Hansgrohe Optimizes Business Process With RFID

The German manufacturer is using RFID-enabled cards in two production facilities to track its stock of components and finished goods.

By Rhea Wessel

Oct. 13, 2008—Hansgrohe, a German manufacturer of bathroom fittings, showers, shower systems and kitchen mixers, has launched its first foray into radio frequency identification by implementing the technology in its assembly processes. Since March, the company has employed RFID-enabled kanban cards to track containers shipped regularly between two of its production locations.

Kanban, the Japanese term for signal, establishes a "pull" instead of "push" system of moving goods throughout a factory. Kanban cards—typically printed cards containing specific information regarding parts for production or final assembly—are used to signal the start of steps, such as raw-material replenishment, that flow in reverse order (from shipping goods to receiving supplies) in a production line. Hansgrohe has added EPC Gen 2 RFID tags to its bar-coded kanban cards that are placed in sleeves on shipping containers. The firm utilizes the RFID-based kanban cards to speed up the receiving of goods, and to make sure it has sufficient parts available, in the right location, to assemble end products.

Every day, the company ships metal tubes for sink faucets and components for shower faucets in containers, from its factory in Schiltach to its production facility in Offenburg, located in Germany's Black Forest. Workers in Offenburg assemble the components in the containers—measuring approximately 60 centimeters by 40 centimeters (24 inches by 16 inches) in size—and pull the RFID-labeled kanban cards from the containers' sleeves.

After assembling several items from the components, an employee takes his collection of pulled kanban cards and places them in a box next to an RFID reader. The device interrogates the cards for the unique ID numbers (Hansgrohe uses both the tags' encoded serial ID numbers and existing kanban card numbers). Reads are performed at pre-set intervals, and information from cards that have already been read is filtered out.

The RFID read data automatically updates a back-end system, thereby enabling the company to track which components have been used and which items have been assembled. The automated card reads save workers' about an hour's time each day, because they no longer have to manually scan the cards' bar-coded numbers. In addition, the company knows which components need to be sent from Schiltach to Offenburg the following day, to keep stocks replenished.

Hansgrohe utilizes approximately 200 to 500 RFID-tagged kanban cards daily, and presently has a total of 4,000 in circulation. All of the cards in the workers' boxes are collected at the end of each day, then are transported back to Schiltach the following morning. The containers remain in Offenburg, and are moved to other locations as necessary. When the RFID kanban cards arrive in Schiltach, another custom-designed interrogator identifies which cards have been returned. The computer system compares the information about

which cards were read in Offenburg with the data regarding which cards were read in Schiltach, in order to confirm that no cards are missing or damaged.

At the Schiltach factory, the RFID-based kanban cards are hung on a kanban board so managers at that site can decide which components to produce. Before the cards are placed on the board, a worker scans their bar codes to update the system that each card is back in circulation. Tobias Held, a supply chain management expert who works for Hansgrohe, says the company consciously opted against reading the cards' RFID tags at this point, because it did not want to change its production process, and because it preferred to keep the application simple.

Installing the System

According to Held, it took about 20 days to install the RFID-enabled kanban system. Not only has the system saved the company labor time, it also provided Hansgrohe experience with a simple RFID application that it could scale quickly when it decides the time is right.

The manufacturer is currently employing readers and tags from Finnish firm Confidex, as well as SAP's Auto-ID Infrastructure (AII) middleware, which helps make data collected via RFID relevant to business processes and compatible with the company's other SAP applications. The device management system CrossTalk, from NoFilis, controls the readers and initially collects data, then prepares it for transfer into the SAP system. IT services firm Freudenberg IT integrated the application.

Confidex, Held says, had to custom-design the interrogators due to the difficulty of getting high read rates with a large stack of jumbled cards. The reader in Schiltach is shaped like an oven, he notes. A worker puts the bin of cards inside the "oven," and the reader identifies all tags within five seconds.

RELATED_ARTICLES To date, the company has not been confronted with damaged RFID tags on kanban cards. Freudenberg's Andreas Adler, the consultant responsible for the system integration, says the system provides an advantage for Hansgrohe, since the manner in which it was configured means the firm did not have to change its processes to use RFID. In addition, it can be easily adapted to new processes and larger numbers of RFID tags in the future if the company decides to tag every product it sells.

Hansgrohe considers the RFID kanban project a success, Held says. As such, the company is implementing RFID in a factory hall it recently opened. He declines to provide further details regarding the forthcoming RFID application, though the company has said it may employ RFID to increase automation and optimize transparency in logistics processes.