Pulse Jet Cartridge Dust Collector

I. Working Process

The Pulse Jet Cartridge Dust Collector is a high-efficiency dust purification equipment, adopting the combined process of "inertial separation + cartridge filtration + pulse jet cleaning". Relying on a unit modular combination structure, it realizes graded interception and efficient purification of various types of dust and fumes, suitable for dry dust, oil fumes, welding fumes, and other treatment scenarios in multiple industries, with purified air meeting discharge standards.

Core Process Flow: The fan generates negative pressure airflow, and dust-laden gas enters the dust collector through side or top inlet pipes. First, it passes through an inertial separator where large particle dust is directly settled into the dust collection barrel under gravity and inertia, completing primary interception and purification. The remaining small dust particles enter the cartridge filtration zone where they are blocked and deposited on the cartridge surface. As dust accumulation increases, the pressure differential across the cartridge gradually rises. When the set value is reached, the pulse solenoid valve automatically opens, and compressed air enters the reverse jet cleaning system. Under high-pressure airflow, dust deposited on the cartridge surface detaches and falls into the dust collection bucket, achieving automatic cartridge cleaning. After cleaning, the cartridge restores optimal filtration state, and purified clean air is discharged through ducts and fan. The entire process cycles continuously for stable and continuous dust removal.





II. Key Parameters

Processing technology: Inertial sedimentation + bag filtration + pulse jet cleaning

Equipment structure: Composed of five parts – upper casing, middle casing, lower casing, dust discharge system, and jet cleaning system

Jet cleaning system: Includes pulse controller, pulse valve, jet pipe, and air reservoir

Filter material options: Fiberglass needle-punched felt (≤240 ° C), polyester needle-punched felt (≤120 ° C), aramid needle-punched felt (≤200 ° C), polypropylene needle-punched felt (≤90 ° C)

Purification efficiency: ≥99.9% (effectively intercepts fine dust)

Cleaning method: Pulse jet cleaning, sequential bag-by-bag cleaning with automatic control

Dust discharge method: Electric discharge valve with matched dust collection barrel (or vehicle)

Operating temperature: Continuous operation allowed at 90 ° C~240 ° C depending on filter material

Applicable air volume: Customizable to meet different processing scale requirements

Control method: Automatic cleaning controller, triggered by resistance automatically

III. Operating Instructions

1. Startup Preparation: Check if the cartridge is securely installed, verify the pulse solenoid valve operation status and dust collection bucket sealing. Confirm all components are undamaged and leak-free. Based on the dust type being processed, ensure the filter material selection meets the working condition requirements.

2. Start-up Operation: First start the fan. After the negative pressure airflow stabilizes, the equipment enters normal filtration state. Based on dust generation volume, set the pulse jet cleaning time interval, or enable the differential pressure auto-control mode to ensure timely cleaning.

3. Operation Monitoring: Observe the equipment operation status in real time, monitor the cartridge pressure differential and fan operating parameters. If the pressure differential abnormally increases, check if the cartridge is clogged or damaged. If pulse jet cleaning is abnormal, promptly investigate the solenoid valve and compressed air system.

4. Daily Maintenance: Regularly clean dust inside the collection bucket to avoid overflow. Based on working conditions and pressure differential, regularly check the

cartridge status. If filter material is damaged or aged, replace it promptly (replacement requires no tools, quick and easy). Regularly check the pulse solenoid valve and reverse jet piping to ensure the cleaning system operates normally. Regularly clean the inertial separator to avoid large particle dust accumulation affecting pretreatment efficiency.

5. Safety Precautions: During equipment operation, it is prohibited to arbitrarily disassemble the cartridge, piping, or fan to prevent dust leakage. When processing flammable or explosive dust, select anti-static filter material and strictly prohibit open flames near the equipment. When shutting down, first close the fan, wait for dust to settle inside the equipment, then clean the dust collection bucket to ensure operational safety.

IV. Product Advantages

1. **Extremely High Dust Removal Efficiency**: Adopting cartridge-type filtration unit with large filtration area and low face velocity, dust purification efficiency can reach above 99.99%, effectively intercepting fine dust, oil fumes, and welding fumes.

2. **Space-Saving, Strong Adaptability**: Compact equipment with small footprint, adopting flexible and versatile box-type combination unit modules, can meet different on-site installation conditions. Multiple filter materials available to adapt to different types and working conditions of dust treatment needs.

3. **Automatic Cleaning, Stable Operation**: Equipped with automatic pulse jet device, cleaning time can be set as needed or controlled by differential pressure auto-control, ensuring the cartridge always maintains optimal filtration state. No manual cleaning required, operation is stable and reliable.

4. **Safe, Durable, Easy Maintenance**: Using high-quality pulse solenoid valves, strictly controlling misoperation, can withstand high-intensity working tasks. Equipment structure is reasonable, maintenance is simple and cost-effective, cartridge replacement is quick and easy, no tools required.

5. **Flexible Adaptation, Strong Practicality**: Multiple ash discharge options, can select ash bucket, ash cart, or spiral discharge device based on on-site requirements. Filter materials include high-temperature resistant, moisture-proof, flame-retardant, anti-static types, adapting to complex working conditions across multiple industries.

V. Applicable Industries

Widely applicable to various dust and fume treatment scenarios, covering **steel, casting, cement, chemical, mechanical processing, welding, laser cutting, plastic processing, food processing, building materials, metallurgy, electronics, furniture** and other industries. It can process dry dust from steel/casting/sandblasting, flammable and explosive dust from plastic/dye/flour, waste gas dust from welding fumes/laser cutting, as well as fumes and hot smoke from high-temperature chemical processing, making it the preferred equipment for dust purification in industrial production.

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