



This electropermanent system uses Walker magnets to load plates onto a cutting table. The plates are 8 feet by 35 feet and are  $\frac{3}{16}$  inch thick.

# Opposites attract

## Magnets solve a service center's plate handling needs

BY CAITLIN TUCKER

In recent years, the United States fell into recession, churned past two election cycles and danced on the edge of a fiscal cliff. Manufacturing suffered greatly, and many small businesses were forced to flip their open signs to closed permanently. Fighting the odds, one service center continued to expand not only its physical locations but also its services and products. And with larger inventory comes the need to move it.

McNeilus Steel Inc. provides bar, tube, pipe, sheet, plate, flooring, grating, stainless, aluminum, rebar, and other ferrous and nonferrous metal products, while also offering fabrication services. Headquartered in Dodge Center, Minn., the company has two other locations in Fargo, N.D., and most recently, Fond du Lac, Wis.

"Our plate business was rapidly expanding, and we decided to add about 80,000 new square feet just to warehouse our plate," says Paul Blaisdell, general manager of fabrication. "Not only were

our sales growing but also the physical size of the material required was increasing. Most of our increases were in the 96 inch to 120 inch wide by 240 inch to 480 inch long ranges."

To handle the plates, McNeilus previously used slings, hooks and chains. "It was very slow, not very safe and consumed a lot of labor," says Blaisdell. Typically, one worker operated the crane while the other positioned the chains and hooks. "To handle the increase in volume and sizes, we needed to find a way of being more efficient and safer with the way we handled our material," he says.

### A positive charge

The company turned to Walker Magnetics Group Inc., Worcester, Mass., and was directed to product sales manager Dave Wilber. "I ask questions about what they are trying to accomplish," Wilber says, "and then I come up with a solution." His initial inquiries were concerned with the magnets' purpose. McNeilus needed to consider all the components to select the right type of magnet, such as the size and

shape of loads, permanent versus battery-operated magnets and duty cycle.

Walker provides custom design and manufacturing of magnetic products for workholding, lifting, material handling, scrap magnets and separation applications.

The magnets were installed first at McNeilus' headquarters in Dodge Center. After initial success in improving efficiency and safety, the company transferred the same system to its Fargo facility. Magnets require only one operator, while several workers participate in operating cranes and climbing on plate stacks to position slings or hooks. "With magnets you can grab a single plate at a time," says Wilber, "because we have special control features to allow the operator to just grab one plate, or multiple plates."

The magnetic system also eliminates the need for dunnage when placing hooks and straps underneath plates. "It doesn't sound like it's much money, but when you have wood between each plate, it becomes quite an expense," he says. "Also, your stacks of plates are more stable when you don't have wood between the layers." Prying the plates



apart can cause damage, as well.

"With magnets, they don't have to climb, they don't have to deal with the wood spacers, they can just grab the plates they want and move them quickly and they can stay away from the load when they're transporting," he says.

## Improved operations

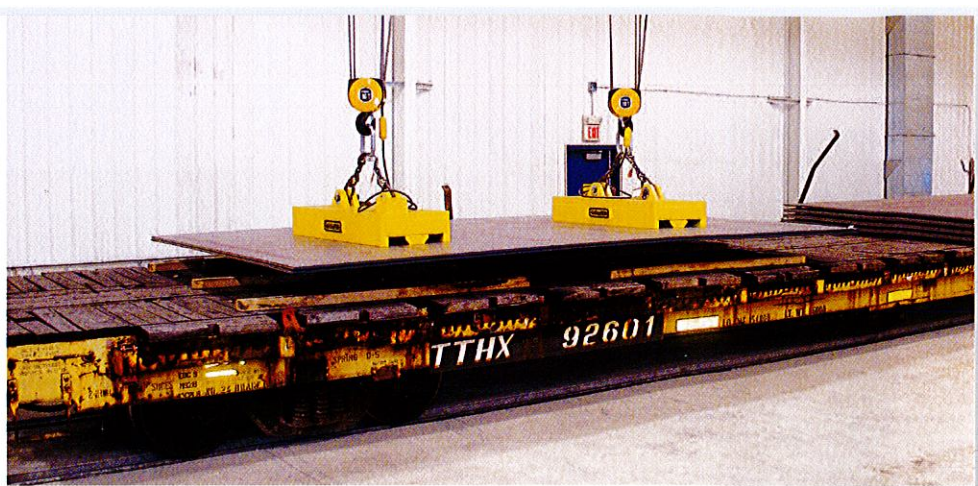
Walker outfitted four of McNeilus' cranes with two magnets for each hook. The new system allows workers to handle plates one at a time or multiple plates per lift. "Those magnets have a real deep field to grab multiple plates," says Wilber. "By grabbing multiple plates, they're able to load and unload these vehicles quickly." Magnets also are used with plate cutting machinery to clear cut parts off the burn table swiftly.

"It's a safety improvement," says Wilber. "Now they don't have their operators climbing up on the tables, but it's also an efficiency improvement, where instead of grabbing a part at a time, now they can grab layers of parts." This lets workers quickly remove cut plate off the table and begin using a new plate immediately. "So one of the benefits of these big, powerful magnets is the ability to keep the idle time down and keep the cutting time up," he says.

According to Blaisdell, the company receives 95 percent of its plate by rail. "Prior to implementing magnets, unloading railcars was a slow process requiring two workers," he says. "It required workers to climb up on the railcar and secure each hook in four different places on the plate for each lift, [which was] very physical and generally unsafe."

With magnets, only one worker is needed, Blaisdell explains. "Once the load is unstrapped, the crane operator simply positions the magnets over the load, drops them down and engages the magnet, picks the load up and brings it into the warehouse."

By handling plates magnetically, McNeilus has become more efficient and has eliminated the physical job of hooking chains and climbing on loads. "We can now unload most railcars in less than one hour with one worker; it used to take two hours and two workers. It's so much more efficient than the old chain and hook method," says Blaisdell. "Another



**Two magnets are more stable than one. These magnets at McNeilus handle multiple 8-foot-by-20-foot plates off a rail car.**

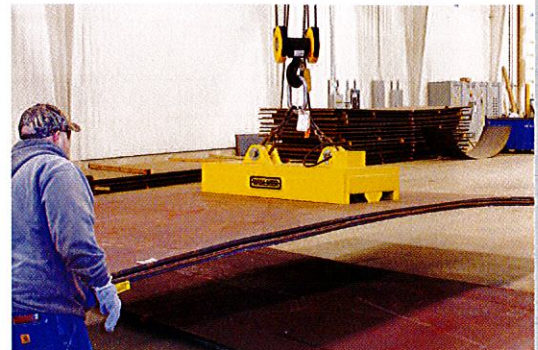
benefit to using magnets has been eliminating the need for dunnage. We do not require any blocking on inbound loads and have, for the most part, eliminated the use of any blocking in our warehouse. It might not sound like a big deal, but handling and disposing of all the excess lumber is a big job."

## The right type

Walker custom designed a plate handling system for McNeilus with 26-inch-by-60-inch electromagnets that can lift 20 tons each and features a battery backup system in case of power failure. "This is what we would call a heavy lifting system," says Wilber. "We build some small magnets in quantity, [which are] available for purchase, but these are the bigger systems. These systems are created by having ongoing conversations with the customer, so we can design and tailor them specifically for their purpose."

Although Walker also builds electropermanent magnets, they were not the preferred solution because McNeilus needed to pick up two or three inches of accumulated plate. "We really tailor electropermanent magnets for single-plate projects," says Wilber. "Between every plate there's a layer of air, what we call an air gap, and electromagnets outperform electropermanent magnets in this type of application."

The magnet company does not install systems. For McNeilus, a crane company put the magnets in place. However, Walker provides training and ensures this system works properly and meets its customers' needs. "After [the magnets] were installed, I trained the operators and



**At McNeilus, a single magnet handles multiple plates and can rotate them 90 degrees.**

taught them safety and proper magnetic material handling techniques," says Wilber. According to Blaisdell, there was classroom education along with warehouse practice. "We did bring in some new people but we also trained a lot of existing guys on it, as well. It takes a lot of practice to become proficient," he says.

"Walker has great customer service," he continues. "They spent quite a bit of time with our guys training and actually certified everybody that went through that initial training program with a Walker training certificate." For the employees at McNeilus, magnets were "a completely different animal" than what they were accustomed to.

McNeilus also has added some smaller battery-powered magnets to its warehouse, and plans to use Walker for future material handling needs. "We were used to chains and hooks," says Blaisdell, "but I can't imagine the transition to magnets going any better than it did." ■

**Walker Magnetics Group Inc.**, Worcester, Mass., 508/853-3232, fax: 508/852-8649, [www.walkermagnet.com](http://www.walkermagnet.com).

**McNeilus Steel Inc.**, Dodge Center, Minn., 800/733-6336, [www.mcneilus.com](http://www.mcneilus.com).