SOUTHERN MACHINERY

Understanding the SME5200 Pallet Cleaning Machine

A Technical Guide to its Operation, Process, and Maintenance

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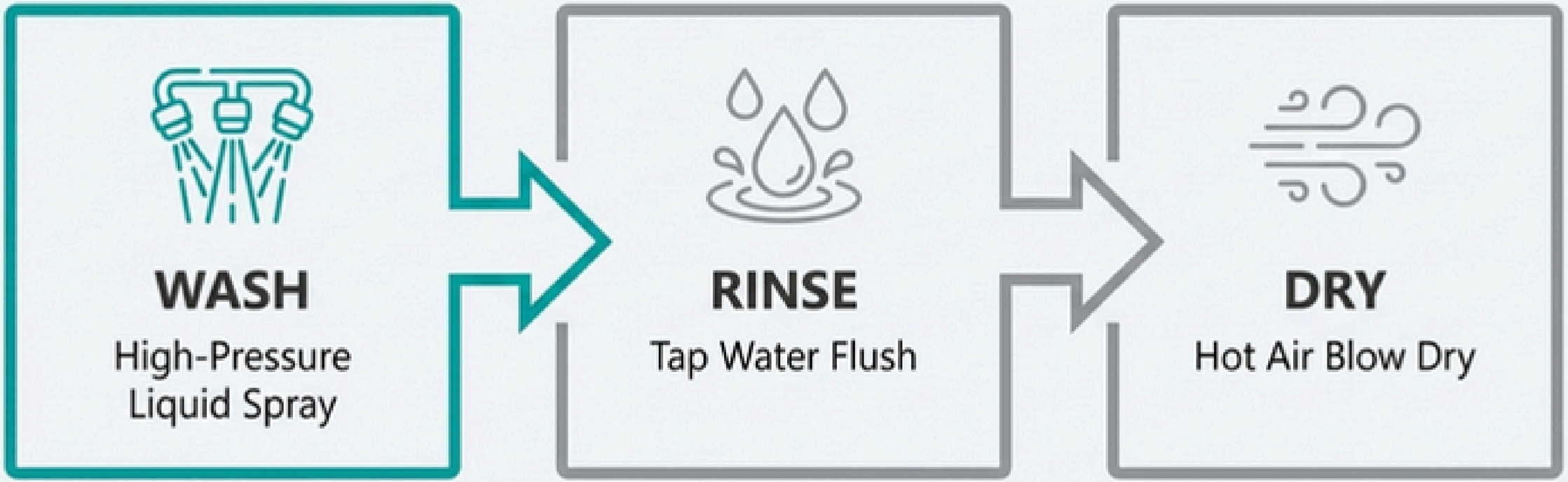
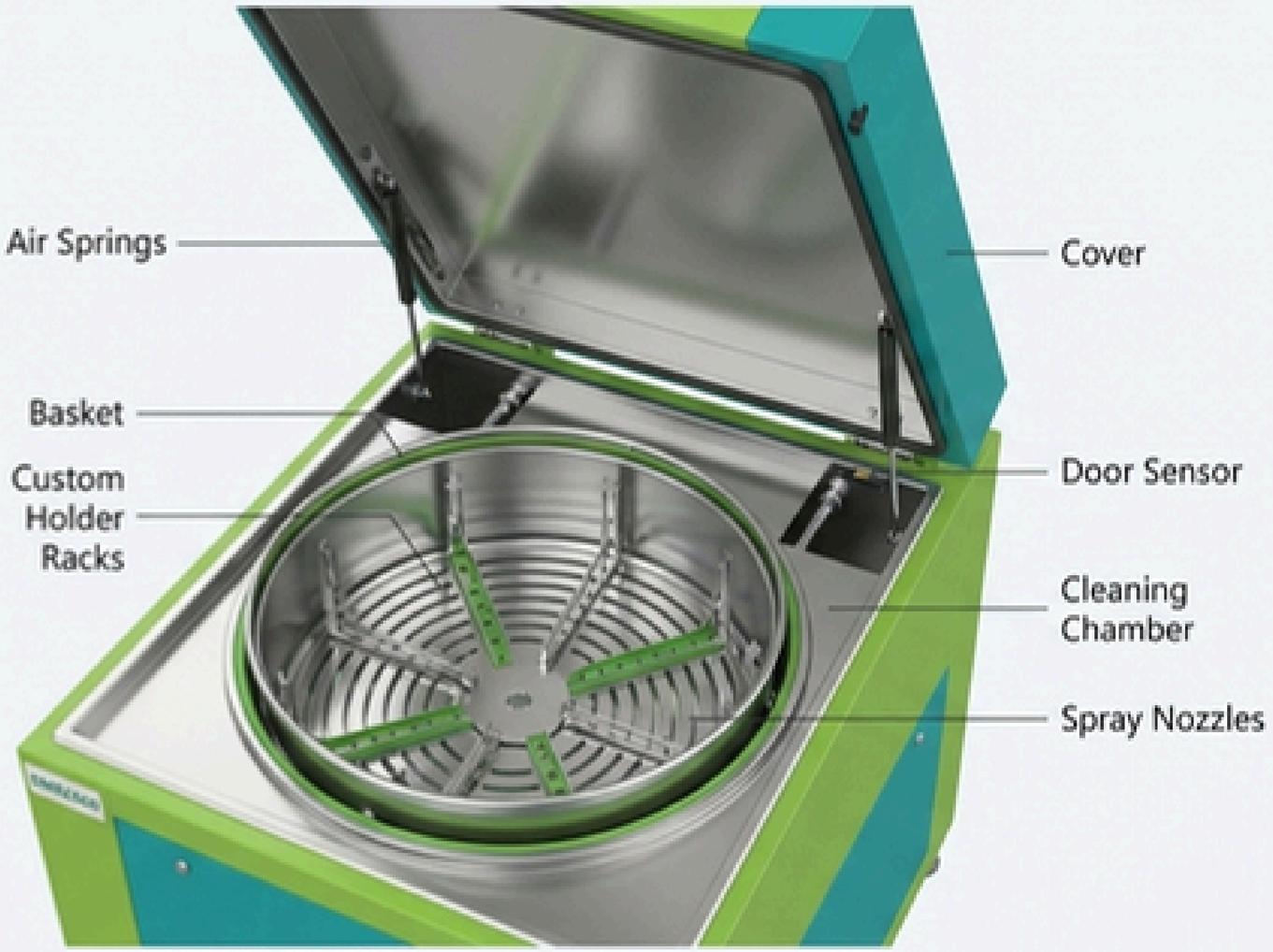
A Pallet's Journey: From Contaminated to Production-Ready

The SME5200 transforms wave solder pallets through a fully automated three-stage process. We will follow this journey step-by-step to understand exactly how the machine achieves a perfect clean, every time.



Step 1: Loading the Pallet



1. Open the Cover

The machine is equipped with air springs for safe and easy lifting. The door sensor will prevent operation if the cover is not securely closed.

2. Position the Basket

Use the "JOG" (点动) button on the control panel to rotate the basket for easy access to the racks. The button must be held down to rotate.

3. Load Pallets

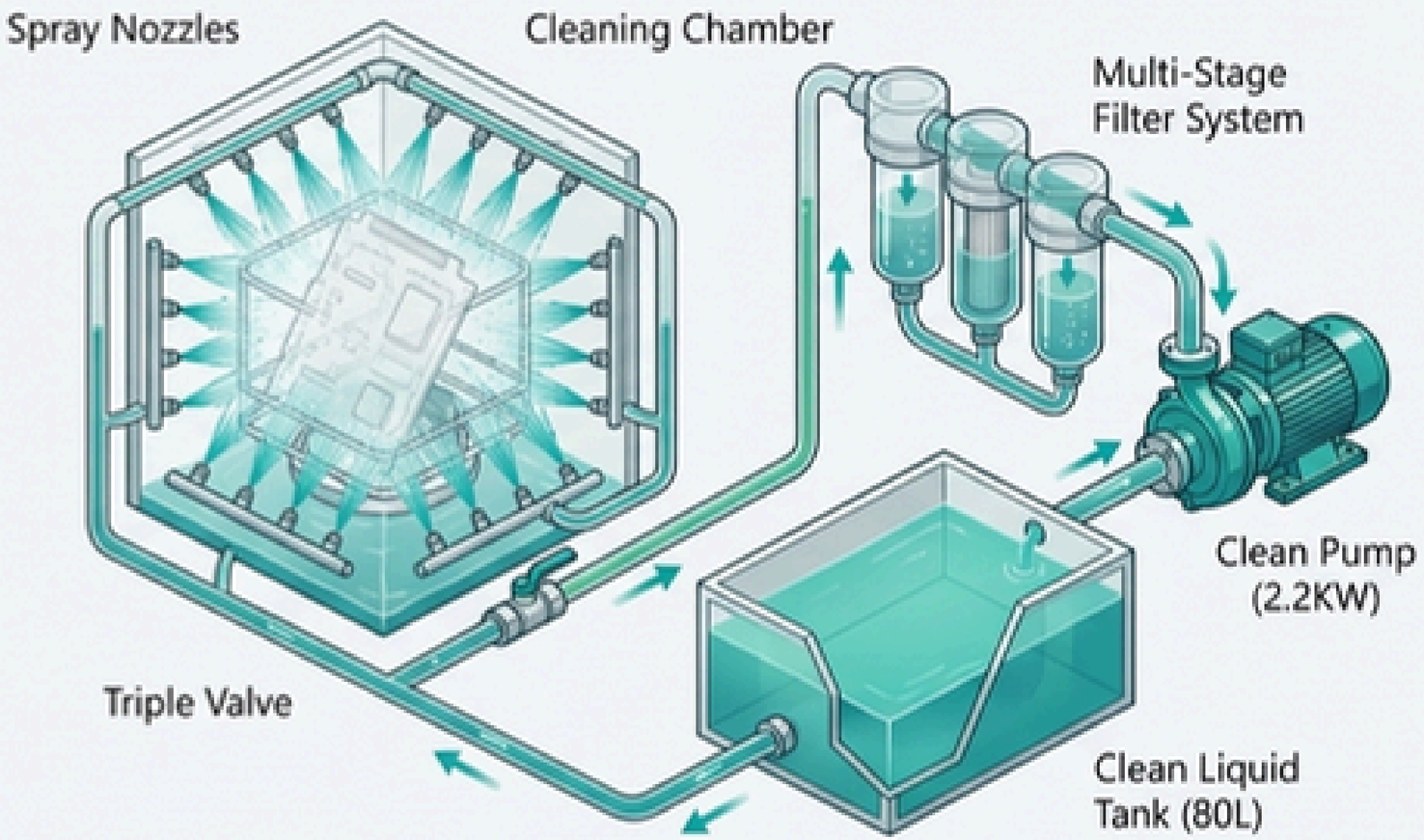
Place dirty pallets securely within the basket's custom-designed holder. Max pallet height is 450mm.

4. Close & Lock

Lower the cover and engage the mechanical latches.

WASH → RINSE → DRY

The Wash Cycle: High-Pressure Flux Removal

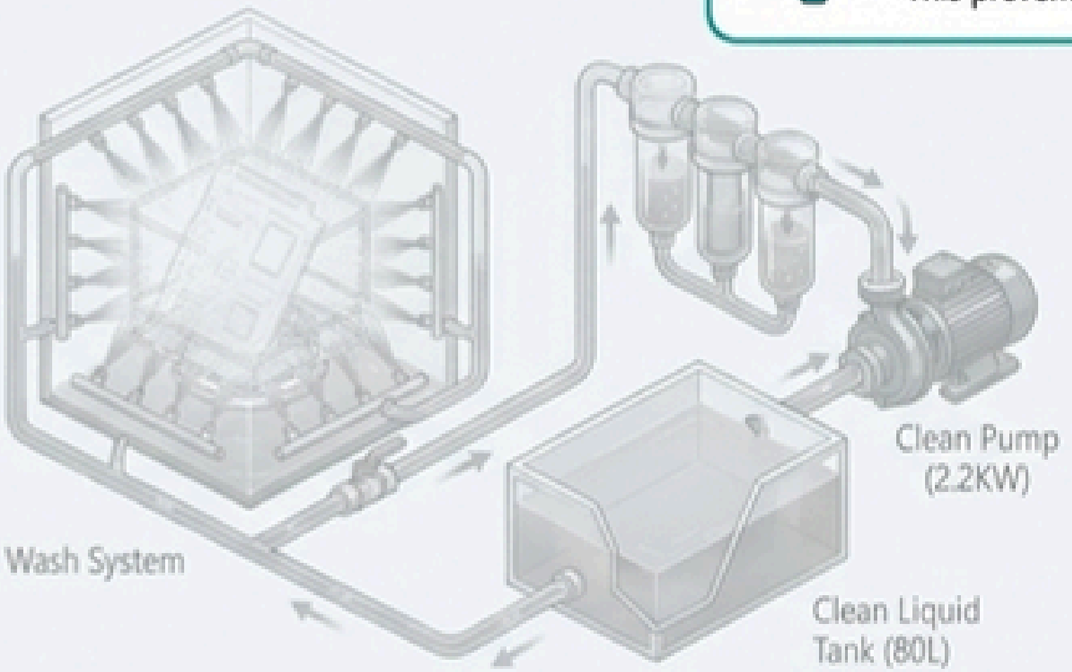


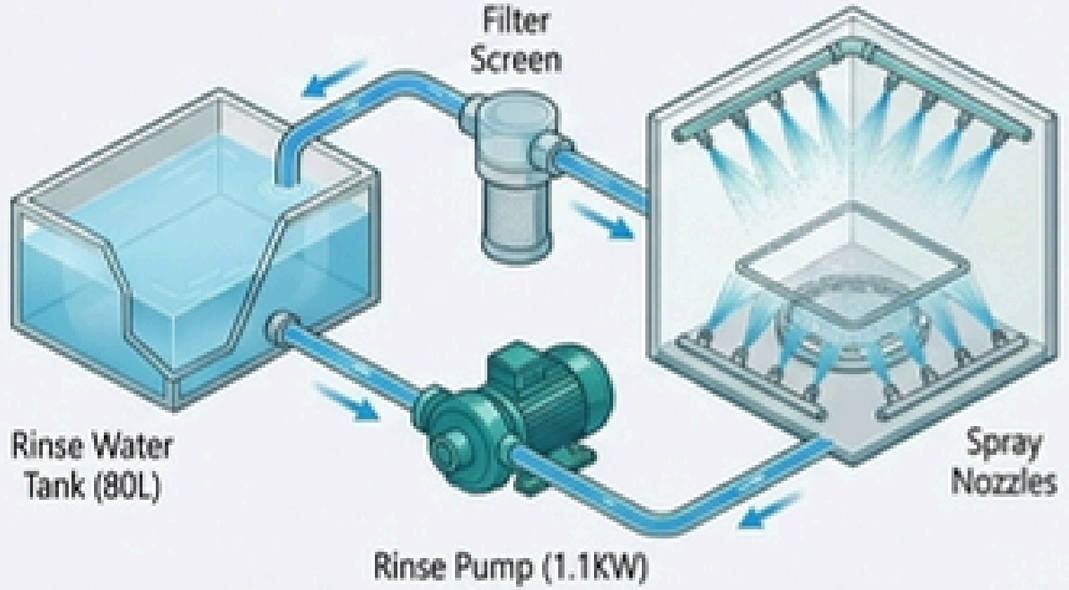
- Uses heated, water-based cleaning liquid (e.g., 40-50°C).
- High-pressure pump ensures powerful spray action.
- The rotating basket and 720° nozzle coverage ensure no blind spots.

The Rinse Cycle: Ensuring a Residue-Free Finish

Dedicated Systems for Purity

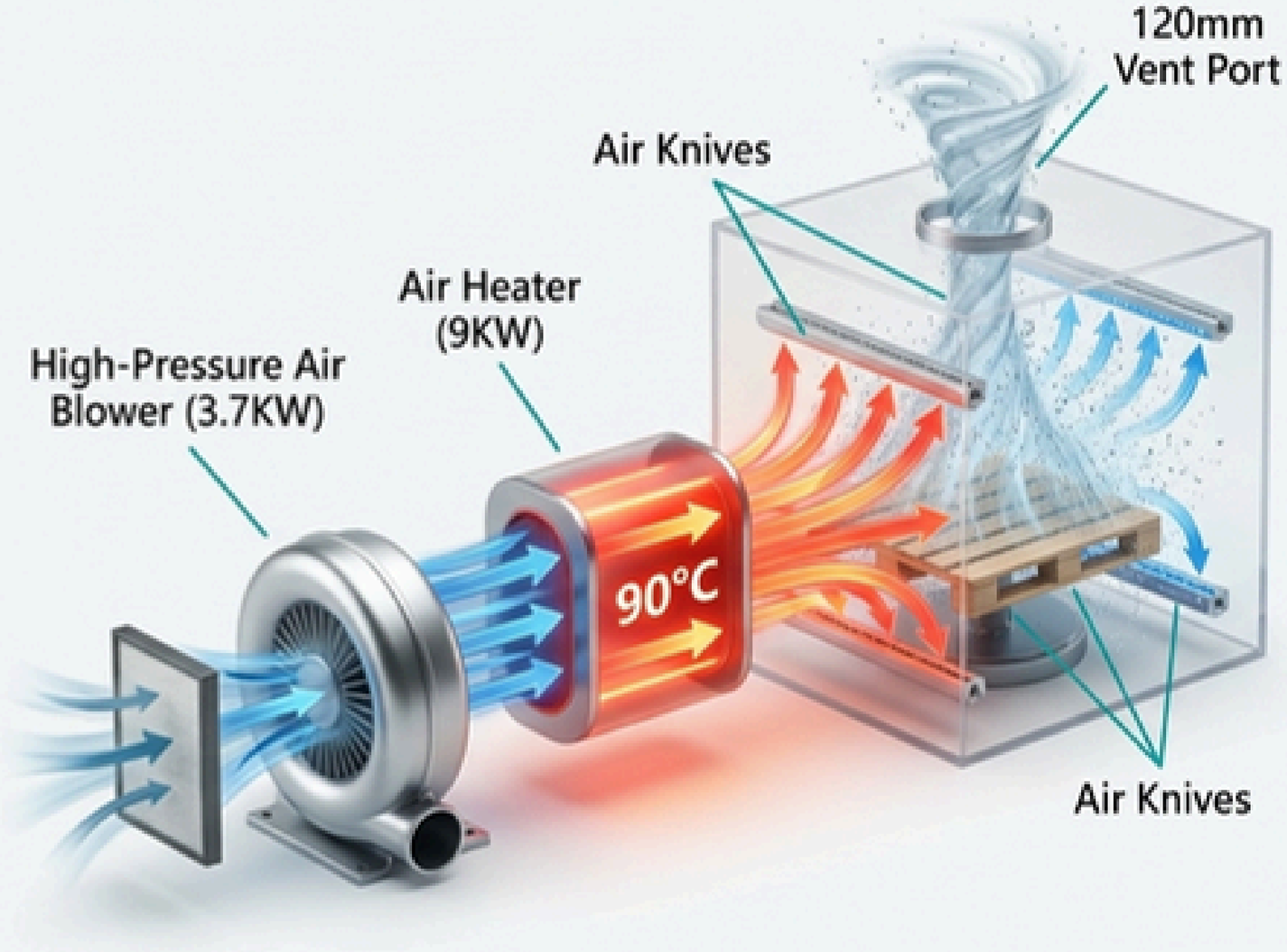
The SME5200 uses completely separate tanks, pumps, and piping for the wash and rinse cycles. This prevents cross-contamination and dramatically reduces the consumption of cleaning liquid.





After both the Wash and Rinse cycles, a compressed air blow purges the respective pipes of residual liquid, further ensuring separation.

The Dry Cycle: High-Velocity Hot Air



- Combines the mechanical force of high-volume air with heat for rapid and complete drying.
- Ensures pallets are 100% dry and ready for the production line.
- Vapors are exhausted through a dedicated 120mm vent port.

The Cockpit: Mastering the Touch Panel Interface

Parameter Matrix: Shows the target **SV (Set Value)** versus the machine's real-time **PV (Process Value).**

Status Indicators: At-a-glance confirmation of key machine states before starting a cycle.

Tank Levels: Real-time display for Clean and Rinse tanks. The machine will alarm and stop if levels are too low.

Primary Controls: Simple, direct command of the automated cycle.

Programming a Cycle: Creating and Selecting Recipes

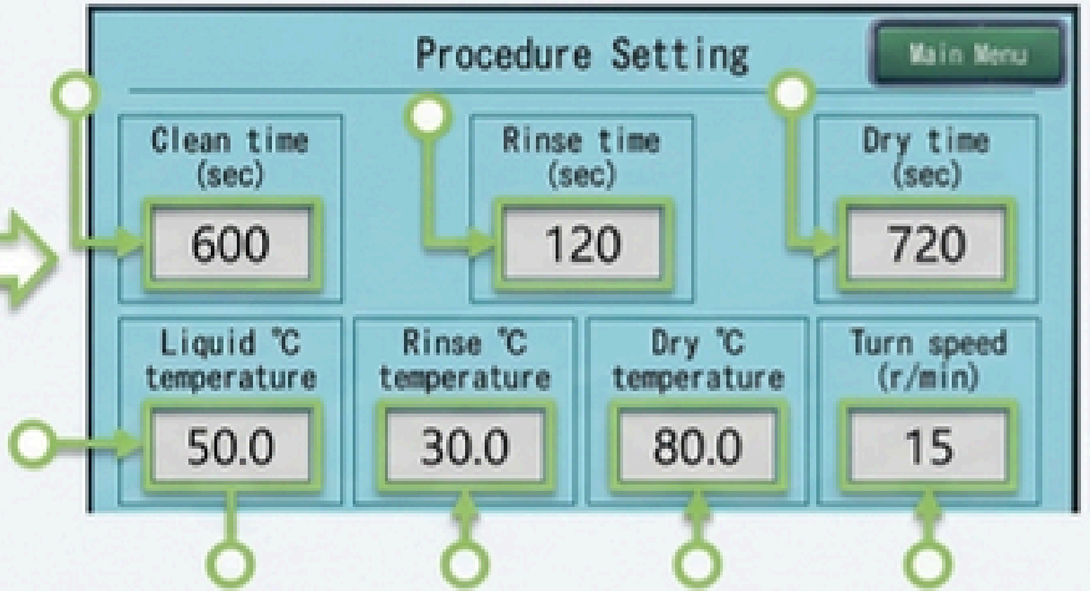
The system can store up to 10 unique cleaning procedures, allowing for optimized settings based on pallet type and contamination level.

Step 1

Enter Password:

147369

Step 2

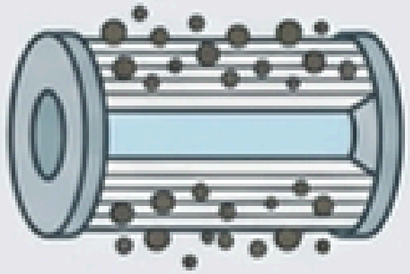


Pro Tip: Typical settings: Clean time 300-600s, Rinse 120-180s, Dry 600-900s. Adjust turn speed (15-20r/min) to optimize results.

Intelligent Alarms: Monitoring System Pressure

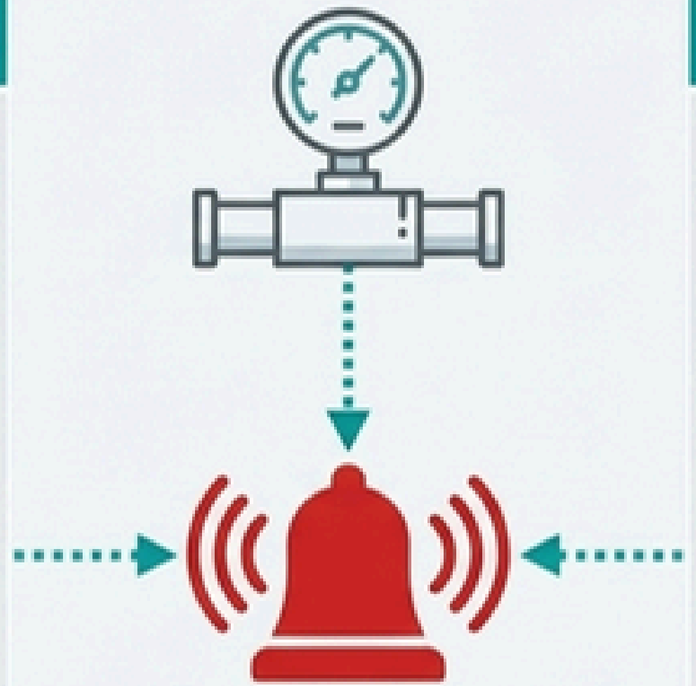
The SME5200 is equipped with electronic pressure sensors that constantly monitor the wash and rinse systems, protecting the machine and ensuring consistent performance.

Alarm: LOW PRESSURE (< 2.0 kg/cm²)

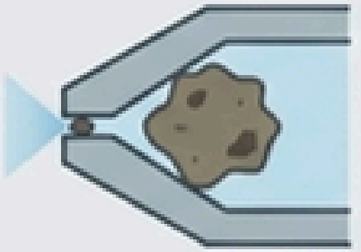


Likely Cause: Clogged filters. The pump is struggling to draw liquid.

Action: Time to replace the filter elements.



Alarm: HIGH PRESSURE (> 7.0 kg/cm²)



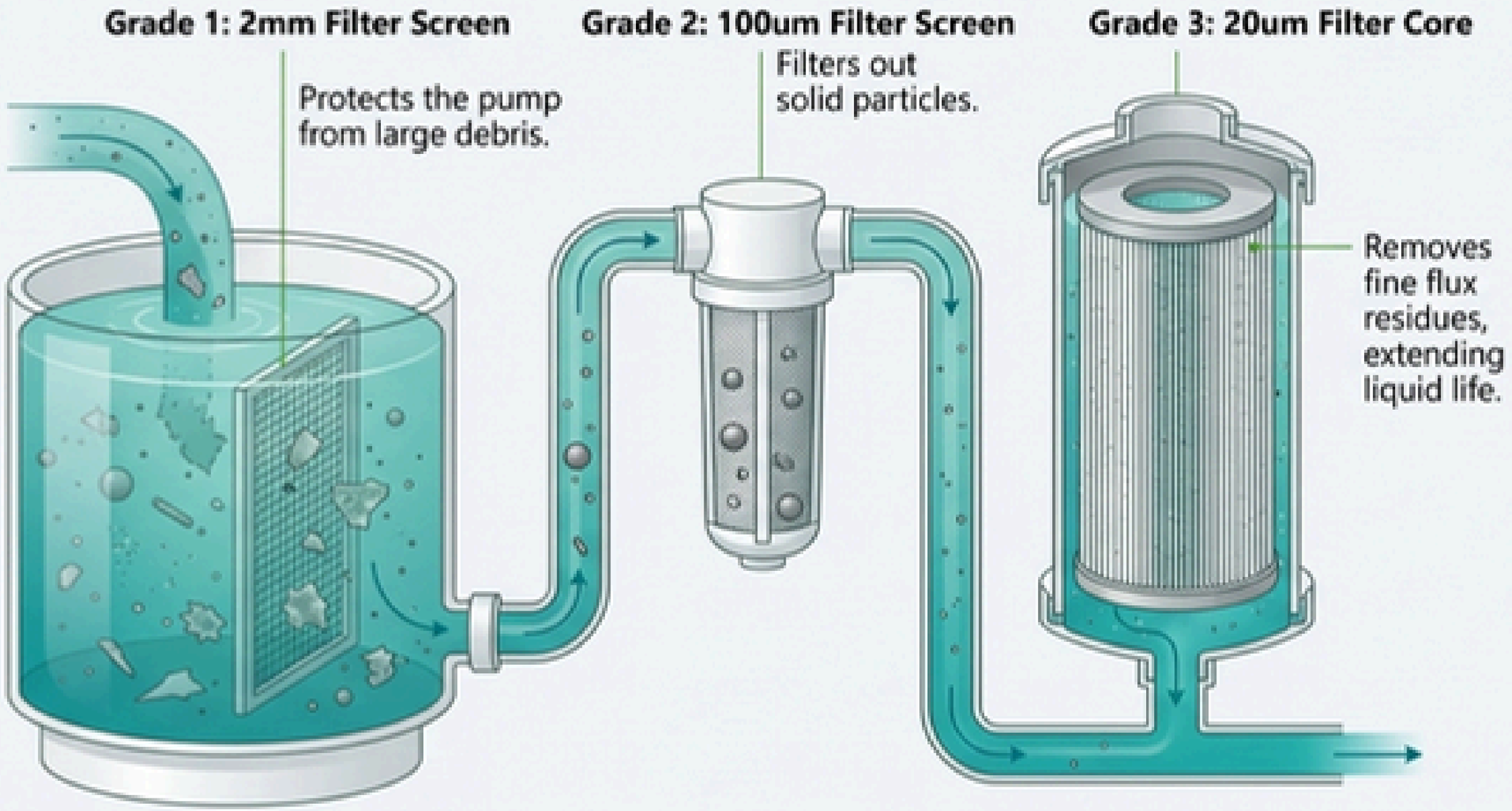
Likely Cause: Blocked spray nozzles. Pressure is building up in the pipes.

Action: Inspect and clean the spray nozzles.

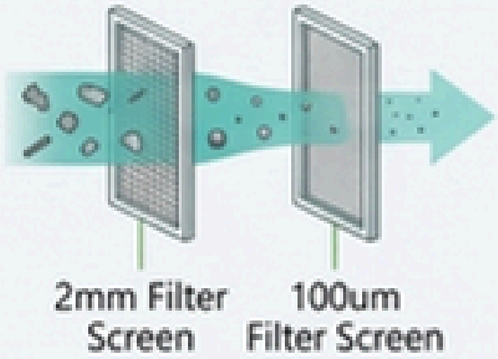
The machine tells you what it needs.

The Heart of Performance: The Multi-Stage Filtration System

Cleaning Liquid Filtration (3 Stages)



Rinse Water Filtration (2 Stages)



A separate 2-stage filter system (2mm & 100um screens) ensures the recycled rinse water remains clean and effective.

The Payoff: Visual Proof of Performance

Test results from a Schneider Electric facility demonstrate the complete removal of baked-on flux residues.

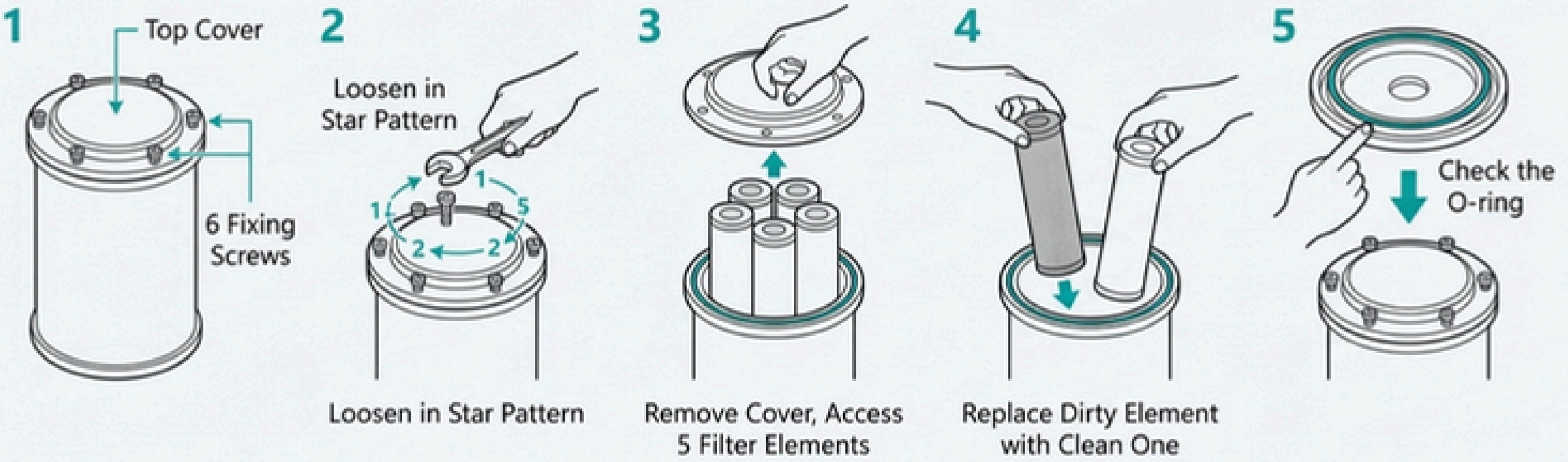
BEFORE

AFTER

Pallets restored to production-ready condition, eliminating defects caused by contamination.

Proactive Maintenance for Maximum Uptime

Replacing the Filter Elements



Loosen in Star Pattern

Remove Cover, Access 5 Filter Elements

Replace Dirty Element with Clean One

Frequency: Every 15-30 days, or when a "Low Pressure" alarm occurs.

Check the Seal: Ensure the O-ring is properly seated to prevent leaks.

Safety First: Always power down the machine before maintenance.

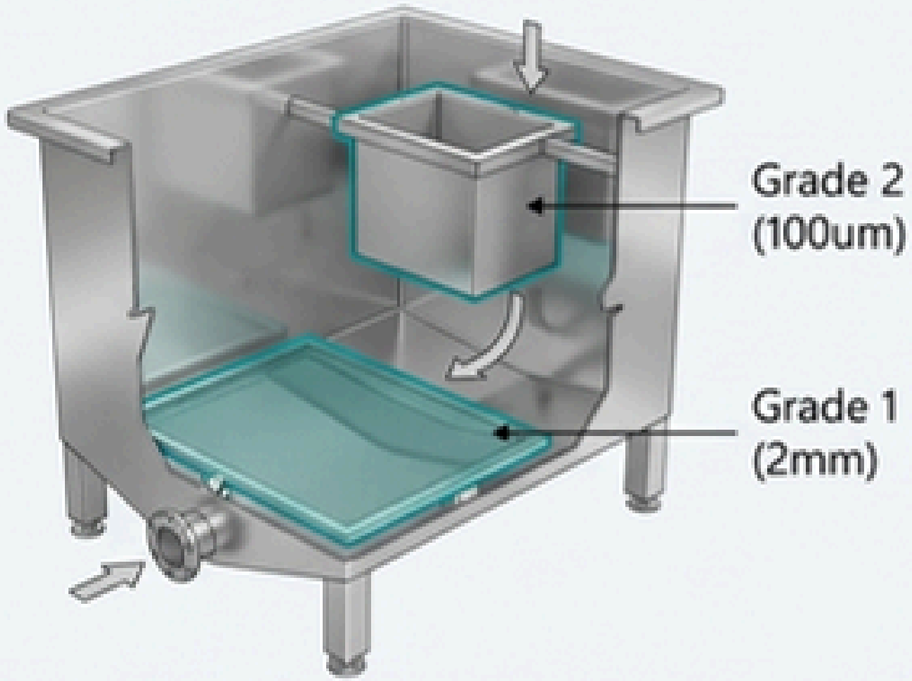
Proactive Maintenance for Maximum Uptime

Inspecting Nozzles and In-Tank Filters

Nozzle Inspection

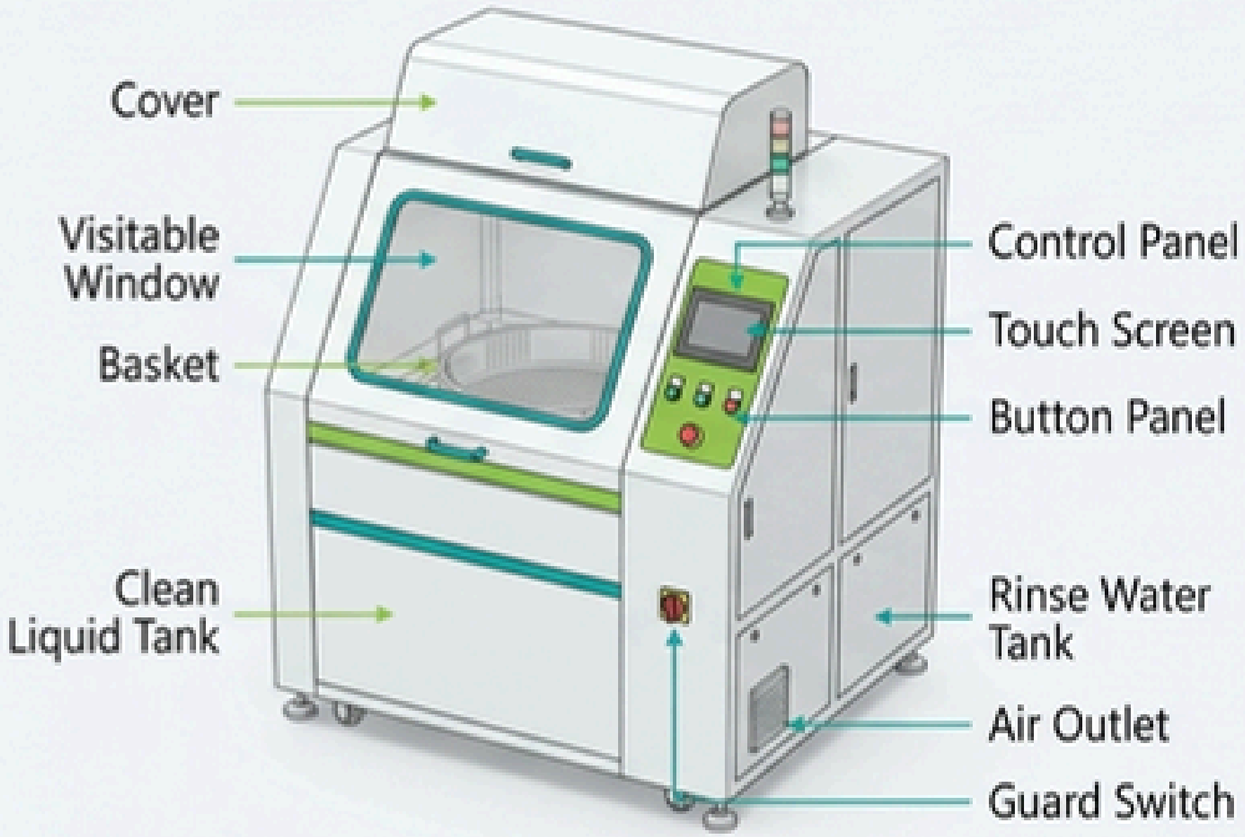
- If a ‘High Pressure’ alarm occurs, visually inspect nozzles for blockages. Disassemble and clean with compressed air as needed. Ensure all nozzles on a single rod have the same spray angle.

Tank Filter Cleaning



- Periodically (e.g., monthly), remove and clean the Grade 1 (2mm) and Grade 2 (100um) stainless steel filter screens located in both the clean and rinse tanks.

SME5200 at a Glance: Key Specifications



Cleaning Basket Size: ø1000 mm x H200mm

Max Pallet Height: 450mm

Clean Liquid Tank Capacity: 80 L

Rinse Water Tank Capacity: 80 L

Total Power: 34 kW

Air Supply: 0.5 ~ 0.7 Mpa

Machine Dimensions:
1400mm(L) × 2000mm(W) × 1500mm(H)

Construction: Full SUS304 Stainless Steel

SOUTHERN MACHINERY

Engineered for Reliability.
Backed by Global Support.

The SME5200 is designed and manufactured in Shenzhen for smart EMS factories, delivering cost-effective and high-efficiency cleaning solutions.

Resources & Contact

Website:
www.smthelp.com

Technical Videos:
YouTube - Auto Insertion

For Technical Support or Spare Parts:
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