Case Study 7021

Intervention key words
Automatic abrasive belt; surface finishing machine; powered grinder

Industry
Manufacturing

Risk factors
Manual handling – lifting/carrying; awkward posture – wrist deviation; awkward posture – back deviations; vibration – hand/arm

Situation

This metal fabricator has experienced numerous over-exertion injuries from using a hand held right die grinder to remove burrs and sharp edges as shown in the photo below. Using the power grinder requires:

- Back bending work postures to reach the work station level;
- Forceful exertions to operate;
- Repetitiveness of awkward hand /wrist postures to reach all edges;
- Operator's hand to be placed against cold air that leaks from the air line, which could lead to CTD.

Solution

This employer installed an automatic surface finishing machine system shown in the photo below. This machine costs $134,440. The machine eliminates the use of all held grinders. The steps below describe the process.

1. Employee loads the part at one end.
2. He or she activates the machine cycle by pressing a button.
3. Then, the employee removes the finished parts from the back end of the machine.

Results

- The incident rate (standardized for each 200,000 hours worked) decreased from 27.6 the two years prior to the intervention to zero the two years following, a 100-percent improvement.
- The annual budget declined to $4,740 resulting in an annual material savings of $9,960.
- The average time required to finish the parts dropped by approximately 66 percent.
- The overtime required previously to finish the parts is now zero. This is a cost savings of $10,000 per a year.
- Rejected parts have gone from 1.2 percent to zero percent. This increases the quality of the work done.