Paint Mist Particle Filter (Dry Type)

I. Working Process

The dry paint mist filter adopts **Inertial Separation + Fiber Filtration + Activated Carbon Adsorption** three-stage purification process. The core relies on physical filtration principles to achieve efficient interception of paint mist particles and preliminary purification of organic waste gas. It is an environmentally friendly paint mist pre-treatment equipment with zero wastewater discharge.

When paint mist exhaust gas enters the equipment, it first passes through a baffle plate structure that forces the airflow to change direction multiple times. Using inertial separation technology, paint mist particles heavier than air are separated from the airflow and adhere to the baffle plate walls, completing primary interception; the remaining fine paint mist particles enter the fiber filtration layer with the airflow, achieving secondary deep purification through the adsorption and interception effects of the filter cotton; finally, trace residual organic waste gas is treated through activated carbon adsorption to ensure the purified gas meets standards for high-altitude emission. The equipment can be flexibly equipped with consumables such as filter paper, fiber filter cotton, and specialized filters, adapting to different spraying operation requirements.



II. Core Parameters

Parameter Category	Specific Values
Purification Target	Spray paint mist particles (oil-based / water-based), trace organic waste gas
Paint Mist Purification Efficiency	⩾98%
Process Type	Dry Inertial Separation + Fiber Filtration + Activated Carbon Adsorption
Consumable Types	Filter Paper, Fiber Filter Cotton, Specialized Dry Filter, Activated Carbon
Applicable Air Volume	Customized (from small spray booths to large coating lines)
Operation Mode	Dry physical filtration, no circulating water
Installation Type	Wall-mounted / Floor-standing / Integrated with spray booth

III. Operating Instructions

Startup Preparation: Check if filter consumables are securely installed and if the activated carbon layer is level. Confirm that the equipment's interlock wiring with the fan and spray system is normal.

Operation Procedure: Startup sequence is "Turn on filter → Start fan → Begin spray operations Begin spray operations"; Shutdown sequence is reversed, ensuring residual paint mist exhaust gas in the equipment is fully purified and discharged.

Consumable Maintenance: Regularly check baffle plates for paint buildup and promptly clean adhering paint sludge; based on spray volume and purification effect, regularly replace filter paper and fiber filter cotton (recommended to establish replacement cycles based on operating conditions); Activated carbon adsorption saturation, promptly replace or regenerate to avoid purification efficiency decline.

Precautions: Do not disassemble filter units during equipment operation to prevent paint mist leakage; do not use in high-temperature or open flame environments to avoid safety hazards from consumables with adsorbed paint mist; this equipment is for paint

mist pre-treatment and primary organic waste gas purification. High-concentration organic waste gas requires downstream deep treatment equipment.

IV. Product Advantages

Zero Wastewater Discharge: Full dry physical filtration process with no circulating water system, avoiding difficult paint sludge wastewater treatment issues, aligning with green environmental protection concepts.

High Purification Efficiency: Supported by three-stage filtration process with paint mist purification efficiency ⩾98%, effectively intercepting fine paint mist particles, protecting downstream equipment from clogging.

Easy Maintenance: Simple and quick consumable replacement, no professional operation required, significantly reducing equipment operation and maintenance costs and downtime.

Strong Adaptability: Compatible with oil-based paint, water-based paint, UV paint and other coatings, can customize filtration solutions based on air volume and paint mist type, adapting to various dry spray scenarios.

Compact Structure: Compact size, small footprint, can be flexibly installed in small spray booths, mobile spray rooms and automated coating production lines.

V. Applicable Industries

Widely used in **automobile 4S 4S stores, furniture manufacturing, precision hardware, electronics and appliances, toys, plastic products, instrumentation, aerospace components** industries, especially suitable for dry spray and touch-up operations in environments with limited space, no wastewater treatment facilities or high environmental requirements.

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