



HEIDENHAIN

CNC PILOT 640

High-end lathe machining

www.heidenhain.com/cncpilot640

CNC PILOT 640: turning without compromises

The CNC PILOT from HEIDENHAIN delivers intuitive operation, innovative programming, intelligent user support and superb motion control, making it the perfect control for lathes, turn-mill machines and high-performance turning centers.

This versatile control can be used on horizontal, vertical and carousel lathes, including machines with driven tools, a Y and B axis, a main and counter spindle, and a C axis or positionable spindle. It also supports multi-channel machining for simultaneous machining steps on multiple machine slides.



CNC PILOT 640: combined versatility and high performance

- Up to 3 channels for asynchronous multi-slide machining
 - Superb motion control based on top-notch TNC milling control technology
 - Ability to import part programs from all prior versions
 - Automatic program creation with TURN PLUS (up to 90% faster)
 - Intuitive and easy-to-learn shopfloor programming
 - Extensive cycles, even in the standard model (e.g., skiving, trochoidal milling and complex turning operations with FreeTurn tools)
 - 5-axis simultaneous machining
 - In-process tool wear and breakage detection
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Field-proven machining cycles

The CNC PILOT 640 is equipped with an extensive package of cycles, including cycles for high-quality turning, milling and drilling. Even complex machining operations such as multiple plunging, simultaneous machining, trochoidal milling and hobbing can be programmed in canned cycles.

Outstanding productivity

- Reliable and efficient production
- All common machining operations
- Convenient form-based programming
- Teach-in cycles
- FreeTurn tool cycles

Intuitive programming

Easy program creation

- Form-based entry
- Context-sensitive help images
- Intuitive program structure
- Graphical contour programming
- Uploading of existing programs

Programming is incredibly easy with smart.Turn. All necessary parameters are provided in fillable forms and illustrated with context-sensitive images. The resulting program contains neatly organized and easily readable machining blocks.

Or you can use the TURN PLUS function to generate a program at the push of a button. Once you've defined your contour, material and workholding, TURN PLUS automatically handles the rest.



Realistic simulation

Perfect simulation

- High-resolution graphics
- Visualization of tools and holders
- Visualization of cutting path
- Machining time calculation

The control's accurate, high-resolution 3D simulation allows you to evaluate the machining outcome beforehand for turning, drilling, and milling processes. It even simulates complex multi-channel operations, displaying workpieces and the multi-slide tool movements. The digitally rendered workpiece blank and finished part can be rotated for complete-sided viewing.

Intelligent monitoring

Load Monitoring

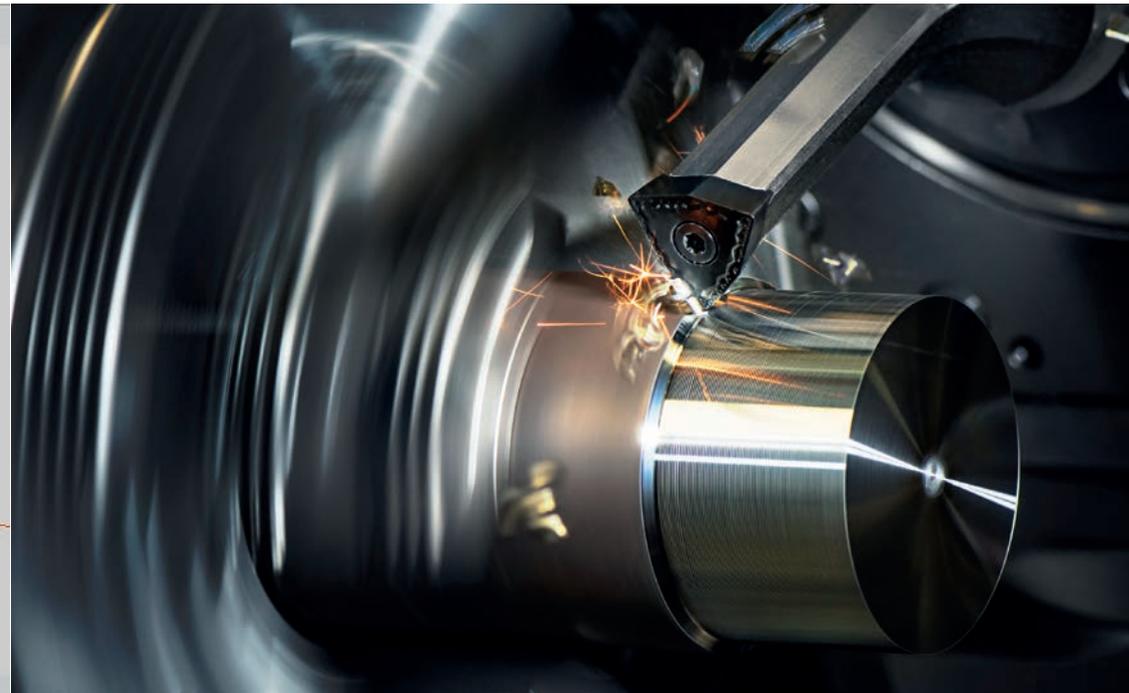
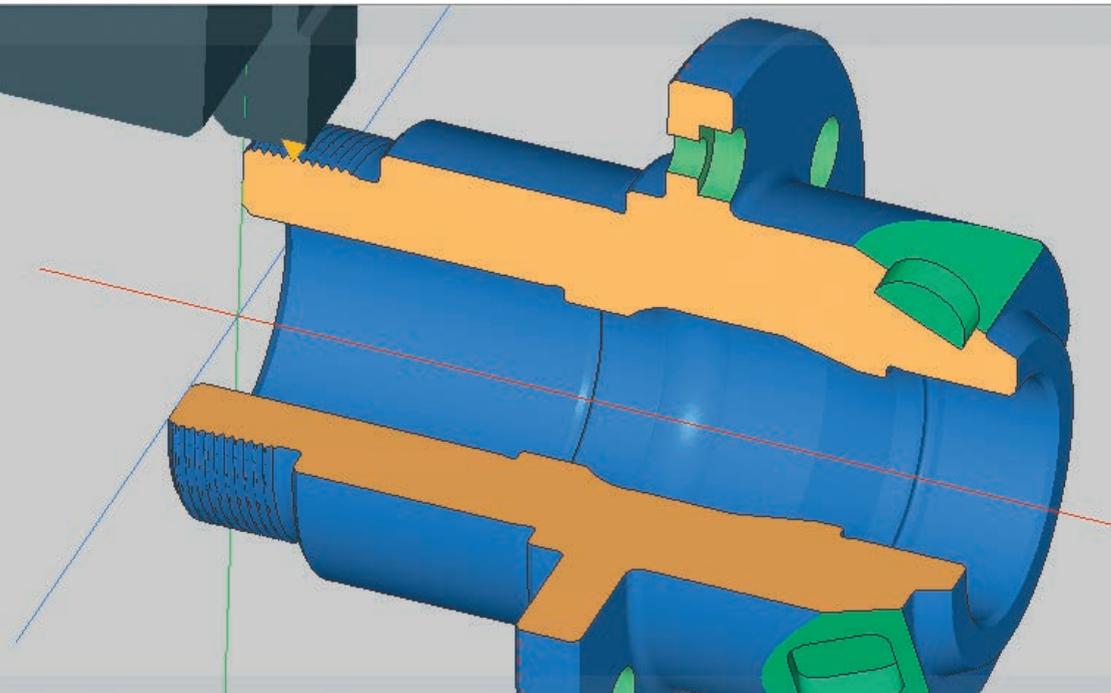
Load Monitoring tracks the machine's spindle and motor loads, comparing them with values measured during a reference operation. This enables the control to detect tool wear and breakage, as well as execute predefined responses.

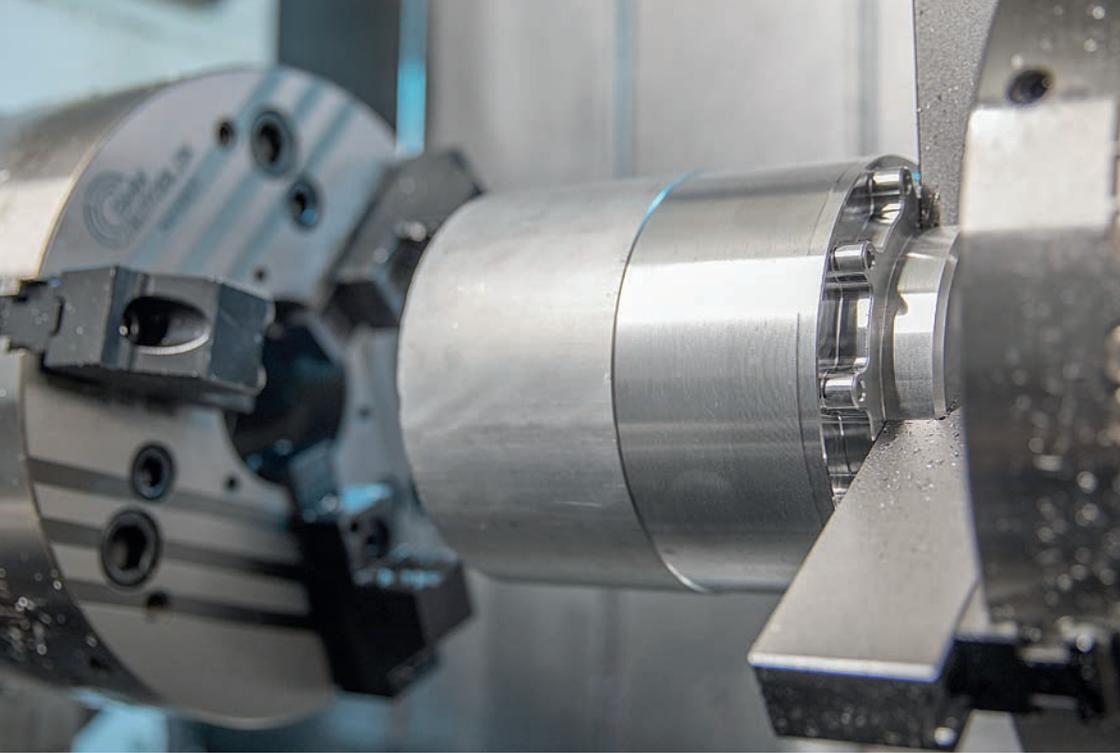
Component Monitoring

Component overload is a common cause of costly machine damage and unplanned downtime. Component Monitoring tracks the current spindle-bearing load.

Optimal process security

- Detection of load deviations
- Wear and breakage monitoring
- Definable error responses
- Machine component detection





B axis and simultaneous machining

Using a B axis makes it possible to perform drilling and milling operations in oblique planes. The CNC PILOT 640 makes it easy for you to rotate the coordinate system to the desired angle while still programming the machining operation in the main plain. The machining operation is then executed in the tilted working plane.

Versatile machining strategies

- Tilted-plane machining
- Coordinate system rotation
- Flexible tool usage
- Cycles for simultaneous turning
- Distortion-free simulation

Broad versatility

Powerful functions

- C axis or positionable spindle
- Y axis
- Counter spindle
- Eccentric machining
- Hobbing

The CNC PILOT 640 is the right solution for any task and any machine configuration, even supporting complex C-axis or Y-axis machining operations, including complete machining on dual-spindle machines.



Optimize production processes

Your Digital Shop Floor software

The StateMonitor software delivers real-time insight into what your machines are doing and helps you analyze the collected data. Since it can be used on mobile devices both inside and outside your corporate network, StateMonitor puts machine data at your fingertips, anytime and anywhere.

Use StateMonitor to optimize your manufacturing

- Collect and evaluate data, regardless of the specific control
- Collect and visualize machine statuses
- Plan and perform maintenance
- Store data on-premises
- Share data with ERP systems
- Use it on mobile devices

Connected Machining

Individualized solutions for digital job management

Connected Machining intelligently networks HEIDENHAIN controls to your process chain, allowing you to fully digitalize job and data management, maximize your shop's full potential and improve quality, productivity, cost-efficiency, time management and dependable delivery.

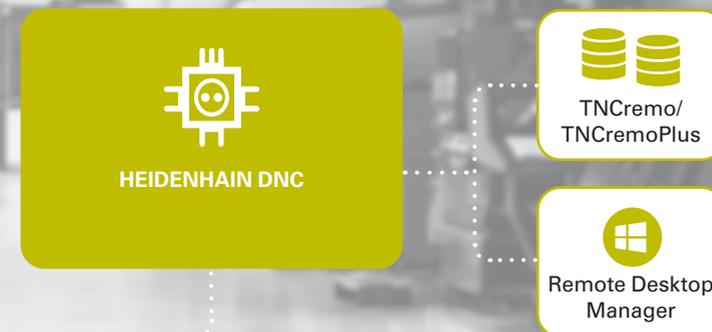
Overview of the Connected Machining solutions:

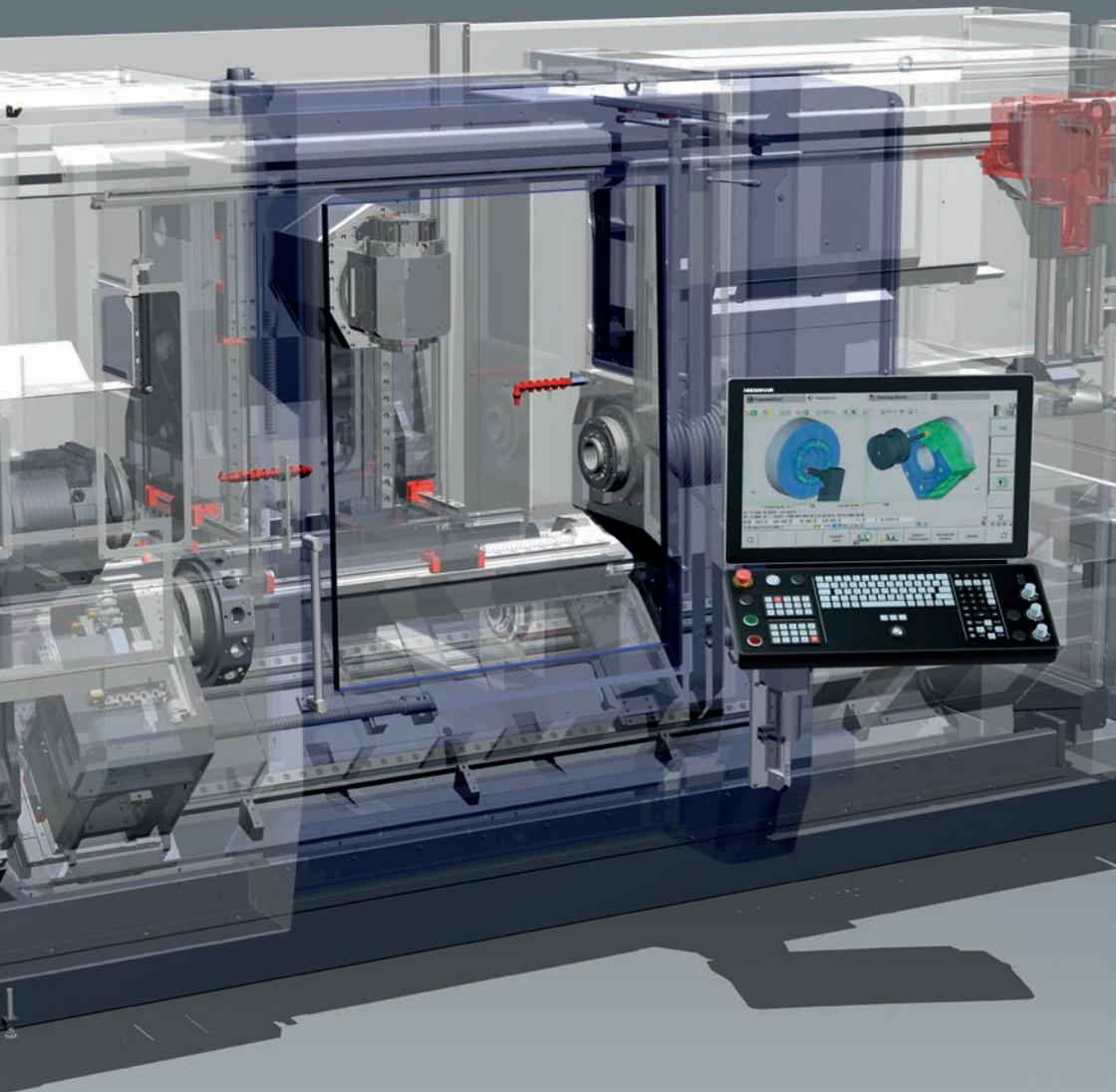
- Remote Desktop Management: display and remotely operate applications on external computers
- HEIDENHAIN DNC: access data from your control in Windows applications
- TNCremo/TNCremoPlus: exchange data between your control and programming station

Software solutions in flexible modules



Connected Machining: high-performance solutions on your control





HEIDENHAIN

DR. JOHANNES HEIDENHAIN GmbH

Dr.-Johannes-Heidenhain-Straße 5

83301 Traunreut, Germany

☎ +49 8669 31-0

☎ +49 8669 32-5061

✉ info@heidenhain.de

www.heidenhain.com



HEIDENHAIN
worldwide