



# Case Study: Beyond Vending - More than Tracking Inventory and Purchasing Parts

.....user case study



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Die castings are among the highest volume, mass-produced items manufactured by the metalworking industry. J. L. French, headquartered in Sheboygan, Wisconsin, is a global supplier of quality aluminum die castings specializing in powertrain and automotive components having three manufacturing plants in the United States and one in Spain. It's not uncommon for large manufacturers such as J. L. French to spend millions of dollars every year on the MRO (Maintenance, Repair, and Operations) side of manufacturing. In 2005, J. L. French realized that controlling these types of costs on MRO, spare parts, tooling, and other indirect material used in the secondary machining operations should be a priority according to Warren Hacker, Manager of North American MRO Purchasing. Being naturally analytical, Hacker had numerous questions regarding asset management and inventory control. Questions such as - Where is all this material going? Why do we have so much of this and not enough of that? Why are so many of our invoices not matching our purchase orders? Bottom line - How much is it really costing us to manufacture these parts?

The die cast manufacturing process at J. L. French involves four basic stages: 1) Die Casting, 2) Secondary Machining Operations, 3) Machining, and 4) Assembly and Testing. Once the castings are cooled, trimmed and inspected, they are transported to the secondary machining operations. Here, the high velocity abrasive blasting machines remove the sharp edges and residual flash in preparation for machining and assembly. J.L. French machines thousands of parts each month. In the machining process, high volume products such as oil pans, front covers, and bearing caps are machined before reaching the final stage of assembly and testing where the components are assembled into the castings.

In a manufacturing environment like J. L. French, monitoring perishable tool

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wear in the machining process is an essential component to getting greater productivity and lower costs from a cutting tool. There are many factors that can quickly increase production costs just in perishable tooling alone. For example, randomly changing out tools drastically disrupts production, and using dull tools can produce scrap that can lead to serious failures. Additionally, communication between shift workers regarding which tools needed to be changed didn't always occur. If a change was done too soon, money was wasted because tools were being replaced prior to the end of their life expectancy.

When the operator had a "gut feeling" a tool needed to be replaced, the following procedure often occurred: The operator would leave the production floor and go to the tool crib located on the second floor of the facility. After the long walk and a lengthy wait in line at the tool crib, the operator would retrieve the tool. The tool crib attendant then made a manual entry on a spreadsheet of the tooling distributed to the operator. This tedious, unproductive process resulted in downtime creating inefficiencies in the manufacturing process, such as:



- o New tooling supplies were not available to complete the task.
- o Inadequate operational records to track the true cost of machining production parts.
- o Loss of production due to downtime.

What about tracking the costs of repair and maintenance schedules of the die cast machines themselves? Manually tracking the various maintenance schedules on these machines can be quite challenging. According to

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Hacker, in excess of 1200 maintenance tasks need to be performed at various times during the die cast production process. Some are on a fixed schedule and others are on a daily service request schedule. For example, one of the die casting components, such as a core pin, can get up to 30,000 castings per pin before it needs to be replaced. Another machine may have less usage before a repair/replacement is needed. "Maintaining these machines can be compared to maintaining a car by changing the oil, rotating the tires, or cleaning the windshield," Hacker states. If there's not an accurate record of the work that has been done or the work to be done, the production process once again is interrupted.

To control these costs and inconsistent maintenance schedules, J. L. French decided to implement a two-phase cost analysis solution over a period of several years. Phase One: To reveal the actual manufacturing costs for die cast and second operations, and Phase Two: To control the costs of repair and maintenance. They looked to WinWare, Inc. (the makers of CribMaster), an inventory management system designed to manage tools, MRO, indirect materials, and other assets. Their full suite of tool and indirect material dispensing devices, otherwise known in the industry as point-of-use devices, are all driven by CribMaster software. This inventory management software is the most robust and feature-rich software in the industry.

The first phase in their process improvement was to bring the tools in proximity to the production area. Hacker chose the CribMaster Toolboxes, electronically controlled helix-style vending machines. These point-of-use devices were placed on the shop floor near the machines. It simply works like this: An authorized employee walks up to the Toolbox, scans his/her badge, and the machine dispenses the approved quantity needed for the job. CribMaster auto-

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matically tracks who took the product, how much, and when.

In addition to improved work flow, CribMaster allowed them to implement a more efficient replenishment system by establishing satellite cribs. Five satellite cribs were set up throughout the plant where the inventory can be received directly to each satellite crib rather than one master crib. CribMaster notifies each satellite crib when an item needs to be reordered. The Toolboxes are then restocked from the satellite cribs resulting in no more lengthy trips to the tool crib. Not only did CribMaster provide a solution for efficient tool replenishment, it provided other benefits, such as:

- o Reduction of downtime due to close proximity of tools.
- o 100% accurate real-time data of tool usage and costs.
- o Elimination of stock-outs with effective replenishment notices.

With proven results from the initial implementation of CribMaster in Phase One, it was now time to begin Phase Two....accurately tracking the direct costs associated with the repair and maintenance of the machines. Once again, Hacker looked to Winware for a solution. The Preventive



Maintenance add-on module integrated with CribMaster offers enhanced tracking and is designed to help maintain equipment. The software suite was designed to issue work orders and tighten the overall management of maintenance tasks. This feature allows all maintenance monitoring and scheduling to work seamlessly with the inventory management of parts and supplies. "By using a numbers scheme on each part, we can identify all the assets in the work order system," states Hacker. Work orders can be done based on time or

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usage of a part to a specific machine providing accurate records of all maintenance tasks.

Additionally, with CribMaster Hacker was able to save time by streamlining the purchasing and invoicing process. Back in the manual days of purchasing, excessive discrepancies would occur between purchase orders and invoices causing an increased work load for the staff resulting in higher soft costs. "The time savings is huge," boasts Hacker. This time savings plan has enabled them to reduce accounting staff and improve the work flow.

In summary, with the implementation of CribMaster, Hacker now has complete knowledge of the manufacturing costs, the repair costs of the product, parts needed and, more importantly, the bottom line....how much it's costing J.L. French to manufacture each part.

Where does the J. L. French world of die casting take CribMaster from here? Hacker sees CribMaster going beyond just vending, tracking inventory and buying parts at one facility. He envisions increased visibility on a corporate level. With CribMaster, purchasing can be done at a corporate level providing enterprise-wide visibility within all three plants. In fact, this process is currently underway providing even more value for J. L. French. A dream about to come true!