

Changes for the Better

Instruction Manual **NC-CycleDesigner**

A grayscale image of the Earth from space, showing continents and clouds. Overlaid on the center of the Earth is the text "MITSUBISHI CNC" in a large, white, stylized font. The text has a slight shadow and is partially framed by a semi-transparent, curved band.

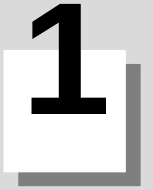
**MITSUBISHI
CNC**

NC-CycleDesigner V 1.02(ENG)

Table of Contents

1. Introduction	6
2. Installation	9
2 Screen Layout	13
2.1 Menu	14
3.1.1 Environment Parameters	14
3.1.2 Application Language Select	15
3.1.3 Application Language Edit	15
3.1.4 Language Export to Excel	15
3.1.5 Language Import from Excel	16
3.1.6 Exit	16
2.2 File	17
2.2.1 New	17
2.2.2 Open	19
2.2.3 Save	20
2.2.4 Export	20
2.2.5 Copy a Cycle	21
2.2.6 Cut a Cycle	23
2.2.7 Process ID's	25
2.2.8 Type ADD, EXT, POS	26
2.2.9 Add Folder	27
2.2.9.1 Change default picture	29
2.2.10 Add Cycle	30
2.2.11 More...	33
2.2.12 Move Up / Move Down	33
2.2.13 Delete	34
2.2.14 Edit	34
2.2.15 Theme color selection	35
2.2.16 Touch screen mode	36
2.2.17 Recent projects	36
2.3 Help	37
3. Sample Project	38
3.1 Screen Layout	38
3.2 Create new Project	38

<u>33</u> 3.4 Create Cycle.....	39
3.4.1 Cycle edit window - Properties.....	39
3.4.1.1 Cycle Items	40
3.4.1.2 Item Property Help.....	41
3.4.1.3 Item Data	41
3.4.2 Add Items	44
3.4.2 Cycle edit window – Test	47
3.4.2.1 Set the HTML Help graphic	48
3.4.2.2 Input Test window	50
3.4.2.3 Input Output window.....	51
3.5 Help Graphic Specifications.....	54
3.5.1 Folder graphic specification	54
3.5.2 Cycle graphic specification.....	54
4. APPENDIX	56
APPENDIX 1: Application Language Edit.....	57
APPENDIX 2: Language Export to EXCEL	60
APPENDIX 3: Language Import from EXCEL.....	62
APPENDIX 4: Standard process ID's	63



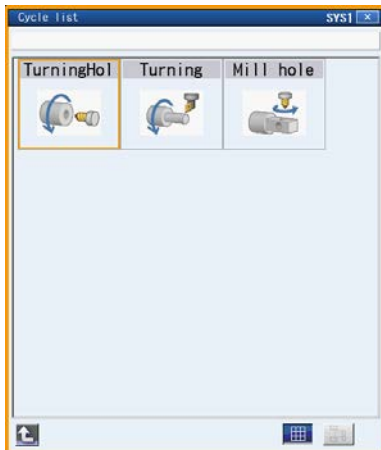
Introduction

1. Introduction

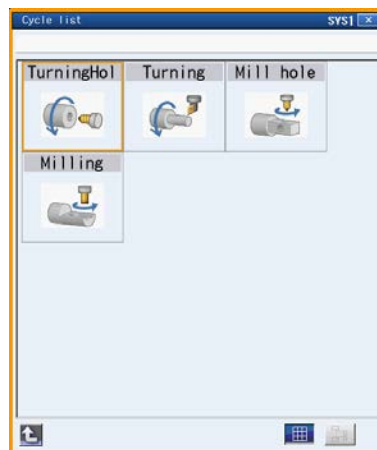
The M800 / M80 CNC Series provides a programming support tool named Interactive Cycle Insertion.

For more details, please refer to the manuals:

- Interactive cycle insertion for lathe - BNP-C3072-121-0002
- Interactive cycle insertion for machining center - BNP-C3072-121-0004



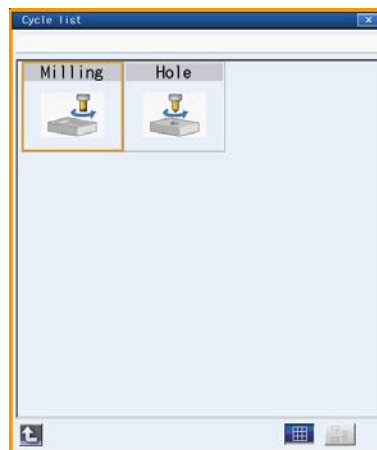
Lathe normal



Lathe extended



Milling normal



Milling extended

With the NC-CycleDesigner it is easy to create customized cycles. This can be done by the machine tool builder, dealer or even by the end user. This Customized Interactive Cycle Insertion (CICI) enables to create the cycle details with help explanations, menu handling and graphic guidance. It controls the tree structure of the folders and cycles as well as the directory and sub-structure. The necessary CNC macro must be prepared separately.

Features of the NC-CycleDesigner

- Easy development of Customized Cycles
- Multiple cycle support
- No XML knowledge necessary
- All XML files are created automatically
- Design of cycle in dialog
- Easy language handling
- Integrated NC program editor
- Preview without CNC or NC-Trainer 2 plus
- Integrated help and tutorials

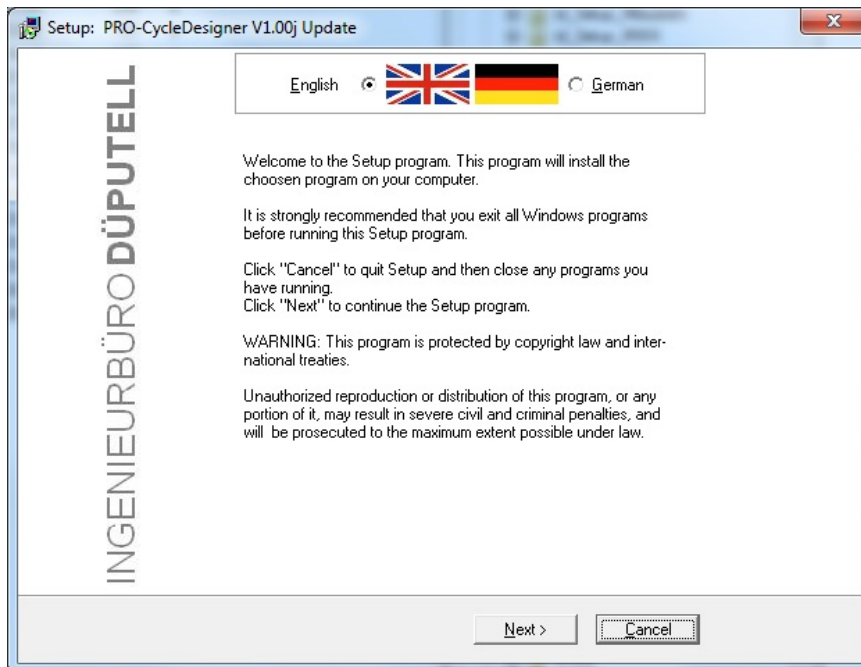
Installation

2. Installation

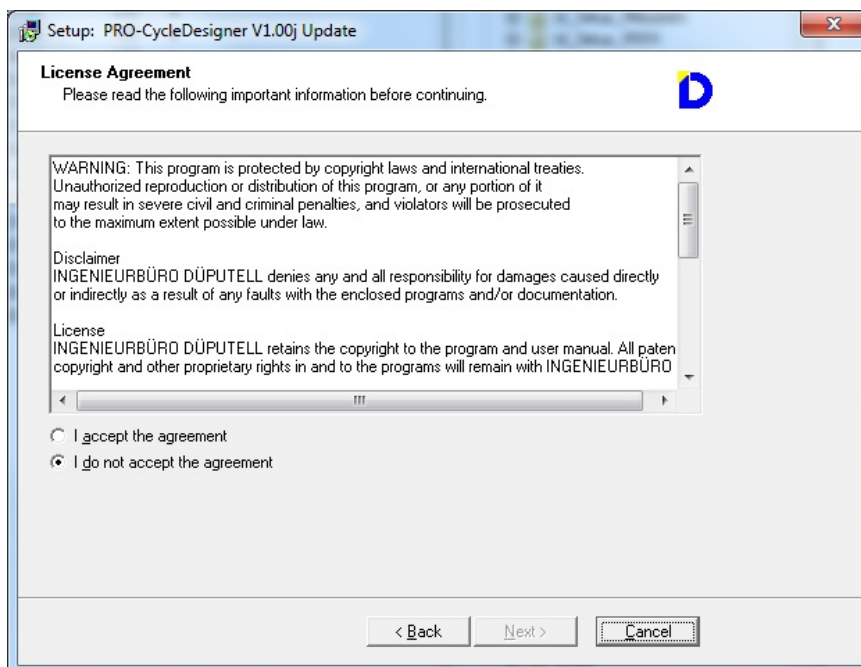
Starting the setup- program : "**SetUp_NC_CycleDesigner_Vx_xx.exe**"

(Vx_xx is representing the corresponding program version: e.g.: V1_00 for version 1.00)

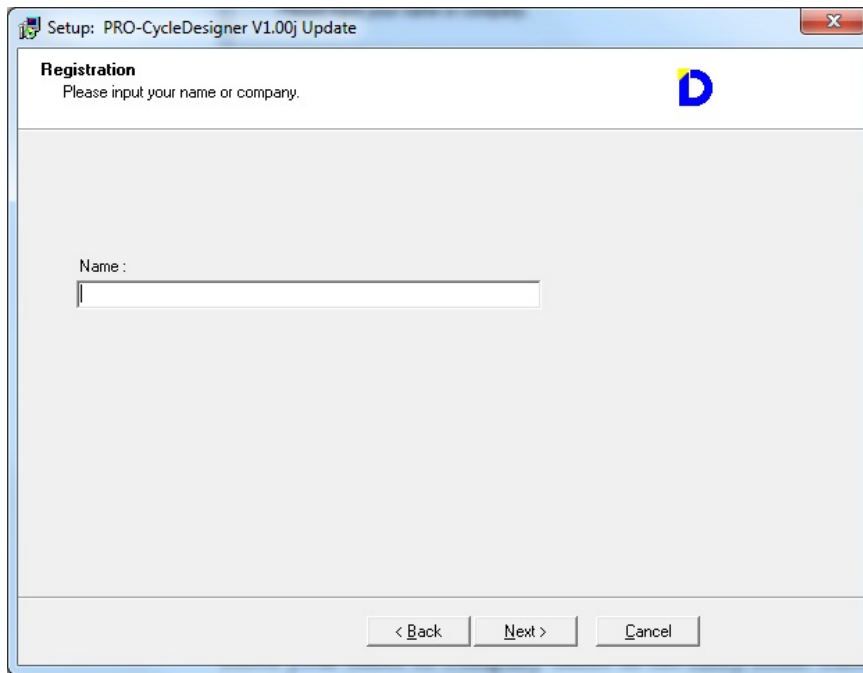
Please follow the setup – programs instruction to install **NC-CycleDesigner** on your computer.



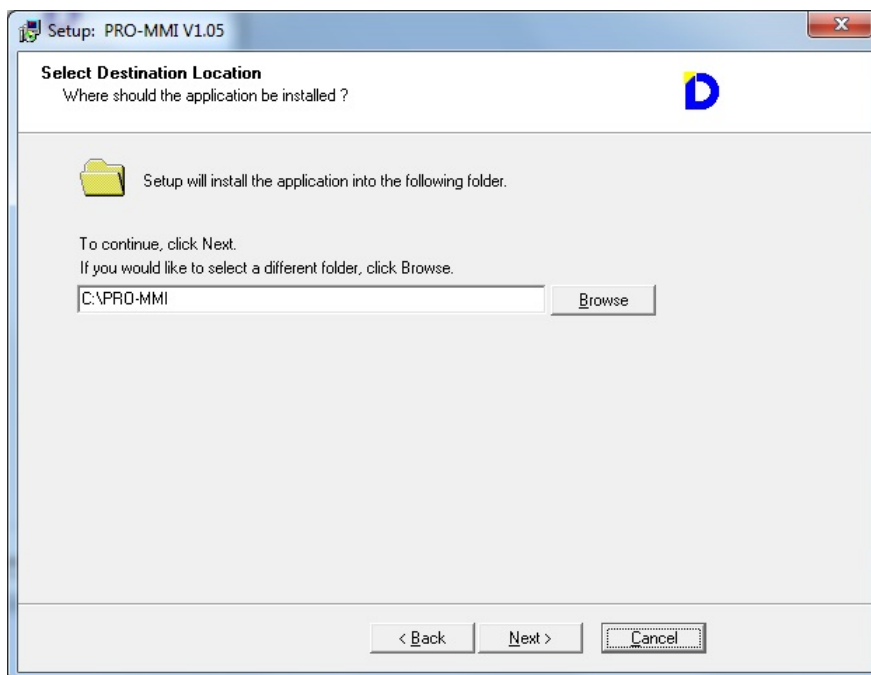
Choose the language on the top of the setup screen.
Then please press the button Next.



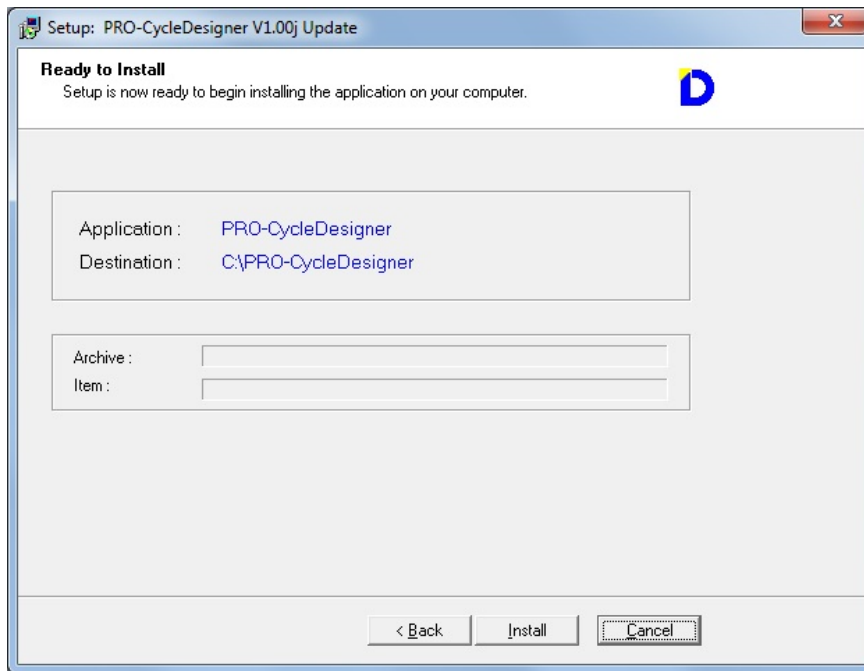
After the "I accept the agreement" the Next-Button can be operated.



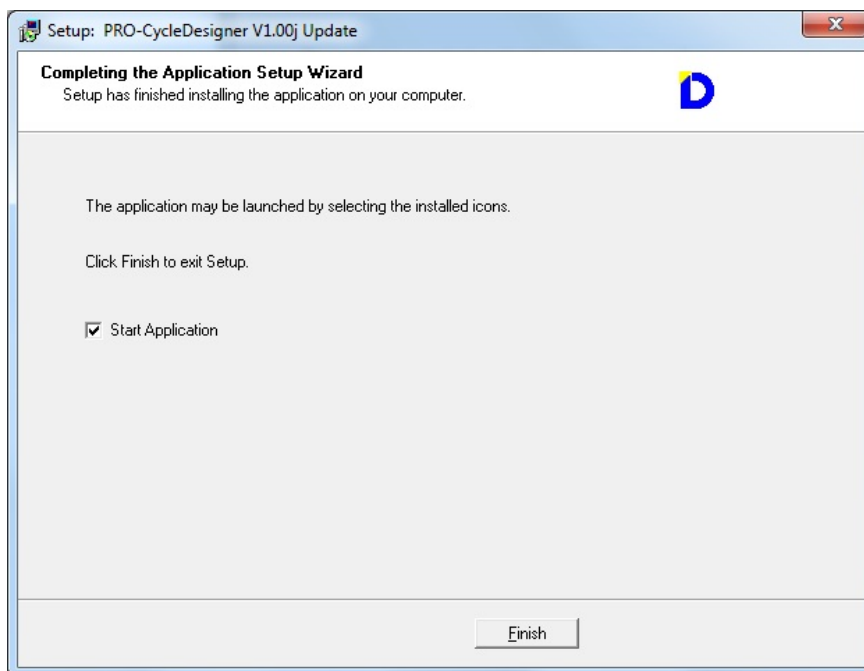
Enter your name or company name in the entry field. Thereafter, the Next button can be pressed.



Thus, the program is installed in the default directory, press the Next button. Optionally, you can specify with the help of the Browse switch to another directory.



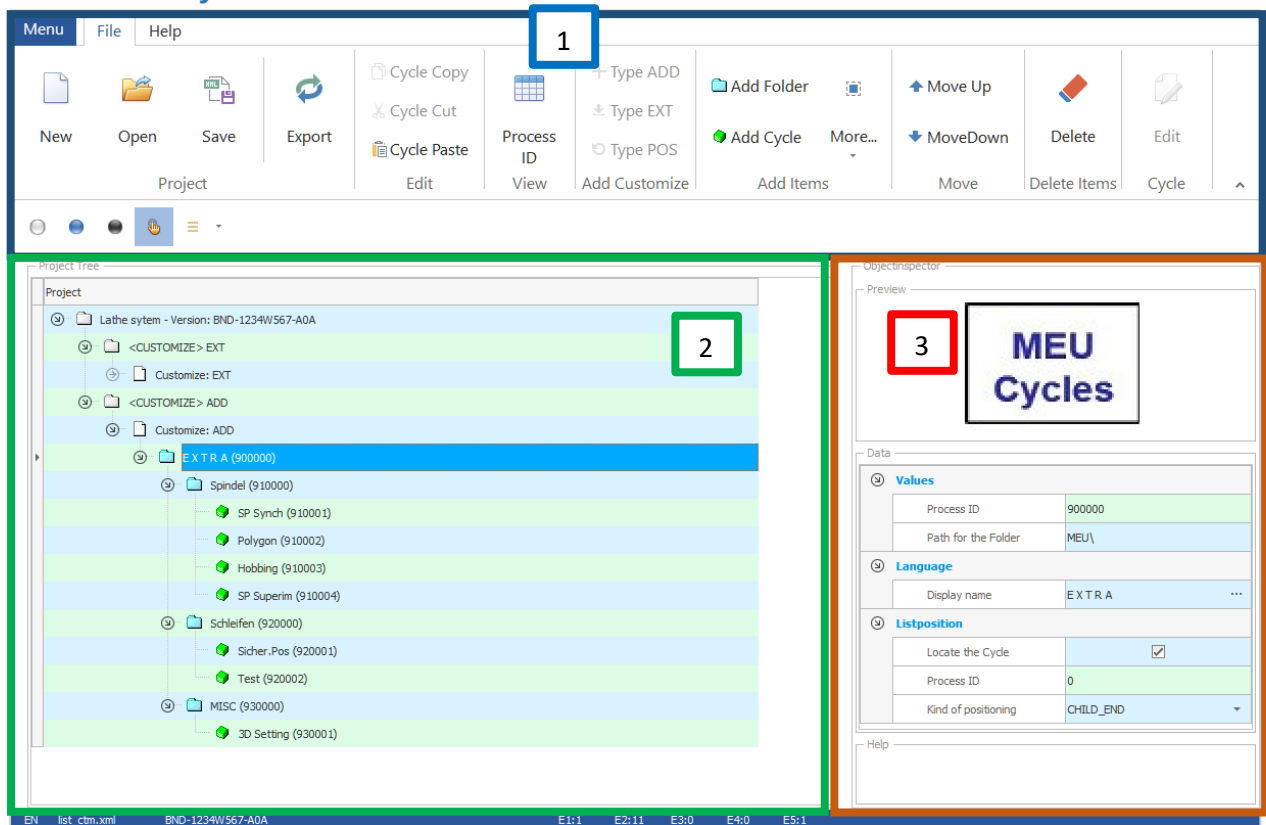
For the final installation of the program on your computer, select the Install button.



After installing the program on your computer, the program can be started immediately. Click on the Finish button.

Screen Layout

2 Screen Layout

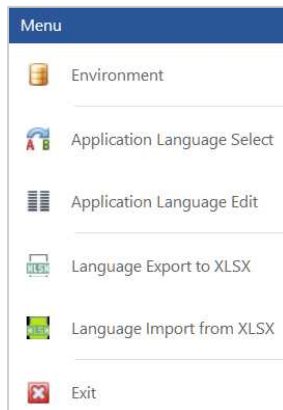


1 Program operation

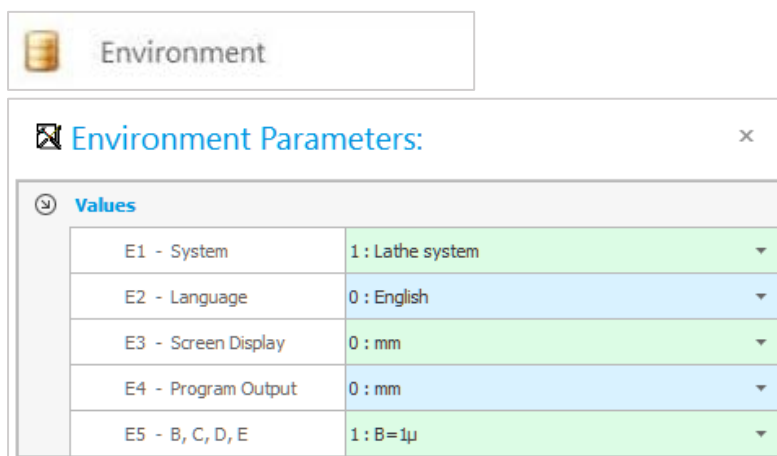
2 Project tree

3 Object inspector

2.1 Menu



3.1.1 Environment Parameters



E1 – System

Select the machine type for which this project is created.

- Lathe System
- Milling System

E2 – Language

Select the language to be displayed for folder and cycle properties and text.

E3 – Screen Display

Setting unit for screen display

- mm / inch

E4 – Program Output

Setting unit for outputting the NC program.

- mm / inch

E5 – B, C, D, E

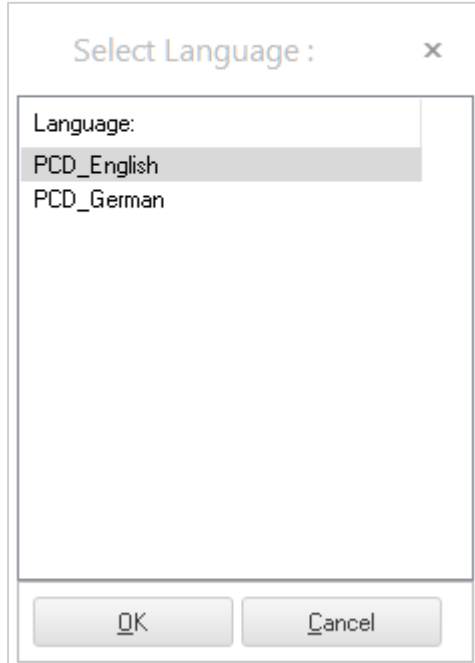
Setting unit for outputting the NC program.

B: 1μ, C: 0.1μ, D: 0.01μ, E: 0.001μ

3.1.2 Application Language Select



Specify the language for the NC-CycleDesigner environment.



3.1.3 Application Language Edit



Here you can edit / translate the NC-CycleDesigner into your own language.
For details of this function, please refer to the Appendix 1: Application Language Edit

3.1.4 Language Export to Excel



All texts of the CICI project can be exported to an external EXCEL-file.
So the translation to other languages can be done easily without running the NC-CycleDesigner
For details of this function, please refer to the Appendix 2: Language Export to EXCEL

3.1.5 Language Import from Excel



After external translation in EXCEL, all texts of the CICI project can be imported from an external EXCEL-file.

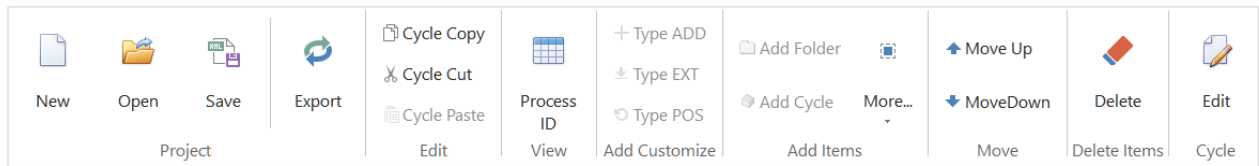
For details of this function, please refer to the Appendix 3: Language Export to EXCEL

3.1.6 Exit



This ends the NC-CycleDesigner.

2.2 File



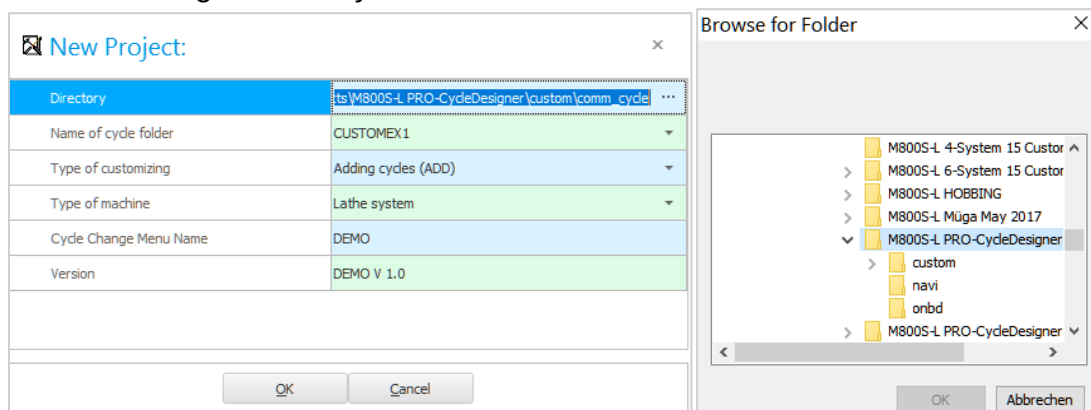
New	Creates a new project
Open	Opens an existing project
Save	Saves the current project
Export	Export the current project to another directory
Cycle Copy	Copies a selected cycle to another place in the project tree
Cycle Cut	Cut a selected cycle.
Cycle Paste	The copied or cut cycle can be inserted to another place in the project tree
Process ID	Shows a list with all used Process ID numbers
Type ADD	Creates a CUSTOMIZE ADD folder
Type EXT	Creates a CUSTOMIZE EXT folder
Type POS	Creates a CUSTOMIZE POS folder
Add Folder	Creates a new Folder in the project
Add Cycle	Creates a new Cycle in the selected Folder
More	Creates a Cycle in a CUSTOMIZE EXT / POS Folder
Move Up	Moves a selected folder or Cycle to another position in the project tree (Up)
Move Down	Moves a selected folder or Cycle to another position in the project tree (Down)
Delete	Deletes a selected Folder or Cycle from the project
Edit	Change to the Cycle edit screen (same as double click on the cycle)

2.2.1 New



Creates a new project.

a) Select the target directory:



b) Select the target location of the project:



This decides the position of the project in the CNC structure

Corresponding folder name	Detail of customization
STANDARDCTM	Cycle data for MITSUBISHI cycle (standard type)
EXPANSIONCTM	Cycle data for MITSUBISHI cycle (expansion type)
CTMCYCLEDATA	Cycle data for customization
CUSTOMEX1	Cycle data for Custom1
CUSTOMEX2	Cycle data for Custom2
CUSTOMEX3	Cycle data for Custom3
CUSTOMEX4	Cycle data for Custom4
CUSTOMEX5	Cycle data for Custom5

Normal	Extend	CYCLE			CUSTOM1	CUSTOM2	CUSTOM3	CUSTOM4	CUSTOM5
--------	--------	-------	--	--	---------	---------	---------	---------	---------

c) Select the type of customizing:

Type of customizing
Adding cycles (ADD)

Three types of customizing are available:

Type ADD	Creates a CUSTOMIZE ADD folder. Default when new project is selected
Type EXT	Creates a CUSTOMIZE EXT folder
Type POS	Creates a CUSTOMIZE POS folder

d) Select the type of target machine type:

Type of machine
Lathe system

- Lathe machine (list_ctm.xml)
- Milling machine (list_ctm_m.xml)

This setting is necessary to create the correct name of the project control file.

e) Define the name to be displayed on the menu button

Cycle Change Menu Name
DEMO

f) Define the version name for the new project:

Version
DEMO V 1.0

2.2.2 Open



Open an existing project.

Select the source directory of the existing project and select the project main XML file.

The screenshot displays the 'Öffnen' (Open) dialog box in the PRO-CycleDesigner V1.02g software. The dialog shows the file explorer path: `<< custom > comm_cycle > EXPANSIONCTM`. The file list on the right shows the following files and their modification dates:

Name	Änderungsdatum
_Backup	18.05.2018 10:36
Blue	09.06.2018 12:03
Gray	09.06.2018 12:03
MEU	26.07.2018 08:51
list_ctm.xml	26.07.2018 09:05

The main application window is titled 'PRO-CycleDesigner V1.02g - [C:\MELCNC\NCT2P\projects\M800S-L PRO-CycleDesigner\custom\comm_cycle\EXPANSIONCTM\list_ctm.xml]'. The interface includes a menu bar (Menu, File, Help) and a toolbar with various icons for file operations (New, Open, Save, Export, Cycle Copy, Cycle Cut, Cycle Paste, Process ID, Add Folder, Add Cycle, Move Up, Move Down, Delete, Edit). The main workspace is divided into three panels:

- Project Tree:** Shows a hierarchical view of the project structure. The selected item is 'EXTRA (900000)'.
- ObjectInspector:** Displays the properties of the selected item. The 'Preview' section shows a box labeled 'MEU Cycles'.
- Data:** Contains a table of values for the selected item.

The 'Data' panel shows the following values:

Values	
Process ID	900000
Path for the Folder	MEU\
Language	EXTRA
Listposition	
Locate the Cycle	☒
Process ID	0
Kind of positioning	CHILD_END

The status bar at the bottom shows the current file 'list_ctm.xml' and the project name 'BND-1234W567-A0A'.

2.2.3 Save



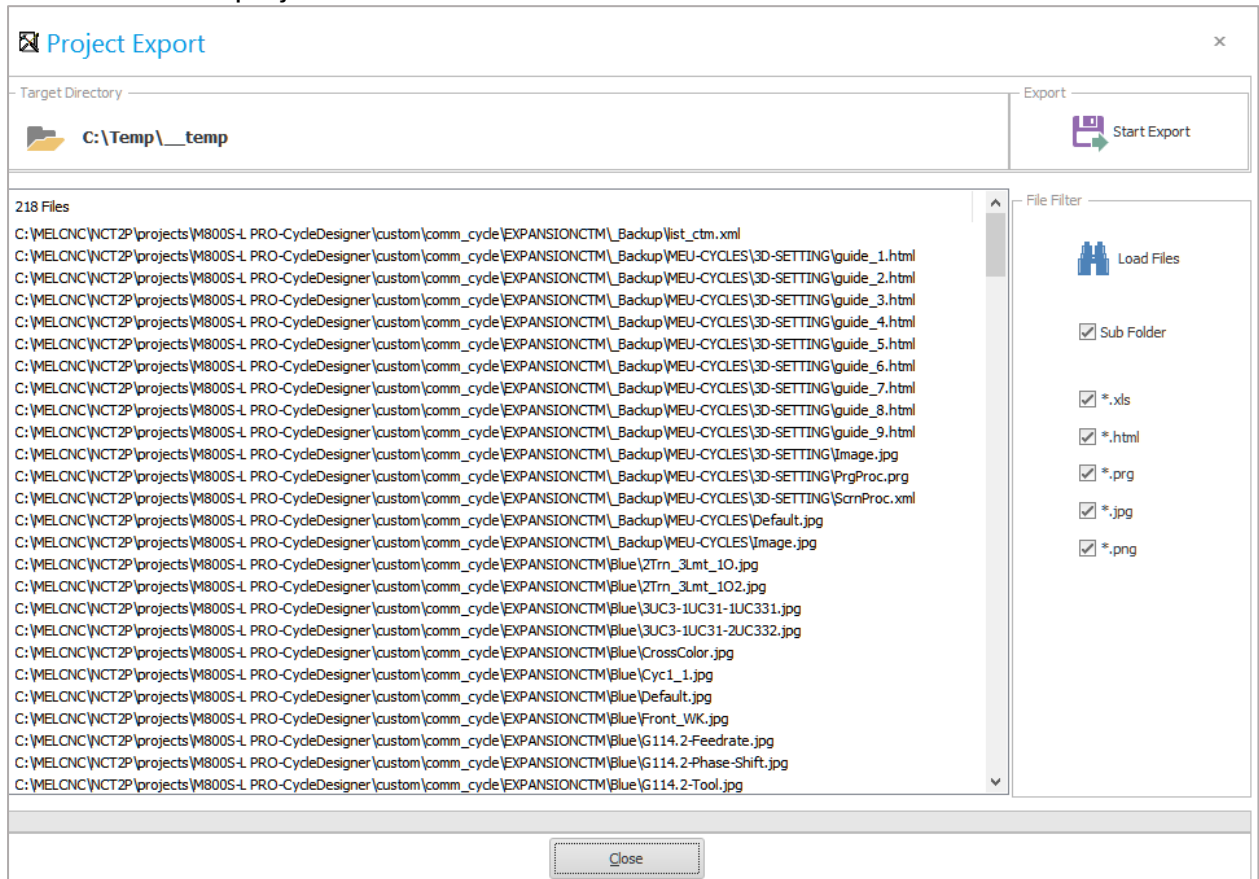
Save the actual project.

By pressing this button, the actual project is saved at the original path.

2.2.4 Export



Save the actual project to another location.



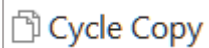
a) Select the target directory in the network by clicking on the folder symbol



b) Select the file types to export

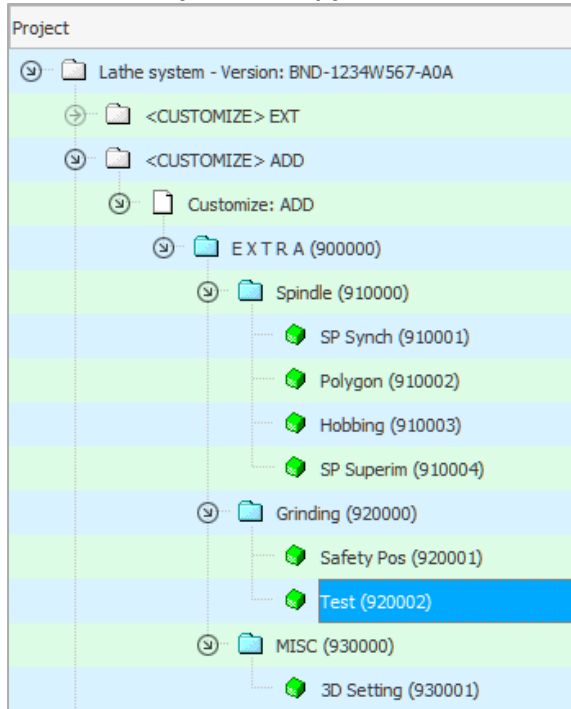
c) Press StartExport

2.2.5 Copy a Cycle

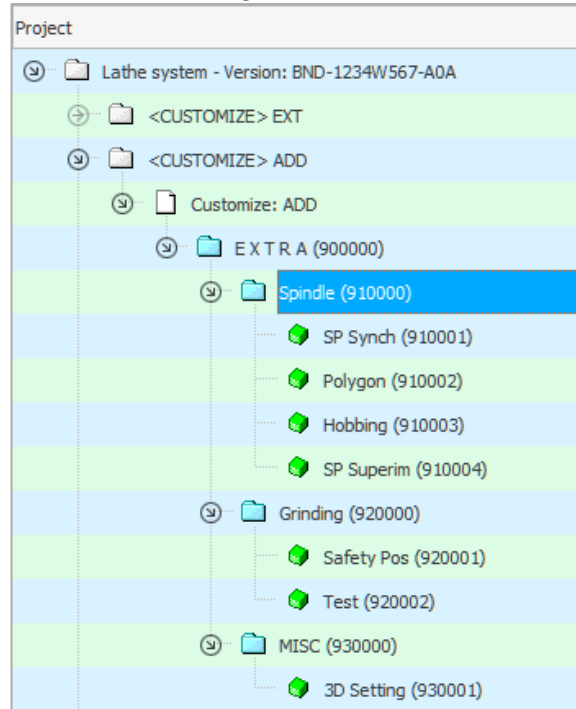


To copy a Cycle you can use this button or the context menu with a mouse right click.

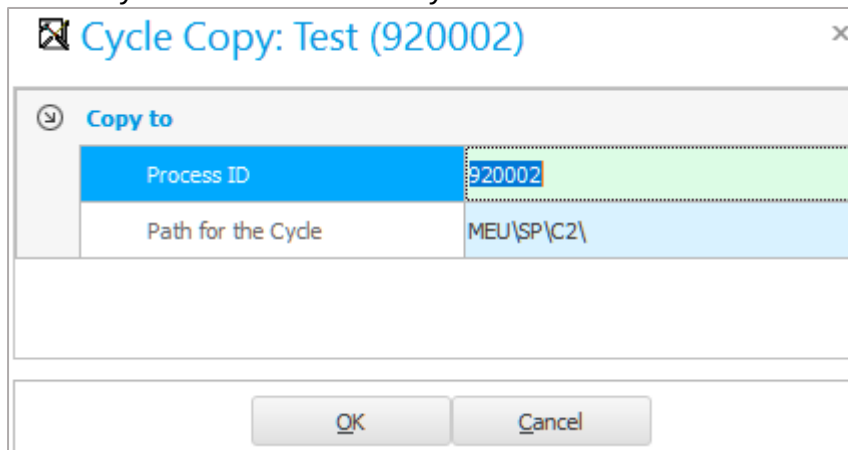
Select the Cycle to copy



Select the target Folder

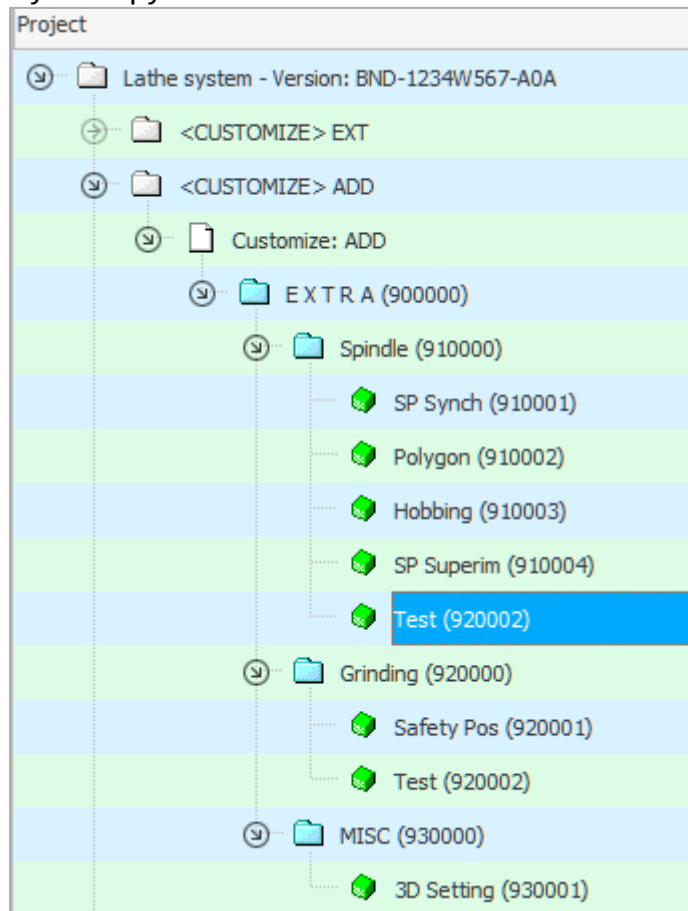


Press Cycle Paste or select Cycle Paste from the context menu.

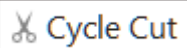


Specify the new Process ID (according to the target folder) and modify the storage path of the copied Cycle, if needed.

Cycle copy finished

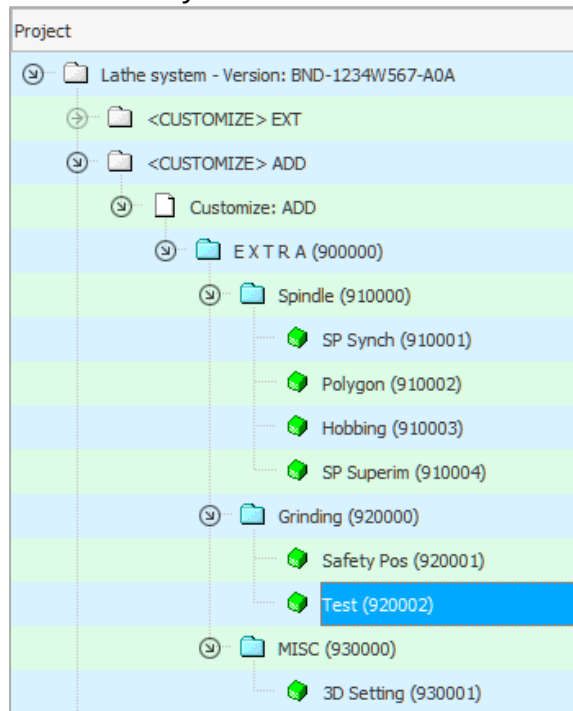


2.2.6 Cut a Cycle

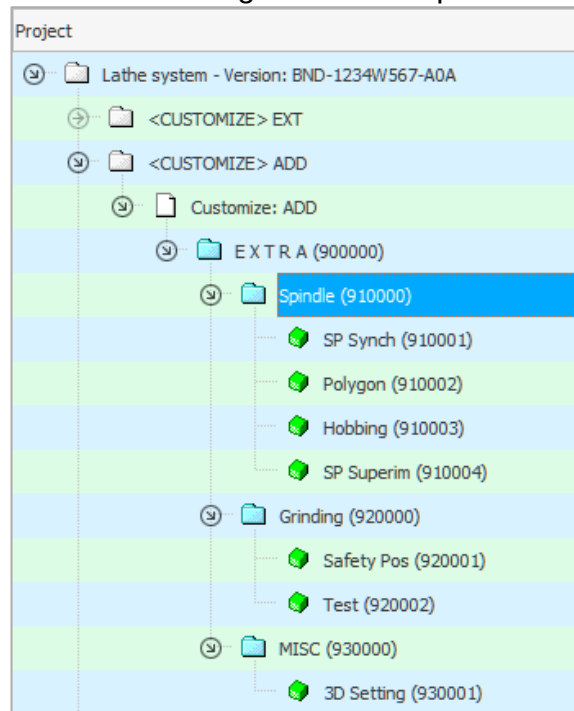


To cut and copy a Cycle you can use this button or the context menu with a mouse right click.

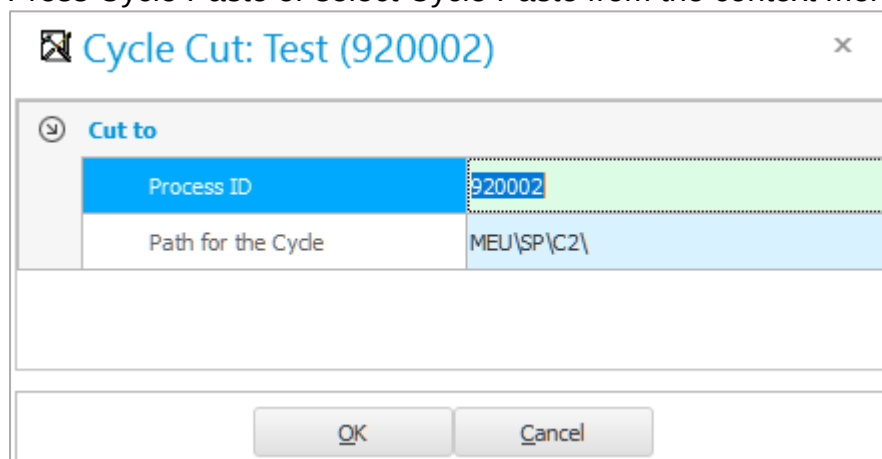
Select the Cycle to cut



Select the target Folder for paste

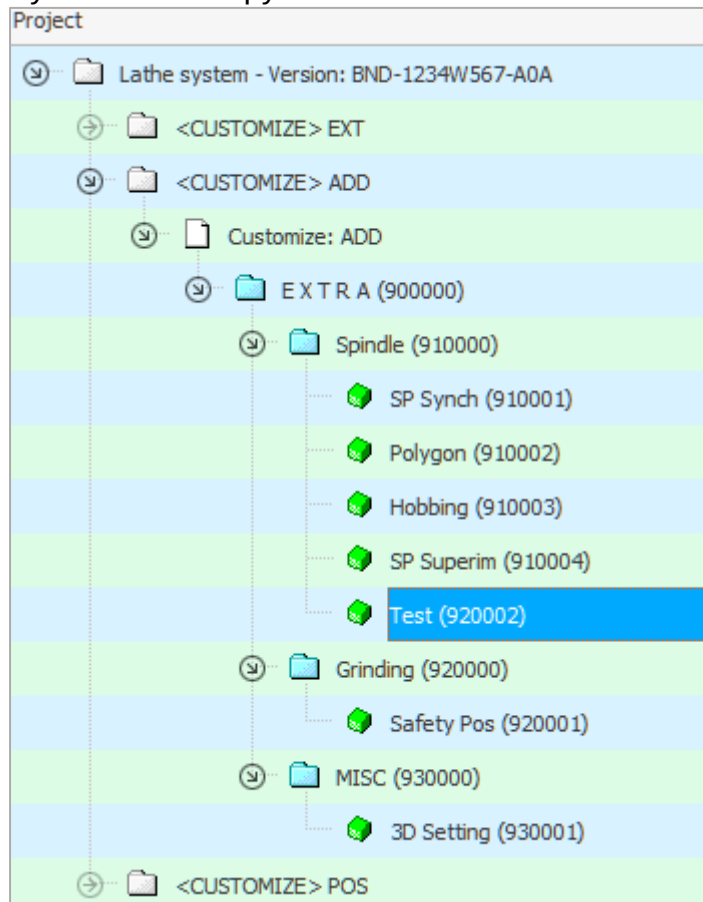


Press Cycle Paste or select Cycle Paste from the context menu.



Specify the new Process ID (according to the target folder) and modify the storage path of the cut and copied Cycle, if needed.

Cycle cut and copy finished



2.2.7 Process ID's



Shows a list of already used custom process ID's (≥ 900000).

You can see an overview of your current project including the information's of

- Type
- Name
- Path
- Process ID

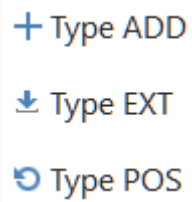
Info PCS_ID: ×					
Drag a column header here to group by that column					
#	Type	Name	Path	Process ID	
1	Folder	EXTRA	MEU\	900000	
2	Folder	SPINDLE	MEU\SP\	910000	
3	Cycle	SP SYNCH	MEU\SP\CA\	910001	
4	Cycle	POLYGON	MEU\SP\CB\	910002	
5	Cycle	HOBGING	MEU\SP\CC\	910003	
6	Cycle	SP SUPERIM	MEU\SP\CD\	910004	
7	Cycle	TEST	MEU\SP\C2\	920002	
8	Folder	GRINDING	MEU\GR\	920000	
9	Cycle	SAFETY POS	MEU\GR\C1\	920001	
10	Folder	MISC	MEU\MISC\	930000	
11	Cycle	3D SETTING	MEU\MISC\3D-SETTING\	930001	
11					
Close					

You can extract the details all items in the list.

e.g. Select by Type (Folder).

#	Type	Name	Path	Process ID
1	Folder	EXTRA	MEU\	900000
2	Folder	SPINDLE	MEU\SP\	910000
8	Folder	GRINDING	MEU\GR\	920000
10	Folder	MISC	MEU\MISC\	930000

2.2.8 Type ADD, EXT, POS



There are three types of customizing

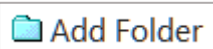
- ADD Add new customize Folders and Cycles
- EXT Extract Cycle groups out of the standard ICI to be available in the customized project.
- POS After extracting standard cycle-groups you can change the position of each cycle group or single cycles to any other position in your project.
- Customized cycle-groups or single cycles can be moved as well into the standard cycle-groups.

[NOTE]: These functions are available only when the project is using the “Normal” and “Extended” menus.

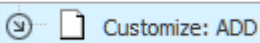
Only the available cycle-groups in “Normal” and “Extended” can be used with this functionality.

Details about the standard process IDs are listed in APPENDIX 4

2.2.9 Add Folder



A Folder can be added only in Customize: ADD



New Folder: ✕

View Process ID

Values

Process ID	900000
Path for the Folder	DEMO1
Display name	Demo 1

Listposition

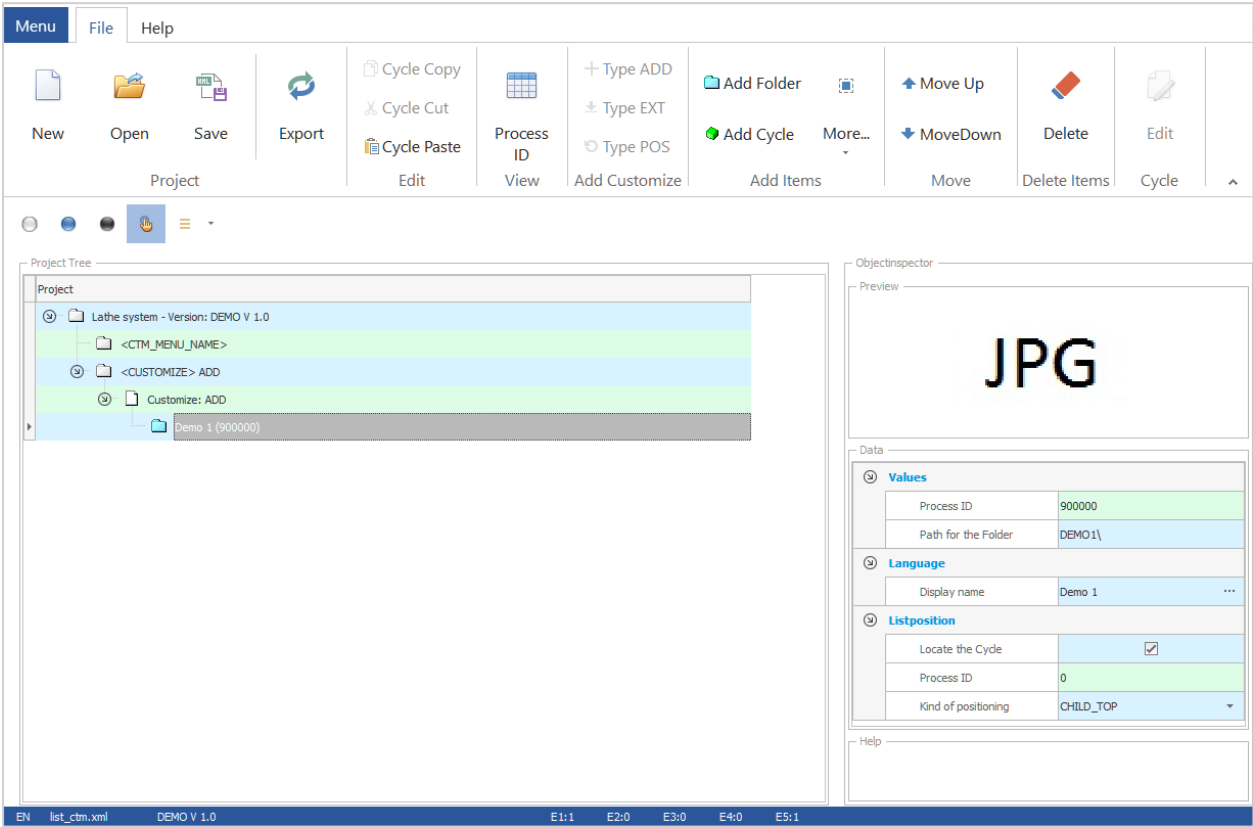
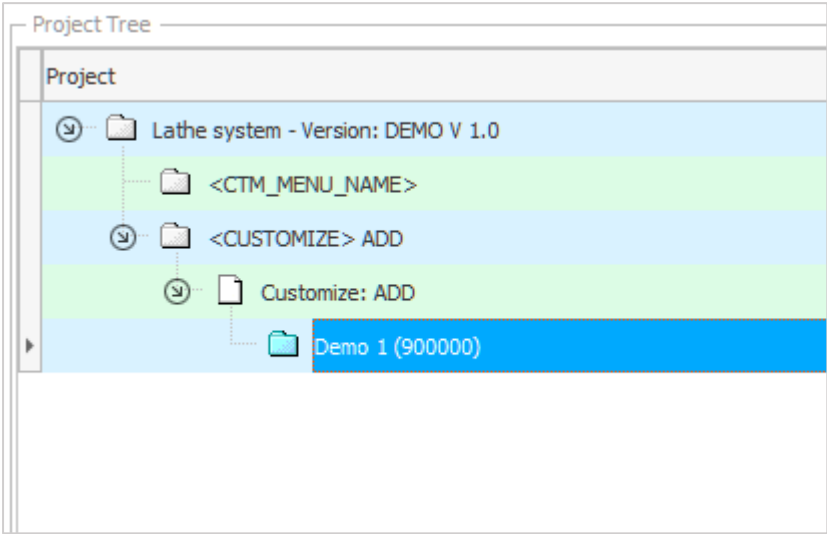
Locate the Folder	☒
Process ID	0
Kind of positioning	CHILD_TOP ▾

OK

Cancel

Process ID	Set the customize Process ID (≥ 900000).
Path for the Folder	Set the path, where the Folder should be stored.
Display Name	Set the name to be displayed in the customized Folder selection.
ListPosition	Entries necessary ONLY, when the Folder is in the ROOT directory.
Locate the Folder	Activate the property.
Process ID	Set this ID to "0"
Kind of positioning	Set the position, this Folder should be set : CHILD_TOP, CHILD_END, PREV, NEXT

New Folder created



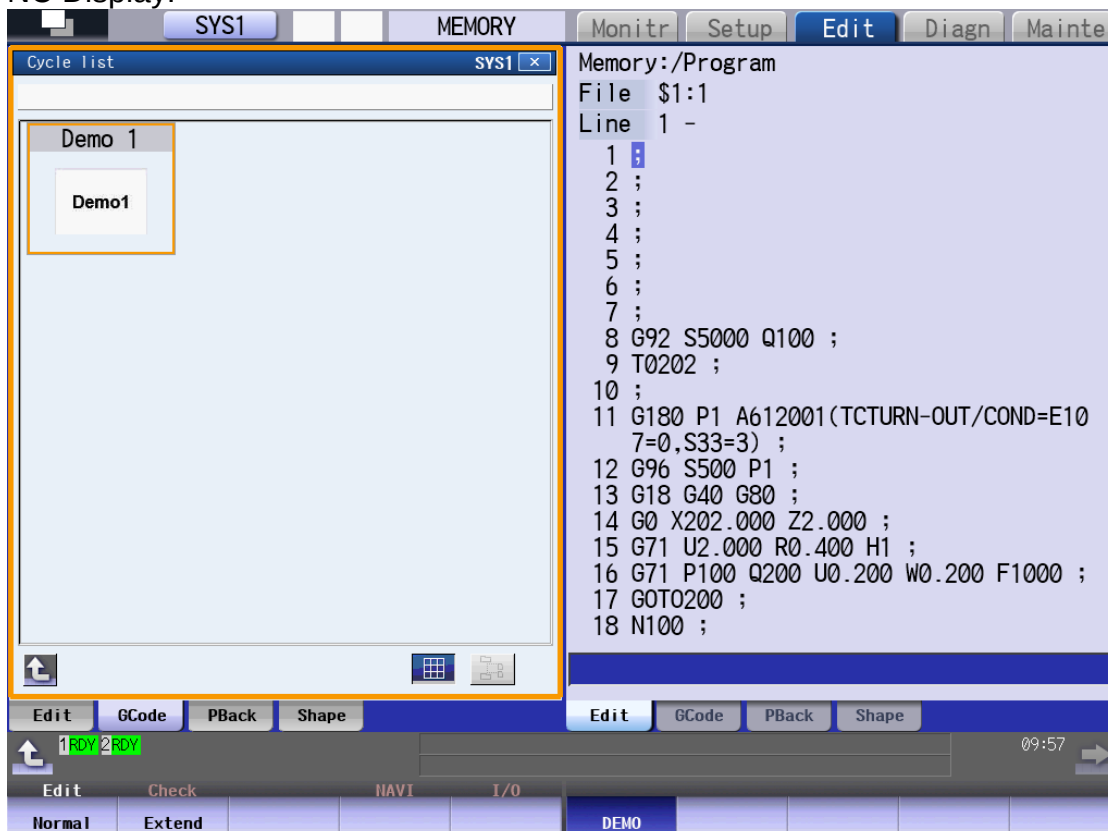
2.2.9.1 Change default picture



With right mouse click, you can select another picture to exchange the default picture.



NC Display:



2.2.10 Add Cycle

Add a Cycle to a Folder:

Select a Folder where a Cycle should be added.

Customize: ADD

Demo 1 (900000)

New Cycle:

View Process ID

Values

Process ID	900001
Path for the Cycle	DEMO1\Cycle1
Display name	Cycle A

Listposition

Locate the Cycle	☐
Process ID	
Kind of positioning	

Process

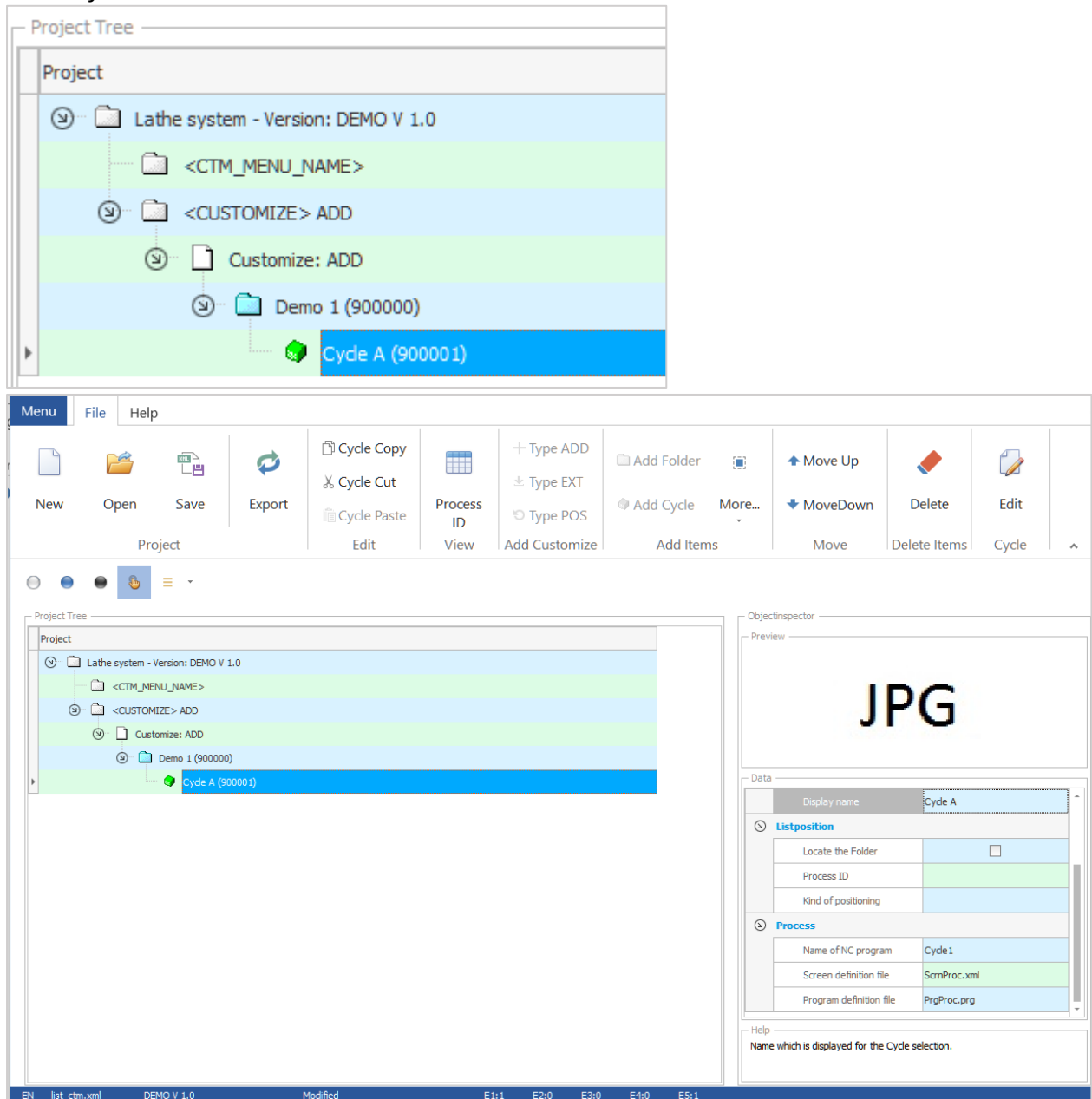
Name of NC program	Cycle1
Screen definition file	ScrnProc.xml
Program definition file	PrgProc.prg

OK **Cancel**

Process ID	Set the customize Process ID (≥ 900000).
Path for the Cycle	Set the path, where the Cycle should be stored.
Display Name	Set the name to be displayed in the customized Cycle selection.
ListPosition	Entries necessary ONLY, when the Cycle is in the ROOT directory.
Locate the Folder	Activate the property.
Process ID	Set this ID to "0"
Kind of positioning	Set the position, this Folder should be set : CHILD_TOP, CHILD_END, PREV, NEXT
Name of NC program	Choose a the name of the NC program which will be generated from this Cycle
Screen definition file	This file defines the information regarding the guidance and the setting items displayed on the Cycle edit window. DO NOT CHANGE !

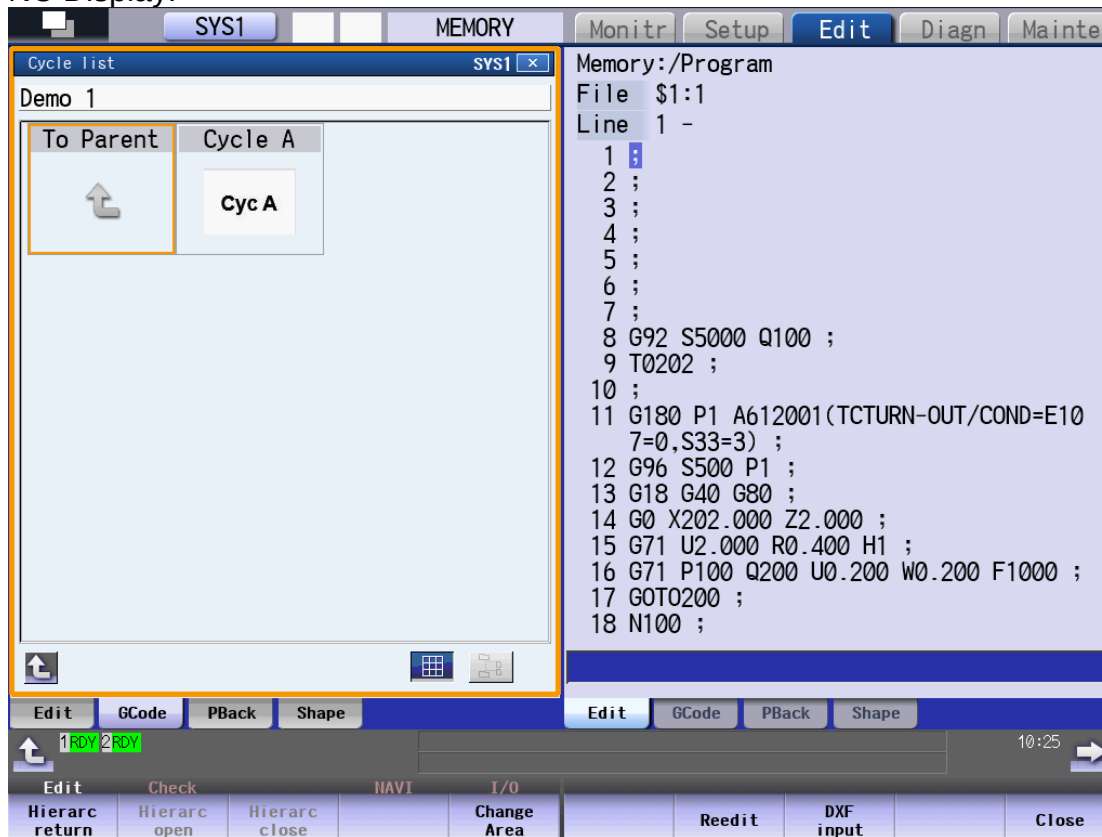
Program definition file	This file defines the format of the machining program to be output. DO NOT CHANGE !
-------------------------	--

New Cycle is created



Change the default picture in the same way as for Folder.

NC Display:



2.2.11 More...

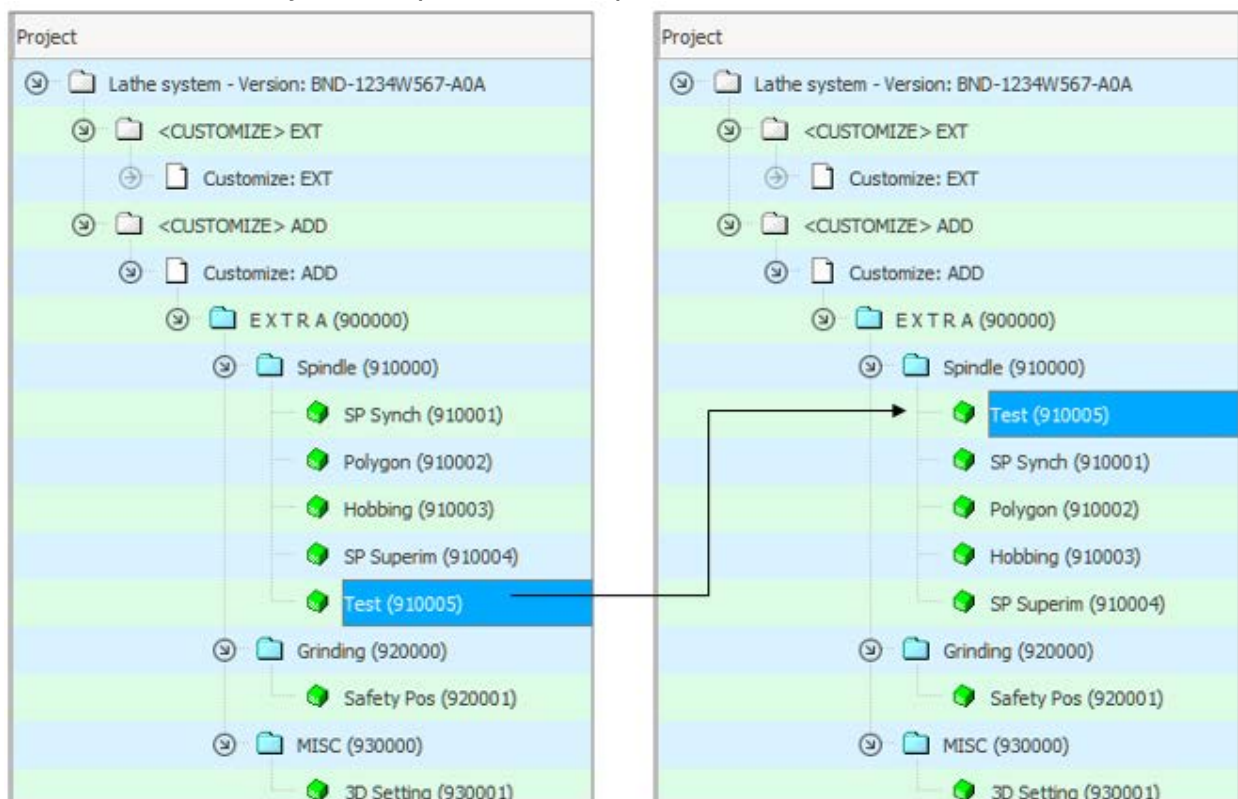


This button is used for adding EXT and POS in Customize operation (see 3.2.1).

2.2.12 Move Up / Move Down



Move a Folder or a Cycle inside the same Hierarchy.
Select a Folder or Cycle and press Move Up or Move Down.

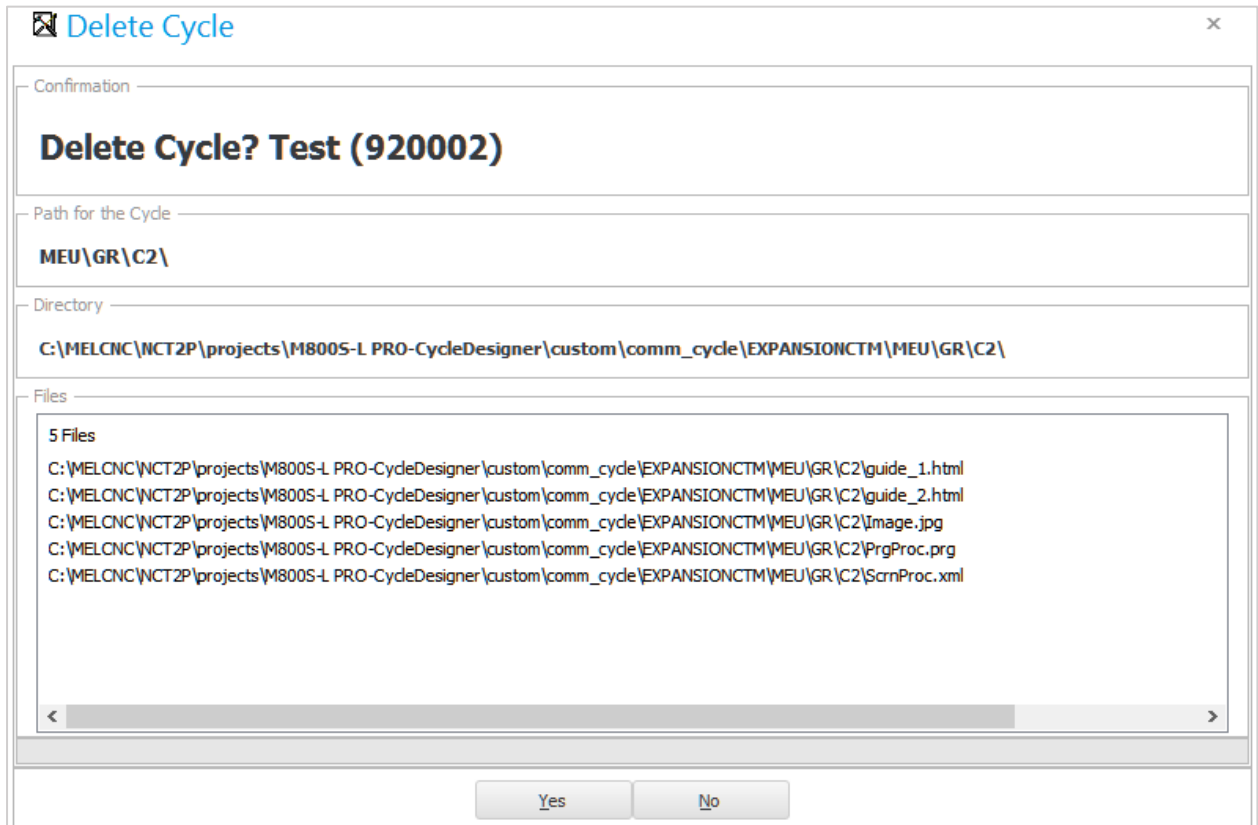


2.2.13 Delete



Deletes a selected Folder or Cycle.

All files which will be deleted are shown in the delete window.



2.2.14 Edit

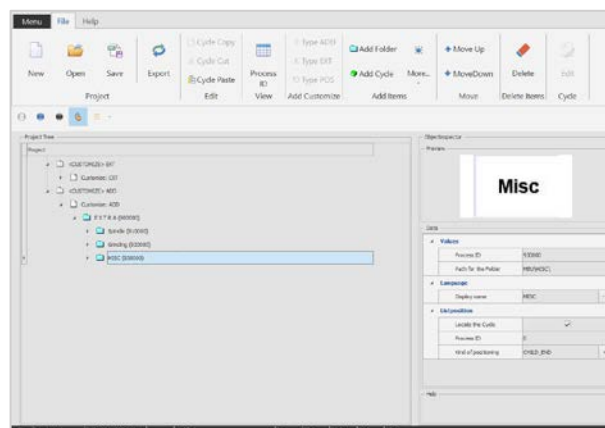
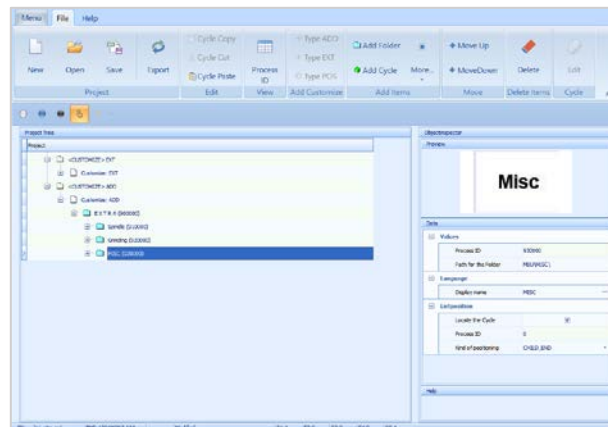
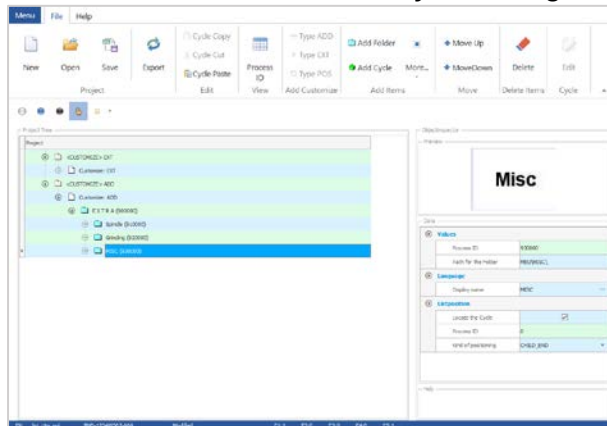


Opens the edit window for a selected Cycle. Same operation as a double click on a Cycle.

2.2.15 Theme color selection



The theme color of the NC-Cycle Designer can be selected.



2.2.16 Touch screen mode

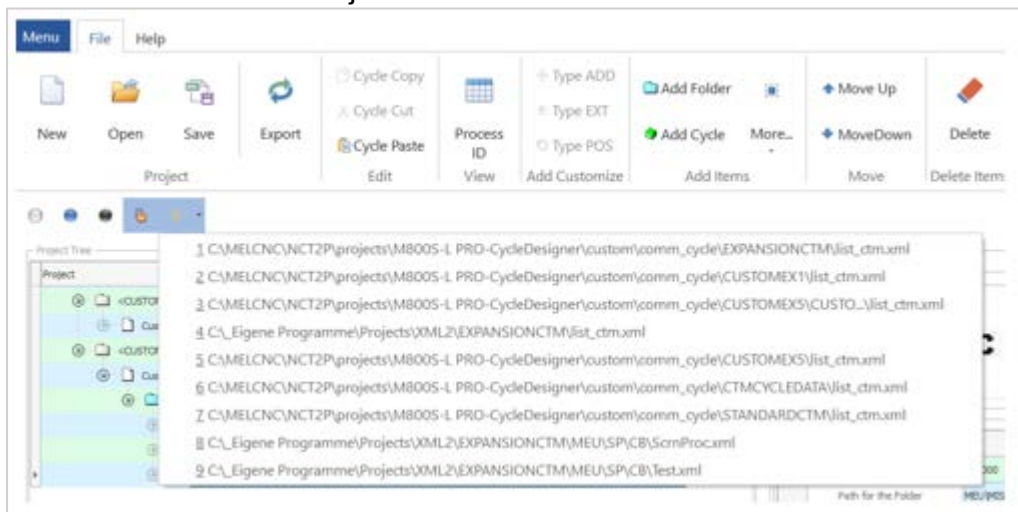


Switch the size of the display between normal operation (small display) to touch screen operation (bigger display).

2.2.17 Recent projects



Shows the last used Projects.



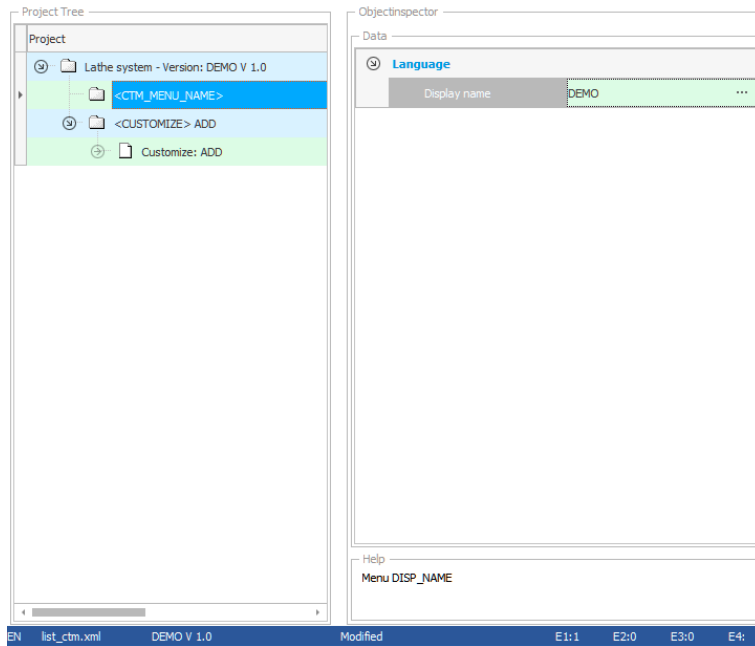
2.3 Help

3. Sample Project

3.1 Screen Layout

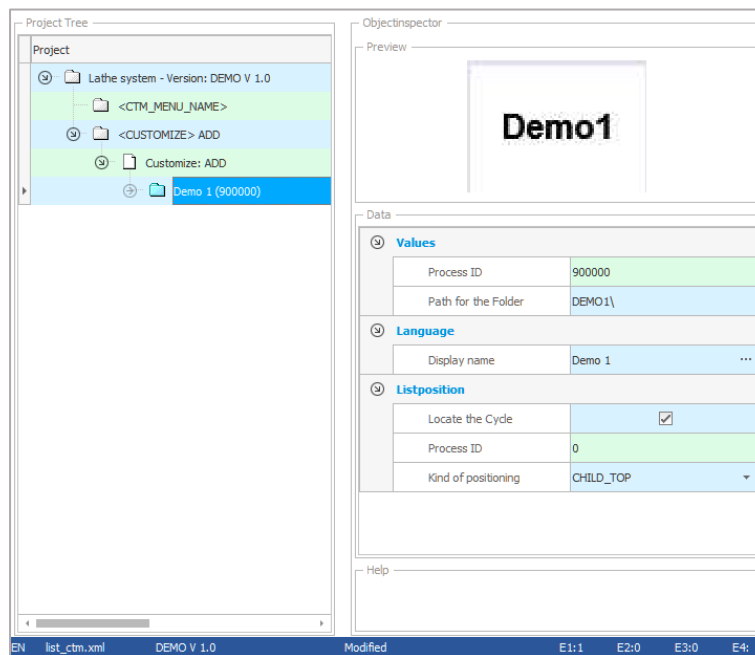
3.2 Create new Project

Refer to “**2.2.1 New**” for details



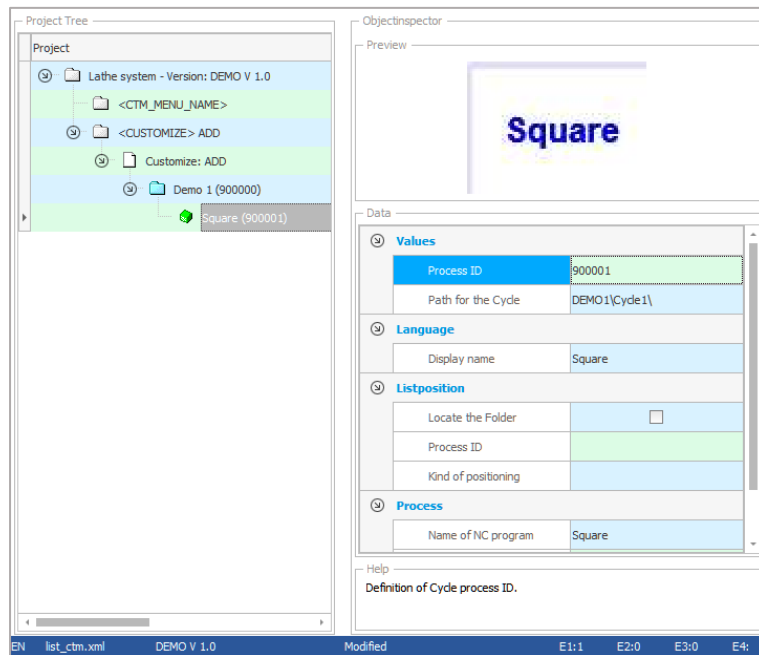
3.3 Create Folder

Refer to “**2.2.9 Add Folder**” for Details



3.4 Create Cycle

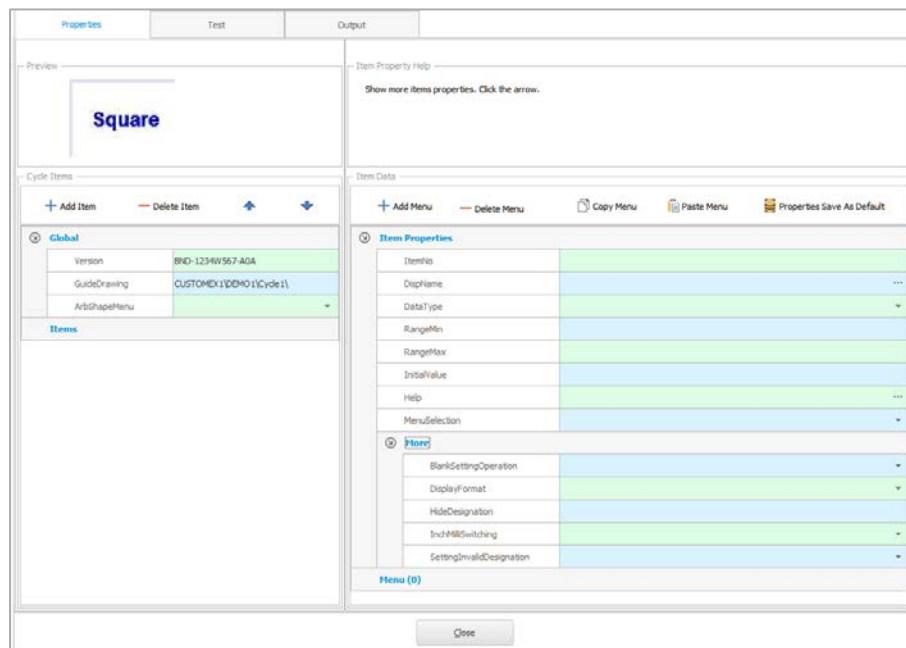
Refer to “2.2.10 Add Cycle” for details



3.4.1 Cycle edit window - Properties

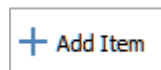
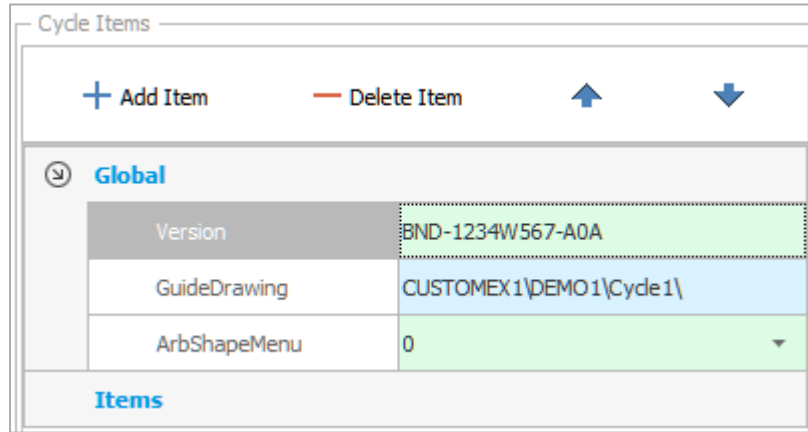
Every Cycle have several Items, which describes the function and contains the value for the Cycle.

Click on EDIT button or double click on the Cycle in the project tree to open the Cycle edit window.

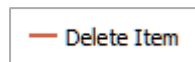


Properties	Preview	Shows the selected graphic for the Cycle
	Cycle Items	Shows the Item list of the Cycle
	Item property Help	Shows some help texts of each item
	Item Data	Shows the Item details

3.4.1.1 Cycle Items



Add a new Item to the Item list.



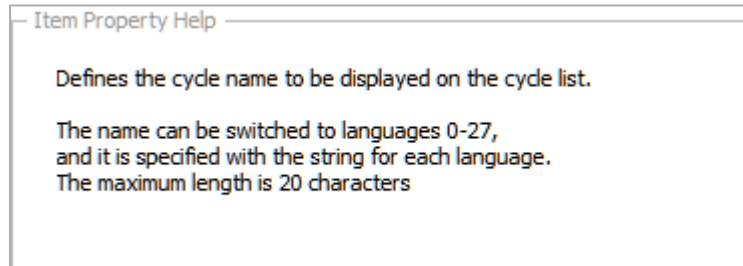
Deletes a selected Item from the Item list.



Moves a selected Item in the Item list up and down.

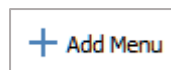
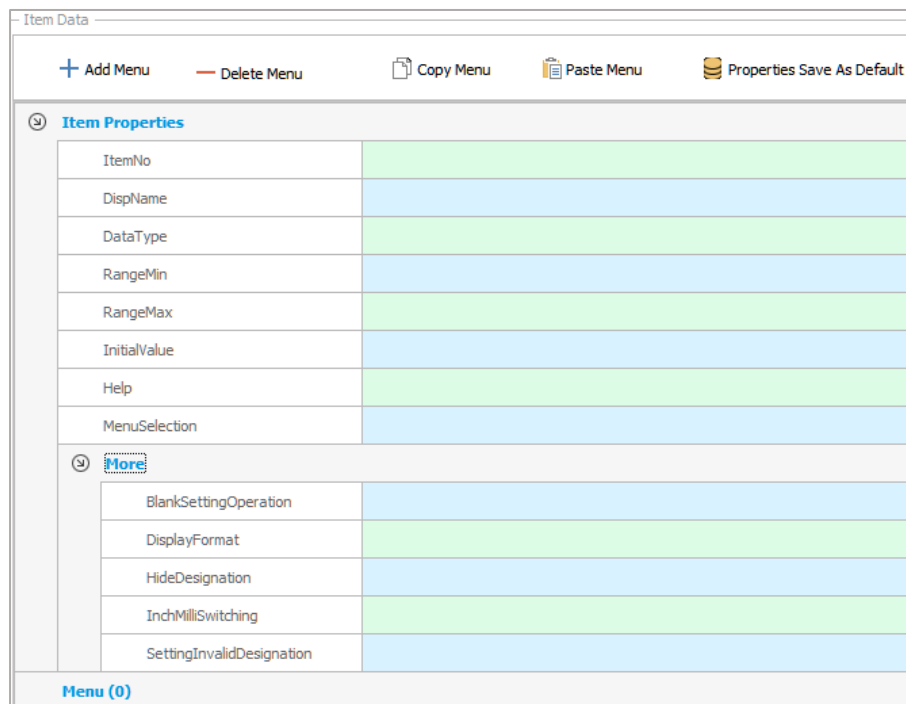
Version	Edit / Show the version of this Cycle
Guide Drawing	Edit / Shows the guide drawings path. There the Help-HTML files are stored. Default path is the path where the Cycle is located.
ArbShapeMenu	Enables / Disables the Arbitrary Shape menu key for the Cycle
Items	Shows the Item list overview

3.4.1.2 Item Property Help

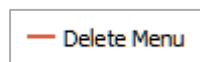


Shows a help text for each selected property

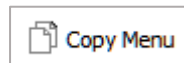
3.4.1.3 Item Data



Adds a menu to the Item.



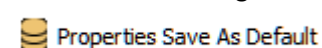
Delete a selected menu item



Copy the created menu to the HD for later usage possibility



Paste an existing menu from the HD to the Item



Safe the actual setting properties of the Item as default. All next new Items will get automatically the properties.

ItemNo	Count up the number of Items
DispName	Defines the cycle name to be displayed on the cycle list. The name can be switched to languages 0-27, and it is specified with the string for each language. The maximum length is 20 characters
DataType	Defines the data type. 0: Integer 1: Real data type
RangeMin	Defines the minimum value.
RangeMax	Defines the maximum value.
InitialValue	Defines the Initial value when the Cycle is opened.
Help	Defines the help strings to display on the screen. The help can be switched to languages 0-27, and it is specified with the string for each language. Max. 3 lines with each 38 characters
MenuSelection	Defines the presence or absence of menu selection. 0: Menu selection invalid 1: Menu selection valid



BlankSettingOperation	Defines the operation when a program is output while the data is blank. 0: Same operation as when the setting is omitted 1: Error 2: Output the data to the program as '?' 3: Data is not output to the program
DisplayFormat	Specifies the display format of setting items. Details to be specified differ depending on the data type. Integer: 0 = displays in decimal, 1 = displays in hex, 2 = displays in binary Real data type: digits of integer part, digits of decimal part in the format of n.m (n = digits of integer part, m = digits of decimal part)
HideDesignation	Defines whether to show or hide the setting item of each data. Specify the hide condition e.g. S1=5
InchMillSwitching	Specifies whether to switch display digits of setting items to inch or millimeter This is specified when data type is real data type. 0: Not switch 1: Switch
SettingInvalidDesignation	Specifies the initial values of setting items (the values originally set when a new cycle is inserted). Details to be specified differ depending on the data type. Integer and real data type: specify the value

 Add Menu


New Menu: 1/3
×

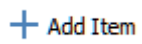
Menu No	
Menu Name	
Menu Value	

OK
Cancel

Menu (2)					
No	Name	Value	1	Menu 1	...
No	Name	Value	2	Menu 2	...

Menu No	Select the menu key of this menu item. Setting range 1 to 12.
Menu Name	Set the display name of the menu item. Max. 2 * 7 characters.
Menu Value	Set the numeric value to be returned to the cycle after pressing the menu key.

3.4.2 Add Items

 + Add Item

Add 2 Items two the Cycle

 **New Item: 1** ×

Item No	1
Item Name	Length of Rectangle

OK Cancel

 **Item Properties**

ItemNo	1
DispName	Length of Rectangle
DataType	1
RangeMin	0.000
RangeMax	99999.999
InitialValue	100.000
Help	Input the length of the Rectangle. Setting Range 0.001 to 99999.999
MenuSelection	0

 **More**

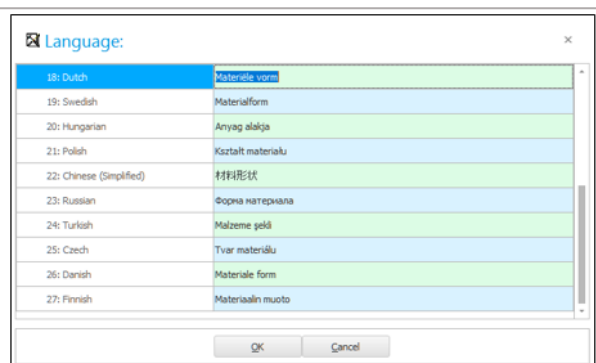
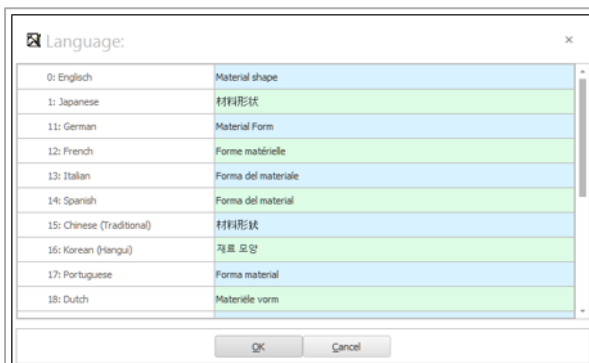
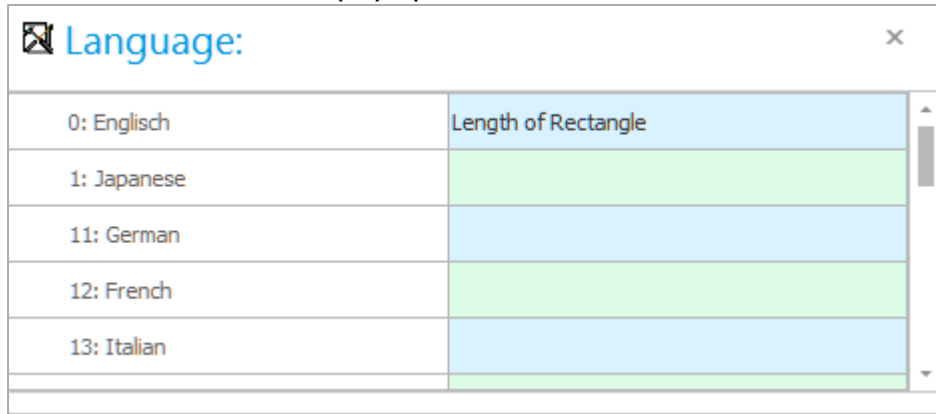
BlankSettingOperation	0
DisplayFormat	5.3
HideDesignation	
InchMilliSwitching	0
SettingInvalidDesignation	0

Text input

All texts can be edited in different languages.

DispName	Length of Rectangle	...
----------	---------------------	-----

Click on the three dots (...) opens the text edit window.



All textes created with the CycleDesigner can be translated inside this tool.
So the displayed text on the CNC Cycle Window can be displayed in the
language determined by the language parameter “#1043 lang”


New Item: 2
✕

Item No	2
Item Name	Height of Rectangle

OK
Cancel

Item Properties	
ItemNo	2
DispName	Height of Rectangle
DataType	1
RangeMin	0.000
RangeMax	99999.999
InitialValue	50
Help	Input the height of the Rectangle. Setting Range 0.001 to 99999.999
MenuSelection	0
More	
BlankSettingOperation	0
DisplayFormat	5.3
HideDesignation	
InchMilliSwitching	0
SettingInvalidDesignation	0

3.4.2 Cycle edit window – Test

This screen shows the result of the Items input

Properties Test Output

☐ Blue ☒ Gray

HTML:

Input

Length of Rectangle	100.000
Height of Rectangle	50

Input the length of the Rectangle. Setting Range 0.001 to 99999.999

100.000

Menu Level 1

< [] [] [] [] [] [] Clear [] fix [] >

Close

Select the display theme of the HTML files (Blue or Gray)

Refer to:

(PR) #11060 Screen theme color

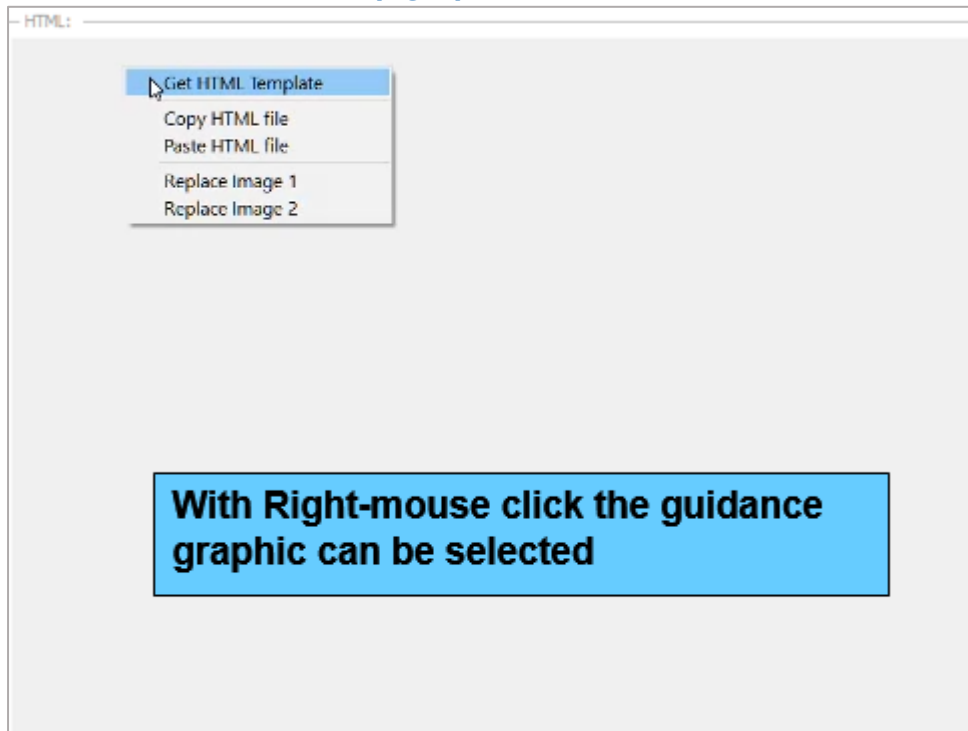
Select the screen theme colors.

This selection affects the colors of the entire screen.

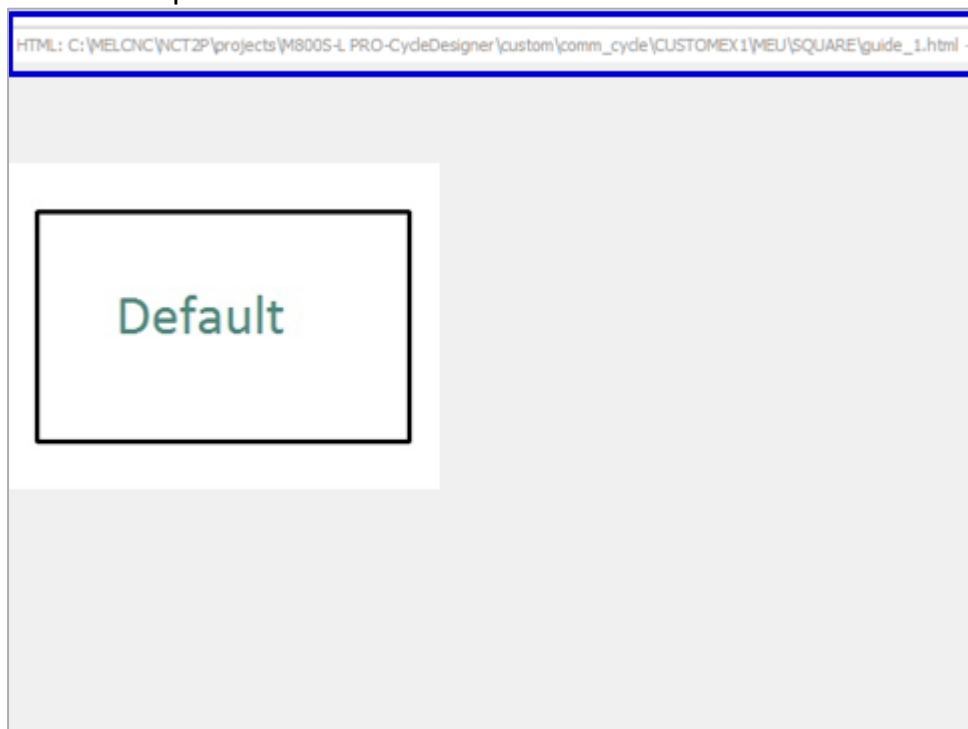
0: Standard colors (gray tone)

1: Blue tone

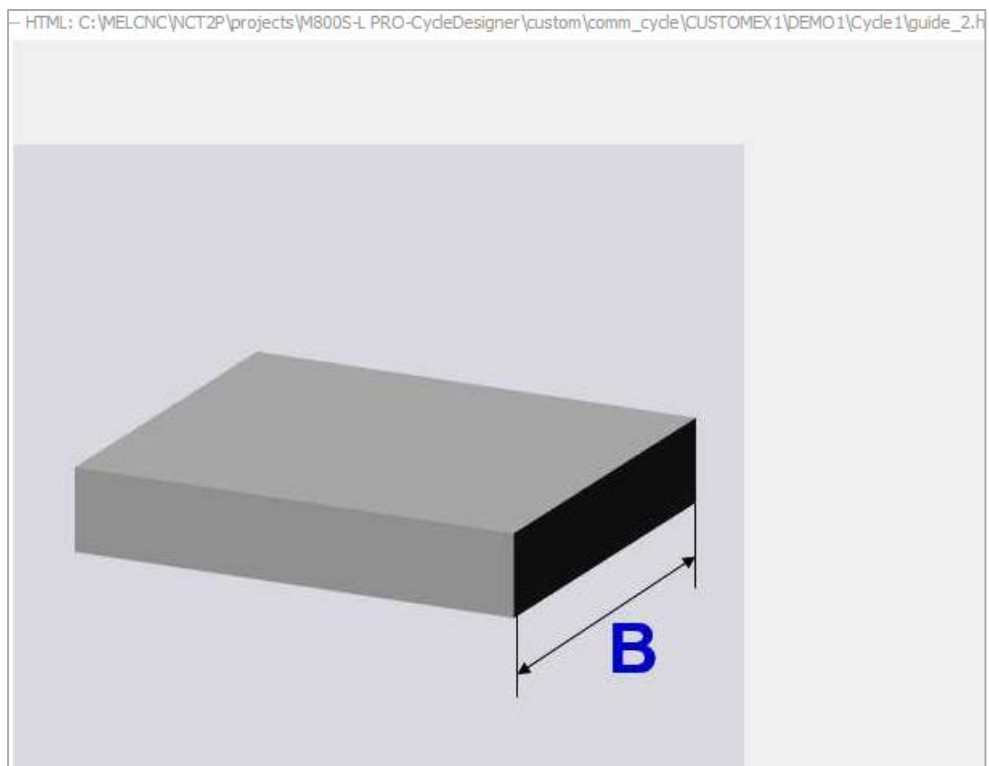
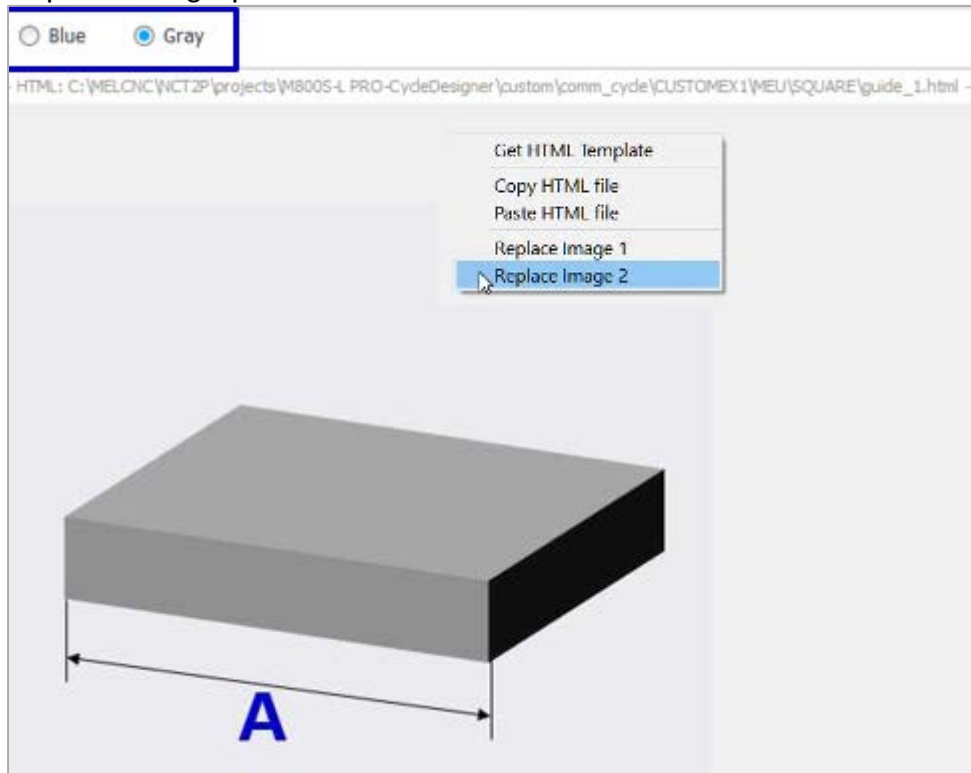
3.4.2.1 Set the HTML Help graphic



Get the template of the HTML file first.



Replace the graphics for both themes.



3.4.2.2 Input Test window

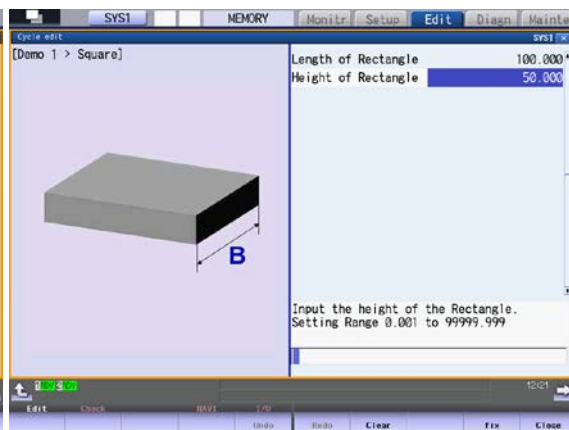
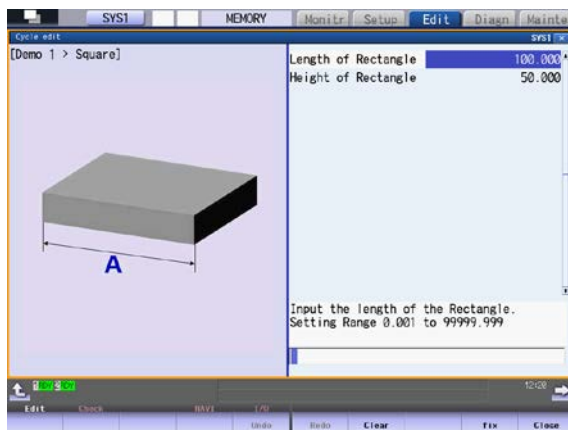
This window enables the testing of the created Cycle.
The Cycle is displayed as on the CNC.

Input

Length of Rectangle	100.000
Height of Rectangle	50

Input the length of the Rectangle. Setting Range 0.001 to 99999.999

100.000



3.4.2.3 Input Output window

This window specifies the NC program output.

The screenshot shows the 'Input Output' window with the 'Output' tab selected. The window contains several panels and buttons:

- Properties**, **Test**, and **Output** tabs at the top.
- fix test**, **Dialog Environment**, and **Dialog Item No** buttons below the tabs.
- D** panel: Displays D1=100.000 and D2=50.000.
- PrgProc.prg** panel: Contains NC code:


```

1 $1
2 G180 P1A<ID>(<NAME>)
3 #1=<D1>(** Width of the Rectangle **)
4 #2=<D2>(** Height of the Rectangle **)
5 G65 P1234 A<D1> B<D2>
6
7 G180 P0
      
```
- Prg Output** panel: Shows the output of the program:


```

1 $1
2 G180 P1A900001(Square)
3 #1=100.000(** Width of the Rectangle **)
4 #2=50.000 (** Height of the Rectangle **)
5 G65 P1234 A100.000 B50.000
6
7 G180 P0
      
```
- Close** button at the bottom right.

Shows the result of the Cycle output.

A button labeled **Dialog Environment**.

Shows the environment parameters.

The **Environment Parameters** dialog box displays the following values:

Parameter	Value
E1 - System	1 : Lathe system
E2 - Language	0 : English
E3 - Screen Display	0 : mm
E4 - Program Output	0 : mm
E5 - B, C, D, E	1 : B=1μ

Buttons: **OK**, **Cancel**

Dialog Item No

Shows the used internal variable names and values.

 Item Numbers:

<D1> - Length of Rectangle	100.000
<D2> - Height of Rectangle	50.000

D	E	
D1=100.000 D2=50.000		

Shows the used variable numbers and values.

D	E
E1=1	
E2=0	
E3=0	
E4=0	
E5=1	

Shows the values of the environment parameters.

Load PrgProg

Load a program specification file from the HD

Save PrgProg

Save the actual program specification file to the HD

PrgProc.prg	
Load PrgProg Save PrgProg	
1	\$1
2	G180 P1A<ID>(<NAME>)
3	#1=<D1>(** Width of the Rectangle **)
4	#2=<D2> (** Height of the Rectangle **)
5	G65 P1234 A<D1> B<D2>
6	
7	G180 P0

Shows the program output specification file

<Dn> Value of the related Item number

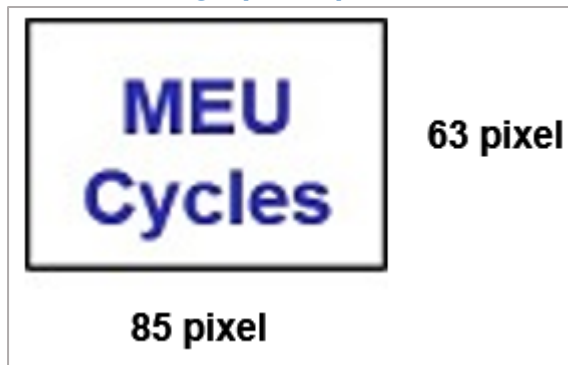
<Dn> will be replaced with the Item value in the program output

Prg Output	
1	\$1
2	G180 P1A900001(Square)
3	#1=100.000(** Width of the Rectangle **)
4	#2=50.000 (** Height of the Rectangle **)
5	G65 P1234 A100.000 B50.000
6	
7	G180 P0

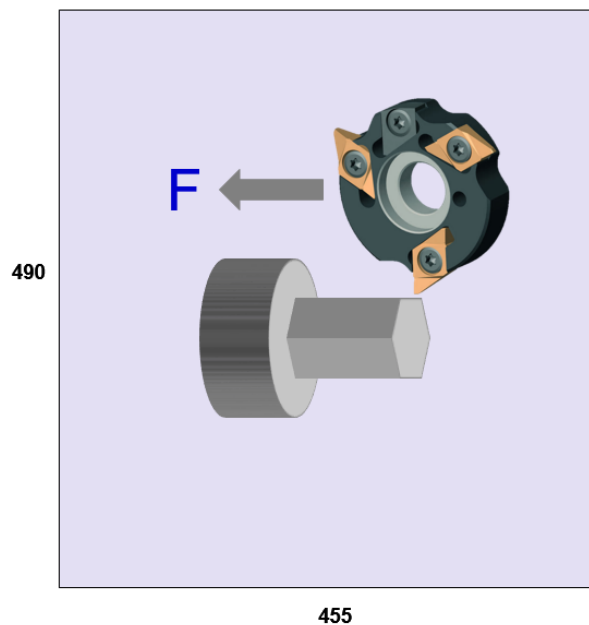
Preview of the program output.

3.5 Help Graphic Specifications

3.5.1 Folder graphic specification



3.5.2 Cycle graphic specification



Background color BLUE

Farbt.: 169	Rot: 200
Sätt.: 109	Grün: 191
Hell.: 199	Blau: 231

Transparence 50%

Background color GRAY

Farbt.: 160	Rot: 216
Sätt.: 27	Grün: 216
Hell.: 207	Blau: 224

Transparence 0%

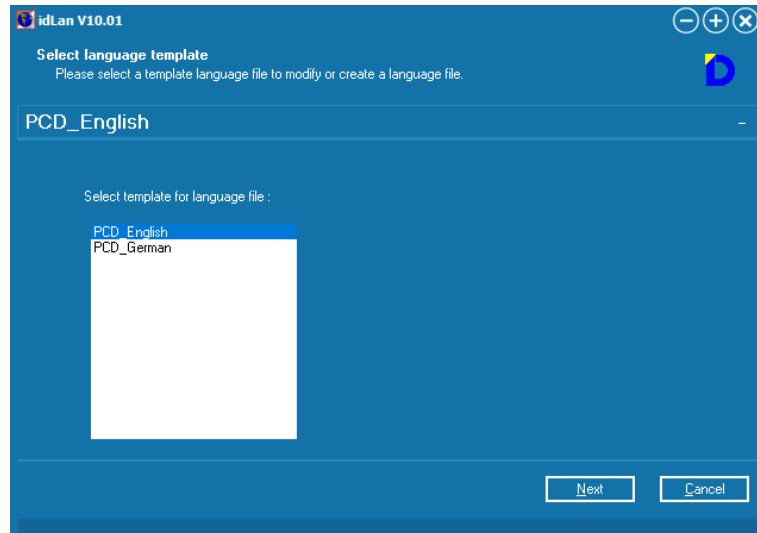


APPENDIX

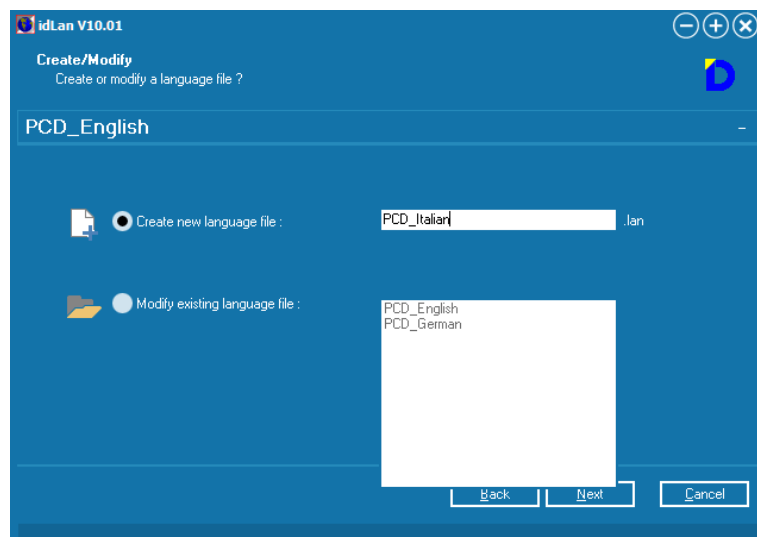
APPENDIX 1: Application Language Edit



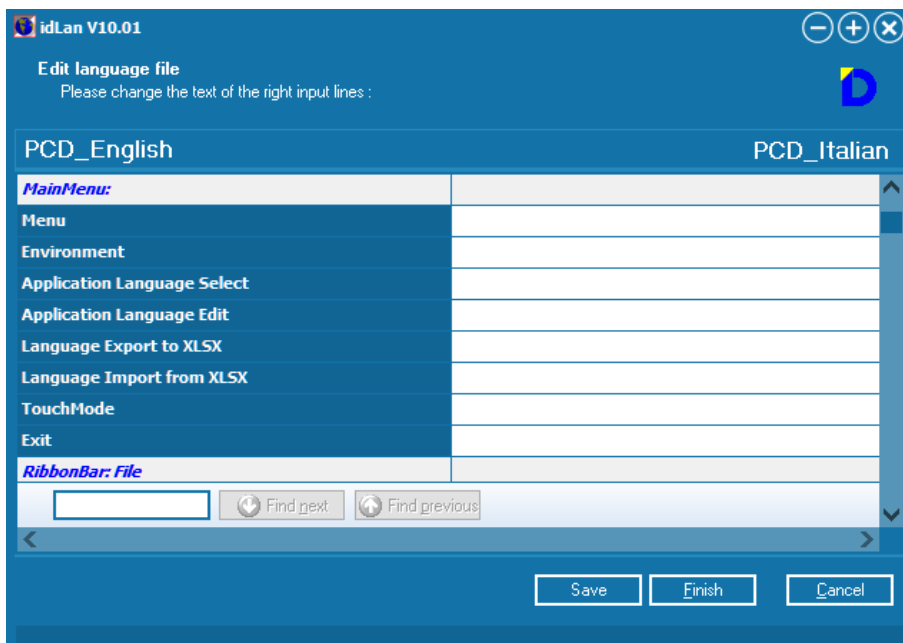
Select the source language file



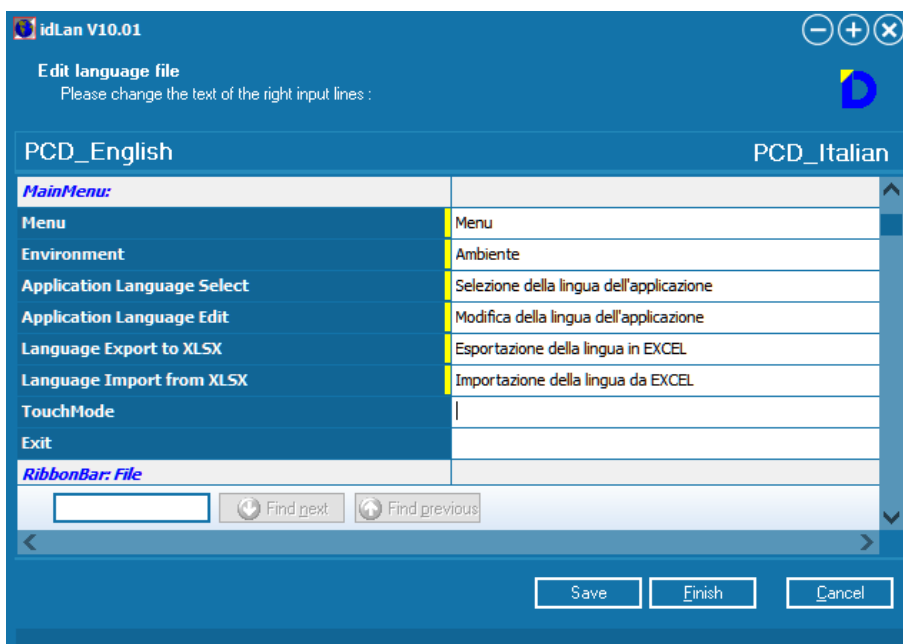
Define the new language file



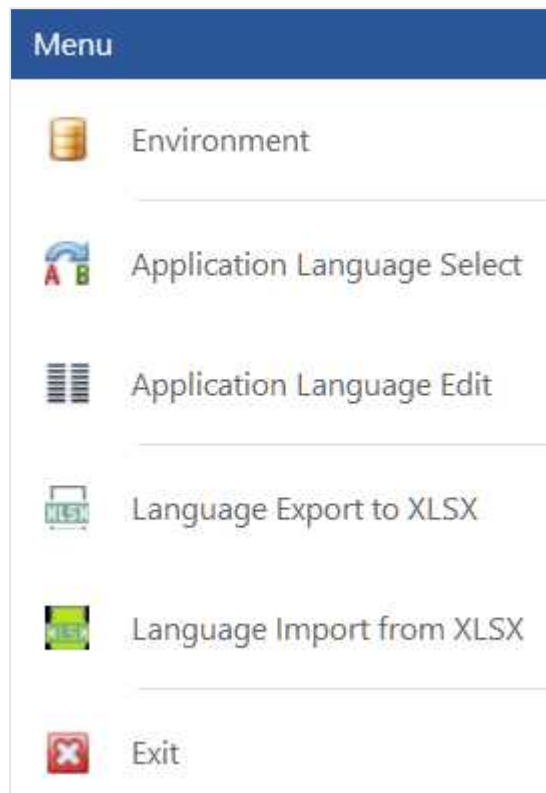
Start the translation



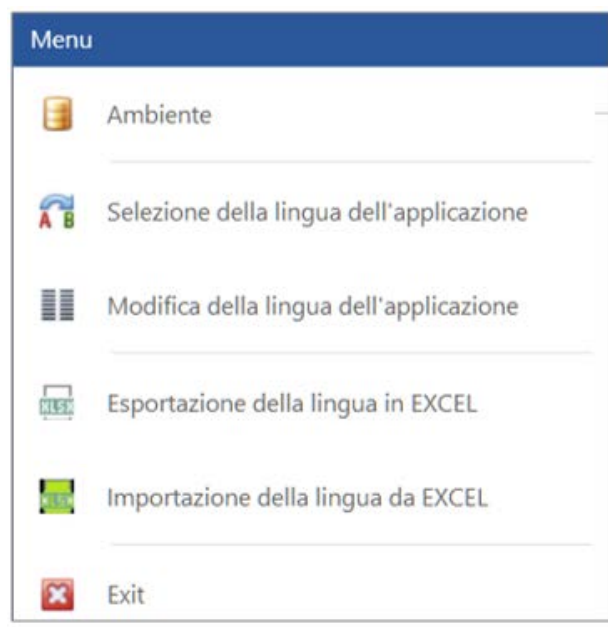
Items which are not translated to the new language are displayed in English, which is the default language of this application



Original : English



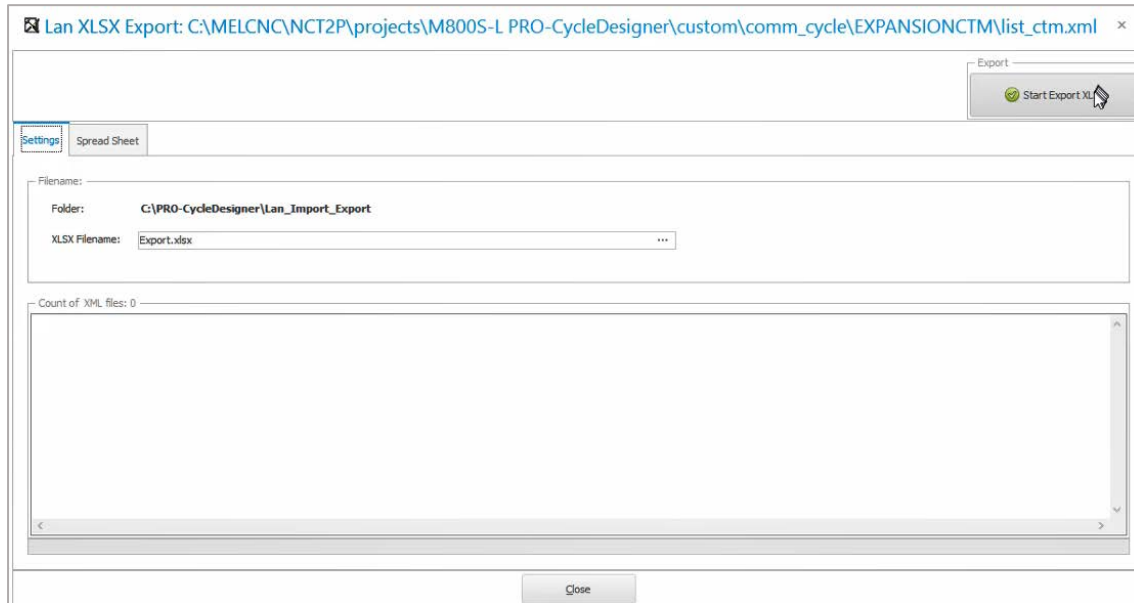
Application language select : Italian



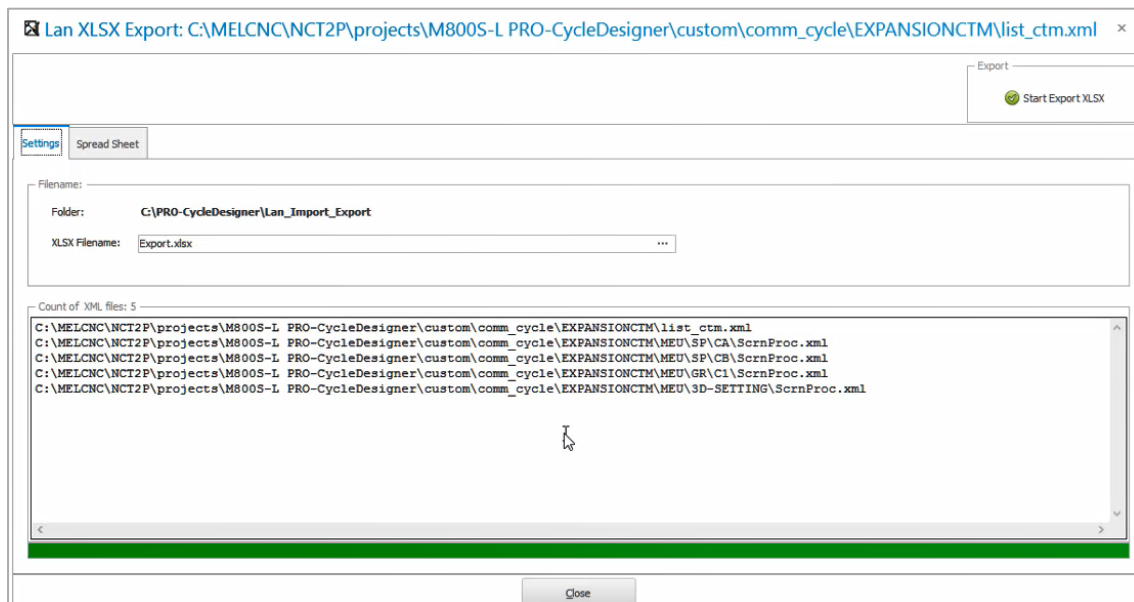
APPENDIX 2: Language Export to EXCEL



Select Language Export to EXCEL and choose a target directory and filename.



Press StartExportXLSX.



All texts are now available in an EXCEL-File and ready for translation.

Export.xlsx - Excel

STARTEINFÜGENSEITENLAYOUTFORMELNDATENÜBERPRÜFENANSICHTENTWICKLERTOOLSADD-INSACROBATTEAM

</

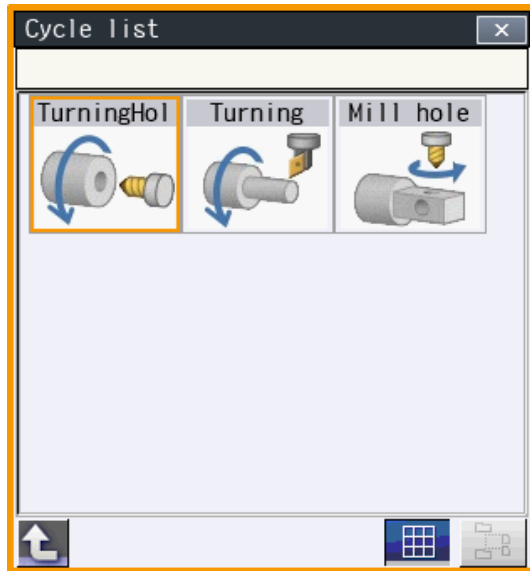
APPENDIX 3: Language Import from EXCEL



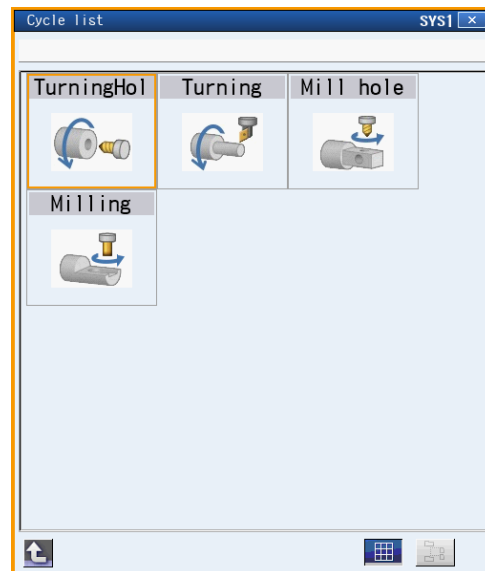
Language Import from EXCEL

APPENDIX 4: Standard process ID's

Lathe Cycles 1st Level

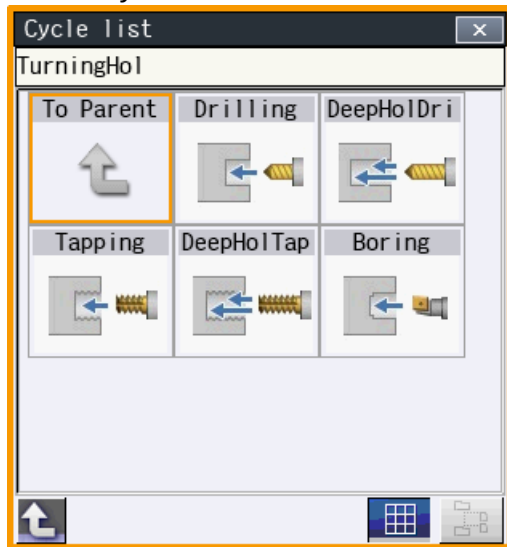


TurningHole	510000
Turning	610000
Mill Hole	710000



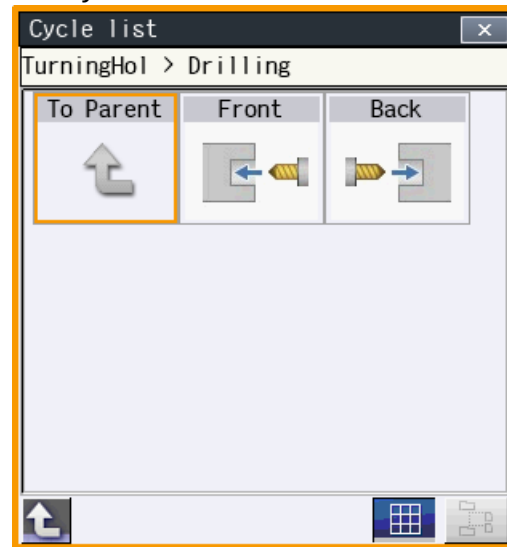
TurningHole	510000
Turning	610000
Mill Hole	710000
Milling	810000

Lathe Cycles 2nd Level



Drilling	511000
DeepHoleDrilling	512000
Tapping	513000
DeepHoleTapping	514000
Boring	515000

Lathe Cycles 3rd Level



Front	511001
Back	511002

All Cycles – Lathe type

Tier 1	Tier 2	Tier 3	Cycle ID	Cycle name
Cycle type	Machining cycle	Machining portion		
Turning hole	Drilling	Front	511001	MEL-TDRILL-FACE
		Back	511002	MEL-TDRILL-BACK
	Deep-hole drilling	Front	512001	MEL-TDDRILL-FACE
		Back	512002	MEL-TDDRILL-BACK
	Tapping	Front	513001	MEL-TTAP-FACE
		Back	513002	MEL-TTAP-BACK
	Deep-hole tapping	Front	514001	MEL-TDTAP-FACE
		Back	514002	MEL-TDTAP-BACK
	Reaming	Front	515001	MEL-TREAM-FACE
		Back	515002	MEL-TREAM-BACK
	Boring	Front	516001	MEL-TBOR-FACE
		Back	516002	MEL-TBOR-BACK
Turning	Turning	Outer diameter	611001	MEL-TTURN-OUT
		Inner diameter	611002	MEL-TTURN-IN
		Front	611003	MEL-TTURN-FACE
		Back	611004	MEL-TTURN-BACK
	Turning (compound)	Outer diameter	612001	MEL-TCTURN-OUT
		Inner diameter	612002	MEL-TCTURN-IN
		Front	612003	MEL-TCTURN-FACE
		Back	612004	MEL-TCTURN-BACK
	Copying	Outer diameter	613001	MEL-TLMIT-OUT
		Inner diameter	613002	MEL-TLMIT-IN
		Front	613003	MEL-TLMIT-FACE
		Back	613004	MEL-TLMIT-BACK
	Thread cutting/ Thread recutting	Outer diameter	614001	MEL-TTHREAD-OUT
		Inner diameter	614002	MEL-TTHREAD-IN
	Thread cutting (Compound)/ Thread recutting (Compound)	Outer diameter	615001	MEL-TCTHREAD-OUT
		Inner diameter	615002	MEL-TCTHREAD-IN
	Grooving	Outer diameter	616001	MEL-TGROOVE-OUT
		Inner diameter	616002	MEL-TGROOVE-IN
		Front	616003	MEL-TGROOVE-FACE
		Back	616004	MEL-TGROOVE-BACK
	Cutting-off	Front	618001	MEL-TDINKING-FACE
		Back	618002	MEL-TDINKING-BACK

Milling hole	Drilling	Periphery	711001	MEL-MDRILL-OUT
		Side	711002	MEL-MDRILL-SIDE
		Front	711003	MEL-MDRILL-FACE
		Back	711004	MEL-MDRILL-BACK
	Deep-hole drilling	Periphery	712001	MEL-MDDRILL-OUT
		Side	712002	MEL-MDDRILL-SIDE
		Front	712003	MEL-MDDRILL-FACE
		Back	712004	MEL-MDDRILL-BACK
	Step drilling	Periphery	713001	MEL-MSTDRILL-OUT
		Side	713002	MEL-MSTDRILL-SIDE
		Front	713003	MEL-MSTDRILL-FACE
		Back	713004	MEL-MSTDRILL-BACK
	Tapping	Periphery	714001	MEL-MTAP-OUT
		Side	714002	MEL-MTAP-SIDE
		Front	714003	MEL-MTAP-FACE
		Back	714004	MEL-MTAP-BACK
	Deep-hole tapping	Periphery	715001	MEL-MDTAP-OUT
		Side	715002	MEL-MDTAP-SIDE
		Front	715003	MEL-MDTAP-FACE
		Back	715004	MEL-MDTAP-BACK
	Reaming	Periphery	716001	MEL-MREAM-OUT
		Side	716002	MEL-MREAM-SIDE
		Front	716003	MEL-MREAM-FACE
		Back	716004	MEL-MREAM-BACK
	Boring	Periphery	717001	MEL-MBOR-OUT
		Side	717002	MEL-MBOR-SIDE
		Front	717003	MEL-MBOR-FACE
		Back	717004	MEL-MBOR-BACK
Milling	Pocketing	Side	812001	MEL-MPOCKET-SIDE
		Front	812002	MEL-MPOCKET-FACE
		Back	812003	MEL-MPOCKET-BACK
	Grooving	Side	813001	MEL-MGROOVE-SIDE
		Front	813002	MEL-MGROOVE-FACE
		Back	813003	MEL-MGROOVE-BACK

All Cycles – Milling type

Hierarchy 1	Hierarchy 2	M system		Cycle ID	Macro name of cycle name
Cycle type	Machining cycle	Standard type	Expanded type		
Hole	Drilling	○	○	5711000	MEL-MDRILLM
	Deep-hole drilling	○	○	5712000	MEL-MDDRILLM
	Step drilling	○	○	5713000	MEL-MSDRILLM
	Tapping	○	○	5714000	MEL-MTAPM
	Deep-hole tapping	○	○	5715000	MEL-MDTAPM
	Reaming	-	○	5716000	MEL-MREAMM
	Boring	○	○	5717000	MEL-MBORM
Milling	Plane	-	○	5811000	MEL-MFACEM