

Screen Printing – Trouble Shooting Guide

Effect	Cause	Remedies
Low opacity	Screen fabric too fine Insufficient screen tension Excessive ink thinning Squeegee too hard, angle too acute Insufficient snap distance	Check screening equipment. Check ink viscosity.
Film defects – pinholing de-wetting, orange peel	Poor drying of enamel Screen blockage Poorly mixed ink Excessive humidity Contamination on glass surface	Check dried film hardness. Clean screen; ensure glass is clean and dry. Print in air-conditioned environment. Ensure ink and thinner are well mixed. Keep ink in sealed containers.
Bubbling	Air entrapped in ink Uneven ink deposit	Mix ink at lower shear rate. Reduce flood coat speed. Check for moisture/condensation.
Ink drips through screen on flood-coat	Viscosity of ink too low	Check ink viscosity.
Lines in enamel	Defective squeegee blade	Sharpen squeegee.
Thin ink deposit	Squeegee too hard Incorrect squeegee profile Insufficient squeegee pressure	Check screen set-up. Change squeegee.
Thick deposit of ink	Squeegee too soft Screen too hot Snap distance too great	Check screen set-up. Change squeegee. Check screen/ink temperatures.
Uneven deposit thickness.	Snap distance not uniform	Check screening set-up and wet film thickness
Blocked screens	Moisture/condensation Screen temperatures too low/ too high Bottles too warm	Check print room conditions. Condition bottles.
Poor definition	Mesh too coarse Ink too low in viscosity for mesh	Use finer mesh. Check ink viscosity.
Marking of enamel	Excessive handling Insufficient drying	Reduce forces in handling processes. Ensure drying is thorough.

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Ink settlement	Shelf life exceeded	Rotate ink stocks.
Insufficient gloss/ enamel matte in center	Firing temperature too low	Increase heat-work (temp/time) or use softer enamel.
Ghosting	Squeegee too soft Lack of screen tension	Change squeegee. Check screen set-up.
Poor registration	Worn machine drive chains, cams, bearings, and etc. Low screen tension Insufficient snap distance Excessive squeegee pressure	Service print machine. Check screen/squeegee set-up.
Print migration	Wet bottles	Check ambient temperature/bottle storage conditions. Avoid condensation on bottles.
Print slip	Pre-heat lehr zone too cool Poor lehr ventilation	Check lehr cycle/extraction.
Browning of enamel	Reducing atmosphere; firing temperature too high	Check furnace atmosphere. Use harder enamel or modify lehr cycle. Increase bottle spacing.