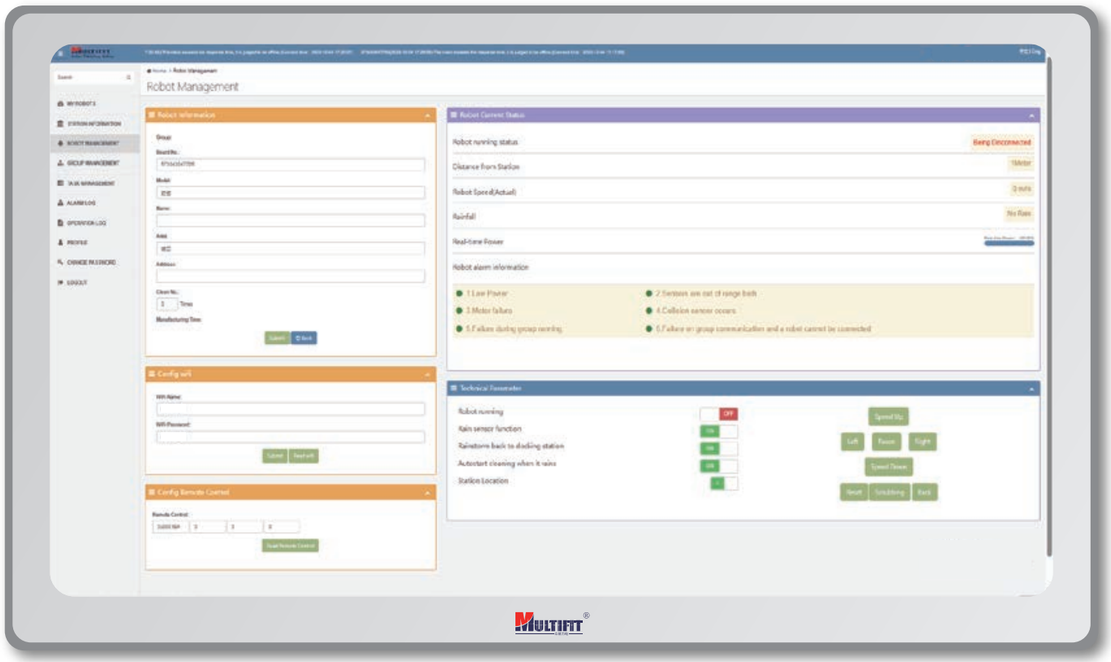
Track the status of the MR-XY Cleaning Robot

1. Improve the transmission efficiency of solar panels.
2. Extend the service life of the panel.

Turn on the intelligently managing control system according to your needs, follow up in real time, and keep your solar panels as clean as new.

CONTROLLER/REMOTE SMART MANAGEMENT CONTROL SYSTEM

Smart Management Control System



Remote Control

Start at any time, stop at any time, scrub repeatedly, where there is no network, you can use the remote control to start and operate the solar panel cleaning robot.

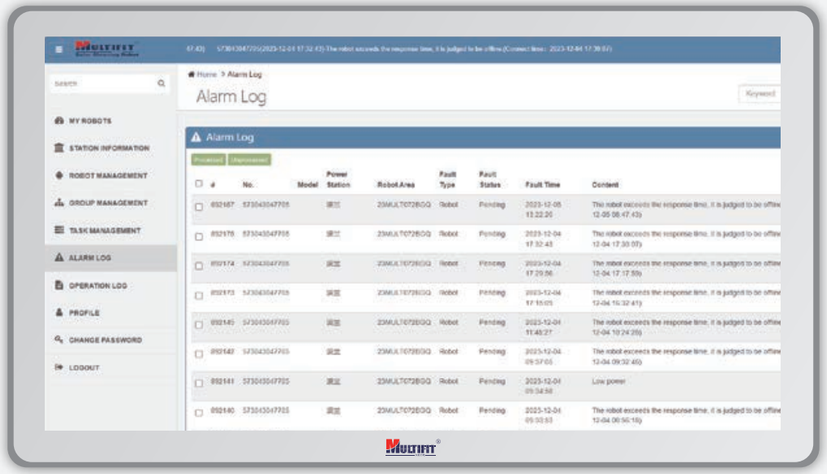




REMOTE SMART MANAGEMENT CONTROL SYSTEM

Platform

Fully automated operation.



No need for you to be on site.

Multiple cleaning robots work simultaneously.



MR-T Series

Tracking Solar Cleaning Robot

04

Product Introduction

The MR-T series solar cleaning robot is an intelligent tracked cleaning robot specially designed for operation and maintenance of PV power stations. Developed to address power-generation efficiency losses caused by surface contaminants including dust, bird droppings and sediment on PV modules, it adopts a technical solution combining a tracked traveling chassis and a flexible roller-brush cleaning system, offering excellent terrain adaptability and high cleaning efficiency.
Featuring lightweight, modular and intelligent design, it is intended to replace conventional manual cleaning, reduce operation and maintenance costs and substantially improve the power-generation return of PV power stations.

Application Scenarios

- Large-scale Ground-Mounted PV Power Plants
- Fishery-Photovoltaic Complementary PV Power Plants
- Commercial and Industrial Rooftop PV Power Plants
- Agro-Photovoltaic Complementary PV Power Plants
- Centralized PV Power Plants
- Distributed PV Power Plants
- Other Applicable PV Power Plants

Installation Method

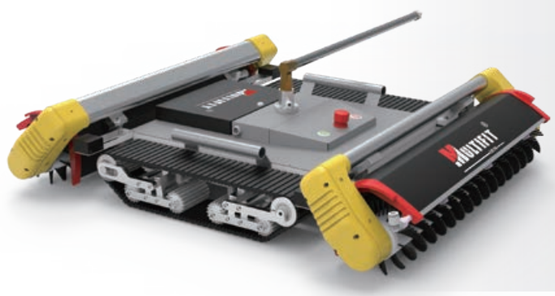
It can be placed on PV panels and operated via fully automatic walking or a remote control.



1
Series
MR-T1

2
Series
MR-T1(S)





3
Series
MR-T2

4
Series
MR-T3



MR-T Series

Tracking Solar Cleaning Robot

Product Functions ▼

Track Type Chassis

Equipped with high-grip tracks for stable travel on solar panels, delivering outstanding climbing and obstacle-crossing capabilities.

Gentle PV-Panel Protection

Flexible-nylon roller brush fitted with shock absorbers. It removes stubborn contaminants without scratching module glass or anti-reflective coating (ARC), preventing micro-cracks.

Lightweight Design

Most structural components adopt aluminum-alloy material. It satisfies mechanical-strength requirements while minimizing overall weight for easy transportation and handling.

Multi Mode Cleaning

Supports dry brush cleaning (sand and dust), wet cleaning (spray+roller brush), or a mix of dry and wet modes to adapt to different types of pollution.

Efficient Cleaning Rate

The system achieves ≥99% cleaning coverage per PV panel, enhancing power generation efficiency by 10%-30% (depending on contamination levels).

Water-Saving and Eco-Friendly

Compared to traditional manual washing, it significantly reduces water consumption by over 50%.

Modular Design

Light-weight aluminum-alloy frame, enabling one-person transportation and assembly. Quick release battery and roller brush modules support fast on-site replacement to minimize equipment downtime.

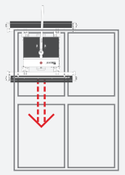
Remote Control

Supports manual remote operation with a range of up to 400 meters, allowing operators to perform cleaning tasks from a safe location.

Anti-Fall Design

Equipped with laser sensors to intelligently detect photovoltaic panel edges and prevent falls. Integrated with a self-check function that verifies laser sensor operation before startup, ensuring reliability.

FUNCTION DESCRIPTION



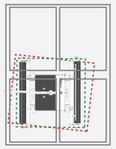
Excellent Obstacle Climbing Ability

MR-T series is capable of handling complex terrains and easily crossing gaps of over 100mm, allowing the robot to move smoothly in different environments, making it particularly suitable for large-scale photovoltaic power plants and ground PV fields. Even when encountering uneven ground or obstacles, MR-T series can ensure continuous operation, ensuring that each PV panel is thoroughly cleaned.



Edge Detection & Automatic Hazard Avoidance

Featuring advanced edge-sensing technology, the MR-T series monitors surroundings and detects hazardous edge zones. When approaching PV-panel edges, it triggers automatic anti-drop protection to avoid drop-offs and collisions. The system also identifies other risks and adjusts routes dynamically to keep the robot operating within safe boundaries.



Automatic Posture Correction

Equipped with an image recognition system, the MR-T series monitors its posture in real time and automatically adjusts its travel direction to prevent deviation or jamming during cleaning. This function maintains proper working posture on uneven and complex terrain, improving cleaning accuracy and efficiency.



Quick Brush Replacement

Adopting modular design, the brush of MR-T series can be quickly replaced within 1 minute. This design greatly reduces equipment maintenance time and improves work efficiency. Users only need a simple operation to quickly replace the brush, ensuring that the equipment is always in the best cleaning condition and avoiding prolonged downtime.



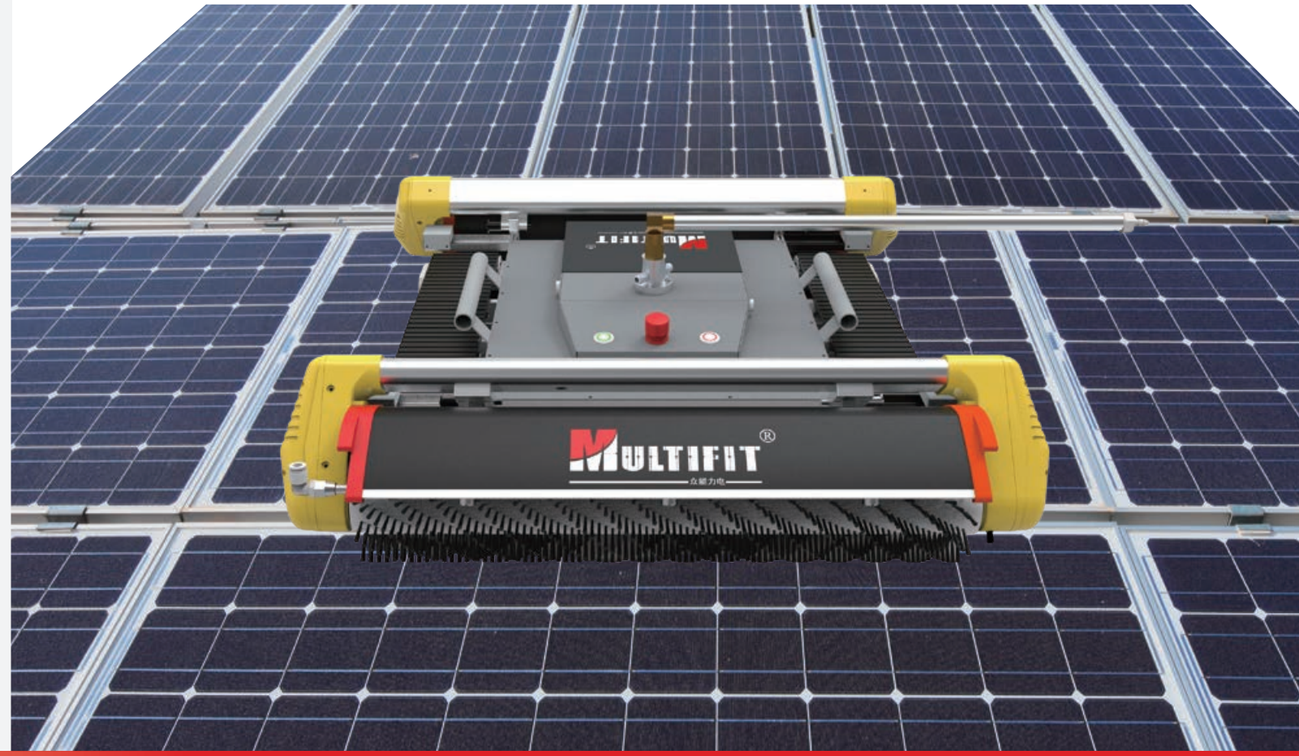
Dry and Wet Cleaning Integration

According to different environmental requirements, MR-T series can switch between dry cleaning and wet washing modes. The dry cleaning mode is suitable for PV panels with less dust or light surface pollution, and can quickly remove accumulated dust; The wet washing mode is suitable for stubborn stains and can thoroughly clean the surface of photovoltaic panels through water washing. The combination of two modes provides users with flexible and diverse cleaning solutions.



Cost-Effective

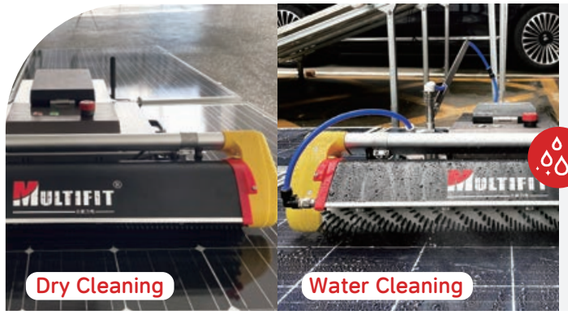
Compared to traditional manual cleaning or mechanical equipment, MR-T series lower initial investment and operating costs. Its efficient cleaning capability greatly improves the power generation efficiency of the power station, thereby accelerating investment returns. Robots reduce labor and maintenance costs, provide a high return on investment (ROI), and make long-term operations more economical.



PRODUCT ADVANTAGES

◆ The MR-T series of fully automatic cleaning robots has more advantages than other robots on the market in terms of performance, product design, and intelligent control. For example, it is easy to carry, has a long service life, and is equipped with an intelligent remote control. Moreover, its rolling brushes are easy to disassemble, install, adjust, and maintain.

◆ The robot can completely accomplish high-precision tasks such as the point-to-point navigation and regional coverage in complex photovoltaic module scenarios. Our robot can achieve 100% coverage at one time to achieve clean photovoltaic panels without the dead ends. Through this way, it can effectively increase the power generation.



Two Cleaning Models

Dry Cleaning and Water Cleaning. Even the dry cleaning model without the water has the prominent efficiency.

Lightweight Design

Easy to operate and user-friendly, it can be easily lifted by a single person with flexible and smooth overall movement.



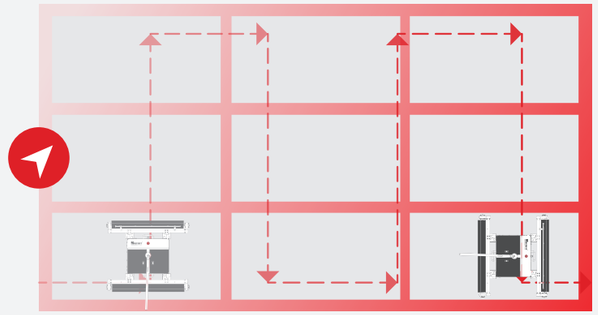


Four Water Outlet Nozzles

The spray-type water outlet can evenly cover the photovoltaic panels, improving the cleaning efficiency. It is water-saving and environmentally friendly.

Path Planning Algorithm

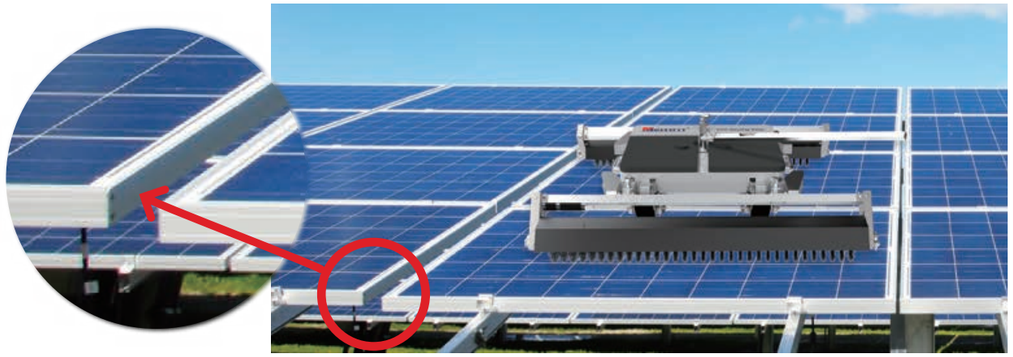
It conducts intelligent path planning to ensure that every inch of photovoltaic panels can be thoroughly cleaned, effectively increasing the power generation.



Scene Selection ▼

① The maximum panel gap distance is 100-140 mm.

② The maximum distance between upper and lower panel gaps is 20 mm.



Remote Control ▼

◆ Start at any time, stop at any time, scrub repeatedly。

◆ The remote control has strong remote control capabilities, with an effective control distance of up to 400 meters.



Remote Control Screen Display ▼



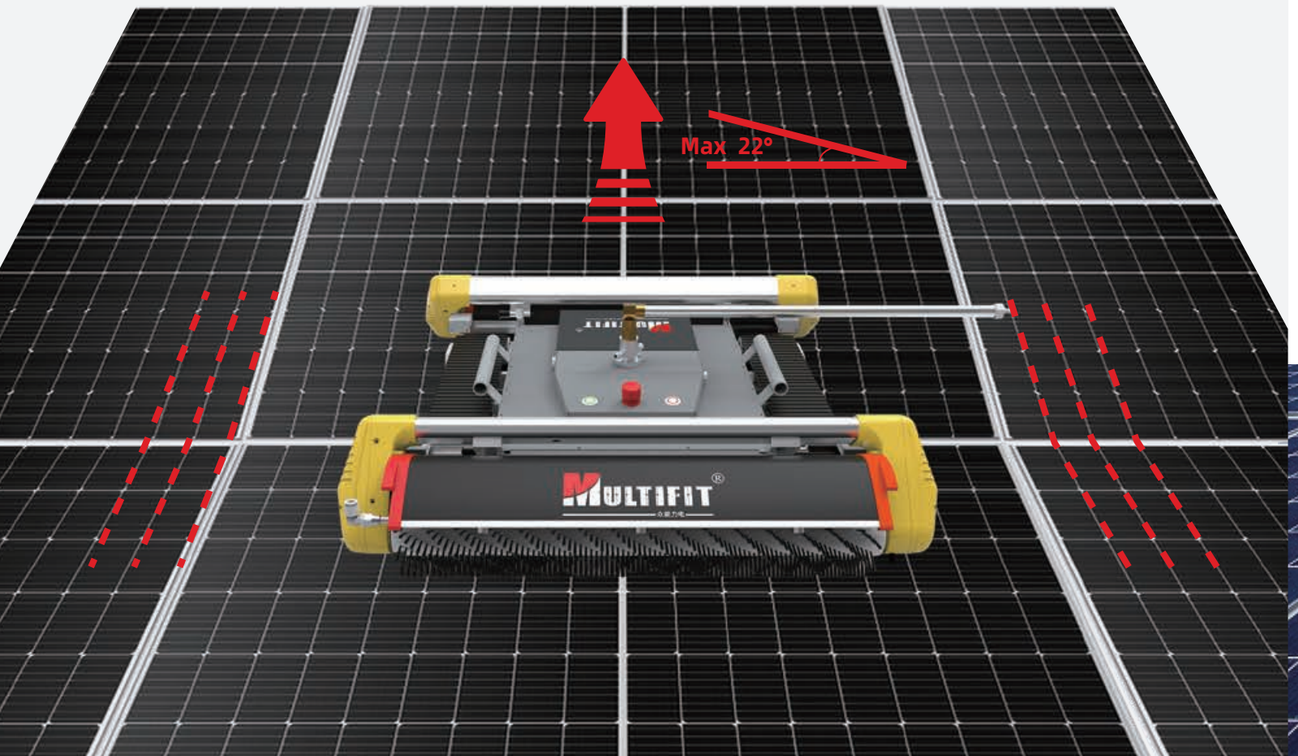
UNIQUE ADVANTAGES

Tracking Solar Cleaning Robot

MR-T2

High-angle Climbing Performance

The hinge connection between the roller brush assembly and the robot main body provides a large swing range. For PV arrays with a tilt ≤22°, the MR-T2 can be lifted to the bottom edge of the PV panels by the lifting platform, then driven onto the array for cleaning via remote control to reduce manual handling.



MR-T3

AI-Powered Decision Making

- Intelligent identification of panel layout, edges, gaps and obstacles
- Automatic selection of optimal cleaning routes
- Adaptive adjustment of cleaning strategies
- Intelligent fault detection and response

Autonomous Navigation & Positioning

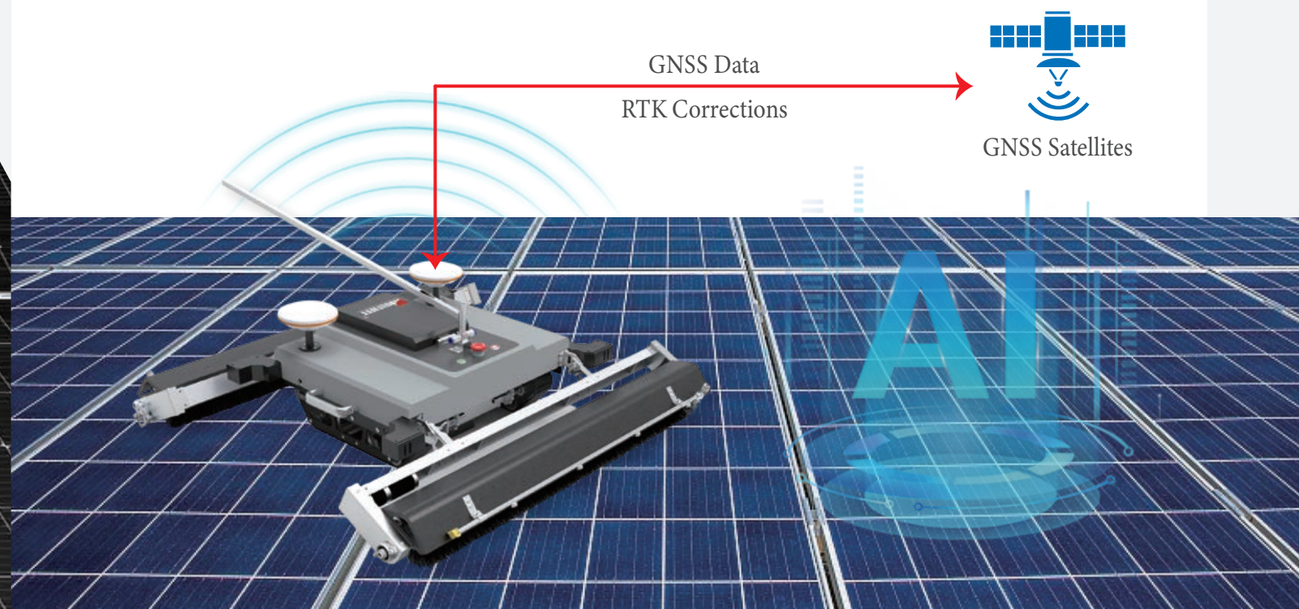
- High-precision RTK/GNSS positioning
- AI vision-based panel and obstacle recognition
- Automatic route planning and path optimization
- Automatic deviation correction

Fully Autonomous Cleaning

- Automatic panel cleaning without manual operation.
- Autonomous movement and cleaning.
- Automatic execution of scheduled cleaning tasks.

Automatic Charging & Energy Management

- Automatic return to the charging station
- Automatic recharging when battery is low
- Automatic resumption of cleaning after charging
- Supports long-term unattended operation



UPGRADE AND OPTIMIZATION — 19

UPGRADE AND OPTIMIZATION



MR-T1

Max Climbing Angle
15°

Obstacle Crossing Capability
Can cross gaps 140mm

Max Obstacle Crossing Height
0°

Weight
40.5kg

Firmware Upgrade
Path planning

AI-Powered Decision Making
None

Red & Green Push-button Switch
None

Applicable Scenarios
Flat fixed PV stations, low contamination



MR-T1(S)

Max Climbing Angle
15°

Obstacle Crossing Capability
Can cross gaps 100mm

Max Obstacle Crossing Height
15°

Weight
18kg

Firmware Upgrade
Manual remote control operation

AI-Powered Decision Making
None

Red & Green Push-button Switch
Displays machine fault codes

Applicable Scenarios
Conventional fixed PV stations, light contamination



MR-T2

Max Climbing Angle
22°

Obstacle Crossing Capability
Can cross gaps 140mm

Max Obstacle Crossing Height
22°

Weight
34.86kg

Firmware Upgrade
Path planning

AI-Powered Decision Making
None

Red & Green Push-button Switch
Displays machine fault codes

Applicable Scenarios
Mountain & low-slope tracker stations, medium contamination



MR-T3

Max Climbing Angle
15°

Obstacle Crossing Capability
Can cross gaps 140mm

Max Obstacle Crossing Height
15°

Weight
40.5kg

Firmware Upgrade
Path planning; RTK positioning; Map navigation

AI-Powered Decision Making
Yes

Red & Green Push-button Switch
Displays machine fault codes

Applicable Scenarios
Large tracker stations in desert/salt areas, heavy contamination

MR-G2 Series Right & Left Solar Cleaning Robot



Mechanical Parameters	
Water Consumption	180~360 L/H (0.3mpa)
Width	470mm
Height	520mm
Net Weight	29.5-48kg
Robot Body Material	Aluminum alloy
Protection Grade	IP65
Corrosion-proof Grade	C4
Brush Lifespan	2-3 Years
Mounting Type	Fully automatic walking, no need to add tracks
Electrical Parameters	
Motor Power	120W/200W/300W
Power Input	24V
Battery Capacity	25.6V/15Ah (25Ah)
Working Time	4-8H
Charging Time	4-6H
Self-charging Board Power	40W/60W
Operating Parameters	
Applicable Angle	0-45°
Applicable Panel Gap	0-35mm
Cleaning Method	Dry cleaning / Water cleaning
Cleaning Speed	12-25m/min
Movement Mode	The walking wheels and hanging wheels are attached to the aluminum frame of the photovoltaic panel
Navigation Mode	Along the aluminum frame of the array photovoltaic panel
Maximum Climbing Angle	≤8°
Cleaning Mode	Once/multiple times/scrub/Clean at regular intervals
Bridge Mounting Rail/ Intelligent Management App/ Robot Group Control Module	Optional configuration
4G Module / WiFi Module Rain Sensor Device / Wireless Remote Controller/	Standard configuration

MR-G3 Series Right & Left Solar Cleaning Robot



Mechanical Parameters	
Water Consumption	220~360 L/H 0.3mpa (optional)
Width	560mm
Height	455mm
Robot Body Material	304 stainless steel material
Protection Grade	IP65
Corrosion-proof Grade	C4
Brush Lifespan	2-3 Years
Mounting Type	Fully automatic walking, no need to add tracks
Electrical Parameters	
Motor Power	200W/300W
Power Input	24V
Battery Capacity	25.6V/15Ah (25Ah)
Working Time	4-7H
Charging Time	4-6H
Self-charging Board Power	50W
Operating Parameters	
Applicable Angle	0-45°
Applicable Panel Gap	0-50mm
Cleaning Method	Dry cleaning / Water cleaning (optional)
Cleaning Speed	12-25m/min
Movement Mode	The walking wheels and hanging wheels are attached to the aluminum frame of the photovoltaic panel
Navigation Mode	Along the aluminum frame of the array photovoltaic panel
Maximum Climbing Angle	≤20°
Cleaning Mode	Once/multiple times/scrub/Clean at regular intervals
Bridge Mounting Rail/ Intelligent Management App/ Robot Group Control Module	Optional configuration
4G Module / WiFi Module Rain Sensor Device / Wireless Remote Controller/	Standard configuration

MR-AR Series Shuttle Solar Robot Transfer Vehicle



Model	MR-AR1
Mechanical Parameters	
Mounting Method	External rail-mounted travel
Lifting Height	0 ~ 250mm (Front rear independent adjustment)
Body Material	Aluminum alloy
Protection Grade	IP65
Anti Corrosion Grade	C4
Brush Lifespan	2-3 Years
Electrical Parameters	
Motor Power	Travel motor: 150w; Lifting motor: 80w
Power Input	24V
Battery Capacity	25.6V/15Ah
Working Time	4-6H
Charging Time	4-5H
Self-charging Panel Power	50W
Operating Parameters	
Travel Speed	9-15m/min
Positioning Accuracy	±5mm
Allowable Rail Gradient	≤8°
Rail Specification	Rectangular tube 60×30×δ3
Cleaning Mode	Dry cleaning / Water cleaning
Sweeping Speed	15-25m/min
Control Modes	Automatic / Remote control / Local manual

MR-XY Series Up&Down Solar Cleaning Robot



Name	Working Time (H)	Walking Speed (m/min)	Walking Distance (m)	Ambiant Temperature (℃)
MR-XY	＞4	8-12（m/min）	＞2000m	-20℃~70℃ No Condense

Control Mode	Field remote control and manual keys
Working Way	Use remote control to operate cleaning, no manual work is required
Parking Apron	Parking areas on the left and right side of the panel array
Protection Level	IP65
Remark	Customized based on solar PV array size

Quality Implementation Standard MR-G MR-XY MR-T

Essential Requirement		Applied Specifications/Standards
Art.3.1(a)	Safety	EN IEC 62368-1:2020+A11:2020
Art.3.1(a)	Health	EN 62479:2010
Art.3.1(b)	EMC	ETSI EN 301 489-1 V2.2.3 (2019-11) Final draft ETSI EN 301 489-3 V2.2.0 (2021-11)
Art.3.2	Radio	ETSI EN 300 330 V2.1.1(2017-02)
Test Standard		EN ISO 12100:2010 EN 60204-1:2018 EN IEC 61000-6-2:2019 EN IEC 61000-6-4:2019

MR-T1 Series Tracking Solar Cleaning Robot



Model	MR-T1	MR-T1 AUT
Mechanical Parameters		
Control Mode	Manual remote control operation	Automatic operation
Travel Route	Remote control selection	Set path planning
Water Consumption	300L/H	
Robot Size (Excluding Roller Brush)	685×617×320mm	
Roller Brush Size	Length: 1 meter; Diameter: 130mm	
Package Size	1250×810×585mm	
Weight	Main body (excluding battery) : 30kg; Brush roller: 10.5kg	
Number of Brush Rollers	2	
Body Material	Aluminum alloy	
Protection Grade	IP65	
Anti Corrosion Grade	C4	
Brush Lifespan	2-3 Years	
Electrical Parameters		
Motor Attributes	Brushless motor	
Power Input	24V	
Battery Capacity	26.6V/15Ah	
Working Time	3-4H	
Charging Time	3-4H	
Operating Parameters		
Cleaning Width	1 meter（Acceptable customized length）	
Max Climbing Angle	≤15°	
Obstacle Crossing Capability	Panel gap 140mm	
Cleaning Mode	Dry cleaning / Water cleaning	
Sweeping Speed	15-25m/min	
Cleaning Efficiency	720～1200 ㎡/h	

MR-T1(S) Tracking Solar Cleaning Robot



Model	MR-T1(S)
Mechanical Parameters	
Control Mode	Manual remote control operation
Travel Route	Remote control selection
Water Consumption	150L/H
Robot Size	850×740×320mm
Roller Brush Size	Length: 650mm; Diameter: 130mm
Package Size	880×770×400mm
Weight	Main body (excluding battery) : 13.5kg; Brush roller: 4.5kg
Number of Brush Rollers	1
Body Material	Aluminum alloy
Protection Grade	IP65
Anti Corrosion Grade	C4
Brush Lifespan	2-3 Years
Electrical Parameters	
Motor Attributes	Brushless motor
Power Input	24V
Battery Capacity	26.6V/15Ah
Working Time	4-5H
Charging Time	4-5H
Operating Parameters	
Cleaning Width	650mm（Acceptable customized length）
Max Climbing Angle	≤15°
Max Obstacle Crossing Height	≤15°
Obstacle Crossing Capability	Panel gap 100mm
Cleaning Mode	Dry cleaning / Water cleaning
Sweeping Speed	12-18m/min
Cleaning Efficiency	380～560 ㎡/h

MR-T2 Series Tracking Solar Cleaning Robot



Model	MR-T2	MR-T2 AUT
Mechanical Parameters		
Control Mode	Manual remote control operation	Automatic operation
Travel Route	Remote control selection	Set path planning
Water Consumption	220L/H	
Robot Size	600×685×245mm	
Roller Brush Size	Length: 650mm; Diameter: 130mm	
Package Size	960×840×360mm	
Weight	Main body (excluding battery) : 23kg; Brush roller: 4kg*2; battery: 3.86kg	
Number of Brush Rollers	2	
Body Material	Aluminum alloy	
Protection Grade	IP65	
Anti Corrosion Grade	C4	
Brush Lifespan	2-3 Years	
Electrical Parameters		
Motor Attributes	Brushless motor	
Power Input	24V	
Battery Capacity	26.6V/15Ah	
Working Time	4-5H	
Charging Time	3-4H	
Operating Parameters		
Cleaning Width	650mm（Acceptable customized length）	
Max Climbing Angle	≤22°	
Max Obstacle Crossing Height	≤22°	
Obstacle Crossing Capability	Panel gap 140mm	
Cleaning Mode	Dry cleaning / Water cleaning	
Sweeping Speed	15-25m/min	
Cleaning Efficiency	470～780 ㎡/h	

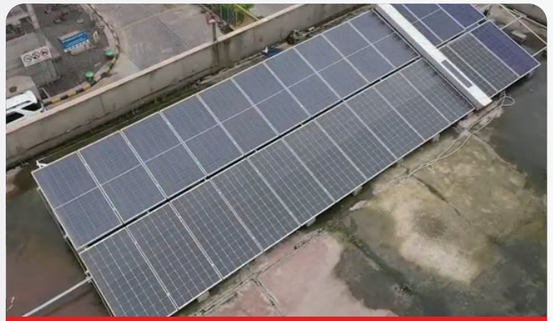
MR-T3 Tracking Solar Cleaning Robot



Model	MR-T3
Mechanical parameters	
Control Mode	Automatic operationa
Travel Route	Set path planning; map-based navigation (RTK positioning)
Positioning Accuracya	2cm-5cm
Water Consumption	300L/H
Robot Size (Excluding Roller Brush)	685×617×320mm
Roller Brush Size	Length: 650mm; Diameter: 130mm
Package Size	1250×810×585mm
Weight	Main body (excluding battery) : 30kg; Brush roller: 10.5kg
Number of Brush Rollers	2
Body Material	Aluminum alloy
Protection Grade	IP65
Anti Corrosion Grade	C4
Brush Lifespan	2-3 Years
Electrical Parameters	
Motor Attributes	Brushless motor
Power Input	24V
Battery Capacity	26.6V/15Ah
Working Time	3-4H
Charging Time	3-4H
Operating Parameters	
Cleaning Width	1 meter（Acceptable customized length）
Max Climbing Angle	≤15°
Max Obstacle Crossing Height	≤15°
Obstacle Crossing Capability	Panel gap 140mm
Cleaning Mode	Dry cleaning / Water cleaning
Sweeping Speed	15-25m/min
Cleaning Efficiency	720～1200 ㎡/h

PROJECT CASES

CLEANING ROBOT



50KW Rooftop PV project in Jakarta, Indonesia



5MW Ground PV power station in Malta



200KW Rooftop PV power station bridge in Guang'ao, Shantou



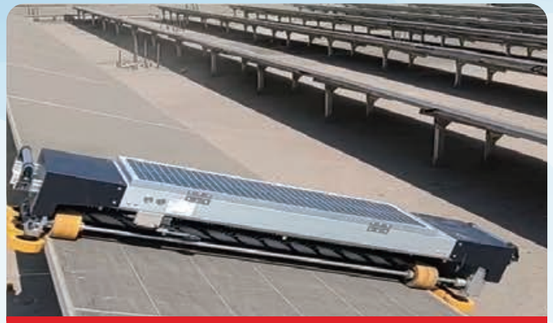
6.3MW Qatar World Cup-Transportation photovoltaic power station



1.1MW Solar project in Tajikistan



1.5MW Rooftop PV power station in Turkey



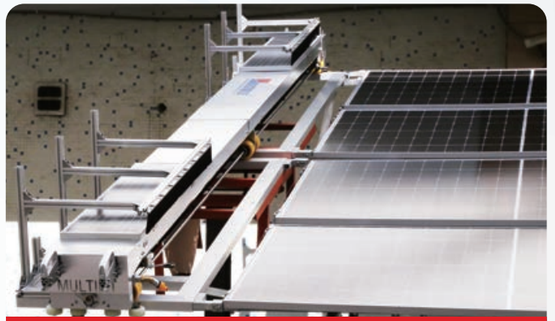
286KW Pahotovoltaic project in Oman



30MW solar panels cleaning solutions in hainan, China



10KW Rooftop in South Africa



Returning position, parking apron, bridge connection customization project



100MW in Xinjiang



500.2KW Solar system in Viet Nam



3MW Photovoltaic power station project - Dongguan



125kw Factory roof in Portugal

PROJECT CASES

CLEANING ROBOT



Photovoltaic project in saudi Arabia



T1 robot for cleaning serives in Cyprus



5MW Rooftop photovoltaic project in China



300kw Rooftop photovoltaic project in lebanon



Rooftop photovoltaic project in Dongguan



Rooftop photovoltaic project in Singapore



1.28MW Photovoltaic project in China



Rooftop Photovoltaic project in Guangdong, China



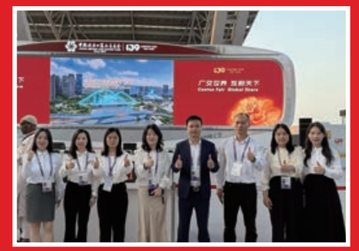
Photovoltaic project in Saudi Arabia

COOPERATION













COOPERATION

RECRUITMENT

- Hot blue ocean projects in emerging industry market.

ONE-STOP SUPPORT FOR ENTREPRENEURSHIP

- The heart-level service of the headquarters saves you the trouble to start.

AUTHORIZED DISTRIBUTION

- Franchised dealers sell products in authorized areas or channels.

FREE TRAINING

- Provide marketing and technical training for franchised dealers.

REBATE REWARD

- Complete the sales task and reward according to the incentive policy.

TECHNICAL SUPPORT

- Assist in the design of schemes and comprehensive technical consulting services during the support period.

PRODUCT SUPPORT

- Provide copies of relevant certificates and letters of authorization.