Ji'nan ShengTai Painting Equipment Co.,Ltd.
Address: East of the intersection of Dongwaihuan Road and Wenhua Road in Wenden, Diaozhen Street, Zhangqiu District, Jinan City,Shandong Province
Email: sales@stpowdercoating.com WhatsApp:+8615854139190

Electrophoretic Ultrafiltration System ST–EC–US

Ultrafiltration is one of the most common and essential configurations in an E coating line. Key processes such as paint recovery, wastewater discharge reduction, and precise control of electrophoretic bath liquid level and conductivity all depend on the correct configuration of ultrafiltration systems. Ultrafiltration is a membrane filtration technology capable of purifying, separating, and concentrating solutions, making it a critical component of modern E coating equipment.

Main Functions

Paint Recovery
Ultrafiltration recovers electrophoretic paint washed off from the workpiece surface, preventing environmental pollution caused by wastewater containing paint residues.

Cost Reduction

The recovered electrophoretic paint can be reused, enabling enterprises to save up to 30% on electrophoretic paint procurement costs.

Closed–Loop Rinsing System

The newly generated ultrafiltrate from the ultrafiltration unit provides rinsing water for workpieces exiting the electrophoretic bath, forming a closed–loop circulating rinsing water system.

Stabilization of the E–Coating Bath

By appropriately discharging ultrafiltrate, various ions introduced into the electrophoretic bath during production can be removed, ensuring the stability of the electrophoretic coating solution.

Control of Impurity Ion Concentration in the E–Coating Bath

Even when chemical pretreatment workpieces undergo multiple stages of water rinsing and deionized water rinsing, a certain amount of impurity ions inevitably enters the electrophoretic bath. Additionally, various ions are continuously generated during the electrodeposition process. If these accumulated harmful impurity ions are not removed in time, they will affect the stability of the bath and may cause coating defects. Controlled discharge of ultrafiltrate effectively regulates the concentration of impurity ions in the bath, ensuring stable operation of the E coating line.

Closed–Loop Circulating Rinsing

Using ultrafiltrate for closed–loop circulating rinsing further improves paint utilization, reduces wastewater discharge, and lowers wastewater treatment costs and environmental impact. The overall result is enhanced operational efficiency and economic benefits.

Low–Cost and Effective Control

Ultrafiltration enables low–cost and efficient control of the electrophoretic bath liquid level. When the bath level becomes too high, it can be easily adjusted by discharging an appropriate amount of ultrafiltrate, allowing new paint to be replenished smoothly—without the need to drain old bath liquid to add fresh paint.

Types of Ultrafiltration Systems

Currently, the main ultrafiltration systems used in E coating equipment include tubular ultrafiltration, hollow fiber ultrafiltration, and spiral–wound (roll–type) ultrafiltration.

Tubular and spiral–wound ultrafiltration systems are mainly suitable for medium to large electrophoretic baths.

Hollow fiber ultrafiltration systems are suitable for both small and large electrophoretic baths.

System Configuration and Importance

A typical ultrafiltration system forms a closed–loop circulation system together with the electrophoretic bath, ultrafiltrate storage tank, rinsing devices, pumps, pipelines, valves, flow meters, and filters.

By using a magnetic drive pump to pressurize the electrophoretic bath solution and pass it through ultrafiltration membrane tubes, the system separates electrophoretic paint from water, solvents, and dissolved metal impurities. As an indispensable part of any E coating line, ultrafiltration performance directly affects the quality of the final electrophoretic coating film. Therefore, selecting a high–quality ultrafiltration unit is critical.

ShengTai Painting Equipment specializes in providing reliable and high–performance ultrafiltration solutions tailored for advanced E coating equipment, helping customers achieve superior coating quality, reduced operating costs, and environmentally responsible production.

Please provide detailed information so that we can provide you with a more accurate solution:

1. What are the Maxminum and Minimum dimensions of your workpieces (L × W × H)?
2. What is the maximum weight of each workpiece? If available, please also provide product photos.
3. How many workpieces do you plan to coat per day (based on 8 or 16 working hours) or per month?
4. Which heating source do you prefer, such as electric power, diesel, fuel oil, or natural gas?
5. What are the dimensions of your workshop (L × W × H)? If possible, could you share a layout or drawing of the facility?
6. Prior to coating, do you require spray pre–treatment to prepare and clean the product surface?
7. What voltage and frequency standards are used in your country?

Please also share your WhatsApp or another instant messaging contact so we can communicate more efficiently.

Website: https://www.stpowdercoating.com
Address: East of the intersection of Dongwaihuan Road and Wenhua Road in Wenden Village, Diaozhen Street, Zhangqiu District, Jinan, ShanDong, China, 250000
WhatsApp: +86–15854139190
WeChat/Telegram: +86–15098917702
Email: sales@stpowdercoating.com