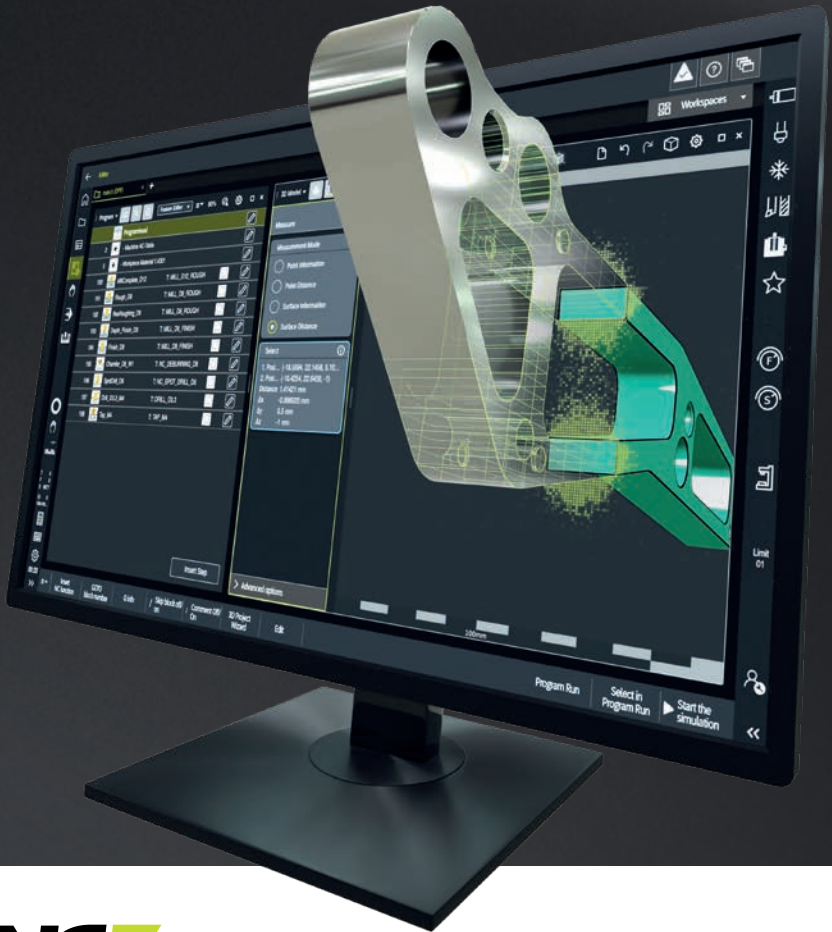


HEIDENHAIN



vTNC7

Faster path to the finished NC program

www.heidenhain.com/vtnc7

The future of NC programming

vTNC7, the powerful PC programming system

Start cutting chips faster, with shorter programming times

- Efficient: Create NC programs directly from 3D models
- Automated: Leverage AI assistance, geometry recognition, tilting, and pre-positioning
- Reliable: Run programs on the shop floor that perform dependably from the very first time
- Flexible: Bring the latest machining technologies to legacy machines

Your benefits

- Greater capacity for NC program creation
- Increased machine uptime through validated programs
- Valuable machining expertise available whenever it's needed
- Seamless machine simulation with digital twins
- Easy programming of tilting operations

Typical applications

- Single parts and small batches
- 2.5D machining
- Shop-floor oriented programming



Functions for greater efficiency

Faster path to the finished NC program

1. Automatically identify features in 3D models
2. Select the desired machining strategy for each feature
3. Convert the program for specific NC controls as needed

Store and reuse valuable manufacturing expertise

- Save defined machining strategies and reuse them for similar machining tasks
- Preserve the know-how of experienced employees and make it available across the entire organization at any time

Integrated AI assistance with HEIDENHAIN Digital Intelligence

- Combines the complete expertise of HEIDENHAIN controls and Klartext conversational programming in a single tool
- Provides active support directly within the vTNC7 programming environment
- Acts as a digital expert, answering questions and offering practical tips and programming suggestions

Verify programs with confidence

- Validate machining operations in advance using the integrated simulation
- Detect errors and potential collisions before the machine starts running
- Use a Digital Twin to simulate machining with your specific machine configuration

Program a wider range of components

- Quickly program 2.5D parts with tilting operations directly—no specialized expertise required
- Automatic pre-positioning makes programming even easier

Feature-Based Programming

Gain a significant boost in efficiency and sustainability for NC programming

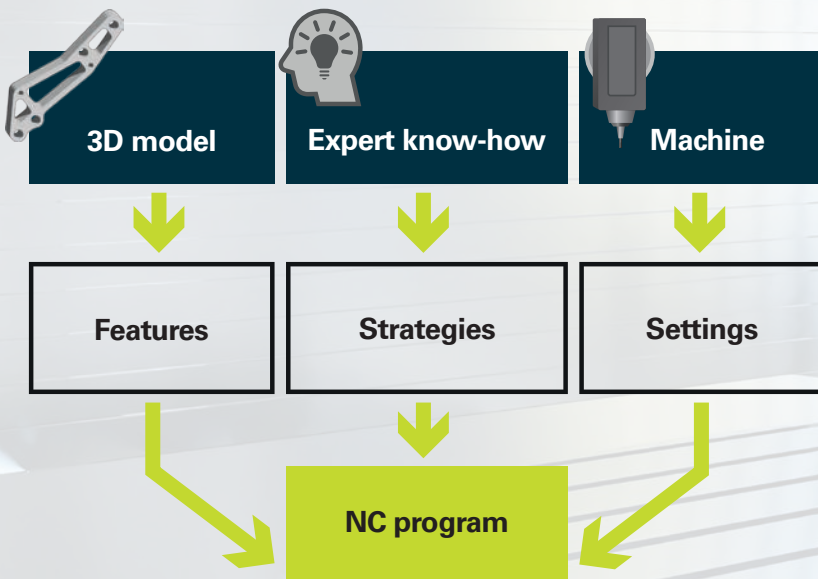
Feature-Based Programming opens up an entirely new approach to NC programming:

- No more entering NC blocks one by one
- Generate NC programs directly and intuitively from a part's 3D model
- Instantly access valuable process and manufacturing expertise covering cutting data, tools, and machining parameters whenever you need it

The vTNC7 systematically stores machining strategies once they have been defined and used. This allows you to preserve valuable know-how and efficiently apply it to future machining tasks.

Create a ready-to-run program in four steps

1. Load the 3D model into the vTNC7
2. Automatically identify features
3. Assign machining strategies
4. Use the vTNC7 to simulate the program under real-world conditions



Benefit

Description

Programming assistance

Fast route to a usable NC program:

- User guidance through process steps
- Automatic NC program generation

Working on the basis of the 3D model

- Geometry detection within the CAD model
- Direct selection and assignment of machining strategies

Automatic tilting and pre-positioning

- Tilting movements and pre-positioning via a special algorithm
- Ability to modify calculated motion sequences

Systemic storage and reuse of machining parameters

The separation of geometry information from machining strategies enables the systematic storage and reuse of machining information

Virtual machine

- Digital replica of the real numerical control
- Programming and simulation under realistic conditions



Klartext Converter

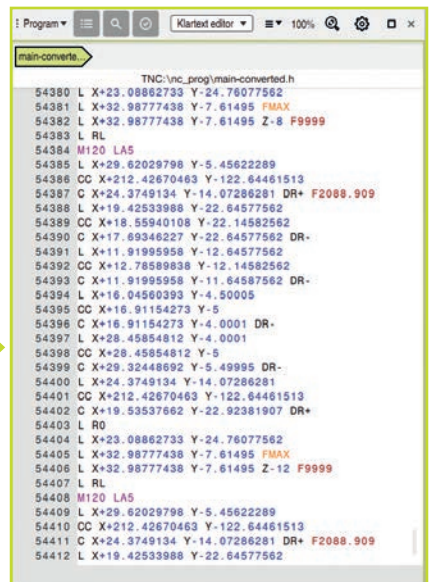
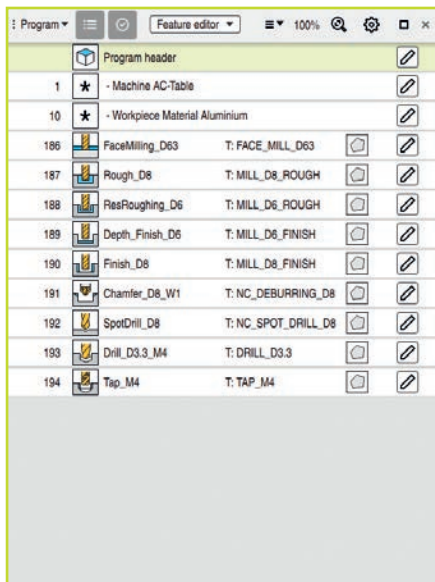
Significantly expand the capabilities of older TNC controls

The Klartext Converter of the vTNC7 translates the new feature syntax into a linearized version that can be executed seamlessly even on older generations of controls.

- Cycles with complex motion sequences, such as OCM
- Infeed movements
- Pre-positioning operations

Your benefits for existing machines

- Increased performance and efficiency through the use of the latest programming technologies
- Extended service life and more sustainable machine utilization
- Access to the latest programming technologies without needing additional software options
- Maximum flexibility and greater planning reliability across your machinery



HEIDENHAIN DIGITAL INTELLIGENCE

AI assistant HEIDI: Shorten programming times and get the most out of TNC controls

HEIDI, the HEIDENHAIN DIGITAL INTELLIGENCE AI assistant, provides support whenever you are programming, setting up, or optimizing TNC controls and the vTNC7 programming system:

- Delivers clear, easy-to-understand answers to your individual questions
- Acts as a virtual trainer, providing practical tips and even complete programming suggestions
- Offers fast assistance directly in the vTNC7 or online at www.heidenhain.ai

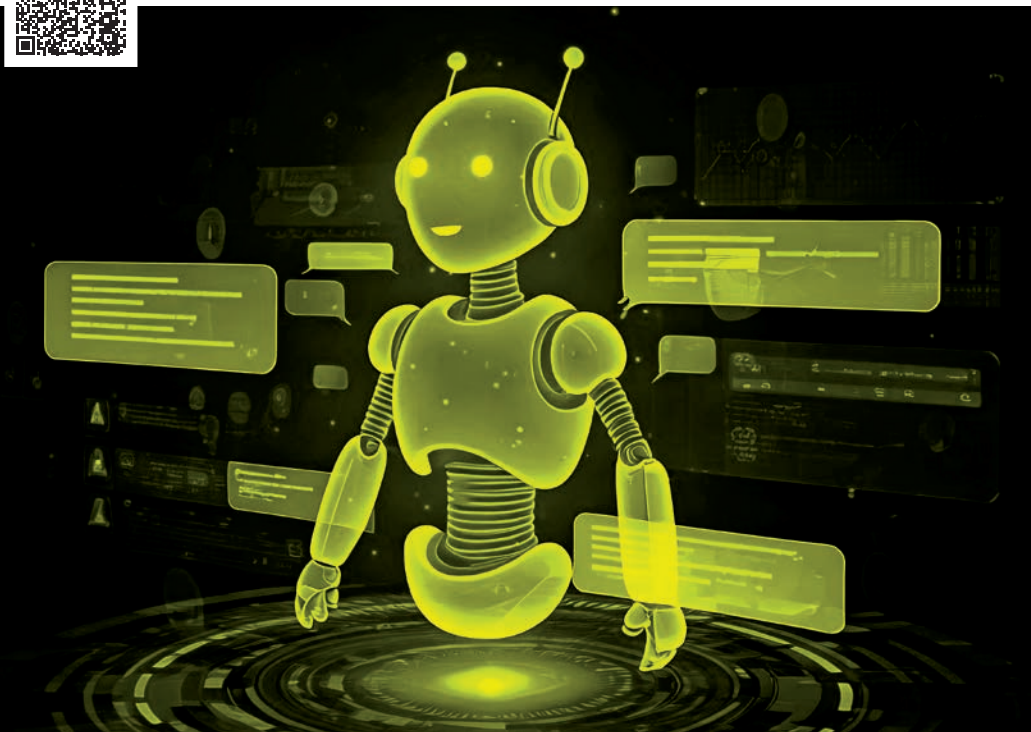
Program more easily, efficiently, and confidently

HEIDI enables fast, intuitive communication without requiring complex technical terminology, because the AI assistant:

- Understands the specific application context
- Has access to the complete body of control expertise
- Provides targeted support exactly when and where it is needed



www.heidenhain.ai



Digital Twin

Bring your machine into the office

The HEIDENHAIN Digital Twin* is a realistic model of your machine, created from its actual machine configuration. With the Digital Twin, vTNC7 takes into account:

- The machine's real kinematics
- Machine-specific parameters and functions

Using the vTNC7 together with a Digital Twin, you can evaluate and optimize machining processes under real machine conditions before production begins:

- Check and optimize tool paths
- Detect collisions in the simulation
- Forecast exact machining times

Your benefits

- Greater process reliability:
Avoid collisions, program interruptions, and machine damage
- Reduced setup times:
Start machining jobs immediately with optimally tested NC programs
- Reliable planning and costing:
Calculate quotations and machine utilization based on validated data

* This service is provided for a fee



Everyday challenges and vTNC7 solutions

Your day-to-day reality

"Only a few people have the necessary technical knowledge."

"One misread dimension or typing error, and I've got a mistake in the program."

"Even though I do a lot myself and know my way around programming, there are times when I still need help and specialist expertise."

"Bringing new machining strategies to our older machines would be difficult and involve major upgrades or CAM solutions, if it's even possible at all."

"For simple parts and one-off jobs, CAM programming is too complex and simply isn't worth the effort."

"The simulation in our CAM system is never a 100% match for reality. I often find errors only during prove-out. Poorly simulated programs tie up the machines and disrupt our entire production schedule."

Our solution for you

The vTNC7 stores manufacturing and process expertise in a structured way, making it available for everyone to reuse at any time.

The vTNC7 extracts 3D contours and automatically identifies holes. Instead of manually entering dimensions, you simply select the required geometry.

The HEIDI AI assistant provides task-specific support based on comprehensive knowledge of cycles and Klartext conversational programming. It explains functions in an easy-to-understand way, offers programming tips, and can even generate complete programming suggestions in Klartext.

The Klartext Converter of the vTNC7 makes strategies from current control generations, such as OCM trochoidal milling cycles, available on older controls as well.

The vTNC7 uses the same familiar operating principles as your TNC control. Thanks to guided, step-by-step Klartext programming, users can quickly learn the system and become productive right away.

With the PC-based vTNC7 programming system and a Digital Twin of your machine, you can test NC programs in the office before production begins under real shop-floor conditions, including the machine's actual kinematics. Your machine remains productive, and new programs run reliably from the very first execution.

vTNC7: Easy online ordering

Maximum flexibility with the right version

Demo version

- No licensing required
- No time limit
- Supports up to 100 NC blocks per program
- Download:
<https://www.heidenhain.com/service/downloads/software>

Download the software



License versions

A valid vTNC7 license is required to unlock the full functionality of the programming system.

Choose from two licensing models:

- Online license with access file
- Offline license with USB dongle for use without an internet connection

HEIDENHAIN SHOP



Both options are available as 12-month subscription licenses and can be purchased online through the HEIDENHAIN Shop. There you will also find detailed information on pricing, licensing terms, and included services.
<https://www.heidenhain.shop/en/vtnc7.html>

Work just like on the control with the TNC7 operating panel

The vTNC7 programming system can be operated on a PC using either the virtual keyboard or a standard PC keyboard. For maximum convenience, however, the optional TNC7 control panel is available as an accessory:

- Hardware in the modern TNC7 design, including axis keys and function keys
- Compact form factor for office workstations
- USB ports integrated into the panel, including an installation bay for a USB dongle on the underside
- Support for an additional PC keyboard

vTNC7



Learn everything you need to know about installing the vTNC7 and using TNCmanager in our webinar.

**Watch the
webinar**

Stay in control with TNCmanager

With the free TNCmanager, you can centrally manage the installation, licensing, and administration of:

- vTNC7
- Programming stations
- Digital Twin

This centralized administration software allows you to:

- Activate rental licenses
- Manage online licenses
- Activate and verify offline licenses using a USB dongle
- Manage multiple virtual controls

The easy way to get started

1. Download and install TNCmanager
2. Download the vTNC7 installation package:
<https://www.heidenhain.com/service/downloads/software>
3. Enter and launch the vTNC7 in TNCmanager

System requirements

For using the vTNC7 programming system, we recommend a Windows PC with the following specifications:

- Microsoft Windows 11 (64-bit) operating system
- Processor with VT-x or AMD-V instruction set extension (e.g., Intel Core i5 or higher supporting the VT-x virtualization technologies)
- Dedicated graphics card (AMD or NVIDIA; integrated graphics are not recommended)
- Memory: At least 16 GB of RAM (8 GB of RAM for each started system)



**Download
TNCmanager**





Our answer to today's challenges

Get started quickly:

Intuitive operation with minimal training required

Access data directly:

Easily use the part's digital 3D model

Stay in control:

Structured visualization of all machining steps

Leverage expertise:

Systematically integrate user know-how

Stay flexible:

Easily adapt NC programs to changing requirements

Save time:

Dramatically reduce programming effort

Transfer data directly:

Import geometry values from the model seamlessly

Overcome bottlenecks:

Generate and deploy programs more efficiently



You can find more information at:

www.heidenhain.com/products/software/vtnc7-programming-system

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