By Stefanie Scott

Up and down and all around

New warehouse technology provides safe and efficient movement of products

BEVERAGE COMPANIES ARE CONSTANTLY CREATING NEW PRODUCTS WITH different shapes and sizes. In addition, they have attempted to consolidate warehouse locations, packing more SKUs into fewer locations. As the number of SKUs grows every year, warehouse machinery continues to be updated to handle the complexity.

From automated storage and retrieval systems to computer-driven systems and forklift updates, new technologies help ensure quick and safe transport of thousands of products.

"Companies are reducing the number of warehouses due to the cost of transportation," says Laura Worker, marketing manager at Westfalia Technologies Inc., York, Pa. "Everyone has been consolidating warehouses and distribution centers, trying to figure out how to ship to clients exactly how they want products — in mixed pallets, layer pallets or other variations."

In order to handle the growing number of SKUs, Westfalia provides automated storage and retrieval systems (AS/RS) and Savanna.NET, the company's warehouse management software.

Savanna.NET supports both paper-based and paperless order-picking technologies including pick-to-belt and pick-to-pallet, as well as pick-to-light, pick-to-voice and RF communications. The software also provides real-time information for analysis and management control.

Westfalia also added new robot technologies to its automation system to accelerate the throughput rate and number of layers the robots can pick at one time, says Juergen Conrad, sales director at Westfalia.

Conrad says the company knows what is going on in the warehouse at all times with Savanna.Net because it manages and controls all product movement, directs equipment, including the robot technology, and tracks product flow.

In addition, the "software is not only controlling the warehouse inventory and the cranes, it also now controls the robots, extending the right information and data to tell the robots what needs to be picked," he says.

PICKING SYSTEM AND SOFTWARE

Vertique Inc., Arden, N.C., also provides picking software and an automated case-picking and conveying solution for the beverage industry. The Vertique system can be converted to handle different products, and can pick up to 10,000 cases per hour, the company says.

"The system can continue to grow with the changes in the industry," says Jeff Stingel, vice president of sales at Vertique. "So as the distribution environment changes, we are able to change our system to match what that customer may need going forward. You're not locked into one solution forever."

Through Vertique's system, pallets of product are staged on custom-designed staging platforms for manual loading onto Vertique towers. Each SKU is assigned to one or more vertical towers, and the assignment can be adjusted to meet demands, the company says. Customers also can opt for a fully automated system.

Designed for use with the automated systems is the company's Vertique Picking Software (VPS), a custom-designed interface compatible with all standard order processing and truck routing software. VPS sorts orders based on specific customer requirements and delivery routes, and creates pallet pick sheets to optimize bay size and truck use.

Beverage manufacturers in the past were concerned about automated systems and software, but that feeling has changed throughout the years, Stingel says.

"There becomes a little of a comfort factor now because the systems run every day, products are shipped every day and people are becoming less concerned that automation will continue to work in the future," Stingel says. "If they had a concern about if anything broke down, or maybe how it would recover, those things are all covered now."

VEHICLE SAFETY AND MANAGEMENT

Technology used on forklifts and industrial trucks in the warehouse is equally as important as case picking software and systems. Vehicle management systems and vehicle attachments help ensure product and employee safety.

I.D. Systems, Hackensack, N.J., supplies a vehicle management system (VMS), which controls access to warehouse vehicles. Once equipped with VMS, operators need to present their IDs to a card reader installed on the truck to start the vehicle. The system is linked to the vehicle's ignition and the vehicle will only start if the operator is authorized. In addition, once the operator is authorized and the vehicle is started, the system

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I.D. Systems provides a vehicle management system to control access to warehouse vehicles.

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monitors and tracks how the vehicle is being used.

"It may sound a little big-brotherish, but it's more of a productivity tool from the manufacturer/distributor standpoint," says Ken Ehrman, president and chief operating officer at I.D. Systems. "It allows management to better understand and have visibility to see how their fleets are being used."

An inspection of the vehicles also is required before an operator may use them. The operator enters the vehicle and inspects various elements. Once the inspection data is entered in the onboard computer, the vehicle is enabled for use, Ehrman says.

"The vehicle management system puts resources where they are supposed to be to reduce the cycle time in the manufacturing and distribution processes," Ehrman says. "It also makes a safer work environment, which is something that benefits everybody."

Raymond Corp.'s iWarehouse system allows warehouse and distribution managers to collect and analyze real-time truck data.

FORKLIFT ATTACHMENT

For use on forklifts in a warehouse, Washington, Pa.-based Tygard Machine & Manufacturing Co. provides an attachment to forklifts that has the ability to pick layers of product and stack them onto pallets.

The Tygard Claw is a layer-picking device that can build a mixed pallet of products, transfer a slip sheet to a pallet or transfer an international pallet to a domestic pallet. It also can remove damaged products from a pallet or remove a broken pallet.

"It is 10 times faster than hand picking," says Kip Tygard, managing partner at Tygard Machine & Manufacturing Co.

The Claw also has the ability to pick layers of many sizes and shapes to fit retailer requirements. "The companies can now use the Claw to pick both beverage pallets — 38-by-38 inches; grocery pallets, which are 40-by-48 inches; and very small 32-by-37 pallets," he says.

The Tygard Claw can be both side- and front-mounted on a forklift truck. The side-mount design fits on a 6,000 pound capacity lift truck, and can pick approximately 2,000 cases per hour. The side-mount Tygard Claw hangs on the left side of the truck so it can pick and stack the product, and it is kept evenly aligned with the truck by the same rail the truck is running in, the company says. The front-mount design works on a 5,000 pound capacity lift truck, and picks between 900 and 1,200 cases per hour.

"Due to the addition of quick disconnect features, the Front Mount Tygard Claw no longer requires the use of a dedicated forklift," Tygard says.

In addition to the forklift attachment, Tygard also

offers a ram, which is designed to fit into the empty holes or "chimneys" of layered product. Products that have a "chimney" through the layers often cannot be layer-picked due to instability, the company says.

"What happens is the center does not have any stability or support, so the product falls down through the center," Tygard says. "We invented a ram that fits into the center chimney and allows the product to close down around that center post. It keeps it sturdy, and it keeps the pressure into the center of the layer."

The newest addition is the expandable ram that allows the claw to pick products with different sized chimneys or holes in the layout design. It works best on non-carbonated products that do not have a rigid configuration to allow most layer pickers to get a good grip, Tygard says. Once the desired pick level is reached, the Claw closes from the outside and the ram expands on the inside.

REAL-TIME TRUCK DATA

Raymond Corp., Greene, N.Y., introduced the iWarehouse system, an enterprise fleet optimization solution for warehouse and distribution managers to collect and analyze real-time truck data. Warehouse managers can access the information via a custom Web portal to generate reports and benchmark lift truck and operator productivity, diagnose potential lift truck issues remotely, and reduce the risk of impacts, the company says.

"It all begins with iPort, a single point of connectivity from the vehicle manager," says Joe LaFergola, manager of business and information solutions at Raymond Corp. "This allows any of a number of third-party wireless devices to connect to the truck without having to run many sensors and wires."

iWarehouse is available with a range of modules that users can choose from to meet their specific needs. iAlert automatically sends alert code notifications to identify required maintenance; iControl configures specific operator profiles to limit lift speed and acceleration; iImpact notifies warehouse managers if an impact occurs while the truck is in motion; iVerify requires the operator to review the OSHA-mandated operator daily checklist; iMetrics tracks lift truck usage data; and iTrack generates reports on lift truck fleet maintenance data by truck, facility, region and company.

"Our technology has increased the interval between scheduled preventative maintenance and repairs, resulting in a lower cost of operation," LaFergola says. **BI**

Tygard Machine & Manufacturing Co. supplies a side-mount claw, which can pick nearly 2,000 cases per hour.