Phoenix Products Inc., Avon Lake

Intervention Key Words: Automated Leak Testing System, Conveyors
Industry: Manufacturing
Risk Factor(s): Repetitive motion, High Hand Force- Pinching/Gripping, Awkward Posture-Wrist deviations

Situation:

Phoenix Products Inc. assembles and distributes a variety of plumbing fixtures. Faucets and shower heads constitute a majority of their products, which require tedious and repetitive assembly and testing. It is the testing process that has Phoenix Products concerned about Cumulative Trauma Disorders (CTDs). This task requires operators to twist faucet handles up to 2,000 times per day, proving to be a highly repetitive procedure equating to a high CTD risk. In addition, extreme reaching for parts and rapid bending/twisting of the wrists accentuate the risks.

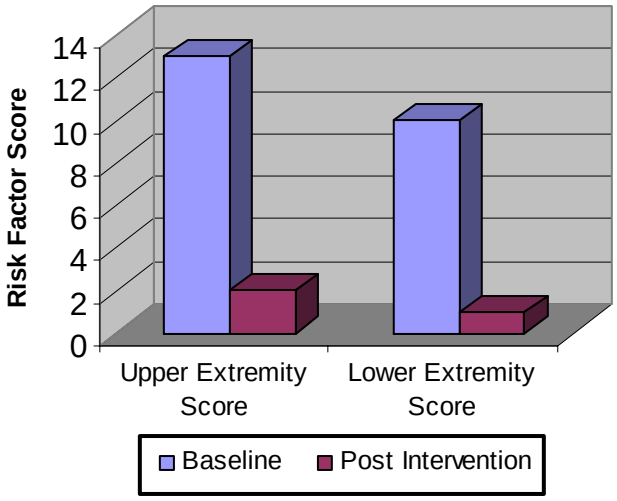
Solution:

Phoenix Products Inc. deduced that the best solution to their problem would be to eliminate the need to manually test faucets. They consulted a number of companies and purchased an automatic Leak-Test machine. The new machine provides extremely accurate data while requiring no user intervention except to oversee the machine operation. It uses a series of photo-eye sensors to position the faucet and then runs through a series of pressure tests. Parts are transported by conveyor to the next station so there is no worker contact with the fixtures. Total cost for the project was $94,935. Phoenix Products received $40,000 from Safety Grant$ to help offset the expenses.

Auto-Tester User Interface

Worker oversees pressure testing

Results:



- Upper and Lower Extremity Risk Factor scores decreased 85% and 90% respectively.

- CTD rate, Lost Days rate and Restricted Days rate (per 200,000 hours worked) decreased 100% in 24 months following the intervention when compared to the year prior.

- Productivity (Avg. Pieces per Hr) was 33.5 for the year prior to the intervention. By the end of a 2 year post intervention recording period, production was at 48.32. This equates to a 31% increase.

- An increase in Employee Turnover rate was observed but may not be directly attributed to the intervention.