determined that this was a “high risk” job, since it required frequent lifting to floor level, stressful shoulder and back motions to invert the pails, and forceful pulling while moving the empty pallets into place. Two back injuries typically occurred on this line each year, costing an average of $18,000 per claim.

The lean team determined that it could redesign the pail palletizing process to allow the palletizing to be done by one employee rather than two. Powered roller conveyors were installed at the end of each line, and the two conveyors converge at a palletizing station. As the pails travel down the conveyor, flipping stations on each line invert the pails onto their covers as required.

Pallets are placed onto a self-leveling lift table in the new palletizing area using a lift truck. A vacuum hoist is used to lift the pails onto the pallets, eliminating the manual lifting required by the material handler.

The changes are diagrammed in Figure 1. The financial impact for this lean redesign is calculated in Figure 2. The total cost of the equipment, installation and training was $10,150 with a total annual savings in workers’ comp and labor costs of $66,000. The return on investment was calculated at 5.5 with a payback period of 36 days. The ergonomics risk assessment rating was reduced from 18, which is in the high-risk range, to seven, which falls in the lower risk range. This project was highly successful in improving productivity while significantly reducing the risk of back injuries.

Winning on multiple levels

Lean manufacturing allows employers to improve operating efficiencies and compete in the global marketplace. When implemented effectively, the lean process creates a culture of employee involvement and empowerment and establishes a positive working environment in which workplace changes are expected and accepted.

Sharing the mission and goals of the lean process and recognizing employees who make meaningful contributions to achieving cost savings will make the process successful and effective.

Ergonomics provides additional tools for lean teams to reduce waste and create value within your organization. Ergonomics is not another step; it is part of the process.

Without ergonomics, lean processes can lead to costly workers’ compensation claims in the months and years after implementation. With ergonomics, lean processes can reduce costs and the payouts from workers’ compensation claims. Can your company afford to ignore ergonomics as you create a lean organization?

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