

WinTool Interface for Esprit

Version 2.10.3 for ESPRIT 2009

Content

Summary	3
Job.....	3
Requirements	3
Supported Tool Types	3
Licensing	3
Copyright	3
Installation.....	4
Installing the Software	4
Licensing	5
Configuration	6
User and Password	6
Interface Application Path.....	7
Tool List Exchange Path.....	7
Solid Models Path (WT-Esprit-Interface.cfg)	7
Getting Started.....	8
Sample Database	8
Importing Milling Tool Assemblies	8
Save the Tool List to <i>WinTool</i>	11
Importing Turning Tool Assemblies	11
Set Up Your Tool Database.....	13
User Classification	13
Machine Configuration.....	13
Work Materials.....	13
Technology Library	14
Standard Assembly (Tool Data Entry)	14
Mounting orientation	14
Coolant Type	15
Spindle direction	15
Settings in Tool Lists for Turning Tools	16
Esprit Custom Setting	16
Custom Specific Assembly with Contour-DXF	17
Custom Specific Assemblies with STL	18
Axes orientation.....	20
Transferred Flag for Assemblies	21
ToolShift Z for rotating Tools	21
Feed and Speed in KB	22
Software Structure.....	23
Software-Modules and Data-Exchange.....	23
<i>WinTool</i> -ESPRIT Data Integration.....	23
<i>WinTool</i> -ESPRIT Data Integration.....	24
Annex.....	25
Set Windows System Variables.....	25
Configuration File Parameters.....	26
Supported Esprit Tool Types	31
History	39

Summary

Job

The WT-Esprit-Interface enables the user to select and transfer assemblies from the *WinTool* database to the Esprit CAM environment. Full graphic representation for each assembly is supported. The cutting conditions for the different work materials are transferred from the *WinTool* technology library to the Esprit KB. A complete list of every used tool assembly per NC-Program will be stored in the *WinTool* database for further use as setup sheet, documentation and queries.

Requirements

This Interface requires *WinTool* Professional 2009 or later and ESPRIT 2009.

Supported Tool Types

The interface supports most rotating and still standing ESPRIT tool types (see details in Annex). The geometry values are transferred from *WinTool* to the ESPRIT tool parameters. For rotating tools, the contour of holders and extensions is automatically calculated, transferred, and used for 3D simulation. (See manual of shape module for additional information.) The interface also transfers one STL file per assembly (rotating or lathe tool) for simulation purpose.

Licensing

You need a signed license agreement from DATOS Computer AG as well as a License code matching with the number of your ESPRIT copy protection key.

Copyright

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

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Installation

Installing the Software

- Be sure to be local administrator to install software on a PC. To operate the Interface the Windows user needs write permission for the "exchange folder".
- Before installing the WT-Esprit-Interface, please install WinTool Professional.
- Activate ESPRIT within *WinTool* by setting the flag in Settings\CAM Settings
- Uninstall previous version of WT-Esprit-Interface before installing the new interface. Configuration files and "user tool models" will not be deleted.
- Run setup.exe to install the WT-Esprit-Interface software into a new folder (WT-Esprit-Interface installation folder):
`C:\Program Files\DATOS\WT-Esprit-Interface`

Note: When installing a newer version of ESPRIT in future, you will have to uninstall WT-Esprit Interface before, to omit invalid entries in the registry.

- You can use the Shape-Generator to verify the contour of a tool assembly (DXF-graphic) prior to using the WT-ESPRIT-Interface. To do so, start up the Shape-Generator in the export feature of the *WinTool* Tool Assembly window. To enable this, you need to copy the file "`WTxTShape.exe`" from the WT-Esprit-Interface installation directory to your local *WinTool* installation directory (e.g. `C:\Program-Files\DATOS\WinTool2006\`). This file can also be used in other *WinTool* professional installations without installing the WT-ESPRIT-Interface software.
- Note:
Whenever you change system variables you have to restart ESPRIT to make them effective.
- The Interface software is now installed with default parameters. Run ESPRIT to check, if the new buttons "Get and Put" are available.



- Please follow the "Licensing" instructions below to activate the interface.

Licensing

- You need *WinTool Professional* to use the WT-Esprit-Interface.
- For the ESPRIT demo version, you do not need a WT-Esprit-Interface license.
- For ESPRIT CAM, you need a license for the WT-Esprit Interface. When using the "Get" or "Put" function, you will be asked to enter Username and License Password:



- Ask for your password by mail to info@datos.ch. Please declare your "Username" and your ESPRIT "dongle No".
- Note:
If you are updating a previous installation of the WT-Esprit-Interface, the Username and Password will be transferred automatically to the new installation.
- Note:
You can not store the password if you are not logged in as administrator including the right to change values in the registry.

Configuration

User and Password

Default installation

If using a default installation, no user or password must be configured.

User and password for external modules

To enable external *WinTool* modules accessing the *WinTool* database they need a user/password combination similar to a human user. All external modules use the default values (`user = Admin`, `password = <empty>`) except it is differently configured in the specific configuration file.

The users/passwords being allowed to access the database are stored in the file "system.mdw". The default location for this file is the *WinTool* installation path (`C:\Program files\DATOS\WinTool\system.mdw`). The system.mdw being installed at this location during *WinTool* setup contains the default user/password as described above.

Individual System.mdw files

If you are using a global *WinTool* database you will want different "database user" with their "password". The user accounts are stored in a global system.mdw file. The system.mdw to be used by the *WinTool* application is indicated as parameter of the startup command.

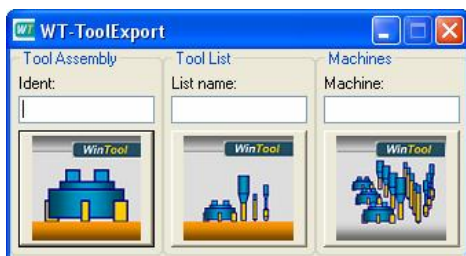
Unless different configuration the external modules will still use the local system.mdw with the default account.

Individual User and Password - WT-ToolExport.cfg

Access for WT-ToolExport is configured in the file `WT-ToolExport.cfg`, located in the WT-Esprit Installation folder. You do not need to configure user and password unless you changed them in your default system.mdw.

- Test: double-click "WT-ToolExport.exe"

Result if User and Password is valid



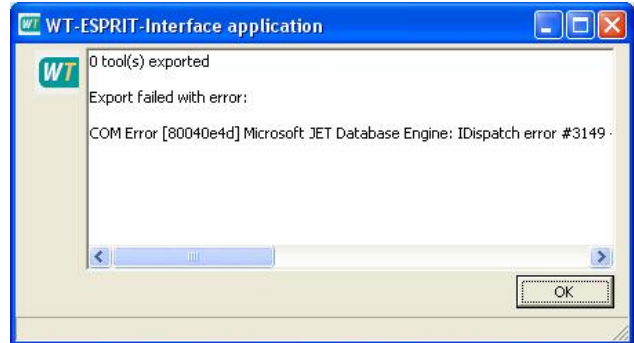
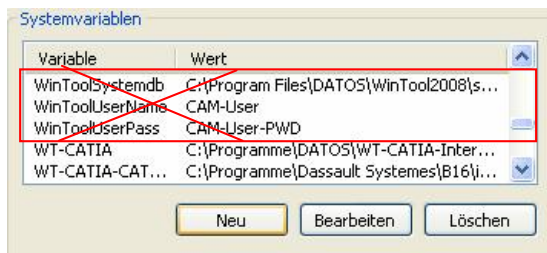
Result if User or Password are invalid



Individual User and Password - WT-Esprit-Interface.cfg

Access for WT-Esprit-Interface module is configured in the file `WT-Esprit-Interface.cfg`, located in the WT-Esprit Installation folder.

- In case of any password problem, the following message is displayed:
- Please check the system variables and delete all entries left there from further versions or trials.



Interface Application Path

- To enable Esprit to **start up** the WT-Esprit-Interface, the path to the interface software folder is stored in a system variable. The default is set during the installation. With extended system control of Windows you can change this path. (See details in section: Set Windows System Variables)

`WTEspritInstallPath = C:\Program Files\DATOS\WT-Esprit-Interface`

Tool List Exchange Path

- The list of Tools used in an Esprit program is transferred to the *WinTool* library by the **WT-MakeList** module. This path is stored in a system variable where the default is set during the installation. To change this path, change the value of the windows system variable:

`WTMakeListPath = C:\Program Files\DATOS\WT-Esprit-Interface\exchange\`

Note: Use a different WTMakeListPath for each user.

Solid Models Path (WT-Esprit-Interface.cfg)

- The DXF Files and the STL **Solids** are stored in a common folder to be used within Esprit for simulation. This path is stored in a system variable where the default is set during the installation. To change this path, change the parameter in file WT-Esprit-Interface.cfg:

`WTEspritUserModelsPath = X:\Global\WT-Esprit-Interface\UserModels`

By running the module, the path will also be stored as Windows System Variable:

`WTEspritSolidsPath = C:\Program-Files\DATOS\WT-Esprit-Interface\UserModels`

Note: Use a common SolidsPath for all users.

- Be sure the selected folder is included in the periodical backup procedure.

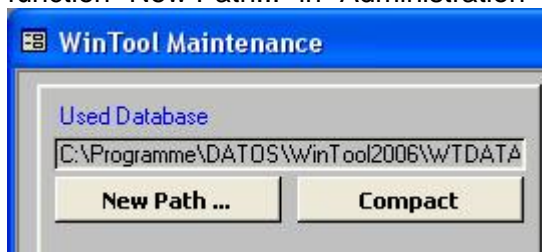
Getting Started

Sample Database

- With the *WinTool* software installation a sample database (WTData.mdb) is installed. An extended database is provided with the WT-Esprit-Interface, which contains ready to use tool assemblies with SK40 holders for testing.

Note: Only tools in the tool list "100 150 06 M" have cutting conditions assigned.

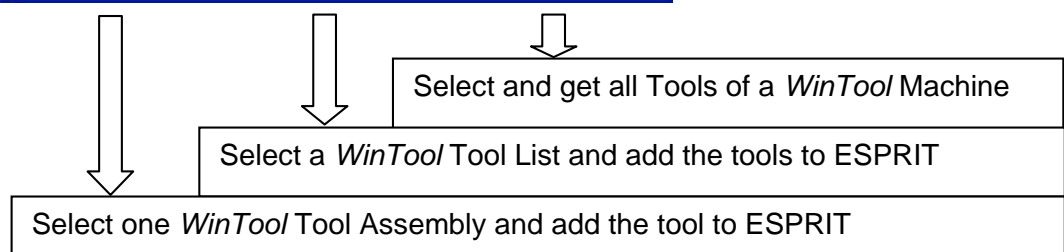
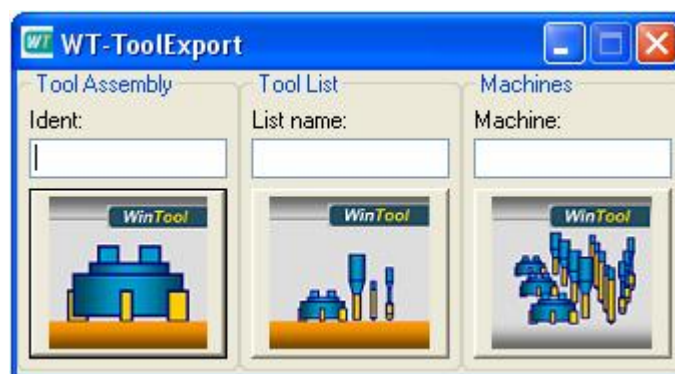
- The WT-Esprit-Interface always works with the database that is hooked up with the local *WinTool* installation. Re-link your *WinTool* installation to the sample database with the function "New Path..." in "Administration" on the main *WinTool* screen.



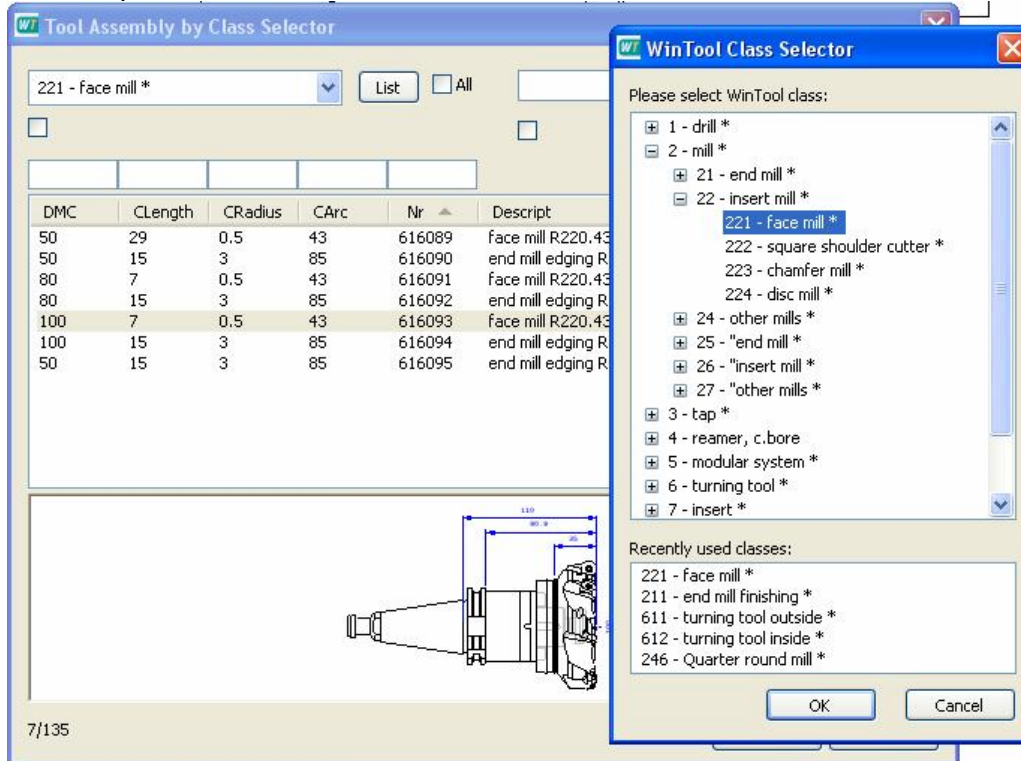
Note: If you installed *WinTool* with an SQL Database, please use the "WinTool Database Manager" to switch the active database. You find the DB Manager in a subfolder of your *WinTool* installation path.

Importing Milling Tool Assemblies

- In ESPRIT CAM open the sample "Side-Frame" located in the WT-Esprit-Interface sample folder.
- Use the "Get" button to open the Tool Selection Menu (WT-ToolExport) and choose the "Tool Assembly" button to select a single tool assembly



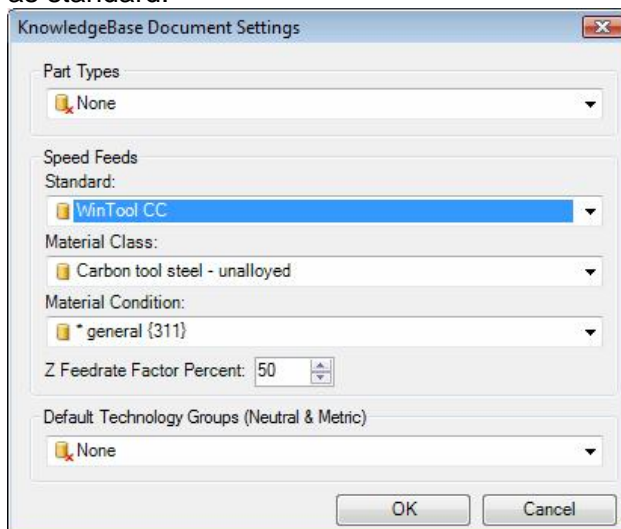
- Use the button "List" to select the tool Class "face mill". For this first run through in this manual, please select the tool with the ID 616093 and click OK.



- Immediately the tool data will be transferred and is available in ESPRIT:



- Select in "ESPRIT KnowledgeBase Document Settings" the "WinTool Cutting Conditions" as standard.



Note: Work materials and cutting conditions are transferred from *WinTool* to the ESPRIT KB with the tool assembly (...if they have been previously stored in *WinTool*).

- Create a Facing Operation for the open sample work piece and select the face mill we just transferred from *WinTool*. To get the transferred cutting condition for the selected material, select "Any" in "Type of Cut".

SolidMill - Facing

General | Face

Tool ID: face mill R220.43 100mm #61609

Clearances

Full Clearance: 150.000000

Clearance: 2.000000

Return Plane: Full Clearance

Retract Plane: Clearance

Feeds and Speeds

Use Feed and Speed KB: Yes

Type of Cut: Any

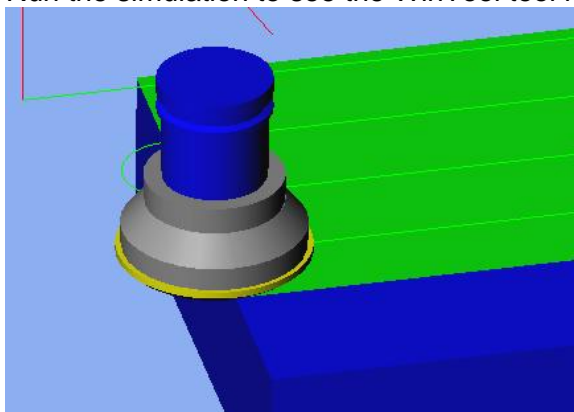
Cut Speed RPM, SPM: 2580 810

XY Feedrate PM, PT: 3611.465022 0.200000

Z Feedrate PM, PT: 1805.732511 0.100000

Max Feedrate PM, PT: 0.000000 0.000000

- Run the simulation to see the WinTool tool representation.



- Use the "Get" function again to transfer the Tool List "100 150 06 M" from *WinTool* to *ESPRIT* and you will get a set of total seven tools in *ESPRIT*.

Tool ID	Style
face mill R220.43 100mm #616093	Milling Tools - Face Mill
tap M08 #616001	Milling Tools - Tap
twist drill HSS 6.8mm #616004	Milling Tools - Drill
end mill HSS 32mm #616017	Milling Tools - End Mill
end mill HSS 20mm long #616031	Milling Tools - End Mill
twist drill HSS 8mm #616077	Milling Tools - Drill
boring bar 10 mm #616134	Milling Tools - Boring Bar

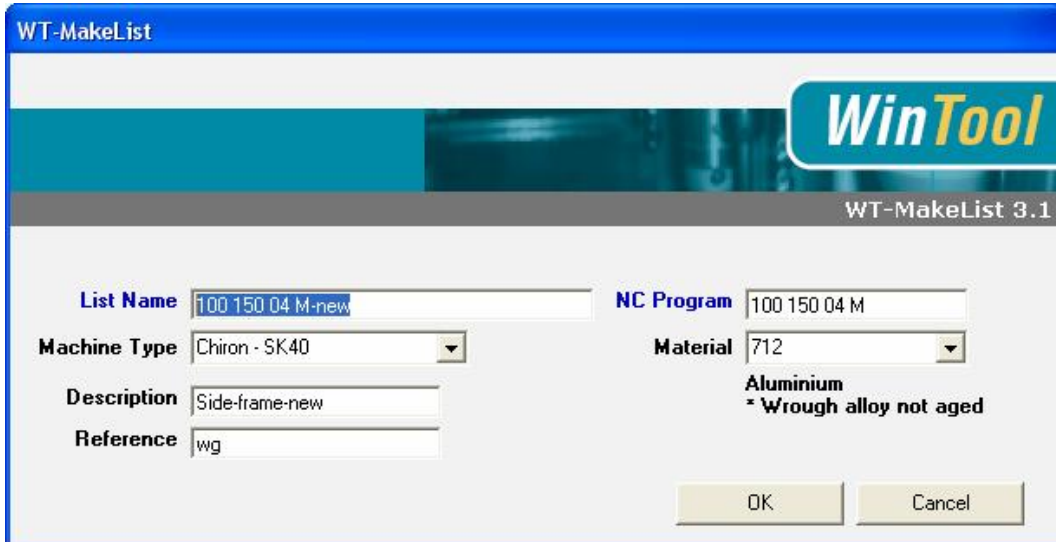
Note: Only tools in the tool list "100 150 06 M" have cutting conditions assigned.

- Continue to use the transferred tools to create a NC-Program.

Save the Tool List to *WinTool*

When the NC-Program is created, the list of tools used in the program must be saved in *WinTool* to make it available for planning and tool crib.

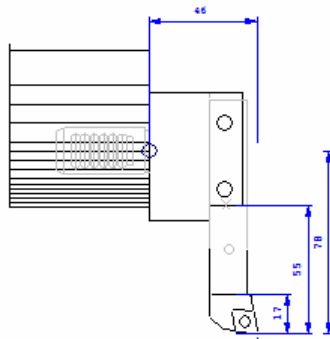
- Use the "Put" button to save the tool list as exchange file. The WT-MakeList software automatically reads this exchange file and creates in *WinTool* a new tool list or updates an already existing tool list in the *WinTool* database.
- Give the List a new name and fill in the other fields as you wish. The information will be stored to the *WinTool* database.



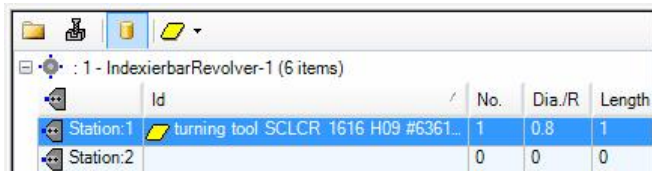
- Note: You can configure default values for these data fields. For more information see [WTEsprit.cfg](#) in the Annex of this manual.
- Note: The sequence of the assemblies in the tool list is the same as in the ESPRIT tab "Tools". You can change to "order of usage" in configuration file.

Importing Turning Tool Assemblies

- In ESPRIT CAM open the sample "Club-Shot" in the WT-Esprit-Interface sample folder.
- Click on the "Get" button to open the Tool Selection menu and use the "Tool Assembly" button to find and pick the turning tool 636106.

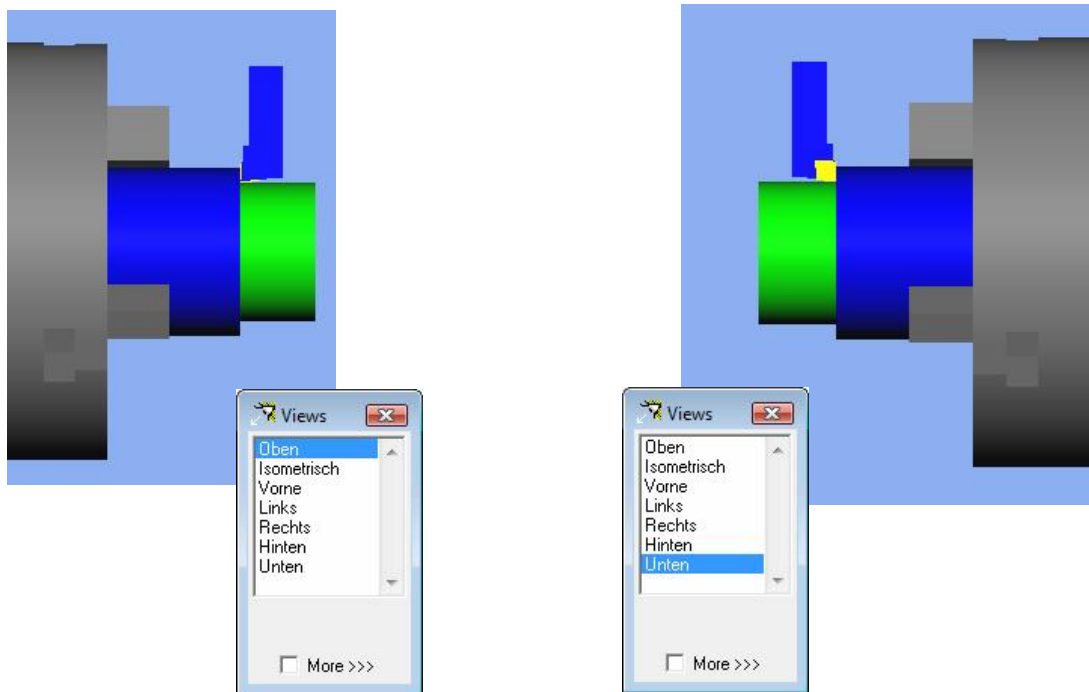


- Place the tool at Station 1

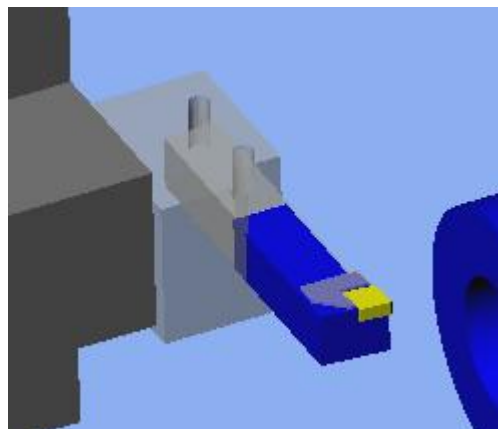


Id	No.	Dia./R	Length
Station:1 turning tool SCLCR 1616 H09 #6361...	1	0.8	1
Station:2	0	0	0

- Create a manual turning operation with this tool and run the simulation.



- Note: Use "View from below" to show the tool similar to the view in *WinTool*.
- Note: The tool position (Tool Shift X and Z) is set according to the configuration of machine setup (see [Configuring the ESPRIT Machine Setup](#)).
- Note: Use a STL file if a full representation of the holder is required. The file must be stored to the "SolidModels" folder and its name must be the same as the ToolID. For Tool 636106 and 636107 the STL files are supplied with installation.



Set Up Your Tool Database

Before you start to set up a database with your tool data, please read the following chapter carefully to fully understand the principals of the interface mechanism and to ensure, you will record your data correctly.

User Classification

- For each *WinTool* User-Classification you need to assign the corresponding Esprit tool type. In the main *WinTool* menu select "Setting", "Classes" and select a class. Assign in the data field "note" the corresponding Esprit tool type, for example `/ES01`

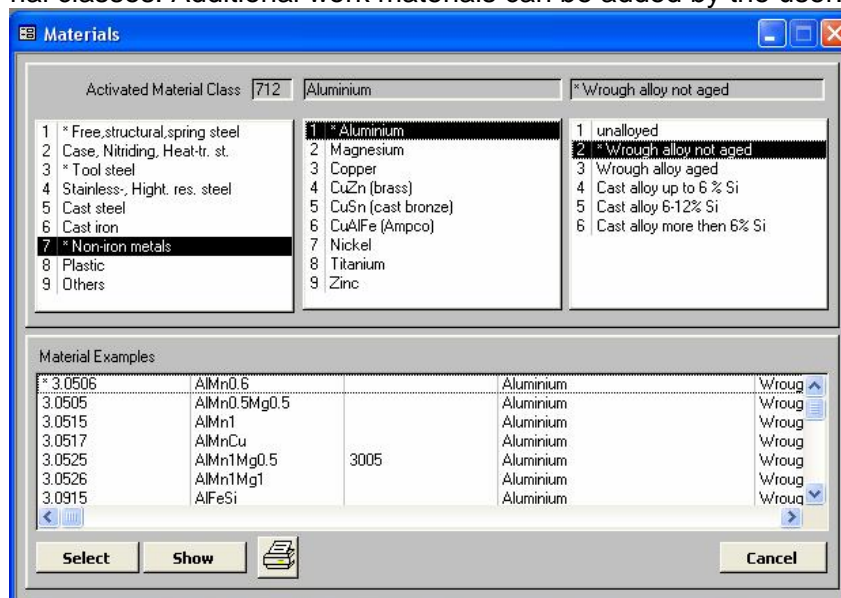
To find the ESPRIT tool types see in the Annex or see examples in the supplied sample database.

Machine Configuration

- Before you create your own tool assemblies, you have to record and configure the "machine types" in *WinTool*. Prepare a *WinTool* machine type for each machine adapter (CAT40, VDI-25 etc.) you have (and not for each physical machine tool you own).

Work Materials

- WinTool* offers a database with over 1000 work materials structured in 100 different material classes. Additional work materials can be added by the user.



- The *WinTool* Work material classes are being transferred to the Esprit KB during data exchange with the WT-Esprit-Interface.

Note: Find the work materials you are using and take a note of the "material classification". While working with the interface later on, the note will easily let you select your work materials during tool import to ESPRIT.

Technology Library

- For each tool assembly multiple cutting values for different work materials and machining situations can be stored in a table. If cutting data is stored for a work material and you are using that material in your Esprit project, the corresponding values will be transferred by the *WinTool* interface automatically to the Esprit KB.
- If multiple cutting values are stored for one work material, all the data will be transferred.

	ap	ae	D	z	Vc	fz	S	F	P	T(Min)
122	* 1.0570	60	10	20	4	38	0.089	605	215	0
311	* 1.1545	60	10	20	4	25	0.081	398	129	0
712	* 3.0506	60	10	20	4	126	0.106	2005	850	0

Standard Assembly (Tool Data Entry)

WinTool considers "Standard Assemblies" those tools which are fully supported by the WT-ESPRIT-Interface and can be automatically generated with the Shape Module. Please refer to the manual of the Shape Module to review its capabilities in creating a contour for rotational-symmetric 3D models.

- Be sure to enter the tool geometry as described in the *WinTool* help section in chapter 4.1.9 "Where to measure the geometry". Only if you enter the component data according these instructions, the assembly can be transferred to ESPRIT correctly.
- Only tool assemblies will be transferred to ESPRIT that have
 - (1) a classification ("class") assigned
 - (2) contain a "namegiving component" (set flag in appropriate component).
 - (3) are linked to a *WinTool* "machine type".

Mounting orientation

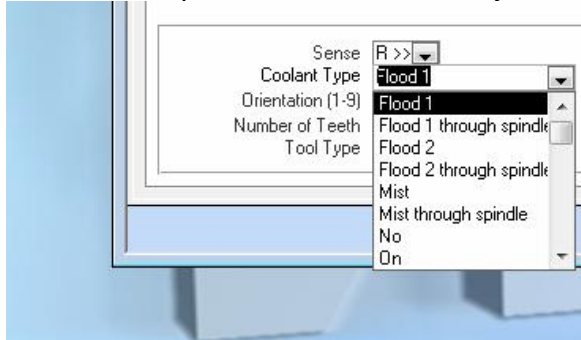
Within ESPRIT the mounting orientation is selected in the general tab of each tool. For each assembly the default mounting orientation can be pre-set in the *WinTool* custom field C6.



C1		* Mounting Orient.	3V	C11	
C2		* Spindle Dir.	L	C12	
C3		C8		C13	
C4		C9		C14	
C5		* Coolant	7	C15	

Coolant Type

Within ESPRIT the Coolant Type is selected in the general tab of each tool. The default value can be preset for each assembly in the "Geometry" tab:



The former method by using the custom field C10 is still supported:

C1		* Mounting Orient.	3V	C11	
C2		* Spindle Dir.	L	C12	
C3		C8		C13	
C4		C9		C14	
C5		* Coolant	7	C15	

- 0=Off
- 1=On
- 2=Mist
- 3=Flood
- 4=Flood2
- 5=Through-On
- 6=Through-Mist
- 7=Through-Flood
- 8=Through-Flood2

Spindle direction

Rotation Tools

The *WinTool* field "Sense" in the assembly record is used as default. This is usually suitable for rotation tools.

Sense <<<< L

Lathe tools

For lathe tools the default spindle direction is set in the *WinTool* field C7. Use "R", "N" or, L

C1		* Mounting Orient.	3V	C11	
C2		* Spindle Dir.	L	C12	
C3		C8		C13	
C4		C9		C14	
C5		* Coolant	7	C15	

- R=CW
- N=None
- L=CCW

Settings in Tool Lists for Turning Tools

Turret

The "Put" function transfers the Turret ID where the Assemblies is placed to the Tool List. When reloading a tool list with the "Get" function, the turret ID stored within the tool list is transferred to the project.

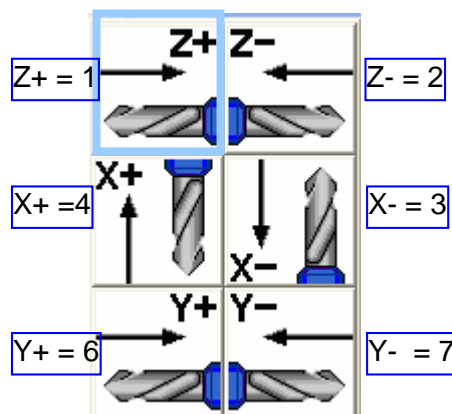
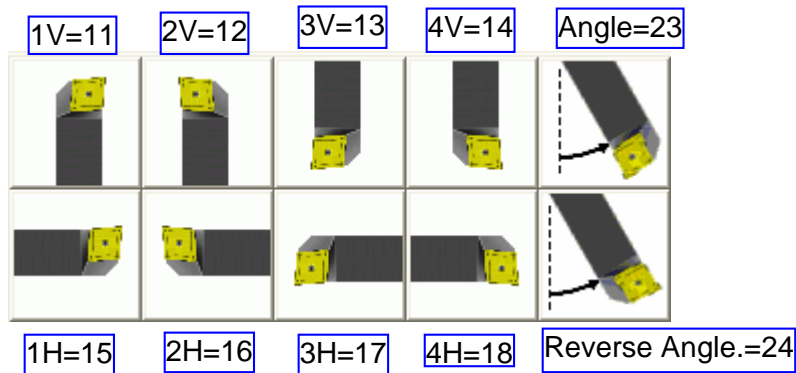
Station ID

The "Put" function transfers the Station ID where the Assemblies is placed to the Tool List. When reloading a tool list with the "Get" function, the Station ID stored within the tool list is transferred to the project.

Mounting orientation

The "Put" function transfers the Mounting Orientation of the Assemblies to the Tool List. When reloading a tool list with the "Get" function, the Mounting Orientation stored within the tool list is transferred to the project.

The following values are used within the Tool List to store the orientation:

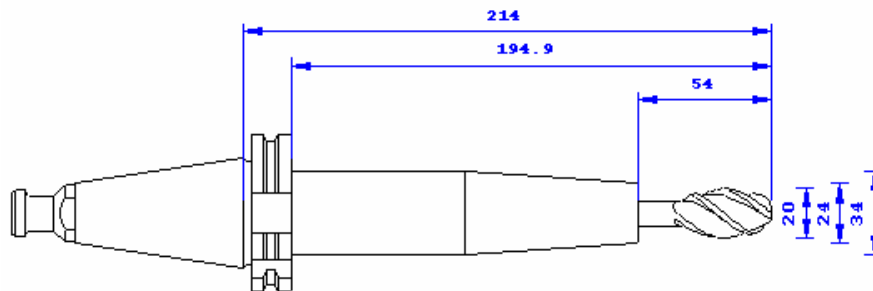


Esprit Custom Setting

The Values (numerical) stored in WinTool data fields C1 up to C10 are transferred to the custom setting fields of the ESPRIT Assembly.

Custom Specific Assembly with Contour-DXF

A non-standard or a “custom specific tool” is an assembly that can not be created fully automatically because of limitations of the Shape Module.

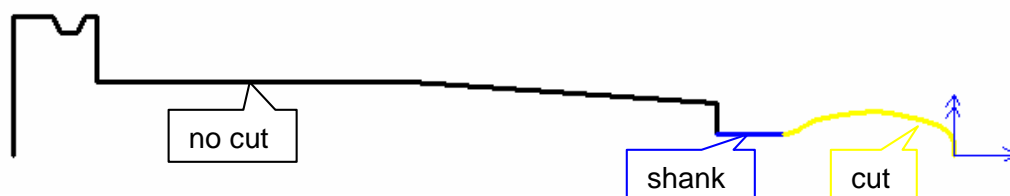


For custom specific assemblies you can create the DXF file manually.

Note: The WT-ESPRIT-Interface stores contour-DXF files in the folder `WTEspritSolidsPath`. Even if a tool is not supported fully by the Shape Module, the Shape will create in most cases a contour-DXF, although not with all additional details of the custom specific tool ... but with a lot of useful elements in place already: holder, extensions, reductions, shank, total length, correct layers, etc. The DXF file can be easily modified and completed as a “custom specific contour-DXF” manually.

Record a custom specific tool assembly in WinTool as follows:

- Create a custom specific assembly with the advanced functions “search matching” and “adjustment length/width” in WinTool.
- Use Tool Assembly Export to generate a contour-DXF and modify the tool geometry as described above ... or create the contour-DXF manually assigning correct layers.



Use the WinTool tool assemblies ID # as filename (i.e. "615015.dxf"). Store the file at the configured `WTEspritSolidsPath`.

- Assign the new custom contour-DXF to the *WinTool* tool assembly: Check the box “User Model” in the tab “CAM” in the row “Esprit”.

CAM Name	Transferred	User Model
Esprit	<input type="checkbox"/>	<input checked="" type="checkbox"/>

If the row “Esprit” is missing, please activate ESPRIT in Settings \ CAM Settings on the main *WinTool* screen.

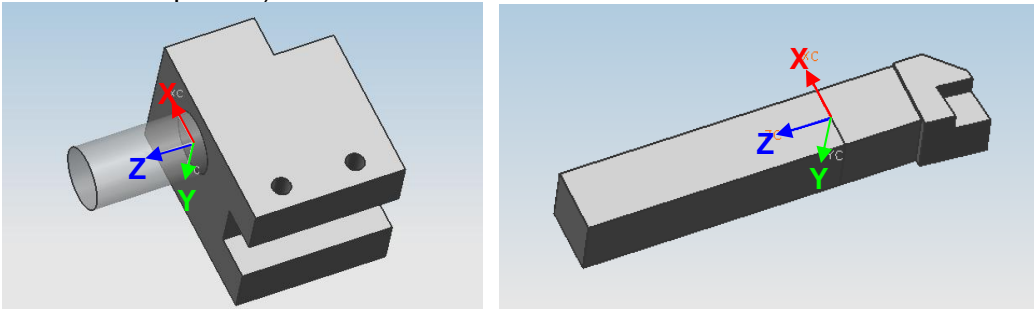
- Note: The contour must not have any gaps. Endpoints will be linked to the rotation axes and multiple simulation profiles will result. Only one of them will be recognized by the simulation.

Custom Specific Assemblies with STL

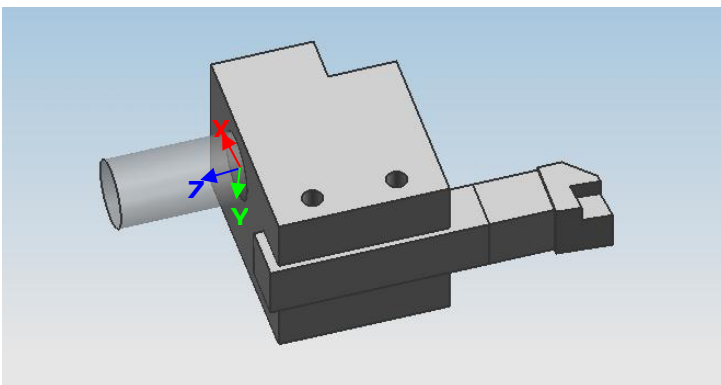
A custom specific STL can be used if the standard 3D representation in ESPRIT is not sufficient. Note: Only limited functionality supported for Versions before Esprit 2009.

Preparing the STL

- Create the assembly in *WinTool*.
- Create 3D Models for the components (use Item No. as file name and link the file to the *WinTool* component).



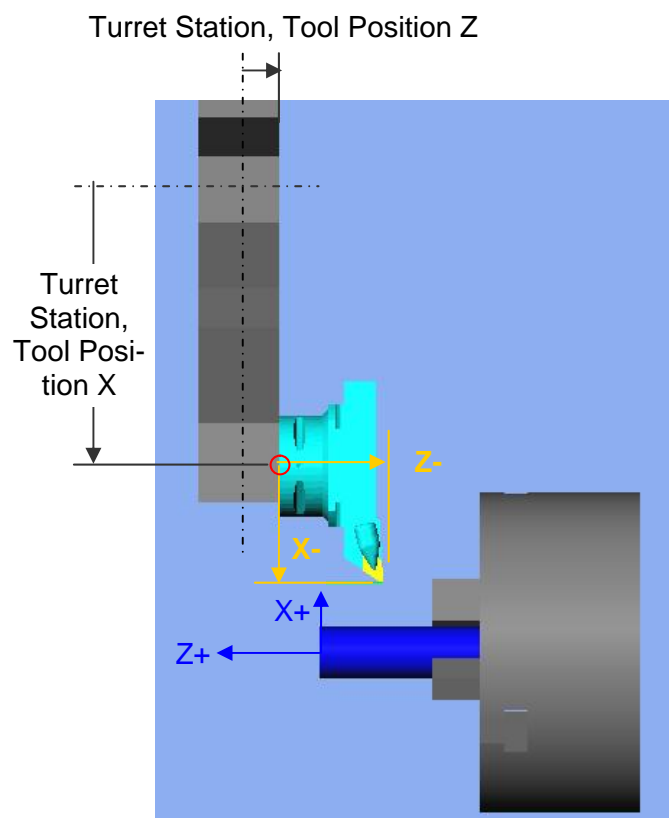
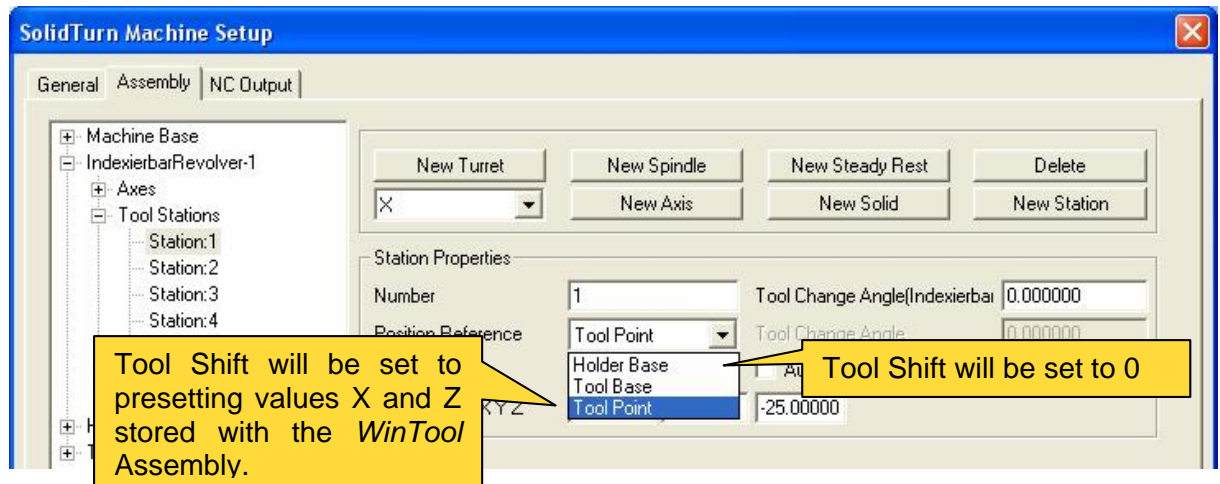
- Combine the component's models to a 3D Assembly. Do not include the insert in the STL because it will be created directly out of the *WinTool* tool component data.
- Store the model as STL in the configured "UserModelspath". Use the "Indent No" of the assembly as file name.



- Note: You can export the WinTool 2D tool assembly as DXF drawing as a starting point to quickly create an STL in ESPRIT. Or ask your tool supplier for STL files or create them with any 3D CAD software.
- Note: You do not need to assign the STL file to the assembly to force its use. Whenever an STL with proper naming is available in the configured FOLDER "UserModelspath" folder it will be automatically loaded.
- Add the link to this STL-file in *WinTool* assembly tab "AD" so you can access it quickly (just click on it) using a viewer. This is not a requirement but it helps to manage 3D models.

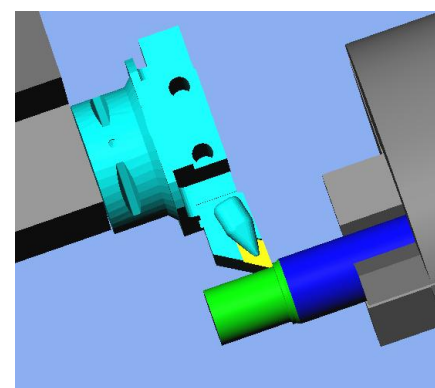
Configuring the ESPRIT Machine Setup

- Set the appropriate values for the tool stations of your machine:



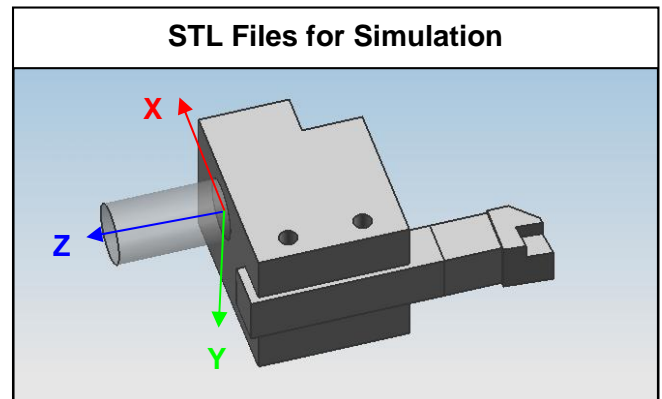
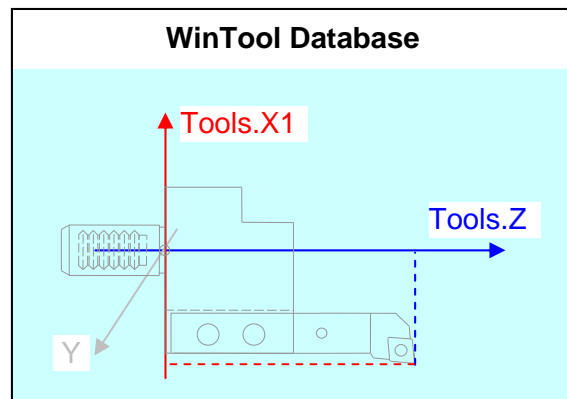
From Turret configuration

ToolShift from WinTool

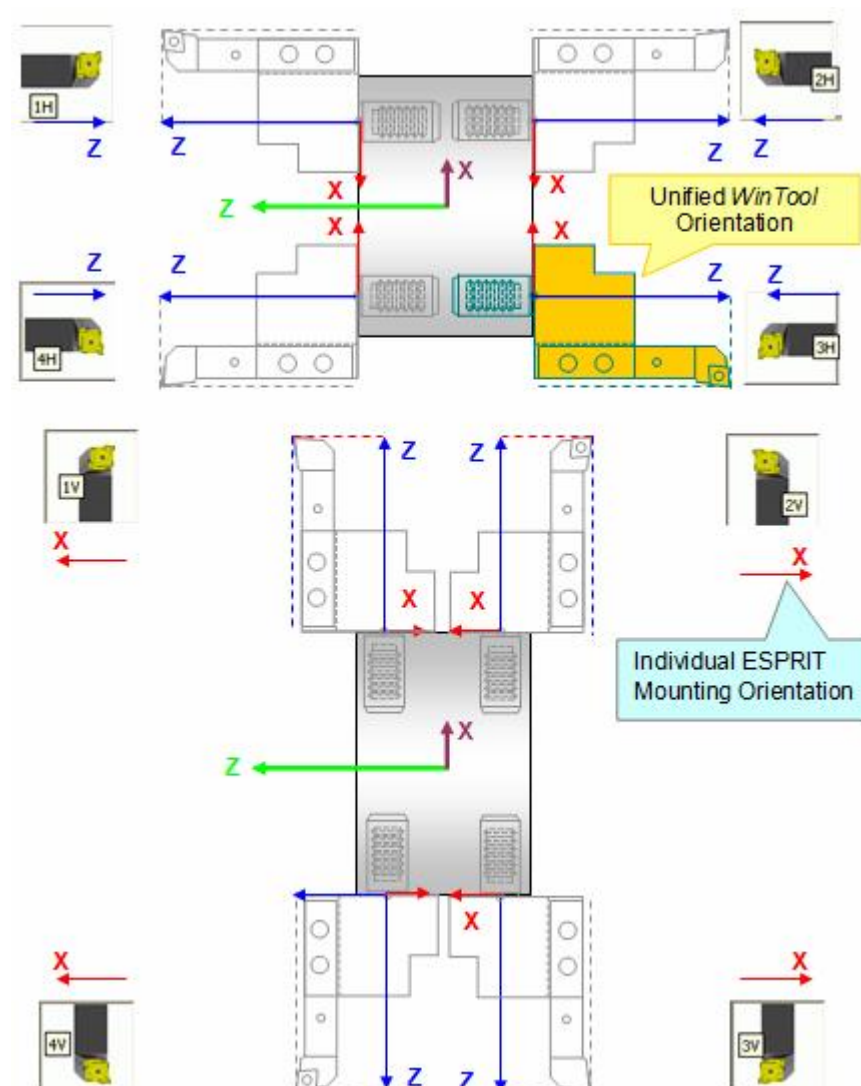


Axes orientation

STL Files



ESPRIT mounting orientation



Transferred Flag for Assemblies

- The "transferred Flag" is a checkbox in the folder "Geometry" in the row "Esprit" of each tool assembly.

CAM	Transferred	User Model Name
Esprit	<input checked="" type="checkbox"/>	<input type="text"/>

- The "transferred flag" helps to speed up the interface. If the transferred flag is set, no shape contour will be created during transfer. It is assumed then, that the shape (DXF) is already available in ESPRIT from a previous transfer.
- Whenever a tool is exported, the flag "transferred" will be automatically set for the assembly. The flag will be automatically erased whenever the WinTool picture of the assembly is changed (rebuild). The flag can also be erased manually.
- Since the Shape Generator is very fast, hardly any time is lost to create the same contour-DXF again and again. Therefore, the functionality is **switched off** in the WT-Esprit-Interface.cfg file by default but can be switched on if required. Do not use it before problem free operation of the interface is accomplished.

ToolShift Z for rotating Tools

Because of unknown reason, ESPRIT mounts the tool holder with a Z-displacement to the spindle nose. This Z-Displacement depends of the configured Tool Holder size in the ESPRIT machines settings.

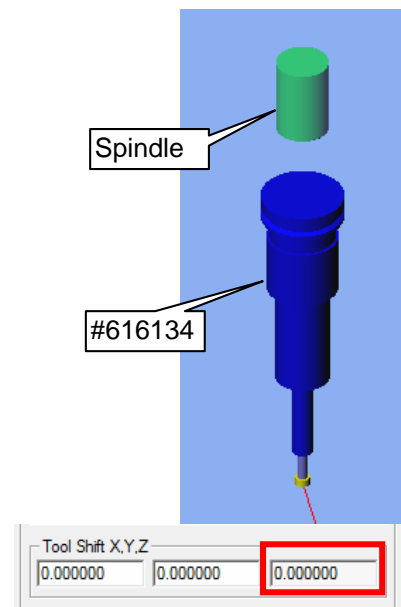
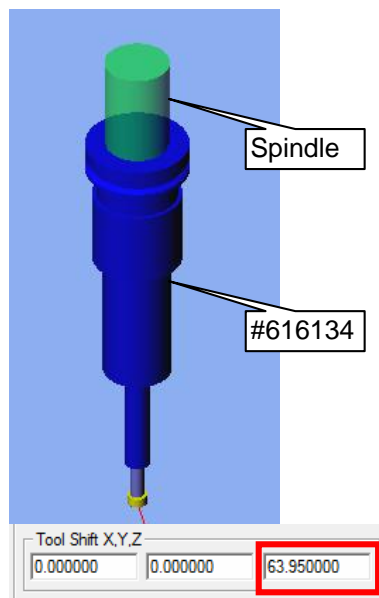
Tool Holder

Position Reference

WinTool does automatically add the appropriate value in the Tool Shift Z-register to adjust the displacement.

It is important, that the Post Processor does not add the Tool Shift to the NC-Program coordinates calculated. The following parameters must be set in the PP Machine mode:

```
XEXCLUDEGAGELLENGTH : 1
ZEXCLUDEGAGELLENGTH : 1
```

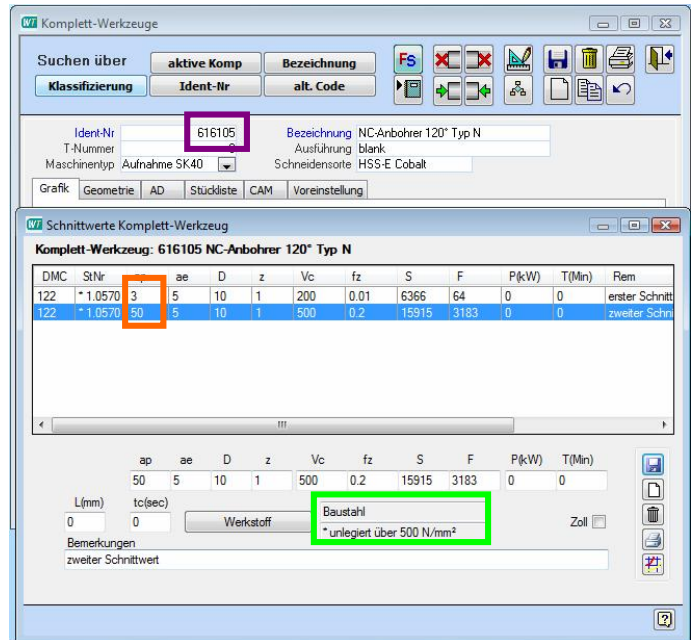
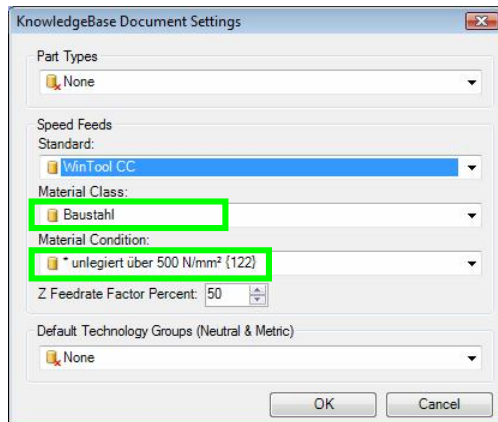


Feed and Speed in KB

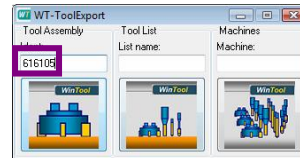
Cutting conditions stored with the Assembly and linked to a work material.

In this case, the cutting conditions are for two different depths of holes but for one on the same work material.

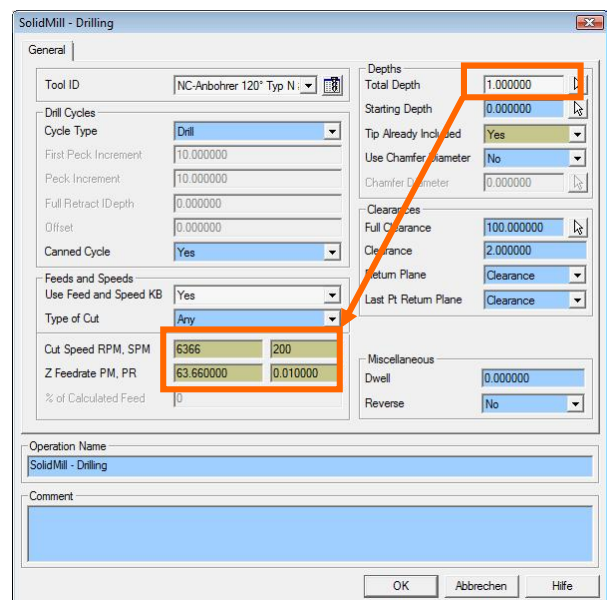
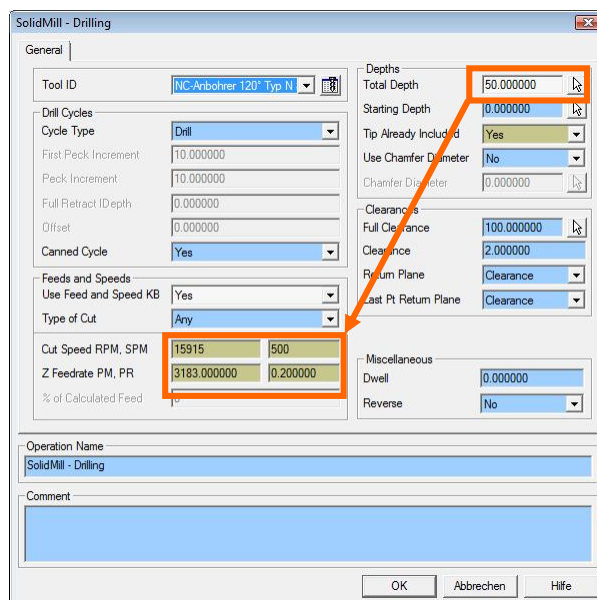
Work material must be selected in ESPRIT



The assembly and the cutting conditions for the selected material are transferred to ESPRIT

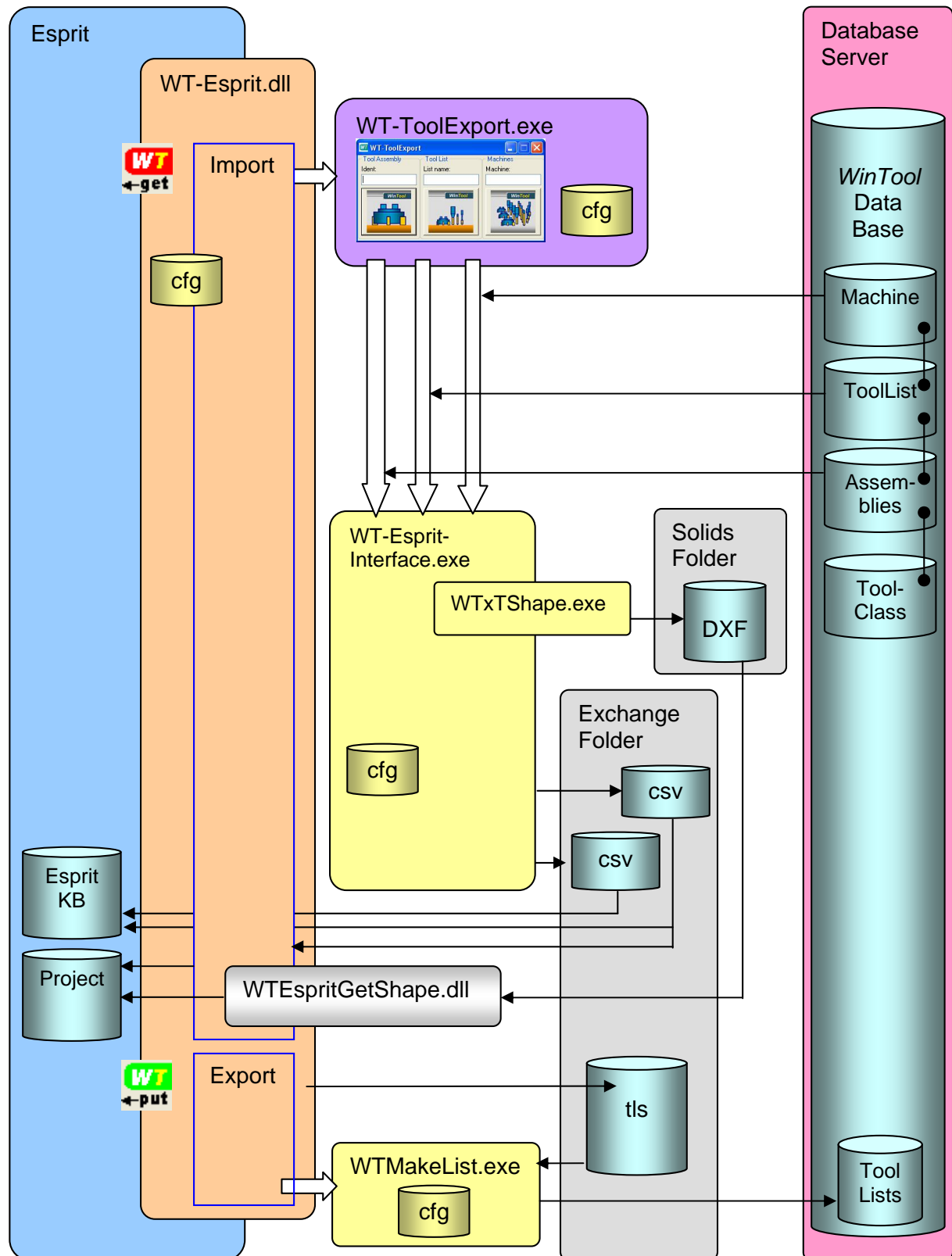


The KB uses the transferred cutting conditions to calculate best values for the operation.



Software Structure

Software-Modules and Data-Exchange



WinTool-ESPRIT Data Integration

WinTool

Components

Search in Catalog | Search in Library | Search Matching

Description: Face mill R220 43 100mm
 Profile/Cutting edge: OFEX 05T 305
 Type / Design: 43 degree
 Holder / Coupling: cyl.bor. 32mm ISO240/5462

Data: R220.43-0100-05
C04008

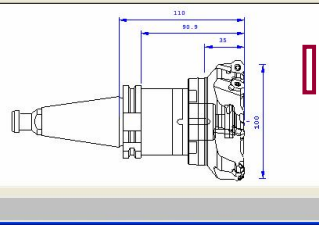
Diameter (A1): 100 | Profile radius (G4): 0
 Cutt. depth axial (B1): 7 | Side angle (E1): 43
 Total height (B5): 50 |
 Length bearing out (L1): 50 | No. of cutting edges (F2): 7

Adm. No.: 51165 Item No.: 221 - face mill *

Tool Assemblies

Search by: Class | Tool List | Active comp.

Ident No.: 51605 | Caption: Face mill R220 43 100mm
 T-Number: 2 | Design: OFEX 05T 305
 Machine Type: Taper - SK40 | Sort: T25M



Activated Material Class: 712 | Aluminium

1 * Free structural spring steel	1 * Aluminium	1 Unalloyed
2 Case, Nitriding, Heat tr. st.	2 Magnesium	2 * Wrough alloy not aged
3 * Tool steel	3 Copper	3 Wrough alloy aged
4 Stainless- High. res. steel	4 CuZn (brass)	4 Cast
5 Cast steel	5 CuZn (cast bronze)	5 Cast
6 Cast iron	6 CuAlFe (Amperco)	6 Cast
7 * Non-ferrous metals	7 Nickel	
8 Plastic	8 Titanium	
9 Others	9 Zinc	

Cutting Data

ap	ae	D	z	Vc	fz	S	F	P	T(Min)
1.22	1.0520	65	75	100	7	267	0.1	650	365
311	1.11456	7	0.2	100	7	162	0.2	379	811
712	3.0506	7	0.2	100	7	810	0.2	2578	3609

Material: T22 | Unit: mm | Inch

Remarks: recommendation SECO

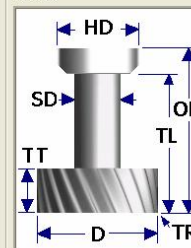
ESPRIT

Milling Tools - Face Mill

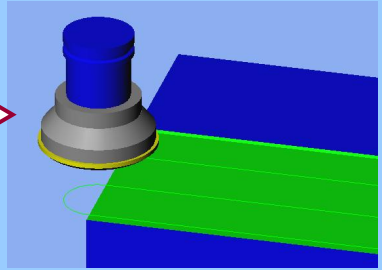
Geometry | General

Tool Style: Face Mill | Unit: Metric

Face Mill:
 Diameter (D): 100.000000
 Holder Diameter (HD): 58.000000
 Shank Diameter (SD): 102.000000
 Shank Length (DL): 110.000000
 Shank Length (TL): 50.000000
 Tool Radius (TR): 0.500000
 Tool Thickness (TT): 7.000000
 Number of Flutes: 7



Comment: face mill R220.43 100mm - OFEX 05T 305 - T25M - "UserModel="



Part Material

Standard: WinTool CC

Material: Wrough alloy not aged (106)

SolidMill - Facing

General | Face

Tool ID: Face mill 100mm #516053

Clearances:
 Full Clearance: 150.000000
 Clearance: 2.000000
 Return Plane: Full Clearance
 Retract Plane: Clearance

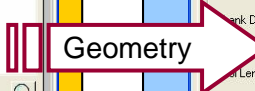
Depths:
 Total Depth: 0.000000
 Incremental Depth: 5.000000
 Starting Depth: 0.000000
 Retract for IDepth: None

Feeds and Speeds:
 Use Feed and Speed KB: Yes
 Type of Cut:
 Cut Speed RPM, SPM: 2580 | 810
 Cut Speed PM, PT: 3611.465022 | 0.200000
 Cut Speed PM, PT: 1805.732511 | 0.100000
 Min. Removal Rate: No


Miscellaneous:
 Include Islands: No

Operation Name: Planfräsen
 Comment:


Geometry



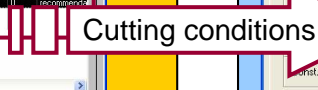
Holder contour



Part material



Cutting conditions

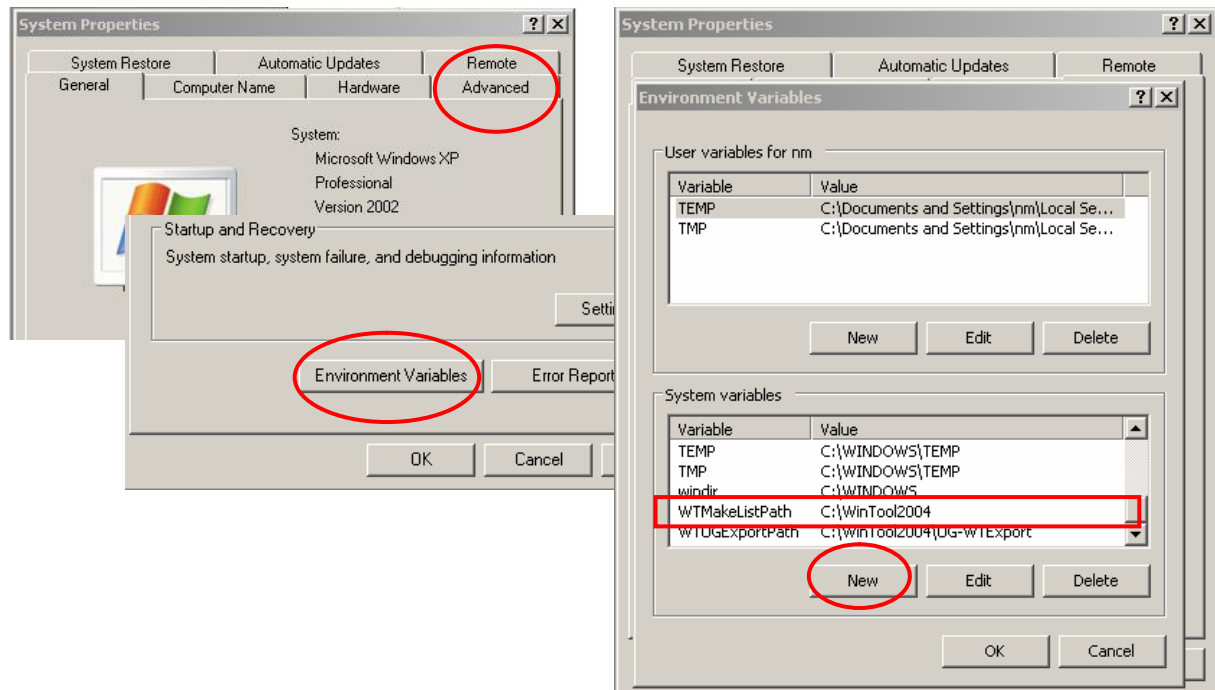


Annex

Set Windows System Variables

Use advanced system control of Windows to set the "environment variable" for the MakeList module:

`WTMakeListPath = C:\Program-Files\DATOS\WT-Esprit-Interface\exchange\`



Configuration File Parameters

General Information

Configurable parameters have their default as long as they are not set differently in the cfg file. The cfg file can be edited with any text editor. Lines starting with a “#” sign are comment lines and will be ignored. Some parameters have their default as system variable. These defaults will be overwritten by those values configured in the cfg file as soon as the software is launched.

WT-Esprit-Interface.cfg

```
# Exchange Path configuration
# -----
# OutputPath = "C:\"
#   Default OutputPath is "exchange" folder in local path
# WTEspritUserModelsPath = "C:\"
#   Default WTEspritUserModelsPath is "UserModels" folder in local path
# WinToolAppPath =
#   Default WinToolAppPath is set in registry
OmitComments = false
ignore_TransferredFlag = true

# Shape configuration
# -----
ShapeFormat = DXF
# DXF format is required for this application
# ShapeAppPath = "C:\WinTool2006"
#   Default ShapeAppPaths are "localpath", "registry settings" and "Win-
#   ToolAppPath".
SkipShapeGen = False
# No Shape file is created if set to true

WinTool database user and password
# -----
# WinToolAppPath = directory or path to WinTool.mde
# WinToolSystemdb = (directory or path to workgroup DB (system.mdw))
#   (Enclose Paths with space in double quotes)
# WinToolUserName = admin (user name for connecting to WinTool.mde)
# WinToolUserPass = (user password for connecting to WinTool.mde)
#   Leave commented out if empty.
#   Default is used from registry (see manual)

# Interface operation control
# -----
DefaultToolType = 1
# Regular toolType is set by the user for each WinTool tool class
QuietMode = true
# use the "false" option for debugging

# PostProcess command
# -----
PostProcessCmd = cmd /C copy file.txt Exchange\file.txt
# PostProcessCmd = taskkill /F /IM wt-ug*
hlCopyFileToOutputPath = WTESFinished.txt
# Application to be launched after collecting tools
```

```
# Currently no post process command is used

# Language resource file and settings
# -----
# ResourceFile = "WT-Esprit-Interface.res.xml"
# ResourceCulture = en-US
# for German use: ResourceCulture = de-DE

# log file options
# -----
# LogFile = WT-Esprit-Interface.log
# log = true

# --- End of configuration file ---
```

WTEsprit.cfg

The defaults for the variables being transferred from Esprit via the Put-Function to the *WinTool* tool lists are configured in the file "WTEsprit.cfg".

```
# Configuration file for WTEsprit.dll and WTEspritGetShape.dll
# -----
# Copyright 2009 DATOS Computer AG

# Defaults for Assembly Input Rotating Tools
# -----
Orientation = 1
TurretID = 1
StationID = 1
XTCMovement = 1
YTCMovement = 1
ZTCMovement = 1

# Defaults for ToolList Export
# -----
#
ToolListsIdent=328
# 328 = ESPRITNAME, out of "Miscellaneous Register"
ToolListsDescript=462
# 462 = ESPRIT ProgramName, out of "CL File Register"
MachineName=1592
# 1452 = ESPRIT MachineName, out of "CL File Register"
MachineNr=1561
# 1355 = ESPRIT ToolHolder, out of "CL File Register"
ToolListsWho= 1593
# ESPRIT Comment, out of "CL File Register"
ToolListsNCP=155
# 155 = ESPRIT ProgramNumber, out of "CL File Register"
DeleteUnusedTools=0
# Tools loaded into the ESPRIT model but not used within
# the current NC-Program, will be deleted if parameter is set to 1.
ExportUnusedTools=0
# Tools loaded into the ESPRIT model but not used within the
# current NC-Program, will be exported if parameter is set to 1.
ToolOutputorderByMillOperation = 0
# If Parameter =1 Milling Tools are exported in sequence of usage
```

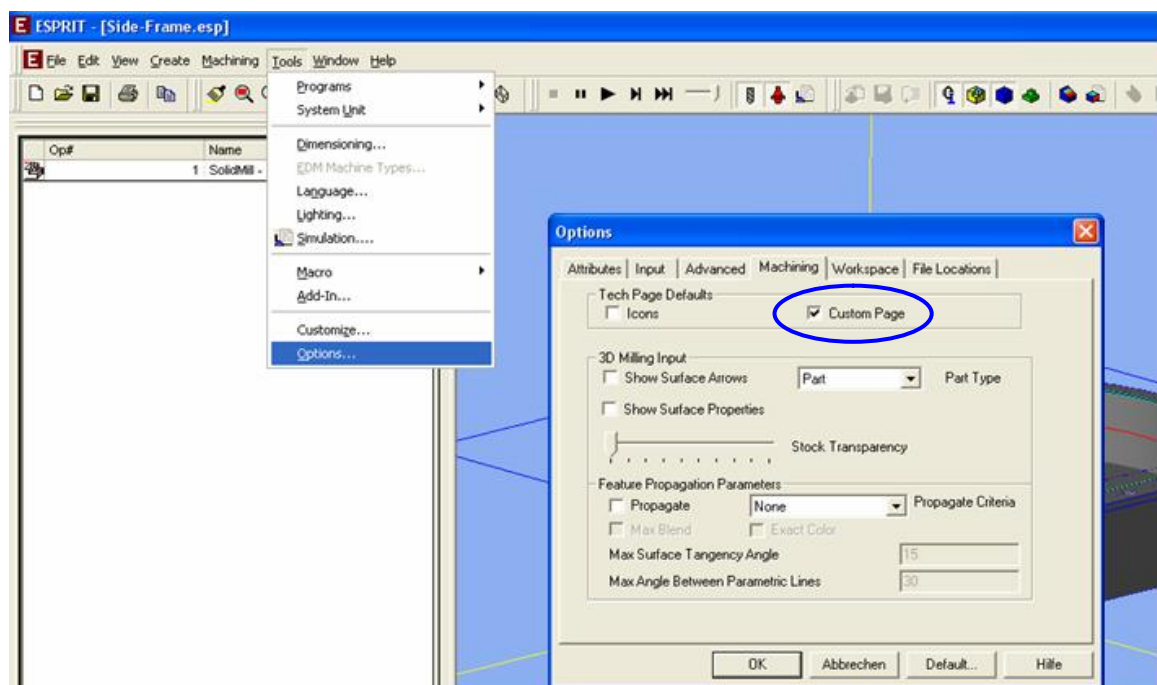
used tools are exported only if this parameter is set to 1

The above mentioned parameters are listed in the "ESPRIT Post Processor help". The next chapters will show you where to find them in the menu.

ESPRIT Parameters in CL-Register and Custom Properties

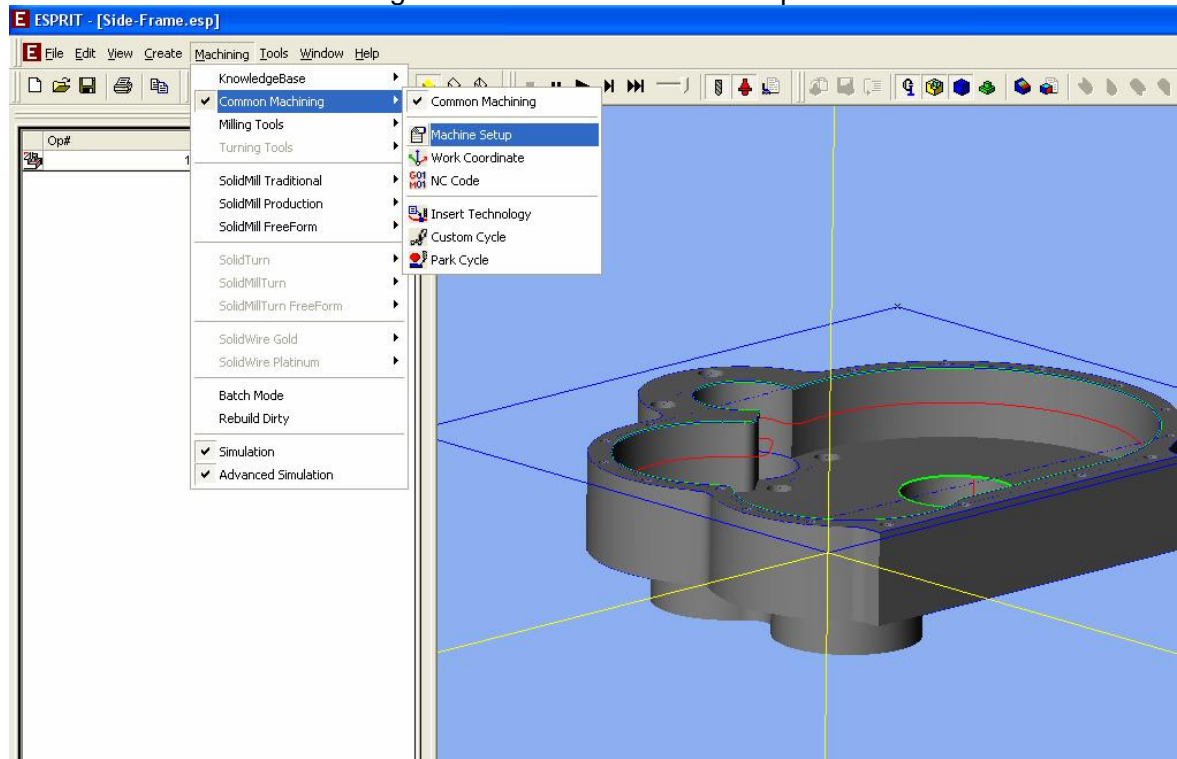
Enable data fields for custom properties:

- Select "Tools", "Options" and activate the tab "machining".
- Mark the selection box "custom page" to enable entering custom property values



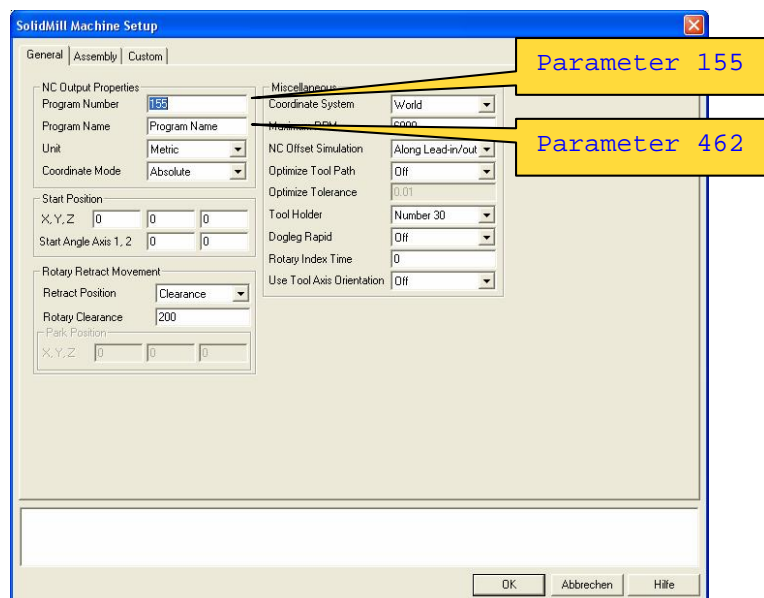
To set values for CL-Register fields open the "Machine Setup" windows:

- From the "Common Machining" menu select "Machine Setup".

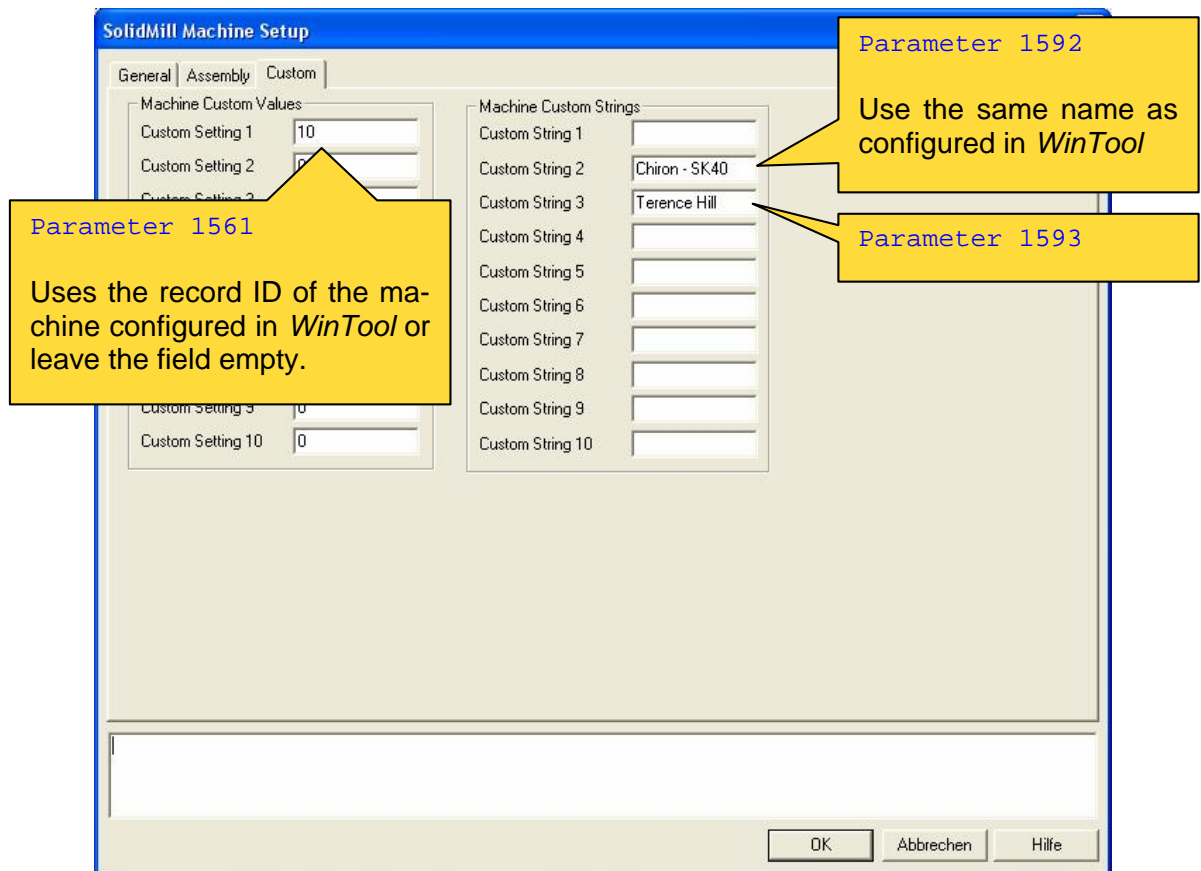


or

- Right-click inside the Operations page of the Project Manager (press F2 to display), then select "Edit", "Edit Machine Setup".
- Select the tab "General" to change the values in the CL register

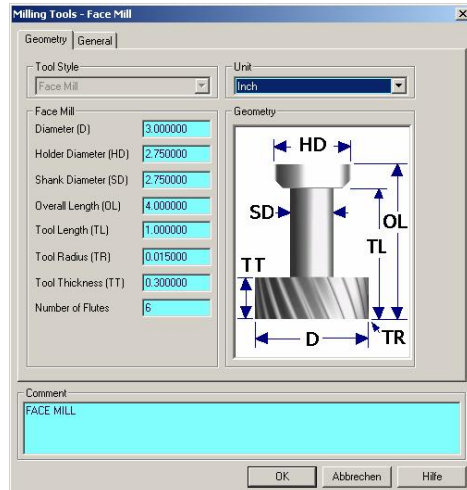


- Select the tab "Custom" to change the values of custom property fields.

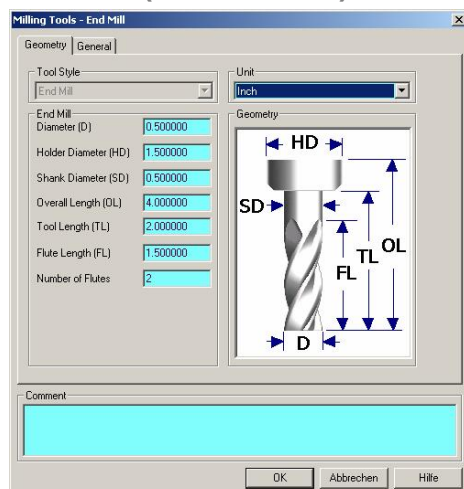


Supported Esprit Tool Types

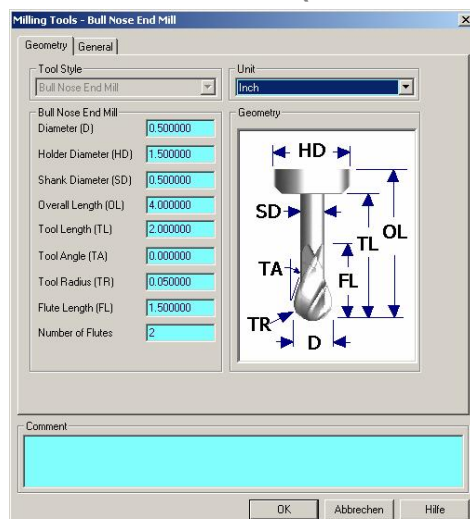
Face Mill (Walzenstirnfräser) /ES08



End Mill (Schachtfräser) /ES01



Bull Nose End Mill (Formfräser) /ES07



Ball End Mill (Kugelfräser) /ES09

Milling Tools - Ball End Mill

Geometry | General

Tool Style: **Ball End Mill** Unit: **Inch**

Ball End Mill

Diameter (D): 0.500000

Holder Diameter (HD): 1.500000

Shank Diameter (SD): 0.500000

Overall Length (OL): 4.000000

Tool Length (TL): 2.000000

Flute Length (FL): 1.500000

Number of Flutes: 2

Comment:

OK Abbrechen Hilfe

Center Drill (Zentrierbohrer/Stufenbohrer) /ES03

Milling Tools - Center Drill

Geometry | General

Tool Style: **Center Drill** Unit: **Inch**

Center Drill

Diameter (D): 0.218700

Holder Diameter (HD): 1.500000

Shank Diameter (SD): 0.500000

Overall Length (OL): 4.000000

Tool Length (TL): 2.000000

Chamfer Angle (CA): 60.000000

Tool Angle (TA): 82.000000

Tool Tip (TT): 0.125793

Number of Flutes: 2

Tip Depth (TD): 0.218700

Comment:

OK Abbrechen Hilfe

Drill (Bohrer) /ES02

Milling Tools - Drill

Geometry | General

Tool Style: **Drill** Unit: **Inch**

Drill

Diameter (D): 0.500000

Holder Diameter (HD): 1.500000

Shank Diameter (SD): 0.500000

Overall Length (OL): 4.000000

Tool Length (TL): 3.500000

Flute Length (FL): 3.000000

Tool Angle (TA): 118.000000

Tool Tip (TT): 0.150215

Number of Flutes: 2

Comment:

OK Abbrechen Hilfe

Tap (Gewindebohrer) / ES04

Milling Tools - Tap

Geometry | General

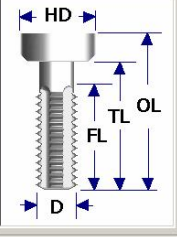
Tool Style: Tap

Unit: Inch

Tap

Diameter (D)	0.250000
Holder Diameter (HD)	1.500000
Overall Length (OL)	4.000000
Tool Length (TL)	2.000000
Flute Length (FL)	1.500000
Thread/Unit	20.000000
Pitch	0.050000
Number of Flutes	2

Geometry



Comment

OK Abbrechen Hilfe

Taper Radius End Mill (Konischer Fräser) / ES10

Milling Tools - Taper End Mill

Geometry | General

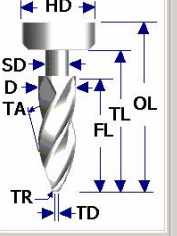
Tool Style: Taper Radius End Mill

Unit: Inch

Taper Radius End Mill

Diameter (D)	0.500000
Holder Diameter (HD)	1.500000
Shank Diameter (SD)	0.500000
Overall Length (OL)	4.000000
Tool Length (TL)	2.000000
Flute Length (FL)	1.548000
Tool Radius (TR)	0.125000
Taper Angle (TA)	5.000000
Number of Flutes	3
Tip Diameter (TD)	0.000000

Geometry



Comment

OK Abbrechen Hilfe

Chamfered End Mill (Fasfräser) / ES11

The screenshot illustrates the configuration of a Chamfered End Mill in the WinTool software. The main window shows a 3D model of the tool with dimensions and a table of tool components. A red box highlights the 'Adjustment Dia' field in the 'Tool Component List' table. A red arrow points from this field to a secondary window titled 'Milling Tools - Chamfer End Mill', which shows a detailed diagram of the tool geometry with labeled dimensions and a table of parameters.

Tool Component List Table:

Ident No	Description	Machine Type	Cutter Type
1	pull stud	DIN 63972 A for SK 40	MyCom
1	end mill holder 20mm	DIN 6358, drive flat	USR - 5
1	chamfer mill R215.49-2016.3-09	SPMx0903"	MyCom
2	insert SPMx0903AP-75	75	HX
1	Measure point milling	51265	MyCom

Milling Tools - Chamfer End Mill Window:

Tool Style: Chamfered End Mill

Unit: Metric

Geometry:

- Control Diameter (D): 20.000000
- Holder Diameter (HD): 40.000000
- Shank Diameter (SD): 26.500000
- Overall Length (OL): 123.000000
- Tool Length (TL): 60.000000
- Flute Length (FL): 11.200000
- Tool Tip (TT): 0.000000
- Chamfer Angle (CA): 45.000000
- Number of Flutes: 2
- Tip Diameter (TD): 16.000000

Comment: Chamfer mill R215.49-2016.3-09 - SPMx0903" - HX" - 616088

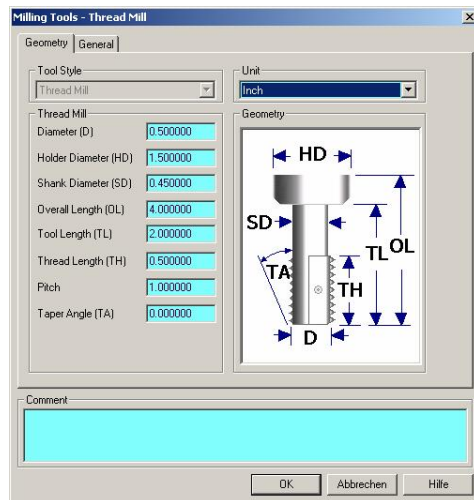
Corner Round Mill (Viertelkreis Fräser) /ES12

Note: TR is negative in *WinTool*!

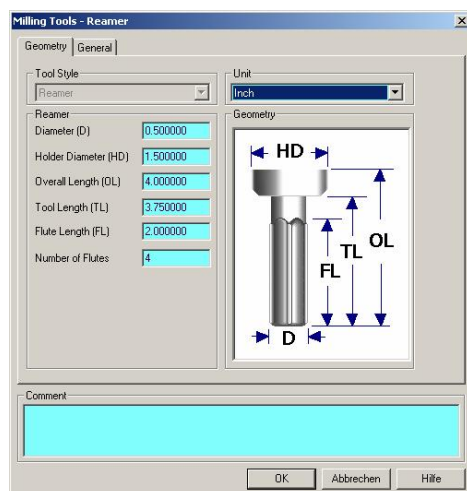
Dove Tail End Mill (Schwalbenschwanz Fräser) /ES13

Boring Bar (Bohrstange) /ES06

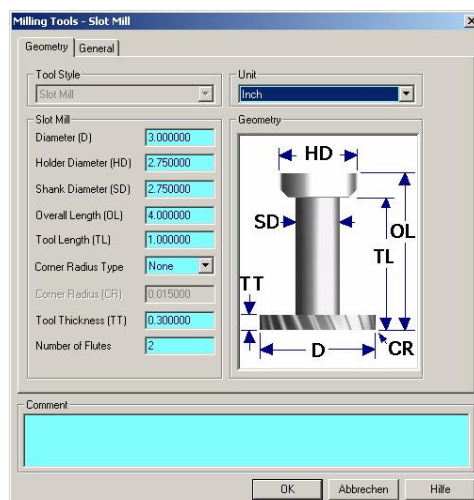
Thread Mill (Gewindefräser) /ES20



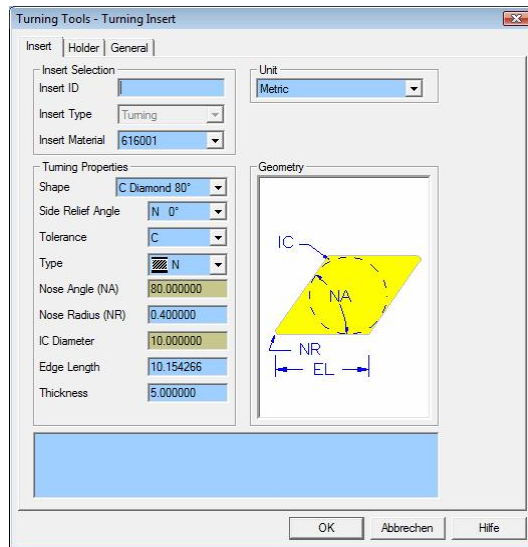
Reamer (Reibahle) /ES05



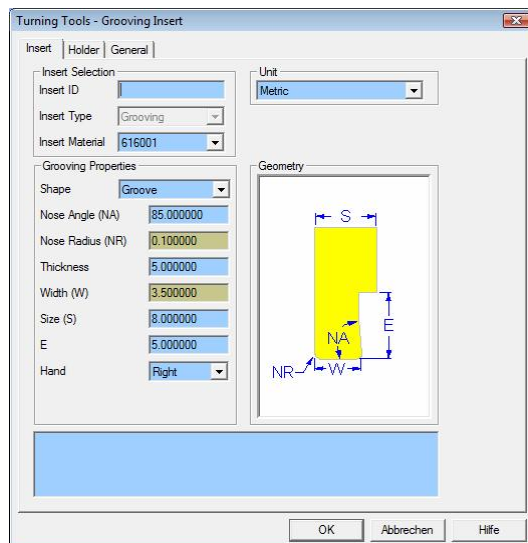
Slot Mill (Scheibenfräser) /ES25



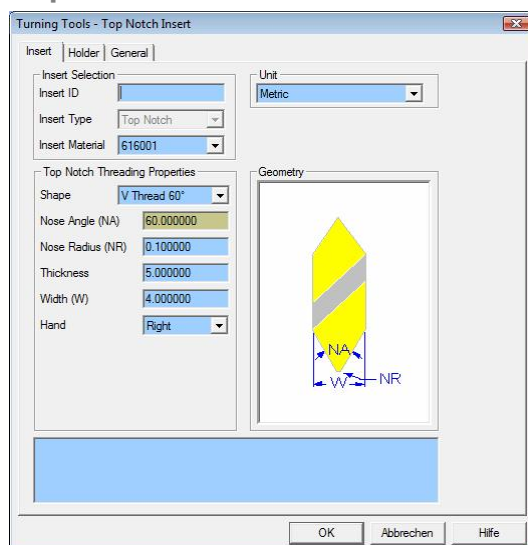
Turning Tool (Drehwerkzeug) /ES16



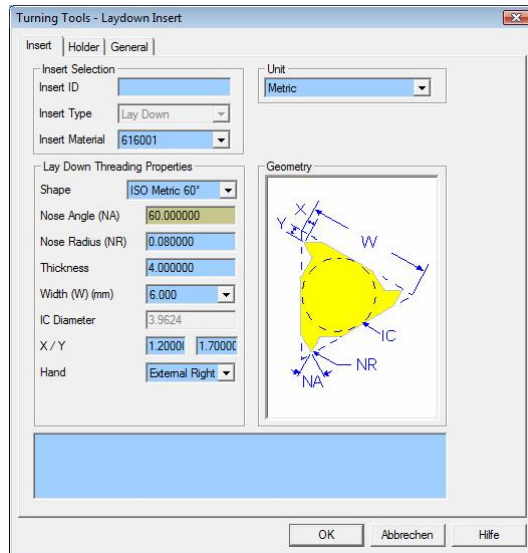
Grooving Insert (Stechwerkzeug) /ES17



Top Notch Insert /ES18



Lay down Insert /ES19



Not Supported Esprit tool types

- Mini-Turning
- Mini-Goowing
- Mini-Boring
- Undercut Mill

History

2.11

- Bottom Radius for T-Slotter supported
- Mounting orientation, Station and Turret ID for ToolLists supported
- STL position supported for all different mounting orientations

2.10

- A set of all assemblies linked to one machine type can now be transferred
- Chamfer mills without adjustment diameter supported
- Round inserts for face mills supported
- Bottom radius now supported
- Required write permissions for Exchange-Folder and Registry mentioned in manual
- Support for new Coolant Types in *WinTool* assemblies
- Final correction in STL movements for Mounting Orientation

2.9.11

- Correction in STL movements for different Mounting Orientations
- WTMakelist automatically installed
- Description for ToolShift Z added in manual

2.9.10

- New data fields in Esprit 2009 are supported
- Grooving tools are supported
- Mounting orientation supported with data and STL adjustment
- Adjustment of holder position according the cone size configured for the spindle
- Mounting Orientation, Station ID and Turret ID supported for tool list transferred ("Get" and "put" function)

2.8.6

- Support for Esprit 2009 and 2008
- *WinTool* Assembly fields C1 up to C10 are transferred to the ESPRIT custom fields
- ToolShift is recalculated properly after assembly is re-mounted in different orientation.
- STL are re-positioned after assembly is re-mounted in different orientation.
- STL now supported for rotating assemblies
- If STL is available it is loaded automatically (no more usermodel flag required) .
- When loading the STL the "suppressed" box is not marked any longer.
- *WinTool* default orientation for lathe tools required for proper calculation of mounting orientation.
- Put: Sequence of the assemblies in can be forced to be the same as the used in the Esprit operations. WTEsprit.cfg Parameter ToolOutputorderByMillOperation=0 or 1.
- Put: Station + Turret + Orientation now exported to exchange list but not yet imported to *WinTool* (planned for *WinTool* 2009).

- If station is set to ToolTip, the ToolShift values are set. If station is set to Holder Base, no ToolShift values are set. (Rotating tools only)
- Automatic adaptation of machine configuration to ToolTip for late tools can be activated by a new WTEsprit.cfg parameter: LathToolAlwaysToTip = 0 or 1.
- Extended configuration (cfg) and rsx files
- Adjusted STL sample files

2.8.4

- Spindle Direction from custom field C6 repaired (Woodward, Jeff, WG. 30.10.08)
- For Drills ToolTip (TT) now calculated properly (Woodward, Jeff, WG. 30.10.08)
- Now allowed to transfer assemblies not linked to a machine type.

2.8.2

- No more " - sign as last character of the comment
- Tools without assigned machine type can be transferred now
- ToolTip (TT) correctly calculated for tool type 2 (Drills)
- Spindle direction now transferred from field C7
- ThreadPerUnit: New specifications for metric and inch
- Default LatheToolOrientation now correctly determined
- Inside Turning Tools: Dimension A and D now correctly supported.

Fix: 2.8.1, dll 2.0.101

- Coolant Type: Default supported in assembly field C10
- Inch tap: Pitch supported correctly
- Cutting length of turning tools correctly supported
- No more error message if 2 cutting or 2 name giving components within the assembly
- ToolShift now recalculated according mounting orientation
- STL for rotating Tools now supported
- STL is now automatically loaded if present in usermodels path (no more flag required)
- If mounting type "Holder base" is selected for a station, ToolShift is set to 0
- Easier password handling for database access of the interface

2.7.4

- WT-Esprit.dll for Esprit 2008 now registered in Setup

2.7.3

- Cutting conditions in KB are now linked to a "ToolMaterial"
- Mounting procedure tools and STL optimized

2.7.2

- Versions for ESPRIT 2007 and 2008 available
- Problem with decimals for cutting conditions solved

2.7.1

- Round shank for boring bars supported
- "LatheToolOrientation" is transferred for horizontal (Z-direction) machine adapter

- "Mounting Orientation" and "LatheToolOrientation" for tools (i.e. V3) can be preset in assembly field C6
- Default for "Spindle Direction" supported
- Value ThreadPerUnit is transferred from inch components
- Station ID is exported to ToolList (but not yet imported)
- Color for STL models is set to silver and STL is embedded in project now
- If T (Toolnumber) is set for assembly, it is used as station number for turning tools
- ToolShift is set to presetting value X,Z if configured as ToolTip, else it is set to 0
- Toollist export (put) checked and description extended for default transfer

2.6.0 (03.07.2007)

- Turning Tools supported
- STL Models supported for simulation
- Enhanced support for Holder Diameter
- Full support for Chamfer Mills
- Full support for Quarter round mills
- Full support for dove tail mill
- Full support for thread mills
- Old cutting conditions are no more deleted in KB
- Cutting conditions for drills adjusted
- New Tool selection module (WT-ToolExport)
- Enhanced error handling and better language support

2.2.0

- #696: Neck diameter and die overall length correctly supported (Fill)
- #697: Esprit-Type /ES7 calculation of arc for Lollipop corrected.
- #698: Esprit Tool Type 7 CRadius transferred from cutting component (Pres Block)
- #699: Esprit Tool Type 8 CRadius transferred from cutting component (Centriforce)
- #700: Log File: No more warning appears when not needed. (Claval)
- #701: Quality field in KB is now filled with comment, before it was "Any" (DloG)

2.1.2

- User models Path supported
- New WTMakeList module implemented
- New Shape module implemented
- Separate Interface versions for ESPRIT 2006 and 2007
- Complete Setup D and E
- Proper Text, English or German, is installed for assembly queries

1.1.2

- Automatic GetShape call if simulation is started with properties but without profile
- DXF support with GetShape
- Work material import to KB

- Work material class export from WTEsprit DLL to WTMakelist