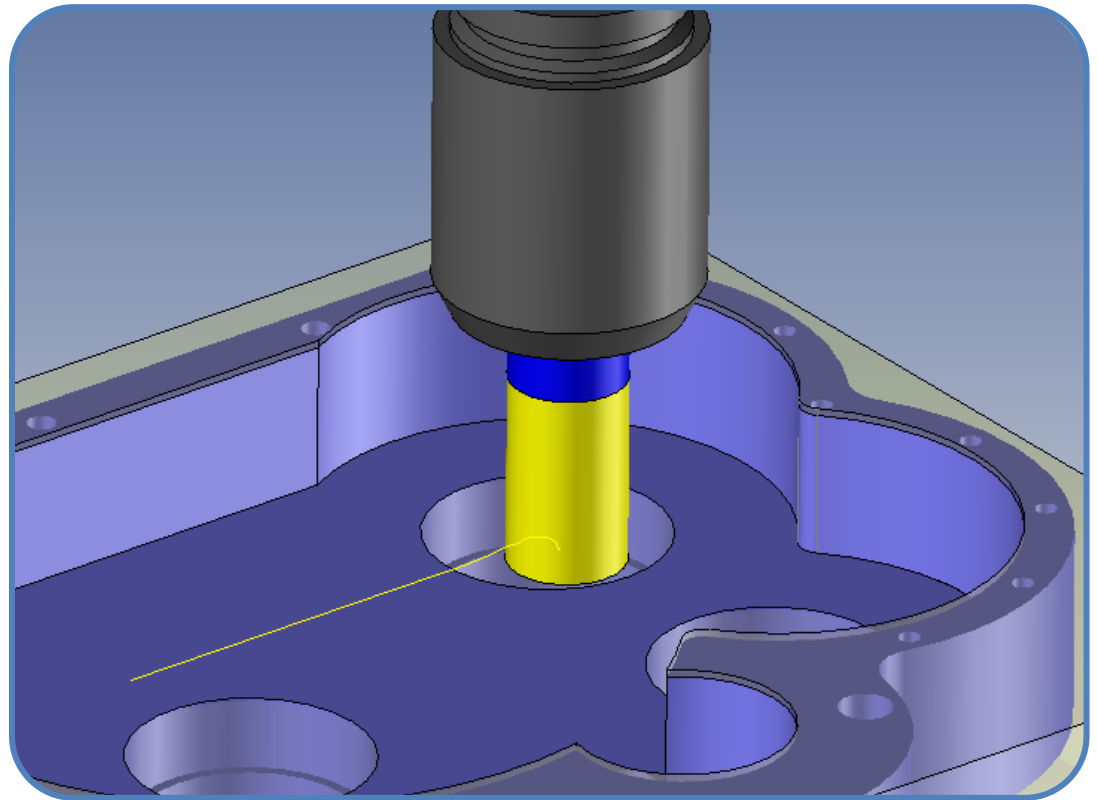# WT-TopSolidCam Interface



| Manual | *WinTool* Interface 1.3.2 for TopSolid'Cam 7 |

The WT-TopSolidCam-Interface enables the user to select and transfer tool assemblies from the *WinTool* database to the TopSolid'Cam environment.
After production of a NC program, a complete list of the tools used in the NC-Program will be stored back to the *WinTool* database for further processing in the company.

Requirements
- *WinTool* 2011 Professional or newer
- TopSolid'Cam 7.10 or 7.11

## Content

# Summary

## Job

The WT-TopSolidCam-Interface enables the user to export all assemblies from the *WinTool* database into the TopSolid environment. Full graphic representation with tool holders and extensions are supported.

After production of a NC program, a complete list of the tools used in the NC-Program will be stored back to the *WinTool* database for further processing in the company.

## Requirements

This Interface requires *WinTool* Professional 2011 or newer. TopSolid'Cam 7.10 and 7.11 are supported.

## Licensing

You need a license agreement with *WinTool* AG, Switzerland.

## Copyright

This documentation as well as the Software itself is under copyright of

WinTool AG
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CH-8048 Zürich
Phone: +41 (0)44 401 00 55
info@wintool.com
http://www.wintool.com

# Installation

## Directory Structure

All user data is centrally placed the `[Public Documents]`\WT-TopSolidCam-Interface folder:

| User data | Location |
|---|---|
| Default location of UserModels folder | `[Public Documents]`\WT-TopSolidCam-Interface\UserModels |
| Default location of Exchange folder | `[Public Documents]`\WT-TopSolidCam-Interface\Exchange |
| Configuration file WT-TopSolidCam-Interface.cfg | `[Public Documents]`\WT-TopSolidCam-Interface |

**Note:** `[Public Documents]` on Windows XP is located in `C:\Documents and Settings\All Users\Documents` on Windows Vista and newer in `C:\Users\Public\Documents\`

## New Installation

Log on with administrator rights to install the software on a PC. Install *WinTool* Professional first before you install the WT-TopSolidCam-Interface.
Download the latest WT-TopSolidCam-Interface software release from www.WinTool.com and start Setup.exe.
Follow the instructions in chapter Configure WT-TopSolidCam-Interface and Configure TopSolid'Cam
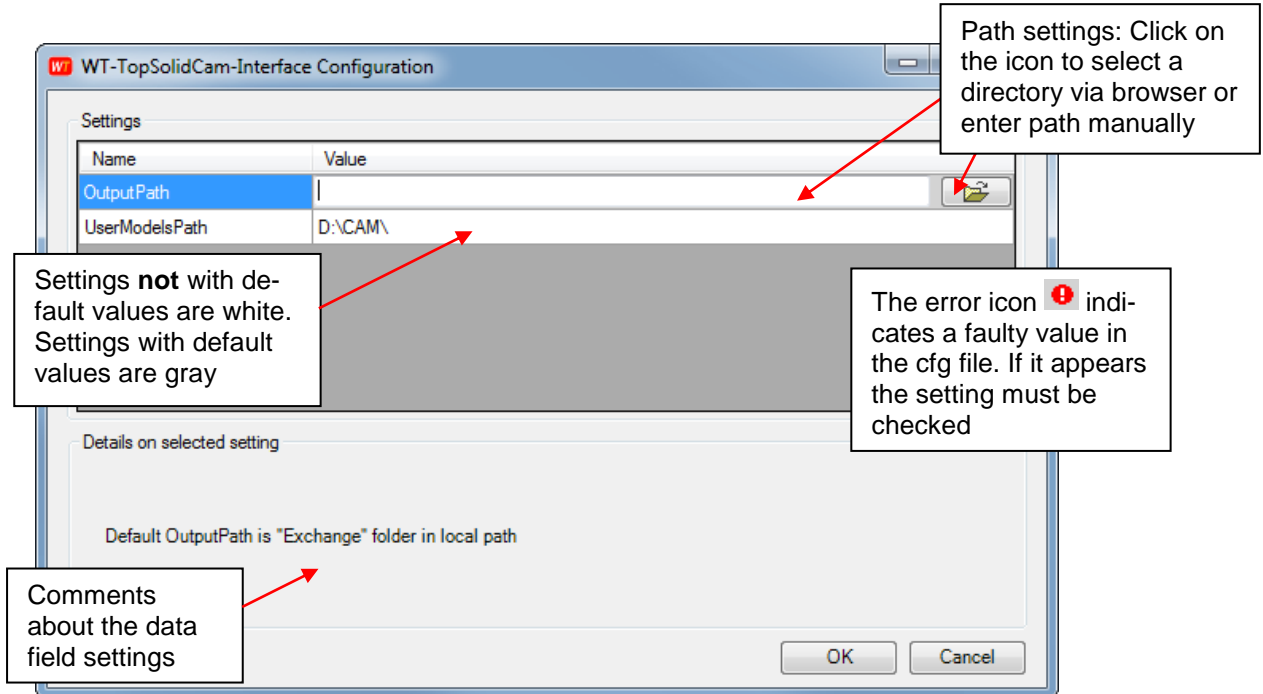
## Update

Download the latest WT-TopSolidCam-Interface software release from www.WinTool.com and start Setup.exe.

Follow the instructions in chapter Configure TopSolid'Cam

Open the interface configuration via "Start" > "All Programs" > "WinTool" > "WT-TopSolidCam-Interface" > "WT-TopSolidCam-Interface Configuration" and check the settings.

# Configure WT-TopSolidCam-Interface

The configuration window allows you to check and change the settings of the WT-TopSolidCam-Interface. Open the configuration window via "Start" > "All Programs" > "WinTool" > "WT-TopSolidCam-Interface …" > WT-TopSolidCam Configuration"



<OK> stores all settings. <Cancel> exits the configuration window without saving.

The configuration window reads and stores settings in the file "WT-TopSolidCam-Interface.cfg" which is located in the directory [Public Documents]\WT-TopSolidCam-Interface. This file can also be edited with a text editor.

## Output Path

The Output Path defines the directory for the data exchanges.

This directory must not be shared by multiple users because the data transferred via this directory is NC project specific and temporary only.

The default settings are:
OutputPath = [Public Documents]\WT-TopSolidCam-Interface\Exchange\

## UserModels Path

The UserModels directory manages the transfer of tool contour graphics (DXF). *WinTool* links and manages these models and all NC programmers must access and share this data.
If you have multiple NC programmers you must create a UserModels folder on the server. It must be included in the backup schedule.

The default settings are:
UserModelsPath = [Public Documents]\WT-TopSolidCam-Interface\UserModels\

## Configure TopSolid'Cam

To access the WT-TopSolidCam import and export quickly, add the buttons to TopSolid'Cam:
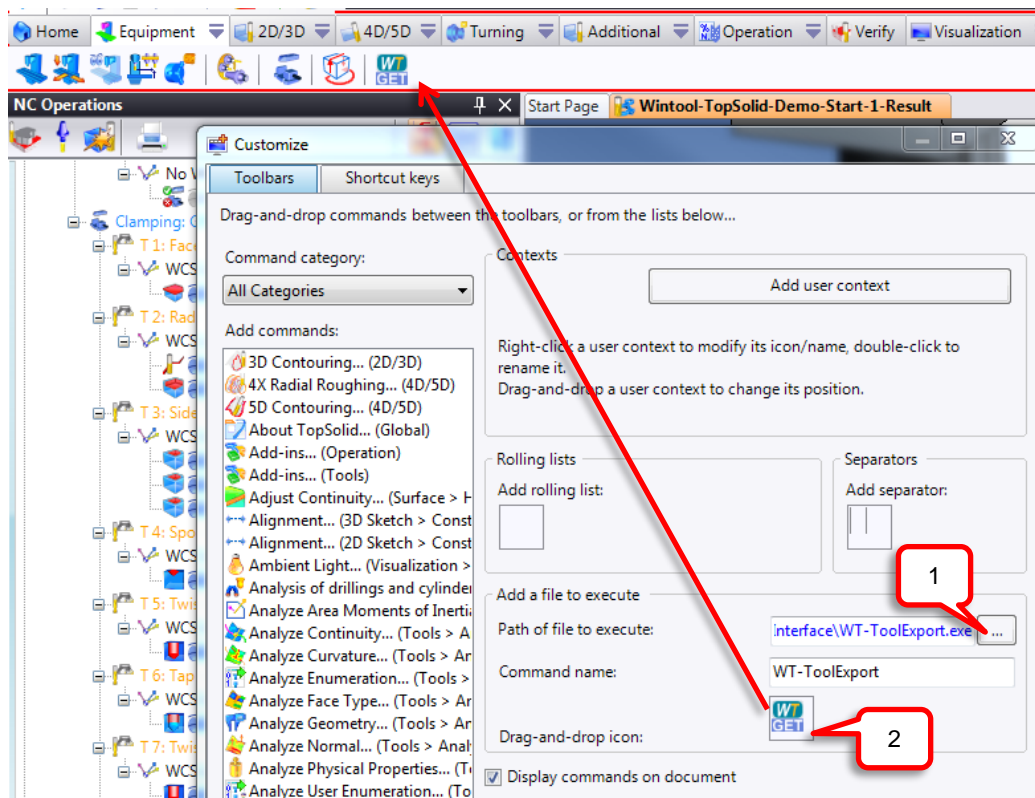- Open a machining project in TopSolid'Cam
- Select "Tools" > "Customize"

### Import Button

1. In "Add a file to execute", click on "…"
   - Go to the WT-TopSolidCam-Interface installation directory and open the directory "7.10" or "7.11"
   - Select "WT-TopSolidCAM-GetTools.exe"
2. Drag and Drop the "WT-GET" icon into a toolbar "Equipment"

### Export Button

1. In "Add a file to execute", click on "…"
   - Go to the WT-TopSolidCam-Interface installation directory and open the directory "7.10" or "7.11"
   - Select "WT-TopSolidCAM-PutToolList.exe"
2. Drag and Drop the "WT-PUT" icon into the toolbar "Equipment"
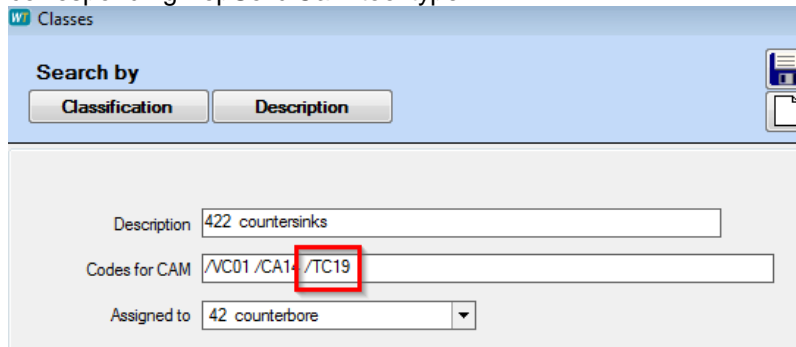
# Supported TopSolid'Cam Tool Types

Each tool classification in *WinTool* must be assigned to the corresponding TopSolid'Cam tool type.
This is done automatically when you import tool assemblies.

You can modify the assignment manually:
In *WinTool* select Settings > Class, then select a classification. In the data field "Note" you can assign the corresponding TopSolid'Cam tool type.



## Drilling, Milling and Probing Tool Types

| TopSolid'Cam Tooltype | | *WinTool* Classification |
| --- | --- | --- |
| **Deutsch** | **English** | |
| Anbohrer | Spotting Drill | /TC01 |
| Zentrierbohrer | Center Drill | /TC02 |
| Spiralbohrer | Twist Drill | /TC03 |
| Flachbohrer | Flat Drill | /TC04 |
| Planfräser | Face Mill | /TC06 |
| Schaftfräser | Side Mill | /TC07 |
| Langlochfräser | Slot Mill | /TC08 |
| T-Nutfräser | T Slot Mill | /TC09 |
| Eckradienfräser | Radiused Mill | /TC10 |
| Radienfräser | BallNose Mill | /TC11 |
| Kugelkopffräser | Lollipop Mill | /TC12 |
| Konischer Fräser | Conic Nose Mill | /TC13 |
| Konischer Radiusfräser | Conic Nose Ball Mill | /TC14 |
| Senkfräser | Spot Face Mill | /TC15 |
| Senkbohrer | Counterboring Mill | /TC17 |
| Radiusfräser | Corner Rounding Mill | /TC18 |
| Fasenfräser | Chamfer Mill | /TC19 |
| Umgekehrter Fasenfräser | Reverse Chamfer Mill | /TC20 |
| Doppelter Fasenfräser | Double Chamfer Mill | /TC21 |
| Scheibenfräser | Disc Mill | /TC22 |
| T-Nut-Rundungsfräser | Radiused Staggered Teeth Mill | /TC23 |
| Reibahle | Constant Reamer | /TC25 |
| Ausdrehwerkzeug | Boring Bar | /TC26 |
| Gewinde | Tap | /TC27 |
| Innengewindefräser | Internal Thread Mill | /TC29 |
| Kugelsonde | BallTouch | /TC30 |
| | Ignore | /TC00 |

## Turning Tool Types

| TopSolid'Cam Tooltype | | *WinTool* Classification |
|---|---|---|
| **Deutsch** | **English** | |
| Aussendrehmeissel | External Turn | /TC31 |
| Innendrehmeissel | Internal Turn | /TC32 |
| Aussennutmeissel | External Groove | /TC33 |
| Innennutmeissel | Internal Groove | /TC34 |
| Radialnutmeissel | Frontal Groove | /TC35 |
| Aussengewinde | External Thread | /TC36 |
| Innengewinde | Internal Thread | /TC37 |

*WinTool* classifications mapped to /TC00 are ignored. This means that tools assigned to this classification are not transferred to TopSolid'Cam. This is useful for measurement equipment, fixtures, etc.

# Importing Tool Assemblies

**Note:** The "TopSolid Machining" library must be in the PDM.

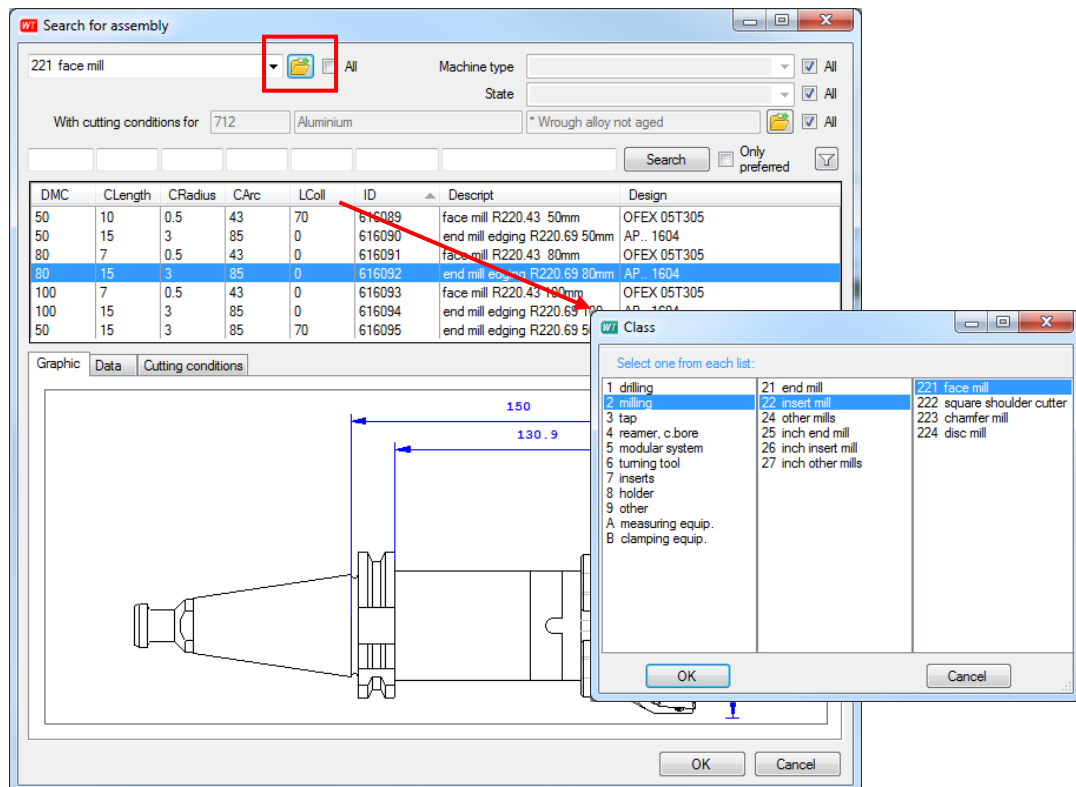Open a machining project. Start the import by clicking on the WT-GET button.

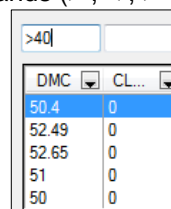The following WT-ToolExport menu will open:



Select the icon for tool assembly to import tools individually or for tool list to load an existing *WinTool* tool list. If you know the tool assembly ID or tool list name, you can fill in the value and hit enter on your keyboard.

The tools will immediately be transferred. Click on [icon] to open the tool classification tree. Select and high-light the desired tool.



There are filters available for machine type, tool data release state, cutting conditions for different materials, and preferred tools. You can also enter commands (> , < , >= , <= ) to filter a list of tools:

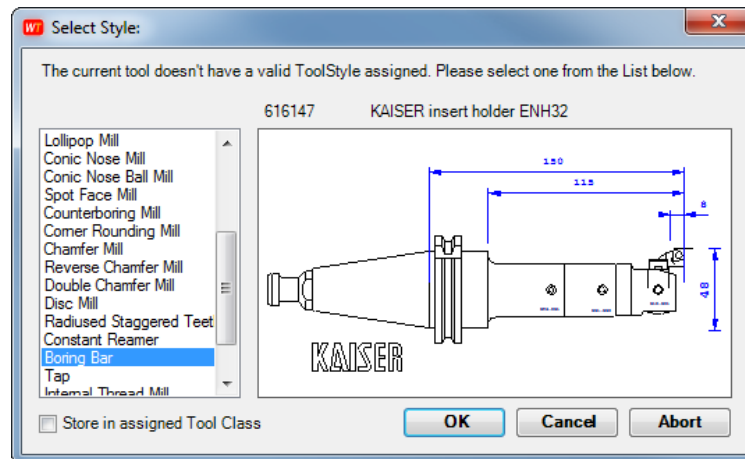The function [filter icon] turns on combo box selection for the tool values:

| DMC | CL... | CR... | CArc | LColl | ID | Descript | Design |
|-----|-------|-------|------|-------|----|---------|---------|
| 50.4 | 0 | 0 | 0 | 0 | 500057 | BARRA MICROMÉTRICA Ø... | |
| 22.4 | 0 | 0 | 180 | 70 | 500058 | BMA-003-Ø20-15,5 | Inserts CC?3-0602??N |
| 36.55 | 0 | 0 | 180 | 51 | 500062 | CPM-001-C/ Ø36,55 | Inserts CC?3-0602??N |

You can review detailed tool data in the folder tabs Graphic, Data, and Cutting conditions:

| Graphic | Data | Cutting conditions |
|---------|------|--------------------|
| Diameter (D) | | 50.4 |
| Dia step 1 (Da) | | 0 |
| Collision Dia (Dx) | | 0 |

If no TopSolid'Cam tool type has been previously assigned to the selected *WinTool* classification of the tool assembly, you must do it now.
This will map the *WinTool* classification to the TopSolid'Cam tool type. Select the correct TopSolid'Cam tool type from the selection list.
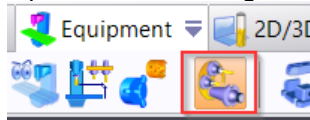


If you select "Ignore" to assign to a tool classification, the tool assemblies in this classification will not be transferred at all. This is useful for data that must not be transferred to TopSolid'Cam, e.g. measuring equipment.

The tool assemblies are created in a library called "WinTool Tools". A reference to this library is added automatically in the currently open machining project.
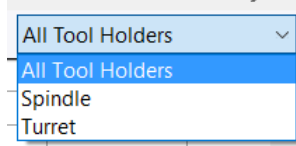
# Assigning Tool Assemblies to a Pocket

Tool assemblies must be assigned to a pocket before they can be used in an operation. This can be achieved via the tool selection in the operation definition or the tool manager.
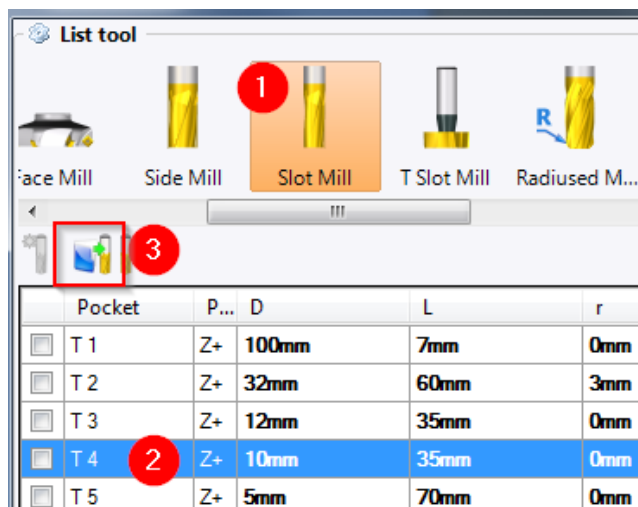
Open the tool manager:



If you are using a mill-turn machine, you can filter the type of pockets displayed in the list:
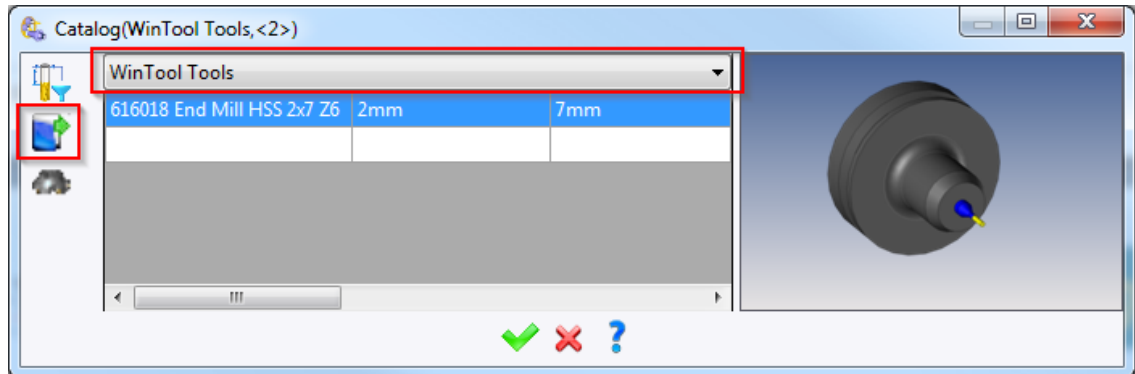


The pocket list is now displayed.
1. Select the tool type of the tool assembly you would like to assign to the pocket
2. Select the pocket where the tool assembly will be placed
   **Note:** Each turret pocket has three pocket axis (Z+/X+/Z-).
   When importing a turning tool, select the correct one according to the turret type. X+ is the most frequently used.
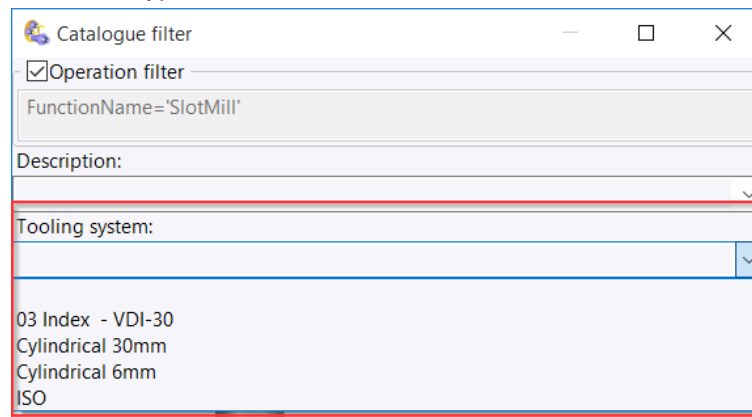3. Click on the "Import from catalog" button

| Pocket | Pocket Axis |
|--------|-------------|
| T 1.1  | Z+          |
| **T 1.2** | **X+**   |
| T 1.3  | Z-          |

In the next window, if the "WinTool Tools" library is not active, click on the "Tools Library" button on the left side and select "WinTool Tools" from the dropdown list.
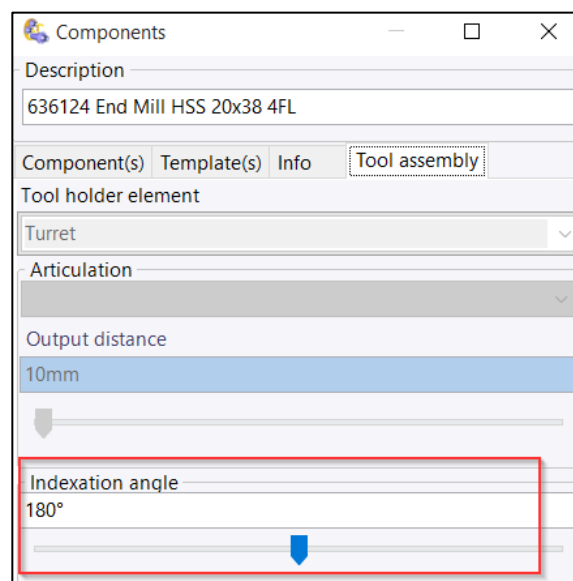


**Note:** In the "Catalogue filter" window, you can use the "Tooling system" filter to view all tool assemblies on the selected WinTool machine type:



When you have found the tool assembly in the list, double-click to add it to the pocket.

## Turing Tool Assembly Indexation Angle

When importing a turning tool assembly, you can change the indexation angle to change the orientation of the tool assembly on the turret. Double click on the tool assembly and go to the "Tool assembly" tab. Change the angle until the tool assembly is correctly placed:
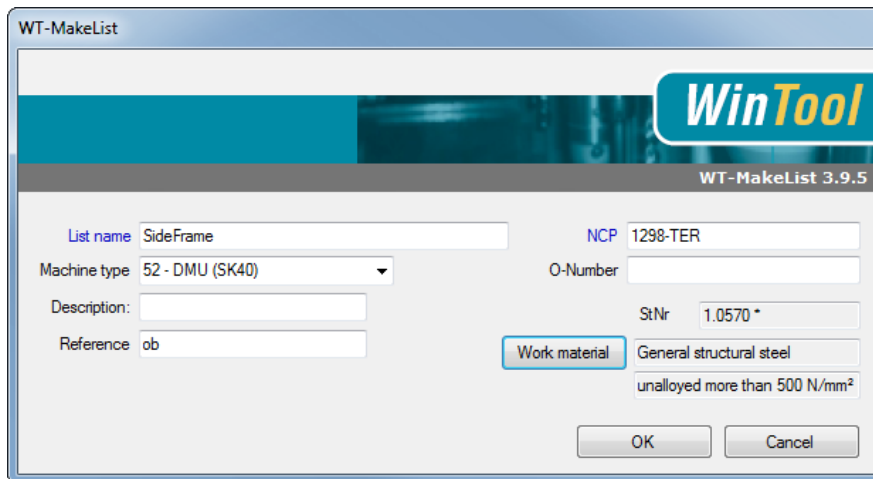
# Export Tool List To *WinTool*

When you have finished the NC program, the list of all the tools used in the TopSolid'Cam project must be stored back to *WinTool*. This will allow the next person in the production process to continue with the job.

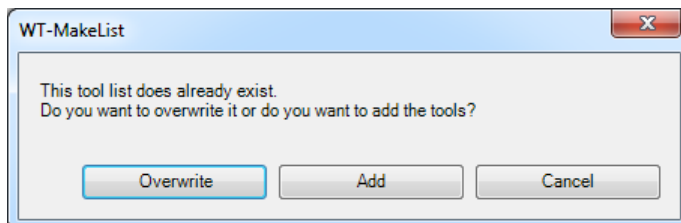Start the export by clicking on the WT-PUT button.

Edit the tool list header information:



Select "OK" to store the information in the *WinTool* database.
If a tool list with the same List Name already exists in *WinTool* the following dialog box appears:
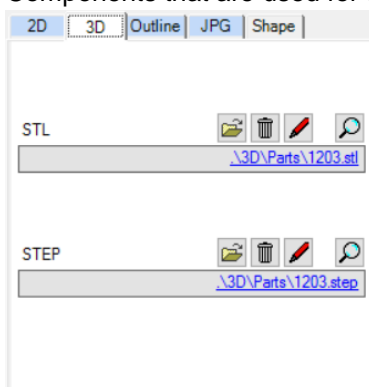
# Preparing Tool Data in WinTool

For the WT-TopSolidCam-Interface to work properly *WinTool* component and assembly data must be recorded correctly. *WinTool* resellers offer training courses to make sure that you are building a high-quality tool database that is fit for engineering requirements.

However, the following points are prerequisite for the WT-TopSolidCam-Interface to work and will be described in detail in the chapters below:
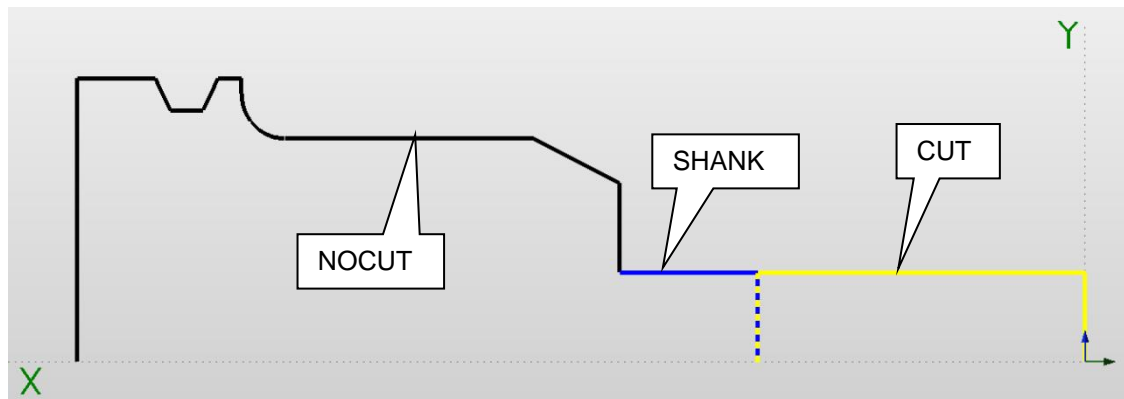
- Each *WinTool* classification must be assigned to the corresponding TopSolidCam tool type.
- Each tool assembly must be linked to a *WinTool* Machine Type.
- Each tool assembly must have a "namegiving" and a "cutting" component.
- The tool geometry must be recorded in *WinTool* with the correct tool type and outline (for details please refer to the *WinTool* Professional documentation and the training course manuals).
- Components that are used for turning tools must have STEP or STL models linked in the folder 3D:
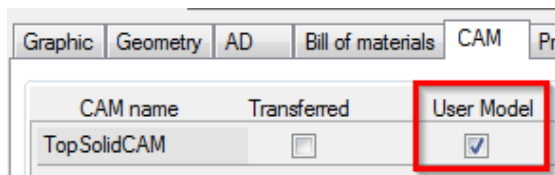
# Custom Tool Assembly Contour

If a contour of a tool assembly cannot be created automatically with the Shape-Generator, you can create the DXF file manually.

- Open the tool assembly and use the Shape-Generator button to create a DXF contour. Even if a tool is not supported fully by the Shape-Generator, it will create in most cases a contour-DXF, although not with all additional details of the custom tool - but with a lot of useful elements in place already: holder, extensions, reductions, shank, total length, correct layers, etc.
- Then modify it with Vector or any other DXF editor until it is exact. You must use the layers CUT, NOCUT, and SHANK:
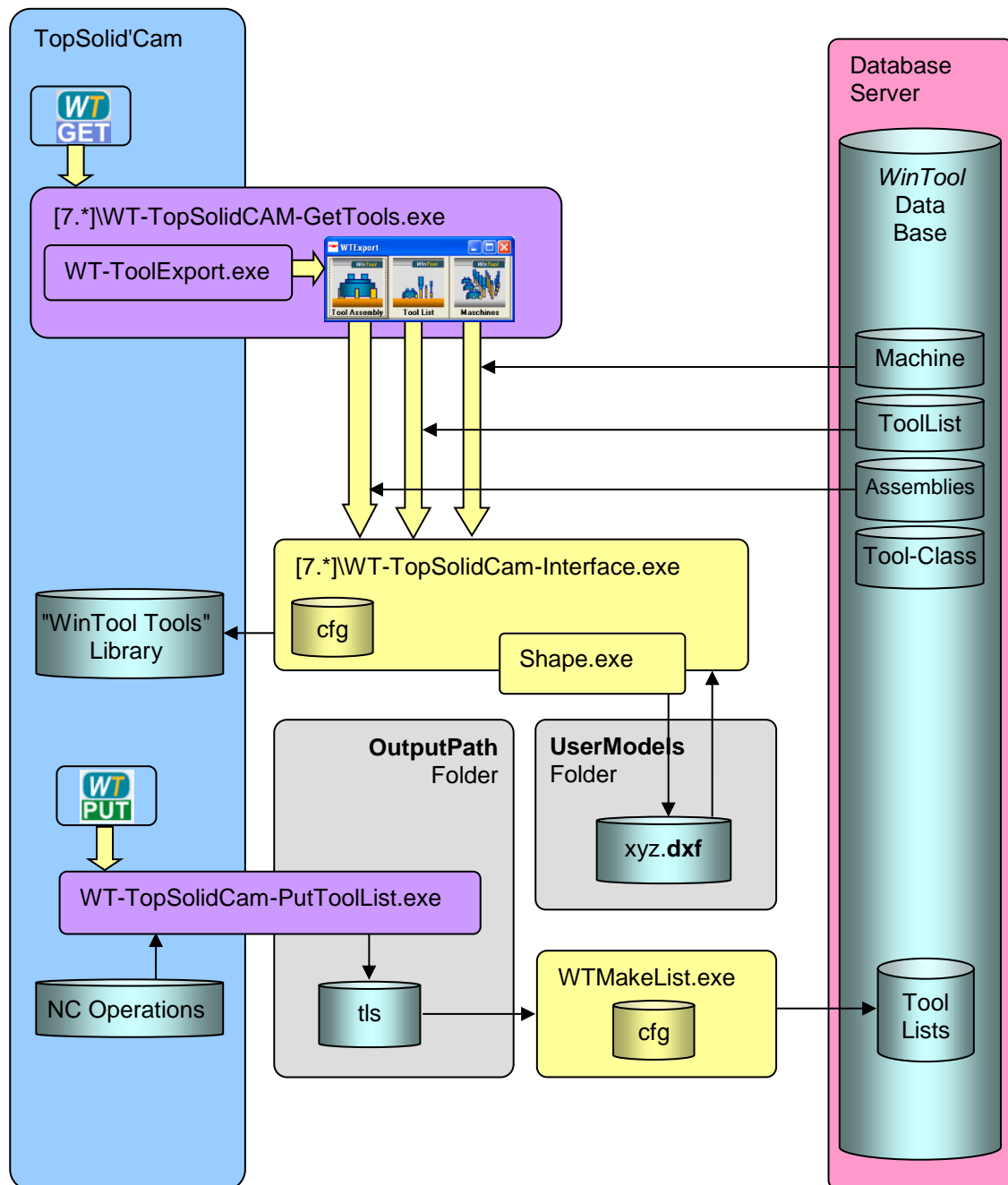


- The CUT layer is independent from the shank and holder closed contour. It **must** start and end at the X-axis (Y=0). Only the first and the last line of the contour are allowed to start/end at X-axis.
- The SHANK and NOCUT layer together must form a closed contour. It **must** start and end at the X-axis (Y=0). Only the first and the last line of the contour are allowed to start/end at X-axis.
- When you have finished the modification, you must save the file in the User Models Path with the name of the *WinTool* tool assembly Ident No (e.g. `616089.dxf`). Already existing files must be overwritten.
- Assign the new DXF to the *WinTool* tool assembly: Check the box "User Model" in the tab "CAM" in the row containing "TopSolidCam". If it is missing, please activate TopSolidCam in "Settings" > "CAM settings" on the main *WinTool* screen.



# Special Tool Assembly 3D Models

You can create a 3D tool assembly model for the holder components (do not include the cutter) if you place a STEP or STL file in the User Models Path. The model file must have the name of the *WinTool* tool assembly Ident No (e.g. `616089.step`). You must also set the check the box "User Model" in the tab "CAM" of the tool assembly, see picture above.

# Software Structure

# History

## 1.3.2

- ✓ Corrected error when importing turning tools in Versions above TopSolid'Cam 7.11.300.0

## 1.3.1

- ✓ Corrected error when importing tools in TopSolid'Cam 7.11
- ✓ Added shortcut to interface configuration window

## 1.3

- ✓ Compatible with TopSolid'Cam 7.11
- ✓ Added support for flat drill tools
- ✓ Corrected import of tool offset values for chamfer mill, face mill and corner rounding mill
- ✓ Adjusted import of chamfer mill to work with graving tool

## 1.2

- ✓ Compatible with TopSolid'Cam 7.10
- ✓ Added support for turning tools
- ✓ Added 3D model holder import for radial milling and drilling tools
- ✓ Importing WinTool machine type name to enable filtering in tool search window

## 1.1

- ✓ Compatible with TopSolid'Cam 7.8 and 7.9
- ✓ Importing tool assemblies into "WinTool Tools" library instead of current project
- ✓ Corrected center drill import
- ✓ Corrected pocket number extraction in tool list export