

Amtech Tool and Machine, Boardman

Intervention Key Words: CNC Milling Machines, Automation

Industry: Manufacturing

Risk Factor(s): Repetitive motion, Awkward Posture- Back deviations, Shoulder deviations, Wrist deviations, High Hand Force- Pinching/Gripping

Situation:

Amtech Tool and Machine specializes in the building of metal stamping dies and performs various other custom machining work. They have five manual milling devices that are heavily used in operations to machine details to be incorporated into dies, to perform production milling and drilling and to fabricate parts per customer specifications. These machines require a high force, awkward postures and repetition in order to operate them. This poses a high risk for Cumulative Trauma Disorders (CTDs) upon the workers. Other safety concerns include piles of metal chips that accumulate on the floor along with coolant spills, which create slip and trip hazards.



Awkward postures and high forces can lead to CTDs

Solution:

Amtech Tool and Machine purchased a CNC milling machine to address their CTD issues. The new machine is completely automated, effectively reducing the workflow through the manual machines. It entirely eliminates the need to manually adjust the milling device and also the frequent tool changes, which is now done mechanically. Total cost for implementing

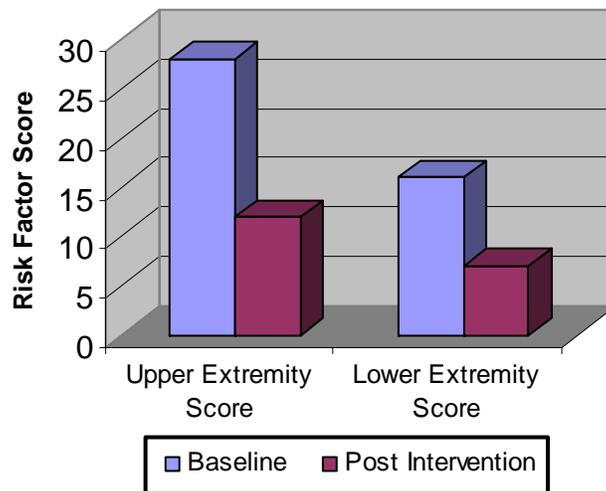


the new machine was \$98,893. Amtech Tool received \$40,000 in assistance from SafetyGrant\$.



New CNC Milling Machine in operation

Results:



- Upper and Lower CTD Risk Factor Scores decreased a combined 57% following the intervention.
- CTD, Lost Days and Restricted Days rates (per 200,000 hours worked) were at 0 for the year prior to the intervention and remained at 0 for 2 years following.
- Employee Turnover rate decreased from 332 to 190 over the same time period, a 43% improvement.
- Productivity, measured in the time needed to perform a specific operation, decreased from 2.985 hours to 2.0555 hours, a time savings of 0.9295 hours following the intervention.
- Quality, measured in the percentage of scrapped or reworked parts, decreased from 6% prior to the intervention to 3.5% 24 months later.