Draper, Inc. - Window shade manufacturer improves efficiency with barcode tracking system

Founded in 1902 to provide window shades for schools, Draper's window shades are still helping companies control heating and cooling costs, while providing a more pleasant environment free from the glare of direct sunlight. Today, however, style is just as important as efficiency and Draper maintains an inventory of over 2,600 different SKUs of window shade fabric for an ever-increasing variety of designs. Each window is essentially one-of-a-kind and window shades are all custom-made. According to Brian Hickok," Production Planner "standard is whatever the customer needs".

Keeping track of this material is essential to efficient work flow. But it's not easy. Material comes in 30-35 yard rolls and each type of material may come in a number of widths. Rolls are stored in 35 different racks, 12 feet high, 8-10 feet deep. In storage, only the ends of the rolls are showing.

Pick tickets are printed and workers locate material in the racks, move it to a work cell then, if there is still material left on the roll, return it to inventory. This happens nearly half the time.

The previous materials management process with manual recording of data during the day and end-of-day batch updates to the company's MAC-PAC XE ERP on an I Series clearly wasn't working. Material was scattered throughout the storage racks and storage locations weren't consistent, making cycle counting difficult and inaccurate.

Worse, fabric couldn't be found when needed; worker's, supervisors and sometimes even sales manager's time was wasted hunting for material; and promises were being broken because of stock-outs. Something had to be done.

Draper formed a steering committee to evaluate different solutions and invited two companies to demonstrate their ideas. Integrated Barcoding Systems, Inc. (IBS) not only met the challenge, they exceeded expectations. Within two days of coming in to demonstrate their ***QuikTrac***® software and mobile bar code reader solution, they had a working system up and running. It didn't have all the "bells and whistles" but it did what Draper needed. Draper was sold.

According to Hickok, "You could say that IBS brought in a bicycle that needed a light, a basket and a few other accessories but it was a bicycle you could ride. The other company brought in a bicycle with no wheels."

Bar Code Tracking

Window shade material, the majority of which is from local manufacturers, is received on skids that hold between 12 and 16 rolls. Protective metal caps cover the ends of the rolls. Inside these caps are bar code labels with Draper's SKU number, purchase order number and line number of the purchase order. The labels are removed from the end caps and placed on the ends of the rolls.

As rolls are stored, an Intermec CK31 hand-held reader is used to scan the bar codes on the label and a bin location in one of the racks. This information is communicated wirelessly to the ***QuikTrac*** software to instantly update the inventory and location.

The storage locations are large racks and bar code labels identify each location that may hold dozens of rolls of fabric. According to Hickok, once the correct storage location is identified, finding a particular roll in these racks is not that difficult and there is no need for a more specific location.

When pick orders are issued, fabric is moved to a work center and cut to size. An Intermec SR30 is used to scan a bar code on the work order to record the job number as well as the SKU bar code on the roll. The amount of fabric used is manually entered into the system. Before any remaining fabric is returned to the rack, a new end label with the SKU number and quantity is printed on a Datamax I-series printer. When material is returned to the rack, an Intermec CK31 is used to scan the roll and storage location bar codes.

Implementation

The system was useful from the very beginning. According to Hickok, "within a few weeks, the system was quite functional." Small modifications were made to the initial system as glitches were found and improvements were identified. According to Hickok, most of these were "ten minute fixes" and the system is being fine-tuned on an ongoing basis.

One of the improvements developed for Draper was a subroutine to accommodate Draper's use of ISO/IEC 15418 data identifiers (DIs) in their bar codes. DIs are short alpha or alphanumeric strings that precede data in a bar code that indicates what the data represents -- SKU number, quantity, location, work order number etc. This ensures that even if symbols are scanned out of the expected order, the correct data is entered into the correct field. DIs are used to validate that the right data is being entered but are stripped before data is entered into the system.

In the first 6 months, there were 25,000 location moves; 47% of the rolls were returned to storage areas.

Typically, there are 4-6,000 transactions (material moves) per month. The company performs cycle counts of approximately two-thirds of their inventory per month. Accuracy is up from less than 80% to 95%. The 5% error is attributed to human error.

Benefits

The system easily met the requirements to improve inventory accuracy and inventory management. Inventory levels were decreased by 25% even after adding a new product line because of tighter inventory controls. An unexpected benefit of better inventory management was the identification of some quality issues because they were able to identify that some jobs were using more fabric than necessary.

Of equal importance, the number of orders that couldn't be completed as promised because of stock-outs dropped from 30-40 per month to less than five.

According to Hickok, the system was "easy to sell" in the shop because it saved people time in looking for materials. The time it took to do a physical inventory went from three days with 8-10 people down to two hours with three people. And accuracy increased to 99.6%.

Future Plans

The system is currently being used only for window shade fabric. However, today's window shades are complex engineered systems that include spring rollers, clutches, plugs, fascia, motors, and other components. Draper is looking at expanding the ***QuikTrac*** system to include these components as well.

At A Glance

Draper, Inc., Spiceland, Indiana

Application:

Inventory management

System:

- ***QuikTrac***® 5.5 screen integration and data management software
- Intermec CK31 hand-held terminals
- Intermec SR30 scanners
- Datamax I-Series printers
- TL Ashford label software
- IBM ISeries

Benefits:

- Real-time inventory achieved
- Inventory accuracy improved to 99.6%
- Inventory reduction of 25% (even after adding additional SKUs)
- Physical inventory reduced from 8-10 people over three days to three people in two hours
- Missed deadlines because of stock-outs reduced from 30-40 per month to less than five
- Manufacturing quality issues / waste identified through tighter inventory control