

THE PERFECT TIME-REDUCTION SET-UP SOLUTION

- Application:** Gantry Style CNC Milling
Boring
- Material:** Hardened Steels
- Challenges:** Process 18,000 different types of parts
Handle parts from 2" to 20' long, up to 8' wide
Hole diameters up to 3" with depths up to 2"
Counter sink; punch square



A North American manufacturer is producing carbon steel replacement parts for heavy machinery. As one of the world's largest producers of OEM replacement parts, their products are used for off-road vehicles and heavy equipment machines such as road graders, snowplows, bulldozers, and front-end loaders, that serve the municipal, construction, and heavy equipment markets.

To keep pace with growing demand, combined with a commitment to innovation and continuous improvement, the company searched for a solution to accommodate round-the-clock production of parts that presented unique challenges to traditional clamping methods for CNC machining.

With over 18,000 different types of parts manufactured from stock ranging in lengths from 2-in. to 20-ft. and widths up to eight feet wide, management quickly realized that manual clamping was too slow a process and could contribute to diminished part quality.

A new Quick-Mill™ gantry-style CNC milling machine was purchased, but the search was on for an alternative workholding solution. The company knew that CNC machining would provide advantages in increased manufacturing capacity. However, to manage their machining process involving multiple parts with varying dimensions would require considerable time-consuming locating and clamping if traditional methods were used. They were certain magnetic milling chucks were the answer.



Six Walker Turbo-Mill™ magnetic milling chucks, each 40" x 24", were installed. A custom magnetic fixture was made for the operation whereby the milling chucks were ganged, set flush and voids filled to create a 240" long holding surface with a custom riser to accommodate through-hole drilling. Additionally, standard controls were modified to allow for selective magnetic clamping of the various workpieces.

Loading and unloading of parts takes place outside the machine envelope, with no gap in production. "We've saved thousands in the load/off-load cycle," says the company's plant manager. "There's no locating, no clamping, no air guns running. We simply place the parts on the chuck, up against locator pins pre-set to the CAD drawings. A quick push of the button activates the magnets, and we're rolling."

Traditional clamping with a CNC boring center runs the risk of damaging costly steel templates. With Turbo-Mill magnetic workholding, this manufacturer avoids that possibility. Furthermore, running "flip-flop" manufacturing as the company does with the magnetic chucks, ensuing operations such as drilling are easily and efficiently managed.

"I don't know why anyone would not use magnetic chucks, as they pay for themselves in a minimal amount of time," states the plant manager. "Everyone should have one: we've saved time and money on set up, our production productivity has increased 400-500%, plus, the magnets keep up with our required production process. They can take the side hold pressure of the most heaviest cut to square any part."

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The Walker companies offer the widest range of magnetic products and systems than any other manufacturer in the world. As a global leader in the design, development and manufacture of magnetic technologies for industry and applied science, we can deliver a performance-engineered solution for your workholding, material handling and separation, lifting or conveying application. Whether it's a single standard magnet or a totally customized system, magnetic measurement and analysis or rebuild and repair, the one name best known for quality and innovation is Walker.



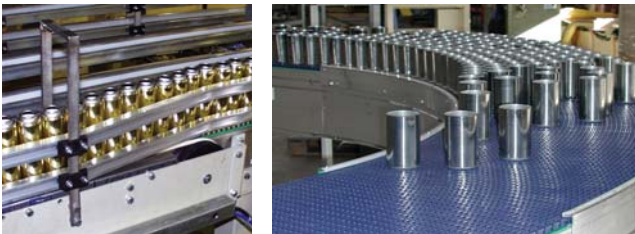
Walker electromagnetic and permanent chucks are used worldwide as cost-effective solutions for a variety of turning, milling, grinding, EDM and other machining operations.



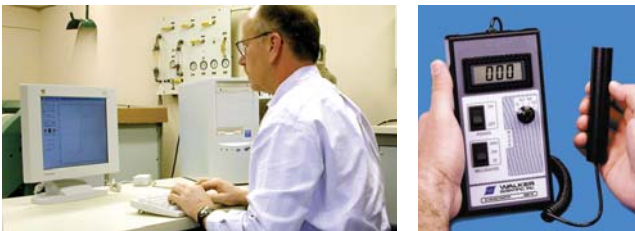
Walker lift magnets - with lifting capacities from 66 lbs. to 112,000 lbs. - are ideal for all types of material handling applications in manufacturing plants, shipyards, warehouses, and steel mills.



Walker all-welded and cast steel scrap handling magnets range in diameter from 26" to 100", and are widely used in the scrap metal industry. Designed for cool operation and maximum lift performance, these magnets are especially suitable for lifting operations from confined areas such as rail cars or trucks.



As a leading manufacturer of magnetic and non-magnetic conveying systems, Walker is used around the globe to significantly increase production rates in can making and processing. They reduce noise levels and damage to containers, providing uninterrupted transport of products from work area to work area, floor to floor.



Walker Scientific has a broad line of innovative instrumentation and measurement technologies to support magnetic research and the manufacturing market, making it the best single source for institutional and industrial applications.



The Walker companies provide complete service on all Walker products at any time, wherever products and systems are located. Innovative capabilities such as magnet repair and rebuilding or redesign, can meet and often exceed the original performance specifications.