

MODERN MATERIALS HANDLING®

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CASEBOOK 2014 & Buyers' Guide



APPLICATION REPORTS:

- Lift Trucks
- Fixed Path
- Packaging
- Storage/Staging
- Information Management
- Dock Equipment

Custom manufacturer uses carts to safely move product through production

Customized pushcarts boost ergonomics and product identification while reducing product damage.

HRE Performance Wheels manufactures custom wheels for some of the world's finest racing, performance and luxury cars and SUVs. The built-to-order wheel sets are offered in a customized choice of offsets, widths and finishes, and must be handled delicately throughout the production process. By using a series of customized carts, the company has reduced the number of defects, which can cost as much as \$8,000 per set of wheels.

Ten new carts were recently designed and assembled using metal joints, which were selected for their ease of assembly, strength and flexibility should cart modifications be required. The fleet of custom pushcarts are made from a modular system of plastic coated steel pipe and joints. The steel pipe cradles the wheels by the outside diameter of the rims and the soft pipe surface safely carries the wheels through production, minimizing damage during handling and transit.

Associates move the carts from station to station, removing the wheels for processing then placing them back on the carts for continued processing. Each wheel fits into a designated space to prevent nesting and the possibility of contact with another wheel. This designated space also allows for quick identification and easy loading/unloading. The outside upright supports on either end of the carts also act as push-pull

handles while helping maintain stability.

For fast, easy load/unload the carts have two comfortable height levels and six 5-inch diameter urethane casters for stable and safe movement. Four casters feature brakes that can be engaged for secure positioning and two provide swivel support. Each cart holds eight wheels and is 20 inches wide by 70 inches long by 65 inches high, with a weight limit of 500 pounds. The pipe is also available in a variety of colors so carts can be



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color-coded for quick process identification.

Creform
800-839-8823
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Drum motor withstands harsh environments

Lighter one-piece design increases efficiency and slashes downtime.

Run by the Canadian National Railway (CNR), the Two Harbours ore docks in Minnesota unloads 8 million tonnes per year of taconite iron ore pellets from rail cars, stockpiles them, and loads them onto Great Lakes Freighters bound for Chicago-area steel mills.

The key operating system that loads the cargo holds is a machine called the MX bucket wheel reclaimer. Mounted on 20-foot long tank treads, this 95-ton piece of equipment rolls along the storage yard scooping up

6,000 tonnes of ore per hour. The ore is deposited onto a boom discharge conveyor system that extends more than 30 feet. The reclaiming process kicks up dust and grit that wreaks havoc on conveyors with exposed drives causing numerous breakdowns and frequent maintenance.

Due to increasing maintenance and repair delays, CNR through JoyGlobal, a leader in high-productivity mining solutions, upgraded their conveyor systems with a drum motor that is able to withstand the extreme harsh envi-

ronment without continual downtime for maintenance.

To upgrade the conveyor system, the old 300HP motor and external drive chain was replaced with two TM800 150HP drum motors in a “nested” dual-drive configuration with the conveyor belt fed into a serpentine arrangement. The compact design of the drum motor with no external moving parts eliminated motor and coupling maintenance and improved operator safety.

The lighter one-piece design of the drum motors compared to the old system, plus the weight placement to the center of the machine, increased the mechanical efficiency of the entire system. It also reduced the energy demand on the diesel generators resulting in increased savings in diesel fuel costs as well as a 250% reduction in downtime due to maintenance.

The upgrades included a dual drive for the main belt, and a single drive on a shorter feed belt. All three drives were identical and are installed using only four bolts per motor. The drives are easily accessible and the one-piece drum motor ensures simplified removal if required.

“We like the fact that they are mounted using only four bolts. If something were to go wrong with any of the motors, we could swap it out with one of the spare motors we keep on hand and have the whole system up and running again in two hours greatly reducing our downtime,” says Shawn Gramm, account manager for JoyGlobal. “The old design took around eight hours due to alignments that needed to be performed and multiple parts needing to be installed.”

Van Der Graaf
905.793.8100
www.vandergraaf.com

AGVs keep product moving around the clock

Packaging manufacturer’s flexible new fleet helps repetitive tasks become efficient and safe.

Schur, a global manufacturer of packaging materials, machines and systems, wanted to improve the ergonomic environment for workers in its Denmark facility by automating repetitive movements. By installing

Empty pallets are moved from a pallet-stacking machine and delivered to the palletizers.

“The most important benefits of the new system are its stability, accuracy and the smooth workflow it enables,” says Allan Laursen, production manager at Schurpack Denmark.

The AGVs also move raw materials from bulk storage to the production machines. One added operation was for the AGVs to move pallets to storage and place them into storage lanes, thus avoiding the need for overnight forklift operators.

The system is easy to reconfigure and can be expanded by simply adding more vehicles.

The predictable operation, accurate navigation, smooth acceleration/deceleration, non-contact safety bumpers, and visual and audible warning signals gave workers confidence that the AGVs would improve safety.

“We involved a big group of people in the project,” says Laursen. “This gave them a sense of ownership, but also ensured they were comfortable with the system.”

Because of this success, productivity at the facility has increased 12%.

JBT Corporation
215-822-4600
www.jbt-agv.com



Using an AGV system, the company improved flexibility, efficiency, safety and productivity.

an automatic guided vehicles (AGV) system, the company improved flexibility, efficiency, safety and productivity.

Before the AGV installation, movement of the full pallets to the strapping/wrapping machine and to the warehouse was done using manual forklifts. The process was repetitive and predictable—a great candidate for automation, so the company installed four compact fork-over style AGVs.

At the end of the production line, finished corrugated boxes are stacked on pallets. Full pallets are first moved by AGV to an automated strapping and wrapping machine and then moved to the warehouse for storage.