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Cleaning Systems for an E Coating Line ST-EC-CS

The cleaning systems of an E coating line are critical E coating equipment that ensure coating quality and the stable operation of the entire electrophoretic coating process. The common cleaning equipment used in an E coating line is described below. With professional system integration and engineering experience, ShengTai Painting Equipment provides reliable and environmentally friendly solutions for modern E coating lines.

1. Reverse Osmosis (RO) System

Principle:
Reverse osmosis uses pressure differences to force water molecules through a semi-permeable membrane, effectively retaining dissolved salts, organic matter, and other impurities to produce high-purity deionized water.

Function:
When combined with an ultrafiltration system, the RO unit forms a closed-loop cleaning system (such as EDRO technology), replacing traditional pure-water rinsing. This approach enables water recycling and supports zero-discharge operation in an E coating line.

Structure:
Typically consists of RO membrane elements, high-pressure pumps, security filters, pressure vessels, and related instrumentation. Strict requirements apply to inlet water quality and operating pressure.

2. Pure Water Supply System Principle:
This system removes ions and impurities from water using ion-exchange resins, electrodeionization (EDI), or distillation to produce deionized water that meets electrophoretic coating process standards. Function:
It supplies high-quality pure water for bath preparation and cleaning stages in the E

coating line, preventing contaminants from affecting film quality. Structure:
Includes pretreatment units (such as sand filters and carbon filters), ion–exchange columns, EDI units or distillation equipment, along with storage tanks and transfer pumps.

3. Spray Rinsing System Principle:
High–pressure nozzles spray cleaning liquids—such as ultrafiltration permeate, pure water, or specialized cleaning agents—onto the workpiece surface. Impact force and dissolution action remove adhered electrophoretic paint and impurities. Function:
Multi–stage spray rinsing ensures a smooth, defect–free coating surface with no floating paint, meeting the requirements for subsequent drying and finishing processes in the E coating line. Structure:
Composed of spray chambers, nozzles, circulation pumps, pipelines, and valves. Spray angles and flow rates can be customized according to workpiece shape and size.

4. Immersion Cleaning Tank Principle:
Workpieces are immersed in a cleaning solution, where chemical reactions and physical dissolution remove residual electrophoretic coating and contaminants. Function:
Used for preliminary cleaning or deep cleaning of complex–shaped parts. Agitation devices can be added to enhance cleaning efficiency. Structure:
Includes the cleaning tank body, agitators, optional heating systems, and overflow tanks. Cleaning solutions may be recycled or replaced periodically.

5. Cleaning Agent Dosing System Principle:

Based on cleaning requirements, precise amounts of specialized chemicals—such as alkaline degreasers, acidic neutralizers, or surfactants—are injected into the cleaning solution to enhance performance. Function:
Effectively removes stubborn contaminants such as oil, rust, and oxide scale, while adjusting the pH value and chemical properties of the cleaning solution. Structure:
Consists of chemical storage tanks, metering pumps, pipeline mixers, and automatic control systems for accurate dosing.
Integrated Cleaning Solutions for E Coating Lines These cleaning systems are typically

integrated into a complete E coating line, forming an efficient and environmentally responsible cleaning process. Through optimized process parameters and intelligent operation, ShengTai Painting Equipment delivers advanced E coating equipment that ensures high cleaning efficiency, stable coating quality, and sustainable production for global manufacturers.

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.

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