

Best Practices Case Study

Metal Services: Replacing Forklifts with Carts

Company

Metal Services is a job shop located in Blooming Prairie that creates custom products from a range of cutting, bending, rolling, punching and welding processes. Their business relies on versatility, with their ability to fabricate a wide variety of components such as angles, carts, heavy plates, racks, and tubing.



Motivation

Many of Metal Services' continuous improvement goals revolve around optimizing the production process. It is very important for them to maximize efficiency by reducing time, energy, and labor spent in the transportation of parts through their facility. Additionally, worker safety is another major consideration for the company, with a focus on reducing injury risk from lifting heavy objects.

Opportunity

The company wanted to find a way to improve the workflow to decrease process time. Initially, parts were staged on pallets throughout the middle of the plant and in random locations and parts were moved by forklift. Additionally, the welding department was grouped in a tight area,

preventing easy flow of parts to and from many of the weld stations. There was also an opportunity to improve efficiency and worker safety by making changes to how they transported parts through the facility. The company began to formulate possible solutions towards these goals and, in 2019, they rearranged the facility layout to reduce the number of steps needed to complete certain jobs.

Approach

Metal Services used lean strategies such as mapping out the facility floor to visualize their workflow. This allowed them to determine an alternate layout that would optimize parts movement within the constraints of their space. The company also took advantage of their design and fabrication capabilities by fashioning their own carts, which they swapped in for the pallets. This eliminated the need for forklifts that were used to lift and move the pallets throughout the shop. The new carts feature an adjustable tray height that promotes safety by improving the ergonomics of moving large parts and avoiding potential injuries due to heavy lifting.



Results

For the facility layout project, Metal Services restructured the order of their tooling areas to eliminate the need for inefficient back-and-forth routes for jobs through the process. They also designated a central space for staging and kitting jobs that would need to be welded. The welding area itself was reorganized into one row of stations so that each could be easily reached without needing to move or circumnavigate other stations. These changes significantly improved the accessibility of the floor space and production workflow, which in turn reduced the time needed to complete jobs.

In total, 45 carts were created, which reduced forklift usage by 90%. Upon completion of this project, the company saw an improvement in worker safety and productivity, in addition to boosted production speeds and efficiency gains. The overall benefits from these implementations helped to save Metal Services thousands of dollars annually.