

## Company Information

Mursix Corporation is a family-owned manufacturing facility located in West Yorktown, Indiana. Mursix is a technology-driven manufacturing company characterized by its use of state-of-the-practice equipment and technologies in the production of value-added product solutions. Capabilities include tool design and construction, punch press and multi-slide stamping of large and small components (including the stamping of precious metals), precision machining, in-machine processing, injection and insert molding, plating, and sophisticated multi-part assembly. Mursix delivers custom-engineered product solutions and precision components to the automotive, medical, appliance, safety & security, and alternative energy customers. From its administrative, engineering, and manufacturing facilities in the United States and Asia, Mursix Corporation serves a diverse customer base in a wide variety of markets and has earned its reputation as a "one-stop solution" for its customers.

## Problem Statement & Details

Mursix has a Customer On-Time Delivery to Promise Goal of 92%. The past two quarters, we have averaged 85.67%. We have had some products not ship on time due to today's current raw material delays & fluctuations. (That is a small percentage of the -6.33% delta). The majority has been processes we should be able to control or streamline. Mursix would like students to focus on our manufacturing cycle (see below).

Specifically, How do we reduce the production scheduling delays by 50% to reduce the overall delivery cycle time and increase OTD (On Time Delivery).

### Orders Received:

- Raw Material (RM) lead time is currently 12-24 weeks depending on the RM type.
- 90% of the wait time is waiting on the raw material to arrive.
- Raw Materials in house 1 week before the manufacturing start date.
- Due to a history of obsolete inventory, we are currently only purchasing raw material for parts in the queue.
- When a customer order is entered, a manufacturing start time is created based on the due date to the customer and planned manufacturing cycle time.

### Lead Time

- Sales typically quote a standard lead time of 6-8 weeks.
- This becomes a challenge because most customers only provide two (2) weeks confirmed orders and four (4) weeks forecast.
- Larger customers will provide months of forecast.

### Scheduled Jobs

- 20 per day, 100 per week, 440 per month (each job could contain multiple internal and external operations: Stamping, cleaning, plating, assembly, sorting, etc.)
- Have some drop-in orders that are not in the forecasted numbers
- Scheduling jobs 24 weeks out due to long raw material lead times.
- All jobs trigger Raw Material Purchase

Time to determine raw material on-hand & machine capacity

- When Raw Materials are available, operations create a plan by work center to complete each job.
- For work centers with capacity constraints, operations will work with PC&L to determine the priority level of each job.

Capacity Information:

- Stamping has 57 machines (25 vertical presses and 32 multi-Slides)
- CNC has 29 machines (17 lathes, 7 mills, 2 saws, 3 Misc)
- Value Add\*-82 machines or lines (9 molding, 8 welding, 2 ovens, 14 wiring, 27 secondary Misc, 22 assembly lines)

Scheduling Percentages: % of daily jobs scheduled per category (Machines/Lines)

- Stamping 55% (spread evenly)
- CNC 15% (spread evenly)
- Value Add\* 30% Overall
  - Molding 10%
  - Welding 3%
  - Wiring 4%
  - Secondary 5%
  - Oven 1%
  - Assembly Lines 7%

\*Value Add is a department has machines/processes that are mixed.

For example: Wiring : We can make basic wiring and sell it as is. We can also make basic wiring that will be assembled into other more complex products. (We use the term value-add).

We have various equipment that performs different processes that can be considered value-add. Staking, welding, wiring, stress relief, tapping, etc.

# Manufacturing Cycle:

