

Cabinetmaker Goes from Batch Flow to Lean Operation

With help from research group Forintek, Regina, Saskatchewan-based Cabtec Mfg. has made the successful transition to lean manufacturing.



Cabtec manufactures custom frameless cabinetry for residential and commercial applications.

The basic mindset of most companies is that if something works, you should stick with it.

Or should you?

Although successful, Regina, Saskatchewan-based Cabtec Mfg. was looking for a more efficient method of manufacturing frameless-style kitchen and bath cabinetry for the residential and commercial markets. While the batch method of production was effective, it did not allow the 10-year-old company to reach its full production potential.

Cabtec derives its name from a combination of the words “cabinet” and “technology.” According to co-owner Ken Kowalchuk, technology — specifically, efficient operation — is important if the company is to compete in a market where competitors are often much larger and, as a result, have built-in competitive advantages. He adds that while employees become accustomed to hearing management speak about reducing costs and raising production, having someone else deliver that message often results in faster acceptance. That is why, when the company decided to switch to a lean production method, it consulted with an outside source for help with the transition, which included training the company’s 50 employees.

“It’s definitely important to have a lean champion,” says Kowalchuk. “Someone with the drive and motivation to communicate the concepts to employees, establish projects, and work toward a deadline to see that implementation is successful, according to management’s business objectives.”

When Kowalchuk decided to move to a lean production method at the 19,000-square-foot facility, one of the first things he did was to hire a production manager with lean manufacturing experience. According to Kowalchuk, the new production manager imbued the shop employees with the concept of “continuous improvement,” representing many of the same concepts reflected in the lean manufacturing approach.

“At the end of the day, we’re going to be more efficient and our productivity rates will climb,” says Cabtec’s production manager. “People are going to be more interested in what they are doing in a lean manufacturing environment versus what they are used to because there is more multi-tasking involved. They’re no longer going to be stagnated doing one thing over and over again.”

The Lean Implementation

Cabtec manufactures custom frameless cabinetry, which it ships throughout Canada and the United States. In addition to countertop manufacturing capabilities, the company offers a wide selection of wood, melamine and MDF doors and drawer fronts, including a proprietary line of lacquered MDF doors in a variety of styles, finishes and colors.

Prior to bringing the lean manufacturing concept to the shop floor, Cabtec had three employees participate in an eight-module lean training program offered by Forintek Canada Corp., a national wood products research institute. The training by Forintek included both classroom and on-site training elements. The Forintek secondary manufacturing industry advisor working with Cabtec was David Dombowsky.

Although Cabtec is still in the early stages of lean manufacturing implementation, the company has already achieved a 50 percent increase in production, merely by following the concepts of waste reduction and one-piece continuous flow manufacturing in areas where there was an obvious need to achieve greater efficiency, Kowalchuk says. Cabtec targeted its cabinet assembly and CNC sawing area to begin the process of incorporating continuous, one-piece flow into its manufacturing process.

“An example of continuous flow at the saw would be smaller batch sizes, which are pulled from the CNC areas when needed, rather than cutting large batches and pushing them to the CNC areas, which filled up the areas with no room to move,” Kowalchuk explains.

Continuous flow in the assembly area, Kowalchuk says, “[involves] starting a cabinet assembly and flowing it right through to door and drawer installation, inspection, then packaging and right into shipping. There are no stops in between each of these processes anymore.”

Kowalchuk says he noticed the company now has extra available floor space and better material handling because of the concerted effort to reduce waste and maintain lower inventories.

“We’re getting positive responses from our hourly employees,” says Cabtec’s production manager. “The response is, ‘How in the heck did we ever do it the other way?’” referring to the company’s prior practice of batch manufacturing.

“What lean manufacturing does is it turns all that thinking on its head, and says those large batches end up resulting in all sorts of inefficiencies and hidden costs,” says Dombowsky. This could manifest itself in ways such as extended delivery times to customers, high inventory costs, and extra energy and real estate costs to pay for batches waiting to enter the production stream.

As part of the company’s quest to reduce waste, the employees found ways to use waste pieces of particleboard as support pieces in cabinet construction, Kowalchuk says. “Another example of reducing waste is our drop piece organization. We set up bins for the different material cutoff pieces and catalogued each piece, so it is easy to find and use the next time,” Kowalchuk says.

Although the company considers itself still in the early stages of lean manufacturing implementation, significant progress already has been made in just the two years since the company began its transition, Kowalchuk adds. During the next year, he says, Cabtec Mfg. will continue to focus on educating its employees about lean manufacturing and the impact it will have on their work functions.



After cabinet part sizes are generated on a computer, they are entered into the production schedule. Parts are first cut to size on a Holzma panel saw.

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Use the slideshow above to see the steps Cabtec uses to create its cabinets.



Parts that need routing, drilling or grooving are machined on a CNC machining center.

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Then parts are sent to the Brandt (Altendorf) edgebander for edge processing.

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Cabinet parts then are drilled and wooden dowel pins are inserted using the Biesse Polymac boring and dowel-driving machine.

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A Blum Minipress installs hinges on the cabinet doors.

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Drawer boxes, with fronts attached, are assembled into cabinets using a Ritter drawer box clamp.

**RESTART
SLIDESHOW**

Use the slideshow above to see the steps Cabtec uses to create its cabinets.