HEIDENHAIN

Functions of the TNC7

Comparison with the TNC 640

www.heidenhain.com/cnc-controls

09/2025

Dynamic, convenient, intuitive

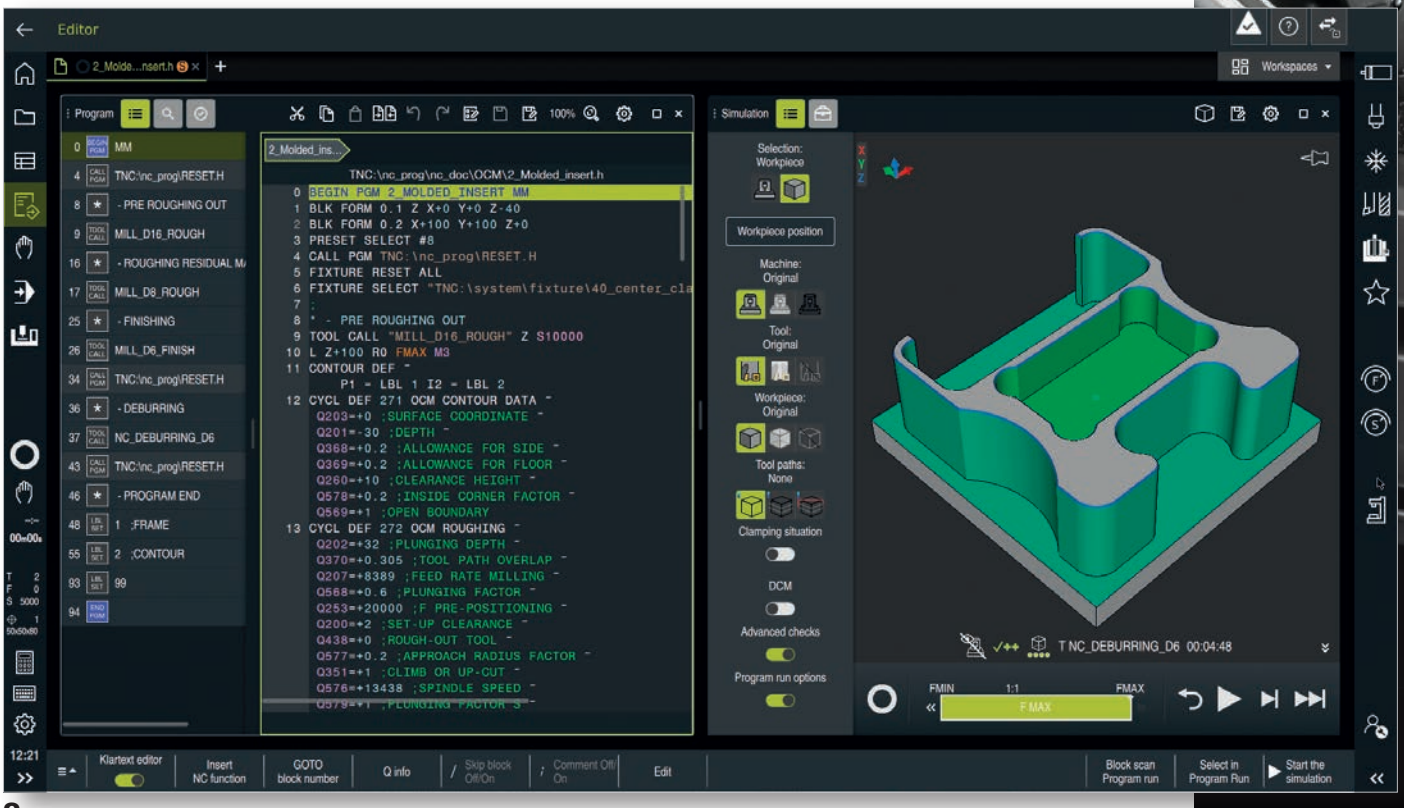
Representing the next level in CNC control technology, the TNC7 from HEIDENHAIN is setting new standards in user experience and new manufacturing potential. The TNC7 assists users every day during program creation, machine setup and workpiece inspection. Its perfect visualization of the workpiece and work envelope, combined with optimal touch-operated software, delivers a major boost in convenience. You can readily rotate visualizations, select functions and navigate merely by tapping and swiping on the touchscreen.

Milling machines are called on to perform a wide range of complex tasks depending on the parts being machined. The TNC7 can be perfectly adapted to your unique requirements, allowing you to select and arrange the dashboard as desired via personalized favorites and a home menu for a fast start. Information and functionality can be placed exactly where they are needed.

Through its perfect marriage of software and hardware components, the TNC7 greatly enhances ergonomics and convenience. The user experience of the TNC7 is fully touch-optimized, while still allowing you to use the keyboard and trackball.

Your benefits

- **Greater efficiency**
  Ability to select and arrange workspaces to match your tasks
- **Maximum flexibility**
  Modes for right-handed and left-handed users, Dark mode, and more
- **Responsive operation**
  Fluid touch operation with zero response time
- **Easy to get started**
  Concise training videos explain the control's functions and proper operation
- **Ergonomic user experience**
  The perfect matching of software and hardware components



TNC7
HEIDENHAIN
Workspaces
Simulation
TOUCH_PROBE
0.000
0.000
-96.400
0.000
0.000
0.000
Internal stop

Programming with optimum efficiency

The TNC7 provides optimal user support every step of the way, from program creation and machine setup to on-machine part inspection. A new function for contour programming stands out in particular.

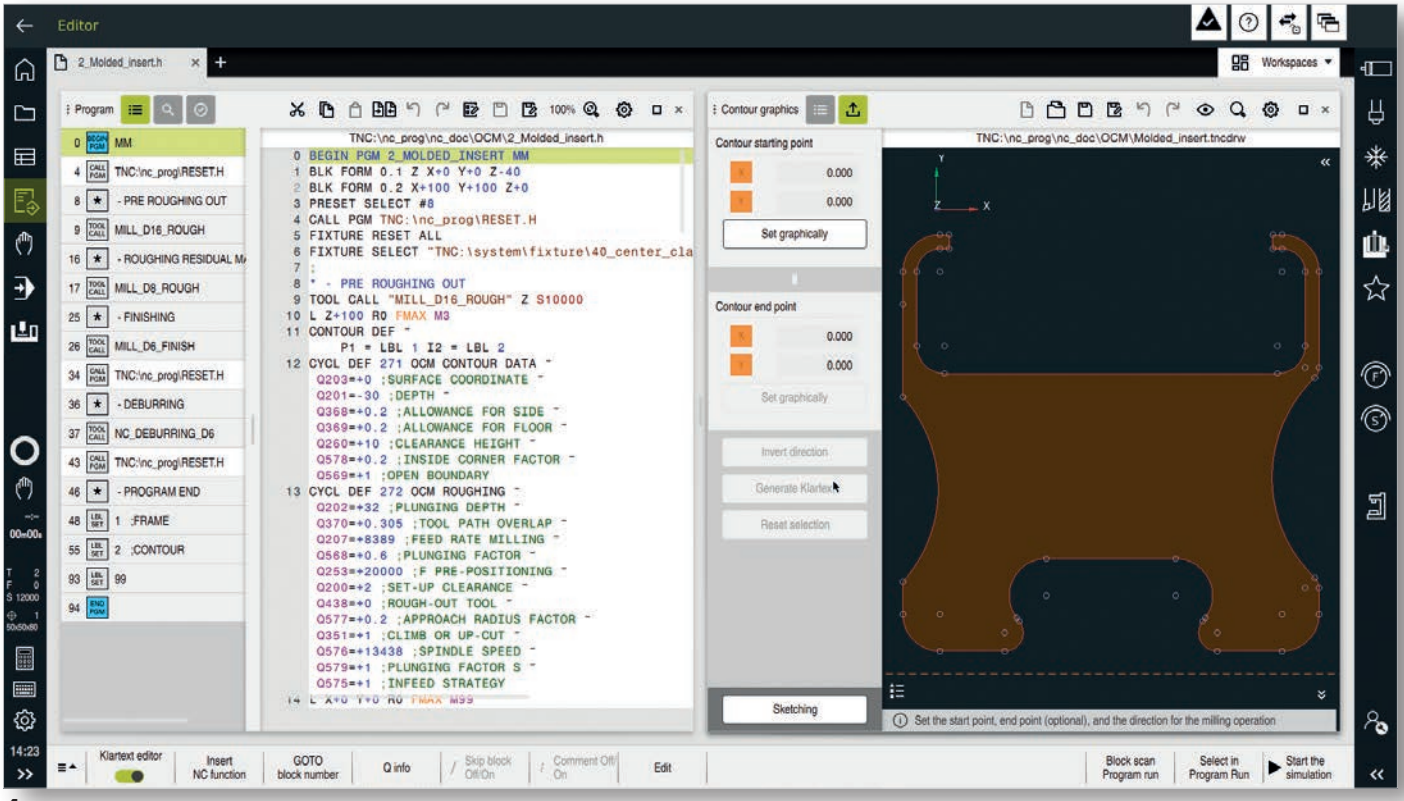
The TNC7 enhances familiar Klartext programming through smart functions. A newly developed graphical programming function lets you draw and dimension contours directly on the touchscreen. The TNC7 then converts this drawing into Klartext, saving it as a program. Programming contours on the TNC7 therefore takes very little time, regardless of the part's complexity.

For a fast, guided programming experience, the new Editor enhances familiar, dialog-guided programming by including form-based entry screens for all Klartext commands. In the process, an optimized program-structuring function enables precise and efficient navigation through the NC program.

The control's fast, high-resolution simulation provides a perfect visualization of the workpiece, fixtures and overall work envelope. You can also use the touchscreen to zoom in on key details within the virtual work zone.

Your benefits

- **Easy operation**
  Rapidly begin programming with form-based entries
- **Intuitive programming**
  Gesture-driven contour programming
- **Effective program verification**
  Realistic simulation for identifying programming errors
- **Familiar approach**
  Klartext remains the format for NC programs
- **Intuitive display of data**
  Centralized file management with recycle bin functionality
- **Full compatibility**
  Continued use of already existing NC programs



HEIDENHAIN
TNC7

Assistance throughout the machining process

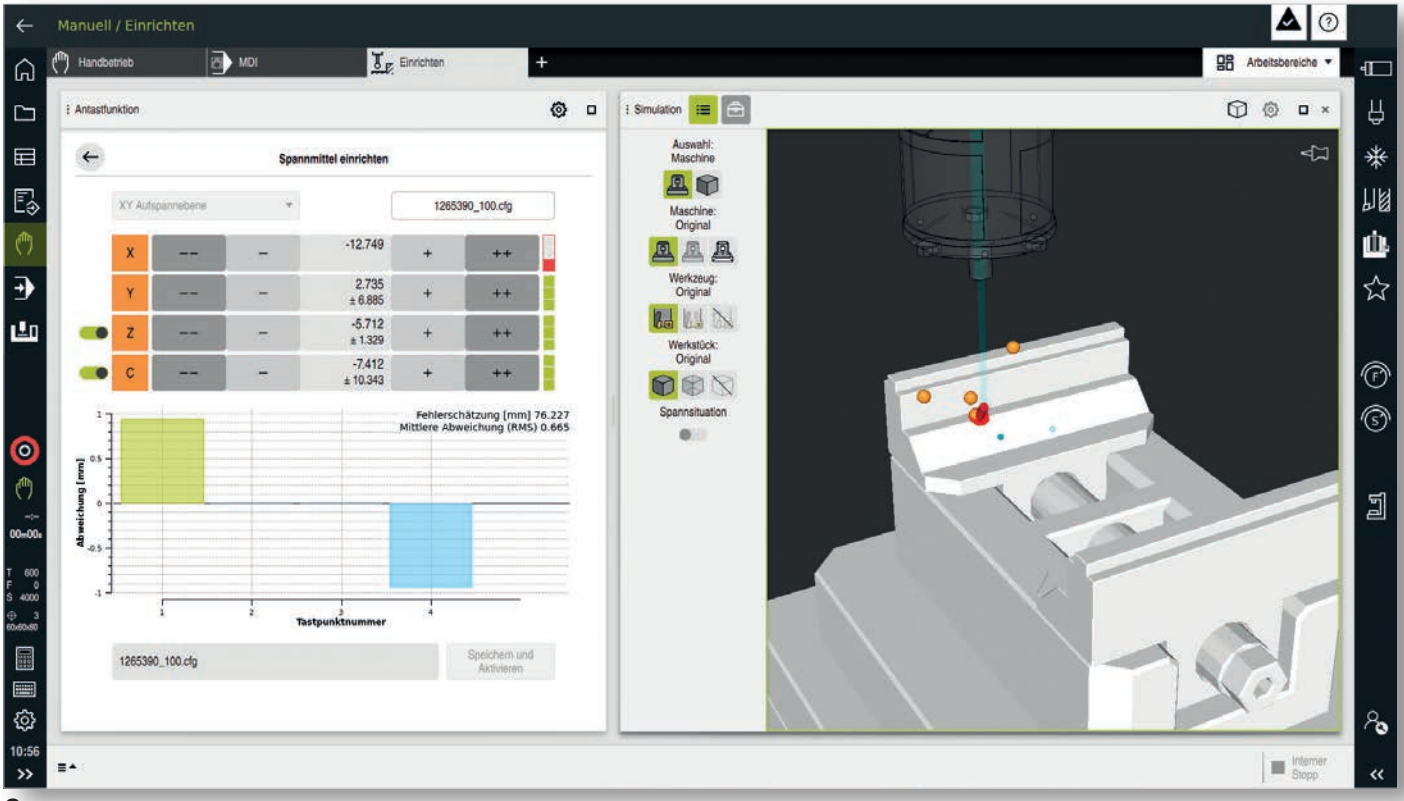
The TNC7 assists you from concept to finished part with intelligent solutions, including new, smart probing functions and graphical probing guidance for defining workpieces and fixtures during setup.

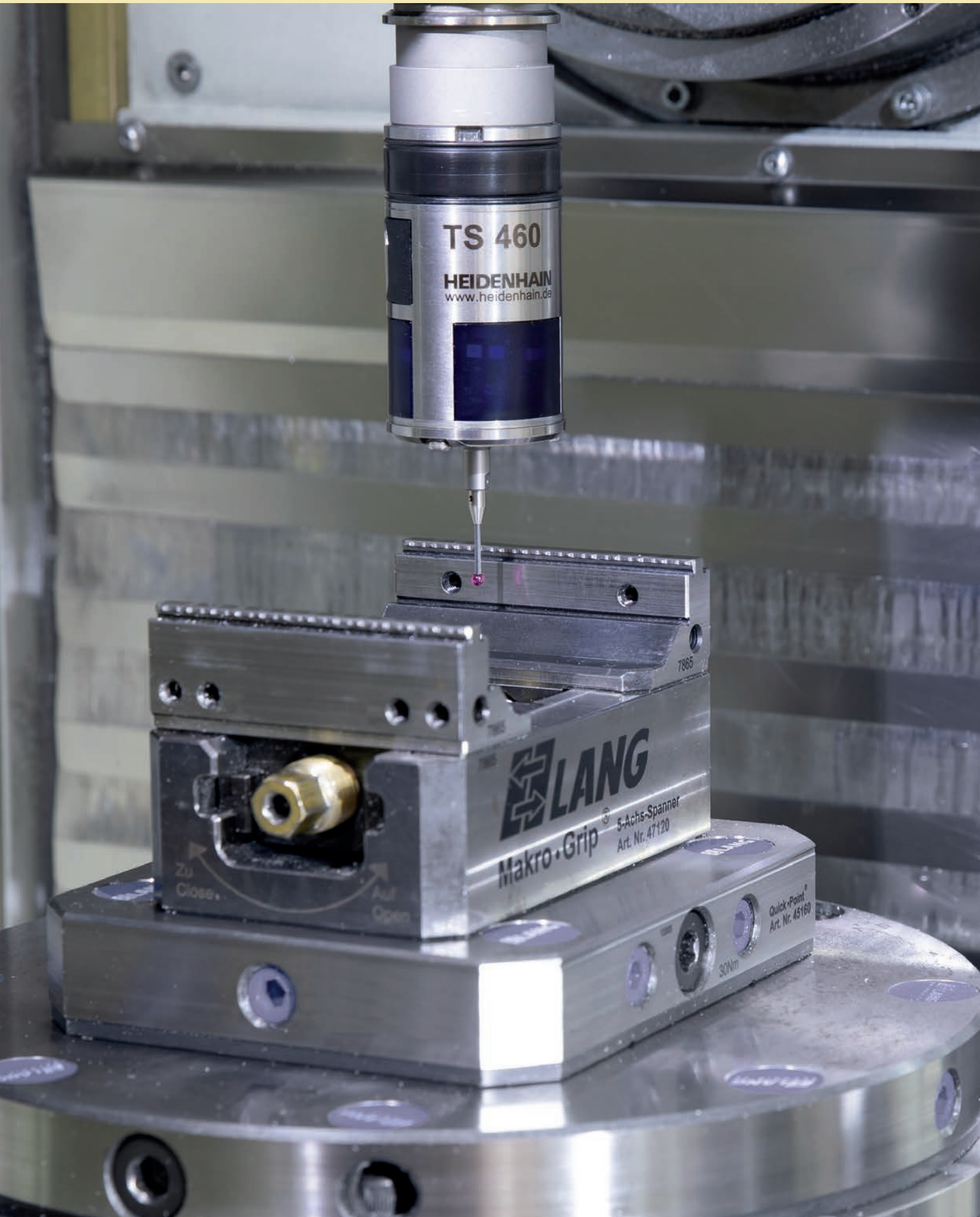
The TNC7 takes Dynamic Collision Monitoring to the next level. Beyond preventing crashes between machine components and tools, DCM also takes fixtures into account. The new version of DCM even provides graphically guided probing for locating fixtures on the machine table. This unique function makes locating fixtures on the machine table fast, reliable and intuitive. A 3D model is all that you need. Optimizing your 3D models is easy with the TNC7's CAD Model Optimizer function, which prepares low-quality 3D fixture models for use in the virtual work envelope.

Alongside DCM's graphical support for fixture probing, the Model Aided Setup function provides graphically guided workpiece probing, thus saving you the trouble of determining which probing functions are needed in which sequence. The TNC7 provides intuitive guidance throughout the measuring task, making it fast and easy for you to measure up to six degrees of freedom on a workpiece. The familiar manual probing functions for workpiece setup also underwent an overhaul so that now the TNC7 provides conversational guidance and context-sensitive support images throughout the measuring process.

Your benefits

- **Convenient setup**
  Graphically supported fixture and workpiece setup
- **3D data optimization**
  Generating and repairing STL files for fixtures
- **Crash avoidance**
  Dynamic collision monitoring for machine elements, tools and fixtures
- **Easy data transfer**
  Importing fixtures with typical 3D file formats

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Makro•Grip
5-Achs-Spanner
Art. Nr. 47120
Quick•Point
Art. Nr. 45160
30Nm
Zu
Close
Auf
Open

Integrated component and process monitoring

Process monitoring (option)
With its intelligent process monitoring capability, the control detects disturbances early in the machining process and ensures reliable results. Errors like tool breakage, skipped or faulty pre-machining of a workpiece, deviations in the material, or changed workpiece positions are detected immediately.

After one or more reference machining operations have been recorded, the control monitors all subsequent such operations and reacts quickly and reliably to any deviations during machining. This can efficiently prevent subsequent damage. Very different kinds of reactions can be defined for the possible faults.

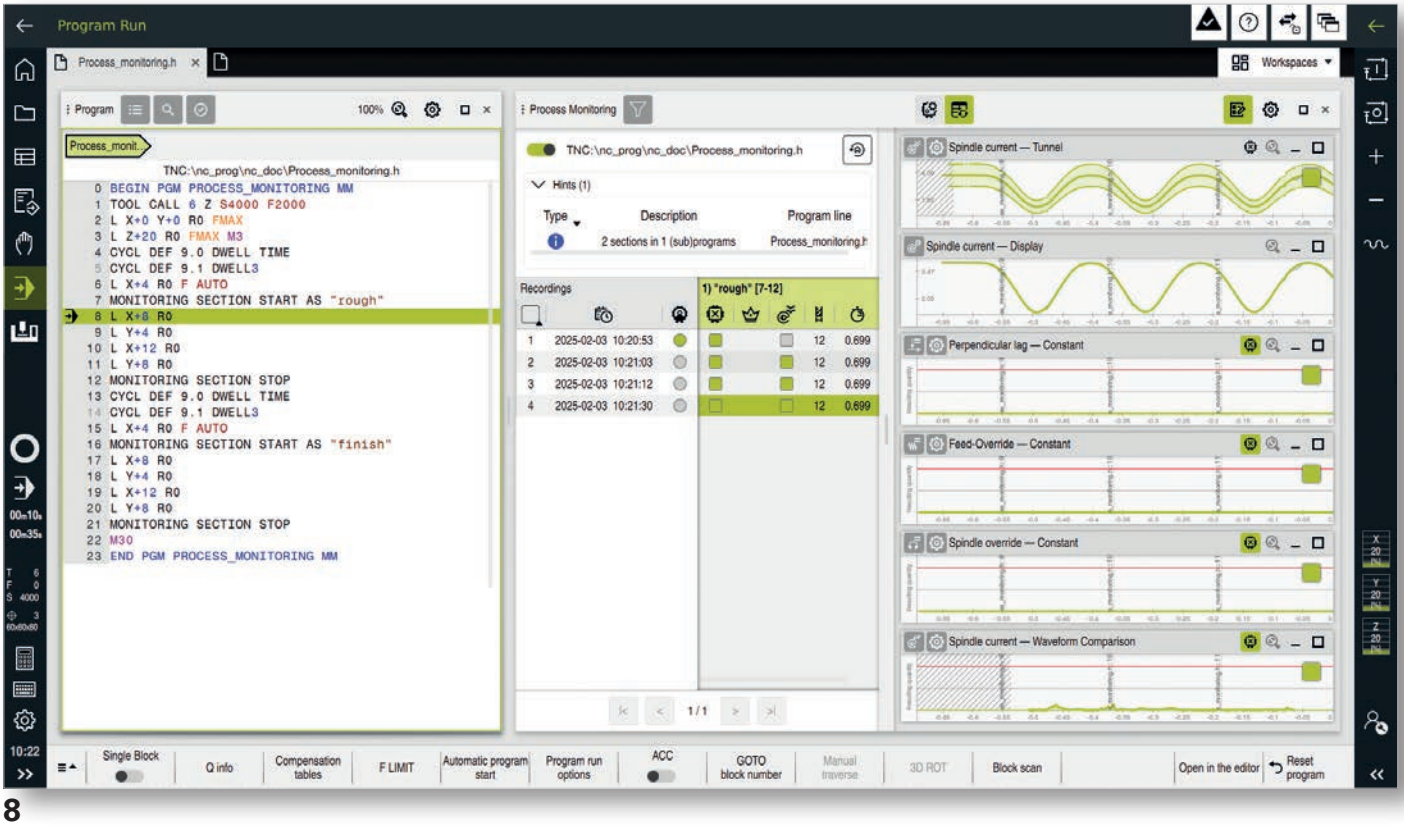
In automated manufacturing, process monitoring even makes it possible to maintain productive operations without intervention by a human operator. For example, if there is a disturbance in the process, the tool can be disabled and the next workpiece or pallet inserted. If the tool is needed again later on, then the control automatically inserts the replacement tool.

Many informative signals from within the control are directly available for process monitoring, such as the spindle current or the part of the servo lag that affects surface quality. No additional sensors are required.

Each monitoring task is displayed graphically, thereby optimally supporting users when setting up the monitoring limits. Additionally, recording of the machining processes is very simple. The results of the monitored processes can be exported in various formats for documentation purposes.

Your benefits

- **Greater process reliability**
  Reliable monitoring due to dependable blockwise synchronization
- **Ensured productivity**
  Detecting errors through deviations from a teach-in cut
- **Less scrap**
  Intelligent error reactions, such as inserting a replacement tool
- **Straightforward analysis**
  Presented via a 3D visualization and a 2D graph
- **Ease of use**
  Easy programming and zero installation effort



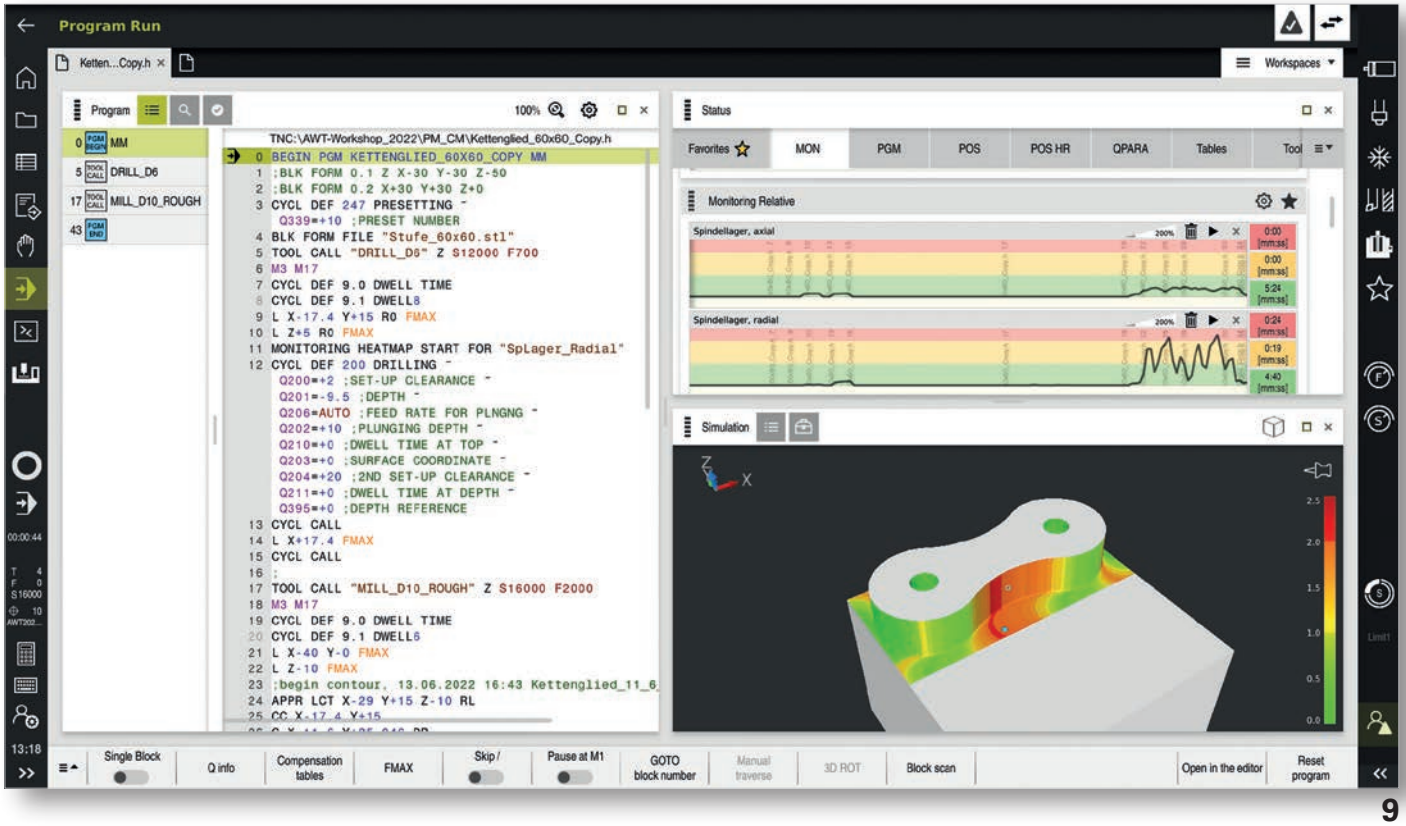
Component monitoring* (option)
Overload often leads to damaged machine components, and therefore to machine downtime. For example, the spindle bearing is often subject to a very high load in machining strategies that have been optimized for maximum efficiency, and can therefore sustain undetected damage. Component Monitoring warns you about these dangers, and can even stop the machine tool if necessary. Thanks to continuous monitoring of the bearing load and visualization of these values, the machining processes can be optimized correspondingly. However, the production quality of a machine tool is influenced not only by overload. Components that are constantly under load, such as guideways or the recirculating ball screw, are subject to wear and thus have an influence on the finished product.

The TNC7 uses the Component Monitoring software option to ascertain the machine status at fixed intervals. The machine manufacturer can output and evaluate the data, and react accordingly, such as by planning predictive maintenance. The machine manufacturer can also parameterize automatic evaluation by the TNC7, with direct reporting to the user, which helps prevent unplanned machine downtime. During machining, the material removal simulation updates the workpiece in real time. The MONITORING HEATMAP function presents the evaluation for a defined monitoring task on the workpiece in various colors. That way you see in the workpiece view where a component is subject to an excessive load.

Your benefits

- **Machine protection**
  Reliably avoid damage to machine components
- **Predictive planning**
  Monitoring of wear in the drive train
- **Simple checking**
  Display wear levels and receive warnings
- **Overload avoidance**
  Detect warning and error limits

* The control must be adapted for these functions by the machine manufacturer.



Functions of the TNC7
Exclusively for the TNC7

Function	Explanation
TNC user interface	
TNC bar	Gain a perfect overview, and navigate with precision. The TNC bar can be expanded or minimized
Left-/Right-handed mode	The TNC7 lets you arrange the TNC and OEM bars as desired
Dark mode	Special color scheme for working in low ambient light
Flexible arrangement of workspaces	In the individual operating modes, various workspaces can be selected, hidden, enlarged, reduced, or shifted
Learning videos	Concise training videos are integrated into the TNC7, where they provide step-by-step explanations for new functions
Centralized area for settings and configuration options	The TNC7 features a Settings tab in the Home operating mode. From here you have access to all settings and configuration options
Favorites system for rapid access	User-defined selection of frequently used functions for better overview during day-to-day usage. The user can select favorites (files, parameters, NC functions, entries in status parameters). These favorites are shown in the quick access menus
Status overview	Within the TNC bar, the control shows a status overview containing the execution status, the current technology values and the axis positions
Virtual keyboard	Use the virtual keyboard to enter NC functions, letters, and numbers, as well as for navigation purposes
Operating modes	
Home	Easy and direct access to functions that are important to you, including the search function and a selection of frequently used favorites
Files	Centralized area for managing all files. The file management area shows drives, folders, and files. You can, for example, create or delete folders or files and connect drives
Tables	Centralized area for managing all tables. The Tables operating mode allows you to open various tables of the control and to edit them as needed
Improved workflow through a reduction in operating modes	• MDI operation is integrated into the Manual operating mode • The operating modes Program Run, Single Block and Program Run, Full Sequence are now in the Program Run operating mode • The operating modes Programming and Test Run are now in the Editor operating mode. As a result, you don't need to switch between operating modes when simulating and editing an NC program

Function	Explanation
File management	
File management	File management is independent of other operating modes. Tabs enable file operations across multiple folders
Recycle bin	The TNC7 features a recycle bin, allowing you to restore accidentally deleted files
Information area	In the information area of individual files, the control shows the path of the file or folder, as well as other information (e.g., the date of change). The information area allows users to write-protect files and designate favorites
Shortcuts	Touch gestures and key combinations are configurable (e.g., for copying, pasting, undoing an action, redoing an action, deleting and marking)
Context menu	With a long-press gesture or by right-clicking with the mouse, users can cause the control to open a context menu for the selected element
Preview area	Preview of the selected file, such as an NC program section
Tables	
Favorites in the Tables operating mode	You can use favorites to show the most important entries from a form, thereby creating your own form
Programming	
Entering cycles and functions through the "Insert NC function" button	As an alternative, you can still insert them through the CYCL DEF, TOUCH PROBE or SPEC FCT keys
Opening more than one NC program at a time	On the TNC7, you can open more than one NC program at a time, for example in order to compare contents and copy them from one program to another
Entries in forms	In the Form column, the TNC7 shows all possible syntax elements for the currently selected NC function. You can edit all syntax elements in the form
Program comparison	You use the program comparison function to determine differences between two NC programs. You can copy the differences into the active NC program
NC sequences	You use the NC sequences to store frequently used NC blocks as sequences. As a result, you do not need to reprogram every individual block but rather can call the individual NC sequences
Text editor	In the Editor operating mode, the control offers the Text editor workspace. In the Text editor, you can open and edit any file types
Cylinder kinematics	The NC function CYLINDER SURFACE allows you to machine the cylinder surface with various NC functions, for example OCM cycles (167/1-02-1), pocket milling cycles, or path functions
Cylindrical grinding	Enables the highest possible dimensional and shape accuracy with high process reliability (e.g., for tight tolerances in rotationally symmetrical components)

Function	Explanation
Programming	
Issuing notifications	With the NC function FUNCTION REPORT, notifications can be issued on the screen under program control
Shaping	Perfect for applications including the machining of sealing surfaces, as well as engine turning or beveling for excellent surface quality with simultaneous gentle machining of the workpiece
Control structures	Using control structures, you can program the NC program more clearly and with a better structure. The TNC7 offers case analyses (IF, ELSE IF, and ELSE), program loops (FOR and WHILE), advanced program loops (BREAK and CONTINUE), and the variables necessary for this purpose
Contour programming	
Graphical programming with intuitive drawing functions and gesture recognition	Graphical programming offers an alternative to conventional Klartext programming. You draw lines and arcs to create a 2D sketch and then generate a Klartext contour from it. You can also edit existing contours
Simulation	
Cutout view	In the Cutout view you can cut through the simulated workpiece along any axis. This enables you to check for holes and undercuts in the simulation, for example
Model comparison	The Model comparison function is used to compare the blank and finished part in STL or M3D format with each other. Color gradients show differences in the amount of material. The more material there is, the deeper the color is. The probing function determines the material difference
Setup	
Manual probing function for tool measurement	With the Tool measurement function you determine the tool dimensions by touching the workpiece
Manual probing function for aligning a plane via cylinders	Use the Plane via cylinder function (via the PLC) to probe either one or two cylinders, each at two different heights. The control calculates the spatial angle of a plane from the probed points
Tool change in the Manual operating mode	Rapid tool change in the Manual operating mode without executing an NC block during program run or MDI
Graphic support for the measurement of fixtures	Determine the exact position of fixtures with interactive and graphically supported probing functions. The TNC7 correctly guides you through the entire probing process
Graphic support for the measurement of workpieces	Determine the exact workpiece position with interactive and graphically supported probing functions. The TNC7 correctly guides you through the entire probing process
Combining fixtures	Combine multiple fixtures and store them as a single new fixture. This allows you to visualize and monitor complex fixturing
Consideration of 3D tool models	You can add 3D models for drilling and milling tools as well as workpiece touch probes. The control can visualize the tool models and take them into account mathematically, such as with the Collision Monitoring software option (Dynamic Collision Monitoring (DCM)).

Function	Explanation
Program execution	
Process monitoring	Monitors the machining process based on a teach-in cut. When using this software option, the control monitors up to six tasks simultaneously in a defined machining section during program run. The control compares changes in the spindle load and tool load with the values of a teach-in cut
Dynamic collision monitoring (DCM) version 2	The Collision Monitoring v2 software option allows you to remove material right up to the fixture. If necessary, you can also reduce the standard 2 mm distance between the tool and the fixture.
Hardware	
OC 310 override controller	With the OC 310 hardware extension, the control allows the following: • Use the dial to manipulate the feed rate or rapid traverse • Start NC programs with the integrated NC Start key • Haptic feedback through vibration • Define conditional stops using breakpoints • Resume the NC program by increasing the override
Operation	
Universal zoom function	The zoom function (two-finger gesture) is available everywhere in the user interface. That way you can magnify or reduce the 3D model in the simulation or the font size of tables or NC programs, for example

TNC 640 functions that have been modified for the TNC7

Function	Explanation	TNC7	TNC 640
TNC user interface			
Context-sensitive help	Context-sensitive calling of TNCguide is possible. A context-sensitive call takes you directly to the related information, such as the selected element or the current NC function. Use the question mark icon to select an element about which the control should show information. When you press the HELP key, the control will display information about the selected NC function	✓	✓
Programming			
Search function	The search function of the TNC7 has been enhanced. For example, you can now search all opened programs for a certain tool. The search function is also available in other operating modes	✓	✓
Context-sensitive help for error messages	Error messages are shown directly at the input fields. Entries are checked as they are made. For example: excessive characters entered	✓	✓
Structure view in NC programs	The new structure function not only shows structure items in the NC program; it also shows subprograms, tool calls and labels, as desired. You can configure the elements that are shown. This greatly simplifies navigation in the NC program. On the TNC7, the configured elements are automatically available as structure items in the machine operating modes and in the Editor operating mode	✓	✓
Help graphics	The TNC7 allows you to select whether the control shows the help graphics as a pop-up window or whether they are shown only in the workspace	✓	✓
Auto draw	The two-dimensional programming graphics give you additional assurance: while you are programming, the TNC7 renders the programmed contour in the work envelope. You can then shift, edit, or export the contour.	✓	✓
Simulation			
Plane view	Plane-parallel view in six directions	✓	✓
Setup			
New manual probing functions	The TNC7 simplifies workpiece setup through smart probing functions. Via a tile menu, you select the desired probing function. The probing functions then provide step-by-step guidance through the measuring task, with intuitive user guidance, context-sensitive help images, and a clear presentation of the probing result	✓	✓
Program run			
Display of the program run time and progress	The TNC7 shows this information in the Status workspace and in the TNC bar	✓	✓
ISO programming	The DIN 66025/ISO 6983 standard defines a universal NC syntax. The TNC7 allows you to program and execute NC programs with the supported ISO syntax elements	✓	✓

✓ Available

Functions no longer supported

Function	Explanation	TNC7	TNC 6xx
Operation			
MOD menu	The settings in the MOD menu are now in the Home operating mode under the Settings application	–	✓
Program entry			
smartSelect	The TNC7 has new, convenient possibilities for inserting new NC functions	–	✓
Soft keys	The TNC7 has a context-sensitive function bar with buttons; additional actions are commanded from within the respective workspaces	–	✓
Programming			
Cycle 7 Datum	Cycle 7 Datum is automatically converted into TRANS DATUM	–	✓
Cycle 19 Working Plane	The PLANE functions replace Cycle 19	–	✓
Contour programming			
FK free contour programming	With the new graphical programming function, FK contour definitions can be imported and processed. However, FK program code cannot be exported	–	✓
Support for *.hp point files	Point files with the *.hp file extension are no longer supported by the control	–	✓

✓ Available
– Not available

Software options
Machining functions

Option number SIK	Option number SIK2	Option	TNC7	TNC 640
		Machining functions		
8	1-01-1	**Adv. Function Set 1** | Programming rotary-table machining • Programming cylindrical contours on an unrolled cylinder • Feed rate in mm/min or degrees/min	•	•
		Adv. Function Set 1 | Coordinate conversion • Tilting the working plane, PLANE function	•	•
		Adv. Function Set 1 | Interpolation • Circular in 3 axes with tilted working plane	•	•
9	4-01-1	**Adv. Function Set 2** | Interpolation • Linear in 5 axes	•	•
		Adv. Function Set 2 | 5-axis simultaneous machining • 3D tool compensation via surface normal vectors • Changing the swivel-head angle with the electronic handwheel during program run without affecting the tool tip position (TCPM = Tool Center Point Management) • Keeping the tool perpendicular to the contour • Tool radius compensation perpendicular to the tool direction • Manual traverse in the active tool-axis system	•	•
17	1-05-1	**Touch Probe Functions** | Streamlining setup and inspection with probing cycles • Workpiece misalignment compensation, preset setting • Automatic tool and workpiece measurement • Touch-probe input enabling for non-HEIDENHAIN systems	✓	✓
19	–	**Advanced Programming Features** | Expanded programming capabilities • FK free contour programming • Canned cycles • Peck drilling, reaming, boring, counterboring, centering • Milling of internal and external threads • Clearing level and oblique surfaces • Complete machining of straight and circular slots • Complete machining of rectangular and circular pockets • Circular and linear point patterns • Contour train and contour pocket, including contour-parallel machining • Special cycles developed by the machine manufacturer can be integrated • Engraving cycle: engrave text or numbers in a straight line or on an arc • Contour slot with trochoidal milling	✓	✓
20	–	**Advanced Graphic Features** | Visualization for verification and program run • Plan view • Projection in multiple planes • 3D view	✓	✓
		Advanced Graphic Features | Detailed 3D visualization	✓	✓
21	4-02-1	**Adv. Function Set 3** | Superimposing handwheel positioning during program run	✓	✓
		Adv. Function Set 3 | Calculating contours with tool-radius offset in advance (LOOK AHEAD)	✓	✓

• = Available as option
– = Not available
✓ = Standard function

Option number SIK	Option number SIK2	Option	TNC7	TNC 640
		Machining functions		
22	**–**	**Pallet Management** | Orchestrating automated pallet machining	✓	✓
40	**5-03-1**	**Collision Monitoring** | Preventing crashes with dynamic collision monitoring (DCM)	•	•
42	**1-03-1**	**CAD Import** | DXF converter, importing contours and machining positions from DXF files	•	•
		CAD Import | Importing contours from 3D models	•	•
44	**1-06-1**	**Global PGM Settings** | Applying configurable settings to entire programs	•	•
45	**2-31-1**	**Adaptive Feed Contr.** | Ensuring optimized feed rates (AFC)	•	•
50	**4-03-1**	**Turning** | Mill-turning functions • Turning tool management • Tool radius compensation • Switching between milling and turning mode • Turning-specific contour elements • Turning cycle package	•	•
		Turning | Eccentric turning	•	•
92	**2-02-1**	**3D-ToolComp** | 3D radius offset based on tool angle (requires the **Adv. Function Set 2** software option)	•	•
93	**2-03-1**	**Ext. Tool Management** | Managing tools based on NC program requirements	•	•
96	**7-04-1**	**Adv. Spindle Interpol.** | Interpolating spindle for shaping and interpolation turning, with a turning tool table	•	•
131	**7-02-1**	**Spindle Synchronism** | Synchronizing spindle motion • Synchronization of two or more spindles • Hobbing cycle (additionally requires the **Turning** option)	•	•
140	**5-03-2**	**Collision Monitoring v2** | DCM version 2 for crash prevention (automatically enables the **Collision Monitoring** software option)	•	–
145	**2-30-1**	**Active Chatter Contr.** | Reducing chatter during roughing (ACC)	•	•
152	**1-04-1**	**CAD Model Optimizer** • Generate correct STL files from STEP files • Repair existing STL files	•	•
154	**2-05-1**	**Batch Process Mngr.** | Informative overview of the pallet lineup	•	•
156	**4-04-1**	**Grinding** | Cycles for jig grinding and cylindrical grinding	•	•
157	**4-05-1**	**Gear Cutting** | Creating gears	•	•
158	**4-03-2**	**Turning v2** | Version 2 of the mill-turning functions (automatically enables the **Turning** option)	•	•
159	**1-07-1**	**Model Aided Setup** | Graphically supported workpiece setup	•	–
167	**1-02-1**	**Opt. Contour Milling** | Optimized trochoidal milling (OCM)	•	•

• = Available as option
– = Not available
✓ = Standard function

Option number		Option		TNC7	TNC 640
SIK	SIK2				
		Machine accuracy			
48	2-01-1	**KinematicsOpt** | Touch probe cycles for automatic calibration on rotary axes		•	•
52	2-04-1	**KinematicsComp** | Correcting 3D spatial errors		•	•
141	2-20-1	**Cross Talk Comp.** | Correcting errors due to coupled axes (CTC)		•	•
142	2-21-1	**Position Adapt. Contr.** | Adapting machine parameters based on position (PAC)		•	•
143	2-22-1	**Load Adapt. Contr.** | Adapting machine parameters based on workpiece-related loads (LAC)		•	•
144	2-23-1	**Motion Adapt. Contr.** | Adapting machine parameters based on axis movements (MAC)		•	•
146	2-24-1	**Machine Vibr. Contr.** | Damping machine vibrations (MVC)		•	•
155	5-02-1	**Component Monitoring** | Monitoring loads on machine components		•	•
168	5-01-1	**Process Monitoring** | Monitoring the production process based on a teach-in cut		•	–
		Communication			
18	3-03-1	**HEIDENHAIN DNC** | Communicating with external Windows applications via COM component		•	•
56 – 61	3-02-1*	**OPC UA NC Server** | Standardized interface for accessing TNC data and functions within a network		•	•
133	3-01-1	**Remote Desk. Manager** | Viewing and remotely operating external computers (e.g., Windows PCs)		•	•
–	3-04-1	**Process Tracking Interface PTI** | Interface for recording control signals and process signals		•	–
		Machine interfacing			
0	6-01-1*	**Control Loop Qty. (Additional Axis 1-8)** | Additional control loops	Additional Axis 1	•	•
1			Additional Axis 2	•	•
2			Additional Axis 3	•	•
3			Additional Axis 4	•	•
4			Additional Axis 5	•	•
5			Additional Axis 6	•	•
6			Additional Axis 7	•	•
7			Additional Axis 8	•	•

* This software option can be ordered multiple times in the desired quantity.
The control automatically takes all enablings into account.

• = Available as option
– = Not available
✓ = Standard function

Option number SIK	Option number SIK2	Option	TNC7	TNC 640
		Machine interfacing		
24	**6-03-1**	**Gantry Axes** | Operating synchronized axes: gantry axes, tandem tables	✓	✓
46	**7-01-1**	**Python OEM Process** | Implementing Python OEM applications	•	•
49	**6-02-1**	**Double Speed Axes** | Double-speed control loops	•	•
77	**6-01-1***	**4 Additional Axes** | 4 additional control loops	•	•
78		**8 Additional Axes** | 8 additional control loops	•	•
101 – 130	**–**	**OEM Option** | Enabling options provided by the OEM	–	•
135	**7-03-1**	**Synchronizing Functions** | Real-time coupling (RTC) for synchronizing axes and spindles	•	•
160	**6-30-1**	**Integrated FS: Basic** | Gen 3 exclusive: enabling of functional safety (FS) and four safe control loops	•	•
161	**6-30-2***	**Integrated FS: Full** | Gen 3 exclusive: enabling functional safety (FS) and the maximum number of functionally safe control loops (10 or more)	•	•
162		**FS Control Loop Qty. (Add. FS Ctrl. Loop 1)** | Gen 3 exclusive: additional functionally safe control loop (no. 1)	•	•
163		**FS Control Loop Qty. (Add. FS Ctrl. Loop 2)** | Gen 3 exclusive: additional functionally safe control loop (no. 2)	•	•
164		**FS Control Loop Qty. (Add. FS Ctrl. Loop 3)** | Gen 3 exclusive: additional functionally safe control loop (no. 3)	•	•
165		**FS Control Loop Qty. (Add. FS Ctrl. Loop 4)** | Gen 3 exclusive: additional functionally safe control loop (no. 4)	•	•
166		**FS Control Loop Qty. (Add. FS Ctrl. Loop 5)** | Gen 3 exclusive: additional functionally safe control loop (no. 5)	•	•
169		**FS Control Loop Qty. (Add. FS Full)** | Gen 3 exclusive: remaining functionally safe control loops enabled	•	•

This brochure describes the functions and specifications of the TNC7 with NC software 81762x-18.

* This software option can be ordered multiple times in the desired quantity. The control automatically takes all enablings into account.

• = Available as option
– = Not available
✓ = Standard function

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Mastering nanometer accuracy

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