Ji'nan ShengTai Painting Equipment Co.,Ltd.
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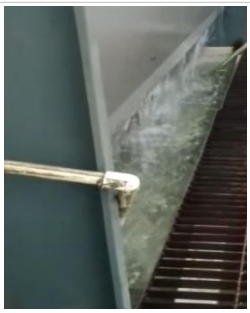
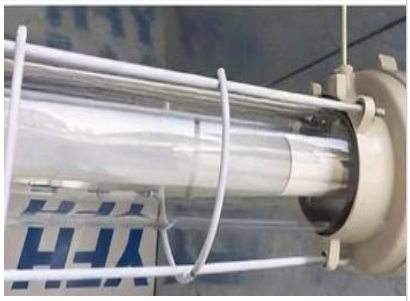
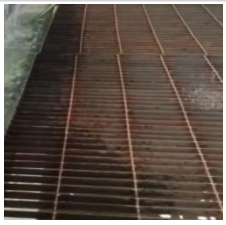
Configuration List for Water Curtain Spray Booth				
No.	Equipment Name	Main Specifications	Quantity	Picture for reference
1	Spray Booth	3000(W) x 3800(D) x 3000(H) mm	1 Set	
2	Dual Vortex Barrels	Φ1100	2 Sets	
3	Water Tank (Basin)	Stainless Steel 201 (2.0mm thickness)	–	
4	Wall Panels	Stainless Steel 201 (1.2mm thickness)	–	
5	Water Pump	2.2 kW	2 Units	

Configuration List for Water Curtain Spray Booth				
No.	Equipment Name	Main Specifications	Quantity	Picture for reference
6	Exhaust Fan (Blower)	4.0 kW	2 Units	
7	Lighting	Explosion-proof	4 Sets	
8	Floor Grating	30 x 30 mm	6 m²	
9	Control System	For Lighting, 2x Pumps, 2x Fans	1 Set	

ShengTai Pumpless Water Wash Spray Booth

The ShengTai Pumpless Water Wash Spray Booth is an advanced technical solution designed for high-efficiency paint mist purification and environmental treatment. Working Principle The pumpless system utilizes

air–induced suction to lift water and create a continuous circulating water curtain.

1. Collision & Mixing: Air containing paint mist collides with the water curtain, then enters the air–water channel where it undergoes intense mixing.

2. Separation: Upon entering the plenum chamber (collection box), the airflow velocity decreases, causing the air and water to separate.

3. Discharge: The air passes through moisture eliminator plates (baffles) before being exhausted into the atmosphere by the fan.

4. Circulation: The separated water gathers in the collection box, flows into the overflow trough, and spills over the flood plate to re–form the water curtain as it returns to the main tank.

Structural Features

- Base Section: A water tank is integrated into the bottom of the cabinet.
- Internal Components: The unit features a water–vapor lift pipe connected to the tank at the bottom and a water–vapor chamber at the top.
- Airflow Management: It includes a primary and secondary induction chamber. A baffle plate is positioned between the water–vapor chamber and the primary chamber.
- Distribution: The lower part of the primary chamber features a water storage trough connected to the water curtain plate.
- Filtration: A floor grating is placed between the curtain plate and the lift

pipe. Mist-eliminating baffles sit between the primary and secondary chambers, with the exhaust fan mounted at the end of the secondary chamber.

Technical Advantages

- Pumpless Reliability: By eliminating the water pump, common issues like clogged pipes or pump failure are completely avoided, significantly reducing equipment downtime.
- High Efficiency: The intensive air-water agitation enhances the removal of solid paint particles, achieving a filtration rate of ⩾98%.
- Easy Maintenance: Operation is as simple as starting/stopping the fan. Daily tasks only require replenishing water, while periodic maintenance involves adding flocculants and removing paint sludge.
- Zero Wastewater Discharge: Exhaust gases are purified through circulating water. You only need to clear the collected paint residue periodically, making it an eco-friendly "closed-loop" system.

Application Scenarios

This equipment is widely utilized across various industries including aerospace, locomotives, automotive, and heavy machinery, as well as for coating small to medium-sized components in the electronics industry.

About us

ShengTai – 15 years of Coating solutions ShengTai Painting Equipment Co.,

Ltd. is a professional manufacturer specializing in the design and production of intelligent surface finishing systems, including powder coating lines, liquid coating lines, e-coating lines, and advanced electrocoating equipment. With over 15 years of industry experience, ShengTai has delivered reliable coating solutions to nearly 2,000 customers across more than 30 provinces and municipalities in China, as well as to international markets worldwide. Backed by a stable global supply chain and long-term strategic partners, we ensure fast response times, consistent product quality, and comprehensive after-sales support for every automatic powder coating line, liquid coating line, and e-coating line we deliver.