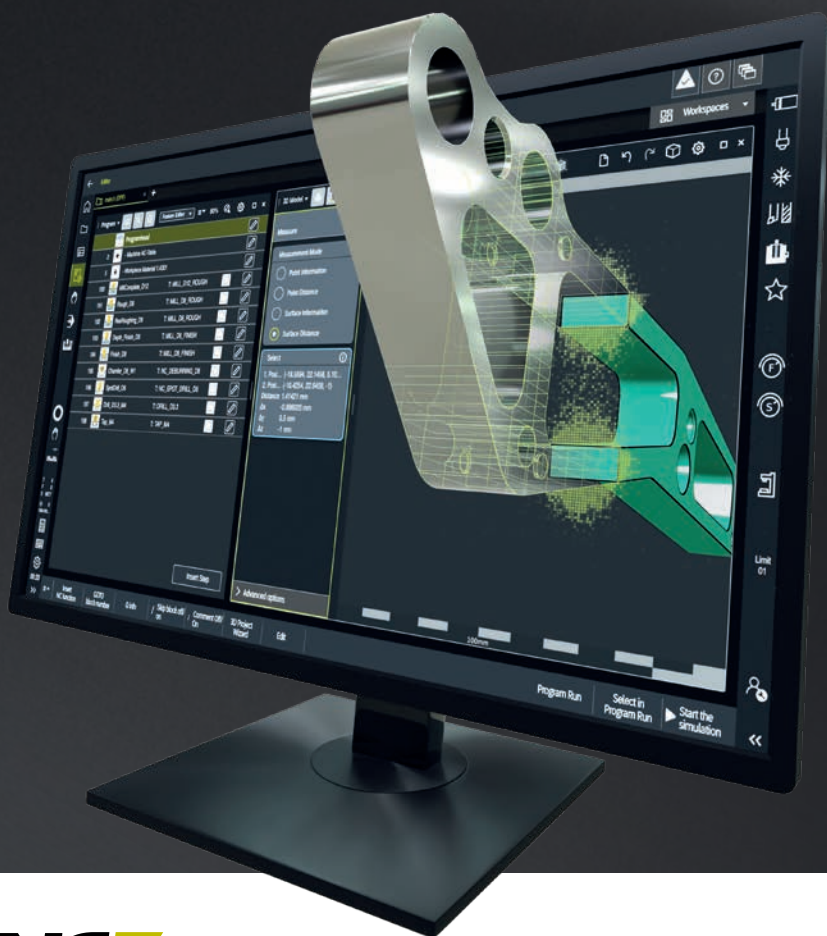


# HEIDENHAIN



## vtnc7

The intelligent programming system

[www.heidenhain.com/vtnc7](http://www.heidenhain.com/vtnc7)

# Next-generation programming system

Today's CNC manufacturing industry is facing rapidly changing demands. Digitalization, process reliability, sustainability and similar topics are impacting the way manufacturers work. Major changes are also underway in the field of NC program creation. Because programming is often a bottleneck responsible for delays and standby time, solutions that enable efficient, reliable, and versatile programming are becoming increasingly important.

This is where the **vTNC7** software solution comes into play, forming an intelligent bridge between the programming office and the machine tool. The **vTNC7** programming system empowers machine operators to create programs for 2.5D parts faster and more reliably within a familiar user interface. No external system is needed. As a result, machine operators gain a performant programming system that they can use from day one, optimally leveraging their valuable expertise and practical knowledge while unlocking additional programming capacity. The obvious benefits include shorter lead times, less machine downtime and greater efficiency while ensuring maximum control and versatility.



# Key functions

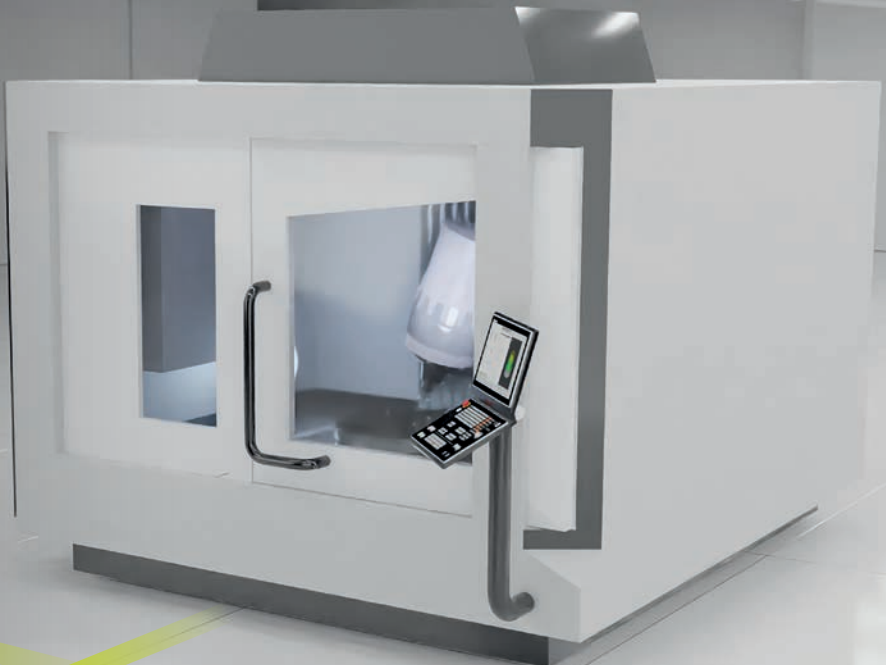
**vTNC7**

## Benefits

- Fast and easy NC program creation
- Realistic simulation
- Reliable program validation and optimization
- Expanded capabilities and knowledge

## Feature-Based Programming

- 3D contour extraction
- Storage and reuse of machining parameters
- Automatic tilting and repositioning



## High versatility

With the vTNC7 programming system, HEIDENHAIN is offering a performant PC application for Windows operating systems. The vTNC7 software is based on the control's user interface, providing users with a realistic and practical simulation environment. The software comes in different versions. To download vTNC7, visit the Downloads page at [www.heidenhain.com](http://www.heidenhain.com).

## Demo version

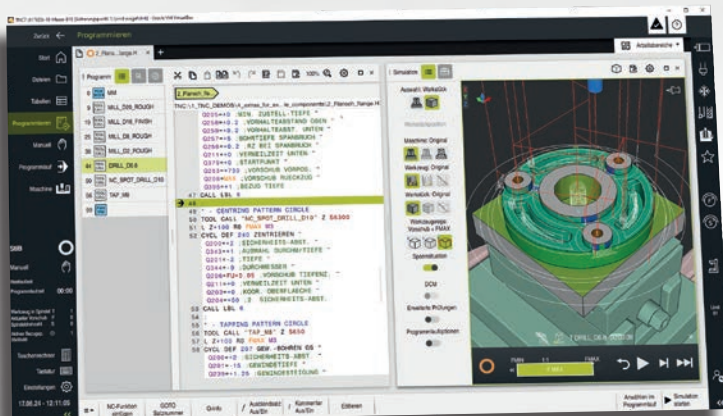
- No software release module (dongle) needed
- Limited functionality (100 NC blocks per program)
- Unlimited usage period

## Programming system with the TNC operating panel

- The same key layout as on the control
- PC keyboard can be used as well
- Additional USB ports on the operating panel

## Programming system with a virtual keyboard

- Operation via the virtual keyboard and a PC keyboard
- Cost-efficient solution with full functionality
- Customizable display options for the virtual keyboard and main window





# TNC7 operating panel

The operating panel is based on the key layout of the TNC7. Featuring a compact design, it's a great solution for an office workstation or vocational training lab. This keyboard is a particularly ergonomic way of operating the vTNC7 software, offering added comfort through its long-stroke key design.

## The vTNC7 operating panel offers multiple benefits:

- State-of-the-art TNC7 hardware design
- Compact form factor for office workstations
- Installation slot for USB dongle on the bottom
- Built-in strain relief for the USB cable
- Newly designed keyboard with improved ergonomics
- Dirt-repellant, anodized keyboard surface



# Greater efficiency

It's easy to write a part program on a TNC control while a different part is being machined, but short reloading times or high machine utilization may hinder attentive programming on the shop floor. The programming system from HEIDENHAIN lets you program exactly as you would at the machine, but away from shopfloor noise and distractions.

## Optimal machining preparation:

- Virtual depiction of the workpiece and work envelope
- Realistic test environment for 3D programs
- High-resolution simulation showing even the tiniest details



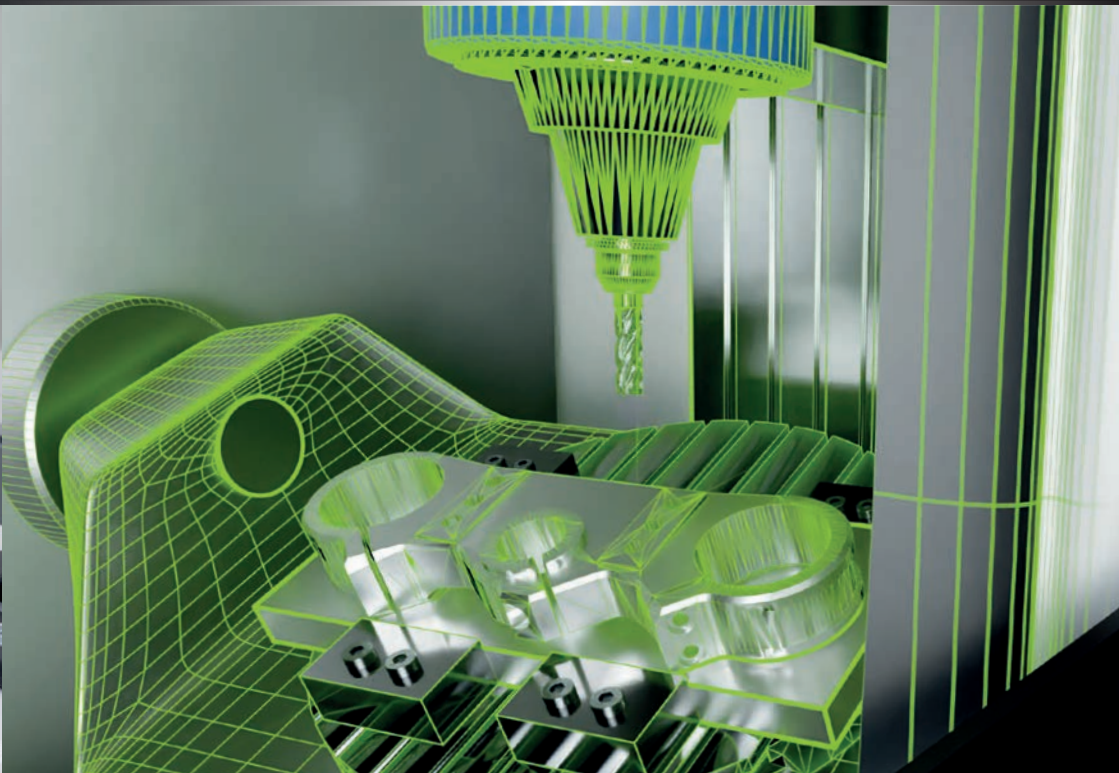
# Digital Twin

When used in conjunction with a HEIDENHAIN Digital Twin\*, the vTNC7 software becomes even more effective at simulating and validating NC programs. Future crashes are detected during simulation, allowing you to avoid interruptions and machine damage. Simulations from the Digital Twin also deliver accurate machining times, enabling fast and easy quoting and machine capacity planning. The HEIDENHAIN Service team creates the Digital Twin based on your machine's configuration. After the Digital Twin has been uploaded into the vTNC7 programming system, you can test and optimize programs using an exact digital replica of your machine.

## Benefits of a realistic machine model:

- Check and optimize tool paths
- Prevent program interruptions
- Avoid collisions
- Reduce setup times
- Increase process reliability
- Determine machining times and costs

\* This service is provided for a fee



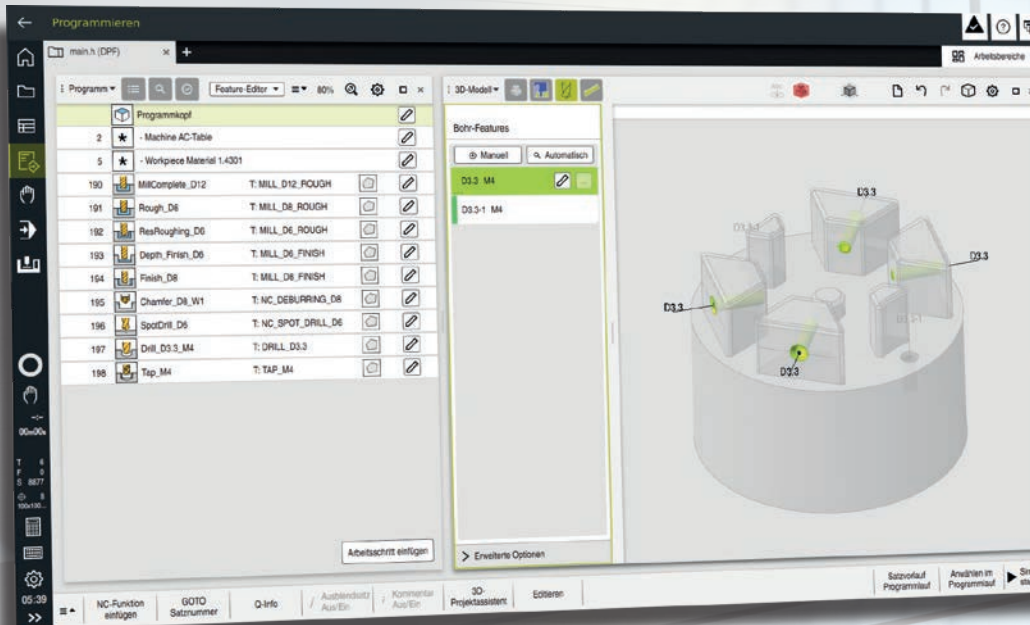


# Feature-Based Programming

The Feature-Based Programming function allows you to create NC programs directly from a 3D model of the part. Optimal user guidance is provided for selecting geometries, defining machining strategies, and performing positioning tasks. It's a fast, reliable and versatile way to create NC programs. Feature-Based Programming also allows users to systematically save and reuse process information and machining parameters across different programs.

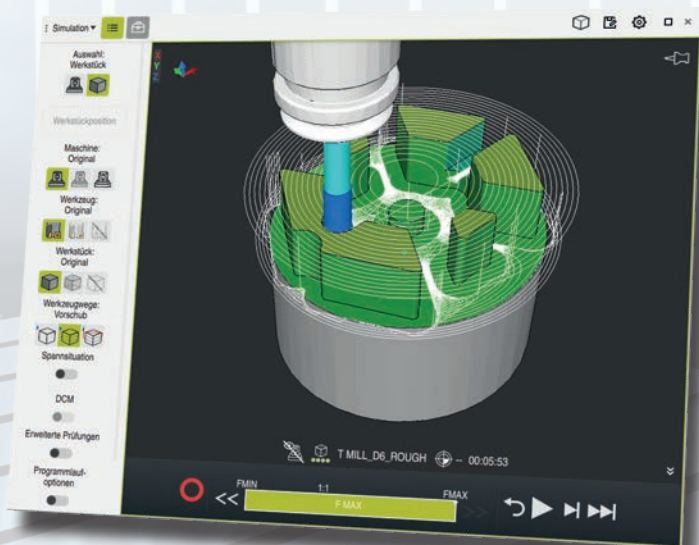
## Feature-Based Programming

- Storing and reusing process information
- Automatic tilting and repositioning
- 3D contour extraction





Benefit	Description
Programming assistance	<p>Fast route to a usable NC program:</p> <ul style="list-style-type: none"> <li>• User guidance through process steps</li> <li>• Automatic NC program generation</li> </ul>
Machining based on 3D models	<ul style="list-style-type: none"> <li>• Geometry detection within the CAD model</li> <li>• Direct selection and assignment of machining strategies</li> </ul>
Automatic tilting and pre-positioning	<ul style="list-style-type: none"> <li>• Tilting movements and pre-positioning via a special algorithm</li> <li>• Ability to modify calculated motion sequences</li> </ul>
Systemic storage and reuse of machining parameters	<p>The separation of geometry information from machining strategies enables the systematic storage and reuse of machining information</p>
Virtual machine	<ul style="list-style-type: none"> <li>• A digital replica of your machine</li> <li>• Programming and simulation under realistic conditions</li> </ul>

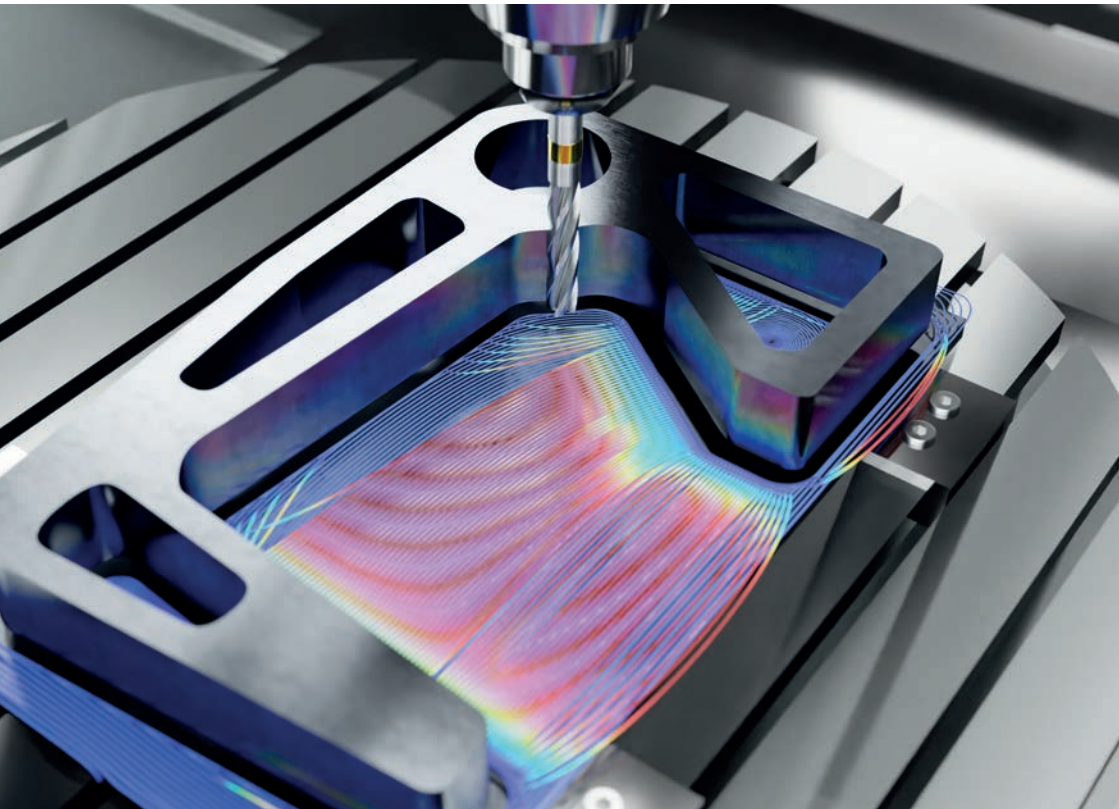


# Klartext Converter

The new Klartext Converter of the vTNC7 programming system now brings state-of-the-art Klartext programs to older TNC controls. Cycles with complex motion sequences, infeeds, and pre-positioning movements are automatically translated into conventional Klartext, enabling full compatibility with earlier controls and expanding the functionality of your older machines. In addition to providing greater performance, the Klartext Converter allows users to extend the usability of legacy machines while ensuring access to the latest programming technology.

## **The Klartext Converter unlocks new potential:**

- Harness innovative functions, even on older machines
- Expand the functionality and performance of existing machines
- No additional software options needed
- Improve efficiency and sustainability by extending machine usability
- Achieve maximum versatility for your machines and greater planning security

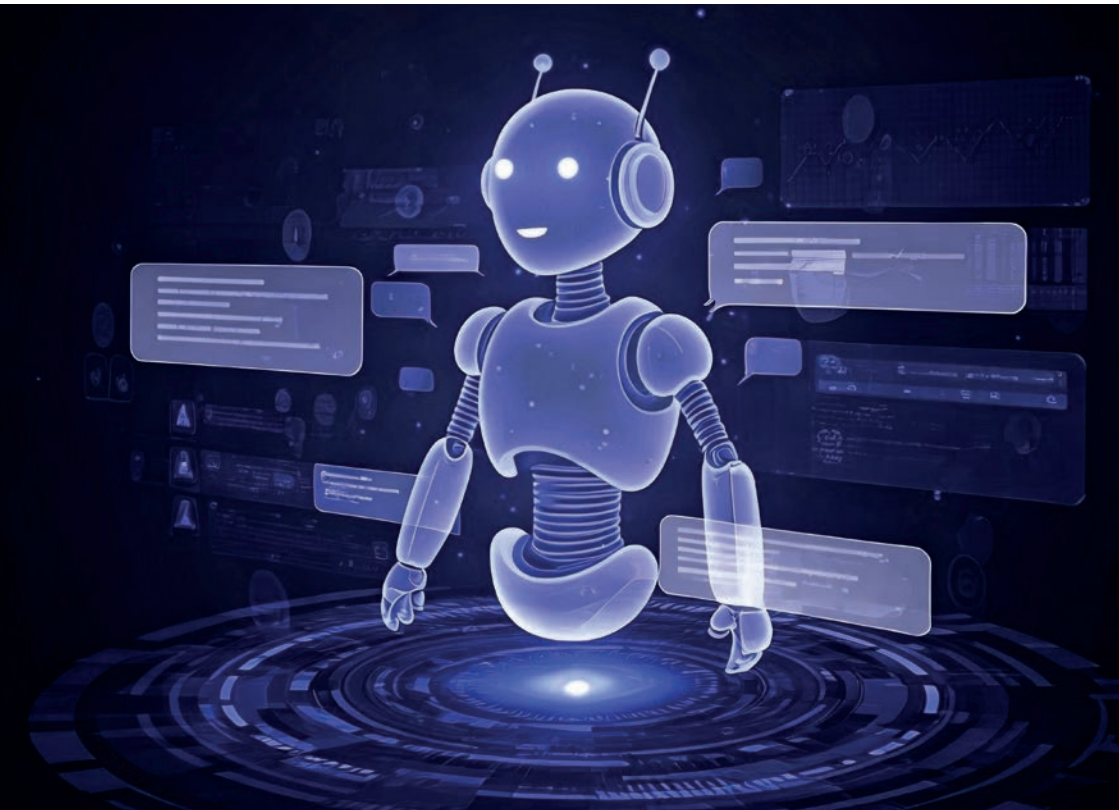


# Digital intelligence in vTNC7

With the new AI chatbot for the vTNC7, HEIDENHAIN is taking task-focused user support to a new level. Based on substantial HEIDENHAIN experience in the field of artificial intelligence, this smart assistant represents a milestone in our continuous product development. It also reflects our rigorous deployment of AI technologies and demonstrates how innovative R&D can translate into practical user support.

## Benefits of the new AI chatbot:

- Easy-to-understand answers to your questions
- Virtual assistance and a trainer for tips and program suggestions
- Fast help within the vTNC7 software without time-consuming searching
- Around-the-clock support during programming, setup, and optimization





## Our answer to today's challenges

- Direct access to all 3D data in a part model
- Short learning curve
- Well-structured work steps
- Leveraging the machining knowledge of users
- Easy and versatile NC program adaptation
- Significant reduction in programming time
- Incorporating geometry information
- Fewer programming bottlenecks



To find out more, visit: [www.heidenhain.com/vtnc7](http://www.heidenhain.com/vtnc7)

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