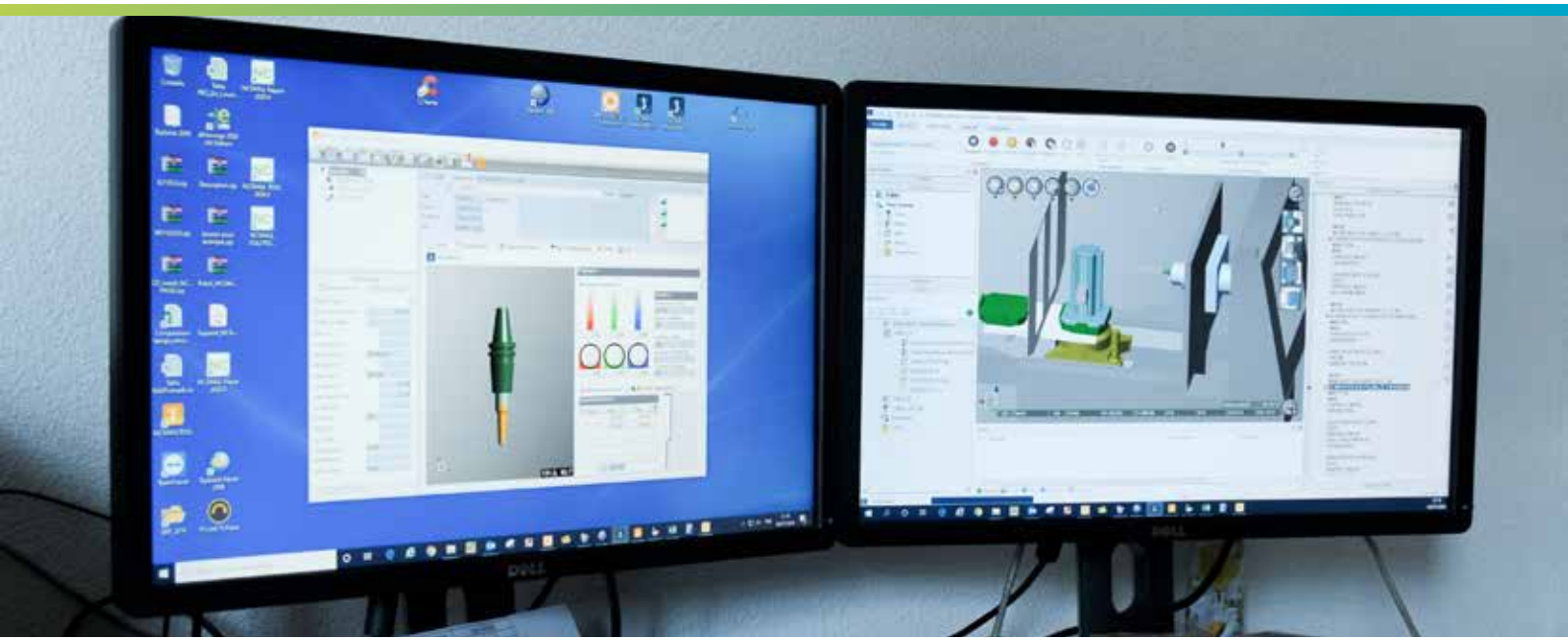
NCSIMUL assures accuracy of brothers' machining code generator

Simulation completes full digital chain for hydraulic blocks



EVAFLO Case Study

A combination of toolpath simulation for G-code verification, and cutting tool management, significantly improved productivity for a company specialising in machining hydraulic blocks.

Based at Saint-Germain-Laval in Central France, EVAFLO uses NCSIMUL's machine simulation module from the Hexagon group to help create a complete digital chain from receiving the customer's product plans, through to setting up their CNC machine tool for cutting the prototype.

The Botellé brothers – Élysé, Valéry and Floréal – were born into the mechanics industry, and learned from their father, an engineer who focused on milling. When they acquired a machine shop in 2000, their professionalism led them to diversify their customer base, and to continuously improve production performance.

Around 80 per cent of their income now comes from machining hydraulic blocks, which are used for receiving all or part of the components of a hydraulic circuit. The connections between the various devices are made by drillings that replace the piping. EVAFLO's sectors of activity are the agro-industry and aeronautics.

Because manufacturing the blocks is highly specialised, the brothers originally coded themselves, through a mix of basic CAM and code written manually using a text editor. "But checking the code line by line on the machine was time-consuming, so we invested in simulation software that would validate the checking stage," says Élysé Botellé. "Installing the NCSIMUL Machine module from Hexagon reduced the time taken to complete that task by a factor of three."

Having saved that time in the workshop, the brothers then turned their attention to improving productivity in the office too. "We developed our own code generator, dedicated to producing machining toolpath programs for our five MORI SEIKI 4-axis machining centres and two MORI SEIKI CN turning machines, which we simulated in the digital twin created by NCSIMUL Machine."

The NCSIMUL Machine module detects programming errors and any potential collisions from the same NC G-code that actually drives the machine tool, so the brothers were guaranteed absolute accuracy before they started to cut metal.

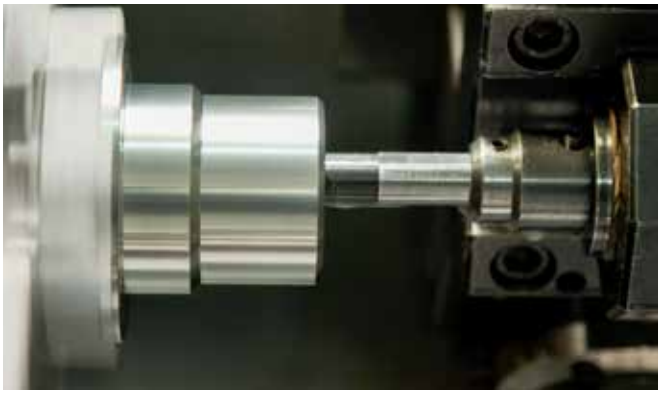
Based on the real characteristics of their machine, NCSIMUL provides EVAFLO with a dynamic verification solution. But it doesn't end there, as they discovered the software has complete synergy with another module: NCSIMUL Tool, which integrates their digital tools into the global production process, and optimises the tool cycle, using simplified import functions and pre-configured master models.

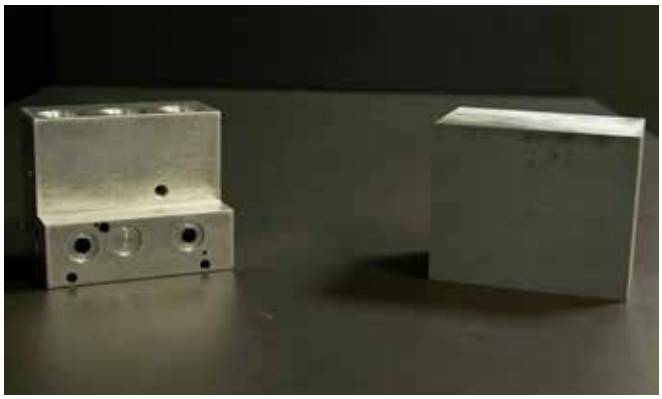
"Registering each of the 1,200 tools we use in the workshop, into NCSIMUL Tool means the office can now simulate the individual kinematics during the cutting operations. And this database has also optimised the workshop's tool management.

"Finally, thanks to full data exchange, a tool identifier in NCSIMUL Tool arrives in the simulation module which automatically recognises it without us having to make a manual connection between the code generator and tools held in the NCSIMUL Tool database.

"Again, this saves us considerable time.

"Overall, the combination of NCSIMUL Machine and NCSIMUL Tool works wonders for us," concludes Élysé Botellé.





Case Study Summary

Company name: EVAFLO

Website: www.evaflo.com

Business: Subcontractor of mechanical parts

Key benefits achieved:

- Reduced the time taken to complete the checking stage by a factor of three
- Completes full digital chain
- The office can now simulate the individual kinematics during the cutting operations thanks to NCSIMUL Tool

Overall, the combination of NCSIMUL Machine and NCSIMUL Tool works wonders for us”

Élysé Botellé,
EVAFLO

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