HEIDENHAIN

TNC Programming Station for Milling Controls from HEIDENHAIN

Programming and training on a PC

www.heidenhain.com/programming-stations

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HEIDENHAIN programming stations
Programming, archiving, and training

What's the purpose of a programming station?
As easy as it is to write a part program on a TNC at the machine while a different part is being machined, short reloading times or high machine utilization may hinder attentive programming work on the shop floor. A HEIDENHAIN programming station gives you the same programming capabilities as a HEIDENHAIN control at the machine, but away from the noise and distractions of the shop floor.

Creating programs
Programming, testing and optimizing HEIDENHAIN Klartext or G-code programs with a programming station substantially reduces machine idle times. There's no learning curve to using the programming station, because you're using the same keyboard as you would at the machine.

Testing externally created programs
The programming station's high-resolution simulation allows you to test even complex 3D CAD/CAM programs and identify tiny details. Testing these programs is particularly realistic with the Digital Twin. CAD/CAM programs usually receive different machine-specific commands that the Digital Twin takes into account even during the simulation.

Training with the programming station
Since the programming stations are based on the same software as the controls, they are ideally suited for vocational training and continuing education. The programming and program testing processes are the same as on the machine, giving trainees the confidence they need to operate a real machine.

TNC7 programming station operating panel

What can the programming station do?
The programming modes provide you with the same functions as those of the TNC controls on your machines. You can create programs:
- In HEIDENHAIN Klartext format or with G codes
- With graphical support during program input and simulation
- With innovative TNC functions, such as contour drawing
- Through direct data transfer from typical CAD formats (DXF, STEP, IGES)

Because the programming station software is the original software of the control, compatibility is ensured. Part programs created with the programming station run on any machine tool equipped with the equivalent control if the programming station software has been configured to your machine.

And because nearly all paid **software options** are available on the TNC programming station free of charge, users of the full version or the free demo version can use the programming station to test various functions and decide whether to pursue an upgrade.

Digital Twin*
A Digital Twin makes the TNC programming station even more effective at testing your programs. Future crashes can be detected during the simulation, allowing you to avoid interruptions and machine damage. Running a simulation with the Digital Twin also provides highly accurate machining times, enabling precise quoting and machine capacity planning. The HEIDENHAIN Service team creates the Digital Twin based on the configuration of your actual machine. After the Digital Twin has been uploaded onto your programming station, you can test and optimize it with a realistic digital model of your machine under real-world conditions:
- Check and optimize tool paths
- Prevent program interruptions
- Avoid collisions
- Reduce setup times
- Increase process reliability
- Determine machining times and costs

* This service is performed for a fee

Your workstation

What does the programming station look like?

The programming station is an application for PCs with Windows operating systems. The software offers you the same TNC user interface and graphical support as the control on your machine. There are also different operating interfaces.

The TNC programming station can be used for the TNC7, TNC 640, TNC 620, TNC 320 and iTNC530 controls. Programming station software for each control is available for download on the HEIDENHAIN website.

Demo version of the programming station

If an operating panel or software protection dongle is not connected, then the programming station software launches in demo mode with limited functionality. As soon as a connected operating panel or software release module is detected, the full functionality of the TNC programming station can be used.

Programming station with the TNC operating panel

A separate TNC machine operating panel can be connected to the PC via the USB port, allowing you to create NC programs using the same keyboard as the one on the machine. The only difference is that the operating panel also contains the soft keys that are normally built into the control's monitor housing. A PC keyboard also enables convenient entry of file names and comments. Overlays for easier soft-key identification and self-adhesive strain relief for the USB cable are included in delivery.

TNC programming station with virtual keyboard

The programming station can also be used with a virtual keyboard instead of a TNC operating panel. The virtual keyboard is shown with the TNC control panel on the screen of the PC and contains the keys needed to open the TNC's most essential dialog boxes. A software protection dongle is included.

Programming station with virtual keyboard

The programming station with a virtual keyboard is available in the following versions:

- **Single-station license**
- **Network license** for 1, 14 or 20 stations. The stations must be connected with each other because the software dongle is connected to only one PC. The network license is therefore especially useful for training rooms.

The programming station operating panel is also available in different versions without the software protection dongle, allowing you to use the operating panel when using a network license.

TNC7 programming station operating panel

The operating panel is based on the layout of the TNC7 keyboard unit and, thanks to its compact design, is ideal for use in an office or in a training environment. The programming station's keyboard layout is highly ergonomic. Its long-stroke key design is particularly pleasant.

The TNC7 programming station operating panel:

- State-of-the-art TNC7 hardware design
- Compact form factor for use at an office workstation
- Installation slot for USB dongle on the bottom
- Strain relief for USB cable built into the housing
- Newly designed keyboard with an improved feel
- Dirt-repellant, anodized keyboard surface

The TNC7 programming station keyboard can be combined as desired with the different programming station variants (dongle versions). A slot is provided at the bottom of the housing for securely connecting your USB dongle.

The TNC7 features a fully touch-optimized user experience. Just like the TNC7 itself, the new programming station operating panel has no separate soft keys. The soft keys are selected via the mouse or by touching the screen.

Versions and system requirements

Which programming stations are available?

To find the appropriate programming station software for our current TNC controls, visit: www.heidenhain.com/software. The installation package of the programming station software contains the following:

- Programming station software
- VirtualBox (VBox) virtualization software from ORACLE
- VBox expansion: TNC VB Base Software and data for the installation and operation of all programming stations (Control Center and virtual keyboard)

Prerequisites for the PC

Operating system: Windows 10/11 (64-bit)

- Processor with virtualization support (VT-x or AMD-V)
- RAM: ≥ 8 GB, ≥ 16 GB (TNC7)
- Dedicated graphics board for graphics-intensive applications
- Hard disk: ≥ 20 GB per programming station
- Resolution: ≥ 1024 x 768, ≥ 1280 x 1024 (TNC 640), ≥ 1920 x 1080 (TNC7)
- Interfaces: USB, LAN

TNC Programming Station	License	ID no.	Programming station software
TNC programming station with TNC 640/TNC620 operating panel	1 local	1113967-03	Downloadable from the HEIDENHAIN Filebase • TNC7 • TNC 640 • TNC 620 • TNC 320 • iTNC 530
TNC programming stations with virtual keyboard	1 local	1113924-04	
	1 network	1125955-04	
	14 network	1113926-04	
	20 network	1113928-04	

Operating panel without a software protection dongle[1]	ID no.	Use: Programming station software
TNC7 programming station operating panel	1380256-01	TNC7 (TNC 640, TNC 620, TNC 320, iTNC 530)[2]
TNC 640/TNC 620 programming station operating panel	1113967-52	TNC7, TNC 640, TNC 620, TNC 320, iTNC 530

[1] TNC programming station with keyboard required
[2] Operation via mouse or touchscreen, no soft key buttons

Conversational languages

You can install the TNC programming station with several languages and switch among them during operation. All dialogs and soft keys are then displayed in the respective national language. The following languages are available:

- Chinese (simplified and traditional)
- Danish
- German
- English
- Finnish
- French
- Italian
- Korean
- Dutch
- Norwegian
- Polish
- Portuguese
- Romanian
- Russian (Cyrillic)
- Swedish
- Slovak
- Slovenian
- Spanish
- Czech
- Turkish
- Hungarian

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Further information:

- Brochure: *TNC7*
- Brochure: *TNC 640*
- Brochure: *TNC 620*
- Brochure: *TNC 320*

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