



Metalworking

Why Machine Shops Are Snapping Up Aftermarket Service Deals

Kip Hanson | Apr 30, 2024

Machine shops grappling with a widening labor shortage, higher inflation and the need to invest in constantly improving technology are increasingly taking advantage of long-term maintenance agreements and other services offered by their equipment suppliers.

It's a trend that benefits both parties. Offering parts replacement, repair and assistance with digital equipment enables manufacturers to lock in revenue streams that can last long past the initial sale—and potentially boost profit margins, *according to consultant McKinsey & Company*.

Their customers, meanwhile, are able to maximize the performance of expensive machinery and tools while assigning smaller workforces to the most important jobs and outsourcing tasks they might previously have handled in-house.

Avoiding Calibration Conundrums

Metrology equipment provider Mitutoyo America Corp., for instance, makes a *variety of quality assurance services* available to its customers, says Education Manager Jeff Meyerholz. At the top of the list is onsite calibration and certification of coordinate measuring machines.

Field service technicians, who also perform general maintenance, “typically use a check master or other type of master gage” for calibration, Meyerholz says. “Contrary to what you might see in a magazine or hear from others, there’s rarely a need for a laser inspection system like those used on a CNC lathe or machining center. Today’s CMMs have temperature compensation and volumetric mapping capabilities, so a skilled technician can very accurately calibrate one by placing a check master in different orientations.”

Those gages draw attention to another common service that Meyerholz and his team perform—calibrating a shop’s gage blocks and rings, which they can then use as reference artifacts for internal calibration of hand tools like micrometers, bore gages and calipers.

While there’s no shortage of *calibration labs* willing and able to perform the service, the National

Institute of Standards and Technology among them, Meyerholz warns that shops should do their homework when selecting one.

"It's important to use an accredited lab, since this means a third party has come in and verified that the lab is following best practices and can actually do what they say they do," he explains.

"I teach a small tool calibration class here at Mitutoyo and frequently hear from customers who are frustrated with the calibration house they're working with, either because it takes so long to get stuff back, the quality of the work isn't what they're looking for, or it's just too costly," he says. "That's when they decide to bring as much of their calibration work as possible in-house."

Keeping It Clean

Just like a clean car, everyone likes a clean machine tool. Unfortunately, you can't drive your CNC through the local Mister Car Wash, but you can call Anthony Perez.

A sales representative for Fluid Service Technologies (a sister company to cutting fluid supplier Ashburn Chemicals), he provides multiple levels of machine cleaning and coolant maintenance.

The service has become "more and more popular across the country," Perez says. "We've recently completed jobs in San Francisco, Denver, and a really big one in Cleveland...we go all over the place to clean machinery."

Many of the cleanings are one-offs. The Cleveland job, for instance, consisted of "five big Mazak mills with tool hives and a pallet system running in between," Perez says.

His crew of four came in on a Thursday evening and was out by Sunday afternoon, leaving behind "almost like new" machinery, he says.

In other situations, customers pay on a subscription basis for a certain number of cleanings per month, quarter or year, depending on the number of machines and their availability.

While many shops leave it up to individual machinists to adjust fluid concentration, check PH levels and keep nasty microorganisms at bay, that approach can lead to inconsistency, Perez says.

"If you have 30 CNC machines and 30 operators, you're likely to get 30 different results," he explains. "By partnering with an external provider like us, your coolant and disposal costs go down while tool life and part quality improve. And if you're not yet ready to subcontract your fluid maintenance, we're happy to come in and work with you on a consulting basis, whether it's to train your crew on best practices or to solve specific performance problems."

Extending Tool Life

The potential market extends far beyond repair and maintenance.

MSC Industrial Supply Co. not only helps customers with tasks such as finding spare parts and arranging for spindle rebuilding but also develops ways to improve tool life and part quality.

Its MSC **MillMax**[®] service, for instance, uses a simple tap test to "take the guesswork out of optimizing your milling applications, replacing the traditional trial-and-error approach with a scientifically proven method that delivers proven results," explains Dr. Michael Gomez, principal engineer with the company's manufacturing research and technology team.

“Machine tools are like musical instruments, in that they both require tuning, and one of the first things any kid in middle school band class learns is how to do that,” Gomez says. “By tapping the toolholder assembly with a hammer and then using an accelerometer to measure the resulting vibration, we can better understand the dynamics of the entire system and take steps to minimize the harmonics that often lead to chatter. Doing so helps you to maximize productivity.”

Something that machinists may not always stop to consider, even though they know it, is that “when you take a cutting tool from a shrink-fit holder and put it in a milling chuck, for example, or increase the stick-out amount by 50 percent, the performance is going to change,” he adds.

“MillMax[®] serves to quantify that change by analyzing toolholder and spindle stiffness, machine mass, and other factors that influence machining performance,” Gomez says. “It then makes suggestions as to what steps you should take to optimize it, whether it’s speed and feed modifications, adjusting the toolpath or changing to a different holder. It’s a very powerful tool.”

What services provided by parts and equipment suppliers are most valuable to your shop? Tell us in the comments below.

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