

# Mining for success: ESPRIT CAM helps Sandvik

Sandvik built its first stone crusher in 1896 and has since grown to become a world leader in mining equipment.

“We are the best in the world, and we can now be even better at making our cone and jaw crushers in different models,” Olle Lundberg, production engineer at the Sandvik Mining factory in Svedala, Sweden told freelance journalist U. Samuelsson, of *mekpoint.com*.

As a specialty manufacturing business under the umbrella of the Sandvik Group, Sandvik Mining is a leading global supplier of equipment, tools, services and technical solutions for the mining industry. Its expertise covers the areas of rock drilling, cutting and crushing, as well as loading, hauling and the handling of materials.

Lundberg, along with five colleagues, will write CNC programs for the lathes and machining centers that manufacture Sandvik’s specially constructed casting.

In 1999, Sandvik chose ESPRIT computer-aided-manufacturing (CAM) software by DP Technology to program its array of machine tools, and has worked with ESPRIT reseller Holotech, based in Örebro, since 2003.

As machine tools have evolved to become more efficient — and more complex — the need for robust CAM software that can program all types of machine tools grows more apparent.

“Obviously, there is new technology in machine tools that software must be able to support,” Lundberg said. “A few years ago, there were just milling machines with two rotary axes, but there are machines now with three rotating shafts and two z-axes that go against each other. There was a time when there was no support for a post processor for a machine like that.”

Those days, however, are over.

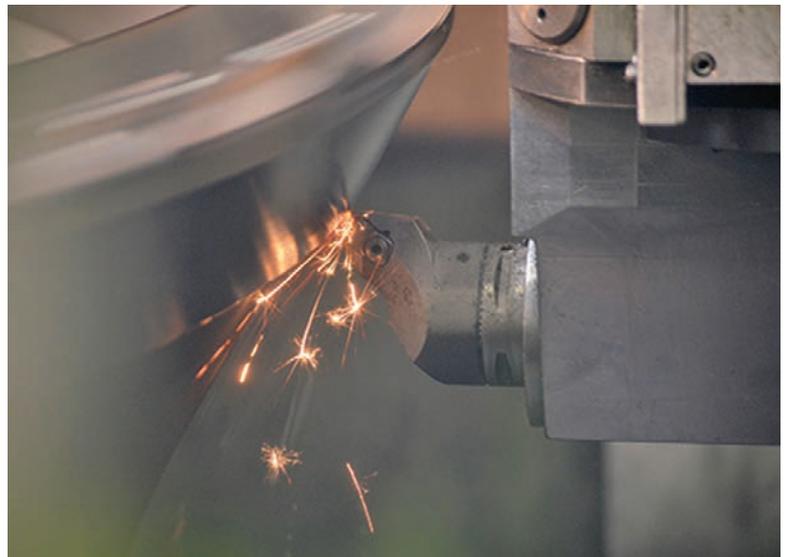
Among Sandvik Mining’s machine tools are a WFL M65 mill-turn machine, as well as a Unicom-6000 four-axis portal-type turning and milling center with a pallet changer and a Unicom-8000 vertical CNC turning and milling center with a pallet changer.

In addition to machine-specific post processors, ESPRIT offers powerful programming for all makes of machine tools. ESPRIT’s full-spectrum functionality includes programming for 2-5 axis milling, 2-22 axis turning, 2-5 axis wire EDM, multi-operation lathe machining and B-axis machine tools.

“We chose ESPRIT because, among other reasons, our former CAM package no longer

supported our needs and we were in search of excellent compatibility between our CAM and computer-aided-design (CAD) systems,” Lundberg said.

The ease of interoperability between ESPRIT and SolidWorks, Sandvik’s chosen CAD system, made ESPRIT the ideal option for the company. ESPRIT’s straight CAD-to-CAM interface directly imports native files intact, without the need to modify or rebuild geometry. This paves the way for accurate design and engineering data transfers that ultimately translate to accuracy and



ease in manufacturing.

The manufacturing process begins when Sandvik Mining receives a 3D CAD file.

“We start by assessing the simplest programming processes to make programming and production as fast and easy as possible,” Lundberg said. “We define which areas of the part will be milled, drilled, threaded, etc., and in what order.”

At this point in the programming process, Sandvik Mining identifies the tools best suited for the job, as well as essential cutting data. To do so, the company uses WinTool add-in software, by DATOS, in conjunction with ESPRIT. The user-friendly WinTool tool management system allows users to integrate tool data for CNC programming and tool storage in one solution.

Sandvik Mining also relies heavily on the simulation and verification capability of ESPRIT,

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**Workers display the ESPRIT control panel.** as they are “a quick and easy way to control the tool’s behavior and detect any errors in programming before a part is manufactured,”

Lundberg said.

With ESPRIT, it’s easy to compare the original “as designed” part to the “as machined” workpiece to ensure detailed accuracy, said Lundberg, who added, “All movements are shown in real time, giving you an incredibly good verification of the machining process.”

Sandvik Mining also appreciates ESPRIT for the development of strong machine-specific post processors and the local support provided by Holotech.

“A good post processor ensures that the machine moves exactly like simulation in ESPRIT,” said Jan Jörholt of Holotech. “Ideally, we don’t want the customer to change anything in the finished CNC code.”

After all, accurate toolpath is what successful computer-aided-manufacturing is all about. ■