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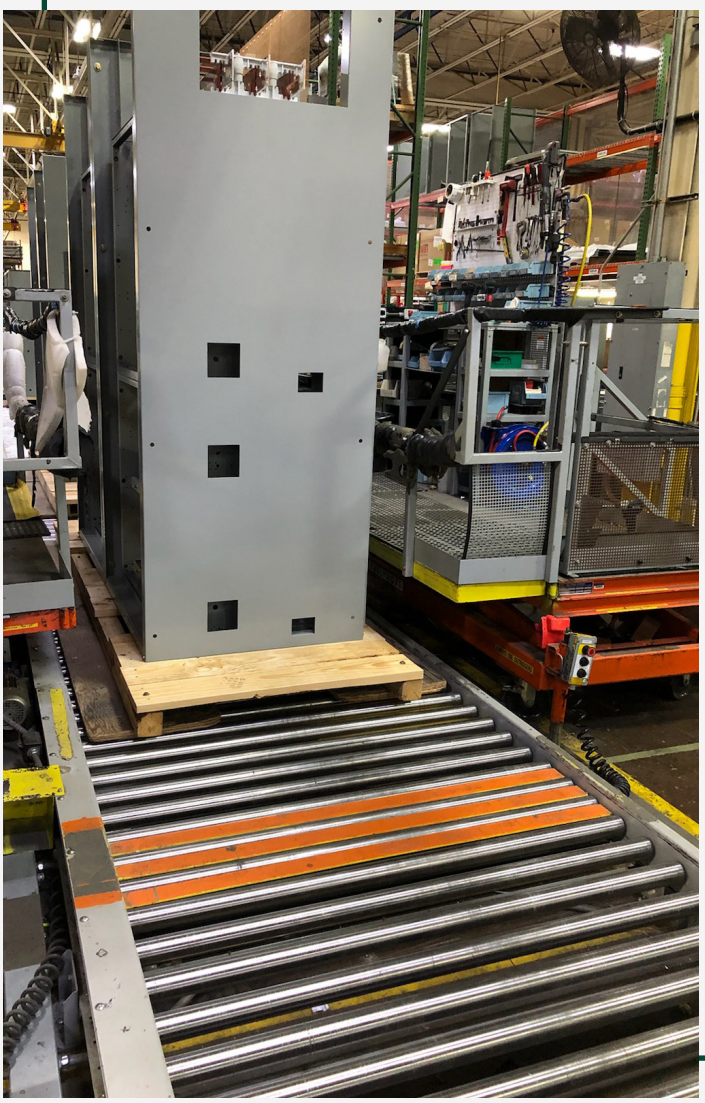
CASE STUDY

Material Handling Solutions Improve Productivity and Safety in Large Assembly Operation

Eaton Corporation is a company with a 100+ year history of providing safe, efficient, and reliable power management solutions to customers around the world. Eaton's electrical division, located in Arden, NC, manufactures power distribution equipment, including low-voltage assemblies, medium-voltage controls and drives, and automatic transfer switches. At the Arden facility, products are engineered to order using standard componentry building blocks to create assemblies that are customized to the unique specifications of each customer.

Ben Kelpin is a Manufacturing Engineer for Eaton's medium-voltage motor control assembly line. Medium-voltage control (MVC) equipment starts and stops electrical loads and is used to drive productivity, process performance and energy savings. MVC equipment includes a variety of starters and adjustable frequency drives that range from 2,300 to 13,800 volts. The motor loads can be as low as 50 horsepower, with the upper limit of approximately 8,000 horsepower, depending on voltage. This equipment typically controls motors used in pumping, fans, and chiller applications.

"Our customers include municipalities who purchase our equipment for wastewater treatment facilities, oil and gas pumping companies, and chiller manufacturers who design large-scale HVAC systems that cool entire factories," Kelpin explains.



Old Assembly using Personnel Lifts on Casters

The Challenge

The motor controls that travel down Eaton's assembly lines are vertical structures, with the most common measuring 36" wide x 30" deep x 92" high. Access to the structures is key. "Up until January of 2023," Kelpin reports, "we used personnel lifts that had casters so they could be moved, but the lifts were heavy, requiring four or five people to unlock the casters and move the lifts to the areas where the work needed to be done. And they didn't allow access to the left or right sides of the structures on the conveyors, so workers either stretched awkwardly or used ladders to reach those sections." Those lifts, which were purchased in 2001, were also showing their age.

The Solution

"We knew we needed to replace that old set up," says Kelpin, "so we brought in Tim Owens, our representative from Regional Material Handling Inc., and he invited Pete Horne, National Sales Manager at Southworth Products, to take a look at the situation. They recommended using two stationery lifts produced by Southworth, that would be positioned on either side of the conveyor." Each heavy-duty lift was fitted with a powered extendable platform and a bridge between the two lifts which allows workers to get closer to the MVC assembly while also providing safer access to areas where they would have previously needed a ladder to do so.

New Assembly using Southworth Lifts

The Results

The new lifts were installed in January 2023. The advantages of the new solution have been significant:

- Productivity improvements- no need to lock/unlock and move the older, heavy lifts.
- Easier access to work areas on and around the conveyor.
- Safer and more ergonomic set up.
    - o No need for reaching or ladders.
    - o Bellows skirting (an added option) blocks exposure to undersides of lifts.
- If staffing is an issue, this new system makes it possible for one person to do the job more efficiently; transversing from one side of the assembly to another using the bridge platform without having to go up and down, and back and forth between lifts.

"Based upon time studies, we had forecasted an annual efficiency savings of about $40,000," Kelpin reports. "In the eleven months since the lifts were installed, we've realized $44,367 in savings."

That's an 11% higher year-to-date savings than projected.

"Anytime we can get our workers closer to the assembly in a way that's safer and easier, that's the kind of solution we want."

Ben Kelpin, Manufacturing Engineer at Eaton Corporation

For more information visit:

Southworth: SouthworthProducts.com

Eaton Corporation: Eaton.com/us/en-us