POWDER COATING SYSTEM
TROUBLESHOOTING GUIDE

Nordson

PROBLEM	POSSIBLE CAUSE	SOLUTION
POOR CHARGING *Inadequate powder film thickness or poor coverage*	High voltage source is not providing enough kV at charging electrode	• Check if the high voltage is ON. Systemically, check electrical continuity from the voltage source to electrode, including the cable, resistors, and fuses. • Use kV meter and megohmmeter to check condition of multiplier, cable/resistor. • Clean/replace electrode insulated or damaged by powder buildup or impact fusion.
	Poor ground to parts	• Check ground from conveyor rail (or rub bar when used) through hanger to part. Contact areas must be free of powder buildup, grease, and other insulators.
POOR PENETRATION *Powder will not coat Faraday Cage area (holes, grooves, channels, inside corners or recesses)*	Powder delivery too low	• Increase powder flow rate air setting.
	Poor ground	• Check all ground paths.
	Wrong spray pattern or nozzle	• Adjust spray pattern or select a more suitable nozzle, i.e., flat-spray, conical or pin-point.
	Voltage too high	• Decrease voltage level, adjust AFC setting, try Ion-Collector.
	Powder delivery velocity too high	• Decrease flow rate and/or atomizing settings so powder air stream does not blow powder out of corners.
	Powder delivery velocity too low	• Increase flow rate and/or atomizing setting so powder cloud has a direct path and can penetrate corners.
POWDER FEED *Surging or splitting; interrupted powder flow*	Insufficient air pressure or volume	• Check compressed air supply. Air pressure should be a minimum of 80 PSI and of sufficient volume to supply the system. (85 PSI for iControl® or color-change systems) • Ensure the flow and atomizing settings are within correct range.
	Hose kinked, flattened or too long	• Check powder hose condition and routing. • Replaced damaged or worn hose. Eliminate excessive length.
	Hoses, powder pumps or suction pumps	• Clean hoses, powder pumps and gun components. • Check air supply for moisture and oil contaminants. • Check powder delivery settings. • Check coating area, relative humidity and temperature. • Check powder delivery system for vacuum leaks. • Check powder delivery hose size for powder flow. (This may require low flow pumps and hoses.)
	Incorrect feed hopper fluidizing	• Adjust fluidization air pressure. • Check fluidization plate for damage oil or water contamination. • Check for moisture or oil in the powder.
	Low powder level	• Add powder to the proper level in the hopper.

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POOR FLUIDIZATION *Air blowing large holes through powder surface*	Powder level too low	• Add powder until feed hopper is filled to proper level.
	Packed or moist powder	• Manually loosen powder and fluidize well with clean dry air. • Check compressed air for oil/water and room air for high humidity.
	Obstructed membrane	• Check bottom of feed hopper for obstructions/oil/water.
PLUGGED HOSES/POWDER PUMPS *Caused by impact fusion buildup*	Air pressure too high	• Clean or replace worn parts in pump. • Reduce powder hose length. • Decrease flow rate settings on pump.
	Moisture in compressed air	• Check air supply filters/dryers to clean, dry oil-free compressed air.
	Worn powder pumps or parts	• Replace all worn or damaged parts.
POOR POWDER CONTAINMENT *Inadequate air flow through spray booth*	Cartridge media blinding	• Check or replace cartridges as required. • Check room ambient air humidity in the coating area. • Check the blow down pulse valves/controller.
	Final filter media clogged	• Check cartridges for powder leakage at seal or damage to media. • Check the gaskets/velcro seals on the color module for leakage. • Check tube sheet seal for damage or leakage.
	Use of compressed air for booth cleandown	• Refer to equipment operation manuals for proper procedures.
	Improper powder gun placement/ alignment	• Adjust gun positions to prevent powder from being blown out booth openings. • Check for proper distance from top-of-part to the conveyor slot opening.
	Room air drafts causing powder to drift from booth	• Map the air flow patterns in the application area. • Minimize drafts from air makeup and doors to eliminate powder drift. • Cross draft on any booth opening should NOT exceed 60 FPM.

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