

Towable Industrial Carts

BY JEAN FEINGOLD

There is a trend in the manual materials handling (MMH) industry to utilize towable industrial carts rather than fork trucks as a solution for moving materials within a facility. Let's examine the advantages of towable carts for moving materials in some industrial environments.

Better visibility and improved ergonomics

When a forklift operator moves a load of materials, they are seated behind that load, at times making it harder to see where they are going. Operators of the tugger or automated guide vehicle (AGV) systems that move trains of multiple towable carts are either sitting or standing on the tugger with the carts behind them, explained Amy Blueter, vice president of operations at MHI member K Tec LLC. This means they can see their route around the facility more clearly.

The carts are hooked together by using a towbar and hitch that can be quickly connected and disconnected. With a mother-daughter system, the mother carts stay connected all the time and the daughter carts slide into or out of the mother carts easily. "Carts can be painted in high visibility colors so they

are easily spotted throughout the facility," she noted. "Carts are also designed to be disconnected and moved around manually within ergonomic guidelines of push-pull forces."

"While fork trucks can be susceptible to accidents due to speed, user error and tipping, tuggers or AGVs are only able to move at a slow speed around a designated route," Ed Brown, founder and



A train of Quad steer carts pulled by a tugger. Photo provided by Topper.



A rotate cart. Photo provided by Topper.



A tilt cart. Photo provided by Topper.



A train of mother carts with ramps on either side that allows for the loading/unloading of existing daughter carts to be moved to production lines.
Photos provided by K-Tec Inc.



A train of flat deck carts is used to move materials around the facility and to the production lines.
Photos provided by K-Tec Inc.

CEO of MHI member Topper pointed out. “Knowledge of the traffic pattern is easier to communicate to workers. There is no risk of speed or tipping.” Fork truck/container operations usually have a bigger footprint and are heavier than a tugger or loaded cart.

Carts have a fairly low risk of injuries provided they have a welded design and a reliable towbar system.

Many manufacturers are establishing internal ergonomic guidelines for carts, Blueter noted, most frequently requesting maximum push-pull levels and dunnage height. “Companies are trying to contain the movement of their employees inside the neutral zone,” she

said. Even though tugger trains weigh hundreds of pounds and require proper use and maintenance, they pose a minimal risk to workers.

“Parts delivered on carts to assembly lines are designed to be presented in the best ergonomic position possible,” said Brown. “By tilting, rotating or raising the container, tow carts are presenting to operators between 24-inches and 48-inches.” This positioning reduces the amount of bending, leaning and twisting workers must do to reach the materials.

Cart connections and routes

Several types of towbars and couplers for coupling and uncoupling carts

are available. “In most cases, towbar systems are designed to auto-couple with foot releases so that operators do not have to bend over,” said Brown. “Tugger/cart systems are easy to implement in most plant operations and are up and running in hours. They are also very flexible. If a new work flow is needed, new routes are easy to establish and can be up and functioning within hours as well.”

Blueter agrees connecting and disconnecting carts is easy to learn but notes, “It is critical to have the upfront dialogue with the customer to determine how the carts will be used in order create optimal train stations and/or sequencing lines.”

Increased efficiency

Large quantities of materials can be moved more quickly using towable carts. “Material flow is much more consistent and efficient with cart systems,” Blueter said. “Usually forklifts can only handle one load at a time while trains can be set to multiple loads as aisle spacing is available. Often fewer tuggers are needed to move the same or more material through the facilities.” In addition, OSHA has more rigorous requirements for forklifts, including operator licensing, compared to towable carts. No operator license is needed to drive tugger/cart systems.

Fork trucks also require one driver per load, while a single tugger operator can move multiple loads per trip with several towable carts attached.

“Improvement in efficiency by converting to towable carts will vary depending on the plant operation,” noted Brown. “We recently converted a large electrical panel manufacturer in Minnesota to a cart delivery system with about 200 carts. I don’t know the total dollar savings, though it was significant. The other improvements they experienced were better safety and efficiency.”

“The flexibility of cart delivery systems enables plant operations to get the right parts or inventory to the right place in the right quantity at the right time,” Brown added. ●