

Kitting from Carousels Ramps Up Forney International's Productivity

"The material stored in these carousels would otherwise require 66% more square feet of floor space"



The Application

Store and pick components for the burner management system manufacturing process.

The Situation

Forney International is a leading manufacturer and integrator of burner management systems. Forney

Corporation manufactures front-end combustion components serving the electric utilities, chemical processing, pulp/paper and cement industries. Since its inception in 1927, Forney has expanded its product line to include igniters, burners, burner management systems, flame detectors, duct burners and CEMS.

As the process of improvement

began, Forney stored its small parts on double-tiered static shelving. Pickers walking up and down the aisles and stairs to access parts wasted valuable time and energy, slowing the production process and increasing the chances for error and rework.

The operation also occupied more area than necessary. *(Continued)*

“Instead of running all over the stock room, an operator can stand in front of the carousel to pick his kits.”

Objectives

- Fast access to kit components
- Increased accuracy
- Reduce necessary floor space
- Speed the manufacturing process

Solution implemented

Two Vertical Carousels. To assure fast and accurate kitting, Forney selected a computer controlled vertical carousel system. The 22-pan carousels utilize a split shelf design to provide 44 levels of storage capacity. A 2400 series vertical carousel can hold 800 pounds per pan with a total capacity of 25,000 pounds. One carousel stores mechanical parts, while the other stores electronic components. Since a static electricity discharge could compromise the integrity of a component, the carousels are equipped with anti-static floor pads, counter mats and wristbands.

There are three types of orders picked from the carousels. A “kit for sub assemblies,” “spares or repair” orders and “requisition” orders. When a purchase order comes in, the MIS department enters it. Each order is then broken into sub-assemblies and a corresponding routing document or “traveler” for the sub-assembly is printed.

Orders requiring parts from the car-

ousels are automatically downloaded to a PC and queued at each carousel. The software determines commonality between orders and directs the batch pitching operation. Up to eight kits can be picked simultaneously from a single carousel rotation.

Totes with anti-static liners are set up on the conveyor next to the carousel. Large orders require a full tote, small orders can use one tote divided into eight cells. As new orders are downloaded from MIS they are automatically queued.

When the operator selects a pick, a label is automatically printed and the carousel rotates to the first pick. The picker places the specified number of items in a bag, seals it and applies the label. The bag is then placed in the proper tote or cell. This process continues until all of the items are picked. The completed kit is then delivered to one of the nine workstations within the facility.

Spares and repair orders are handled in the same manner as a sub-assembly kit except the tote is delivered to the shipping department. Requisition orders are created when there is a change in the required parts. The order is entered into the host computer. The original parts are returned to inventory and new parts are picked and delivered to the workstation. Forney uses a “Dock to Stock” method of replenishing their inventory.

When materials are received, inventory is entered into the host computer. A label is generated with the part number and pan location. This is then placed on a cart and replenished between picks.

The results

This system allows Forney to store and pick components required for manufacturing quickly and accurately while reducing floor space requirements. The carousel delivers the requested items to a conveniently positioned work counter. Dan Sparrow, materials handling manager stated, “We eliminated probably half of our stock room by utilizing the carousels—floor space wise. So now instead of running all over the stock room, an operator can stand in front of the carousel, access the shelves one at a time, pick his eight kits and turn and put it on the conveyor.

With the installation of two vertical carousels, Forney has eliminated the second tier of shelving and dramatically increased efficiency by reducing the climbing, stretching and bending.

“The material stored in these two carousels would otherwise required 66 percent more square feet of floor space if stored on standard shelving. Because of the carousels we’ve become more productive—our sales volume is the same, but we’re doing it with 25 percent fewer people.”

