

# Crystal Mountain Water Cooler gains a competitive edge with AURORA's bar code technology

A bar code system helps the company with work-in-progress tracking and employee monitoring.

By Jeff Bowden

**T** rue to its name, Crystal Mountain has a very clear and tall mandate for outstanding quality in an intensely competitive global water-cooler market. Located in the small community of Pickardville near Edmonton, Alberta, this growing company employs approximately fifty assembly-line workers. In a 40,000 square foot factory complex, Crystal Mountain manufactures water coolers for domestic and commercial consumption.

## ***The way it was***

Traditionally, as a cooler unit moved down the assembly line, the employee would complete



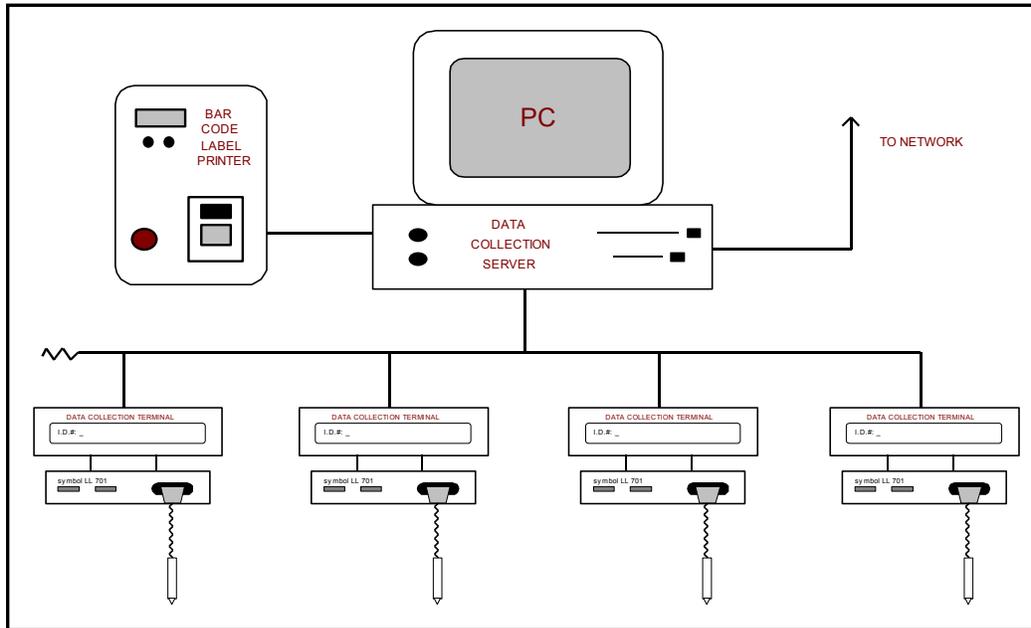
**Figure 1:** A work-in-progress scanning station on the assembly line.

his/her required duties and record them manually on a sheet. The paperwork was then attached to the unit and moved to the next workstation. Obviously, the large paper trail was unpleasant for the employees and extremely cumbersome for management to institute a quality control program or

track productivity. And, for Crystal Mountain, quality control is the key component that sets them apart from the competition.

## **AURORA bar code technologies**

was approached to meet these challenges with an integrated software and hardware system. The system had to electronically monitor the actions of employees and work-in-progress while transmitting flawless information, on demand. Moreover, it needed to be flexible enough for future enhancements.



**Figure 2:** A schematic diagram of Crystal Mountain's data collection system.

## How the system works

The system is comprised of twelve shop floor data collection terminals situated close to the assembly line. These durable units, made by Symbol Technologies, have a small LCD screen that prompt the user for input. A beep is also sounded each time the user scans a bar code. Each workstation is in turn attached to a shop floor data collection server that is linked to the company's PC network.

When an employee arrives at a workstation on the line, s/he scans a personal identification badge with a bar code wand and the system records the exact time and date when s/he began work. Each

water-cooler unit is assigned a bar code number at the beginning of the line, and is scanned at each workstation. As each task is performed on the unit, a corresponding bar code is scanned from a menu. All information is immediately relayed back to the data collection PC that is linked to the company's network.

When the cooler has reached the end of the assembly process, the bar code is scanned a final time to ensure that the unit has passed through all of the workstations on the line. If this is confirmed, a perforated carton label is produced and placed on the box. When a pallet is full with cartons, half of the label is torn off each carton and scanned. All the serial numbers are then printed on a pallet summary list, which is en-

closed with the pallet, ready for shipment.

## Quality control

Crystal Mountain was intent on monitoring the production process more closely so that fewer re-works would be required. By

automating supervision, the company eliminates the need to hire more personnel, and reports are guaranteed to be accurate. An incentive system was instituted where each employee who discovered a manufacturing error on the line would be awarded a cash bonus. Alternatively, if no errors were found in the cooler units, each employee on the line would be given a share of the bonus. The system has proven popular with employees and cost-effective for the company. Without bar code technology, this system would be virtually impossible to institute.

## Accuracy of information

Mr. Tom Buckler, Quality Assurance Manager at Crystal Mountain, notes that before the bar code

technology was put in place, clients would occasionally receive an order where the list of serial numbers did not coordinate with the actual numbers on the units. "Now," he says, "there are literally no labeling mistakes. Information is transmitted in greater detail and much faster than before adopting bar code technology." This enables Buckler to call up a list of exactly what is being produced in the warehouse, all in a matter of seconds.

### ***Current inventory***

Buckler stressed that their manufacturing process, according to instruction, has remained the same. Instead, "the information we can give to the customer has changed dramatically." The company now knows exactly what it has produced on the line, and exactly what it has sold through the accounting package. The net difference is the inventory on hand. When a customer places an order, they are informed precisely how many units are in stock, and how long it will take before the coolers are completed.

### ***Employee satisfaction***

The bar code system has eliminated a cumbersome paper-flow process. While Crystal Mountain's

booming sales have undoubtedly had their effect, the automation experience in the warehouse has been "a positive one," according to Buckler. Introduced properly, the scanners were simply another helpful tool on the production floor. "Ultimately," he says, "the employees are still in control of the process even while we are getting more and more automated."

### ***The future***

The management at Crystal Mountain is sat-

isfied that the bar code system has already cost-justified itself and plans to expand its use. The shipping processes as well as raw goods' tracking are just two of the possibilities.

Wherever the company expands in the global market, Buckler is confident that bar coding is a "valuable tool that we can use to better service our customers."

#### **TOP TEN SYSTEM HIGHLIGHTS**

- ① Eliminated unpleasant paperwork on assembly line
- ② Information available instantaneously
- ③ Flexible enough for future enhancements
- ④ Keeps detailed employee attendance records
- ⑤ Simplifies quality control
- ⑥ Permitted the implementation of employee incentive program
- ⑦ Ensures clients receive exactly what was ordered
- ⑧ Proven production process has not altered
- ⑨ Employees still feel in control of environment
- ⑩ Speedy return-on-investment