

Distinguished with the EuroMold Award



Cutting milling costs and machining times in die and mould production



- ▶ Feed rate adaptation reduces machining times and tooling costs
- ▶ Direct cost savings through reduction of machining time by up to 20%
- ▶ State-of-the-art information technology for fast, reliable production
- ▶ Seamless integration in the CAD-CAM process chain – no added costs
- ▶ No need for expensive add-on machine hardware
- ▶ Enhanced process reliability through peak tool load monitoring
- ▶ Close detail inspection of workpiece surface before production

NCSPEED



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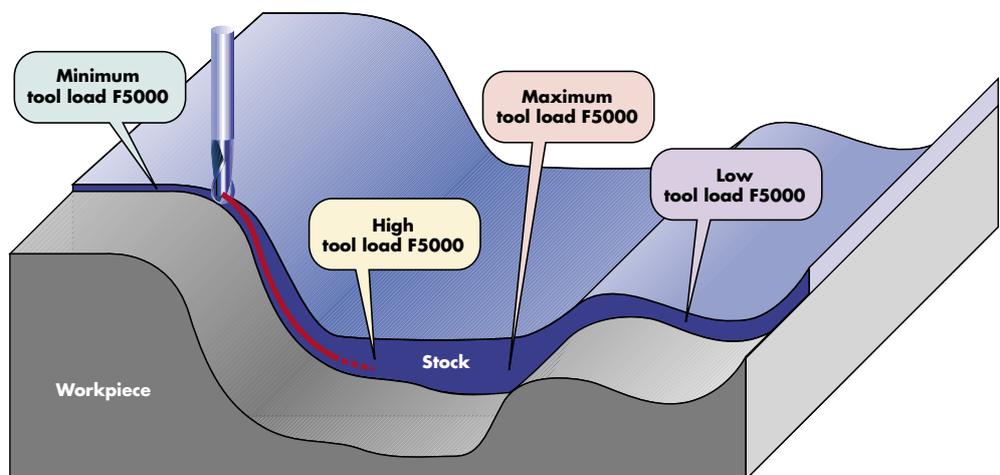
The production of complex dies and moulds is part of your daily routine. To stay ahead of the competition, fast and cost-effective machining is essential. This requires a close and efficient interaction between all elements of the process chain – CAM system, milling machine, control system and cutting tools. By automatically adapting the feed rate to changing machining conditions, NCspeed helps you tap the unused potential of your operating resources. This optimizes the performance of both machine and tool to cut milling times by up to 20 percent.

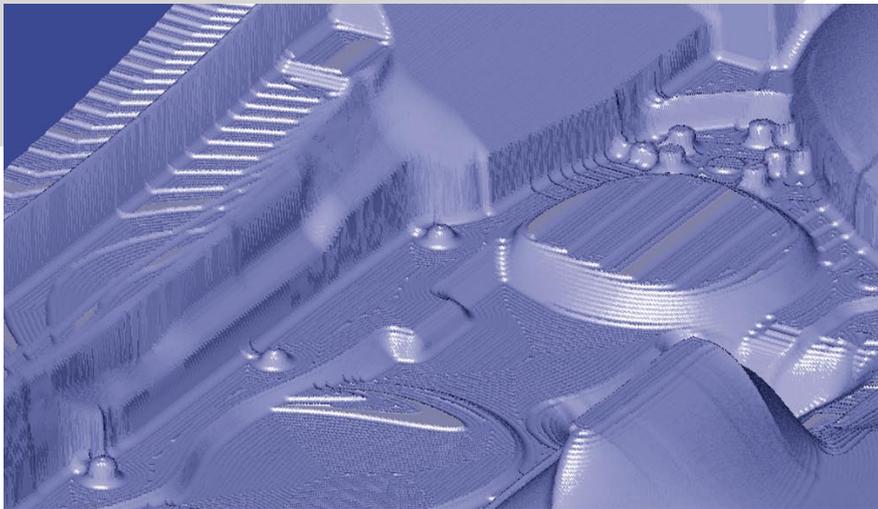
Optimizing feed rates to cut costs

NCspeed analyzes and then optimizes your NC programs. Based on a simulation of the machining sequence, NCspeed calculates the volume of material to be removed for any tool position as well as the resulting tool loads. In areas with low cutting volume and favourable milling conditions, NCspeed increases the feed rate. In critical areas the feed rate is not changed. With the modified NC program, the machine tool works with a higher average feed rate to cut machining times and optimize the utilization of your available machines.

Key feature: Fast, reliable milling

In a simulation of the machining process, NCspeed determines the loads that would be generated in the actual process and compares these values with the tool's user-specified load limit. NCspeed then automatically detects any critical areas and reduces the feed rate to prevent costly tool damage and scrapped workpieces.



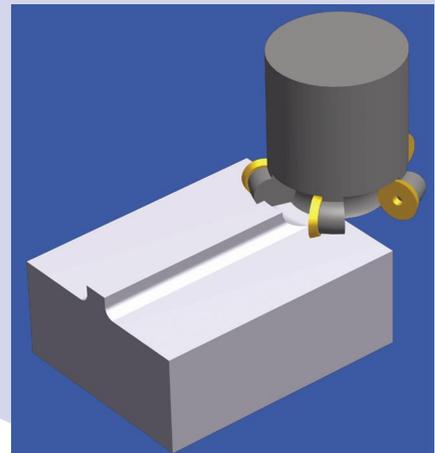


Blank after rough machining.

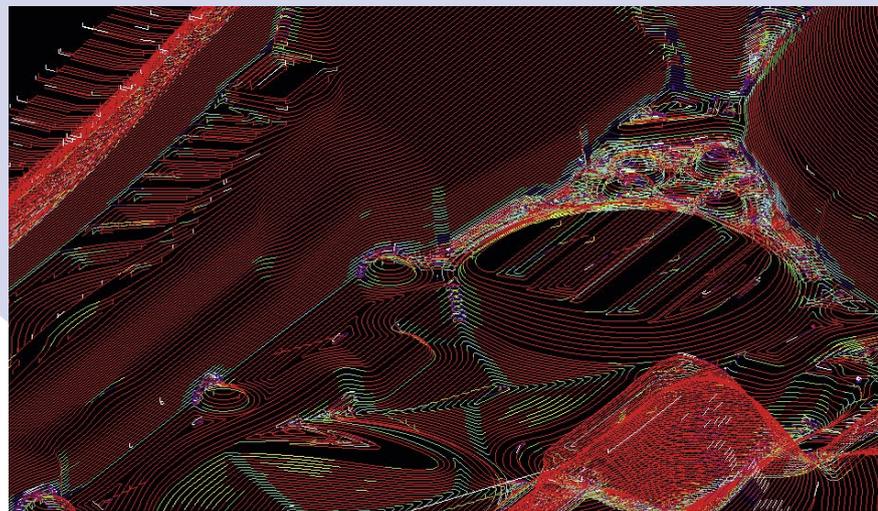


Key feature: Reducing tool costs

One might assume that the feed rate adjustment works purely on the principle “less material = faster the feed rate”. This is far from the truth: Often, machining conditions can be unfavourable even if only a small amount of material is removed.



In roughing on a constant Z-plane, for example, the cutting tool may encounter raised workpiece sections located centrally within its path. Approaching these with a cutting insert tool at high speed can cause tool vibration, which would dramatically reduce the tool inserts' service life. NCspeed's adaptive feed rate control detects such situations and reduces the feed rate accordingly to increase tool life.



Optimized NC program: the colours indicate the feedrates.
Red = fast, blue = slow.

Key feature: Process chain integration

The NC programs generated with your CAM system are automatically processed by milling machines and controllers. NCspeed integrates seamlessly into the process chain, fitting neatly between CAM system and machine controller. Highly customizable, it interfaces with your CAM system, from which it receives the information it needs to optimize the NC program. NCspeed runs almost fully automatically with minimal user input.

Key feature: Fast simulation

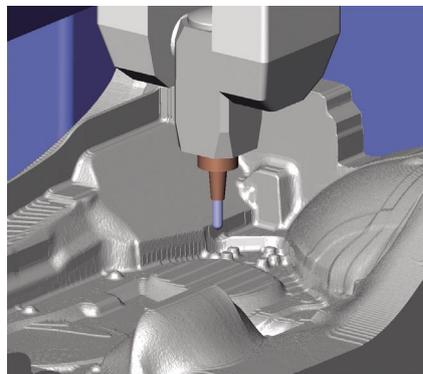
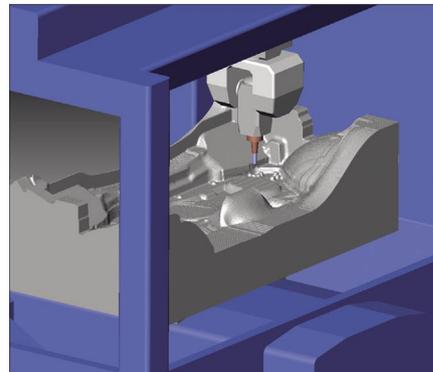
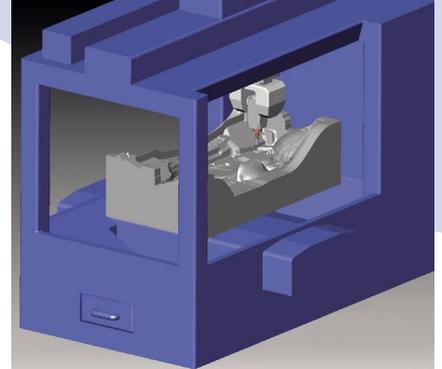
To make an optimization viable for one-off production, the software must – in addition to integrating seamlessly – be fast so as to minimize processing times: A fast optimization process cuts the total production times, reducing the process's overall efficiency. NC-speed is capable of rapidly processing even very large NC programs. Our customers include manufacturers of large sheet metal forming tools with NC programs exceeding 100 MB in size.



Key feature: Staying in the picture

In addition to ensuring the optimum feed rate at all times, NCspeed's machining simulation generates a detailed, accurate image of the resulting workpiece. An analysis of the quality of the workpiece surface provides valuable information about the quality of your NC programs, which you can use to further optimize your toolpath files and eliminate potential problems in advance.

NCspeed also features comprehensive collision checking functionality, which detects collisions between tool, workpiece and all other machine components with a collision potential. Based on the postprocessed data, the collision check reliably detects even postprocessing errors.



Simulation in NCspeed with full control of all machine parts with collision potential



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