Yale®
LIFT TRUCK TECHNOLOGIES

CASE STUDY

RETAIL & E-COMMERCE | WAREHOUSE EXPERTISE

Hamilton Beach

Space optimization and electric lift truck fleet help generate efficiency, safety and sustainability gains for new distribution center

Customer

With products on kitchen counters across the nation, Hamilton Beach designs, markets and distributes a multitude of small electric household appliances like slow cookers, coffee makers and food processors. The company also caters to bars, restaurants and hotels with a commercial lineup of blenders, drink mixers, coffee makers and other solutions.

To keep orders moving to retailers and directly to consumers, Hamilton Beach locates its U.S. distribution operations in close proximity to one of the busiest logistics and transportation hubs in the country – Memphis, Tennessee. At their existing site, Hamilton Beach had long relied on Yale® lift trucks and service from their local dealer, Black Equipment. But the relationship deepened when Hamilton Beach relocated to a new facility in nearby Byhalia, Mississippi and enlisted the help of Yale Lift Truck Technologies to optimize warehouse operations.

Challenge

The old distribution center was a busy omnichannel operation, replenishing retail and wholesale locations and fulfilling direct-to-consumer e-commerce orders. It covered approximately 1.2 million square feet, with capacity for up to 110,000 loads stored entirely at floor level on slip sheets – no racking. Disorganization and congestion at the old facility hindered productivity, limited capacity and contributed to safety concerns and product damage. In their new, smaller footprint distribution center, Hamilton Beach required design expertise and solutions to help them make critical improvements:

GOAL	PAIN POINT
Maximize storage density	Floor stacking unpalletized loads in wide aisles limited vertical stacking and storage capacity.
Prevent product damage	Unpalletized loads on slip sheets left a myriad of opportunities for product damage.
Improve safety	Facility layout affected visibility, with blind corners and operators straining to see around loads.
Enhance sustainability	Internal combustion engine (ICE) fleet contributed to noise pollution, truck exhaust and emissions.
Optimize e-commerce fulfillment	Existing small package fulfillment operations struggled to keep up with e-commerce growth.

"At the old facility, everything was stored on the floor with slip sheets, which only allowed one item per location," says Jarrett Atkinson, Senior Director of Distribution, Hamilton Beach Brands. "As a result, there was a lot of honeycombing that cost us efficiency and left us with a lot of unused storage. And that's before we talk about product damage – probably close to $2 million annually at the old facility."

In addition to operational improvements, the new facility needed to fit the demands of a modern retailer, handling orders quickly and efficiently for a variety of channels, including retail replenishment and direct-to-consumer delivery.

"We're feeling the effect of changing customer demands," says Mike Bunge, Vice President, Global Supply Chain and Operations for Hamilton Beach. "Some years ago, you'd fill a tractor-trailer, and it would go to a brick-and-mortar store. That's not always the case today. In many cases we must achieve same-day shipping, so we're operating seven days a week and sometimes over 20 hours a day. We needed a facility designed to support our evolving business."

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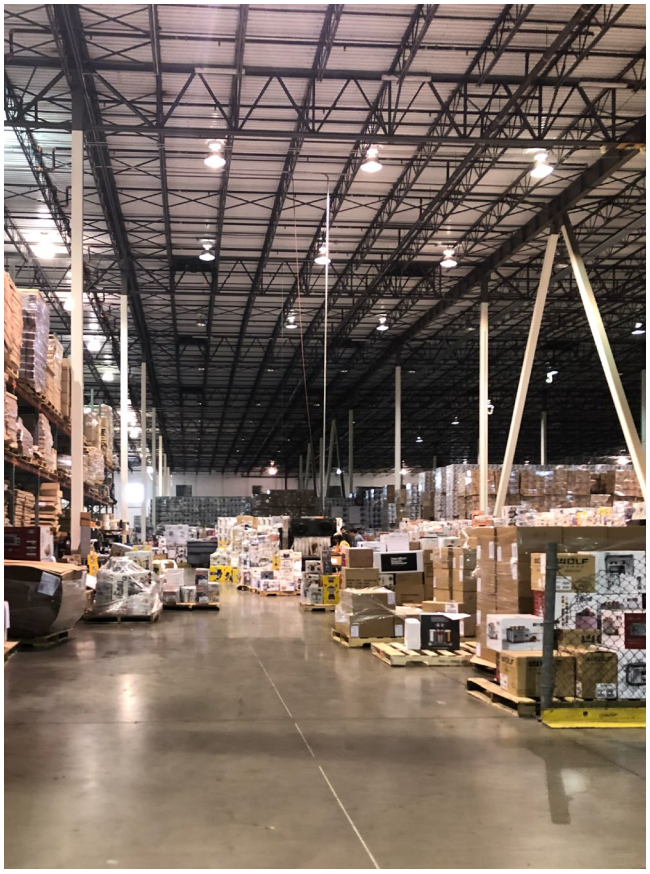


Before

After

Solution

With the company's sights set on a new facility to handle about 80% of total annual volume, Hamilton Beach had big goals for the new facility. To build the right solution from the ground up, representatives from Yale and Black Equipment worked hand-in-hand with Hamilton Beach.

"In simple terms, Hamilton Beach needed a world-class DC and we were able to help them achieve that. In addition to internal warehouse specialists, we worked with a racking vendor to thoroughly and methodically evaluate every aspect of their warehouse operation," says Dan Kachelmeyer, the Yale Executive Business Manager who worked on the project. "That recommendation included shifting from sit-down ICE lift trucks to a completely different fleet composition and power source to enable the narrower aisle and high-density racking of an intense omnichannel warehouse."

The new racking solution spans 50 aisles, six storage locations high, with 80% double deep racking for optimum storage density. To efficiently service the new racking configuration, Yale recommended an electric lift truck fleet specifically engineered for high-density warehouses.

DATA-DRIVEN DECISIONS

In tests comparing the existing trucks to new models, the new center rider proved 274% more efficient than the existing rider jacks, enabling 167 more carton picks per hour – 263 compared to 96.

NEW EQUIPMENT SUMMARY

- 33 NDR035EC reach trucks
- 5 OS030BF order pickers
- 12 MO55 low level order pickers
- 1 MPC080VG center rider

TECHNOLOGY SOLUTIONS

- Yale Vision telemetry
- Fork-level cameras

In addition to productivity and storage density, the Hamilton Beach focus on safety helped shape the new solution. The racking setup and equipment selection offered enhanced ergonomics and helped improve operator visibility.

"Safety is a major emphasis for us. In our old facility with bulk storage, operators had limited visibility at intersections and had to strain to see around loads," says Bunge. "The new racking configuration lifts the majority of loads off the floor and with the side-stance position on the stand-up electrics, it's a lot more comfortable for operators to move and see other equipment."

The new facility would also host a three-shift – rather than a two-shift – operation. Accounting for breaks and gaps between shifts, 20 hours of lift truck operation was required. Hamilton Beach was adamant that Yale and Black Equipment figure out how to make the new electric fleet handle the job without a high level of complexity and redundant units.

"We really needed Black Equipment and Yale to prove to us that these trucks would make it 20 hours per day. If not, do we need extra batteries, do we replace batteries during charging?" says Atkinson. "All of these concerns were eliminated with opportunity charging during shift changes, lunch and other breaks, enabling trucks to be operational all day."

With performance requirements addressed, the next step on the path to electrification was training operators. This transition not only involved bringing them up to speed on the new electric equipment, but also training them to work efficiently in the narrow aisles and double-deep storage configurations.

"The majority of their operators had been with them a long time, and they were used to working with slip sheets on sit-down trucks. Stand-up reach trucks were totally different for them and there was some fear about switching," says Clay Phillips, Sales Manager, Black Equipment. "We spent a lot of time familiarizing managers and operators with the controls and the equipment. To help jumpstart that, we created a training area in the old facility and brought in demo trucks for operators to practice."

Impact

The transformation to a high-density layout and new fleet of electric warehouse trucks yielded significant results. More efficient space utilization allowed for a larger e-commerce fulfillment area, enabling Hamilton Beach to ship over twice as many e-commerce, direct-to-consumer packages in 2022 compared to the old facility's volume in 2019, while using less labor. The transition from floor-level bulk storage to the new layout helped reduce product damage by approximately 80%, and the facility continued Hamilton Beach's strong safety record, with zero OSHA-recordable safety incidents through the first eight months of 2023.

Not only is the facility more productive, but the fleet generates less emissions and utility costs are lower – even with a fully electric lift truck fleet.

"We've been able to reduce utility expenses by 75%. A lot of that has to do with the efficiency of the building, but that's a notable reduction considering we're charging a fleet of electric trucks that used to all be ICE," says Atkinson.

"There's also a sustainability side," Bunge adds. "It's a much cleaner facility and we don't have the emissions and noise pollution the fleet of ICE trucks produced. Plus, we can opportunity charge during the evenings and nighttime when we have cheaper rates."

ICE TO ELECTRIC BENEFITS

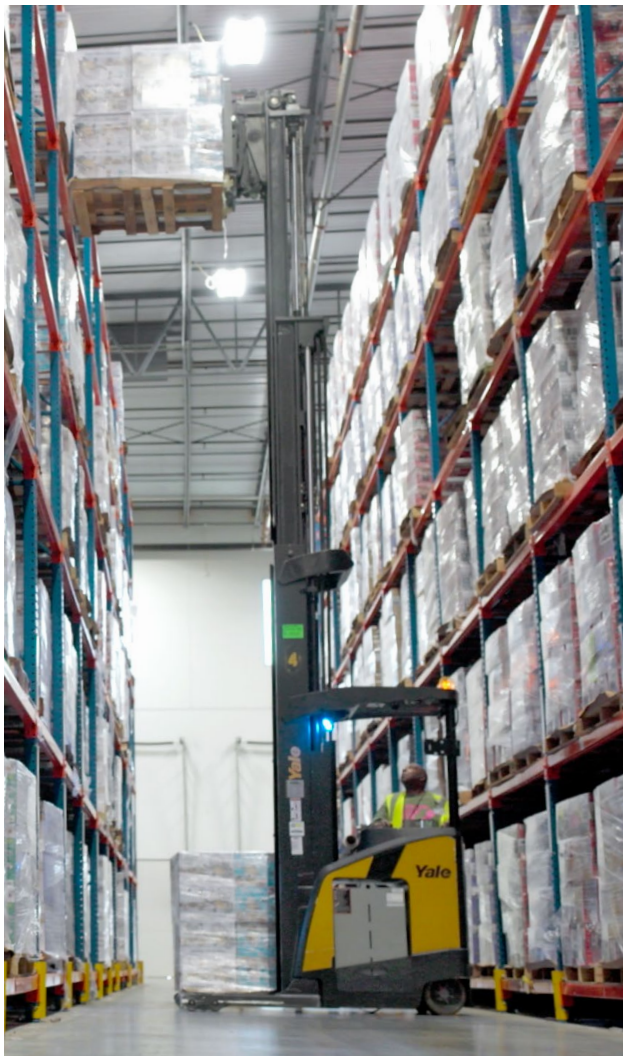
Based on general industry calculations, switching from ICE to electric, on average, can enable the following results*

- 672.2 tons less CO2 emissions/year
- $326,000 savings/year on fuel costs
- $53,000 savings/year on maintenance

**Based on Yale Electrification ROI and CO2 calculator comparing 5,000 lb. ICE sit-down model to equivalent lead acid model; results are typical but will vary per application.*

Another testament to the efficiency gains is that the new facility gets more hours out of its fleet without an increase to the total amount of equipment. At the old site, each piece of equipment offered about 80 hours of productivity per week, but equipment in the new facility provides 120 hours per week.

"I've been in supply chain for 30 years and at previous companies, we've had difficulty getting certain equipment serviced. The fact that we have Black Equipment and Yale as a turnkey provider is huge, with 24-hour on-call service and local parts availability," says Bunge. "And to top it off we now have the most advanced lift truck technologies, for a world-class operation."



DEDICATED SERVICE

The value of Black Equipment and Yale to Hamilton Beach is reaffirmed daily through service and maintenance. Dennis Holloway, a Black Equipment technician, has supported Hamilton Beach as a dedicated, on-site resource since 2016.

"Dennis is the glue that keeps us running. He does whatever needs to be done, whether that's working overtime or coming in on weekends," says Atkinson.

Holloway has his own service area in the new facility where he maintains a healthy stock of critical parts and handles regular maintenance, repairs, warranty claims and more. He credits his training, the continued factory input from Yale along with the trust and support from Hamilton Beach as critical elements, while the new electric lift trucks help set the new facility up for success with cleaner, smoother operation.

"Hamilton Beach trusts us and believes in us, and it shows when something needs to be done. They empower me to do what I need to do and keep them running," says Holloway. "The electric trucks are thin plate pure lead powered, so there's no need to water the batteries and they're quick to charge, easy to clean and you don't have to worry about leaks. You never stop learning with these new lift trucks and technology, and as long as I stay certified, Yale keeps sending me new information and best practices."

For more information on our warehouse products, visit Yale.com.

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