Productive Plastics, Inc.
Custom Plastic Thermoforming

A Case Study

Delivering Value in Thermoforming

with LEAN MANUFACTURING principles and practices

The Details

The Project >> **Increase of efficiency on thermoforming applications with low volume runs and multiple parts to maximize customer value**

- Complex multi-part designs
- Multiple toolings changeovers
- Time critical project deadlines

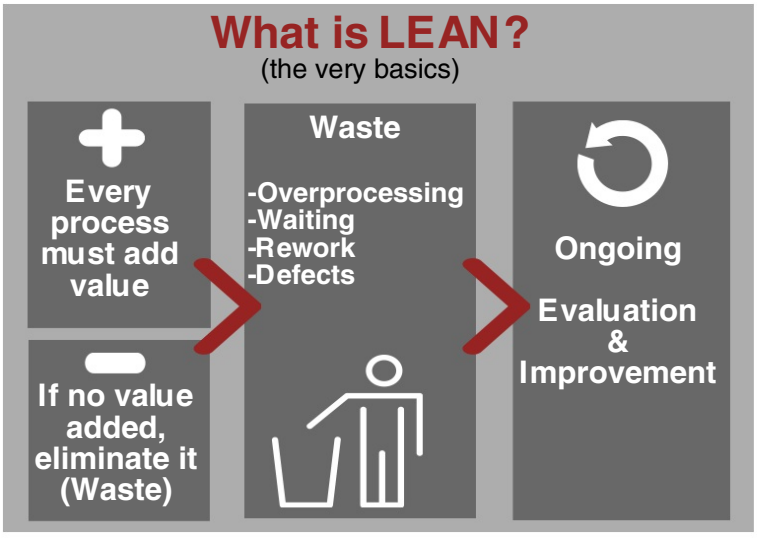
Process improvements were required on low volume/multi-part projects to provide the customer with desired value

The Goals

Maximize Customer Value

Creating the Solution

Lean manufacturing practices such as, value stream mapping, Kaizen events, and Gimba walks were utilized to evaluate the current process for waste (non-value adding activities). Once identified, these non-value adding functions were eliminated or mitigated with numerous changes and process improvements. Chief amoung these were adjustments to the cell based manufacturing structure, evolution of existing standard operating procedures, and the adjustment of work flow.



Comparing the Results

The data below is the cumulative result of lean manufacturing techniques applied to multiple projects and processes

Before LEAN

Changeover time 3.3 hrs (setup)

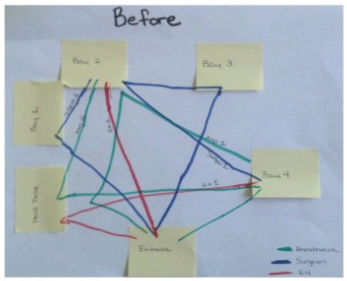
Defects caused by uneven material heating

High defect rate

Waiting caused by defects

Overprocessing caused by defects

Manufacturing cell workflow



50-55 steps per finished product

LEAN Process Improvements

Cell manufacturing process streamlined

Tool temperature management procedures update

Standardized vacuum system components and procedures

Tool setup frame and stop installed for consistent placement

Thermal camera used to troubleshoot oven "cold" spots

Baffles and insulation perimeter installed to maintain consistent temperature environement

Standard operating procedures and quality controls updated for all process functions

After LEAN

Defects 75%

Setup techs no longer required - labor reduction

Changeover time 1 hour (setup)

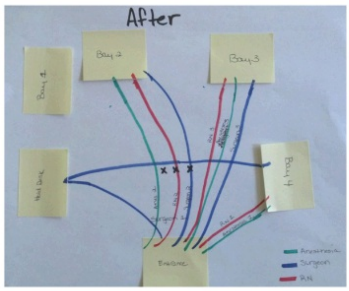
Changeovers now have a predictable result every time

Standard procedures and reporting now allow for efficient management

Work in Progress and Finished Goods inventory 30%

Manufacturing cell workflow

25-35 steps per finished product



Summary

The case study above demonstrates Productive Plastics' commitment to being a Lean Enterprise that incorporates the practices of continuous improvement and reducing waste (resources or time spend on non value added activities) in every facet of the business. Customers get maximum value through unparalleled quality, expedient lead times, and cost effective thermoforming solutions.

Effect on Customer Value

Part Quality ↑

Lead Time ↓

Cost ↓

Visit www.ProductivePlastics.com for more information on how Productive Plastics can provide leading solutions for thermoforming projects.

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