STANDARD OPERATING PROCEDURE (SOP)

Expert Maintenance & Care Guide for Sawgrass Virtuoso SG500 & SG1000 Printers

Document ID: SOP-INK-SG01-EN | **Applicable Models:** Sawgrass SG500 / SG1000 | **Core Technology:** Ricoh Micro-Piezo GelJet | **Version:** v1.0

1. OVERVIEW & SCOPE

Purpose: Standardize daily operation, preventative maintenance, and ink switching procedures for Sawgrass SG500 / SG1000 sublimation printers to prevent printhead clogging, reduce ink waste, and ensure long-term color accuracy and flow stability.

Target Audience: Production operators, technical maintenance staff, print shops, and distributor/B2B clients using aftermarket ink systems.

2. CORE MAINTENANCE RULES

Rule 1: Leave the Printer Powered On 24/7 (CRUCIAL)

Standard Operation: Do not turn off the power switch or unplug the machine. Keep it plugged in and in sleep/standby mode.
Technical Explanation: The SG500/SG1000 features an automated background maintenance routine. While powered on, it periodically performs subtle ink flushes and capping maintenance to prevent sublimation ink from drying and crystallizing inside the Ricoh micro-piezo nozzles.

Rule 2: Maintain a Climate-Controlled Environment

Recommended Temperature: ***15°C – 28°C (59°F – 82°F)***
Recommended Humidity: ***40% – 60%*** (non-condensing)
Caution: Avoid placing the printer near direct AC vents, heaters, or direct sunlight. High heat and drafts accelerate ink drying at the printhead surface.

3. PREVENTATIVE MAINTENANCE SCHEDULE

Frequency	Task	Standard Operating Steps	Objective
Daily	Visual & Paper Path Inspection	Check paper feed trays and exit zones for dust or paper scraps. Ensure the Waste Ink Tank has remaining capacity.	Prevent dust particles from adhering to nozzle surface and causing misfires.
Weekly *(Mandatory during idle)*	Nozzle Check	1. Select **[Nozzle Check]** via control panel or SPM (Sawgrass Print Manager). 2. Print on standard copy paper. 3. Inspect the C/M/Y/K pattern for missing lines or deflections.	Early detection of minor clogs. Resolvable with 1 normal clean rather than aggressive head flushes.

Frequency	Task	Standard Operating Steps	Objective
Monthly	Feed Roller & Guide Cleaning	1. Turn off and unplug machine. 2. Gently wipe feed rollers and guide rails with a lint-free cloth lightly dampened with distilled water. 3. Air dry completely before powering back on.	Prevent paper slippage, skewing, or ink transfer stains on paper backings.

4. INK SWITCHING & FLUSHING SOP

When transitioning from OEM SubliJet ink or another third-party formulation to a new ink solution, execute the following flush procedure to avoid chemical cross-contamination:

1. **Preparation:** Verify new ink cartridges/bottles (with compatible chips) are ready and the Waste Ink Tank has ample space.
2. **Flush Old Ink:** Navigate on panel: `[Menu] -> [List/Test Print] -> [Head Cleaning]`. Perform a **[Head Cleaning]** or **[Head Flushing]** cycle to purge remaining legacy ink from ink lines.
3. **Verification:** Print a Nozzle Check page. If color cross-contamination or faint lines appear, run 1 additional standard head cleaning.
4. **Color Management (ICC):** Apply the dedicated custom **ICC Profile** for the new ink formulation inside SPM or design applications (e.g., Photoshop, CorelDRAW).

> ⚠️ **WARNING:**
> Never mix different ink brands or formulas directly in the continuous supply tank or refillable cartridge. Chemical incompatibility can cause dye precipitation and permanently ruin Ricoh printheads.

5. CONSUMABLE STORAGE & HANDLING

- **Storage Conditions:** Store ink bottles and cartridges in a cool, dry place between $15°C – 25°C$ $(59°F – 77°F)$, away from direct sunlight.
- **Shelf Life:** Sealed ink has a shelf life of up to **24 months**. Once opened, consume within **6 to 12 months** for optimal fluidity.
- **Agitation before Refill:** Gently invert and rock ink bottles for **5–10 seconds** before refilling cartridges to ensure dispersed dyes are uniformly distributed (do not shake vigorously).

6. TROUBLESHOOTING GUIDE

Symptom	Probable Cause	Corrective SOP Action
Missing lines in Nozzle Check	Dried ink residue or micro air bubbles in printhead nozzles.	Run 1 standard Head Cleaning procedure $ ightarrow$ Let printer rest for 10-15 minutes (allows ink to soften residue) $ ightarrow$ Re-test. *(Do NOT run more than 3 consecutive cleans).*
Horizontal banding or severe color shift	1. Clogged nozzles. 2. Incorrect paper media profile. 3. Unloaded ICC Profile.	1. Verify nozzle check pattern. 2. Confirm Media Type settings match paper in SPM.

Symptom	Probable Cause	Corrective SOP Action
		3. Verify proper ICC Profile assignment in printing workflow.