

Rapid Racking

A Quebec retail shelving and racking systems maker's conversion to powder boosts line speeds by 40 per cent and doubles production

No matter how bad the economy gets, people will always have to eat. That truism is one of the main reasons why retail sales in Canada have continued to chug along in an upward direction for most of 2009, according to recent figures from Statistics Canada. Despite the hit retail took along with every other sector of the economy at the end of 2008, retail numbers rebounded immediately and reverted to their usual upward trend.

That's good news for Bruno, QC-based Boni Equipment. The 35 year old company manufactures racking and shelving systems for retail display and it is proving to be a recession-proof business. The company employs 250 people in a 200,000 sq ft facility in the suburbs of Montreal and serves the country's thriving grocery store and drugstore markets, providing shelving systems for chains like Pharmaprix, Jean Coutu and Uniprix in Quebec, and Shopper's Drug Mart in Ontario.



Large racking parts going through the Magic Cylinder powder booth from ITW Gema at Boni Equipment's facility in Bruno, QC.

"The drugstore market is a good market. The foodstore market is not bad, too," says production manager Sylvian Rioux. He explains that Boni's sales are driven not only by retail expansion, but also by the repeat business of continuous store maintenance and remodeling.

To make sure the good times continue for the company, Boni recently made some major changes to its paint finishing line by moving from manual spraying of liquid paint to automatic spraying of powder. The change has allowed the company to virtually double the paint line's production rate while creating savings in labour and coating costs. It has also reduced the plant's environmental footprint, says Rioux.

To satisfy its varied customer base of retailers who all prefer different looks in their stores, Boni manufactures a variety of custom shelving systems in addition to standard parts. Many part runs are short and the company works with a palette of hundreds of colours. Rioux says that to get the required flexibility, his staff formerly relied on spraying liquid coatings manually.



The pumping system on the Chameleon colour management system at Boni was optimized to allow for feeding the material directly from a box of powder. This helps speed colour change and reduce the risk of contamination.

"With liquid paint, the advantage we had was we could do small batches and we could change colours really fast. We could do maybe 15 colours a day with no problems," performing colour changes in as little as one minute, he says. The shop had a material delivery system with five different drums and hoses leading to the booth that facilitated fast colour change by simply switching from one to the other.

"But the problem we had was we were getting maybe 60 per cent transfer efficiency on the stock," with the remainder ending up in wastewater. Rioux was also concerned about the health and safety of the four employees it took to man the paint booth who were exposed to the unpleasant odours of solvents evaporating from the liquid coatings.

In addition, manual spraying of liquid coating created occasional problems with quality, making rework necessary.

"We have a lot of custom parts, new parts that we've never painted before. When we paint those by hand, it's a big problem."

Rioux had heard about the Chameleon powder coating system from ITW Gema and went to visit a business in the US to investigate whether it could deal with the problem of performing frequent colour changes quickly without slowing down production. He was impressed with what he saw.

"These guys were changing colour in maybe 12 minutes," he says.

Rioux had the Gema Chameleon powder management system installed at Boni along with the Magic Cylinder spray booth and powder recovery system. The Magic Cylinder booth is equipped with 24 automatic guns with PLC control of reciprocators and in/out positioning, as well as two manual guns for pre and post touchup.

Greg Taylor, Canadian regional representative for ITW Gema, Indianapolis, IN, says that Boni had some specific

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FINISHING/POWDER COATING/CASE STUDY

requirements for its system to optimize it for their facility.

“They had a certain elevation of conveyor that they had to maintain. To keep the density level in their line without having increases or decreases in elevation, we modified the plant floor and sunk the booth in the floor so that the operators walk in at floor level.”

Taylor says that it was also necessary to change the pumping system on the Chameleon powder management system to allow for feeding powder directly from a box rather than a hopper.

“There are that many more guns and pumps based upon their application requirements, that under typical design would not allow you to put that number of pickup tube assemblies into a powder box,” says Taylor. The optimized system facilitates faster colour changes for the many short runs that Rioux and his staff perform. Pumping directly from a box of powder also reduces the risk of contamination during colour changes by cutting down on the handling of the powder, such as when transferring it from a box to a hopper.

After installing the Gema system, the impact on the company’s production output was immediate and dramatic. In the past with the liquid system, Rioux required four painters in the booth painting parts while another four staff loaded parts onto the conveyor racks for painting and another three unloaded them off the line. Moreover, the labour-intensive process only allowed for painting one part at a time. But with the new Gema system, Rioux says he only needs two staff to operate the booth. One can monitor the progress of the coating while the other prepares for the next colour change. Rioux says the change to an automatic system from manually painting parts one at a time has allowed him to increase the line speed by up to 40 per cent.

In addition, the design of the Magic Cylinder booth also allows Rioux and his staff to double the amount of parts they can rack on the conveyor. Between the increase in line speed and the increase in racking, Rioux says that Boni has been able to double the amount of production in the paint shop and redeploy paint staff elsewhere in the facility, or have them load and unload the increased number of parts on the conveyor.

“One week after we started the new department, we cut the night shift,” he says.

The benefits of the powder system go beyond increased throughput. Rioux notes that compared to the 60 per cent usage rate for the liquid coatings he used formerly, “now we’re talking about 94 per cent,” for the powder coatings, thanks to the powder recovery system and efficient electrostatic spraying. He adds that Boni is now also free of the need and cost to push 30,000 cubic ft of conditioned air, in summer and winter, through the spray booth that liquid painting requires but powder does not.

Rioux, a 20-year veteran at Boni Equipment, cannot say enough about the advantages the Gema powder booth and colour management system and how the system has improved the company’s production capabilities.

“We are now regularly changing colours in 5.5 minutes with recuperation,” he says. Rioux calculates that the system will have paid for itself in two years.

Gema’s Taylor also points out that the powder system has been so successful for Boni that its sister company in the same business, Anjou, Quebec-based Etalex, had it installed six months later. **CM**



Boni needed a system that could easily handle an average of 14-16 colour changes a day.

Boni Equipment www.equipementboni.com
ITW Gema www.itwgema.com