Company
Mennie's Machine Company, Inc.

Situation/Challenge
- Human limitations prevented Mennie's Machine from achieving throughput, consistency requirements and desired production goals.
- The company had safety and ergonomic issues for employees due to repetitive activities, causing frequent employee absenteeism.

Solution
- **Automation**
  - The fully automated system incorporates nine material handling robot models and each robot is equipped with HandlingTool and Collision Guard software, custom grippers and a control interface to the equipment and conveyor.
  - The HandlingTool software allows operators to easily create and run programs, while Collision Guard allows robots to sense a potential collision.
- **Process**
  - The entire system consists of 10 consecutive processes that are linked via a conveyor.
  - A FANUC material handling robot picks up raw parts and places them into a CNC lathe for machining.
  - Each full part pallet makes its way to a FANUC tabletop robot that loads and unloads parts into and out of a broach machine.
  - A second FANUC handling robot loads and unloads parts onto a broach machine for further processing.
  - A third FANUC handling robot moves parts into and out of a boring machine.
  - A fourth handling robot sequentially loads and unloads parts into and out of four machines.
  - A fifth handling robot loads and unloads parts to and from a drilling operation, then conveyed to another mini robot for a spline roll machining process.
  - A sixth handling robot loads parts into a heat-treat operation and a seventh FANUC handling robot loads and unloads parts for grinding.

Result
- Reduced scrap wastes and part defects.
- Accurate and consistent part loading.
- Increased productivity – typically 120 pieces per hour.
- Improved control of entire manufacturing system.
- Lower cost per piece.
- Flexibility to meet future production demands.