

GLOBAL SHOP SOLUTIONS CASE STUDY

Alexandria Pro-Fab Co., Inc.

Founded in 1976, *Alexandria Pro-Fab Co., Inc.* started out with one used welding machine in the back of a rented shop. Over the past years, it has grown into one of the Midwest's leading *contract machine shops*, with more than 150 employees operating out of 100,000 square feet of production space. Using a variety of precision CNC turning, milling and grinding machines, the company turns out *make-to-order* and *make-to-stock* close-tolerance parts for power sports (snowmobiles and 4-wheelers), gun manufacturing and other industries.



Hand-inspected quality assurance.



Wire EDM machine for lower receivers.

Headquartered in Alexandria, Minnesota, Alexandria Pro-Fab's custom machining services include precision CNC turning and milling (2D and 3D), 5-axis milling, prototypes, and machining for small to very large production runs. Their skilled operators work with a variety of materials, ranging from steel and stainless steel to aluminum, brass, alloys and plastics, as well as castings and forgings. Committed to on-time delivery and the highest quality parts, Alexandria Pro-Fab is certified to the latest ISO 9001:2008 standard.

As the company grew over the years, their production management system failed to keep up with them. In particular, the system offered minimal inventory management capabilities, and was unable to accept *electronic data interchange* (EDI) files from customers to simplify the order entry process. Seeking a more up-to-date and robust ERP system to resolve these and other shop floor challenges, Alexandria Pro-Fab turned to Global Shop Solutions.

"Our previous system served us well when we were a smaller company, but the fact is we just outgrew it," says Plant Manager Dave Dahl. "We needed more from our ERP software, and Global Shop Solutions fit all our needs as a growing enterprise."

Inventorying Partial Jobs with Precision

Currently, Alexandria Pro-Fab runs upwards of 3,000 jobs through the shop floor each year, ranging from custom short runs to high-volume stock runs for its bigger customers. As with many of today's manufacturers, the company also stocks finished products for some of its customers, allowing them to draw from inventory as needed on a preset schedule.

The company often starts manufacturing these products months in advance of the actual due date (using the forecasts received through EDI) in order to have sufficient stock on hand for their customers. Hence, the need for precise *material movement and inventory management* is paramount. According to Dahl, Global Shop Solutions ERP software is more than up to the task.

When running partial jobs, Global Shop Solutions makes it easy to track raw materials, parts, work in progress (WIP), and finished goods as the job progresses. Order entry personnel use the work orders to create demand based on the requirements for material, machining and outside processing lead times. As operators machine the parts and log their results against the work orders, the software automatically tracks material usage and the status of each job.

“We do a lot of partials on the large stock orders, so every day we are ‘WIPing’ product to finished goods,” explains Dahl. “It might take several weeks to complete a job, but we need to WIP them in every two or three days in order to ship them. With Global Shop Solutions ERP software, we know at any point in time how many partials we have, where they are, and how many more we need to complete the job.”

APS Drives Near-100% On-Time Delivery

To keep up with the high volume of jobs flowing through the shop floor, Alexandria Pro-Fab regularly runs three shifts. The first shift always operates at full capacity, which can put a strain on the individual capacity of the CNC machines during the day. With only so much time available on each machine, accurate scheduling is essential for maximizing labor and machine efficiencies.

Global Shop Solutions’ powerful [Advanced Planning and Scheduling \(APS\)](#) application assists with the task by allowing flexible workweek scheduling. Depending on the projected workload and due dates, planners will schedule each machine from a 40-hour workweek all the way up to a 100-hour workweek.

“With APS, we can easily see where we have available time on our machines in case we need to move up a job or push others out,” notes Dahl. “And if we decide to forward or backward schedule, the results are instantaneous. As soon as we make the change, the system immediately shows how it affects every other job on the schedule. We don’t have to wait a week for the system to reload, and we don’t have to pour over a spreadsheet with thousands of lines on it to decipher what we just did.”

As a result of this ability to adjust schedules on the fly, Alexandria Pro-Fab has significantly raised on-time delivery rates from the low 90’s to an average of 97.6%. For its biggest customer, which buys nearly \$20M of product each year, the company has achieved 100% on-time delivery.

Precision Job Costing

Since implementing Global Shop Solutions, Alexandria Pro-Fab’s ability to accurately identify [job costs](#) has grown by leaps and bounds. Previously, managers used the standard approach of assigning an hourly cost to each machine and adding the cost of materials for each job. However, this approach fails to take into account hidden costs such as unproductive time when operators are logged onto a job but not actively engaged in making a product.

With Global Shop Solutions ERP software, operators now use the [Shop Floor Data Collection](#) stations on the shop floor to electronically log on and off all jobs, allowing for more precise capture of labor time. They also use the stations to log their scrap and rework, which further refines the job costing process.

“With the old system, we would total up our labor and material costs and assume we made good margins,” says Dahl. “In reality, we often had jobs going out the door for less than it cost us to make. With Global Shop Solutions, we can track and dig through data to easily find our true costs. This enables us to see when we’re not making the right margins and adjust our pricing as needed.”



Alexandria Pro-Fab’s CMM and inspection lab.

Accurate Data = Confident Pricing

Global Shop Solutions ERP software even helps on the **financial side** of the business. Among his many tasks, Accounting Team Member Trent Sutherland uses the system to manage accounts receivables in a timely manner.

“With Global Shop Solutions, I just type in the job number and can instantly see what has shipped, what is waiting to ship, payment terms, payment history and other pertinent data,” Sutherland says. “The system allows me to drill down to any level of detail, and I can easily modify the data when needed. With just a few clicks of the mouse I can access forecasting, pricing, and price history for a part or customer – anything I need.”

“Since I’m in charge of maintaining the system, I also like the software’s ease of use,” says Sutherland. “The screens are very well laid out so that the information flows the way you need it to. And when a new employee comes aboard, it doesn’t take months to train them. It’s so easy to find the information that I just show them the basics and they can figure out a lot of stuff on their own.”

Dahl considers the superb job costing capabilities as the software’s primary benefit.

“In today’s highly competitive markets, it’s critical to know exactly what a part cost when it ships out,” he concludes. “We can’t afford to assume that it cost \$6 when it’s actually going out the door at \$10. We need to know all our costs from start to finish, and we need the ability to look back and see costs, pricing and margins over time.”

“With Global Shop Solutions, we can look back to the first day we went live with the system and all the data is still there,” says Dahl. “As we have gotten more efficient over time, we can see our costs continually drop until we reach the point where we’re the best we can be at a particular job or process. Knowing what we’re actually spending versus guessing at it gives us real confidence in our pricing and our margins.”



Alexandria Pro-Fab's warehouse and finished goods storage.