DIGITAL
SHOP
FLOOR

HEIDENHAIN

Digital Shop Floor

Solutions for digitalizing manufacturing companies

www.digital-shop-floor.heidenhain.com

Digital Shop Floor

HEIDENHAIN supports manufacturing companies large and small with a wide range of solutions for digital networking. These solutions give companies 360° of insight into their production processes, allowing them to streamline their workflows, improve their process reliability and achieve sustainable productivity gains:

- Monitor machine statuses and program progress in real time
- Identify optimization potential through a variety of analyses
- Plan maintenance when it's needed
- Easily transfer data between the control and a Windows PC
- Automate your tool inspection processes
- Realistically simulate NC programs on the programming station
- Grow your knowledge through interactive training

360° of insight into your production processes

Software
We develop software solutions for companies that use CNC machine tools in manufacturing.

Consulting
We're happy to support you with advice and assistance as you fully digitalize your production-related activities.

Services
We're your dependable partner for NC program optimization, as well as for programming support and initial setup of hardware and software solutions.

Training
We can help grow your expertise through continual training courses, seminars, webinars and videos.

Automation
We provide innovative and efficient automation technology solutions through our high-performance hardware and software products, and through our personal support.

The right software for intelligent networking

Manufacturing companies that use CNC machine tools can benefit from the Digital Shop Floor software products from HEIDENHAIN. These intelligent solutions support you throughout your process chain, from production planning and machine setup to production monitoring and analysis.

Our machine data collection software gives you a clear picture of the entire process chain surrounding your machine. You don't need to share data with the Cloud, nor are you limited to specific controls or machine manufacturers.

The HEIDENHAIN control also supports your work with software options that deliver convenient data usability, time-saving workflows and transparent processes to the shop, design office, production planning team and administrative staff.

Software solutions in flexible modules

PartCalculator

JobManager

StateMonitor

PlantMonitor

Maintenance Manager

Connected Machining: high-performance solutions on the control

HEIDENHAIN DNC
HEIDENHAIN OPC UA NC Server

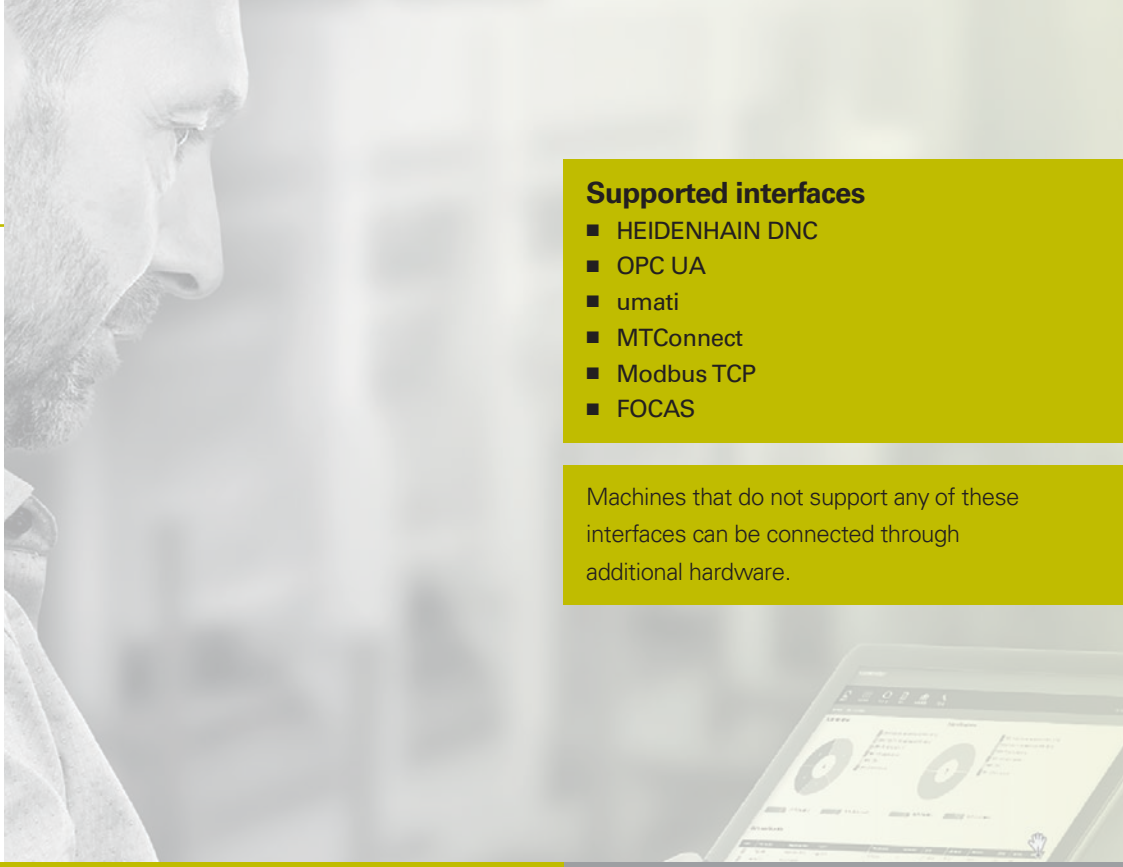
TNCremo/ TNCremoPlus

Remote Desktop Manager

StateMonitor

StateMonitor is a software solution for cross-platform machine data collection. It provides real-time insight into the production processes of machine tools. This intelligent software collects and visualizes machine statuses, tool data, NC program durations, PLC signals and other machine-related data. Through its Messenger function, you can also choose to be notified when various events occur, providing you with full situational awareness:

- Visualize tool data and program progress
- Monitor the duration of individual programs
- Monitor production processes on mobile devices when not at work
- Track machine statuses and uncover optimization potential
- Plan maintenance when it's needed and reduce malfunctions
- Collect and analyze job data



Supported interfaces

- HEIDENHAIN DNC
- OPC UA
- umati
- MTConnect
- Modbus TCP
- FOCAS

Machines that do not support any of these interfaces can be connected through additional hardware.

Gain access through a web browser on various end devices

Real-time notifications by e-mail

Keep an eye on your machines

Collect and visualize job data

Analyze production data in detail

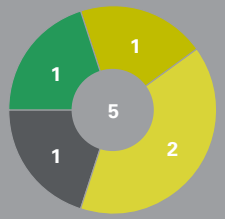
Plan and log on-demand maintenance

Enhance your tool management

Connect your machines via the HEIDENHAIN DNC, OPC UA, umati, MTConnect, Modbus TCP and FOCAS interfaces

Forwarding to an external SQL database for the processing of machine data in an MES or ERP system

Status overview of your machines



20.0 % Productive (Overrides ≥ 100 %)
20.0 % Productive (Overrides < 100 %)
40.0 % OK, but not productive
0.0 % Not ready for operation
0.0 % Delay
20.0 % Machine not in use

98.8 % Availability

27.5 % Utilization rate

JobTerminal

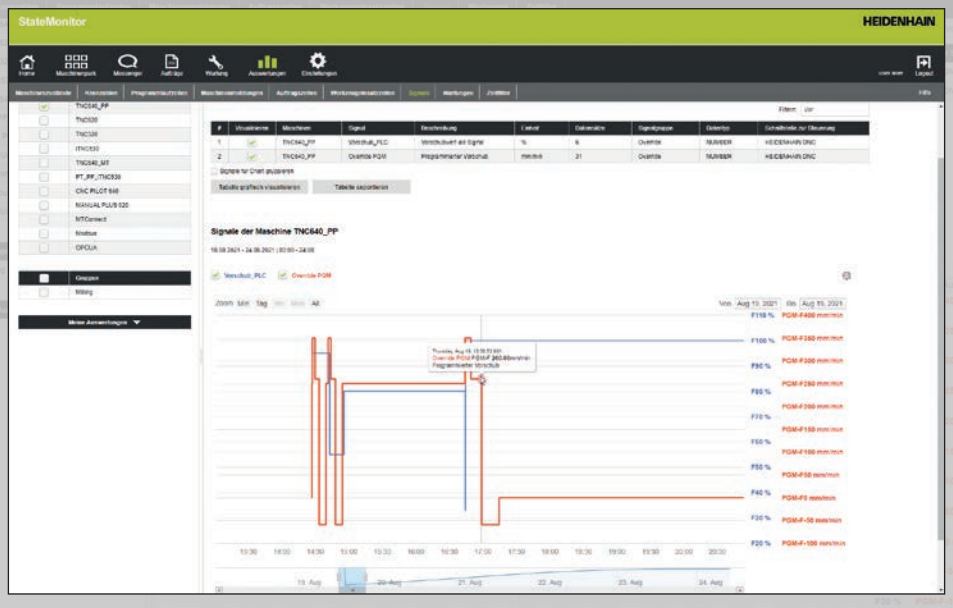
JobTerminal is a StateMonitor option that manages job data, job times and job analyses, allowing you to determine your job costs based on actual setup and production times. You can also uncover planning deviations and centrally collect data about pending, currently running and completed jobs.

MaintenanceManager

MaintenanceManager is a StateMonitor option that allows you to plan maintenance when it's needed based on actual operating times, machine messages and set intervals. It also displays maintenance and error messages via the Messenger function, allowing you to uncover optimization potential and reduce your maintenance costs.

Overview of the JobTerminal functions

- Create and assign jobs or work steps
- Enter setup and production times manually or automatically
- Save additional job data, such as production quantities



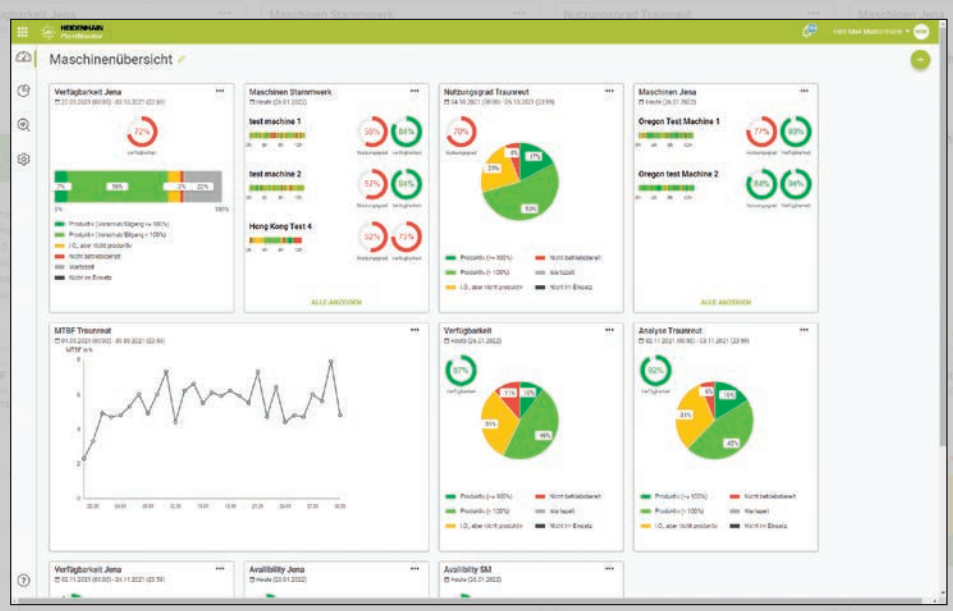
PlantMonitor

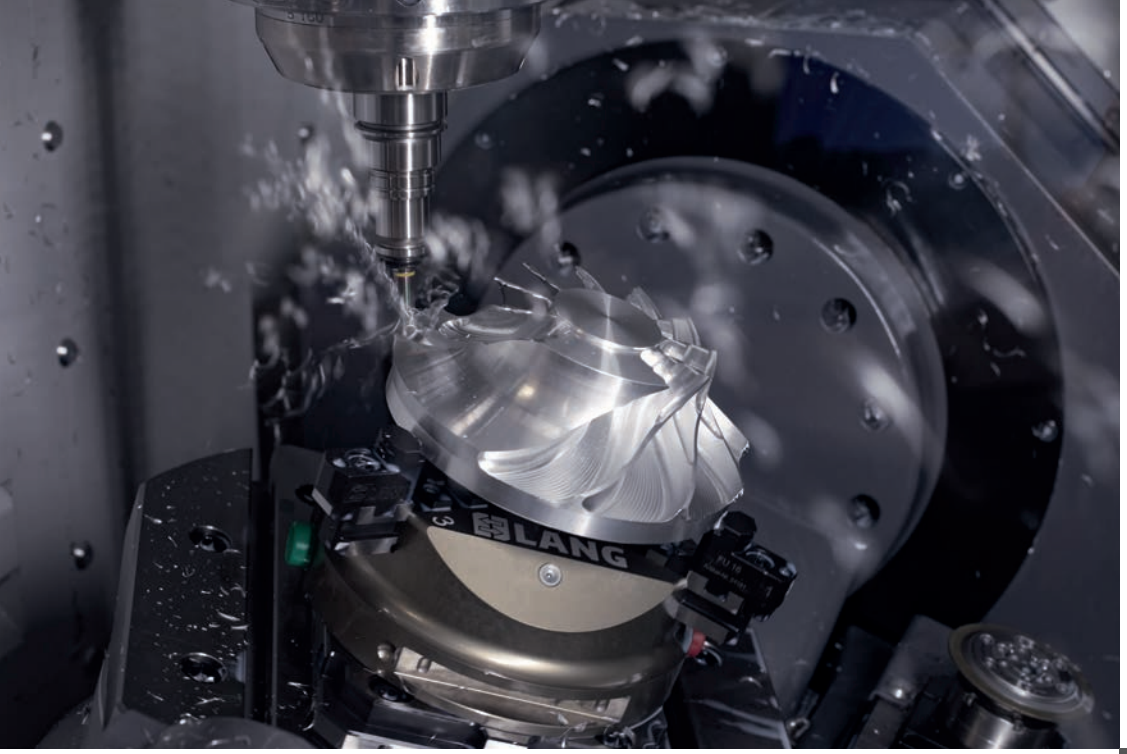
PlantMonitor gives you a real-time overview of machine data from multiple instances of StateMonitor and an analysis of individually configurable machine combinations across multiple sites and production centers:

- Analyze machine data across sites
- Leverage intuitive data presentation on customizable dashboards
- Make decisions based on solid data

5 Signals

The 5 Signals option of StateMonitor allows you to collect and record equipment-specific PLC signals such as fluid levels, temperatures and workpiece counters. Through this additional machine data, StateMonitor's already extensive analyses can be tailored to the specific needs of your company and be used to trigger messages.





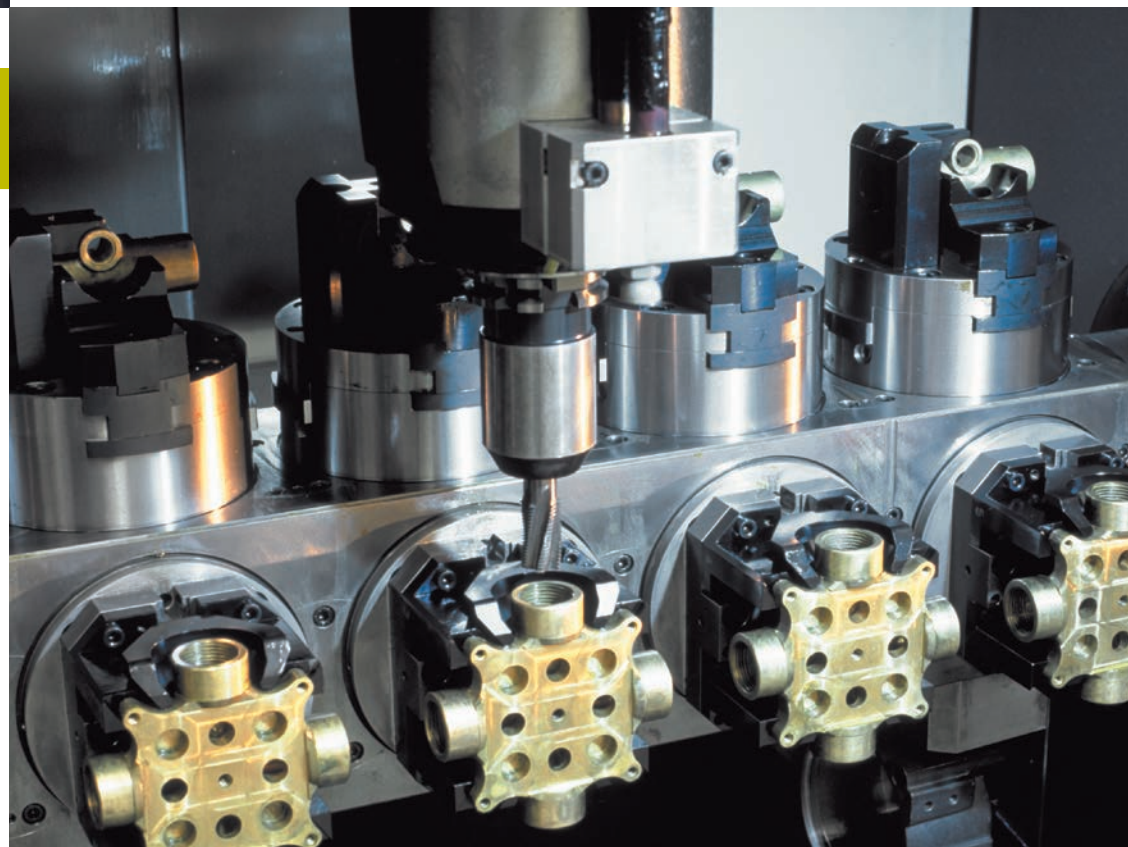
JobManager

JobManager helps you perform detailed job planning by giving you an overview of your created jobs. Jobs can be imported from a connected ERP system or created manually. The software allows you to edit job information and work-step data, as well as assign planned times for setup, machining and transport to the given work steps.

For realistic detailed planning, the software contains a capacity planning function that allows you to store work times for each machine and for every day. All relevant information may be sent to the machine operator via JobTerminal or reported to the ERP system as needed.

PartCalculator

PartCalculator helps you set the price for CNC-milled parts. It delivers key data for quotations and purchasing. Specific machine parameters can be set in the system, and CAD data, along with technical drawings, can be uploaded as PDFs. The drawings or 3D models are then analyzed in order to determine the required production times and costs.



HEIDENHAIN Automation Solution

Hardware | Software | Services

Industrial PC with display

The IPC 8420 with a 15.6-inch touchscreen displays the operating interface.

The PNC 610 software is the basis for the modular system package underlying the HEIDENHAIN Automation Solution.

Compact drives

The UxC drives for three to six axes combine a PLC, controller, frequency inverter, and power supply unit in a single device.

Industrial PC

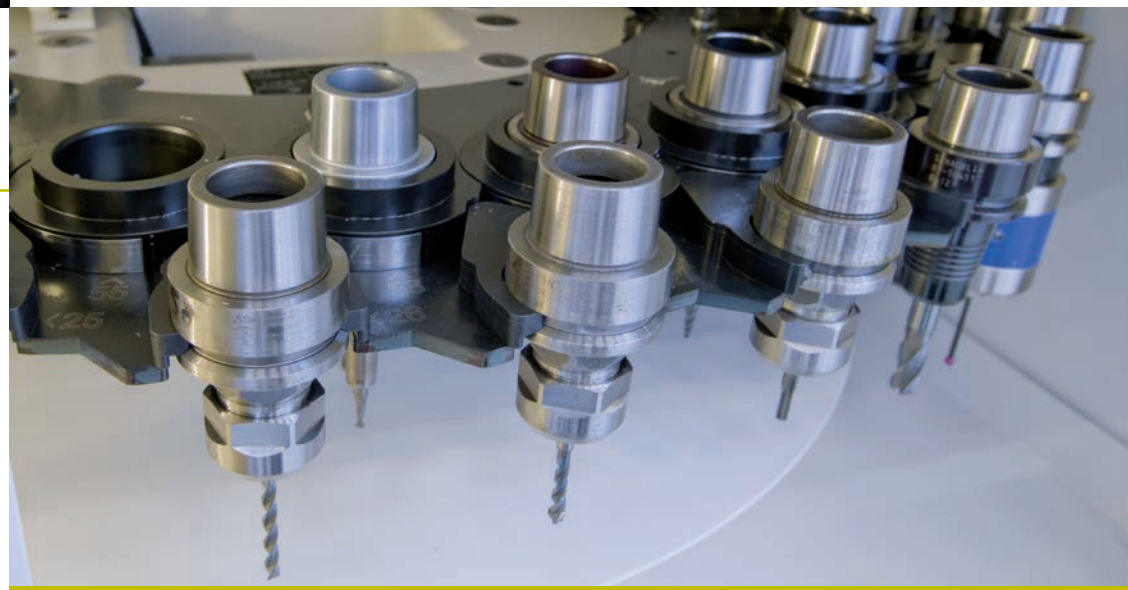
The IPC 6490 is designed for installation in the electrical cabinet

HEIDENHAIN Automation Solution

The HEIDENHAIN Automation Solution is a modular system encompassing hardware and software for universal workpiece and tool automation. Machine users and automated equipment operators benefit from an intuitive operational design, thus giving them control over their automation solution without extensive retraining. Machine manufacturers and automation providers value the Solution's field-proven components and adaptability.

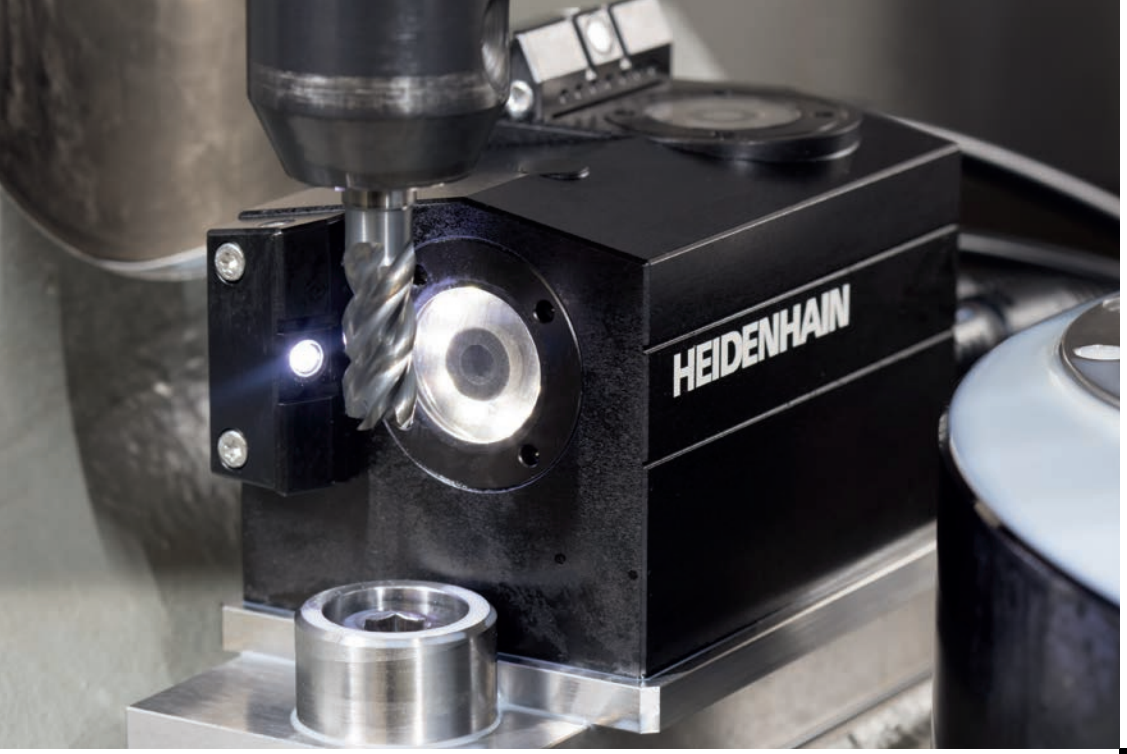
Tool and workpiece automation:
Manage the workpiece magazine and handling system, or connect the TNC to an additional tool storage system separately located from the machine's tool magazine.

System integration support:
Enjoy support when adapting the system with regard to control interfaces, communication interfaces, safety-related functions, bus systems, tool management and pallet management.



Overview of key benefits

- Intuitive, easy-to-operate user interface
- Universal interfaces for all common machine tool controls
- Built-in user administration for preventing improper operation



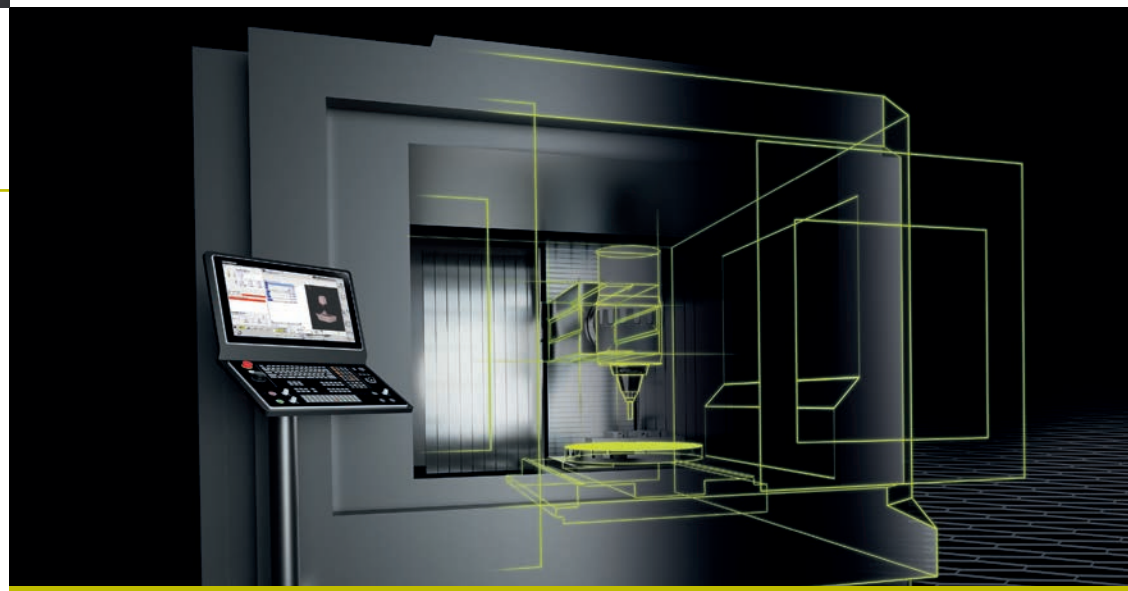
Digital Twin

An offering of the HEIDENHAIN Service department, the Digital Twin provides a digital model of a machine on your programming station. This realistic model allows designers and programmers to use the machine tool's actual functions, kinematics and parameters during their work on the programming station.

VT 121 vision system with VTC software

The VTC software allows you to inspect tools of any size within the machine. It is ideal for inspecting tools prior to critical machining steps or after expiration of their service life. You can also use the vision system to optimize tool parameters and NC programs, and inspect tools for breakage.

The VT 121 vision system uses cycles to produce images of tools in the machine's workspace. Images can be made of the tool's flake face, rake face and underside. A special feature are the panoramic images of end mills, where the tool is virtually unrolled in the image.



Fast and reliable results

- Realistic simulations on the programming station
- Reduced setup and testing times
- Verified NC program for greater productivity

Connected Machining

Individualized solutions for digital job management

At the heart of every manufacturing company is the shop floor, where trained experts create workpieces with lathes and milling machines. The Connected Machining package of functions offers solutions for the individualized networking of HEIDENHAIN controls. A key role is played by the machine user, who takes center stage in the job management process from his CNC control.

The solutions of Connected Machining simplify your work through simple data usability, time-saving workflows and transparent processes for your shop floor, design work, production planning and administrative tasks.

Overview of the Connected Machining solutions:

- HEIDENHAIN OPC UA NC Server
  The high-performance and future-ready HEIDENHAIN OPC UA NC Server offers an OPC UA-based interface for HEIDENHAIN controls. This internationally standardized and widespread communication protocol makes it fast and easy to connect machines to your production IT setup.

- Remote Desktop Manager
  Remotely operate external PCs by accessing one or more Windows PCs and their software directly from the TNC, utilizing fully integrated Windows PC operation on the TNC user interface.

- HEIDENHAIN DNC
  Communicate via COM components to achieve paperless job management and seamless data exchange across all production process steps. This option allows you to access and edit TNC data through a Windows application.

- TNCremo and TNCremoPlus
  Exchange data between the programming station and the TNC control with the free TNCremo PC software. You can transfer programs and service files, create screenshots and save data.

TNC Club

The TNC Club provides CNC experts with support and solutions for getting the most out of their TNC controls from HEIDENHAIN. Enjoy exclusive offers to help you become even more proficient at using your TNC control, and stay in touch with HEIDENHAIN to impact the future development of TNC controls with your ideas and wishes. Key benefits of TNC Club membership include:

- Fast support for servicing questions
- Technical advice tailored to your needs (Premium membership*)
- Learning set with a TNC programming station (Premium membership*)
- Exclusive training course discounts (Premium membership*)
- Regional training courses for TNC users (Premium membership*)

* For current prices and the Terms of Participation, visit:
https://www.tnc-club.co.uk/en/membership/

HIT: HEIDENHAIN Interactive Training

The HEIDENHAIN Interactive Training program is a multimedia learning system for NC programming, providing qualified beginner and advanced vocational training for NC users.

HIT is ideally suited for both self-learning and instructional training. The platform consists of three modules:

- HIT learning software
- HIT guidebook
- Programming station

These modules use the learning aids listed below to accessibly explain key aspects of CNC milling machines, HEIDENHAIN controls and NC programming:

- Videos
- Animations
- Knowledge tests
- Guided programming

Contact information for users:

User-Desk

Call us, or write us an e-mail, and let our experts help you!

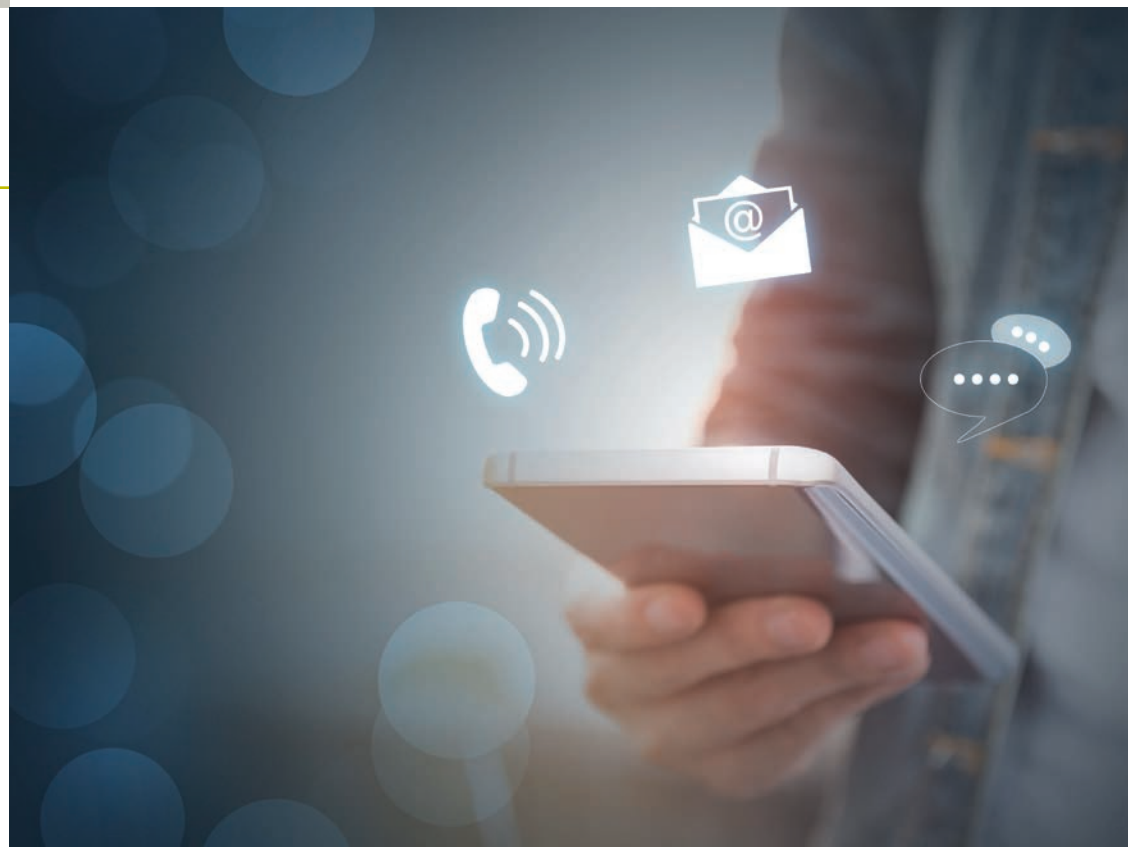
Monday to Thursday	8:00 a.m. to 12:00 p.m. | 1:00 p.m. to 4:30 p.m.
Friday	8:00 a.m. to 3:00 p.m.

☎ +49 8669 31-5000
✉ user-desk@heidenhain.de

Get the support you need

Our competent experts are happy to support you in digitalizing your shop floor and in all matters regarding our numerous products. Our team of specialists is also ready to help you on-site:

- Process analysts for optimizing your planning and production processes
- Application engineers for testing and activating new software options
- Control experts for measuring and compensating for motion errors
- NC and PLC programmers for integrating new cycles and expanding M functions



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  +49 8669 31-5000 or
  user-desk@heidenhain.de
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Everything for B2B users on a single platform

HEIDENHAIN SHOP

HEIDENHAIN

DR. JOHANNES HEIDENHAIN GmbH
Dr.-Johannes-Heidenhain-Straße 5
83301 Traunreut, Germany
☎ +49 8669 31-0
FAX +49 8669 32-5061
info@heidenhain.de

www.heidenhain.com

HEIDENHAIN worldwide

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