



Machining

Smart Tooling: How Haimer's Contactless Management System Helps Reduce Manufacturing Costs

Roland Jones | Sep 29, 2020

Companies adapting to the “new normal” in manufacturing are looking for ways to become more efficient and stay one step ahead of their competitors. Here's why improving toolroom productivity is a powerful approach to this problem.

Ask any machine shop owner or production supervisor to name his or her biggest expense on the facility floor and you're likely to find machining time at the top of the list.

Machining time is generally the main driver of cost in a facility. The longer it takes to machine a part, the more expensive it will be. Long setup times are a drain on productivity, too. These periods—including teardowns and the loading of parts and tools—add no value to operations and should be as short as possible.

What's the solution? A willingness to embrace new tooling approaches that can improve production efficiencies is vital, says Brendt Holden, president of Haimer USA, a toolholder manufacturer and private subsidiary of Germany's Haimer GmbH.

Presetting is a huge part of toolroom operations, but it's often overlooked, Holden says. Manufacturers are constantly looking to decrease downtimes and generally enhance processes. They sometimes think of upgrading equipment, but a less expensive option is to simplify the manufacturing process, he says.

“Setting up for jobs has been going on since the beginning of machining, but I would definitely say there's a new trend toward efficiency.”

Brendt Holden
Haimer USA

“People say, ‘I just set my tools on the machine,’ or, ‘I use a laser in the machine to preset the tool,’ and while lasers have their place, anything you're doing on the machine to preset a tool ends up lessening your efficiency since the machine is not cutting chips during the on-machine presetting time,” Holden adds.

Creating Face Protection for Worker Safety

The coronavirus pandemic has driven up the world's demand for personal protective equipment (PPE), which is necessary to keep workers safe from the highly infectious coronavirus.

With disposable PPE in short supply and costs volatile, Haimer wanted to ensure its workers are safe and began to make its own protective face shields.

"We looked at the face shields on the market and thought they were awfully cheap and simple," Holden says. "They're effective, but we wanted to make something more comfortable. That drove us to adapt fast and make something that's both comfortable and safe."

Made in Germany, the face shields are distributed to Haimer's workers worldwide. They're also available for purchase by Haimer's customers, and workers in other industries where PPE is vital, such as healthcare.

"Our guys really enjoy wearing them because they are safety glass-rated, so you don't have to wear safety glasses too, and in certain shops, you don't have to wear a mask either," Holden says. "There's a great degree of comfort. If you're in a shop and you're wearing PPE all day long, you want something comfortable."

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Toolroom technicians are generally paid an hourly rate, but if a tool room isn't run efficiently then machining time—defined as the amount of time spent using mechanical equipment to produce a product—can become a needlessly large portion of the employee's hourly cost to the company.

"In many production environments you'll have a machinist or someone who runs the machine coming over to set up tools, and that's really wasteful," Holden says. If the person is paid to machine but is spending his or her time setting up tools instead, "you end up costing yourself a lot more money, and that's the hidden cost that many people don't see," he adds.

Getting Smart About Tool Presetting

Haimer's ***contactless tool management system*** streamlines the entire toolroom using an Industry 4.0 approach that allows tool operators to change tools without any personal interaction between other tool operators. It's also "contactless," which in a time of concern about COVID-19 infections means you can avoid lengthy and costly cleaning times.

Haimer's approach is highly organized and "more stable," Holden says: "The big advantage is keeping the machine tools running at all times and that's what everyone should be striving to do."

A recent analysis by Haimer shows the cost savings its tool presetting system provides. In a conventional machine shop with, say, eight machines, where each one requires a person to set up the tools manually, the labor cost can run to \$150,000 per year, but in a shop that uses "Industry 4.0 tool presetting," where you have one person setting up all eight machines, you can reduce that cost to

\$75,000, Holden says.

Another demonstration of the efficiencies, also from Haimer (see video below), shows how the time taken to set up four separate tool sets using different methods—manually, using a laser, using regular presetting, and using Haimer’s Industry 4.0 presetting—can be shortened: from as long as nearly 23 minutes to 1:43 seconds.

Using Contactless Tool Management

Another advantage of contactless tool management is it promotes social distancing within manufacturing facilities, which is seen as one of the most effective ways businesses can prevent a catastrophic explosion of COVID-19 cases.

“When you visit most shops you usually see a whole bunch of people in the toolroom, coming and going, and it’s kind of chaotic,” Holden says. With the Haimer approach you mitigate this issue, he adds.

“We looked at this and said, ‘OK, how can we keep our employees safe?’” Holden says. “In the past, the guy or the girl who would bring in the tooling probably would roll right up next to the person who set the tools and say, ‘Hi Joe, how are you doing? Here’s the new tooling for you to set up the next run,’ and then maybe they talk a little bit, and then off they go, and while there may not have been a lot of actual contact, there was little social distancing.”

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In the Haimer system, tool technicians park their carts containing tools outside the toolroom for another worker to collect, and used tools are left for collection in an adjacent location.

“People just know to come drop off their old tools and grab their new tools immediately, and then they’re gone so they are never interacting with the person in the toolroom,” Holden says. “It’s a process that we think has really helped us social distance our employees within the shop.”

New Drive Toward Efficiency

The Haimer system has some efficiencies that may not be immediately recognized but are significant, Holden argues.

“Often these days you get people in the toolroom who really don’t know how to use the equipment, and so maybe they misuse the equipment, which can lead to costly errors, so I think when it comes to efficiency you have a consistent process with a real expert running the equipment in the toolroom, which minimizes potential damage of the equipment and leads to more consistent products going to the shop floor.”

“Having your tools where you want them is important, too,” Holden continues. “You can have lots of workers moving through a toolroom, and often they spend time looking around for stuff because, you know, Joe put it over there and Sam puts it over here, and then when Tim needs it he has to figure out where it is. With one person in the toolroom, that person generally knows where everything is because the room is organized and the tools are readily available, and all that is very important for Haimer because we want to avoid wasted time.”

Established in 1977, Haimer is a global supplier of the tooling industry. It has provided solutions for its customers creating parts in the aerospace and automotive industries for over four decades, always

focusing on minimizing waste and maximizing efficiency.

“Setting up for jobs has been going on since the beginning of machining, but I would definitely say there’s a new trend toward efficiency,” Holden says. “Everyone talks about their cutting tools and their feeds and speeds, and that’s all very important, but the reason why they’re looking at this is to get things done faster and make more money with the equipment they have.”

“It has a lot to do with gathering data, analyzing it and then figuring out how to make a process more efficient,” he continues. “You want to make sure that every time that tooling assembly comes to the machine it does so in the same fashion, with the same preset length, the same balance condition, and the same runout condition. Analyzing that data every single time is not practical.”

What tips can you share about efficient toolroom management? What are your best practices?

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