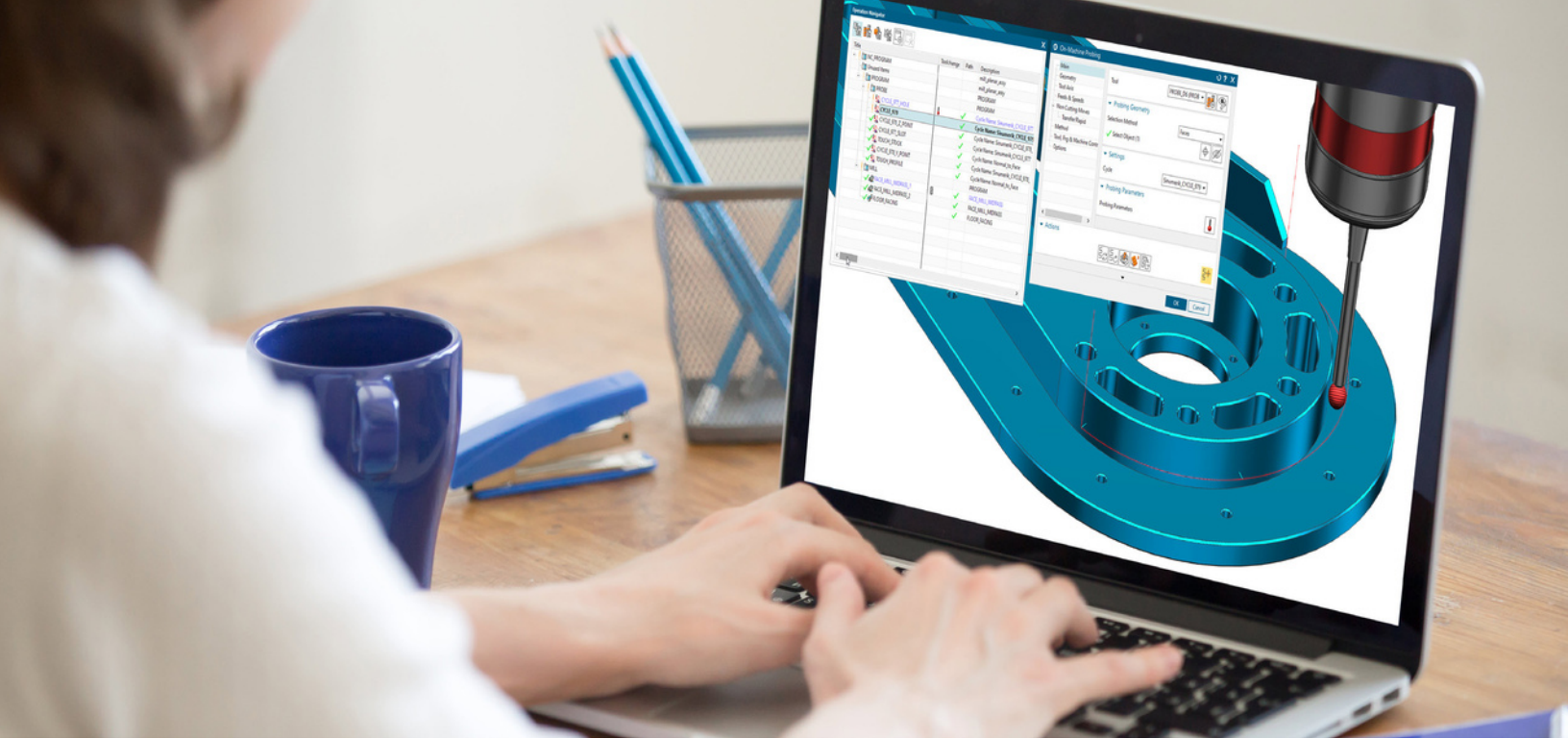




DIGITAL INDUSTRIES SOFTWARE

NX CAM On-Machine Probing add-on

Optimize machining processes to improve part quality and reduce production costs

Benefits

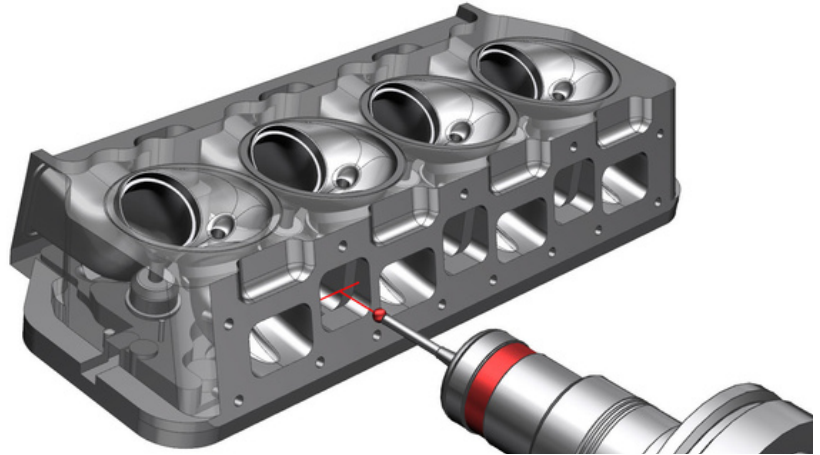
- Increase manufacturing productivity by optimizing machine utilization with in-process measurement workflows
- Use machine controller cycles with the support of manufacturing resources, processes, and advanced capabilities
- Achieve significant time and cost savings by minimizing re-fixturing which maximizes machine uptime
- Perform measurements directly on the machine, eliminating errors and reducing setup time

Summary

The NX CAM On-Machine Probing module provides comprehensive measurement technology to optimize the manufacturing process and improve workpiece quality. Monitor all critical machine and process parameters that affect performance, detect process variations, and adjust machining parameters using NX CAM. Using the on-machine probing capabilities, companies can stabilize the manufacturing process, improving standardization and first-time yield.

Features

- Create on-machine probing cycles for milling and turning
- Generate and visualize probing paths
- Output NC code using integrated postprocessor
- Simulate the process using the digital twin of the part, probe, and machine tool
- Detect process variations to adjust machining parameters



Geometry based process

NX CAM On-Machine Probing enables off-line programming of inspection paths based on the 3D part geometry. Additionally, it includes simulation capabilities of probing cycles for various controllers, which eliminates manual, error-prone data entries. The created inspection paths are associative to the part geometry, enabling fast implementation of design or process changes.

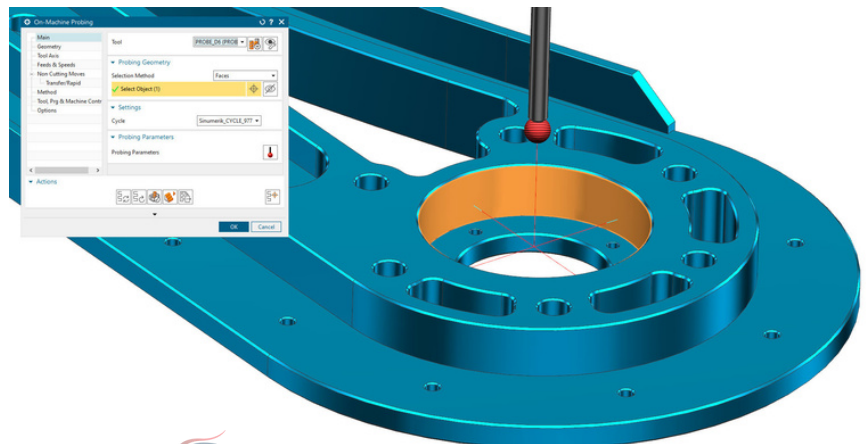
Inspection path calculation in real time

When creating a machine probing operation with the desired cycle parameters, the inspection path for the surface contact point is calculated and displayed in real time.

Workpiece Setup

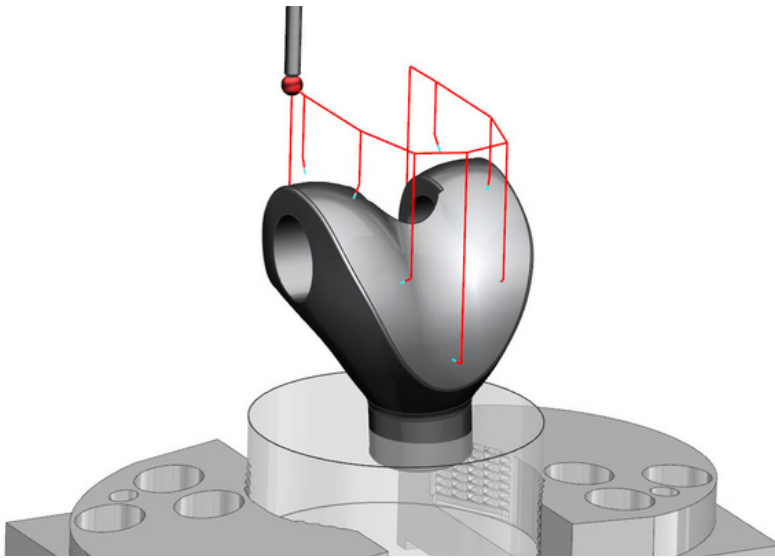
NX CAM On-Machine Probing provides the capability to align and position the workpiece accurately on the machine tool before machining operations begin.

It allows measurement of key reference points or features on the workpiece. By probing specific features, such as hole centers or edges, operators can ensure the workpiece is positioned correctly and aligned as per the manufacturing requirements. This helps minimize errors to achieve accurate machining.



Workpiece Measurement

Measure specific features and dimensions of the workpiece during or after the machining process. By inspecting critical dimensions, engineers can check for deviations from the design specifications, and verify the accuracy of the machined features. This enables operators to perform in-process quality control, ensuring the final product meets the required standards.



Tool Measurement

Use the probe to accurately measure the dimensions of cutting tools, such as drills, end mills, or inserts. By measuring parameters like tool length, diameter, and wear, operators can verify the actual tool dimensions and make necessary adjustments to maintain the required precision of the machining process.

Adaptive Control

NX CAM On-Machine Probing enables detection of process variations and adjustment of machining parameters ("adaptive control"), taking into account tool wear and breakage.

Postprocessors and Machine Simulation

The inspection paths programmed in NX CAM On-Machine Probing can be postprocessed as probing cycles in the NC program. In addition, the probing cycles can be validated using the integrated simulation capabilities in NX CAM.