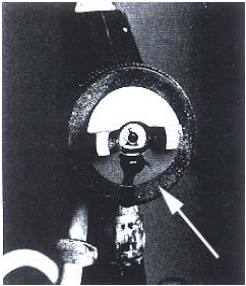
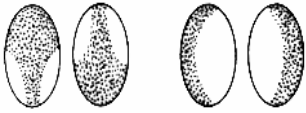




TROUBLESHOOTING SPRAY FINISHING

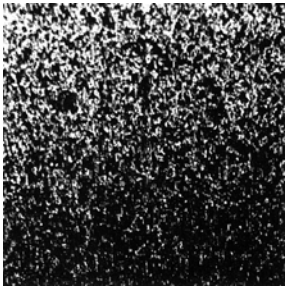
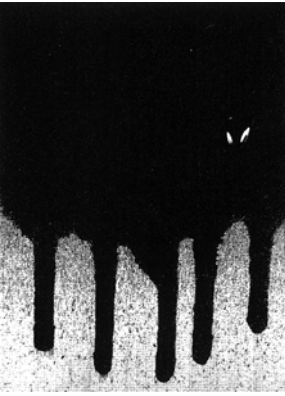
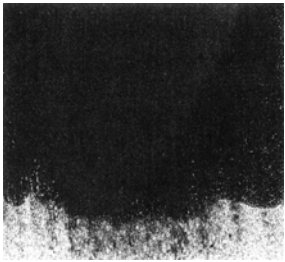
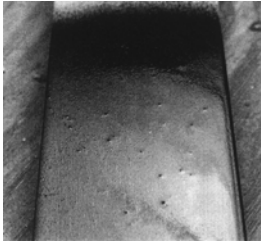
EQUIPMENT


| Problem | Cause | Solution |
|---|---|--|
| Leaky packing nut | Packing nut is loose | Tighten packing nut until fluid stops leaking. If the nut is too tight, the needle will bind. |
| | Packing nut is worn out or too dry. | Lubricate the packing. If this doesn't work, the packing nut needs to be replaced. |
| Air escaping from front of gun (non-bleed guns) | Air valve in trigger is stuck, worn or misaligned. | Try cleaning & lubricating the stem first. If this doesn't work, you may have to replace stem, valve, spring or gasket. |
| Fluid leaking from front of gun  | Packing nut is too tight. | Loosen until needle moves freely. |
| | Packing is worn or dry. | Lubricate or replace packing. |
| | Fluid-needle spring is missing or broken. | Replace fluid-needle spring. |
| | Dried finish or dirt is in fluid tip. | Clean fluid tip |
| | Needle & tip are mismatched | Replace with correct combination. |
| | Fluid tip &/or needle are damaged | Replace with new needle &/or tip. |
| | Fluid tip is loose. | Tighten fluid tip. |
| Fluid leaking from cup | Dry or worn gasket creates poor seal. | Clean or replace gasket |
| | Cup &/or lid are damaged | Replace cup or lid. |
| Spray pattern heavy on top, bottom, left or right.  | Obstruction or build-up of finish on air cap or inside fluid tip. | First determine whether problem is with air cap or fluid tip by making a test spray & then rotating air cap 180°. If obstruction is in fluid tip, the pattern will be the same. Once location of problem is found, clean air cap or tip. |
| Centre-heavy spray pattern  | Material flow or pressure is too high for air cap. | Thin material or decrease fluid flow. |
| | Fan pattern is too small. | Increase size of fan pattern. |
| | Material is too heavy. | Add thinner to material. |
| Split spray pattern  | There is not enough fluid. | Increase fluid flow by backing out fluid adjustment knob. |
| | Atomization pressure is too high. | Lower air pressure at regulator (suction, gravity & pressure pot systems). Use |
| | Fluid pressure is not high enough (pressure pot systems ONLY) | Increase fluid pressure. |

| Problem | Cause | Solution |
|--|---|--|
| Starved spray pattern | There is insufficient fluid flow | Increase fluid flow. |
| | Fluid hose is dirty or clogged (pressure pot systems only) | Clean or replace hose. |
| | Fluid tip is too small. | Change to larger tip. |
| Gun will not spray | Fluid tip is too small or clogged. | Change to larger tip or clean fluid tip. |
| | There is lose of air pressure in cup or pot. | Check gasket for tight seal. |
| | Fluid tube or hose is clogged. | Clean fluid tube or hose. |
| | No air or fluid pressure is available. | Check air lines, hoses, compressor or turbine. |
| | Fluid it too thick to spray | Thin fluid to proper viscosity. |
| Pulsating spray | Material container is low on fluid. | Fill with more finish material. |
| | Packing is lose, dry or worn. | Tighten, lubricate, or replace packing. |
| | Fluid tip is lose or damaged | Tighten or replace fluid tip. |
| | Fluid tube or hose is blocked. | Clean fluid tube or hose. |
| | Material is too thick. | Thin material to proper viscosity. |
| | Vent hole in suction-feed cup is plugged. | Clean vent hole. |
| | Gun is tipped too far, or is upside down. | Rotate fluid tube so it is pointed toward back of cup. |
| Cannot form round spray pattern | Fan adjustment knob is broken or not installed properly. | Replace knob or reinstall. |
| Insufficient air pressure | Filters on compressed air lines or turbine are dirty or clogged. | Clean or replace filters. |
| | Air hose is too small (pressure pot systems) | Install larger diameter hose. |
| | Air hose is too long to maintain sufficient pressure (pressure drop). | Shorten hose. |
| Air pressure too high (compressed air systems) | Regulator is malfunctioning or broken. | Clean or replace regulator. |

TROUBLESHOOTING SPRAY FINISHING

MATERIALS AND APPLICATION TECHNIQUES

| Problem | Cause | Solution |
|---|---|--|
| Excessive overspray, dry spray  | Atomization air pressure is too high. | Decrease pressure (compressed-air systems) or use larger air cap (turbine systems) |
| | Gun is held too far from surface. | Hold gun closer to surface. |
| | Gun is moving too fast | Slow motion to achieve wetter coat. |
| | Material is too thick to atomize properly or contains so much thinner that it dries too fast. | Adjust material to proper viscosity. |
| Runs, sags and drips  | Finish is going on too thick. | Reduce fluid flow &/or decrease size of fluid tip |
| | Material is too thin. | Use less thinner. |
| | Gun is too close to the surface. | Move gun back. |
| | Gun is being moved too slowly. | Increase hand speed. |
| | Gun is tipped at an angle. | Hold gun perpendicular to target. |
| | Improper triggering. | Start motion before gun is triggered & release trigger before end of motion. |
| Orange peel  | There is insufficient atomization. | Increase air pressure (compressed-air systems) or install smaller air cap (turbine systems). |
| | Material is too thick. | Thin material to proper viscosity. |
| | Material is drying too fast. | Use proper thinner or move gun closer to surface. |
| | Coat is sprayed too thin. | Increase fluid flow or slow down hand motion. |
| Solvent pop  | Trapped solvent breaking through surface of fast-drying finish. | Slow down dry time by lowering temperature of finishing area. |
| | Too much thinner has been added to material. | Add more material to increase ratio of material to thinner. |
| | Coats applied too heavily or too quickly. | Reduce material flow; allow more drying time between coats. |
| | Wrong thinner being used. | Use thinner recommended by manufacturer. |

| Problem | Cause | Solution |
|--|---|--|
| Pinholes in the surface of the finish (especially solvent-based finishes) | Coat has been applied too heavily. | Spray lighter coats or add more thinner to material. |
| | Surface preparation is inadequate on open-pored wood. | Use pore filler or spray sealer to close open pores. |
| Finish cracks or blisters | There is moisture on the surface. | Clean & dry surface. |
| | Coatings are not compatible. | Change coatings or use sealer between coats. |
| | Wrong thinner being used. | Use thinner recommended by manufacturer. |
| | Coats have been applied too heavily. | Spray lighter coats. |
| | Coats are not being allowed to dry. | Allow more time between coats. |
| | Temperature of finish or surface being sprayed is too low. | Increase temperature in finishing room. Do not store finish materials on a concrete floor, especially during winter. Be sure finish & surface being sprayed |
| Fisheye  | There is oil, wax or silicone on the wood surface. | Thoroughly clean surface with mineral spirits and apply sealer. Spray several light mist coats over contaminated area. Add recommended fisheye eliminator to |
| | Gun is contaminated with oil. | Clean gun. Use only silicone-free lubricants. Clean or install separator on compressed air line. |
| Blush | There is water in spray equipment or finish material. | Use compressed air or alcohol to dry equipment. Clean or install water separator in compressed air line. |
| | Humidity is too high. | Use dehumidifier in shop. Add retarder to finish material. Wait for a drier day to |
| Bumpy, coarse surface | There is dirt or dust in finish. | Remove all dust from air in finishing room. Thoroughly wipe down surface being sprayed with damp rag. |
| | Material is contaminated or old. | Strain material or use fresh material. |
| Mottled or textured surface (especially water-based finishes & latex paint) | Coats are applied too heavily. | Spray thinner coats by reducing fluid flow or increase arm speed. |
| | Material is too thin. | Use less thinner. |
| | Gun is being held too close to surface, causing finish to ripple or move. | Hold gun farther from surface; decrease air pressure (compressed-air systems) |
| Micro bubbles form in finish, clouding or obscuring underlying surface (water-based finishes) | Material is atomized too finely. | Decrease atomization pressure (compressed-air systems); use larger air cap (turbine systems) |
| | Material is drying too fast. | Add recommended retarder. |

| Problem | Cause | Solution |
|---|---|---|
| Finish looks bland or washed out (water-based finishes) | Inherent clarity characteristic of many water-based finishes. | Add tiny amount of red or brown tint to finish; spray wash coat of dewaxed shellac first. |

The above troubleshooting guide for spray finishing has been copied from:
"Spray Finishing" by Andy Charron, Taunton Press, ISBN 1-56158-114-3