datanomix

TW Springer Finds Datanomix is a Perfect Fit

Family-owned precision manufacturer optimizes performance with advanced analytics and automation.

Thomas W. Springer, Inc. is a precision manufacturer located in a 20,000 sq. ft. facility in Landenberg, PA. A family-run operation founded by Thomas Springer in 1976, the company specializes in precision machining of small components in lot sizes from one to 80,000 for both US and International customers mostly in the electronics, medical, and military industries. The business currently employs 25 people, running one manned and up to two unmanned shifts with a mix of CNC screw machines, Vertical and Horizontal Mills totaling 28 machines.

Aaron Springer is the vice president of TW Springer, and son of the founder. Aaron started at the company when he was 16, mowing the lawns, recycling chips, and doing other odd jobs. He worked his way up to machine operator during the Summer out of school, and after learning how to operate the machines, his Dad told him "to understand the business, you've got to learn quality." Aaron worked in the quality department for 10 years, eventually moving to the front office. Although his Dad is president and still involved, Aaron runs the day-to-day operations.

A Focus on Technology

A technologist at heart, Aaron has been implementing new systems and machines into the TW Springer factory for more than a decade. The company used to have a lot more machines from the late 1980s, but even though the machines were paid off, they didn't run unattended and took twice as many operators as newer machines, and with less accuracy.

TW Springer has always been a Tsugami shop, so they upgraded to new Tsugami S206 CNC machines. For every new Tsugami purchased, they were able to retire two of the old machines and

THOMAS W. SPRINGER INC.

LOCATION:
20,000 sq. ft. facility in Landenberg, PA

CHALLENGE:
Finding the right production monitoring solution to help make better decisions around production and capital

SOLUTION:

- Chose the Datanomix platform for automated production intelligence with no operator input
- Connected seven Tsugami machines, focusing on the screw machines that run unattended
- Installed two smart TVs on the shop floor to engage the entire team with real-time performance scoring

RESULTS:

- Identified bottlenecks in machine setup, leading to the decision to hire another setup person to help optimize production
- By understanding real machine utilization, they make better decisions on when to purchase new equipment
- Real-time visibility into production helps everyone stay on track to meet their customers' production schedules

run with fewer operators. Focusing on technology, the new machines included SPC for quality tracking and unattended operation.

Unattended operation has become increasingly more important to TW Springer as the job market for machine operators, quality control specialists, and production supervisors has become increasingly tight. According to Aaron, "Unattended operation is where we're going with the technology. There's just not that many people looking for jobs in manufacturing these days. The more we can automate our processes, the better. We can deliver more productivity with the same number of people, and our focus on technology helps with recruitment."

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The Need for More Data

With an eye on the bottom line, Aaron knew that the key to continued success was a focus on transforming TW Springer with data. "We've been at this for 45 years and we never really figured out our OEE or put hard data behind our decisions," said Aaron "We just kind of knew the schedule and when we were behind and where our lead times needed to be. If we were running behind consistently, our gut reaction was to buy a new machine."

Aaron was isolated from production numbers while sitting in his office. He would find out at the end of the shift or first thing the next morning that they didn't produce the number of parts they were supposed to, "so now we have to dig in to find out what the problem is." After promoting an employee to foreman, Aaron wanted to get production data directly to him so he didn't have to walk the shop floor every 10-15 minutes to understand what was going on.

An avid learner, Aaron had been reading up about production monitoring solutions for a while and believed they could provide the hard data needed to make better decisions around production and capital. So at the start of 2020, Aaron and his team embarked on a journey to find the right production monitoring system for TW Springer.

Looking for the Right System

The first production monitoring solution TW Springer piloted was fairly non-invasive. It hooked into the breaker panel and used current fluctuations to read when the machine was up or down. The system provided some data, but there were limitations. "First thing in the morning, we warm up our machines for 30-45 minutes before the operators get here. That way, operators aren't standing around, waiting for the machine to warm up. This system had no way of knowing whether we were making parts, making air parts, or what we were doing during warm-up."

TW Springer also looked at a solution that came preloaded on the newer Tsugami machines. The solution used machine data directly from the machines, but it was too complicated for their needs. "It was way more than we bargained for. In order to understand what's happening with the machine, the operator needs to input when the machine is running, when it's stopped, when we're doing a repair, etc. It wasn't going to work for us to have our operators walk away from their machine every time they needed to input the machine states in a central computer."

Even though they were frustrated with the process, TW Springer kept looking for the right solution to their production monitoring needs. In the Fall of 2020, Aaron read an article in Modern Machine Shop magazine detailing

how J&W Swiss Machine, a Swiss-turning shop in Connecticut, used Datanomix to maximize efficiency. Aaron decided to reach out for a demo.

Datanomix is Just Right

TW Springer started a trial in December of 2020, piloting Datanomix on two Tsugami screw machines. Datanomix preprogrammed all of the equipment and TW Springer self-installed. “Datanomix is pretty much plug and play. We did have to upgrade our WiFi and add an extra antenna to get complete coverage on the floor, but other than that, it’s been flawless. Datanomix monitored the system for a couple days and then they turned the live data over to us. Really, we had no issues at all.”

What really convinced TW Springer to purchase was the support offered by Datanomix. During the trial, the Datanomix team worked with TW Springer to highlight their warm-up period in the production monitoring system so the data truly reflected TW Springer’s unique workflow. “The Datanomix team went the extra mile to analyze and solve how we displayed our warm-up period for our machines, even before we purchased it. This made us confident that Datanomix was the right team for us.”

In late January 2021, TW Springer purchased Datanomix and brought seven Tsugami machines online, focusing on the screw machines that run unattended.

Up and Running

With Datanomix, everything clicked and the entire team agreed it was exactly what they were looking for, which was important to Aaron. “One thing I’ve discovered as an owner is if everyone’s not on board, it’s not going to work. With Datanomix, we didn’t have any issues because we made sure our key people—set-up personnel, the foreman, the general manager—were involved from the get-go.”

As part of the roll-out of Datanomix, TW Springer installed two 52” smart TVs in the shop. The Datanomix TV Mode dashboard was demonstrated to all of the machine operators, with the foreman explaining how Datanomix production scoring provides a guide to how each machine was performing in real time. Operators were encouraged to ask questions about the dashboard they would be seeing every day as they ran their jobs.

In addition, Aaron and the foreman have Datanomix running on their computers, so they have access to the system 24/7. “With Datanomix, getting information on current production is instantaneous. When you look at the TVs and see that a job is running at a C grade, everyone rallies to find out what the problem is. Problems get fixed sooner, and we can get production back on track to keep customers happy.”

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Optimize with Data

A major factor in TW Springer's decision to purchase was Datanomix's hands-free approach for delivering actionable insights into production in real time, and overall factory trends over time. Datanomix works in the background, analyzing data and visualizing insights to help the entire company embrace a data-driven operation, all without requiring machine operators to interrupt normal workflows by doing cumbersome data entry. Datanomix automatically provides context about actively running jobs and how they should be performing.

In very little time, the insights from Datanomix made TW Springer realize they were not as efficient as they thought they were. This may seem like a negative, but since Datanomix delivers a benchmarked target for TW Springer to work towards, having this information is actually a positive. Now, TW Springer has a solid number to work towards, and if they make changes, like bringing in another operator or setup person, Datanomix can show TW Springer the results of these changes based on data from live operations instead of just using intuition.

"The hard data Datanomix delivers is important because in the past, our gut reaction to production slow-downs was to buy a new machine. With a new machine, you need people to set it up and upgrade software and hardware, and you need more operators to run and maintain the machine's operations. Now we look at Datanomix and with the data, we know if we can increase production capacity by optimizing utilization before we purchase another machine."

Datanomix has helped TW Springer identify bottlenecks in their machine setup. "Currently, we have two setup specialists doing most of the setup work on our seven CNC screw machines". In some weeks, the machines are running 5,000 to 10,000 piece runs so there is not much set up intervention needed. It's a fairly stable process. But other weeks, every job is 100 or 200 pieces and our setup specialists are running around. Machines are down more than they are up and Datanomix exposes this information to the team, showing us opportunities for improvement."

By understanding their limitations in setup, Datanomix helped TW Springer identify the need to hire another setup person to help optimize production. Even though it's difficult to hire right now, TW Springer knows it's the right move because they have the data with Datanomix. "It's difficult to find the right person because our setup people have 35 years of experience. But we're comfortable making the decision because of the data from Datanomix, and when we do get someone on board, we'll be able to see the impact because of Datanomix."

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Getting in Rhythm

Now that they have experience with Datanomix, TW Springer has developed a rhythm for how the system has been integrated into their processes and workflows. A small team, which includes Aaron, their foreman, and a floor manager receive the Datanomix Coffee Cup Report in their emails every morning, offering an executive summary of the previous day's production and allowing them to streamline production meetings. With this summary information, they can focus on issues instead of running around to gather information from supervisors and operators.

At the core of their day-to-day operations is Datanomix TV Mode, which shows a real-time status for what's happening on the floor right now. "In reality, we pretty much know what's going on at any point in time because we're looking at Datanomix all day long," said Aaron. "TV Mode lets us know when a job isn't going very well, so we should go check on the operator. This real-time visibility is critical to helping us stay on track to meet our customer's production schedules and address issues immediately, instead of waiting until the next day."

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In addition, Aaron takes advantage of the After Action Report, which shows the historical production and performance as compared to the Datanomix-derived benchmark. Aaron can dig into these historical metrics on a per-machine basis to check that what they are doing is trending in the right direction, ensuring the company is moving forwards instead of backwards.

Looking Ahead

Aaron feels like TW Springer has only scratched the surface with how Datanomix can support their data-driven initiatives. "As we get more experience with Datanomix, we continue to look for ways to transform our business with data. One of the more intriguing opportunities is the Quote Calibration Report. As we build more data on different parts and jobs, the information this report provides on our actual cost per part against the benchmark shows us opportunities for improvement, as well as insights into how we can improve our job quoting."

TW Springer has built a solid relationship with Datanomix and continues to be impressed by the support provided, as well as how the product continues to evolve based on feedback from customers. "As we continue to evaluate new technologies to help us optimize our capabilities, I know Datanomix will be there every step of the way, supporting us with data."

Find Out How Datanomix can Power Your Factory

Request a live demonstration by contacting a Datanomix sales representative at sales@datanomix.io