

Maumee Valley Bottlers, Napoleon

Intervention Key Words: De-capper, Conveyor, Beverage, Bottling

Industry Key Words: Distribution

Risk Factor(s): Repetitive motion, High Hand Force-Pinching/Gripping

Situation:

Maumee Valley Bottlers in Napoleon refills large 5 gallon water bottles for the Culligan Company. The process involves de-capping returned bottles and placing them on a conveyor where they are automatically cleaned and filled. Once filled, a worker must take the containers and place them on appropriate racks for shipping. One risk for Cumulative Trauma Disorders lies in the de-capping process. This task involves the worker using a high force pinch-grip in order to remove the caps from the bottles, a technique known to lead to wrist, arm and shoulder CTDs. In addition, the procedure can occur over 600 times per hour, adding repetition to the list of risk factors.



Workers removing bottle caps

Solution:

To reduce the risk of CTDs while de-capping, Maumee purchased an automated de-capper. This machine has the ability to remove the caps from most bottles (one type of cap still needs to be manually removed) while they travel down the filling conveyor. The workers only task is to place the empty bottles on the conveyor. The total cost of purchasing the de-capper and a necessary air compressor was \$18,946. This was offset by a \$15,156 award from Safety Grant\$.



Bottle de-capper in use

Results:

- Maumee Valley noticed an 85% reduction in the incidence rate of Restricted Days standardized per 200,000 hours worked in 24 months following the changes.
- Upper Extremity Risk Factor scores fell from 25 to 22, a 12% improvement.
- There was an increase in CTD rate, Lost Days rate, Turnover rate and Lower Extremity Risk Factor scores which may or may not be directly attributed to the intervention placement.