

JIUSI Cleaning Drone Series D15R

Multi-functional Washing UAV

Efficient cleaning in the air & High-altitude unmanned safe operation & Multi-scenario application



JIUSI | Born for cleanliness

Photovoltaic panels, curtain wall cleaning industry status and trouble spots

Up to now, artificial cleaning (spiderman, cradles) is still the main cleaning method, the industry's cleaning company exists in small, many, miscellaneous characteristics of the industry, the industry is chaotic good and bad mixed between each other there is a “wall cleaning qualification” shared and “spiderman” shared the situation. The industry is facing many challenges



Operational risk

Workers need to use scaffolding or cradles for traditional manual overhead cleaning operations, which involves high safety risks, especially in bad weather conditions.



Poor operational flexibility

Fixed track equipment and some automated equipment can only cover a specific area. It is difficult to adapt to a variety of complex building wall structure and with poor flexibility.



Inefficient cleaning

The existence of artificial cleaning speed is slow, difficult to complete in a short period of time a large area of the external wall cleaning tasks, affecting the overall work efficiency and cleaning strength is not enough and other issues.



High cost

High-altitude cleaning requires a lot of manpower and time, resulting in high costs: automated cleaning equipment acquisition and maintenance costs. Meantime, equipment installation and operation is complex, the overall cost is high.

High efficiency - 1000m²/h high pressure fast cleaning

The D15R cleaning drone features a modular design, compatible with two types of cleaning attachments: adjustable-angle nozzles and oscillating nozzles. Equipped with four nozzles of different angles to meet diverse cleaning requirements, it provides a convenient, efficient, and multi-scenario aerial high-pressure cleaning solution for the industry. It is widely applicable to high-altitude cleaning scenarios such as building exteriors, photovoltaic panels, and high towers.



Tethered water supply operation

Long uninterrupted operation without any limitation of water tank capacity.



1000m²/h max. 20MPa Quick Wash

Fast washing under hovering, 1h coverage 1000m².



20MPa Instantaneous Peak Pressure

Fast and effective removal of stubborn stains.



Rapid installation and deployment

Folding design for easy transportation and storage, quick release mode for 1-minute deployment.

➤ 4 different nozzles as standard

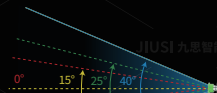
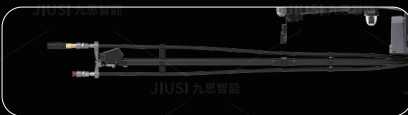
0° spray pressure, suitable for rinsing crevices and stubborn stains;

15° fan-shaped water discharge, rapid rinsing of stains

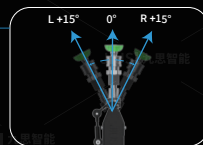
25° fan-shaped water, rapid rinsing of sand and soil, more efficient

40° fan for rinsing large areas after spraying detergent

➤ D15R can be equipped with dual swinging spray booms optionally.



➤ D15R can be adapted to 2 different types of loads



Intelligence - Intelligent route planning

The new upgraded version D15R 5.0 adds intelligent route planning to achieve autonomous operation. It can set routes for different cleaning scenarios. Different cleaning scenarios correspond to different route settings, which improves the multi-scenario applicability of the equipment. It can greatly improve the work efficiency and flexibility of the cleaning drone.



Comprehensive coverage without blind spots: The entire facade can be accurately covered according to the set route and height, avoiding omissions and blind spots that may occur during manual inspection or ordinary flight, ensuring comprehensive cleaning of the target facade.

High degree of automation: The route can be planned in advance through the ground control station, and the drone can fly automatically according to the preset path without the need for real-time manual control, reducing the time and energy costs of manual operation and improving work efficiency.

High precision: Combined with advanced positioning technologies, such as RTK positioning, the UAV can maintain a stable flight attitude and position accuracy when executing a vertical route, thereby obtaining high-precision images, measurement data, etc.

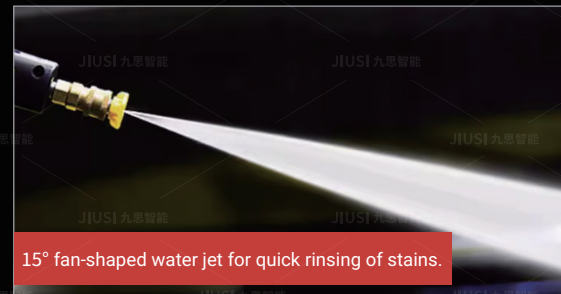
Remote operation: The operator can control and monitor the drone through the ground control station in a safe location away from dangerous facades. Even in the event of an emergency, timely measures can be taken, further improving the safety of the operation.

Multi-scenario, Multi-Scenario -Adaptable to Multiple Nozzles

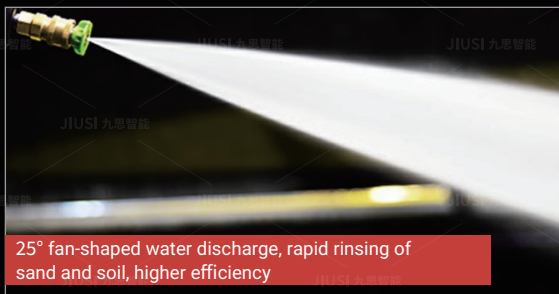
The modular nozzle design meets the needs of customers for diversified cleaning tasks, and the optimal cleaning effect can be achieved by matching the nozzles to the tasks, so as to cope with all kinds of complicated aerial work scenarios, and to improve the applicability of the equipment in multiple scenarios. 4 types of spray nozzles equipped with the D15R can be installed quickly and tool-free, with one nozzle pipe, multiple water types, an switching of water types from 0-40° at will, so that the equipment is efficiently cleaned for different stains.



0° high jet pressure for flushing crevices, stubborn stains, etc.



15° fan-shaped water jet for quick rinsing of stains.



25° fan-shaped water discharge, rapid rinsing of sand and soil, higher efficiency



40° fan for rinsing large areas after spraying detergent.

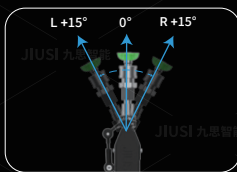
Multi-scenario - Modular design for different loads

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➤ Fixed nozzle

1500mm nozzle keeps the fuselage away from the wall, safe and reliable. The nozzle can swing left and right horizontally, with a swing angle range of Right+15° to Left+15°.



➤ Oscillating nozzle

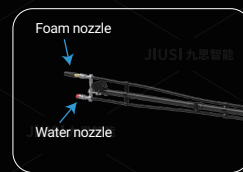
The swing range of the nozzle is 45°, and the speed of the swing can be adjusted on the remote control according to the different stain levels of the cleaning surface.



➤ Dual swinging spray boom

Combines foam and water nozzles for one-key remote switching without landing. Completes full foam softening and water rinsing in one flight, greatly improving efficiency.

(Exclusive to optional kit. Kit includes: 1 dual-swing main body, 1 fisheye bearing rod.)



Multi-scenario, Stable operation at high altitude various nozzles, covering difficult angles



Modular design

Optimal mounts and nozzles can be customized according to Comes with a dual RTK different tasks to meet the configuration, to adapt to a cleaning needs of various high variety of altitude cleaning needs altitude and complex environments.

Stable operation at high altitude

Stable control is achieved through a "Perception-Decision-Execution" closed-loop system, which can adapt to various height-based cleaning requirements.

Flexible operation

Flexible traveling, not afraid of narrow building distance and other complex building space.

Multi-angle coverage of bottom and top surfaces

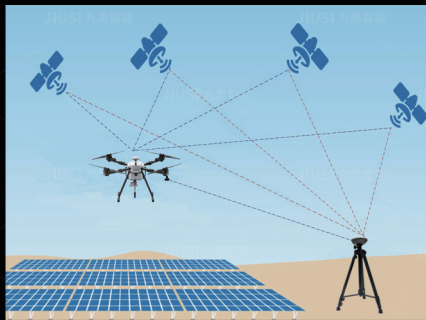
Supporting different configurations, it can easily cover the bottom and top surfaces and other complex surfaces.

Safety - Enabling manual - free high - altitude operations, dual RTK, and wall - following radar



Replacing manual overhead work

Remote control of personnel can complete all kinds of complex cleaning tasks at high altitude, eliminating the potential risks of working at height.



Built-in high-precision dual RTK modules

Equipped with high-precision dual RTK modules, it can output centimeter-level positioning data, ensuring accurate and reliable positioning and safe operation.



Intelligent Perception System

Front-mounted wall-following radar senses real-time distance information ahead, maintains a safe distance, and ensures more secure flight.

Comparison of D15R and traditional manual work operation

D15R offers significant advantages in terms of safety, efficiency and cost:



Indicator	D15R Aerial cleaning System	Traditional manual operation
Security	Drone operation replaces manual work at height, greatly reducing the risk	Manual operation has potential safety hazards
Cleaning efficiency	17m ² /min, high-pressure fast cleaning, support uninterrupted operation	Slow cleaning speed, long operation time
Cost	One-time equipment investment & low long-term operating costs	High labor cost, each time requires a lot of manpower and time investment.
Cleaning effect	20MPa high-pressure cleaning, with professional cleaning agents, thoroughly remove stubborn stains and mold spots.	Difficult to clean thoroughly, affecting the aesthetics of the building and the life of the material.
Installation time	Quick installation for 1 min	Time-consuming and labor-intensive: to set up scaffolding or cradles
Operational flexibility	2 types of mounting, 4 nozzles, multi-angle and multi-scene coverage	Poor flexibility, difficult to cover all work surfaces

Case-Maintenance of a building facade in Dongguan

For a certain industrial park in Longgang, the cleanliness of its exterior walls directly impacts the building's aesthetic appeal and the corporate image of resident enterprises. Due to frequent rainy and humid weather in Guangdong, mold and grime have developed on the park's exterior walls, detracting from its visual appearance. The complex structure of the high-rise buildings renders traditional manual cleaning inefficient and poses significant safety hazards. To uphold a high-end image and ensure tenant satisfaction, the property management office has resolved to seek an efficient and safe exterior wall cleaning solution.



Challenges and trouble spots



Danger of working at height

Traditional manual overhead cleaning requires workers to hang and work, with high safety risk.



Difficulty in cleaning complex structures

Complex building facades are difficult to be cleaned by traditional methods.



High labor cost

10+ manpower team, cleaning 1 day, each person's daily wage 300-500 CNY.



Impact of weather factors

Rainy weather leads to frequent occurrence of mold and dirt, cleaning time consuming, difficult to deploy quickly.

- 01 UAV aerial cleaning:** Eliminating the need for personnel to work at heights and eliminating safety risks of working at heights.
- 02 Cost Savings:** Significantly reduces labor costs and equipment maintenance, saving money in the long run.
- 03 Safe and stable operation:** The distance between the nozzle and the cleaning object is 2-3 meters, real-time ranging, safe and stable.
- 04 Improved cleaning efficiency:** 1000 m³/h of efficient cleaning capacity, so that the cleaning time of large-area facades is greatly reduced, improving work efficiency.
- 05 Fast and effective cleaning:** High-pressure cleaning, support for a variety of cleaning liquids, cleaning effect immediately.

Case-Exterior Wall Cleaning of a Building in Songgang

In hot and humid environments, the exterior curtain walls of Songgang Building are prone to dust accumulation and algae growth. Traditional high-altitude manual cleaning carries high risks and difficulties. UAV cleaning is efficient and flexible, eliminating the need for workers at height, greatly reducing safety hazards. Precise cleaning quickly restores the building's appearance, saving labor and time costs, providing a safe and efficient intelligent cleaning solution for high-rise exterior walls.



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Case-Exterior Wall Maintenance of a Building in Shenzhen

Due to the large number of industrial parks near a certain district in Shenzhen, the exterior walls of a building are often covered with dust, affecting its appearance. To maintain a high-end image and tenant satisfaction, the property management office decided to seek an efficient and safe exterior wall cleaning solution. The Jiusi Intelligent D15R cleaning drone was adopted as the building curtain wall maintenance solution, achieving safe, efficient and low-cost cleaning, providing a new solution for building exterior wall maintenance.



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Case-Building Maintenance for a Building in Shenzhen

A high-end building in Shenzhen stands approximately 30 meters tall with 7 floors. Due to the frequent overcast and rainy weather in Shenzhen, mold and dirt have appeared on the building's exterior walls, affecting its appearance. To maintain the high-end image of this landmark building, the property management office decided to seek an efficient and safe building cleaning solution. The Jiushi Intelligent D15R cleaning drone was adopted as the exterior wall maintenance solution, achieving safe, efficient and low-cost cleaning, and providing a new solution for building exterior wall maintenance.



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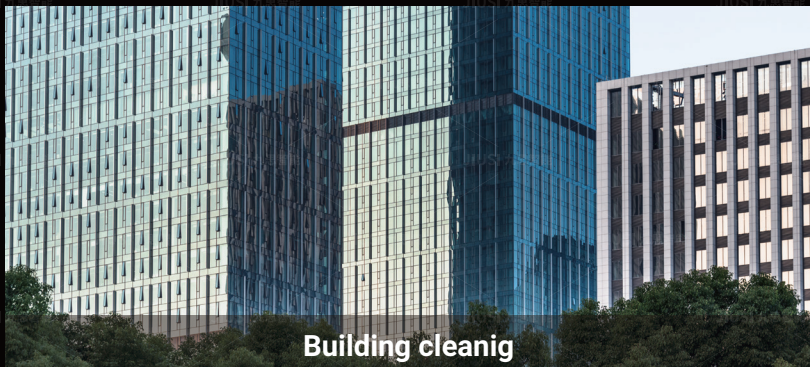


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Application scenario



Product Parameter

Model:	D15R
Overall dimensions:	1945 mm × 1945 mm × 730 mm (with arms and propellers deployed) 1150 mm × 1150 mm × 730 mm (with arms deployed only)
Spray Flow Rate:	15 L/min
Hose Length:	100 m
Flight Time:	22 min
Nozzle-to-surface Distance:	2-3 m (Adjust distance according to work environment)
Battery:	14S 22000 mAh
Spray Pipe:	1500 mm
Maximum horizontal flight speed:	15 m/s
Working Temperature:	-10°C-40°C
Operating Humidity:	0-90%
Maximum wind speed:	12 m/s
Rated Water Pressure:	10 Mpa
Max Water Pressure:	20 Mpa(instantaneous)
Light Cleaning:	1000 m/H
Deep Cleaning:	500 m/H
Time for Charging:	25 minutes
Supports maximum take-off weight:	≤24.9 kg

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