

Bucyrus Blades, Bucyrus

Intervention key words: Power roller table, off stacker, hold-back cylinder, indexer, conveyor

Industry: Manufacturing

Risk factor(s): Manual handling – pushing/pulling; manual handling – lifting/carrying; awkward posture – back deviations; awkward posture – shoulder deviations

Situation: Bucyrus Blades had numerous overexertion injuries from the blade-hole punching process. The photo shows the process to be:

1. One employee pulls the blade off the cross-over table and places the blade on the non-powered roller table.
2. The blade is manually pushed into the machine and to the stop held by the second employee.
3. Both employees then push the blade back against the stop and engage the machine.
4. As the blade is punched and stripped, it is manually pushed and pulled through the machine to the end of the roller table.
5. The blade is then lifted off the roller table and stacked on horses.



Solution: Bucyrus Blades installed an automatic indexing system. The company changed the process as shown in the photo. The system cost \$15,000. Three machines were changed for a total cost of \$44,500. These systems dramatically reduced the pushing and lifting needed to process the blades. Here is the process:

1. One employee pulls the blade off the cross-over table and places it on a powered roller table.
2. The powered roller table pulls the blade into the machine and against the automatic indexer. The cylinder pushes the blade back against the backstop and the punch then automatically engages.
3. The cylinder releases its pressure. The power-roller table activates and indexes to the next position.
4. The stacker then automatically picks and stacks the blade.

Results:

- The incident rate is standardized for each 200,000 hours worked by the company's employees. For the two years prior to the intervention, Bucyrus Blades' incident rate decreased from 4.3 to zero, according to a BWC study. This is a 100-percent improvement for the company.
- The National Safety Council reports the average cost for a workers' compensation claim is \$19,382. Bucyrus Blades' return on investment was five months.
- One person may now process approximately 400 blades for each shift. In the past, two people processed 300 blades a shift.
- The blades' quality dramatically improved with no blades being punched incorrectly.