

The Quest for the All-in-One Machine

Multitasking machines have a pretty clear sales pitch: They can do what you need them to and make a gear, but if you're a job shop with fingers in a lot of pies, you can also use them for anything else you might need to make. Hobbing, cutting, milling, now even gear skiving. If it's a cutting process, a multitasking machine can probably do it. Therefore, when you can do everything you need to with one machine, the time and space savings are immense. No more taking the part off and resetting it as it travels from machine to machine, reducing lead time and the potential for user error. No more needing an entire warehouse of machines just to get one gear out the door. That's the multitasking machine's core selling point: in goes the blank, out comes a finished gear.

Every company, including Mazak and Okuma, will make this their first and primary bullet point when listing the virtues of multitasking machining, but WFL Millturn focuses on taking that philosophy as far as it can possibly go. For many years, they have integrated in-process metrology to the list of steps you can all do on one machine as part of the company's long-term strategy to make their machines literal one-stop shops capable of doing every single step of the entire manufacturing process. This means that a customer using a WFL Millturn can easily program the part (including the gear features), simulate, machine all operations and then measure before taking the perfect part out of the machine. According to Kenneth Sundberg, managing director of aftermarket sales at WFL, this is the work WFL does every day and how the company differentiates itself from the competition.

"This is what we do at WFL: complete machining," Sundberg said. "This is simply our DNA. To be number one in complete machining; this is our ambition. This is our focus every day."

So what benefits does the latest step in that process yield for you, the manufacturer? The main benefit, according to Sundberg, is reduced floor-to-floor time. Having advanced programming and simulation software like Crashguard Studio, as well as metrology equipment in the machine itself, means that manufacturers can double check their work without having to take a workpiece out of the machine. They will not have to drag it to dedicated metrology equipment, bring it back and put it back on, or

alternatively have to wait to start the next piece until the previous one has been checked. Like with everything else in multitasking machining, its primary benefits are reducing setup time and minimizing the number of points during the manufacturing process for potential human error to occur.

It's important to note however, that as with almost all in-process metrology systems on offer today, WFL's onboard measuring equipment is *not* a replacement for a full metrology lab. In the future, the sky may well be the limit, but for now, WFL's in-process metrology doesn't track every criteria required for measuring gears according to AGMA's practices. Instead, in-process metrology's main job is to quickly and accurately check the main features to secure the quality of a machined gear. It aids in ensuring workpiece consistency for repeated jobs and makes sure that nothing's gone awry mid-process, but completed components should still go through proper lab testing to provide the required gear quality data according to the gear standards required.

"If you have one component and it has to be right, this is extremely important to be able to measure in the machine," Sundberg said. "Otherwise you have a lot of hassle with setting up the part again and you lose time and so on."



WFL is on a mission to create truly all-in-one multitasking machines.



WFL is running into increased demands for automation and a push for machines that can run 24/7.

“We see that the demand for automation is growing all the time, and the main topic is that customers want the machine up and running for the majority of the available hours,” Sundberg said. “And there’s not enough skilled workforce for that, so that’s a big limitation. And if you invest in an expensive machine like a WFL Millturn, then you should make sure that you get the hours out of it that you can. Here we see that automation is a very big topic for smaller to midsize batch manufacturing.”

Which all leads to WFL’s recent acquisition of Frai, an automation solutions company. The acquisition is too recent to publicly announce any advances, but Sundberg noted that this acquisition would help WFL improve its automation and help push the company along in its quest for the ultimate, permanently operating all-in-one machine.

While many multi-tasking machine manufacturers are now offering gear skiving, it’s not as much of a focus for WFL as a majority of the customer requests are solutions for larger gears where the traditional methods like hobbing, InvoMilling, and profile milling are beneficial. WFL’s wheelhouse is machines primarily designed for small batches of large parts, where other traits such as high torque and high machine rigidity are of higher importance. In this case, Sundberg noted that the mechanical drives WFL traditionally uses are of higher importance. That said, Sundberg stated that WFL is working on new developments suitable for batch manufacturing of gears where certainly gear skiving will be one feature covered.

“We are still committed for the future to offer this technology for precision machining,” Sundberg said. “It is definitely something that has come to stay and will expand in a lot in the next [few] years.”

In the meantime, WFL’s quest to be the best at single-setup manufacturing remains the company’s primary focus. 

For more information:

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