

# CASE STUDY

## Mori Seiki NT Series

**Von Ruden Manufacturing, Inc.**  
Buffalo, Minnesota

Von Ruden is a leading manufacturer of mechanical power transmission and fluid power products for the machine tool, mobile construction, commercial landscape and industrial systems markets. Since 1946, Von Ruden has been designing and manufacturing solutions with 60+ years of gear and bearing expertise, 30+ years of hydraulic seal and pressure expertise and in 2001, combined these techniques into an industry leading rotary tooling line for many machine tool manufacturers.

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### CHALLENGE

This family-owned company manages over 12,000 manufactured components, with over 7,000 active at any one time. The processing for which includes operations across several work centers while maintaining critical tolerances, features and timings. Their expanding rotary tool market for machine tools created a greater need for improving efficiency, shortening lead-times, set-ups, and WIP inventories. The complex, timed features required multiple processes machined in various materials resulting in extensive set-ups and lead-time requirements.

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### ASSESSMENT

The majority of their component parts for their rotary tooling line required several turning and milling operations performed on different work centers, resulting in a lead time of over eight weeks to ship a part from start to finish. Multiple set-ups resulted in higher than acceptable scrap rates and WIP inventories. To overcome this, Von Ruden forecasted inventory at levels greater than market demand. Von Ruden and Ellison Technologies evaluated multi-process equipment capable of combining machining processes into a single operation.

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### SOLUTION

Ellison Technologies evaluated the manufacturing process and recommended a Mori Seiki NT4250SZ/1500DCG CNC Multi-Function Turning Center. The main spindle had full B-axis capability with KM Receiver, 100-station carousel and lower turret with Von Ruden live tooling; allowing heavy milling of critical part features. Additional features from Mori Seiki Machining Technology Laboratory (MTL) included dual spindle Adaptive Balancing, Hydrogage and Grinding Technologies to provide further inspection and process capabilities.

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### END RESULT

Parts are processed with a single machining operation. Operations were reduced from four to one and overall set-up time by 95%. Reduced material handling transactions have eliminated scrap concerns and the combining of machining operations have eliminated costly WIP inventories. Forecasted lead-times have been reduced from eight weeks to less than three weeks.



#### Before:

- 525 minutes in set-up
- Four operations, seven days in WIP
- High scrap potential through set-up & handling
- Eight weeks planning lead-time

#### After:

- 30 minute set-up - 95% reduction
- One operation, one day in WIP - 85% reduction
- Scrap all but eliminated - 95% reduction
- Less than three weeks - 65% reduction