



## CASE STUDY

# Lean Manufacturing Phononic

### PROBLEM / CHALLENGE

Electromechanical solid-state manufacturing company with disruptive technology transitioning from early-stage product development to full production, was squeezed into a small facility footprint, struggling with quality yield and throughput as demand ramped up.





### LEAN ASSESSMENT

A Lean Assessment was conducted and the resulting recommendations were to apply 5S throughout the facility, Value Stream Map (VSM) the production flow and revise the facility layout to promote more streamlined operational flow.

### IMPLEMENTATION DETAILS: 5S

- **Formed 5S Implementation Team to design and lead the 5S implementation**
  - Divided facility into manageable areas to implement 5S over a 6-month period
  - Developed 5S audit template to measure performance and sustainment
- **Provided 5S training to Team, facility management and area personnel prior to each area launch**
- **Facilitated 2 area launches per month**
  - Initial 1S, 2S, 3S per area
- **Worked with management to implement 4S and 5S best practices in parallel**
  - Ongoing 5S meetings, audits and monitoring

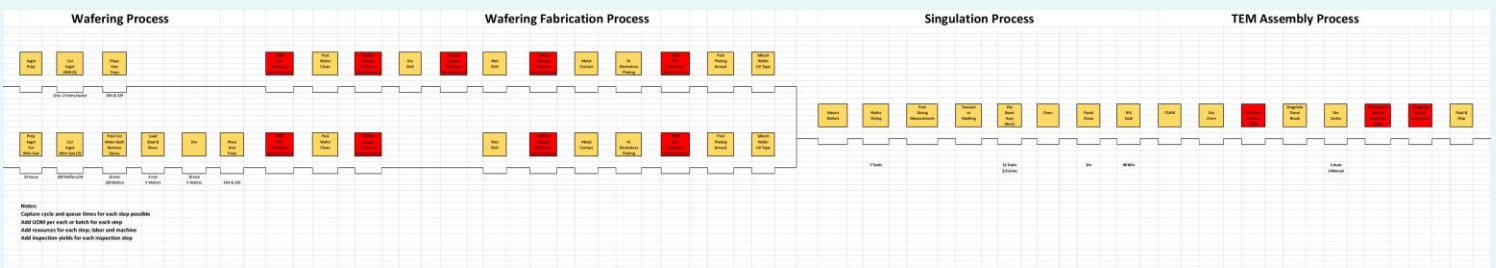
### WHAT IS 5S

	English	Japanese	Translation
1S 	<b>Sort</b>	Seiri 整理	Clearing Up
2S 	<b>Set</b>	Seiton 整頓	Organizing
3S 	<b>Shine</b>	Seiso 清掃	Cleaning
4S 	<b>Standardize</b>	Seketsu 清潔	Standardizing
5S 	<b>Sustain</b>	Shitsuke 躰	Training & Discipline

## TYPICAL 5S INITIAL IMPLEMENTATION SESSION



## VSM WITH MOST CONSTRAINED PROCESS STEPS SHOWN IN RED



## IMPLEMENTATION DETAILS: VSM & STREAMLINED FLOW

- Created Value Stream Map (VSM) of the production process
- Analyzed and identified production constraints
  - Observed operations and spaghetti diagrammed production flow around the constraints
  - Brainstormed improvement ideas and implemented best recommendations
- Repeated the process for the next several constraints
- Created dashboards to monitor throughput and quality, and compared trend results with baseline VSM data

## DIFFICULTIES ENCOUNTERED

- Multiple small retail spaces joined together made a difficult footprint for facility flow improvements
- Some areas required strict clean room conditions
- 24/7 operations with 4 shifts and high demand made it unfeasible to bring all shifts together for 5S, thus it placed a greater burden on intra-shift communications and coordination
- Ongoing capital equipment upgrades/changes were happening in parallel resulted in frequent operational changes

## RESULTS

- Improved flow within previously constrained areas
- Initial throughput increased 20%+

Reference: James Cantrell, VP of Operations  
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