PROBLEM OVERVIEW

Question: How can our team reduce non-value added time by minimizing waste and improving quality?

Original Scope: Improve inventory and the kitting process to reduce the laser assembly setup time

Descriptive Scenario

Inventory: 26.3 min wasted due to the current inefficient kitting system

Buildroom Layout: Does not meet OSHA standards and can be improved ergonomically

Main Issue: Frequent halt in production, causing problems in keeping pace with increased demand

PROJECT SCOPE

Original Scope: Improve inventory and the kitting process to reduce the laser assembly setup time

- Calculated original scope to have insignificant impact
- Projected to only save around three minutes per laser
- Our team identified significant NVA time in defects
- 22% of sensitive parts experience defects

Proposed scope expansion to include defects and rework

New scope accepted by Access Laser in early March

Quality now serves as our primary impact measurement

SOLUTIONS

Inventory System

- Designed a Point Of Use system to replace kitting, leading to decreased touch points
- This system is projected to decrease overall process setup time by 51%
- This also improves data traceability and provides more precise tracking of defects

Buildroom Layout

Original Layout

- 7 build desks
- 424 sq ft storage
- 8 inventory racks
- Did not allow for point of use
- Did not meet OSHA standards

Improved Layout

- 7 build desks
- 504 sq ft storage
- 10 inventory racks
- Improved ergonomics
- 16% increased inventory space

Sensitive Part Storage

- Provided new storage solutions for all five sensitive knife edge parts
- 33% reduction in touchpoints and projected 26% defect reduction

IMPLEMENTATION & ANALYSIS

Process Setup Time Before and After Solution

- The slight increase in builder setup time is a result of a more thorough part issuing process that leads to more precise defect tracking, and is an essential tradeoff for improved quality

Defects Over Time

- Inventory (old): 500 defects
- Inventory (new): 450 defects
- Builder (old): 300 defects
- Builder (new): 260 defects
- Overall (old): 800 defects
- Overall (new): 760 defects

Inventory Storage Space

- Improved Layout
- Original Layout

Note: we are unable to share throughput statistics for confidentiality reasons

IMPACT

- Projected reduction in sensitive part defects
- 26%
- 113 hrs

- Projected time saved in total rework per month
- 51%

- Projected process setup time reduction per laser

A special thank you to Patricia Buchanan and Michelle Song (UW ISB), and Alank Choudhary and Markus Wilhelm (Access Laser)