



User Report

Tool Presetting

ZOLLER
expect great measures

ProCam Services LLC, Zeeland, Michigan

Business booms after shop invests in tool presetting

Streamlined workflows save time and boost revenue





From left, **Alex Bassett**, ProCam Services LLC day shift foreman, and **Tom Bassett II**, company owner and founder, stand beside the ZOLLER »smile 420« tool presetter at the job shop in Zeeland, Michigan.

Tool presetter drives machine shop's \$1 million sales increase

How ProCam Services used ZOLLER's »smile 420« to optimize its processes and grow the business

ZEELAND, MICHIGAN — Poll any group of machine shop owners, and chances are every one of them wants to reduce setup times, decrease changeover time between jobs and improve machine tool uptime.

But ask that same contingent about the technology they use to be more efficient, and the responses vary significantly and reveal a wide range of approaches.

Even so, as the manufacturing industry's

persistent skilled worker shortage drives interest in productivity-boosting solutions, small and medium-sized machine shops are increasingly recognizing the time and money they can save with tool presetters. These offline machines measure various dimensions of cutting tools, including length, diameter and offsets, before the tools are installed in the machine tool for production.

"It's not unusual for us to work with job shop

owners who believe the misconception that presetters are not for them,” said Dietmar Moll, director of sales at ZOLLER Inc., an Ann Arbor, Michigan-based company that provides an array of manufacturing hardware and software, including presetters. “But often when we get the presetter into their shop and they see the results, their only complaint is they wish they had purchased one sooner.”

CNC job shop’s investment in tool presetter pays off

That’s exactly what happened at ProCam Services LLC, a family-owned CNC machine shop that Tom Bassett II established in western Michigan nearly 30 years ago. Initially skeptical of tool presetters, Bassett’s reservations vanished after he purchased the ZOLLER »smile 420« about five years ago and incorporated the tool presetter into the workflow of his busy job shop in Zeeland.

Not only does the machine precisely measure cutting tools within microns, but it completes the work in minutes. ZOLLER’s internal tests show measuring with a tool presetter is at least 45% faster than with the machine tool’s internal control.

Setting up jobs on the tool presetter also freed up time ProCam machinists previously spent touching off tools in the shop’s CNC machines and mills. This streamlined approach where a machinist measured tools for one job while the machine tool cycled through another job allowed ProCam to take on more orders.

In the company’s first year using the ZOLLER tool presetter in 2019, sales increased by \$300,000. In 2020, they grew by another \$700,000. Bassett attributes the bulk of that \$1 million increase to more efficient processes that improved the productivity of all the shop’s machine tools.

“I don’t think I’ve ever had a piece of equipment that I’ve gotten in the shop that changed

Today, presetting tools on the ZOLLER »smile 420« tool presetter is an integral first step of the manufacturing process at ProCam Services LLC in Zeeland, Michigan.



things so much," he said. "...There's been things in here that we've gotten and you're like, 'Oh, man, we should have got that thing years ago.' But I don't think anything's ever had the impact that the ZOLLER has."

Do presetters belong in high-mix, low-volume shops?

Bassett's current view on presetters sharply differs from his earlier stance. For much of his career, he believed presetters didn't belong in shops like ProCam with a high mix and low volume of orders and frequent job changes.

”



Tom Bassett II
ProCam Services LLC founder

I don't think I've ever had a piece of equipment that I've gotten in the shop that changed things so much.

Launched in 1995, ProCam positions itself as an agile job shop that beats its competitors on lead time without sacrificing quality. Its machinists often cycle through 20 to 30 jobs a day to fulfill orders for industries ranging from aerospace to automotive to agriculture and everything in between.

The 38,000-square-foot shop includes eight milling machines — vertical and horizontal mills and three-, four- and five-axis mills — three lathes, including one six-axis unit, and two CNC routers. The setup gives ProCam the flexibility to quickly complete orders of varying sizes, materials and complexity.

"We've had customers call in the morning and say, 'Hey, we're broken down. We need this,' and then we've delivered the part to them in the afternoon," Bassett said. "It doesn't always go that way, but most of the time, our backlog is about two weeks because we cycle through things so fast."

At shops like ProCam, every minute spent on setup or changeover is a minute the machine tool is not making money. It's not surprising then that Gardner Intelligence's Top Shops 2019 survey concluded that more profitable job shops tend to use presetting machines. The survey found 55% of shops with over \$180,000 in sales per employee — a strong indicator of a shop's profitability — use a tool presetter. Among the quarter of shops with the lowest sales per employee, only 29% used a tool presetter.

For Bassett, it all came down to the numbers. Intrigued by a demo of the »smile 420« at the ZOLLER booth during the 2018 International Manufacturing Technology Show, he calculated how much time his machinists spent touching off tools and checking runout in the machine tool before production.

He realized they spent anywhere from 30 minutes to an hour per job on setup. When multiplied by the number of jobs per machine tool each day — and then extended over weeks, months and years — the numbers



were alarming. Applying the shop's hourly machining rate to those numbers brought the lost opportunity cost into focus.

"When I'm running the numbers, I'm like, 'This cannot be right. There's just no way this is right,'" Bassett said. "I'm going from, 'This thing isn't something for our shop,' to 'Oh my God, I got to have this thing.'"

Accuracy and consistency in tool presetting

Today, presetting tools on the »smile 420« is the first step of ProCam's machining processes once an order reaches the shop floor.

Outside of the considerable time savings, the tool presetter introduced a level of repeatability that human operators simply cannot replicate. The machine's high-precision SK-50 spindle, optics and image processing

camera provide accurate data each time for a consistent operation.

"Before the ZOLLER equipment, with the touch offs, you had a wide range of variables from one person to the next," Bassett said. "Day shift starts the project, night shift comes in, and now you've got two different touch-off techniques, and they're off a little bit here and there. Then you can end up with quality issues with the parts or having to rerun programs again to get the blends right. With the ZOLLER equipment, that doesn't happen anymore because everybody's touch offs are exactly the same."

The »smile 420« tool presetter can output data automatically to the machine tool, eliminating the possibility of data entry errors. Bassett took this further by internally developing a program that outputs the data to multiple machine tools so machinists can pull up the

ProCam Services LLC machinist **Carter Vander Kolk** uses the ZOLLER »powerShrink 600« heat-shrink machine at the job shop in Zeeland, Michigan.



values on any of the shop's machines.

"It's so embedded into the shop as such an integral part of our process now that allows us to be a lot more nimble than we were in the past — changeovers from one job to the next, the accuracy of it, it's just really amazing," Bassett said. "It's one of those things that you look back on and I can't imagine not having this thing. How could I even think that way in the first place that I didn't need this thing?"

Convincing machinists to say goodbye to outdated techniques

While Bassett was sold on the math behind a tool presetter's value, he knew a major hurdle was convincing his machinists. Previously, ProCam machinists measured tools in the machine tool prior to production through a variety of methods.

"Each machinist has their own little technique where they come down on the surface, and they're using shim stock or some use 1-2-3 blocks and they're sitting there, working the thing in," Bassett said. "If they're checking runout on that tool, it can take them anywhere from a minute to five minutes to do one tool. It would be no problem for a job to have 15 tools in it, so there goes anywhere from 15 minutes to 45 minutes just loading tools in the machine. With ZOLLER, you're done in less than five minutes."

Seeing is believing, so when one ProCam machinist doubled down that his technique was superior, Bassett posed a challenge: Touch off your tools the old way and compare the results to the tool presetter.

"I said, 'I want you to prove to me that this thing is wrong. Show me,'" he said. "And in less than a week, he was no longer touching off his own tools."

Alex Bassett, the day shift foreman and Tom's youngest son, said the machinists now trust the »smile 420« completely.

"It just gives us less to worry about," he

said. "When you're setting up complicated stuff, there's times where your mind is melting because you're like, I got to check this, check this, check this. But at the end of the day, I got the ZOLLER, I know this tool, that's one less thing to worry about. It gives you peace of mind."

'Strong partner': What ZOLLER offers beyond presetting

Since acquiring the tool presetter, Bassett has also bought ZOLLER toolholders, and after IMTS 2022, he purchased the ZOLLER »power-Shrink 600« heat-shrink machine.

"We're still kind of in the beginning stages of using it, but we're already seeing a big payback as far as tool life and increasing our speeds and feeds from what we were doing before," Bassett said of the »powerShrink«, adding ProCam's early results show tool life is about four times longer than before.

That piece especially impressed the younger Bassett, who often operates the »power-Shrink« on the shop floor.

"It helps tool life because your tool isn't wobbling around from runout (and you achieve) increased surface finish because it's not creating any ripple effects on your profile," he said. "It really helps with harmonics because it just totally grabs the tool."

According to Moll, companies that first encounter ZOLLER by purchasing a tool presetter often find other solutions in the company's portfolio that can help them optimize their manufacturing processes.

"The presetter is the biggest bang for your buck, meaning the investment is relatively small but the return is huge, and that's how many companies are introduced to us," he said. "But with ZOLLER, you're not just getting a piece of equipment. You're getting access to ZOLLER's entire ecosystem of smart manufacturing solutions, and you have a strong partner who wants you to succeed."

Closer look: ProCam Services

ProCam Services LLC is a “true CNC job shop” that machines parts for industries throughout the Midwest, according to founder Tom Bassett II. Established in western Michigan nearly three decades ago, the family-owned company has grown to serve a range of sectors such as agriculture, automotive, manufacturing, food processing, oil and gas, aerospace and more.

The business is rooted in Bassett’s passion for programming. He started his career in 1984 programming CNC machines for the mold industry. By the early 1990s, he was completing work for his own clients, initially working out of his basement and later graduating to using a CNC machine in his garage.

That side job developed into a full-blown business by 1995, when he and his wife, Malinda, launched ProCam Services. In 2005, Bassett moved the business from a rented space in a friend’s job shop to a facility in Jenison. Five years later, he opened a second location in nearby Hudsonville.

In 2012, he merged the two shops and moved the business to its current location, a 38,000-square-foot facility in Zeeland. Today, the shop employs about 25 people — including two of Bassett’s sons, Alex and Brent — and generates about \$4 million in sales annually.

Learn more about ProCam Services at procamservices.com.



Established in 1995, ProCam Services LLC machines parts for a range of industries throughout the Midwest from its 38,000-square-foot facility in Zeeland, Michigan.



ZOLLER Solutions

Presetting & Measuring

Tool Management

Inspection & Measuring

Automation

More speed, higher quality, safe processes – with ZOLLER, you increase the efficiency of your production. ZOLLER offers you outstandingly precise devices for adjusting, measuring and testing cutting tools, software, interfaces, cloud services and solutions for the automation of tool processes. You can combine all of this to create your individual system solution – on your way to the smart factory.

DRABPROCAM - US (02/2024)



ZOLLER Inc.
3900 Research Park Drive
Ann Arbor, MI, 48108 USA
Phone: 734-332-4851
sales@zoller-usa.com | www.zoller.info

ZOLLER
expect great measures