



HEIDENHAIN



NC-Solutions

**Description for FAQ 1405
Tool carrier management**

**English (en)
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**Excerpt from the
User's Manual:**

1.1 Fundamentals

You can create and manage tool carriers using the tool carrier management. The control factors the tool carriers into the calculations.

On machines with 3 axes, tool carriers for right-angled angled heads help processing on tool axes **X** and **Y**, as the control takes the dimensions of the angle heads into consideration.

Along with software option number 8, **Advanced Function Set 1**, you can tilt the working plane to the angle of the removable angled heads and thus keep working with the **Z** tool axis.

Along with software option number 40, **Dynamic Collision Monitoring**, you can monitor every tool carrier and thus prevent collisions.

You must carry out the following steps so that the control can factor the tool carriers into the calculations:

- Save tool carrier templates
- Assign input parameters to tool carriers
- Allocate parameterized tool carriers

1.2 Save tool carrier templates

Many tool carriers only differ from others in terms of their dimensions, but their geometric shape is identical. So that you don't have to design all your tool carriers yourself, HEIDENHAIN supplies a range of ready-made tool carrier templates. Tool carrier templates are 3-D models with fixed geometries but changeable dimensions.

The tool carrier templates must be saved in **TNC:\system\Toolkinematics** and have the extension **.cft**.



If the tool carrier templates are not available in your control, please download the data you require from:
<http://www.klartext-portal.com/nc-solutions/en>



If you need further tool carrier templates, please contact your machine manufacturer or third-party vendor.



The tool carrier templates may consist of several sub-files. If the sub-files are incomplete, the control will display an error message.

Do not use incomplete tool carrier templates!

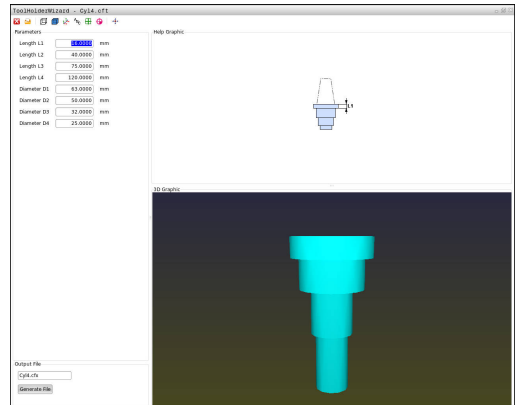
1.3 Assigning input parameters to tool carriers

Before the control can factor the tool carrier into the calculations, you must give the tool carrier template the actual dimensions. These parameters are entered in the additional **ToolHolderWizard** tool.

Save the parameterized tool carriers with the extension **.cfx** under **TNC:\system\Toolkinematics**.

The additional **ToolHolderWizard** tool is mainly operated with a mouse. Using the mouse, you can also set the desired screen layout by drawing a line between the areas **Parameter**, **Help graphics** and **3-D graphics** by holding down the left mouse button.

The following icons are available in the additional **ToolHolderWizard** tool:



Icon	Function
	Close tool
	Open file
	Switch between wire frame model and solid object view
	Switch between shaded and transparent view
	Display or hide transformation vectors
	Show or hide names of collision objects
	Display or hide test points
	Show or hide measurement points
	Return to starting view of the 3-D model



If the tool carrier template does not contain any transformation vectors, names, test points and measurement points, the additional **ToolHolderWizard** tool does not execute any function when the corresponding icons are activated.

Parameterizing the tool carrier template in the Manual operation operating mode

Proceed as follows to parameterize tool carrier templates and save these parameters:



- ▶ Press the **Manual operation** key



- ▶ Press the **TOOL TABLE** soft key



- ▶ Press the **EDIT** soft key



- ▶ Move the cursor to the **KINEMATIC** column



- ▶ Press the **SELECT** soft key



- ▶ Press the **TOOL HOLDER WIZARD** soft key
- > The control opens the additional **ToolHolderWizard** tool in a pop-up window.



- ▶ Press the **OPEN FILE** icon
- > The control opens a pop-up window.
- ▶ Select the desired tool carrier template using the preview screen
- ▶ Press the **OK** button
- > The control opens the selected tool carrier template.
- > The cursor goes to the first parameterizable value.
- ▶ Adjust values
- ▶ Enter the name for the parameterized tool holder in the **Output file** area
- ▶ Press the **GENERATE FILE** button
- ▶ If required, reply to the message on the control



- ▶ Press the **CLOSE** icon
- > The control closes the additional tool

Parameterizing the tool carrier template in the Programming operating mode

Proceed as follows to parameterize tool carrier templates and save these parameters:



- ▶ Press the **Programming** key



- ▶ Press the **PGM MGT** key
- ▶ Select the path **TNC:\system\Toolkinematics**
- ▶ Select the tool carrier template
- > The control opens the additional **ToolHolderWizard** tool with the selected tool carrier template.
- > The cursor goes to the first parameterizable value.
- ▶ Adjust values
- ▶ Enter the name for the parameterized tool holder in the **Output file** area
- ▶ Press the **GENERATE FILE** button
- ▶ If required, reply to the message on the control
- ▶ Press the **CLOSE** icon
- > The control closes the additional tool



1.4 Allocating parameterized tool carriers

To allow the control to factor a parameterized tool carrier into calculations, you must allocate the tool carrier to a tool and **call the tool again**.



Parameterized tool carriers can consist of several sub-files. If the sub-files are incomplete, the control will display an error message.

Only use fully parameterized tool carriers!

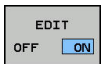
Proceed as follows to allocate a parameterized tool carrier to a tool:



- ▶ Operating mode: Press the **Manual operation** key



- ▶ Press the **TOOL TABLE** soft key



- ▶ Press the **EDIT** soft key



- ▶ Move the cursor to the **KINEMATIC** column of the required tool



- ▶ Press the **SELECT** soft key
- ▶ The control opens a pop-up window with parameterized tool carriers
- ▶ Select the desired tool carrier using the preview screen
- ▶ Press the **OK** soft key
- ▶ The control copies the name of the selected tool carrier to the **KINEMATIC** column



- ▶ Exit the tool table

