

How To Be A Happy Camper

Outdoor Gear Manufacturer discovers rugged flexibility of modular conveyors



When an outdoor gear manufacturer developed a new concept for manufacturing ice substitutes and handling scrap plastic, it needed several special conveyors to bring it to fruition. After using traditional conveyors for years, engineers at the facility wanted conveyors that were adaptable to other projects, because they felt that using conveyors designed for other tasks compromised the success of the operation.

A portion of the concept included the use of conveyors that could be wheeled out of the way to perform maintenance on molding machines, but when put together created a continuous system that fed one onto another. After some research, the company decided that modular conveyors were best for the new concept.

Genuine modular conveyors are custom conveyors that use standard components to configure and reconfigure complete systems by removing, inserting, or exchanging modules that are available in lengths as short as 6", which permits incremental changes.

Although the system seemed ideal for the concept, engineers needed to know that the reconfigurable conveyors — manufactured from lightweight, high-impact polycarbonate — could stand up to the rigors in the facility, which operates 24/7, five to six days per week, to produce coolers, jugs, and ice substitutes using raw

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components and raw high-density polyethylene.

“They wanted to be sure that the plastic would not form to the conveyors, as can sometimes happen with other conveyors when you put them under the machinery,” says Jill Batka, President of Muskegon, MI-based Dynamic Conveyor Corp., wdec produces DynaCon conveyor systems for plastics, packaging, and automotive industries.

To address concerns about the system’s ruggedness, a representative from the company took a small conveyor sample to the plant, installed it with the gear manufacturer and poured hot plastic on it, proving that it would not be a problem. Satisfied that this conveyor would fit with the new concept, a design was agreed upon.

Almost immediately after receiving the conveyors, the flexibility of a modular conveyor system became evident. Since this was an entirely new concept, engineers had found a way to make it more efficient, which eliminated the need for one of the six conveyors. With another type of conveyor, the gear manufacturer would have paid for something that was not usable, but with the modular conveyors, engineers could adapt the conveyor for use in another area.



Because DynaCon conveyor systems are so easily removed and put back in place, mishaps or spills on the plant floor are much less dramatic because they can just be rolled away, power washed, cleaned, sanitized, and put back in service.

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With modular conveyors manufacturers are not locked into production designs. When processes change, or a piece of machinery moved, modular components are removed or added to adapt them to the new configuration. With a few minor changes and a couple of additional components, the original flat modular conveyor converted into a custom z-style conveyor with a 45-degree angle at minimal cost.

Custom Systems from Standard Components

Standard DynaCon conveyor system packages include all straight, incline, decline, and radius turn modules as well as drive flights, retaining walls, and legs.

A variety of primary accessory modules such as metal detection, box filling, cooling tunnels, separators, and water bath tanks for cooling products carried by the conveyor system can be added to create systems that are more progressive.



Since the gear manufacturer's facility takes scrap that comes from the molding process and conveys it to a grinding unit and then back into the system, DynaCon suggested the inclusion of a metal detection module to prevent metal being reintroduced into molding machines.

"They told us that when shavings enter the machinery, a significant tear down of the equipment to rid the machine of the metal would take an entire day," says Batka.

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The metal detection module is part of the last conveyor of the four that work together to form a continuous unit. When the unit detects any metal — even a minute shaving — it stops all the conveyors simultaneously for removal of the metal. “They told us that the metal detection unit has paid for itself more than once,” she says.

In addition to the metal detection unit, the facility opted to have the controls installed in a single panel rather than on the conveyor itself. Unlike traditional conveyors, which require special orders for the controls to be located somewhere other than on the conveyor, genuine modular systems treat drive systems and motors as modules that can be either external or internal. This affords engineers the option to purchase the motors with or without the drive system, providing flexibility to use existing controls to manipulate the conveyors, or place them all in a single panel.

Reconfigurable modular systems also accommodate engineering departments’ desire to purchase AC or DC motors as modules that integrate with their system, facilitating the need to have replacements on hand without having to store a lot of extra equipment.

In addition to the motors giving users more flexibility, they also save on energy costs because they use far less power by comparison than traditional conveyors. Batka says, “A traditional 10-foot long conveyor typically uses a .1/2 horsepower, 480v motor, but the DynaCon uses 1/30th of a horsepower and the motors all run on 100V.” Because of this, facilities have no trouble locating power sources for the units.

The angled modules are one of the biggest benefits in a modular system since typical conveyors ordered with angles are unique pieces of equipment. For example, if a manufacturer orders a conveyor with a 45-degree angle to dump on another conveyor and then decides that he wants a 30-degree angle instead, reconfiguration for the new angle can be done on the fly. However, typical conveyors lock manufacturers into the original angle or leave them with a piece of equipment that is obsolete.

Now that the company has seen how well the conveyors adapt to their process it is looking to add flow through belt with a cooling fan to cool to further increase efficiency.

To learn more about Dynamic Conveyor Corp’s quick ship program, next business day parts replacement, 5-year guarantee, or for more information about reconfigurable conveyor technology, visit www.dynamicconveyor.com [1].

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