Smart spray painting production line

PTA-3007L for steel parts

Safe operating procedures

1. General regulations

1.1 Purpose

Standardize the operating procedures of the smart spray production line to ensure equipment performance. Continuous and smooth operation. Prevents fire, explosion, mechanical injury, and accidental death. toxic chemicals

1.2 Scope of Application

Paint spray operators, paint mixers, material handling/unloading workers, equipment maintenance personnel, and all personnel entering the spray booth.

1.3 Responsibilities

Operator : Must follow equipment operating procedures; any unauthorized activities are strictly prohibited . Typically, monitor the operation of all departments in the production line and report safety hazards promptly. Paint mixer: Properly store new and old paint containers to prevent volatile thinner from spreading, quickly mix and add coatings, and thoroughly clean paint transport equipment. Ensure the two-component coating is used within the curing time; otherwise, it must be immediately flushed out.

Loading/unloading workers: Use lifting equipment correctly for smooth lifting; avoid collisions or impacts with other equipment. Assess in advance whether stacking regulations are followed and refuse overloading. **Equipment maintenance personnel:** Ensure equipment is in maintenance mode before entering the paint booth to avoid collisions from the spray plate and protect against abnormal high-pressure spraying of the coating. Maintenance of all parts should be performed while the machine is off. **Team Leader:** Streamline the working hours of the spraying departments and each position, and coordinate... Monitor equipment performance. Regularly check equipment consumables usage and organize routine maintenance. Supervise the implementation of maintenance tasks. safety measures

2. **Ensure** safety **before operation .**

2.1 Personal **Protection**

Mandatory : When entering the paint spraying room and mixing room, you must wear a protective mask . (with organic vapor filter), anti-static clothing, solvent-resistant gloves, and safety shoes.

Absolutely **forbidden :** Lighters and any items that can easily produce sparks.

2.2 Equipment **and** environment **inspection**

• **Coating transport system:** Verify that the inside of the mixing drum is completely clean; Check for clogged filters; Check that the pressure and tightness of the spray pump are normal; Check that the piping is smooth; Check that the spray gun operation and nozzle image are correct. • **Operating** system : Verify that the compressed air and propane fuel pressure are normal and that the supply is sufficient; Verify that the industrial computer and scanner are functioning normally; Ensure that all sensors are not contaminated or damaged, and that the system has no abnormal alarms. • **Ventilation system:** Check for clogging of the paint filter cotton; replace if the pressure difference

is too large.

Ensure the fan is operating normally without unusual noise. Clean any remaining paint residue from the baffle filter.

• **Drying system:** Check that the propane supply pipelines and components are functioning properly to detect any abnormal leaks, confirm that the temperature controller is working correctly, and check the operational stability of the combustion.

2.3 **Management of** hazardous chemicals

Two-component paint should be used and opened as needed. When mixing paint, follow the three-pair rule and three stirs to properly mix the paint and prevent clumping and condensation due to uneven mixing. After pumping the paint into the mixing tank, the lid must be closed to reduce solvent evaporation. The paint mixing room must maintain a sealed environment and negative pressure; all equipment must be reliably grounded, and spark-generating tools should be avoided.

Used paint buckets must be properly disposed of in a hazardous waste treatment room and must not be stacked in the paint mixing room. Opened solvent containers must be sealed immediately after use.

to reduce solvent evaporation

Paint waste in the spray booth needs to be cleaned regularly and treated as hazardous waste.

timely

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3. Safe operation during the operation process.

3.1 **Cargo handling operations**

The lifting components must be placed smoothly and neatly using appropriate lifting tools.

Proper handling; do not pull, hang, or force loads at angles. Pay attention to safe distances between the current crane and other cranes, and ensure there are no obstructions around the loading area. Ensure

parts comply with ordering rules

3.2 Spraying **activities**

Before starting the chain spray machine, ensure there are no obstructions in the spray booth that could hinder operation, such as piles of paint or scattered tool parts. If a fault occurs in the spray booth and requires repair, the equipment must be switched to maintenance-free mode and only
The system is brought in after the current operation has completed to avoid injury from high-pressure spray painting. When the coating supply system requires maintenance, the air supply to the spray pump must be cut off and the coating pressure inside the pipeline must be released. In case of a stove

shutdown warning, flammable gas leak warning, or overheating warning, the air supply must be immediately cut off and the cause of the abnormality thoroughly investigated. The total line length is 120m. During startup,

shutdown, and operation, operators A and B should communicate well to avoid the risk of accidents.

3.3 Absolutely **Prohibited** Behaviors

• Placing obstacles in areas where components may be present in the loading and unloading area is strictly prohibited.

Entering the spray booth is strictly prohibited when the equipment is not in maintenance mode.

• The installation or removal of pipelines under pressure is strictly prohibited.

Absolutely avoid touching areas that can move.

Cross-running devices are strictly prohibited.

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4. Post-operative safety measures

4.1 Hygiene requirements

After each shift, the paint transport system must be thoroughly cleaned and operating procedures must be strictly followed without compromise. If working continuously, cleaning should be done regularly.
It should be done at least once every 72 hours to prevent slow internal buildup.

Areas where paint waste can accumulate include interior walls, baffle filters, T-beam conveyors, drive shafts, spray painting areas, and drying and leveling areas. Cleaning
Daily cleaning is necessary to prevent large buildup, as smoke and spontaneous combustion can occur.
high temperature weather

4.2 **Turn off** the **device**

To turn off the hot air recirculation device, the burner must be switched off first and the main fuel valve manually closed. Only turn off the fan after the temperature has dropped.
After shutting down the spraying equipment, first clean the coating delivery system. After cleaning, shut off the air supply to the spray pump and release the pressure inside the pipeline. During cleaning, the ventilation system must operate continuously and be switched off after 10 minutes.

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5. **Emergency response**

- **Fire response:** Press the emergency stop button ÿ close all gas valves ÿ use dry powder fire extinguishers ÿ evacuate along the emergency route
- **Misuse of the spray gun can cause injury:** Turn off the pump ÿ release the pressure from the hose ÿ rinse the wound thoroughly with plenty of water ÿ see a doctor immediately (a high-pressure coating will be injected into the skin).
- **Solvent poisoning:** Move to a well-ventilated area ÿ remove contaminated clothing ÿ call emergency services

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6. **Maintenance** safety

Before maintenance, all personnel operating on the production line must be notified not to continue operations, all production line activities must be temporarily suspended, the program switched to maintenance mode, a "do not start" warning sign must be posted, and at least one such sign must be in place.
Two people from the same company, along with a supervisor, enter a confined space.

Appendix

Safety staff:

Contact number: