





# **Table of contents**

- Software Installation
- 3 Postprocessors

### **Common Functions**

- 3 Geometry tab Hide/Show geometry
- 3 Tooltip

### **CAD Data Import**

3 CAD Interfaces

### Wire EDM

- 4 Deactivating/activating operations
- 4 CAMMAN
- 4 Simulation
- 4 Set up sheet
- 4 Rotation axis
- 4 NC file name
- 4 Postprocessors
- 5 Postprocessor Makino
- 5 Postprocessor Sodick
- 5 Postprocessor AC Vision
- **5** Start hole postprocessors

### Milling

- 6 Duplicate
- 6 Load Machining Scheme
- 6 New "Postprocessor settings" dialogue

### 2,5D Milling

- 6 Profiling
- 6 Z Offset
- 6 Sorting machining figures

### Select Expert

6 Project outline

### **3D Milling**

- Common: Automatic Machining Area for Barrel tools
- Multi plane machining: Z depth coordinates refer to the current origin
- 3D Roughing: Automated multisided roughing
- Offset Rouging: Optimized Level based ordering
- 8 3D Roughing: Machine Flatlands after each depth
- 8 Parallel Cuts: Ordering by Region
- 8 Constant Z: Rest Finishing based on Previous Tool Shaft Length

- 8 Constant Cusp: Spiral Blend connection with shift distance
- 8 Flatland > Parallel: Optimal XY angle for Flatland machining
- 8 Flatland: Outside to Inside ordering
- 9 Flatland: Multi-passes with Depth Step option
- 9 Flatland: Single Pass Flatland Toolpaths
- Finishing Strategies: 3D Contact point boundary for Finishing
- 9 Finishing Strategies: Store contact point normals

### **5 Axis Simultaneous Milling**

- 10 Multi axis roughing: Minimize links
- 10 Multi axis roughing: Avoid small profile ramps
- 10 Multi axis roughing: Trim line ramps
- **10** Multi axis roughing: Primitives definition as clearance area
- **10** Multi axis roughing: Detect material thicker than ...
- **10** Multi axis roughing: Tool segment selection for tilting
- **11** Multi axis roughing: Stepover by cusp height
- **11** Multi axis roughing: Toolpath extensions
- **11** Multi axis roughing: Floor parallel pattern for wall finishing
- **11** Swarf machining: Accurate 4-Axis Swarf mode
- **11** Swarf machining: Gouge Checking against Individual Tool parts
- **11** Deburring: Corner Arc support for Chamfer tools
- 12 Deburring: Consolidated 3+2 behavior
- 12 Geodesic machining: Multiple Boundary Passes
- **12** Geodesic machining: Improved corner smoothing
- 12 Geodesic machining: Improved medial axis cuts
- 12 Rotary Roughing: Leads for Roughing
- **13** Rotary Roughing and Finishing: Support for Fixtures/Chucks

- **13** Rotary machining: Leads for Floor Finishing
- **13** Rotary machining: Containment trim for Rotary Finishing
- **13** Rotary: Support for Fixtures/ Chucks for Turn Milling
- **13** Rotary: Axial and Radial Offsets for Turn Milling
- 14 Collision control: User defined clearance areas
- **14** Links: Virtual fixture plane for safe linking
- 14 Collision control: "Autotilt" Support for Bull Nose tools
- 14 General information: Tilt tool in a user defined plane
- 14 5 Axis Simultaneous and 3D Milling: Fade lead in/out

#### Milling – Toolpath Simulation

- **15** New Graph-Based Triangulation speeds up Simulation
- **15** Operations Manager: Improved simulation quality

### CUT-Expert – 3D Laser- & Waterjet Cutting

- **16** Extensions and new functions
- **16** Machine settings dialog
- 16 Extension of the change points (NCI)
- 17 System behavior
- 17 Tube Cutting
- 17 Time calculation
- 17 Robot Programming

#### **Turning Module**

- **17** Toolpath graphic
- 17 Operation Manager
- **17** Turret configuration/Tool selection
- **17** Machining strategies
- 17 Simulation

#### CAMMAN 9.0

18 NC Program Management



## **Software Installation**

#### Postprocessors

### Now online available

From PEPS Version, only the most important postprocessors are installed with the software installation. However, all postprocessors are available in the download area under <u>Support & Service</u>

### **Common Functions**

#### Geometry tab - Hide/Show geometry

From PEPS Version 2025, simply click on the icon in front of the geometry name to hide/show geometries. One, several or all geometries can be shown or hidden.



The tooltip of the geometry type Groups (G1, G2 etc.) has been extended and now shows the number of points.

GROUP 4 (Counter bore D=5.3 T=29 D2=9.75 T2=5) No. of Points: 4



# **CAD Data Import**

### **CAD Interfaces**

The following CAD interfaces have been updated:

- INVENTOR Version 2025
- Siemens NX Continuous Release 24012
- SOLIDWORKS Version 2025
- Creo 13
- CatiaV5 R34
- CatiaV6 R213
- Solid Edge Version 2025



# Wire EDM

### **Deactivating/activating operations**

From PEPS Version, simply click on the **icon in front of the operation comment to deactivate/activate.** One, several or all operations can be deactivated/activated.



### CAMMAN

CAMMAN program management users can now set themselves which data is transferred to the CAM system. To do this, use the dialogue **File > Settings > Module settings > Camman Db.** 

Modul Settings			>
Databases Dialog settings Simulation Settings Common Post Settings Camman Db News and Updates	CAMMAN Data (Read) F Read CAMMAN Data PEPS Relds F Description F Part Number NC-File Name Material	CAMMAN Fields Bezeichnung Programmummer Dateiname Material	<b>&gt;</b>
	ОК	Cancel Save As Default	Help

### Simulation

The **"spark gap"** is now taken into account in the simulation of wire EDM programs. The size of the spark gap is determined in the dialogue **Operation start > Technology > Spark gap.** 

Workpiece					;
Billet Output File Technology Strategy Options Machine Options	Material SKD-11 Wire	• for Finishing			
	Roughing Wire Finishing Wire	Wire Dia - 0.25 mm	• •	Global Feedrate Spark Gap	2.0 0.01

### Set up sheet

The set-up sheet now shows graphic symbols for wire threading, wire cutting and stops.



### **Rotation axis**

The direction of the rotation axis + or - can now be inverted by the user.

### NC file name

The new option specifies that the NC file name automatically follows the file name of the \*.VDM file.

### Postprocessors

- The postprocessor AC CUT UNIQUA Dynamic/ Sequential has been expanded and optimized:
- CNC control version 2.7.0.2 is supported.
- Tech Database version 2.7.0 is supported.
- General improvement for the programming of rotation axes.
- Locking of rotation axes now possible (Dynamic model only).
- Twin wire is also possible with X machine
- **Threading conditions** can be saved as default (Dynamic model only).
- Manual threading is supported (Dynamic model only).
- "Variable taper" operations can be output as "4 axis Ruled Surfaces".
- Type of **probe** used can be determined.
- Programming of **"sectors"** is possible. Similar to the **AC Vision** postprocessor (Dynamic model only).
- SEQ Spindle commands are now possible.
- SEQ billet definition added.
- SEQ ISO billet arbitrary shape added.
- SEQ MOO/MO1 is now configurable.
- SEQ Additional offsets (clearances) can be output as variables.



#### **Postprocessor Makino**

The previously different Makino technology databases were converted into a standardized SQL database format. The adaptation leads to faster database access and a standardized database format.

### **Postprocessor Sodick**

Together with the comment, the current figure name can now also be output to the NC file.

i	Example:
ł	(Rough Cut 1 MATRICE_12);

### Postprocessor AC Vision

All settings in the **"Sectors"** dialog can now be exported to a file and imported again at a later date.

#### Start hole postprocessors

New start hole sorting function **"Shortest path".** The start hole NC file can be opened directly after it has been created.

Search for Startholes	×
Search Sorting Options	Shotest Path           C Active           Statpoint           0.0
	Priority Y X
	Startpoint
	C X-Ptority     C Y-Phority     Direction Revenal     Row Tolerance     0.01
	Diameter/Size Do not sort by Size
	Show current Path Start Sorting
	OK Cancel Save As Default Help



# Milling

### Duplicate

The new Duplicate function allows you to copy individual operations with just one click. The copied operation is inserted under the selected operation.



#### Load Machining Scheme

The **"Load Machining Scheme"** dialog has been completely revised and offers new and improved functions:

- Loading and managing of Machining Schemes improved.
- "Preview" contents of the selected Machining Scheme available.
- Assignment of existing Figures/Groups within the "Load Machining Scheme" dialog.
- Derivation of **Figures/Groups** from the 3D model using **"Select Expert"** functionality.



#### New "Postprocessor settings" dialogue

The **File > Settings** menu has been expanded to include a dialogue for **"Postprocessor settings".** The dialogue allows you to define postprocessor-related settings.

Postprocessor Settings		×
Tool Database	Totol Database Settings IP In:General, no humifier of the XY/Zinfeed is a machining operation IP No adoption of XY/Zinfeed when editing a machining operation	
	OK Cancel Save As Default Help	

# 2,5D Milling

### Profiling

The function for extending **"open" toolpaths** has been updated and revised once again.

### Z Offset

Where possible, the **"Z Offset"** field has been activated for all **2.5D milling dialogs** in the **Machining Parameter tab.** This makes it possible to define a **positive/negative "Z Offset"** without adjusting the **"Z Depth".** 

Tool Data	Comment Taschenfräsen	
Cutdata Objects	Tool Op: Schaft-Schlicht-Fräser D8 AL31 NL11 Z4 SPM *	ool Database
Machining Parameter	Parameters	
Technology Dive in	Clear Plane (abs.): 5	
Extended Technology	Rapid to Distance (incr.): 1	
Pre / Post	Island Allowance: 0	
	XY-Offset: 0	
	Z-Offset -0.5	
	Start Height: 0 >>	
	Depth: -15 >> from figure	
	Sten: -2 mm	

### **Sorting machining figures**

The 2.5D milling dialogues Profiling, Pocketing etc ... have been extended to include functions for sorting the machining figures used.



### **Select Expert**

### **Project outline**

The algorithm of the **Profiling > Select Expert > Project outline** option has been revised. The percentage of recognized external geometries has been noticeably increased.



# **3D Milling**

### Common:

#### **Automatic Machining Area for Barrel tools**

This enhancement allows automatic selection of the part area, which can be effectively milled in 3-axis by barrel tool based on profile of circle segment cutter.

The new Automatic option is available for the Lens, Tangent to shaft and Double profile types of Barrel mill. You can find the new option see: Surface paths > Area > Angle range.



Automatic Machining Area On

### Multi plane machining: Z depth coordinates refer to the current origin

If, for example, the depth of a pocket is determined by "snapping" coordinates in 3D Multi plane machining, the determined depth refers to the **current zero origin** from **PEPS Version 2025 onwards.** In previous versions, the coordinates referred to the **world coordinate system.** The new approach results in much clearer coordinate values.

### 3D Roughing: Automated multi-sided roughing

The strategy for **automated multi plane roughing** makes **multi-sided roughing** of more complex components considerably easier.

Until now, an individual roughing operation was programmed for each machining plane. The new function for **automated multi-sided roughing** only requires a suitable tool and the machining planes. All collision checks and the calculation of the current residual material are performed by the strategy.



The images show a component that has been **automatically roughed** from 5 sides with just one machining operation.

### Offset Rouging: Optimized Level based ordering

This enhancement **reduces** the **retracts and links** between regions by optimizing the toolpath ordering, which reduces the machining time.





### 3D Roughing: Machine Flatlands after each depth



The new option Machine Flatlands – After each depth step machines flatlands on top surfaces after each slice. This option, along with DHC (Dynamic Holder Control), enables the tool to reach

deeper pockets, which would otherwise not be possible to reach.

### Parallel Cuts: Ordering by Region

The **Parallel Cuts** strategy can now be generated using new **region-based ordering.** This provides better surface quality as there are no engage or retract moves in a region. Each region is milled completely and then the tool moves to the next region. This option is offered in addition to the shortest path ordering option.



### Constant Z:

### **Rest Finishing based on Previous Tool Shaft Length**

This feature allows creation of toolpath for previously inaccessible regions due to shorter tool stick out length. Splitting the toolpath into multiple zones based on the tool length can improve surface quality as appropriate speeds and feeds can be used for each region based on tool stick out length.





Rest Finishing **On** 

### Constant Cusp: Spiral Blend connection with shift distance



The **Constant Cusp strategy** now supports **spiral blend connections** with a shift distance. This provides a better surface finish compared to **one way cutting** method with **blend spline, direct, or follow surface links.** 

### Flatland > Parallel: Optimal XY angle for Flatland machining

An option to **optimize the XY angle** has been added to the **Flatland > Parallel** toolpath. It adjusts the angle for separate regions independently to optimize material removal and surface quality. This is achieved by aligning the parallel passes with the longest length of the relevant area.



### Flatland: Outside to Inside ordering

This enhancement enables **Flatland** strategy to order the passes from the **outside** to the **inside** of the island or region. This helps to improve surface quality and greatly increases the tool life since the tool no longer engages directly on the surface from the top.



### Flatland:

### **Multi-passes with Depth Step option**

With the help of this feature, users can remove excess stock from the flatlands by generating **multiple depth steps.** 





Depth step **OFF** 

Depth step **On** 

### Flatland: Single Pass Flatland Toolpaths



The new Single Pass Flatland toolpath reduces the machining time by milling thin areas which are smaller than the tool diameter through a single mid pass. It increases the productivity considerably.

### Finishing Strategies: 3D Contact point boundary for Finishing

The new implementation of the **3D contact point boundary** accurately limits the finishing toolpath to the 3D containment curve on the part. Users only need to define the cut area on the actual part together with 3D containment and the calculation automatically limits the toolpath to ensure the tool contacts at all the points.



#### Advantage:

Users no longer need to recreate the containment or manually add the offsets.

### Finishing Strategies: Store contact point normals

This new enhancement for 3-axis finishing toolpaths stores the **contact point normals** along with the toolpath in the structure. These **contact point normals** can be used subsequently for 3D cutter compensation or tilting in the 3-axis finishing strategy.

Single cut for narrow regions



# **5 Axis Simultaneous Milling**

#### Multi axis roughing: Minimize links

This new enhancement **reduces the number of ramps** in the **multi-axis roughing strategy** by optimizing the start points for closed contours. This means that some ramps are removed and, in these cases, the tool engages from previously cut passes. This reduces the total cycle time of the operation while increasing tool life.





Minimise links Off

Minimise links **On** 

### Multi axis roughing: Avoid small profile ramps

This improvement enables the **minimum size of profile ramps** to be controlled by a parameter. This helps to avoid small profile ramps, making it possible to use tools with wider non-cutting areas.



It also improves tool engagement efficiency, and larger ramps means less ramping time.

### Multi axis roughing: Trim line ramps

With this improvement, the **line ramps** are now trimmed to the stock. This ensures that the ramp length is appropriately defined according to the available stock which in turn reduces the overall engagement time.



Before

After

### Multi axis roughing: Primitives definition as clearance area

With this enhancement users can define **clearance area** as **plane or sphere or cylinder** to handle retracts in better way.



Clearance area Sphere

### Multi axis roughing: Detect material thicker than ...

With this new feature, **thickness of rest material** gets detected considering the preset value. This improves the quality of **stock-based roughing** operation, as tool does not go into the unnecessary areas.



### Multi axis roughing: Tool segment selection for tilting

This feature enables users to define tool tilting using a tool segment when working with advanced tools such as barrel tools. This gives users greater control over the tilting range as well as the tool contact point for operations.





Profile section **Tip radius** 

Profile section **Barrel** 



### Multi axis roughing: Stepover by cusp height

This enhancement adds an option for defining the **stepover based on the cusp height** for advanced tools, such as barrel mills. With a **cusp-based stepover**, users can easily set up operations and avoid mistakes in manual calculations.



### Multi axis roughing: Toolpath extensions

This feature allows the tool to **extend** its motion beyond the start and end point of **each closed contour.** This reduces the size of the cusps at the start and end points, in particular with advanced tools such as barrel tools, and produces clean surfaces.



Multi axis roughing: Floor parallel pattern for wall finishing



The new **floor parallel cut pattern** for **wall finishing** generates slices parallel to a planar floor to ensure that features on the wall do not disrupt the pattern generation. This introduces a whole new set of geometries that can be machined with less tilting and better surface quality.

### Swarf machining: Accurate 4-Axis Swarf mode



The surfaces of some parts, such as cylindrical cams, can be geometrically machined using flank milling on a relatively inexpensive 4-axis machine. However, when machining with a tool smaller than the slot, it is difficult to optimally align the tool with the surfaces. This enhancement of the

**4-Axis Swarf** mode improves the accuracy of parts, reduces machining costs, and offers greater flexibility in selecting tool diameters.

### Swarf machining: Gouge Checking against Individual Tool parts

With this update, it is now possible to select **individual parts** of the tool for collision checking. This feature gives the user more flexibility and control over which sections of the tool are included in collision checking. The user has more flexibility and control over which sections of the tool are considered for collision checking. For example, the user can allow specific sections of the tool, such as the shaft, to remain close enough to the part for optimal machining

### Deburring: Corner Arc support for Chamfer tools

This new enhancement **creates a continuous toolpath** around inner and outer corners when using a **chamfer** mill **without any intermediate links** for 5-axis deburring. This reduces the linking motions and hence the overall cycle time for chamfering.





#### Deburring: Consolidated 3+2 behavior

The common direction algorithm has been enhanced for deburring to ensure a **3+2 orientation** with minimal 5-axis movements. This minimizes undesired 5-axis motions, resulting in safer and more accurate machining.



Improved 3+2 axis Deburring toolpath

#### Geodesic machining: Multiple Boundary Passes



This feature sets up a **machining operation** for the **boundary of an area.** A new operation is created which allows full customization of the boundary pass. For example, a different stepover or tilting behavior can be used for the boundary pass. This results in improved surface quality and safer operations.

#### Geodesic machining: Improved corner smoothing

This option smooths the corners in toolpaths. This results in better surface quality and shorter machining time as the tool does not need to decelerate and accelerate abruptly.



### Geodesic machining: Improved medial axis cuts

With this option, users can add **additional medial axis** cuts that are either merged with the main cuts or added as finishing cuts. This greatly improves surface quality and reduces the manual effort required to clean up the cusps afterwards.



### Rotary Roughing: Leads for Roughing

This option **adds lead-in/out** options for rotary machining roughing toolpaths. These additional motions ensure the smooth entry and exit of the tool into and out of the material.



### Rotary Roughing and Finishing: Support for Fixtures/Chucks

**Collisions** with the selected **fixtures/chucks** can now be **detected** in the **rotary roughing and finishing** toolpath calculation. The selected mesh/model is spun and the resulting profile is used to avoid collisions. An **offset** distance is also provided to give users more control and safety. Support for **fixtures/chucks** provides more safety and confidence to the user during toolpath generation.





Avoid collisions Off

Avoid collisions On

#### Rotary machining: Leads for Floor Finishing

**Leads** can now be added to the cylindrical or conical surfaces pattern for **Rotary Floor Finishing.** This results in smooth entry into the surface and fewer tool marks. **Leads** for **Floor Finishing** gives users greater control over the toolpath. It can also improve the surface finish in some cases.



### Rotary machining: Containment trim for Rotary Finishing

This feature trims the toolpath as the tool center touches the containment region. This helps to avoid unnecessary extensions of the toolpath beyond the containment.



### Rotary: Support for Fixtures/Chucks for Turn Milling

This feature improves **collision avoidance with Fixtures/ Chucks.** The new enhancement for **Turn Milling** allows users to select Fixtures/Chucks for inclusion in the collision avoidance calculations for **Turn Milling** toolpaths. The selected model is spun, and the resulting profile is used to avoid collisions. An **offset** distance is also provided to give users more control and greater safety. This new option gives the user more safety and confidence during toolpath generation.



Avoid collisions Off

#### **Rotary:**

### **Axial and Radial Offsets for Turn Milling**

This feature provides greater control of **offsets**. There is a new option for setting the **axial and radial offsets** for both the machining geometry and the fixture, in addition to the existing global offset option. This means that users can now define offsets to meet the finishing requirements This provides more flexibility and control over leaving the offset material to meet the requirements of the specific finishing job, resulting in an overall better surface finish.





### Collision control: User defined clearance areas



This new feature allows the selection of **user-defined surfaces as clearance areas.** With this feature, toolpaths can be limited to shorter retracts, thereby reducing the overall cycle time while providing more flexibility and control to the user.

### Links: Virtual fixture plane for safe linking

With this feature, users can **avoid links** that go beyond the defined virtual fixture plane. This prevents the tool from entering dangerous areas. This feature defines the fixture plane according to a user-specified height so that links are forced to stay above that plane. Defining the fixture plane reduces the risk of collisions, even on complex machining setups.



Virtual fixture plane **On** 

•	
1	Noto
	NULC.

This option is available for Sphere Clearance only.

#### Collision control: "Autotilt" Support for Bull Nose tools



This enhancement enables the Autotilt option to be used with bull nose tools.

### General information: Tilt tool in a user defined plane

A new tilting strategy has been added. Using this feature, the tool axis can be restricted in the user **defined plane**. Depending on its orientation, either rotary or alternatively tilt can be avoided completely. If the plane normal is aligned with a rotational axis of the machine, it will limit rotational machine movements to that axis.



Tool axis is tilted into plane

Benefits: With this enhancement, users can expect fewer machine axis movements for more stable machining.

### 5 Axis Simultaneous and 3D Milling: Fade lead in/out

This new feature adds a **new lead type** called **"Fade"** that moves slowly away from and towards the machining surfaces. The result is a very small ramp that enables rest finishing strategies to easily engage the material without leaving stepover marks on the workpiece.



Lead in/out **Off** 

Lead in/out **On** 

Benefit:

Improved surface quality after tool changes, orientation changes and machine downtimes.



# Milling – Toolpath Simulation

# New Graph-Based Triangulation speeds up Simulation

Users often struggle to achieve optimal **triangulation** due to the need to balance performance and stock quality. For very large and complex **stock models**, simulation responsiveness can be poor, leading to significant delays on the shop floor.



**Old Traingulation** Number of triangles 337.956 **New Traingulation** Number of triangles 29.014

The PEPS Version 2025 release solves this problem through a new triangulation method based on a dexel model. This new method delivers significantly faster stock drawing and mesh exports, resulting in improved simulation performance. In addition, the new triangulation improves the watertightness of exported meshes.

#### Operations Manager: Improved simulation quality

The simulation quality of arc and line elements has been significantly improved.

- Arcs are no longer simulated in segments (G01), but smoothly as real arcs (G02/G03).
- The system automatically splits **long line elements** to ensure a smooth simulation.
- The dialogue interface has been revised and an improved speed controller has been implemented.

imulat	ion			
2	5 Ax Finish	ing		
ogres	is 📙			
peed				
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Y	109.064	в	0.00	
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Displa	ay ool oolpath ool Vectors piects			
,. 0	0,000			Abort



# CUT-Expert – 3D Laser- & Waterjet Cutting

#### **Extensions and new functions**

#### **Programming of multiple Micro Joints.**

The new function offers extensive parameters for defining micro joints and lead on/lead off strategies.





This delivers fast results and perfect micro joints.



New tilting strategy: "Along flank/Ignore edges".



Improved point input: Display coordinates of the picked position.

#### More

- Insertion of comments/NC codes at the start/end of a cut now possible.
- New Lead in/out strategy "Slanted line with fillet" available.
- Improvement of the cutting contour selection: Behavior of the ALL button improved, pick sequence is adopted.
- CUT-Expert help system (German) available.

### **Machine settings dialog**

- Use the **axis names** of the machine currently in use.
- Nozzle selection via file browser.
- Password request when saving the settings.
- Standardized storage of configuration data.

#### Extension of the change points (NCI)

elect Tilt Li	ines		×
Position –	Koordinaten	X1049.8929 Y595 Z125.1061	>>
-Richtung	Eingabetyp Querwinkel Längswinkel	Lokale Winkel 25 0	·
Düse —		Anzeigen	

The **change point** dialogs and the **tilt line** dialog have been standardized.



Help tooltips for change points.



Display of change point symbols can be customized and has been improved.



**Display quality** of the **direction arrow** symbols improved. Different display types can be set.

#### More

- Extension by user NCIs, technology change, comment, NC command.
- Copying and moving of change points via "drag & drop" possible.
- Edit change points with double-click.



### System behavior

- Machine used is saved in the \*.VDM file.
- Workspace is locked when a dialog is open.
- NC output is locked in DEMO mode.
- Correction: Number of unwanted retractions has been reduced.

### **Tube Cutting**

- Align Tube Automatically align pipe according to machine axis
- **Display Tube box** Graphic display of a blank box that encloses the Tube.
- Calculate Tube profile curve Output of the tube profile curve data to the NC file (postprocessordependent).

### **Time calculation**

Improvement in processing time (optimized distribution of times).

### **Robot Programming**

Robot programming has been further optimized. Robot programming is also possible in conjunction with the milling module.



# **Turning Module**

### **Toolpath graphic**

### The toolpath graphic has been completely revised:

- Toolpaths are permanently saved in the graphics window.
- Toolpaths can be switched on and off individually.

#### **Operation Manager**

- **Vertical scrolling** is now possible for extensive operations.
- New function **Delete tool paths** added to the **right** mouse button in the operation manager.

#### **Turret configuration/Tool selection**

- Revised Turret assignment/Tool selection dialogs.
- Several new functions in the context menu of the right mouse button when selecting a tool in the turret.

### **Machining strategies**

- Strategy "Roughing with 2 tools" has been revised.

### Simulation

- New function **"Simulate operation"** in the context menu of the right mouse button when selecting an operation.
- Tools are displayed as a **3D model with holder** when using the "Simulate operation" function.
- Display of the **B-axis i**n simulation has been revised.



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### CAMMAN 9.0

### **NC Program Management**

CAMMAN 9.0 has been specially adapted for the latest version of Windows 11 and PEPS Version 2025.

Noto	
Note.	
PEPS Version 2	025 only runs with CAMMAN 9.