



Standard Operating Procedure (SOP)

(Electrostatic Painting)

[10/04/24]

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Objective:

Cover the process of electrostatic painting

Scope:

Detailed instructions for a painter to follow

Responsible personnel:

Operations and field supervisor

Materials and Equipment

- **Electrostatic appropriate paint**
- **Solvents (Xylene, Methyl Ethyl Ketone aka MEK) or other product-specific solvents and thinners.**
- **Electrostatic Sprayer**
- **Tip wrench (DO NOT LOSE IT)**
- **Protective Gear** (Spray suit, respirator, gloves, goggles, head sock, shoe covers optional)
- **Grounded Cord**
- **Use a GFCI-protected outlet**
- **Masking Materials** (paper, tape, plastic, tarps, shields)
- Clean bucket for mixing and a clean measuring cup capable of 8 and 12 oz liquid measuring.

Procedure

Pre-Paint Surface and Area Preparation

- Overspray may occur, even though it is greatly reduced due to the low pressure and electrostatic attraction.
- Too much wind will make it unable to properly paint (5 mph is about the max all wind affects the spray)
- Mask the surrounding areas with at least two rows of paper, paying particular attention to corners and nearby metal surfaces to prevent unintended paint attraction.
- If there are nearby swimming pools, ensure they are covered and monitored closely. The slow drying time of oil-based paint and the mist can linger in the air.
- Properly prepare the surface by sanding, scraping, cleaning, and priming

Step 1: Clean and Test the Sprayer

- Run **Xylene** through the sprayer to ensure it is clean and free of any previous residue. Keep it in a separate container to use later for clean up

Step 2: Flush the Solvent

- Use **Xylene** to flush all solvent through the sprayer until the holding container is completely empty.

Step 3: Prepare the Paint or primer

- Follow the manufacturer's PDS instructions. Pay close attention to pot life of 2K products.
- Thin as needed to reach a proper viscosity.

Step 4: Prime the Sprayer

- Pour the prepared paint mixture through a strainer bag into the sprayer's holding tank.
- Prime the sprayer to allow the paint to flow through the system.
- Test spray on cardboard to adjust and dial in the proper pressure settings.

Step 5: Turn on the Electrostatic Box

- Power on the electric box (switch located at the bottom).
- Attach the ground clamp firmly to the material to be sprayed
- Ensure the power is on at the gun and verify the continuity of the material by checking for three green lights when the trigger is pulled, but not all the way to spray.

Step 6: Check Grounding

- Attach the grounding cord securely to the metal surface being painted. The grounding point should be as close to the painting area as possible to ensure optimal electrostatic attraction.
- Be sure the grounding clamp is kept clean for proper grounding

Step 7: Adjust the Pressure

- After confirming that all settings are correct, adjust the sprayer's pressure as needed for smooth and even paint application. Start low for less overspray.

Step 8: Begin Painting

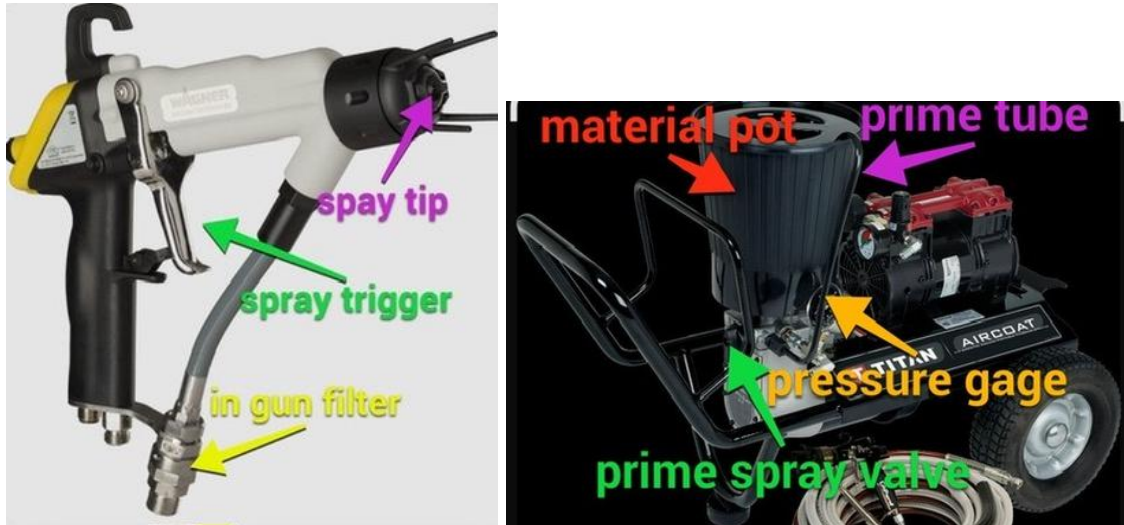
(Brent)

- Ensure that the work area is properly prepared and free of debris.
- When painting fences, it is best practice to spray from inside the property outward toward open areas or away from the building or home.
- Begin spraying once all checks are complete.
- Immediately assess your overspray to ensure your masking is adequate for your conditions.
- Although the paint will wrap, you must visually inspect it and attend to light coverage in certain areas.

Step 9: clean up

- **Cleaning Electrostatic Sprayer – SOP**
- **1. Drain Material**
 - Drain all paint from the material pot using the prime tube.
 - Pour a small amount of xylene or MEK solvent into the pot—just enough to see a visible level.
- **2. Initial Solvent Flush**
 - Run solvent through the prime tube, hose, and spray gun with the tip in the clean-out position.(¼ turn loosened using the tip wrench) • Using a debris-free rag dipped in solvent, wipe down the inside of the pot to remove remaining paint. • Drain the contaminated solvent through the prime tube.
- **3. Repeat Until Clean**
 - Continue running clean solvent through both the prime tube and the gun until the solvent exits completely clear.
- **4. Depressurize**
 - Switch the machine to prime mode to relieve pressure in the paint hose.
- **5. Remove & Clean Filters**
 - Remove the filters under the spray gun and the filter screens inside the pot. • Wipe all filters using a clean rag and fresh solvent until free of paint and debris.
- **6. Clean Spray Tip**
 - Remove the spray tip and clean thoroughly to remove all paint and debris.
- **7. Final Solvent Flush**
 - Reinstall filters and spray tip.
 - Run a clean solvent flush to ensure proper reassembly, no leaks, and full cleanliness. • If the solvent is not clear, repeat the flush.
- **8. Exterior Cleaning**

- Using xylene and a clean rag, wipe down the exterior of the machine.
- Clean drips before they dry for easier removal. (tip if the machine is 100% clean wiping a thin coat of lube oil on the base of the machine helps with easy clean up)
- **9. Short-Term Storage**
- If storing for a short period, leave a small level of clean solvent in the pot to preserve internal components.
- **10. Long-Term Storage**
- Drain all solvent.
- Add a small amount of piston lube oil (same oil used for airless sprayer pistons) into the pot. • This keeps the machine lubricated during extended storage.



Tips and troubleshooting

- Proper masking is crucial to prevent overspray on unintended surfaces.
- Monitor the spray pattern and pressure throughout the painting process to ensure even application.
- Clogged tip - Use the tip wrench to slightly loosen the tip then spray a quick shot into a container, then retighten the tip
- Poor wrap - check grounding clamp. Too close or pressure too high will cause poor wrap
- Back spray at operator - distance too large between gun and object
- Always prime when restarting the machine.
- If the sprayer loses power, try the reset switch on the bottom of the unit
- Keep gauges and controls covered on the sprayer while in use
- Use at least a 6000-watt generator. Use a 12-gauge or bigger extension cord

- Be very careful with the gun, do not submerge it in liquid, and do not let metal prongs touch anything. (They are fragile and will bend or break easily)

****Training:****

[This is an advanced painter task and should only be used with professionally trained personnel]

Safety Precautions

- Always wear full protective gear, including a spray suit, respirator, gloves, and goggles.
- Store solvents out of direct sunlight.
- Dispose of solvent rags by soaking in water and then drying out flat before discarding.
- Ensure proper ventilation in the work area to avoid the buildup of fumes.
- Regularly check the sprayer and equipment for proper functioning to avoid accidents or malfunctions.

References

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****Distribution:****

All personnel involved in the process should read and understand this document.



