

Hargrove Fires Up Gas Log Production with Automated Use-Point-Manager System



Application

Store work-in-process and replenishment materials to support manufacturing and curing operations for gas fire cement logs.

The situation

Hargrove Manufacturing Corporation of Sand Springs, Oklahoma manufactures gas fire cement logs for fireplace specialty dealers and distributors in the United States and Canada. To reduce production time, make more efficient use of available floor space, and reduce workers' compensation claims, the company chose to make

the leap from a manual, labor-intensive production process to an automated material handling system.

The desired solution:

- Boost production 100% with no increase in manpower.
- Cut order-filling cycle time 40%.
- Reduce floor space requirements 80%
- Smooth production flow with virtually no downtime.
- Dramatically lower workers' compensation claims.

Solution Implemented:

- One-aisle Unit Load AS/RS
- 465 storage locations
- Real-Time System (RTS) software

Although relatively small with \$5 million in annual sales, Hargrove nevertheless approved a \$350,000 capital expenditure for a unit load Automated Storage and Retrieval System (AS/RS). Designed

“Companies of all sizes and kinds can benefit from AS/RS and other Handling Systems”

to function as a use-point manager, the system consolidates the process of producing and curing 150 different styles of gas fireplace logs.

A use-point manager is a form of flexible manufacturing system where individual workstations are directly and automatically served by an AS/RS, allowing individual workers to direct the flow of materials to and from the workstations.

The use-point-manager AS/RS buffers and replenishes materials required at the point where they are used. This ensures the operator receives a constant supply of the right materials at the right time, at the right place, and in the right order. The system provides accurate, real-time material control, quick response times to

"We increased production 100% without adding a single person...and worker compensation claims are way down."



orders and changeovers, and manufacturing flexibility.

The use-point-manager AS/RS at Hargrove is a one-aisle unit load that measures 120' long, 12' wide, and 19' high with capacity for up to 465 pallets. A loop conveyor transports the pallets in and out of the unit load.

New latex rubber molds are prepared in a number of styles and fastened on the pallets. The pallets are then brought to the pickup and delivery station at the far end of the AS/RS. The operator enters a confirmed store empty of the particular log product number, type, and quantity of molds on each of the pallets.

The S/R machine picks up the pallets of empty log molds and places each one in a designated storage location. The storage areas are zoned based on the use of each mold from most frequent to moder-

ate. Empty molds are then sent via S/R machine to be filled with log mixture.

When the RTS computer directs the AS/RS to pull the pallets of molds that need to be filled with slurry, the S/R machine automatically retrieves the pallet and deposits it on the output station.

The empty pallet bypasses the worker emptying the molds and travels around the loop conveyor, where the molds are prepped, filled, and sent back into the AS/RS to cure. RTS times the curing cycle of the logs and automatically directs the AS/RS to pull the finished pallets of logs to be emptied and painted. The manufacturing process is then repeated with the empty molds.

The Results

For Hargrove, the advantages of using adaptable use-point-manager AS/RS are

numerous. The AS/RS frees up 80% of the floor space used in the company's old process and keeps the production pipeline flowing smoothly, with virtually no downtime. The system continually tracks storage locations for pallets of cured logs, and it runs the daily operations from the orders stored in the computer, directing pallet retrieval, updating inventory counts in the system, and providing real-time control of Hargrove's entire manufacturing process. In addition, the system allows management to generate various production control reports.

Since the AS/RS system was installed, Hargrove's log production has increased by 100% with no increase in manpower. Product quality has significantly improved, and the company has achieved a 40% reduction in order-filling cycle time. Hargrove also expects a dramatic decrease in workers' compensation claims, due to reduced lifting and manual handling.



"We chose AS/RS because it was not a custom system, which made it affordable for our company," said company president Gary Hargrove. "Cisco-Eagle understood what we wanted to achieve, and they provided a cost-effective solution that meets our needs. The new system is streamlined, very smooth and does the job well."

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