Research & Development of Material Tracking System for Fabricated Parts
AMETEK_MT – Fall 2019- Senior Design II

UNC CHARLOTTE
The WILLIAM STATES LEE COLLEGE of ENGINEERING

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Project Objective

To develop and implement a material flow process to improve the material traceability of Ametek CSI's (CSI) fabrication facility.

Project Overview

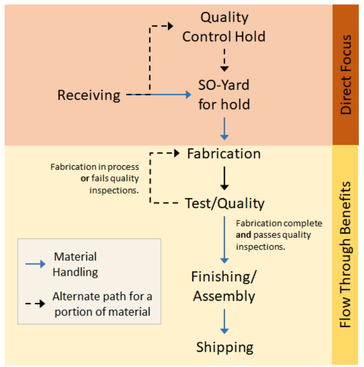
CSI's current receiving process is manually labor-intensive making it prone to documentation errors and longer processing times.

The new process includes a semi-automated data collection system to provide detailed tracking information and other process analysis opportunities.

Project Specifications

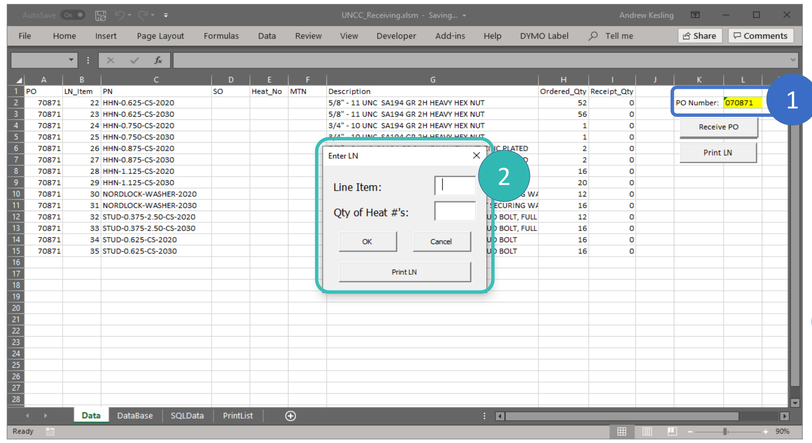
- Maintain/Reduce the amount of inventory needed.
- Increase production efficiency.
- Decrease total number of touchpoints for parts.
- Decrease the amount of lost/wasted material due to improper tracking or storage of parts.
- Decrease the amount of errors during the fabrication process.

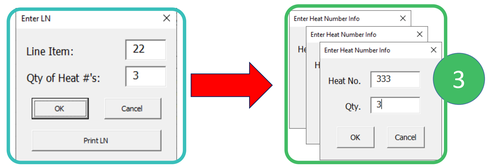
Process Flow

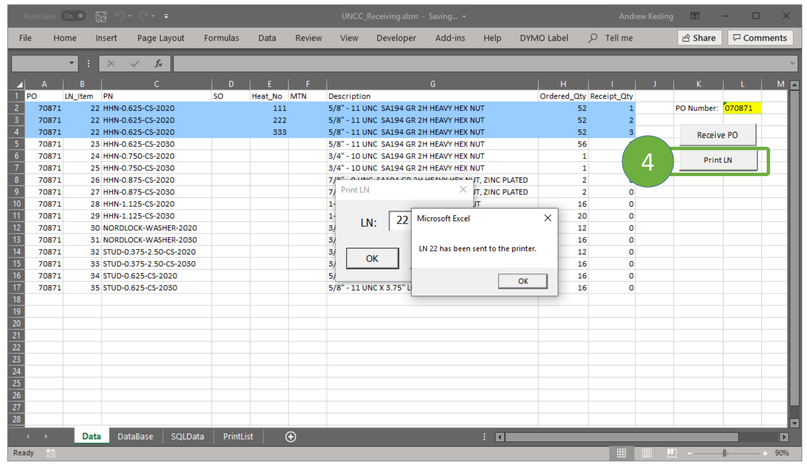


*The safeguard of materials throughout the process will be considered out of scope.

System Design







Receiving Document

Links CSI's SQL server with Dymo Software to print labels for material tracing.

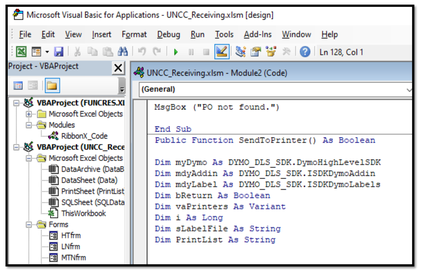
Receiving Steps

Receive PO (1)
- Enter the PO Number in the highlighted field

Enter LN (2)
- Input the Line Item number located on the PO
- Enter the number of Heat Numbers located on the PO

Enter Heat Numbers (3)
- Enter the Heat Numbers that correspond with the Line Item from the PO

Print Labels (4)
- Select print LN
- Collect Barcodes & Place on Material

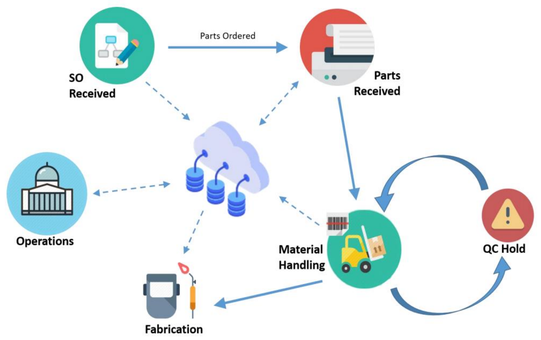


Software Utilized

- SQL Server
- DYMO SDK
- Macro-enabled Excel (VBA)
- DYMO Label Software v.8

Results

- Semi-automated receiving process
- Decreased receiving time
- Reduction of touchpoints during receiving
- Reduction of errors due to part labeling or documentation issues
- Improved traceability and documentation of material throughout CSI Operations
- Digital record of material and assigned MTN & Heat number



Impact

CSI will be able to begin integrating other technologies throughout their operations, taking them one step closer to a paperless environment.

AMETEK® THERMAL PROCESS MANAGEMENT
CSI