Fixed Integral Movable Spray Booth

I. Working Process

The fixed integral mobile spray painting room is a specialized environmentally friendly coating equipment designed for the difficult problem of painting oversized, extra long, and extra heavy workpieces. The core adopts the process of moving the room body and multi station linkage, which does not require moving the workpiece and only achieves segmented spraying at different stations by moving the room body along the track. The equipment is equipped with an independent exhaust purification system, with 2-3 exhaust purification stations corresponding to each room. The spray painting room is precisely moved to the processing station to form a closed spraying space, and other stations can simultaneously carry out previous processes such as polishing; After the spraying is completed, the room can quickly switch to the next polishing station, achieving uninterrupted and continuous painting and polishing processes. The room can be flexibly equipped with purification devices such as dry paint mist filters and catalytic combustion equipment. The paint mist and organic waste gas are efficiently purified after centralized collection,meeting environmental emission requirements.



II. Core Parameters

Equipment Structure: Steel frame movable booth + Fixed multi-station work area

Driving Method: Dual reduction motor interlock drive, track-type movement

Station Configuration: 1 booth accommodates 2-3 exhaust purification stations

Movement Control: Precise positioning control, flexible station switching

Purification Compatibility: Dry paint mist filters / Catalytic combustion equipment, etc.

Operation Mode: Booth moves, workpiece fixed, segmented spraying

Booth Characteristics: Steel frame structure, lightweight design, high overall strength

III. Operating Instructions

Before starting the equipment, check track smoothness, motor operation status, and purification system and station sealing conditions. Confirm there are no abnormalities before starting the machine.

According to the production plan, move the spray booth to the station corresponding to the workpiece to be sprayed via the control terminal. Confirm the booth is securely positioned, then start the exhaust purification system before beginning spraying operations.

While spraying operations are underway at this station, other stations can simultaneously perform workpiece grinding, pre-treatment and other work, achieving parallel processes.

After spraying is completed, continue running the purification system for several minutes to expel residual exhaust gas from the booth, then move the booth to the next station to be sprayed.

Regularly clean paint sludge from each station, inspect tracks and drive components, and maintain purification system consumables to ensurestable equipment operation.

During booth movement, prohibit personnel from entering the track and station work areas, and implement proper safety precautions.

IV. Product Advantages

Specialized Solution for Large Workpiece Coating: Workpieces remain fixed while the booth moves for spraying, completely solving the problems of difficult movement and high transportation costs for oversized / overweight / overlength workpieces.

Multi-Station Interlock, Double Efficiency: Spraying and grinding processes operate in parallel with no downtime, achieving continuous production and significantly improving coating production efficiency.

Low Energy Consumption, Controllable Costs: Only the operating station requires enclosed purification, eliminating the need for large-area factory-wide air control, effectively reducing fan and purification system energy consumption.

Safe and Stable Operation: Dual reduction motor interlock drive, steel frame booth structure is sturdy, with precise movement and positioning, equipped with multiple safety protections for more reliable operations.

Strong Adaptability, Environmental Compliance: Compatible with various paint mist and exhaust purification equipment to meet different environmental requirements, and booth dimensions can be customized according to site conditions.

Reasonable Structure, Easy Maintenance: Lightweight steel frame design with high strength and reasonable footprint. Tracks anddrive components are easy to inspect and repair, resulting in low daily maintenance costs.

V. Applicable Industries

Widely applicable to **heavy-duty construction machinery, shipbuilding and heavy industry, large-scale steel structures, wind power equipment tower barrels / blades rail transit vehicle bodies/components, large-scale pressure vessels, heavy-duty machine tools, and mining machinery** industries, especially suitable for large-scale coating production scenarios of oversized, overweight, and over length workpieces.

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