NC Express e^3

Software version release: 23.1

19. May 2023

New features in NC Express e³ 23.1

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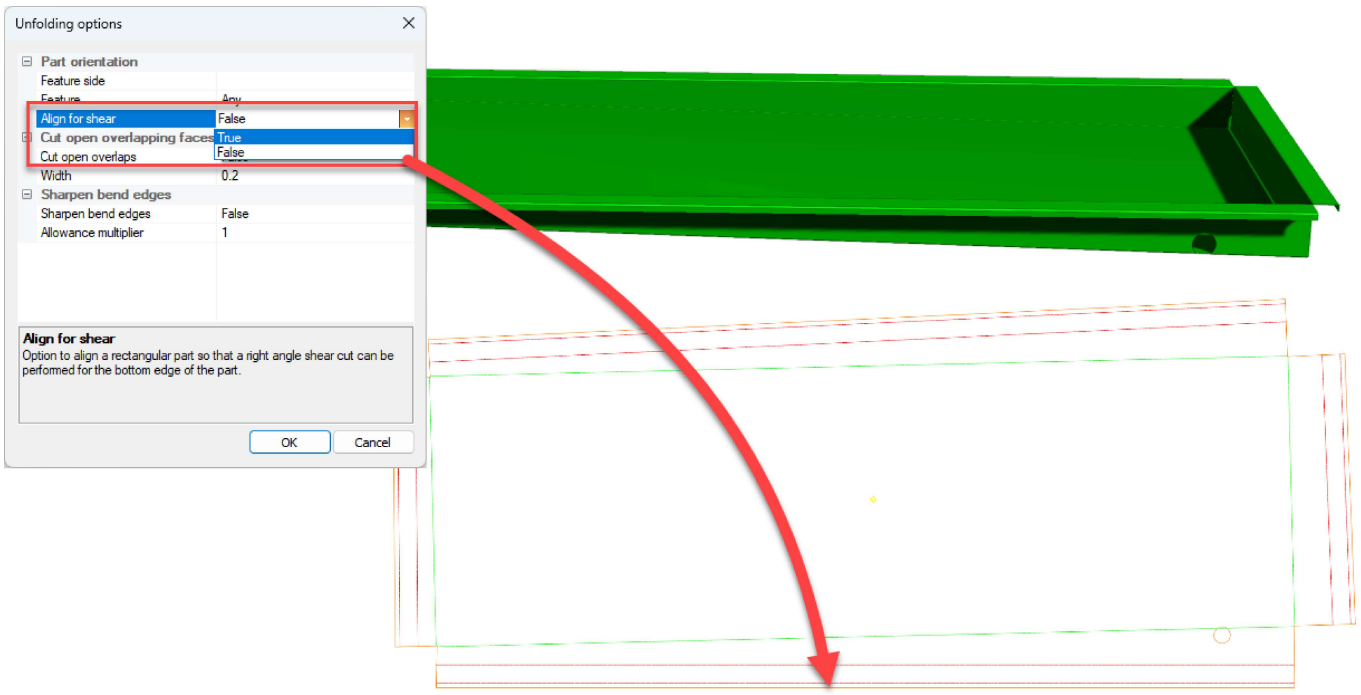
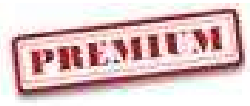
Unfolding

Option to align better for shear machine

The choice ***Align for shear*** in ***Unfold – Options*** turns the bottom side of the blank straight, which typically is the best orientation for a shearing machine.



Supported 3D formats and versions



- Autodesk Inventor (*.ipt, *.iam), up to 2023
- SolidWorks (*.sldprt, *.sldasm), up to 2023
- Solid Edge (*.par, *.psm, *.asm), up to 2023
- Siemens JT (*.jt), up to 10.7
- Siemens NX (*.prt), up to 2206
- PTC Creo (*.prt.x, *.asm.x), up to 9.0
- Catia (*.catproduct, *.catpart), V4 (4.15 to 4.26) and V5-3DX (R10 to R32, R2023x), V6
- IGES (*.igs, *.iges), up to 5.3
- STEP (*.stp, *.step), AP203 (E1, E2), AP214 (up to E3), AP242 (E1, E2, E3, BO XML), AP209
- Spatial Acis (*.sat), up to 2021 1.0
- Parasolid (*.x_t, *.x_b), up to 34.1

The LASER machines

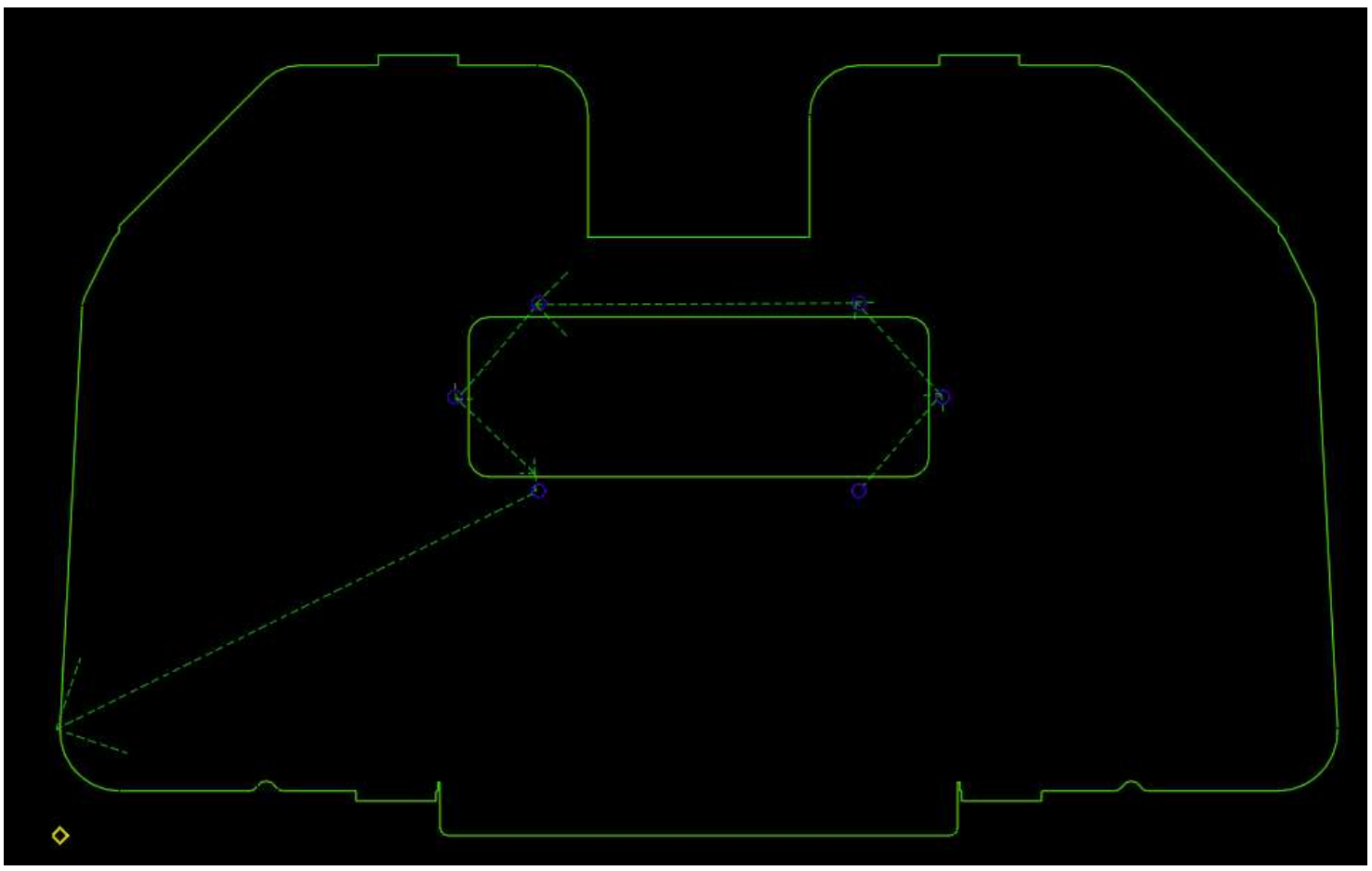
Laser micro-joints on corners

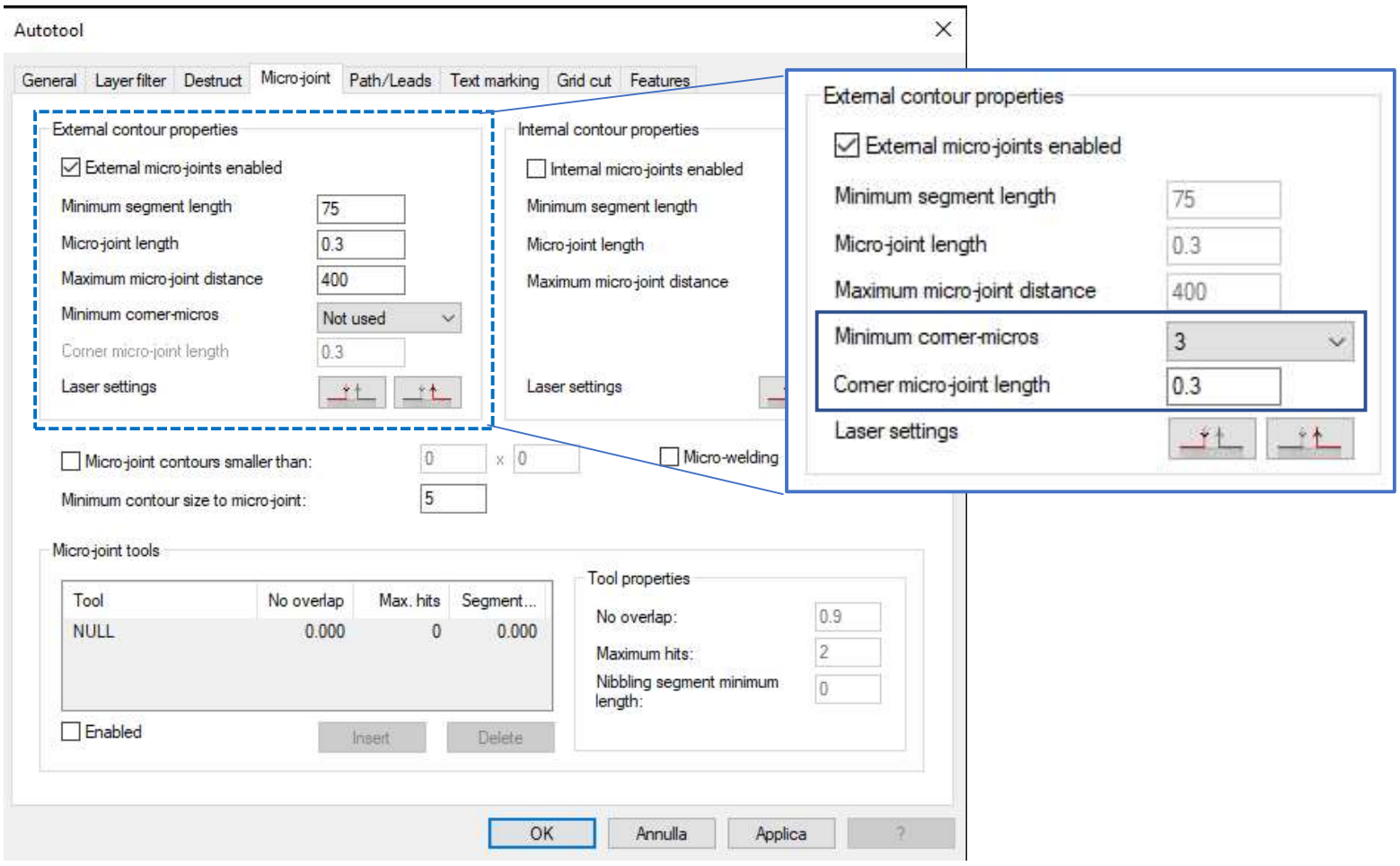
NC Express allows the automatic definition of “micro-joints on corners” on the external profile for laser machines since this version. The algorithm is based on *convex hull* criteria: algorithm chooses the corners with maximum distances among them.

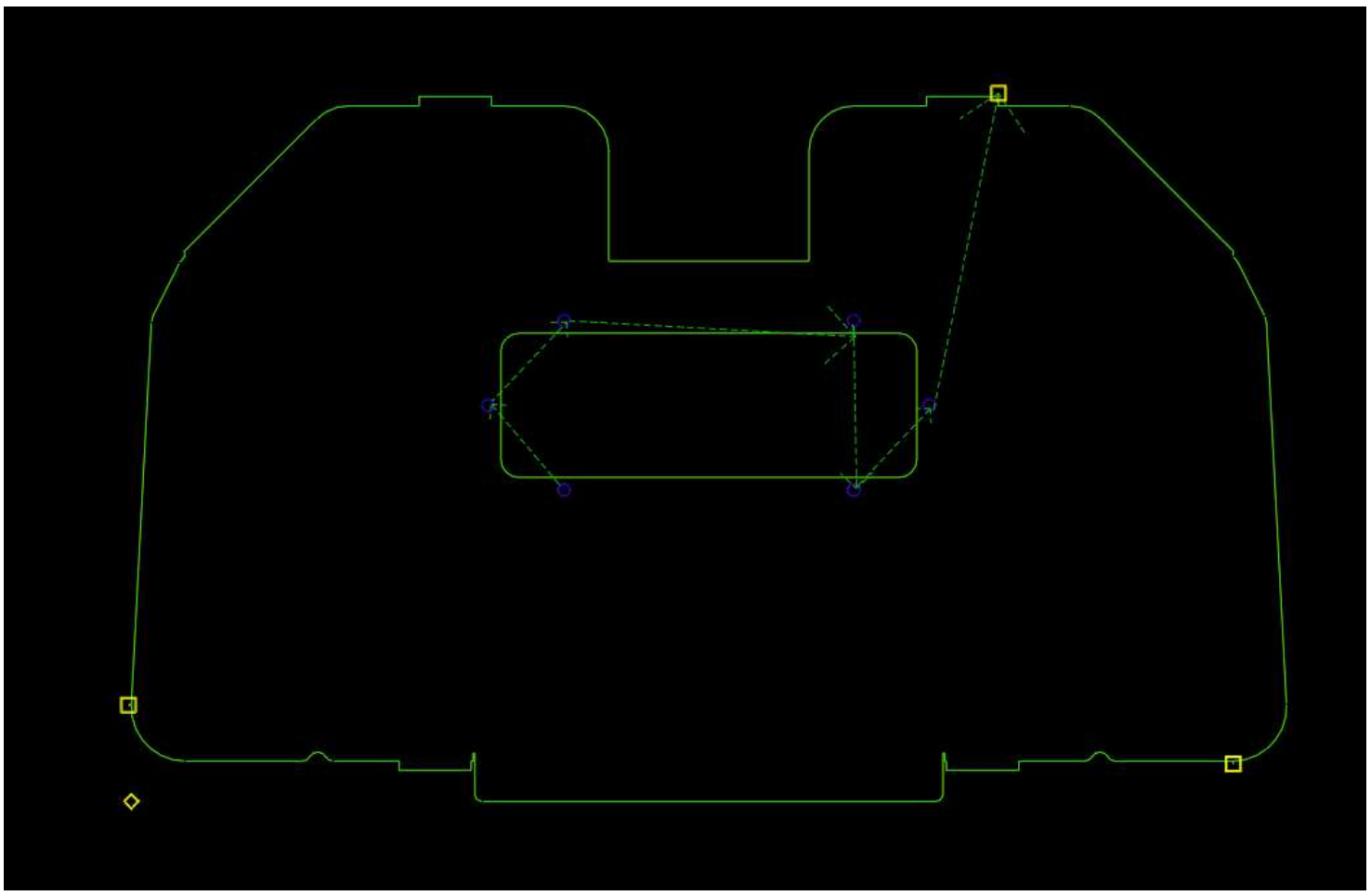
Punch machines already have a different algorithm for “micro-joints on corners”. NC Express uses the same HMI of punch machines but different technologies (punch VS laser) cause different constraints:

- The parameter ***Minimum corner-micros*** defines the required number of micro-joints to be found as solution. The allowed range is from 1 to 4. Algorithm fails when the evaluated number of corners is less than this number. In this case, a message advises the user about it.
- The parameters about geometric distances are disabled because only the required number of micro-joints must be added to the profile, no more.
- When the option about the creation of fillet arcs is enabled, they are created only on the corners without micro-joints.

Following picture shows an example on a generic part:

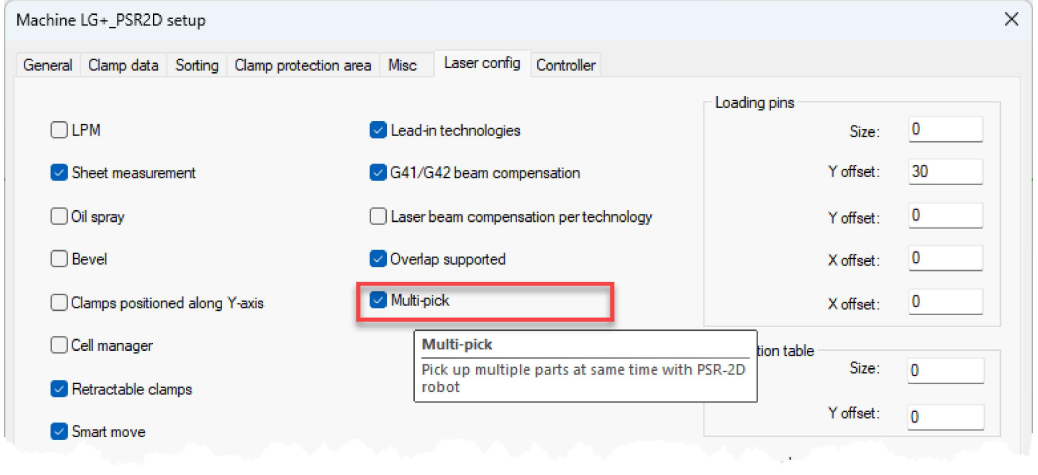



Autotool
General
Layer filter
Destruct
Micro-joint
Path/Leads
Text marking
Grid cut
Features
External contour properties
External micro-joints enabled
Minimum segment length
75
Micro-joint length
0.3
Maximum micro-joint distance
400
Minimum corner-micros
Not used
Corner micro-joint length
0.3
Laser settings
Internal contour properties
Internal micro-joints enabled
Minimum segment length
Micro-joint length
Maximum micro-joint distance
Laser settings
Micro-joint contours smaller than:
0
x
0
Micro-welding
Minimum contour size to micro-joint:
5
Micro-joint tools
Tool
No overlap
Max. hits
Segment...
NULL
0.000
0
0.000
Enabled
Insert
Delete
Tool properties
No overlap:
0.9
Maximum hits:
2
Nibbling segment minimum length:
0
OK
Annulla
Applica
?
External contour properties
External micro-joints enabled
Minimum segment length
75
Micro-joint length
0.3
Maximum micro-joint distance
400
Minimum corner-micros
3
Corner micro-joint length
0.3
Laser settings

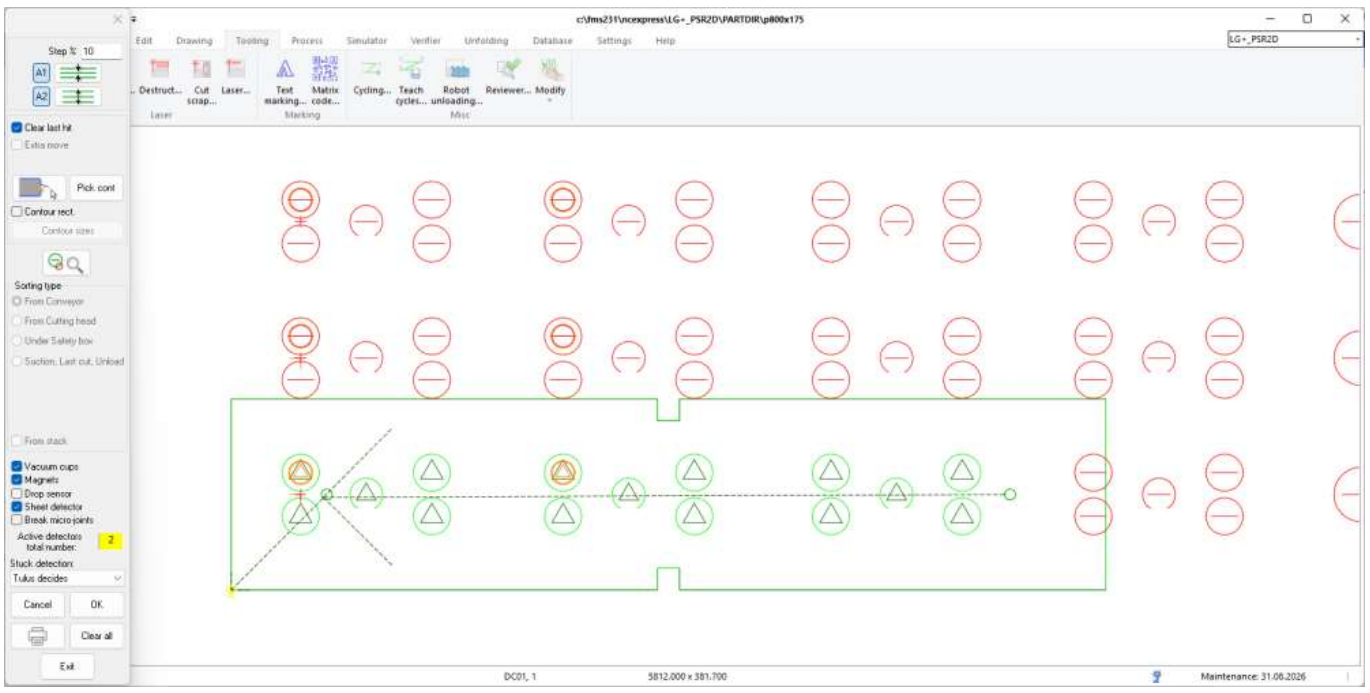


Multi-pick for LG+PSR

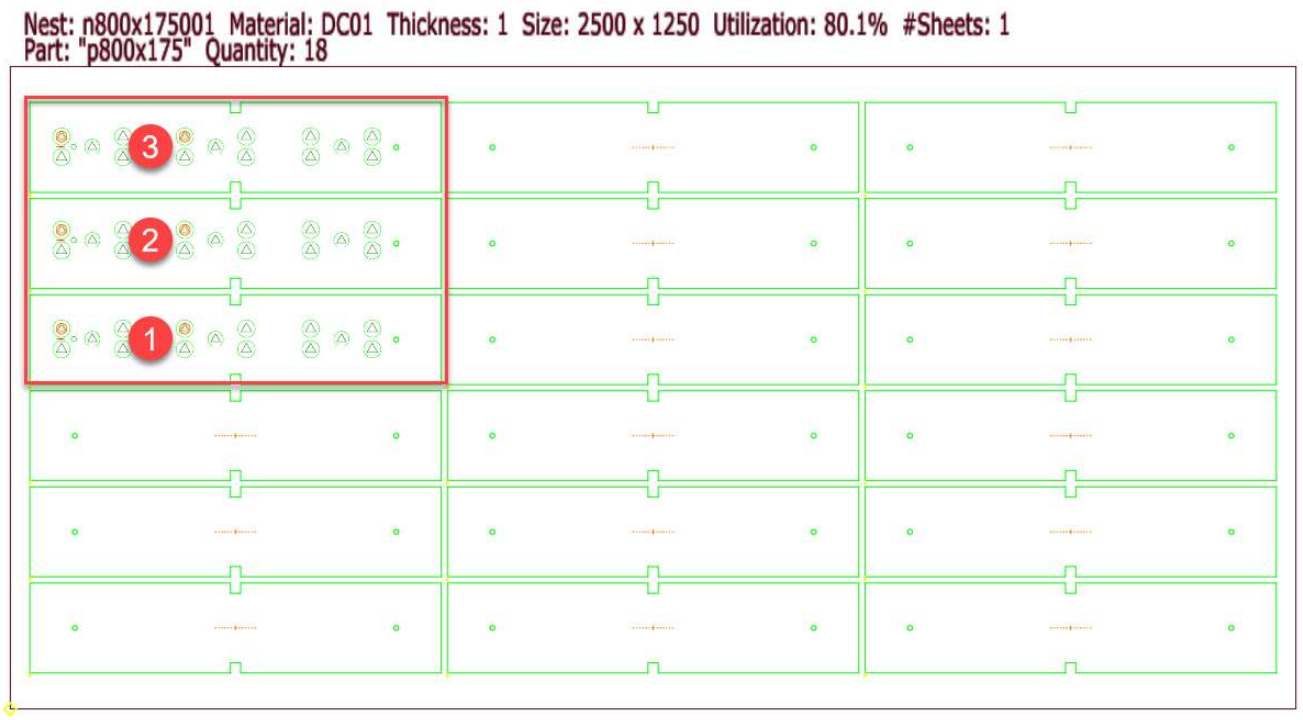
On LG+PSR machine it’s possible pick three slim parts individually on each bar. This happens automatically when ***Machine settings - Laser config - Multi-pick*** is ON:



And part needs to have a single bar gripper hold:

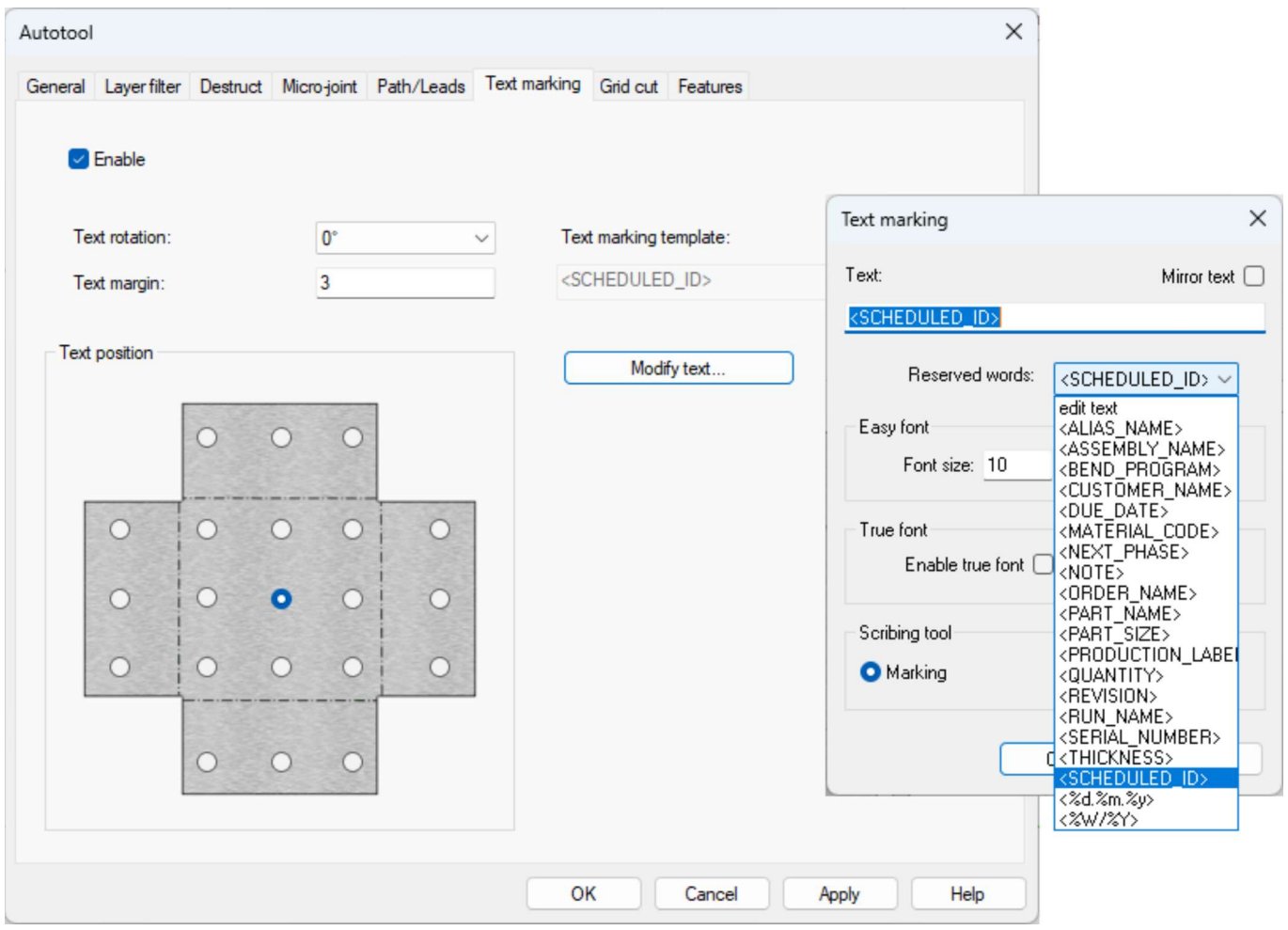


Max three parts are picked from a sheet on one pickup:



Option to laser mark scheduled part number

On ***Autotool – Text marking*** there is a number of reserved tags you can use to identify a component. One of those is the new tag <SCHEDULED_ID> for a part number.

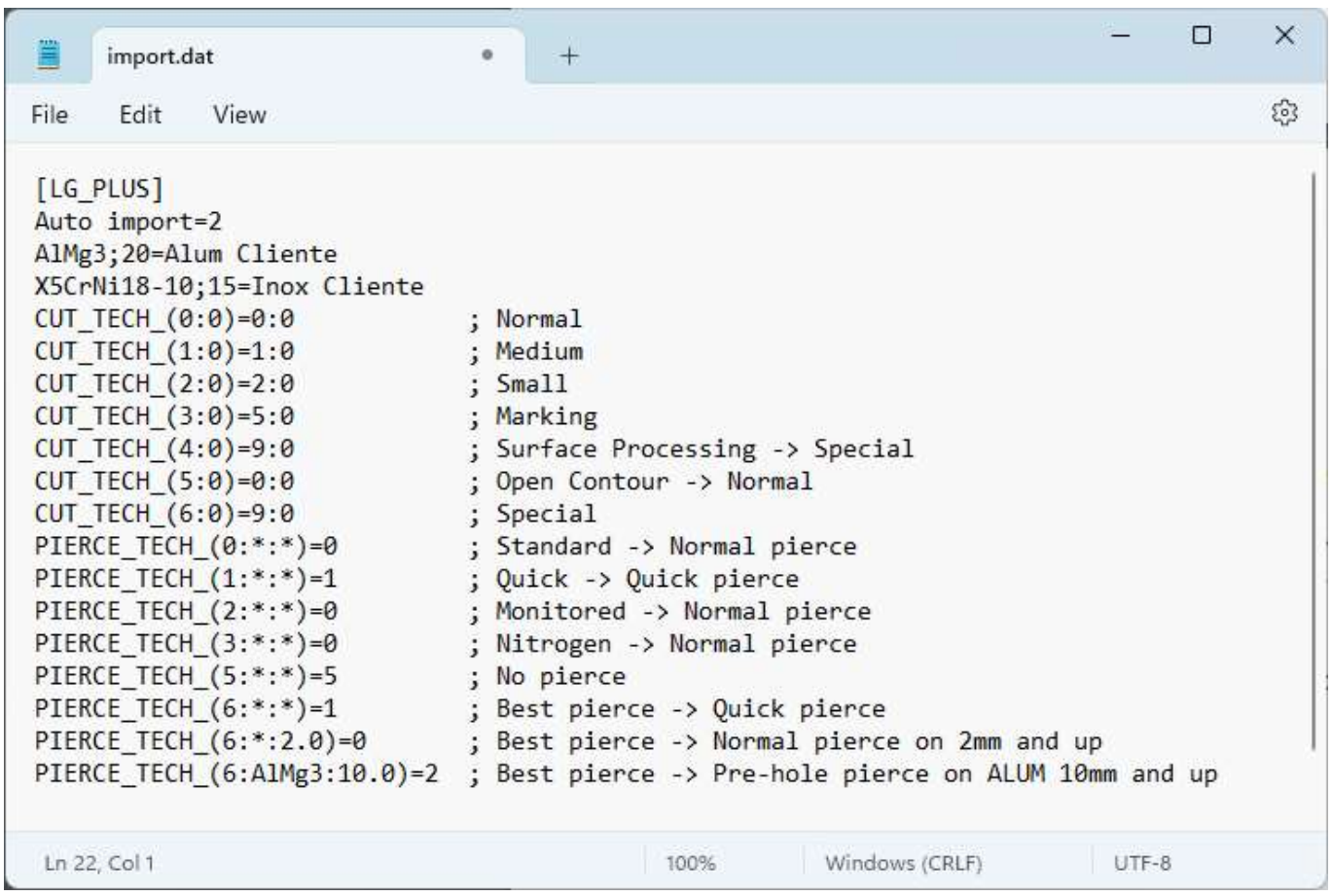


Options to import part file from another machine

The file ‘Import.dat’ controls how part files are read from a foreign machine. It’s possible to map:

- Material name
- Tool name
- Laser technology
- Sorting device

More information on the use of this is available in the document “NC Express part import settings”. Please contact Prima Power support if you need to do this.



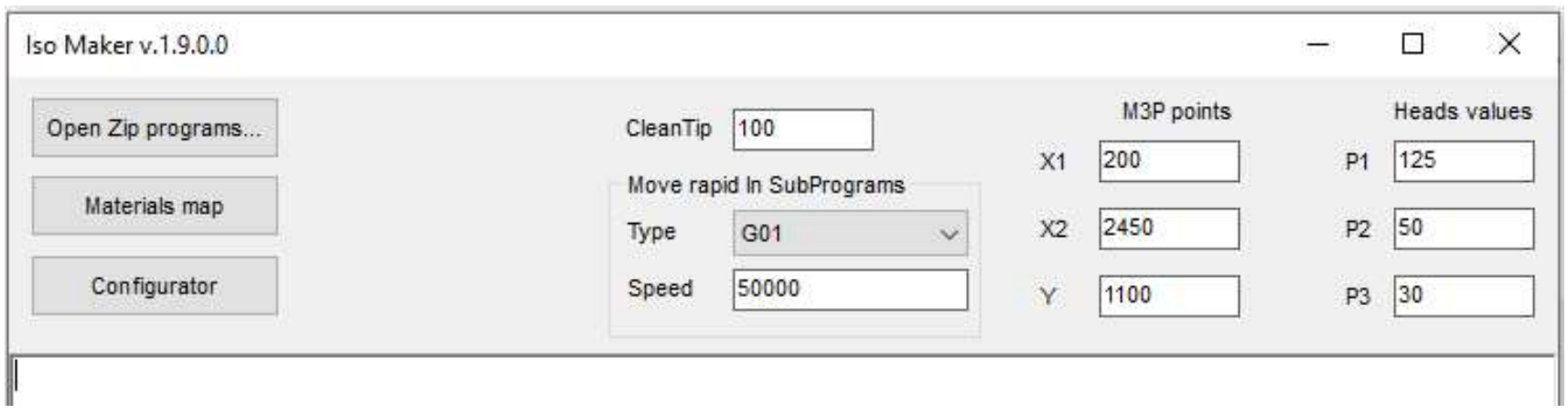
Option to run ISO converter

This option is not integrated inside the default installer of NC Express. The installation package and the dedicated documentation is available from Prima Power support on request.

This package is composed by:

- **ISOMaker** application: it converts NC programs from Open/Tulus format to P20/P30L format for 2D Prima Laser machines. ISOMaker supports two execution modes since version 1.8.0:
    - HMI (standard)
    - Ghost (background)

  Ghost mode allows CAM NC Express to automatically convert NC programs of a nesting run during ***Accept*** phase.

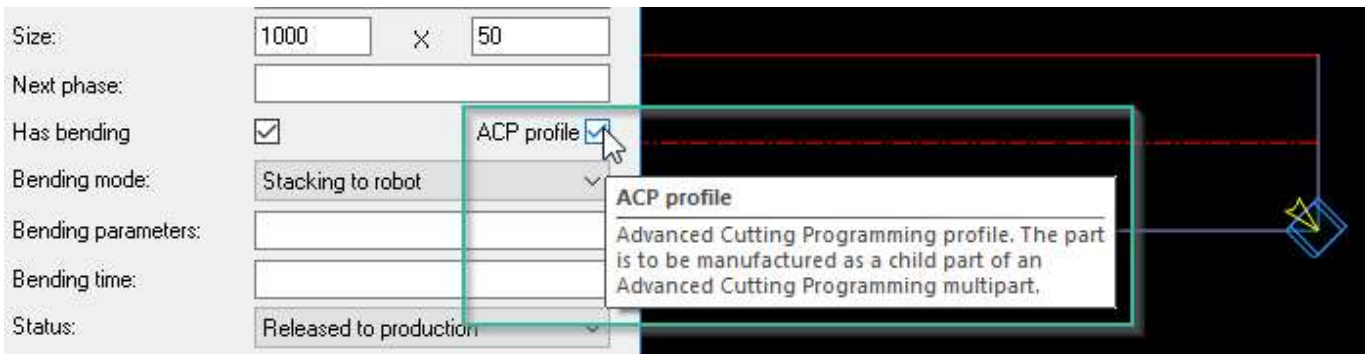


- **Accept.vbs** script: it is a script that NC Express automatically calls when user presses ***Accept***-button after the optimization of a nesting. This customized script calls ISO Converter in Ghost mode to convert the NC program of the current nesting.

The COMBI, Punch-Shear machines

ACP profile part property

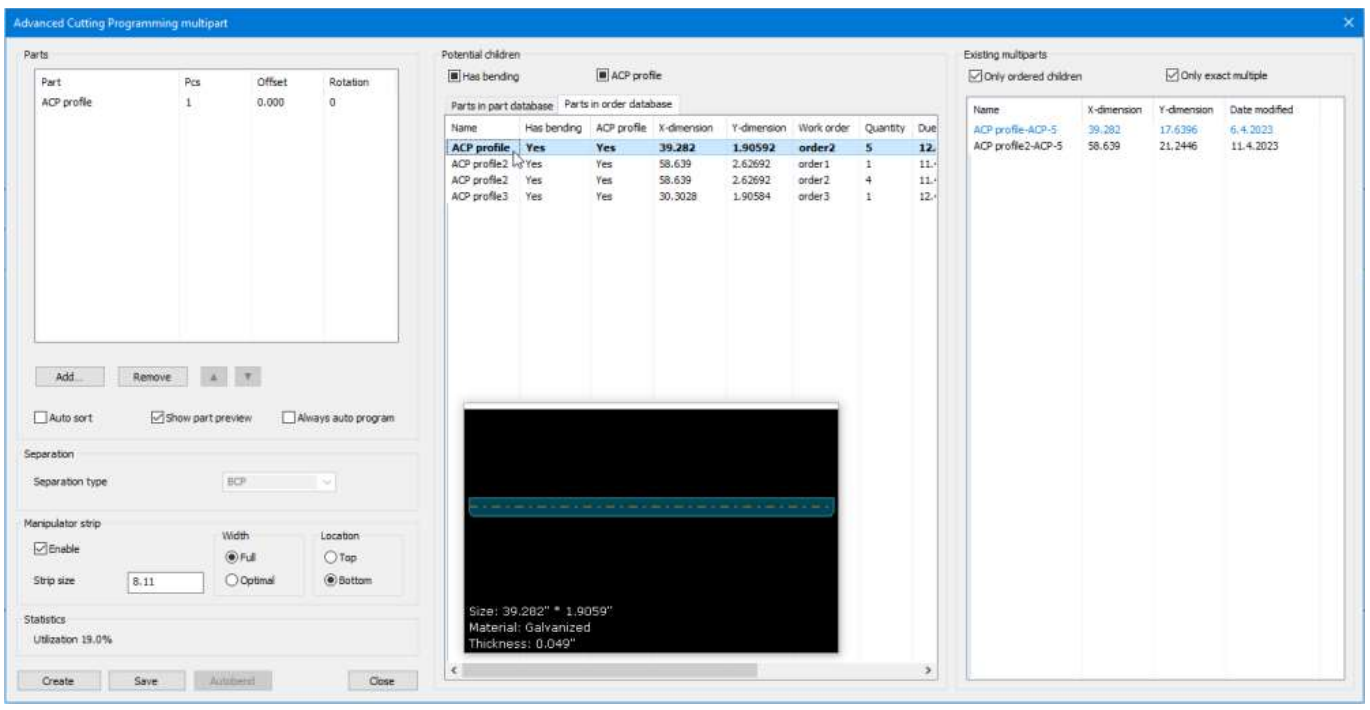
Part ***Properties***-dialog has a new ***ACP profile*** part property to indicate if a part is meant to be manufactured as a child part of an Advanced Cutting Programming multipart. ACP multipart is a group part consisting of such a child part's which do not have enough room to place a manipulator of a panel bender. Child parts of ACP multiparts can be separated from the multipart by using BCP wheel at panel bender.



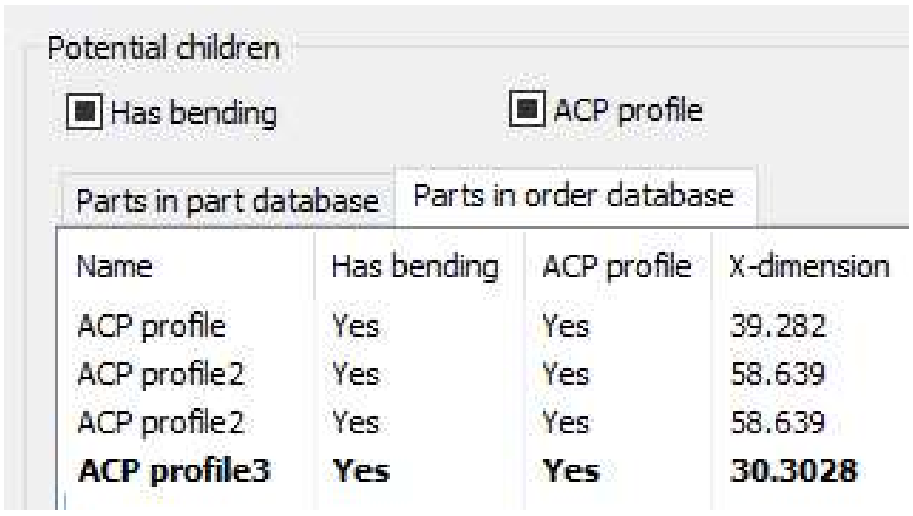
ACP profile property can be set by user in the ***Properties***-dialog, through PARANCX or mapped from 3D file metadata by using ***Unfolding - Property mapping*** function. Grid of the ***Part database*** dialog has a column ***ACP profile*** to indicate which parts are marked as ACP profiles.

Advanced Cutting Programming multipart dialog enhancements

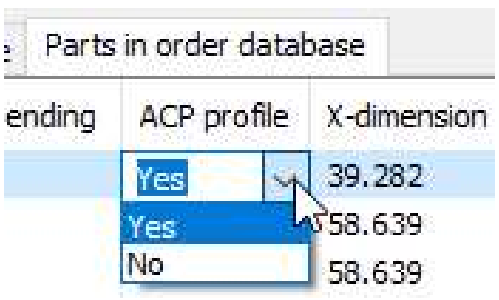
'Advanced Cutting Programming multipart' dialog has many enhancements. Enhancements ease the process to create new multiparts and find if there are already suitable existing multiparts for certain child parts.



'Potential children' lists non-multiparts from part database. Parts can be filtered by using filters: 'Has bending', 'ACP profile' and 'Parts in order database'. A filter is not affective when checkbox has a black square. Bold parts are currently added into the 'Parts' list. Double click on a part will add the part into the 'Parts' list.

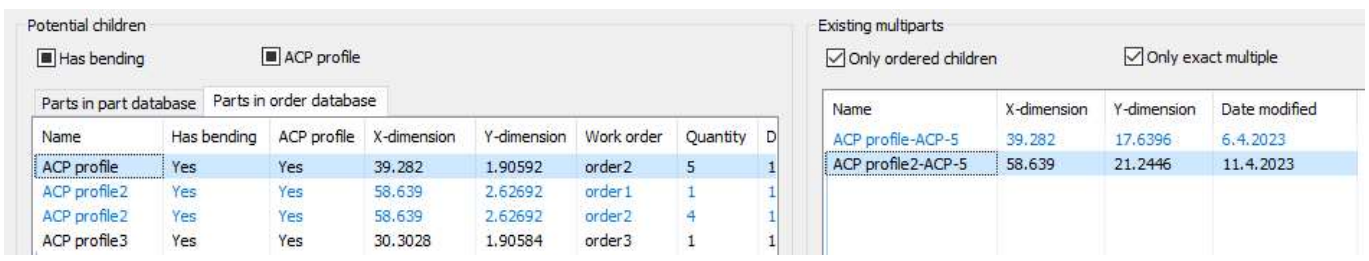


‘ACP profile’ part property is possible to modify from drop-down menu of the ‘Potential children’ grid.

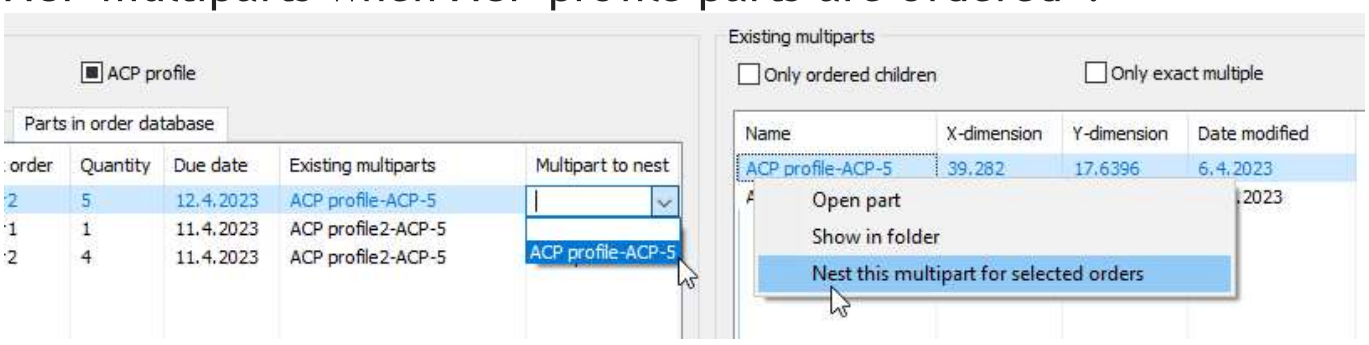


‘Existing multiparts’ lists ACP multiparts found from part database. When the tab ‘Parts in order database’ is selected, only multiparts having any child of current order pool are shown. Filters ‘Only ordered children’ and ‘Only exact multiple’ can be used to find multiparts maching with ordrered quantities of child orders.

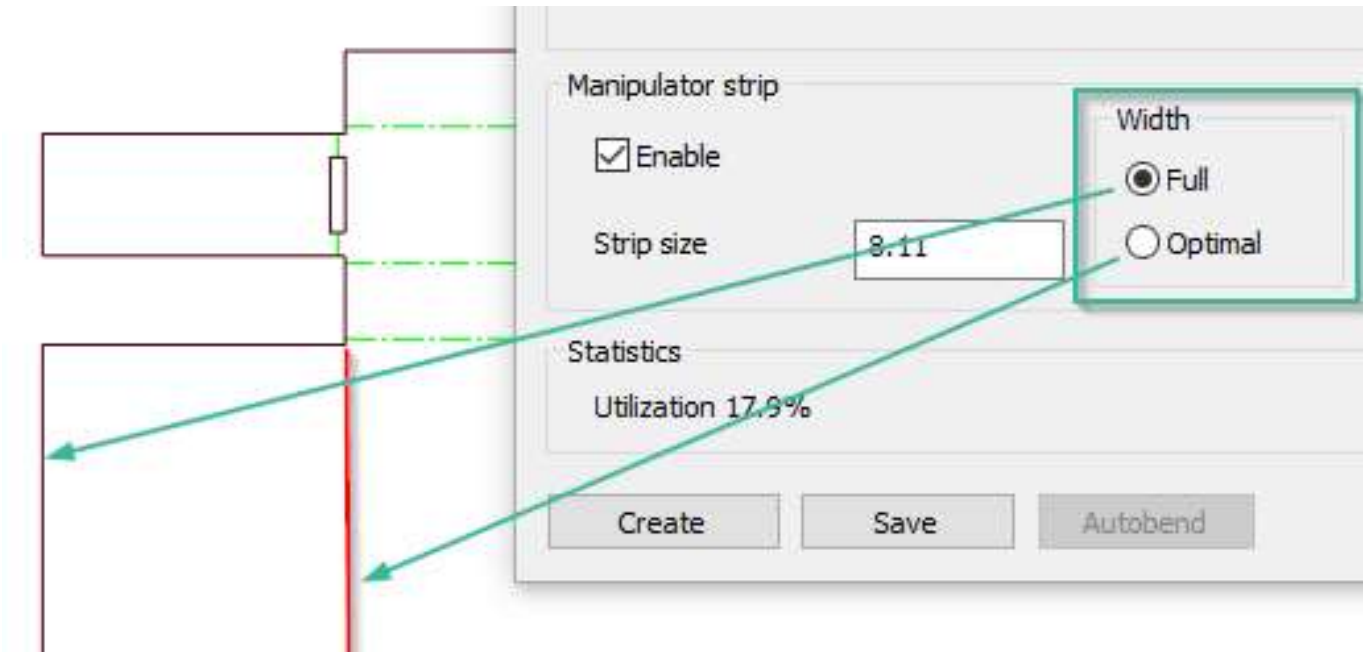
If ‘Potential children’ list has selection, then all multiparts having all the selected children are colored blue on the ‘Existing multiparts’ list. If ‘Existin multiparts’ list has selection, then all children of selected multiparts are colored blue on the ‘Potential children’ list. This is to ease to find machig multipart for childparts.



When ‘Parts in order database’ tab is selected, it is possible to define used ‘Multipart’ to nest from ‘Part orders’ dialog. See details from the section “Nest ACP multiparts when ACP profile parts are ordered”.

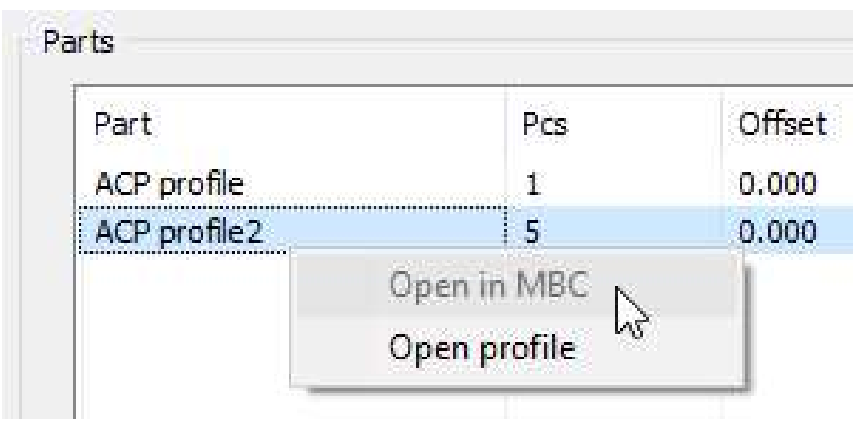


To avoid unnecessary punching on sides of ‘Manupulator strip’, a ‘Full’ width can be used to extend X-diemension of a manipulator strip to cover whole width of the multipart.



To use ‘Autobend’ to create a bending program for a multpart, Master BendCam version 25.1.11 or newer is required. Multipart has to be ‘Saved’ before ‘Autobend’. To configure ‘Autobend’ function, see separate document “NC Express Master BendCAM integration”.

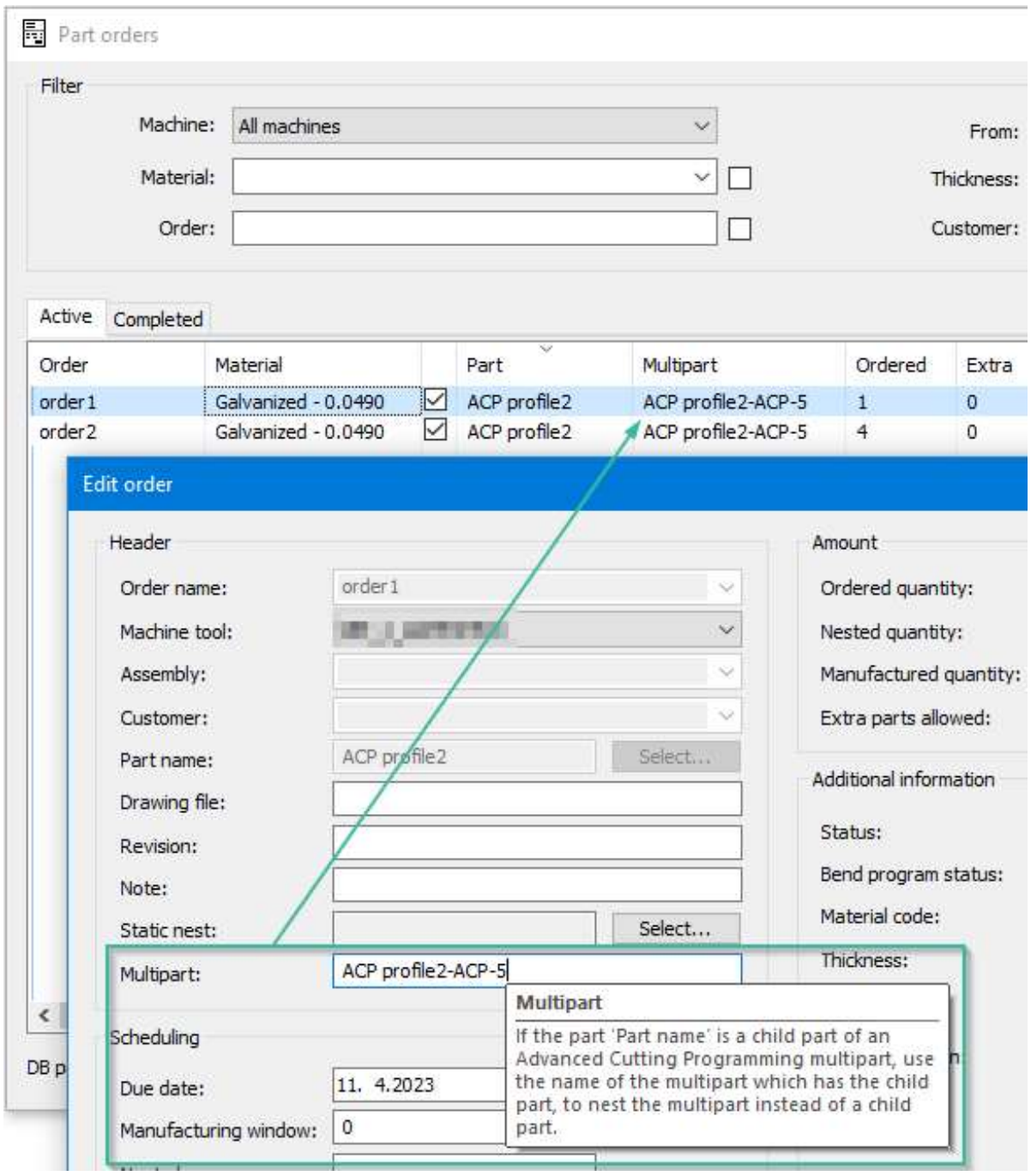
If automatic bending programming fails an error message from Master BendCam is shown for user. After ‘Autobend’ is used once, user may open and modify each child bending program in the Master BendCam and combine fixed child programs by running ‘Autobend’ again. Multipart may contain different amounts of different child parts. After ‘Autobend’, child programs can be launched to Master BendCam with right-click on ‘Parts’ list.



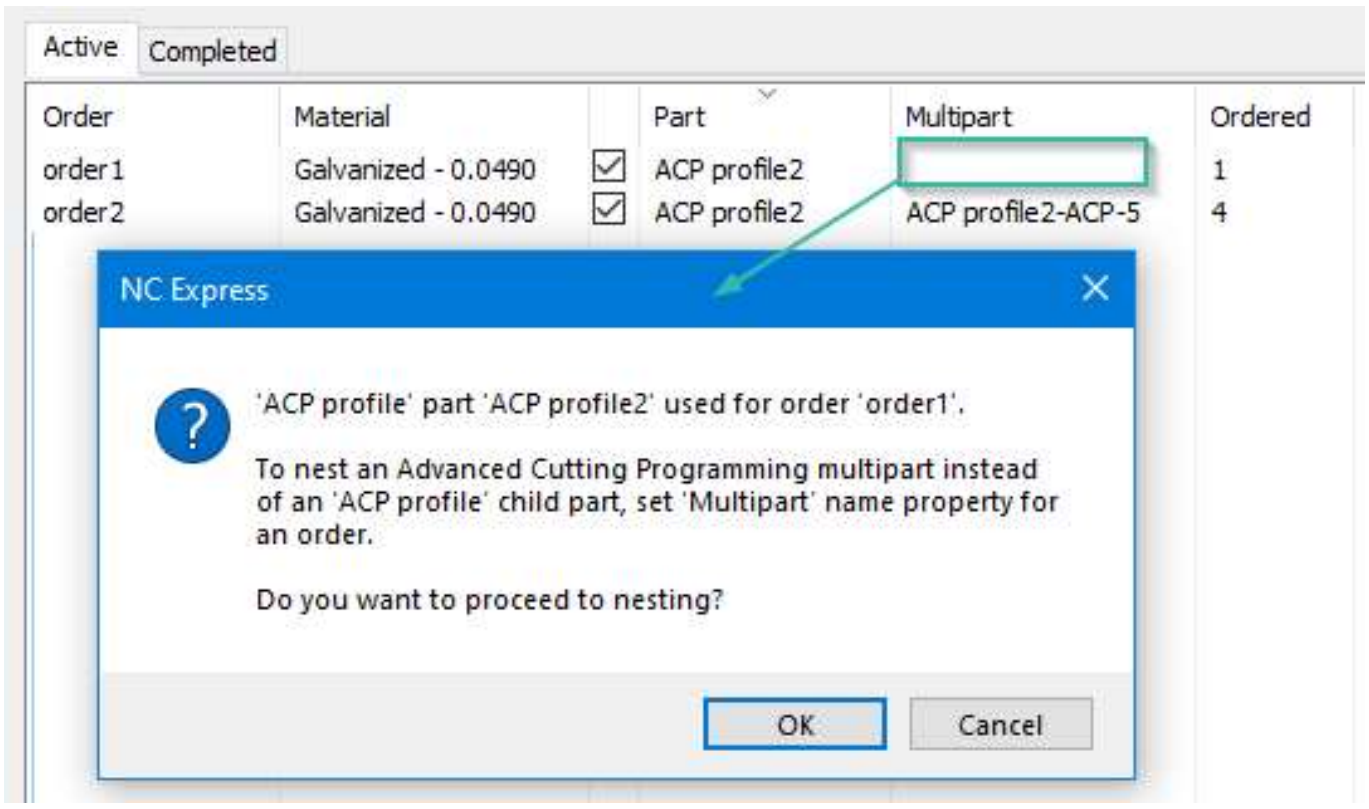
If ‘Always auto program’ is enabled when ‘Autobend’ is used, Master BendCam overwrites all existing programs and manyally made changes to child programs are lost.

Nest ACP multiparts when ACP profile parts are ordered

Now it is possible to order child parts of ACP multiparts when using ‘Part orders’ dialog for 'Nesting [x] ...’. When a child part is ordered, multipart to be nested instead of the ordered child part can be defined in the order of a child part by using “MultipartName” field. When the field is filled nester nests the given ‘Multipart’ instead of the ordered child part. ‘Multipart’ of an order can be set also from the ‘Advanced Cutting Programming multipart’ dialog (see the section “Advanced Cutting Programming multipart dialog enhancements”).

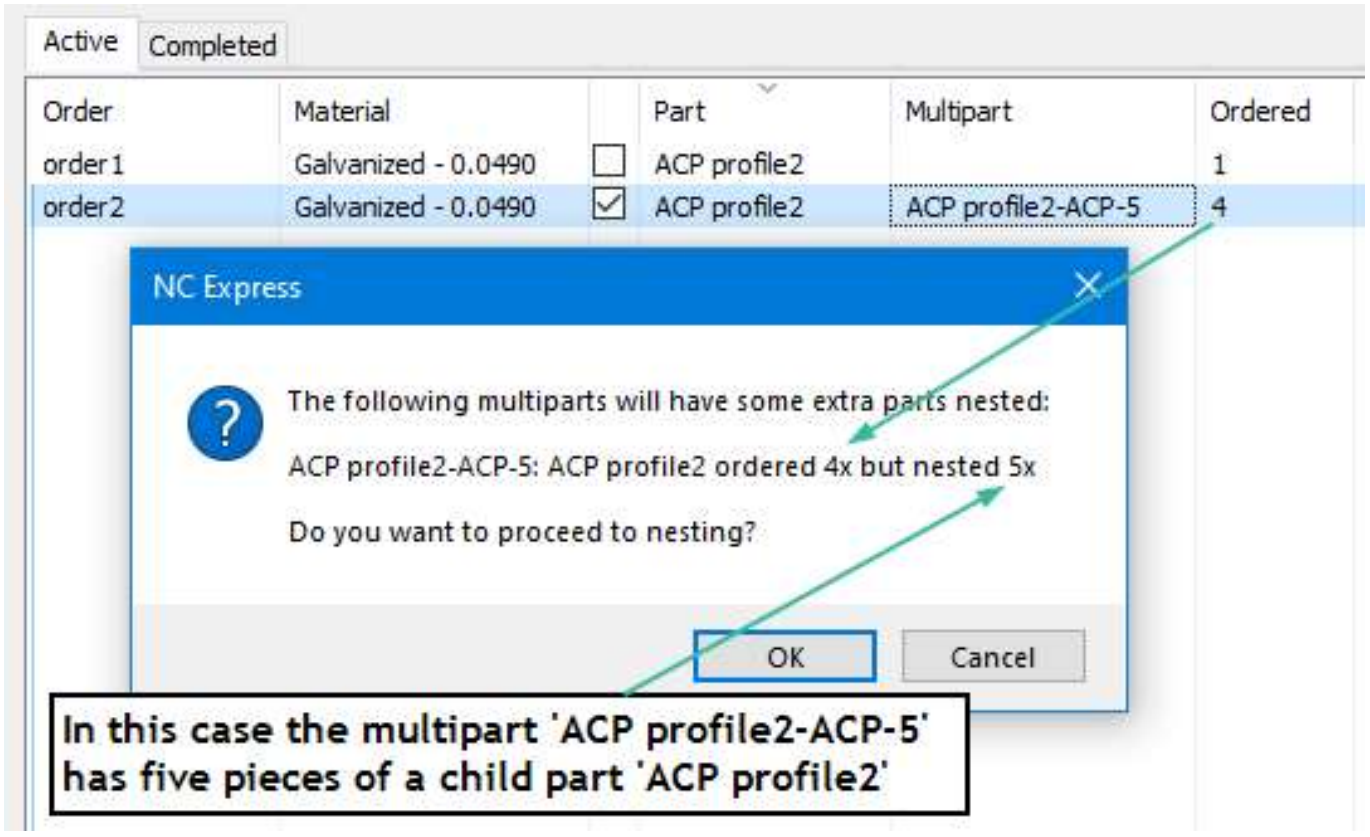


If a part with ‘ACP profile’ part property turned on is ordered, and ‘Multipart’ name is not defined for the order, in nestin a warning is given to indicate that the ordered child part is to be nested.

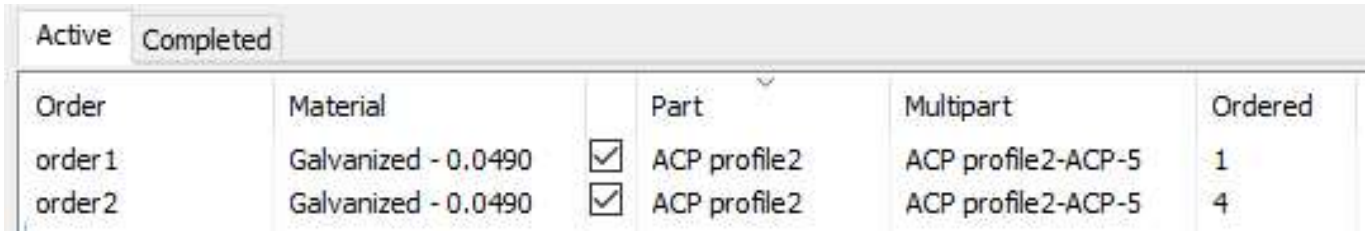


If ordered amount of children is not even with child quantities of used multiparts the logic fulfills the ordered quantity and tells how many extra child parts are

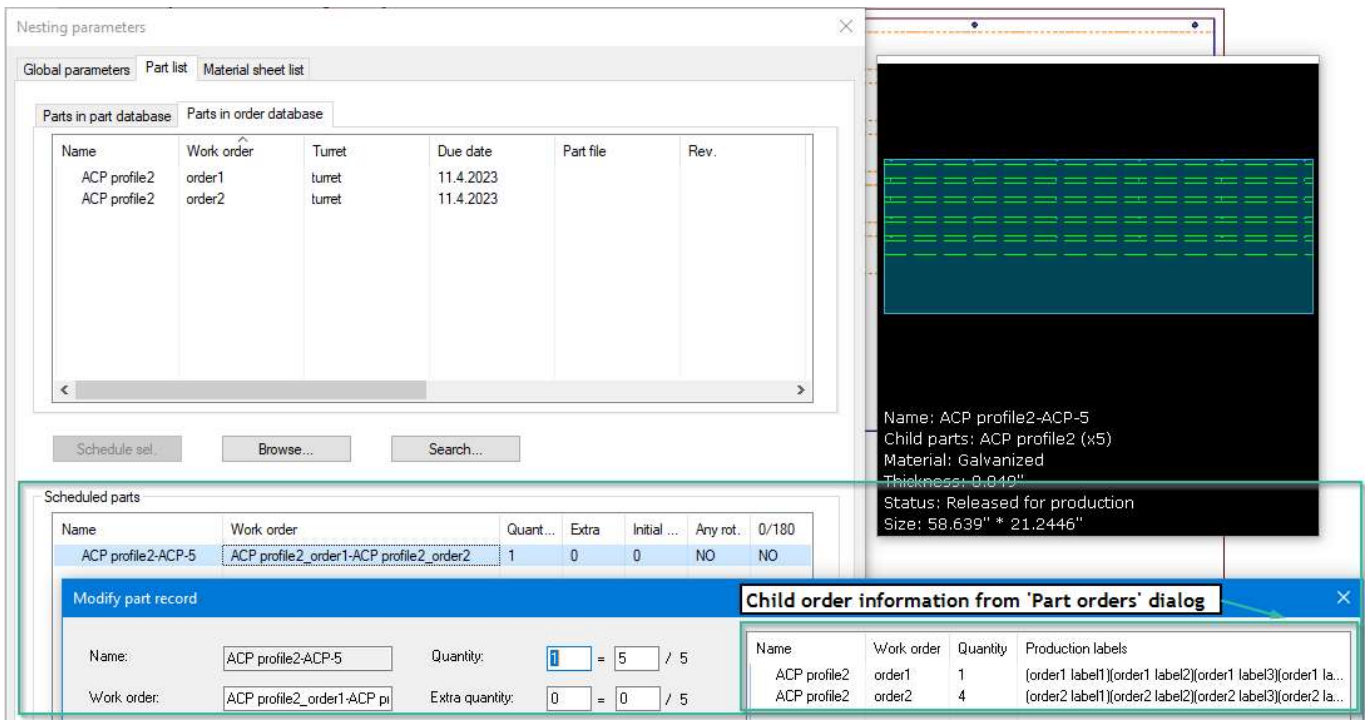
nested inside used multiparts. It is possible to use ‘Extra parts allowed’ to allocate nested extras for a certain child order.



As the end result of the nesting child order information is automatically fed into scheduled parts of nested multiparts. As exmple two order lines for child parts of a multipart “ACP profile2-ACP5".

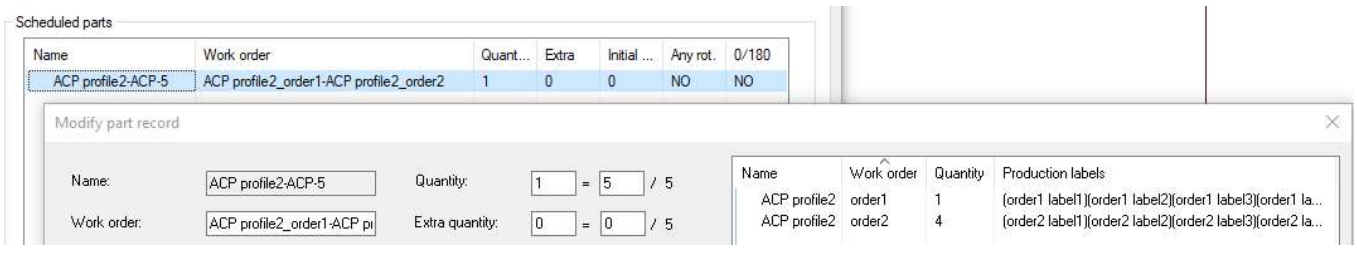


When above orders are nested, order data is filled for all child parts of the nested multipart. ‘Work order’ of nested multiparts is automatically filled based on orders filled into the scheduled part of multipart.

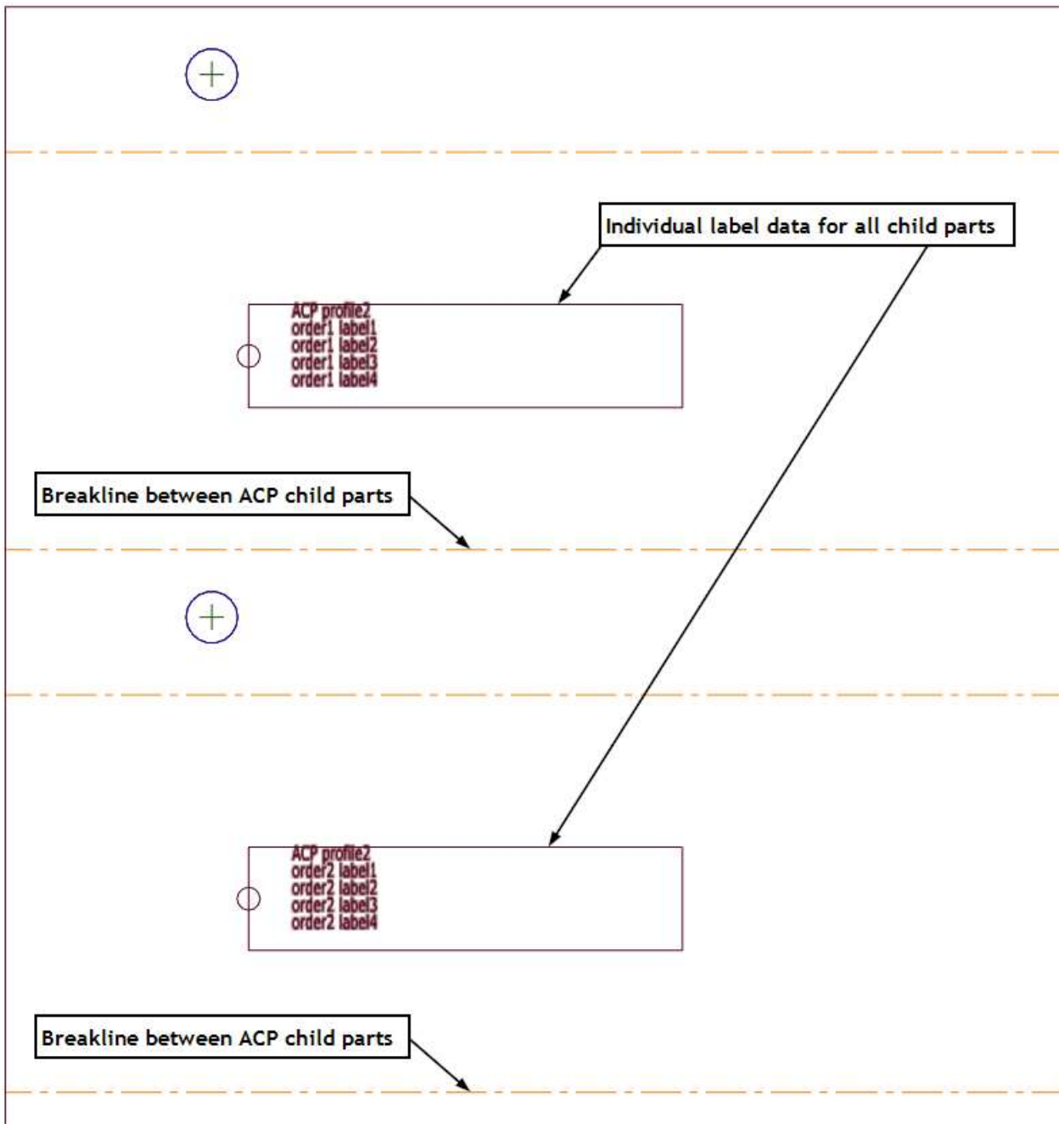


Own label for all child parts of ACP multipart

Now it is possible to add own ‘Context’-’Marking’-’Print label’ for each child part of an Advanced Cutting Programming multipart. When ‘Database’-’Orders’-‘Part orders’ dialog is used to nest ACP child parts (like described in the section “Nest ACP-multiparts when ACP-profile parts are ordered”) order information and production label information of ordered child parts of ACP multiparts is carried into scheduled part of nested ACP multiparts.



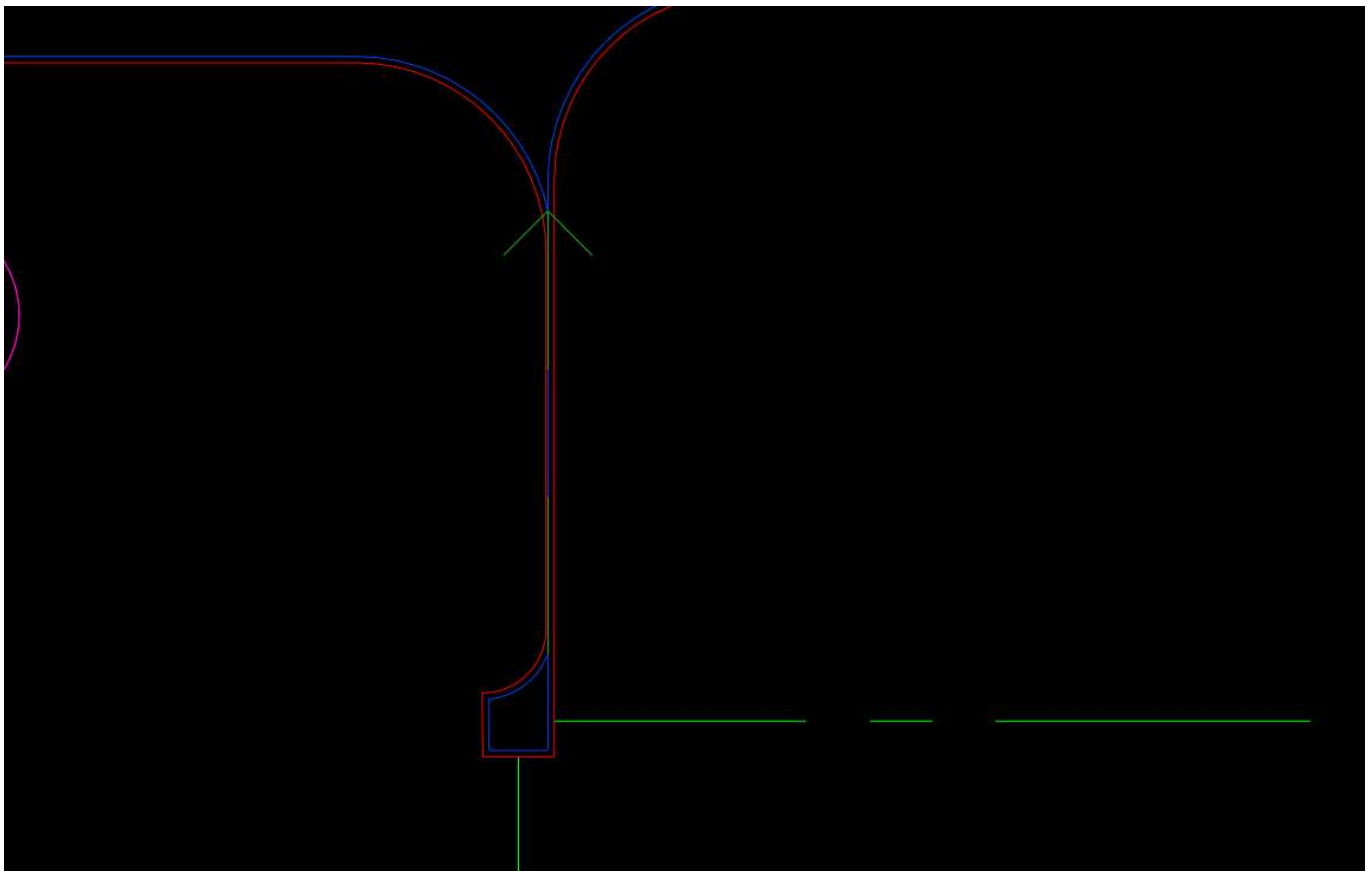
This enables order data to be carried into labels of child parts of ACP multiparts.



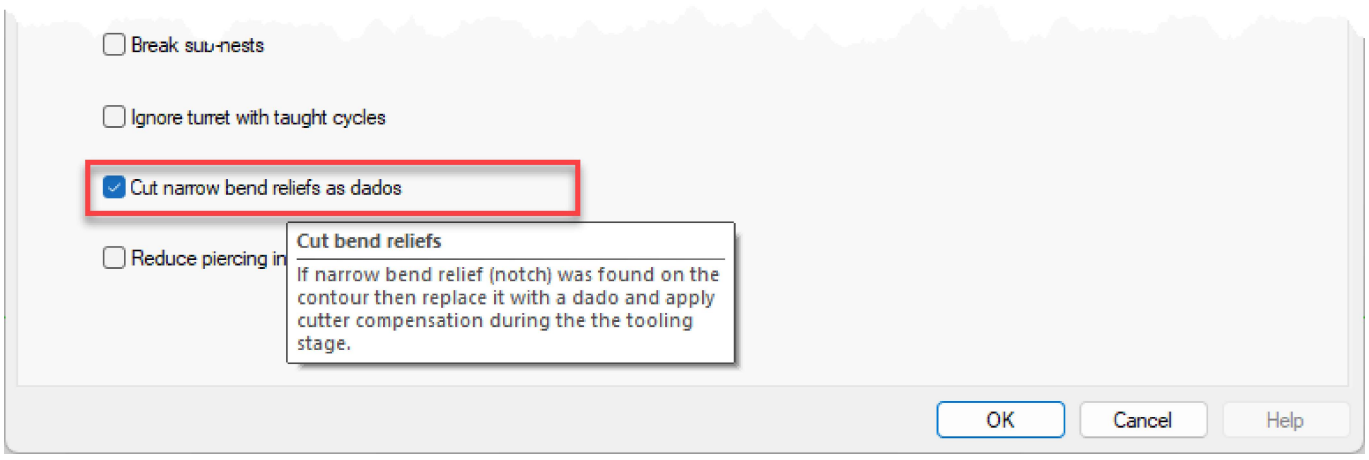
The COMBI, Laser-Punch machines

Cutting bend reliefs

The option to avoid double cutting, when auto-tooling narrow bend reliefs, can be enabled for Laser-Punch machines. It was improved to support complex shapes as in the following sample:

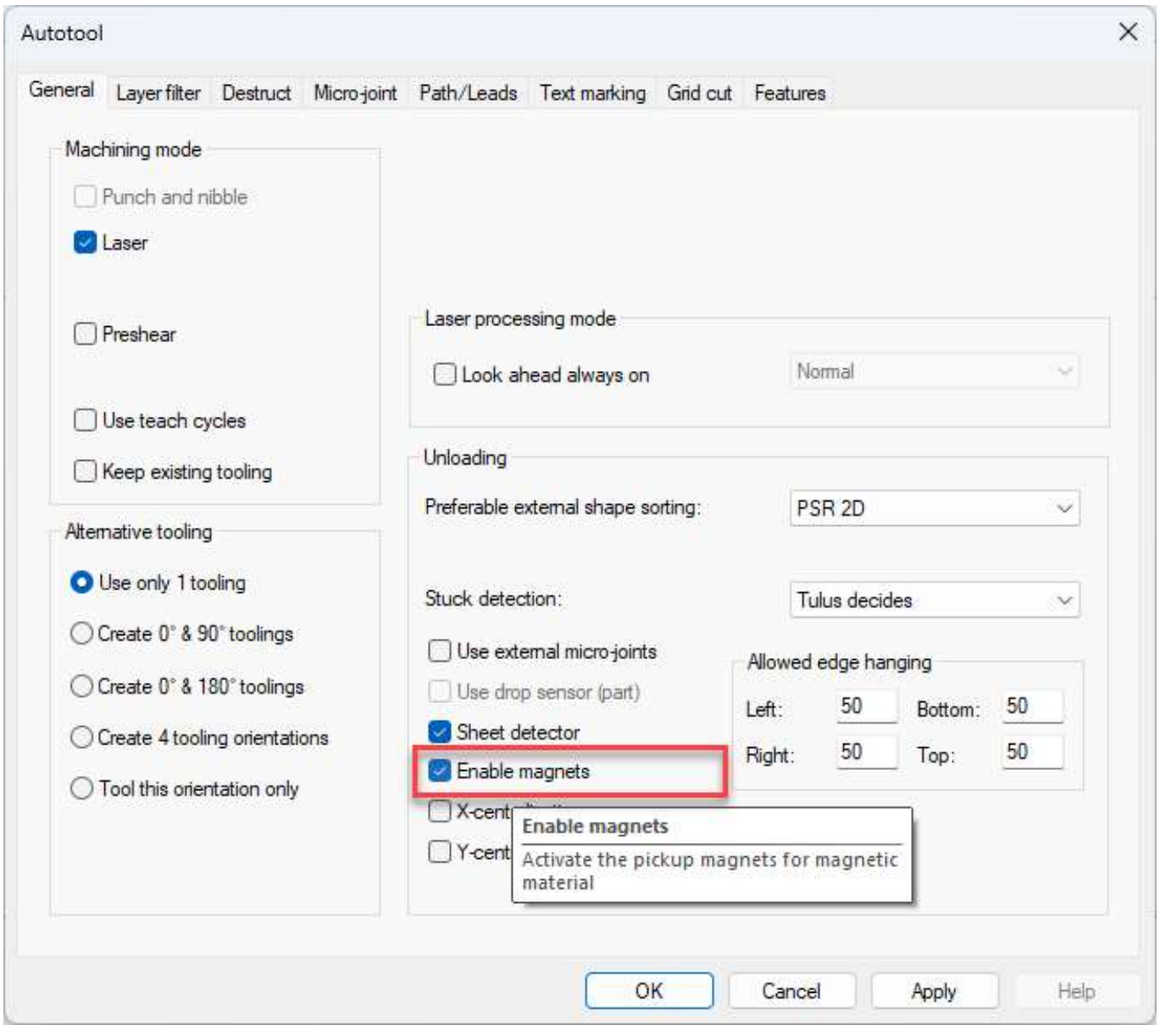


This can be activated at ***Settings - Options - Autotool*** on the choice ***Cut narrow bend reliefs as dados***:



Magnets enabled choice for Autotool

It’s possible to set per material if the automatic robot placement is going to use magnets. This is determined by ***Autotool – General – Enable magnets***.



Laser micro-joints on corners

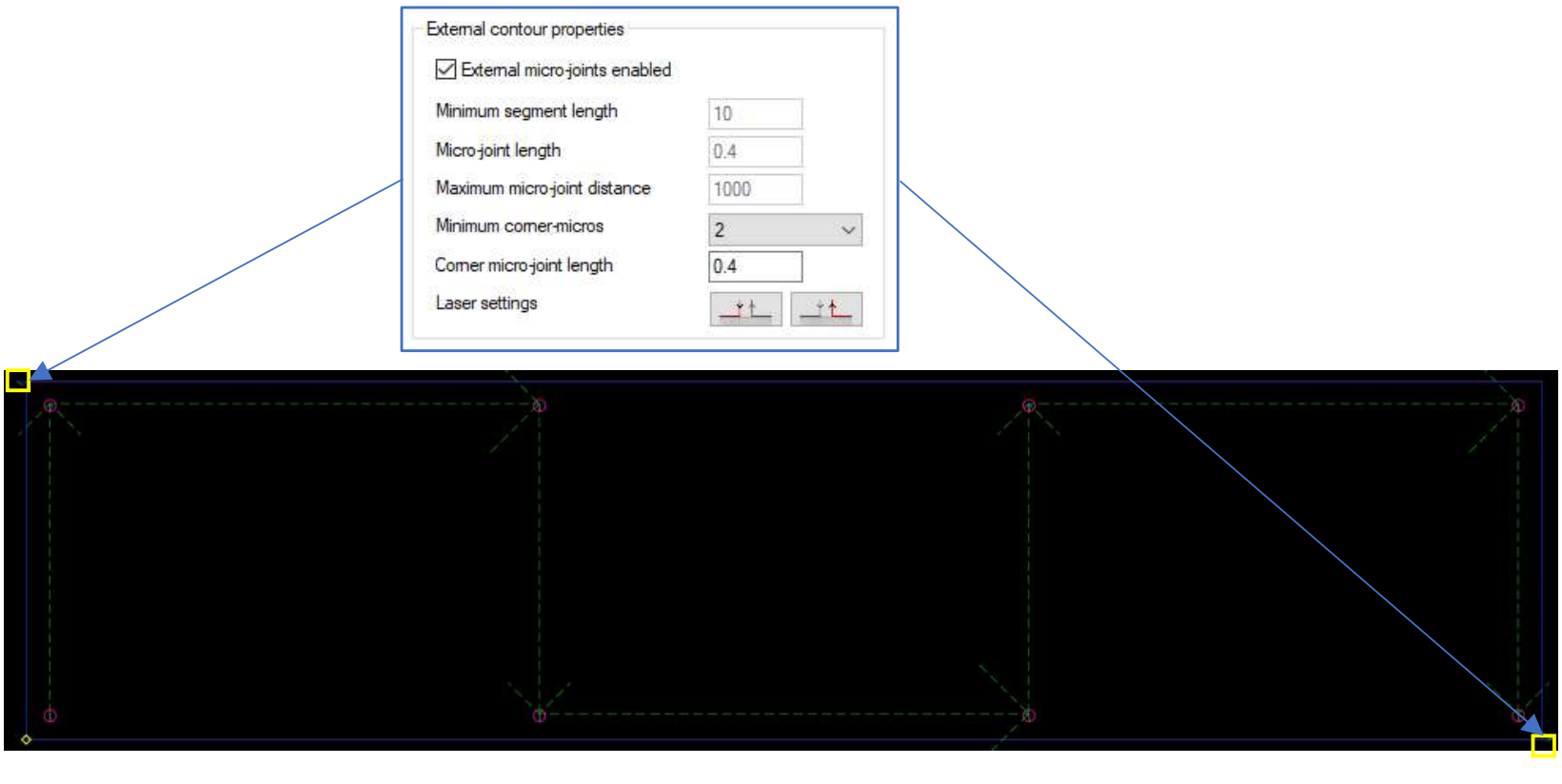
NC Express allows the automatic definition of “micro-joints on corners” on the external profile for laser machines since this version. See paragraph about Laser micro-joints on corners

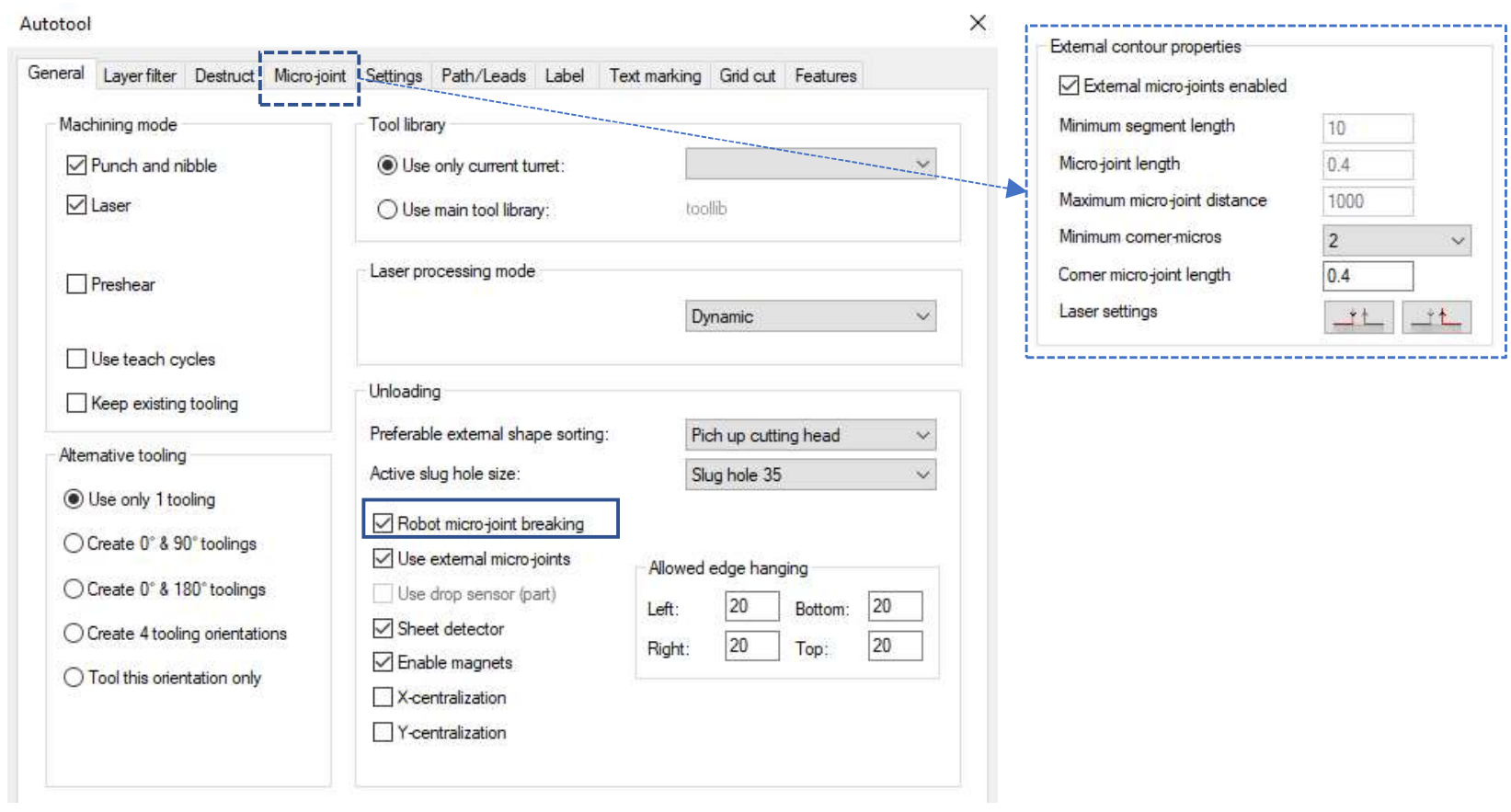
COMBI machines have an additional constraint respect Prima Laser machines when:

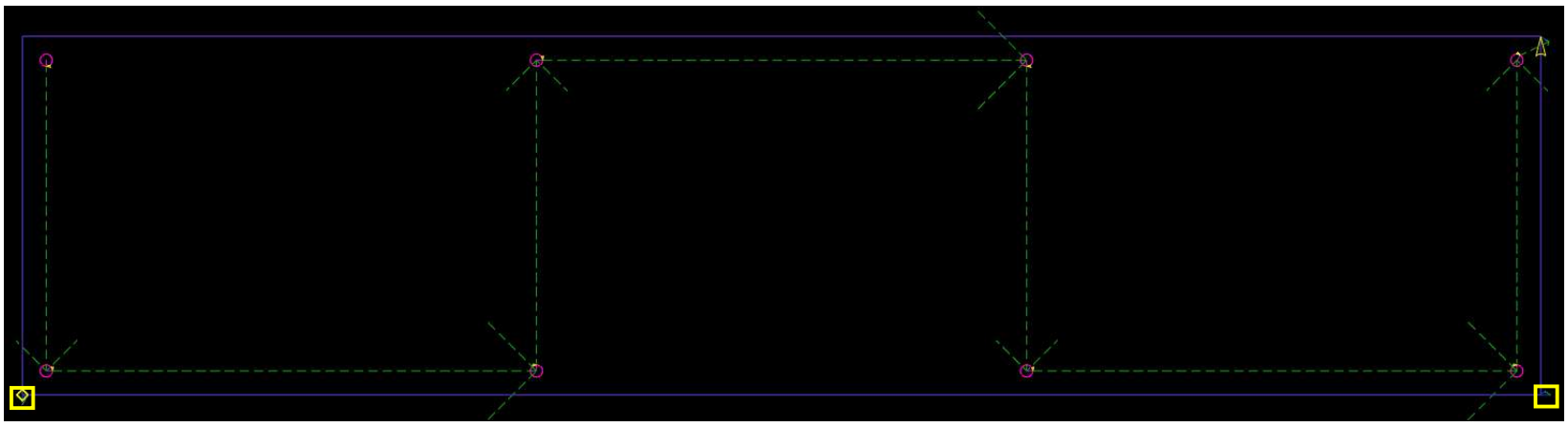
- laser mode is enabled,
- **Minimum corner-micros** is equals to 2
- On the general tab of Autotool the flag ***Robot micro-joint breaking*** is enabled;

In this case the evaluated corners are the ones nearest to the bottom left and right instead the most far. An example is shown in the following pictures.

In the first case we have the standard execution. In the second the constraints about micro-joint breaking.

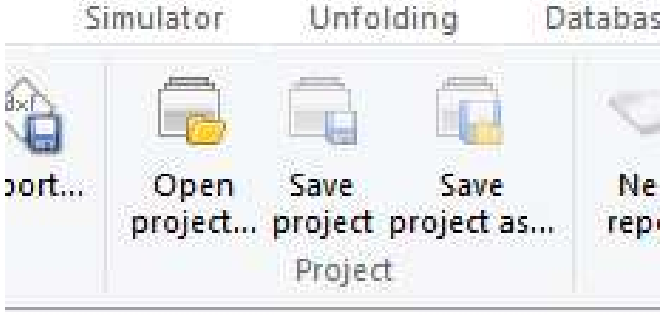

External contour properties
External micro-joints enabled
Minimum segment length
10
Micro-joint length
0.4
Maximum micro-joint distance
1000
Minimum corner-micros
2
Corner micro-joint length
0.4
Laser settings


Autotool
General
Layer filter
Destruct
Micro-joint
Settings
Path/Leads
Label
Text marking
Grid cut
Features
Machining mode
Punch and nibble
Laser
Preshear
Use teach cycles
Keep existing tooling
Alternative tooling
Use only 1 tooling
Create 0° & 90° toolings
Create 0° & 180° toolings
Create 4 tooling orientations
Tool this orientation only
Tool library
Use only current turret:
Use main tool library:
toollib
Laser processing mode
Dynamic
Unloading
Preferable external shape sorting:
Pich up cutting head
Active slug hole size:
Slug hole 35
Robot micro-joint breaking
Use external micro-joints
Use drop sensor (part)
Sheet detector
Enable magnets
X-centralization
Y-centralization
Allowed edge hanging
Left:
20
Bottom:
20
Right:
20
Top:
20
External contour properties
External micro-joints enabled
Minimum segment length
10
Micro-joint length
0.4
Maximum micro-joint distance
1000
Minimum corner-micros
2
Corner micro-joint length
0.4
Laser settings



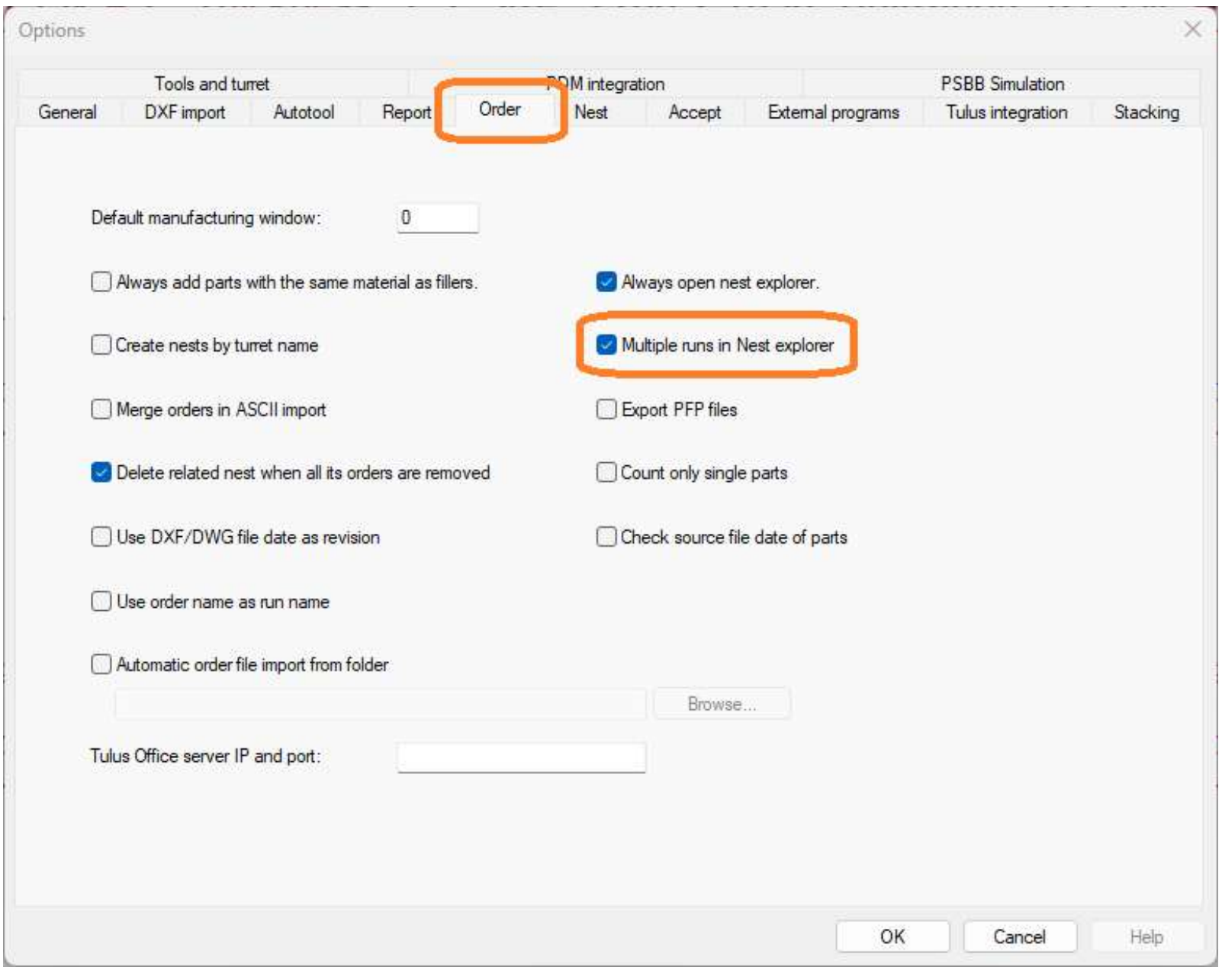
Other usability enhancements

Project file



NC Express 23.1 introduces a new NC Express project concept. It helps the user to organize and link existing runs in the WORK directory to a single entity called a *project*. With the help of the project, it is easier e.g. to open and to re-create a ZIP file from several runs than before. The concept includes a new NC Express related file having the file extension *.ncxproj*. Such files are called project files. The file contains a list of names of selected runs available in the WORK folder. Once such project files have been created, they are located by default in the directory 'PROJECTS' under the 'WORK' directory. The project file also stores information about the last sheet of the runs the user was working on when creating or saving the file. This helps the user to continue the project where it was left.

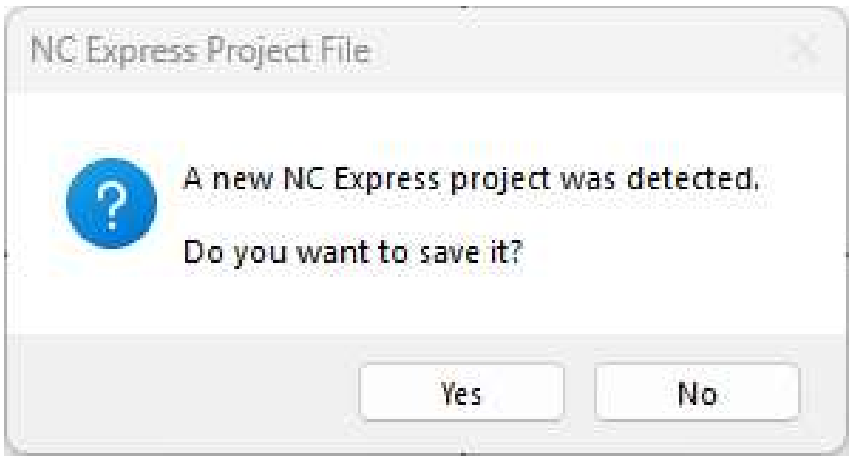
To activate the project concept, the setting '*Multiple runs in Nest Explorer*' must be active on the '*Order*' option page. Note, changing the setting and to have the effect on or off, restarting the NC Express software is needed. A separate message is given in such situation.



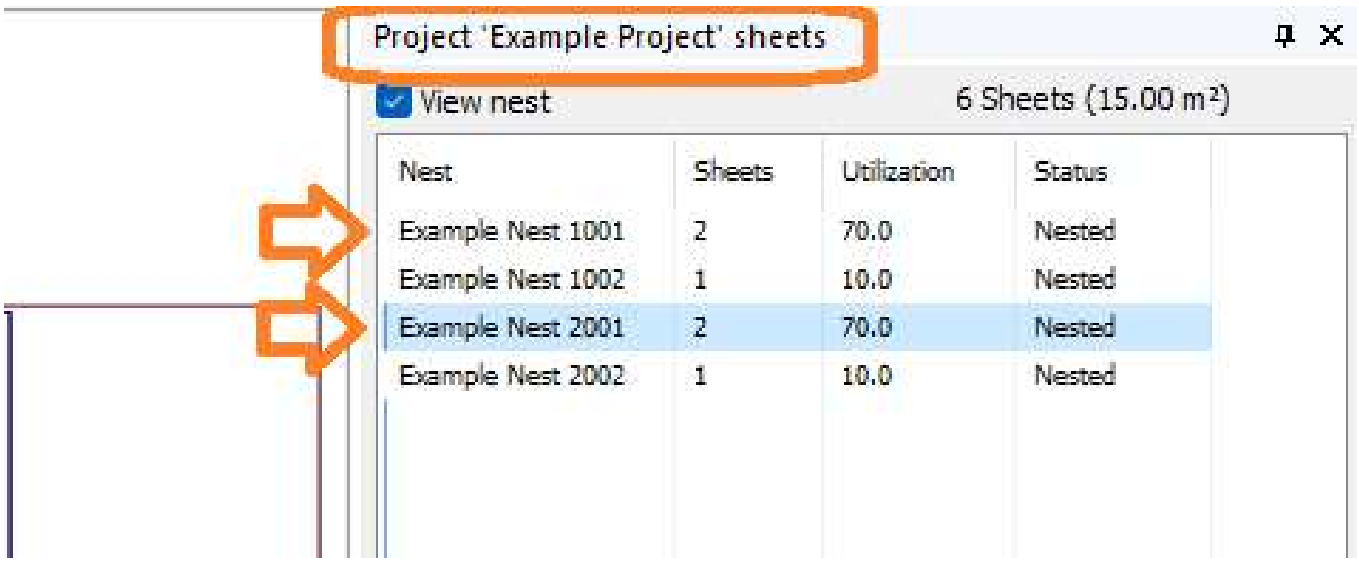
Create a New Project

A new project can be created in several ways, and NCX Express will detect automatically when the user is creating a project. To create a project from existing runs in the WORK directory, first, open a desired run. Then, open another one. NC Express will ask the user to choose whether or not the opened one(s) must be kept in NC Express by showing the following popup dialog:

Choose ‘No’, and then, the existing run(s) already opened will remain in the Sheet Explorer of NC Express. Now, two different runs are opened, and NC Express will detect this automatically, and asks the user to save the work as a project as the following popup dialog indicates:

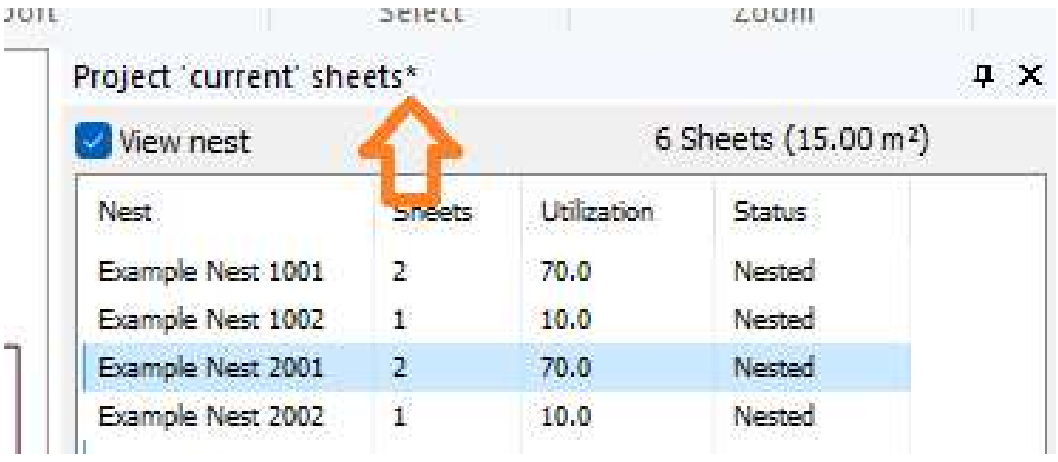


If the work is planned to be saved for a possible later use, click the ‘Yes’ button. Otherwise, click the ‘No’ button. In case the work is saved, the name of the project will be the same name given for the project file saved. Here is used ‘Example Project’ for the name. In the below picture, two runs are open, ‘*Example Nest 1*’ and ‘*Example Nest 2*’, and the name ‘Example Project’ of the project is presented on the title bar of the Sheet Explorer.

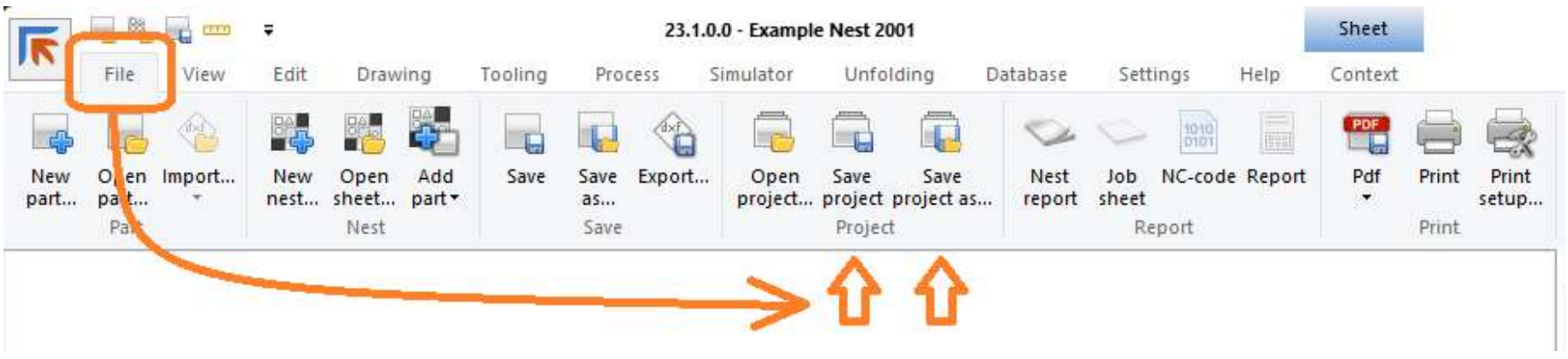


Save a Project

NC Express saves the project automatically when there are changes to the project itself, and a non-default name for a project has been given (=: different than the current.ncxproj, see more from the later subsection '*Open a Project*'). In case the user does not save a new project created, that is, clicks, e.g. the 'No' button in the new project has been detected dialog, an unsaved project is indicated by the asterisk character '*' on the title bar of the sheet explorer as it can be seen from the below picture:



To save the project, navigate the to 'File' tab, and from there click either 'Save project' or 'Save project as...'. Choose the latter one if a new name for the project is needed to be given.



Open a Project

An existing project can be opened easily. From the same place where the project was saved in NC Express, choose the 'Open project...'. It will open a File Explorer, and from there the user can open the desired project. By default, the projects are saved to the directory 'WORK/PROJECTS', and that folder is presented by default in the File Explorer. Once the project to be opened has been selected, and pressed the 'Open' button, NC Express will open automatically the sheet the user was working on when he or she saved the project.

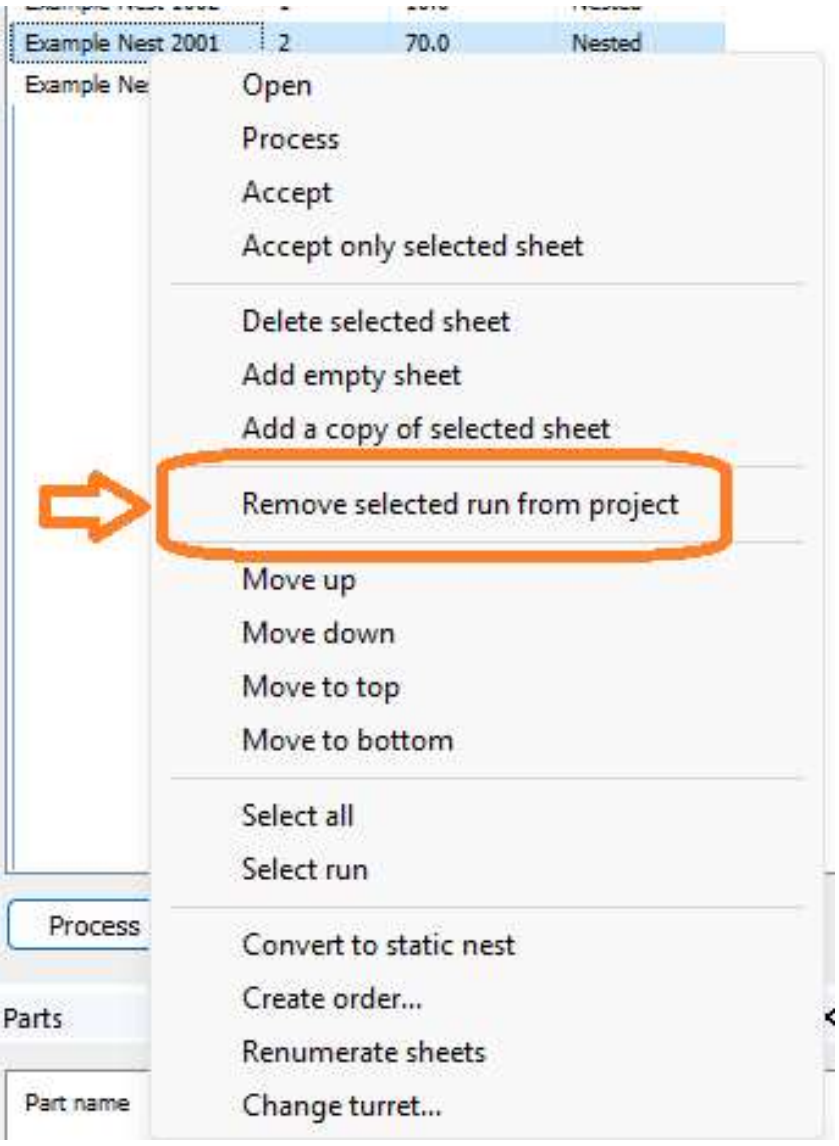
As a note, a run from the WORK directory can be opened individually as it has been possible before the concept of the NC Express project. In other words, a run included to a project works also as an individual meaning that a project does not add anything extra to the run itself. This makes it is possible that a run can be included to several projects at the same time. If the run is modified in some project or as an individual, the modified run will be the same in all projects. In other words, there are no local copies of the run in different projects.

NC Express has by design a default project file called 'current.ncxproj' in the WORK/PROJECTS directory. This file is generated automatically by NC Express, and

it contains necessary information on the current project the user is working on. It can be considered as a backup project file if it happens to be that the user has not saved the project and closes NC Express, or something other unexpected occurs in NC Express. In addition, the content of the file ‘current.ncxproj’ is also saved when a project with a proper name has been given.

Removing a Run from a Project

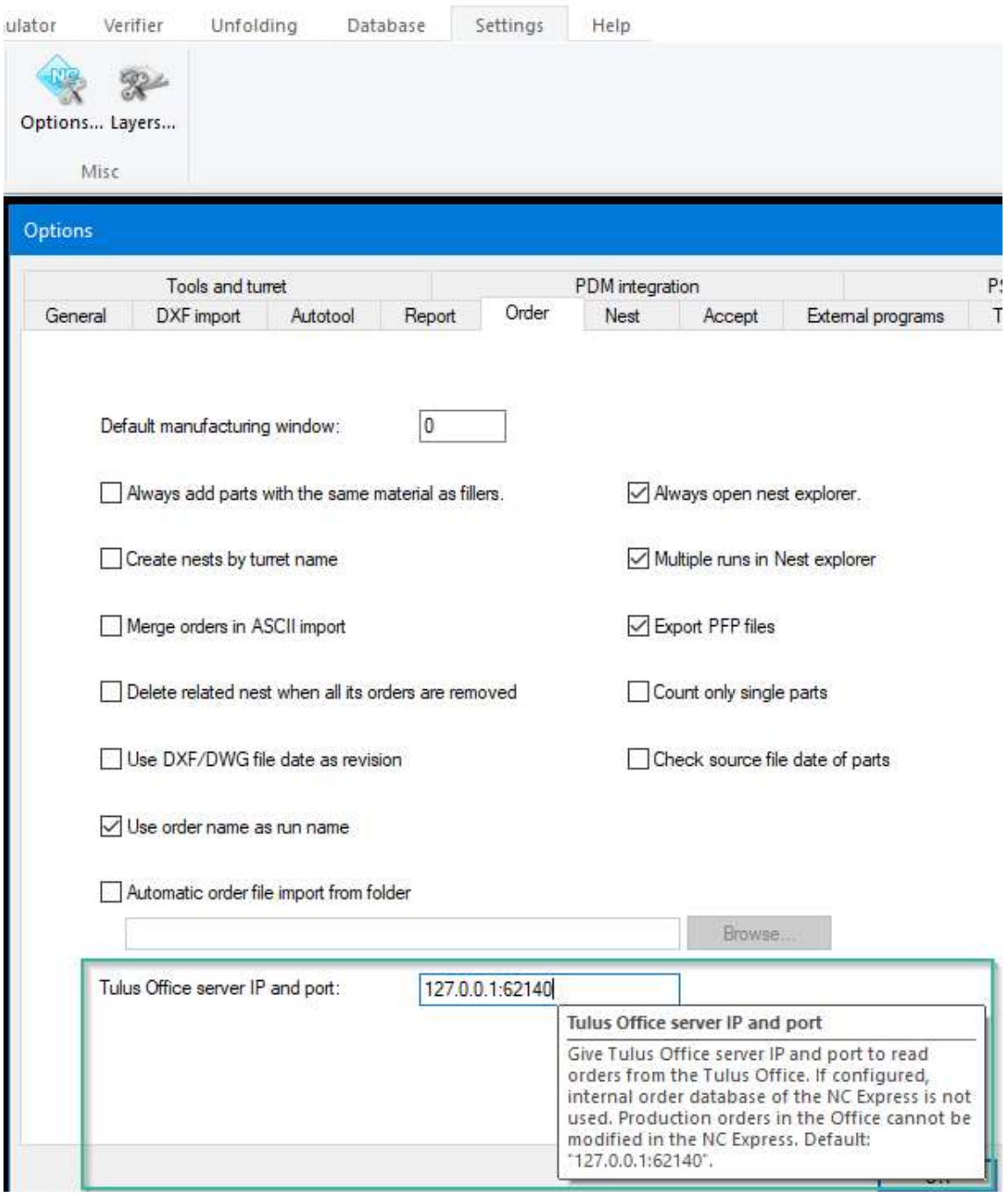
Removing a run from a project can be done from the Sheet Explorer. First, select a sheet of a run to be removed by opening the popup menu by the second mouse button. Then, choose ‘*Remove selected run from project*’ from the menu to remove a run from the project.



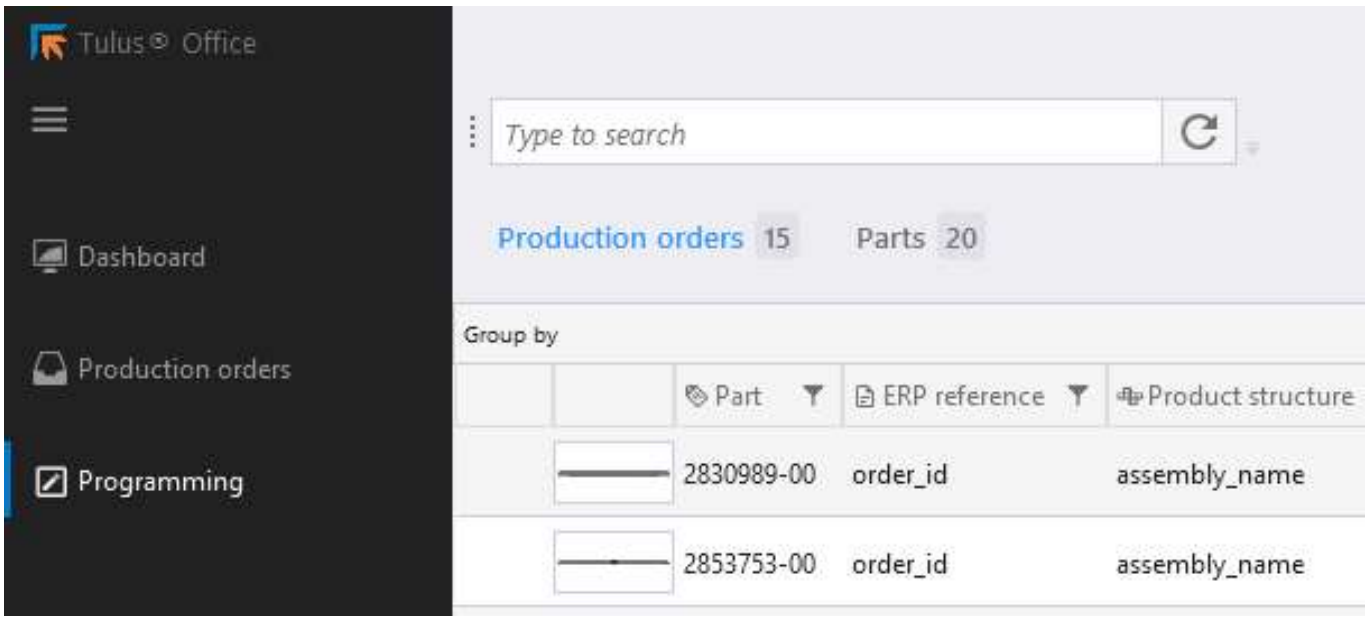
Then, the run containing selected sheet(s) is removed from the project. Note, all sheets of the run will be removed from the project. An active run, that is, one of its sheet is open in the CAD window area of NC Express, cannot be removed. In other words, only inactive runs can be removed from the project. Thus, to remove the active run, open first a sheet from another run available in the Sheet Explorer. Another very important note, when the ‘*Remove selected run from project*’ is used, the files of the run will remain in the WORK directory compared to the option ‘*Delete selected sheet*’ that will permanently delete selected sheet(s) and the corresponding files from the run directory!

Read Tulus Office Order database

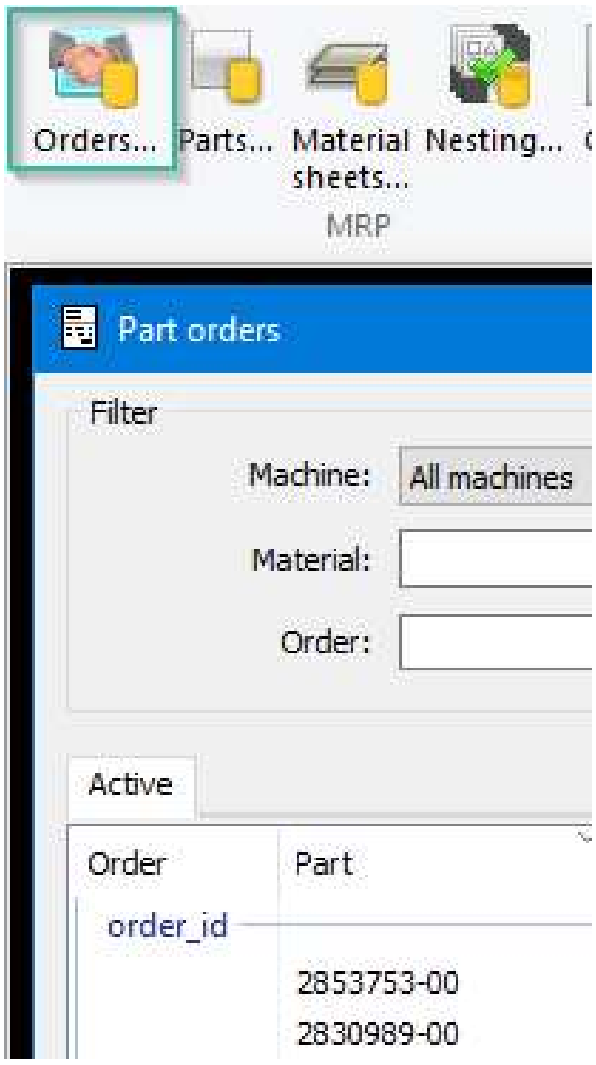
Now NC Express can read order database of Tulus Office. In the ‘Settings’-’Options’-’Order’ there is possibility to configure ‘Tulus Office server IP and port’ to activate the feature.



When the feature is activated the NC Express shows ‘Started’ (orders with a status ‘In production’) ‘Production orders’ which are visible in the ‘Programming’ view of the Office. Order rows currently added into the nesting function of the Office are not visible in the NC Express.



User may use NC Express ‘Part orders’ dialog at same way how the dialog is used when NC Express order database is in use. Through NC Express, it is not possible to change original order information read from the Office. At the moment material and thickness information has to be defined in the Office orders.

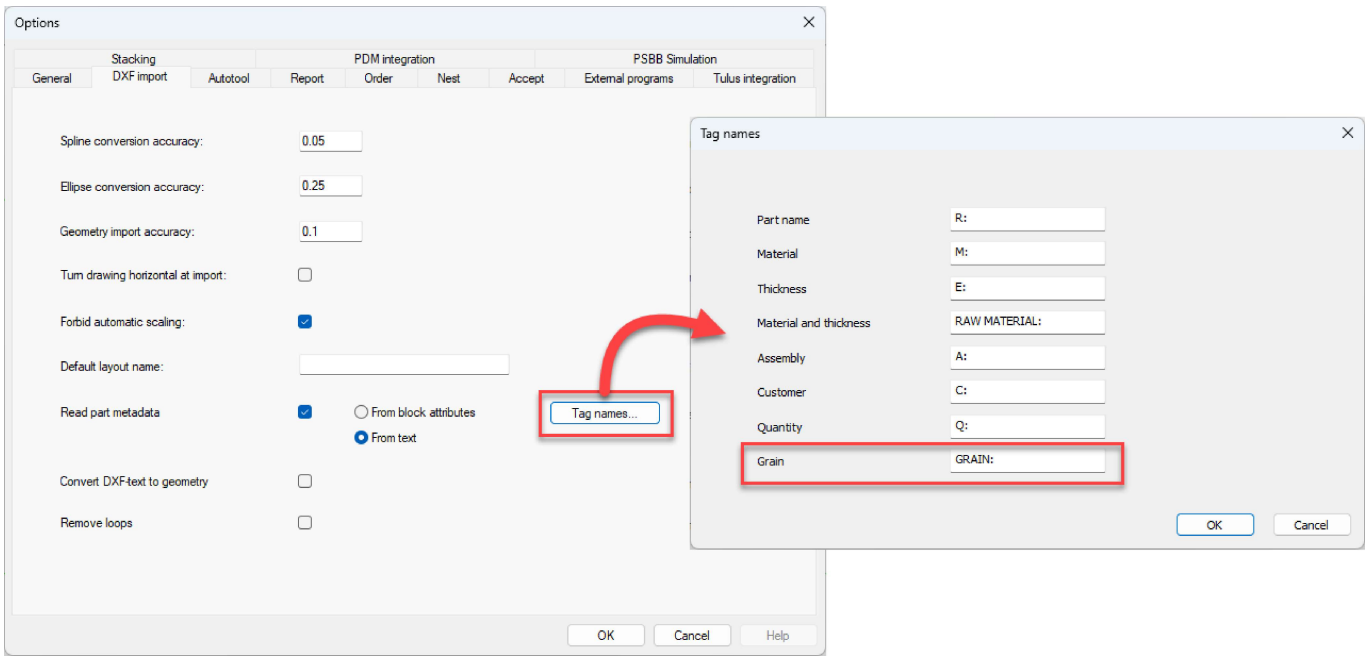


When a manufacturing batch.zip is added into calendar in the Tulus Office, nested orderlines disappear from the ‘Active’ orders of the ‘Part orders’ dialog.

Read grain from metadata-layer in DXF

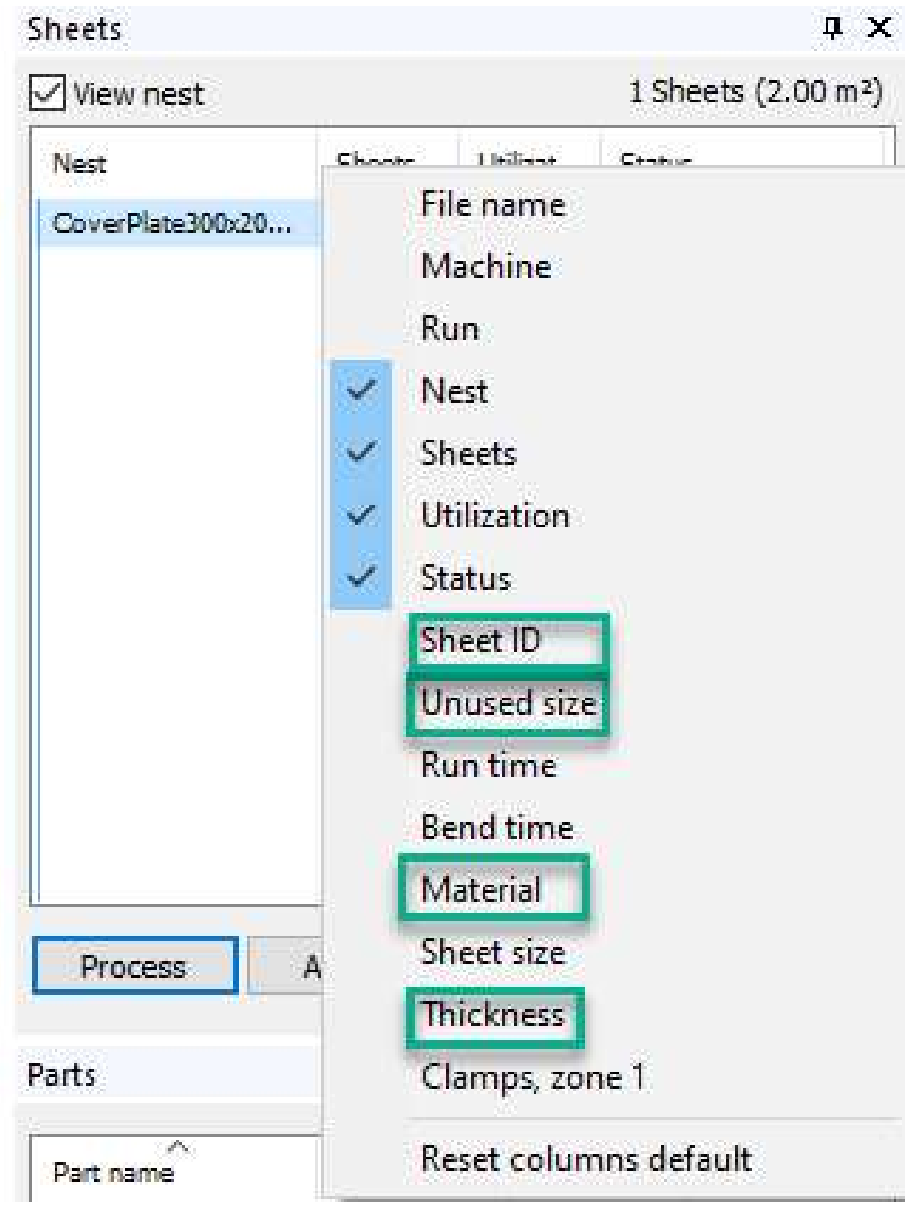
There is a new choice ***Grain*** available in ***Settings – Options – DXF import – Tag names***. This allows reading material grain from DXF/DWG-drawing. Supported values are the following:

0 = all 4 rotations are allowed
1 = only 90 and 270
2 = only 0 and 180
3 = no rotation
4 = free (any) rotation

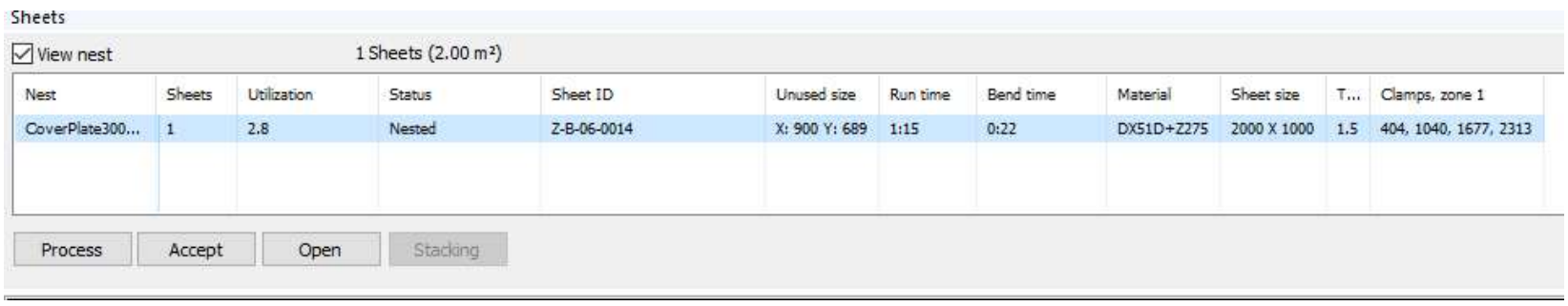


Material, Thickness, Sheet ID, Size and Unused size on Sheets-list

Right mouse click on ***Sheets***-list header opens the grouping window, where you can add now also the Sheet ID, Unused size, Material and Thickness column visible to ***Sheets***-list.

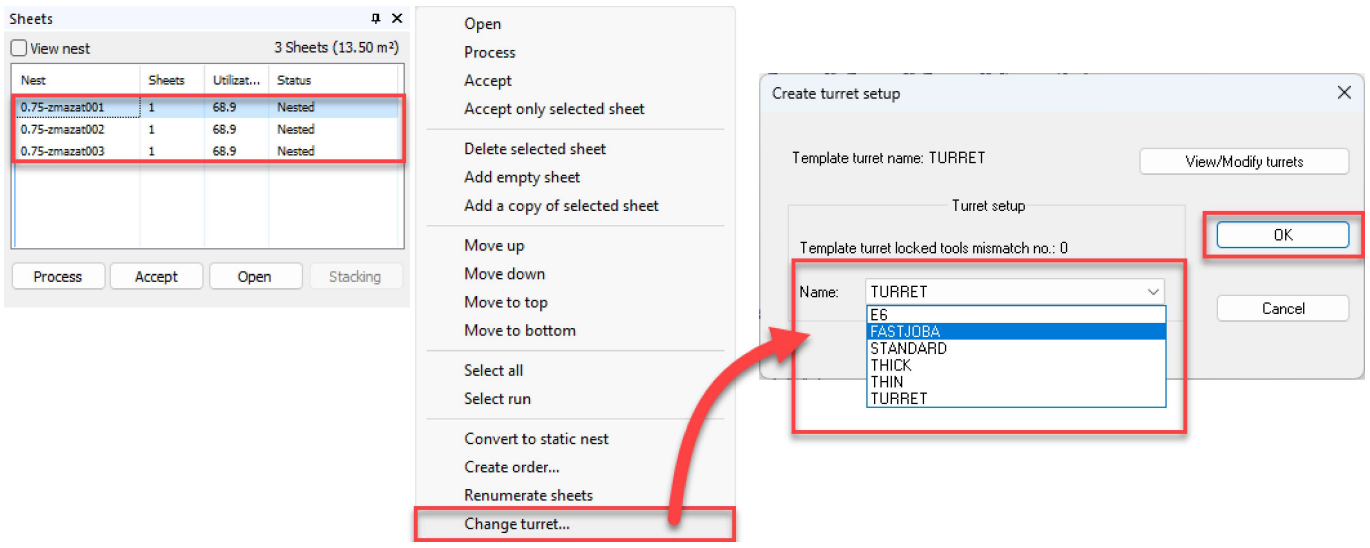


Result when all columns are set visible:



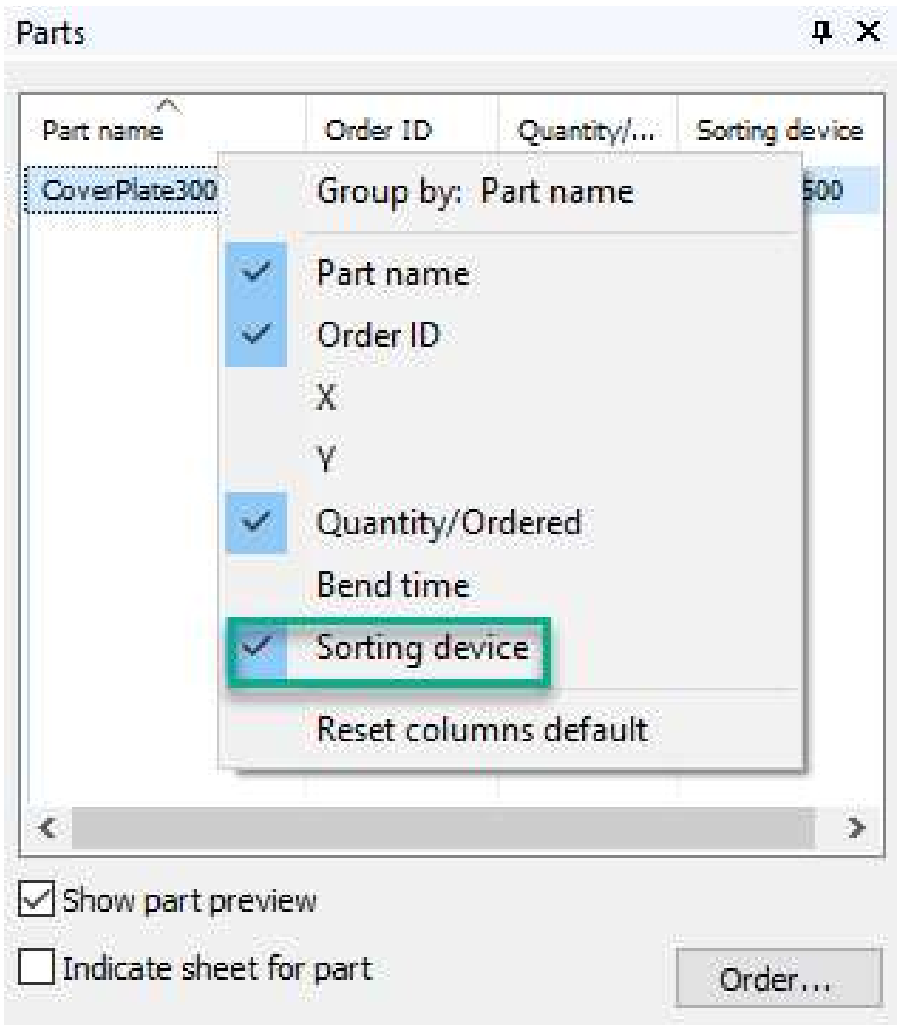
Change turret from Sheets-list

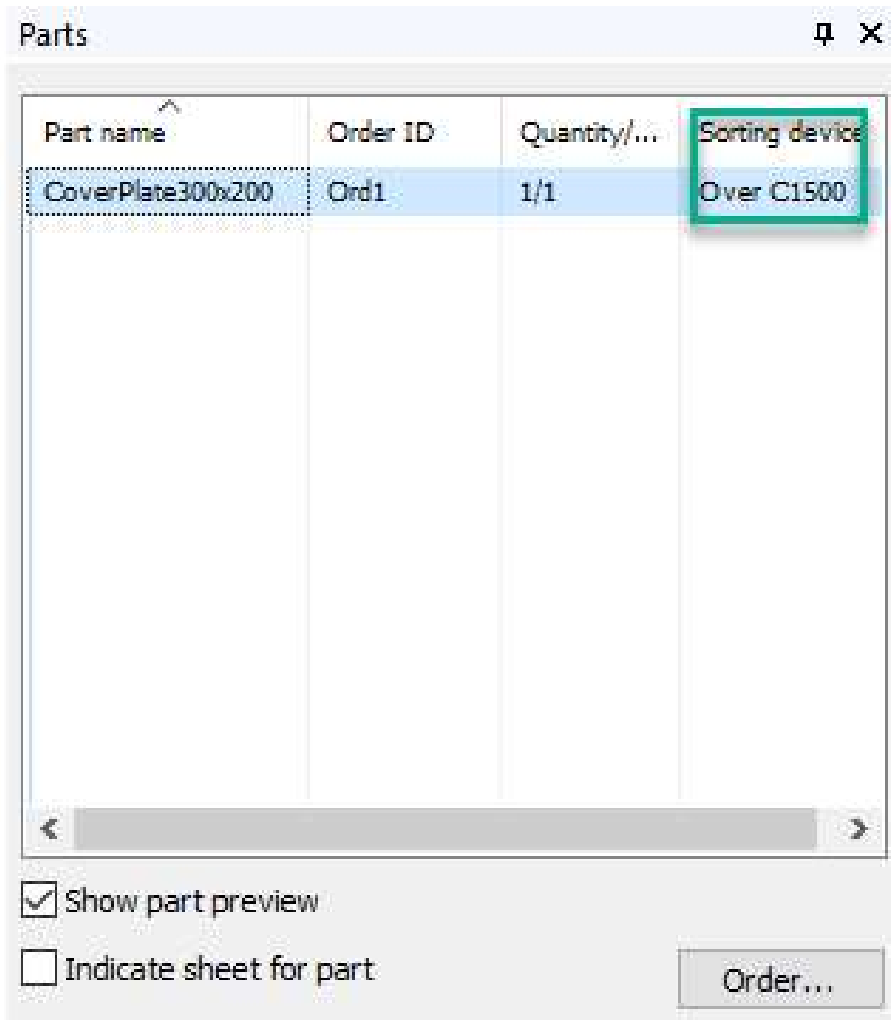
The choice ***Change turret*** allows you change the template turret on the existing nest. All sheets on the current nest get reset to 'Nested' when do this (optimized sheets have anyhow wrong tool protection areas, motion range and station#).



Sorting device on Parts-list

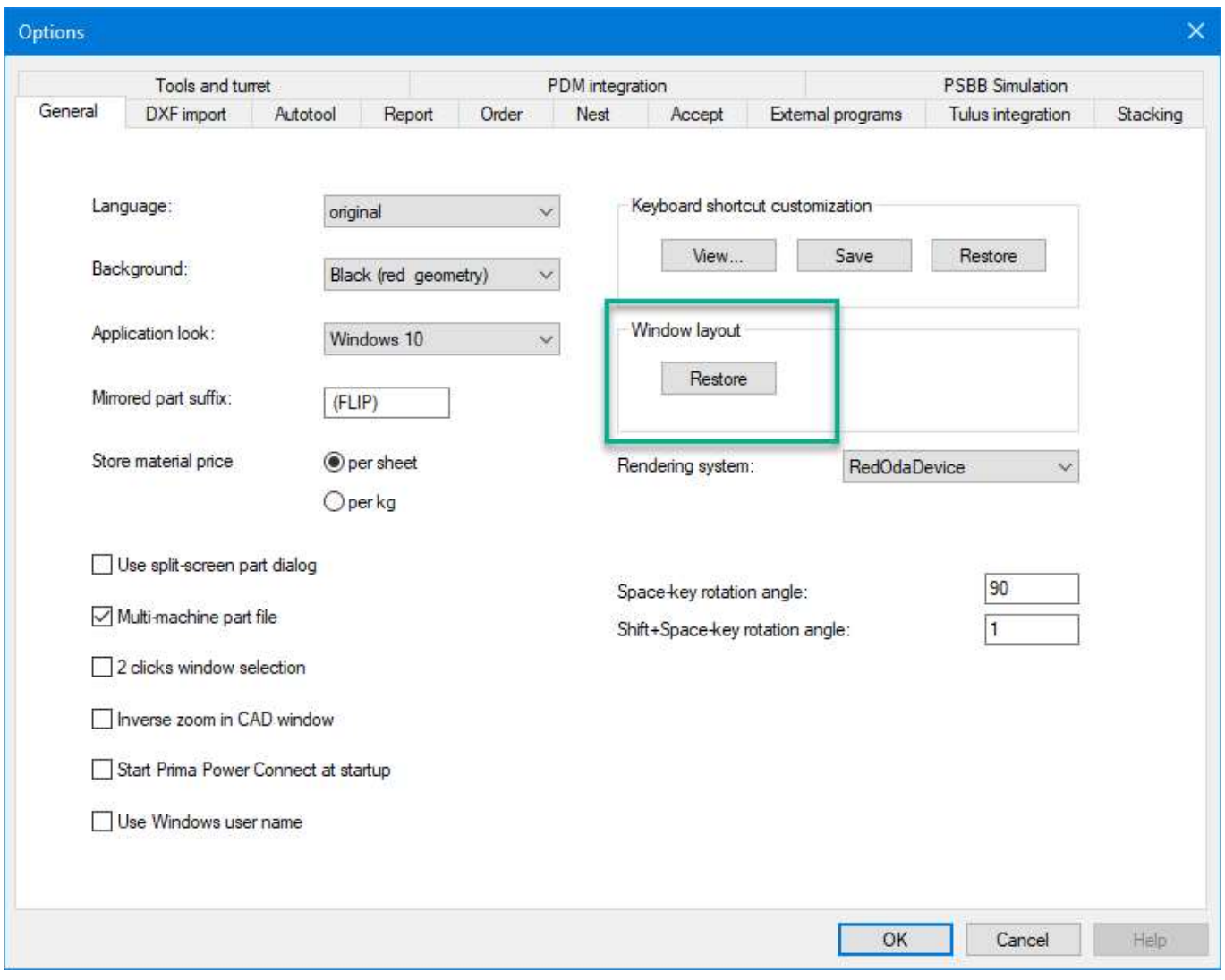
The right mouse click on part explorer header opens the grouping window, where you can add now also the Sorting device column visible to part explorers part list.





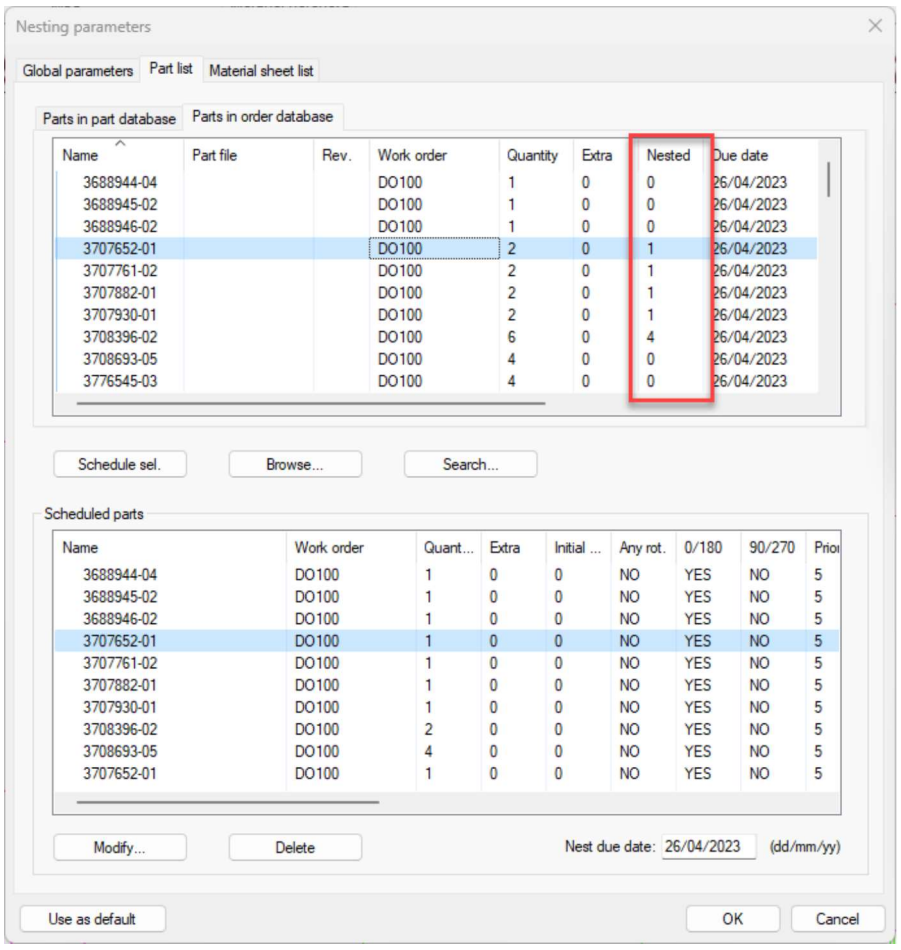
Restore window layout button to Options-General

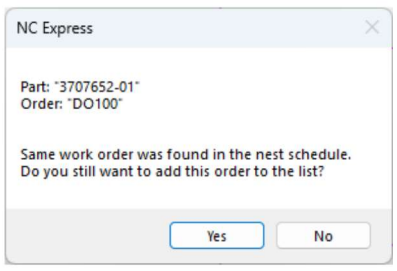
Restore window layouts to default positions. This can be used for example in the situation when you have multiple monitors and you have moved the windows to another screen. Then you disconnect the monitor, and you cannot see all the windows. Restoring the default set all windows to be seen in actual monitor configuration.



Nest - Part list and Order database enhancements

Nest - Part list tracks previously nested quantity with the ***Nested***-column. And it alarms if you try adding a similar part order twice.

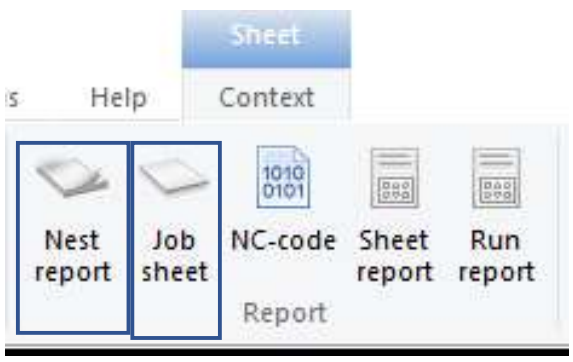


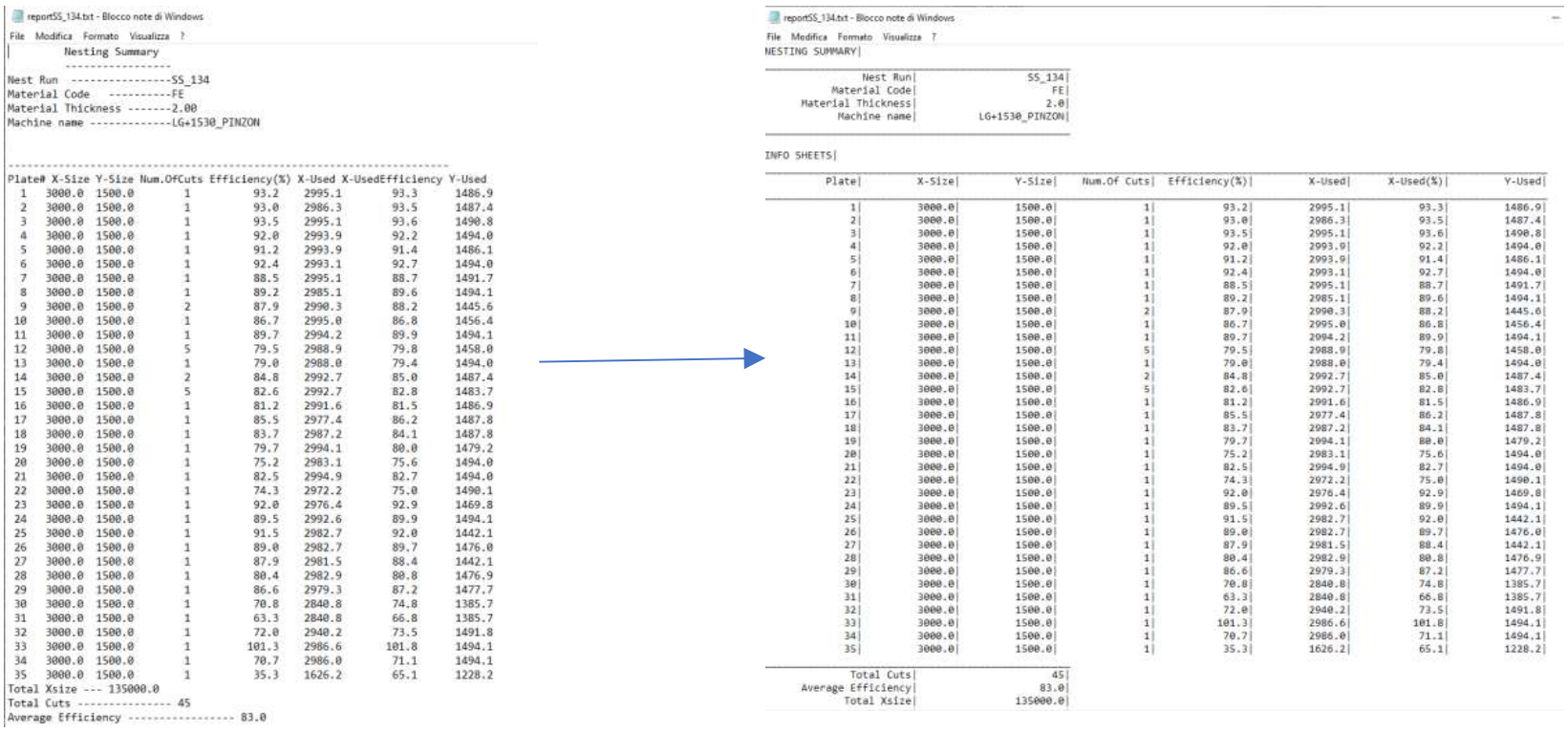


'Job sheet' and 'Nest report' on your own language

It is now possible have a translated version with a renovate format of the textual reports:

- Nest report
- Job sheet





reportSS_134.txt - Blocco note di Windows

File Modifica Formato Visualizza ?

```
        Nesting Summary
        ---------------
Nest Run  ----------------SS_134
Material Code   ----------FE
Material Thickness -------2.00
Machine name -------------LG+1530_PINZON


-------------------------------------------------------------------
Plate# X-Size Y-Size Num.OfCuts Efficiency(%) X-Used X-UsedEfficiency Y-Used
  1   3000.0  1500.0         1          93.2   2995.1         93.3    1486.9
  2   3000.0  1500.0         1          93.0   2986.3         93.5    1487.4
  3   3000.0  1500.0         1          93.5   2995.1         93.6    1490.8
  4   3000.0  1500.0         1          92.0   2993.9         92.2    1494.0
  5   3000.0  1500.0         1          91.2   2993.9         91.4    1486.1
  6   3000.0  1500.0         1          92.4   2993.1         92.7    1494.0
  7   3000.0  1500.0         1          88.5   2995.1         88.7    1491.7
  8   3000.0  1500.0         1          89.2   2985.1         89.6    1494.1
  9   3000.0  1500.0         2          87.9   2990.3         88.2    1445.6
 10   3000.0  1500.0         1          86.7   2995.0         86.8    1456.4
 11   3000.0  1500.0         1          89.7   2994.2         89.9    1494.1
 12   3000.0  1500.0         5          79.5   2988.9         79.8    1458.0
 13   3000.0  1500.0         1          79.0   2988.0         79.4    1494.0
 14   3000.0  1500.0         2          84.8   2992.7         85.0    1487.4
 15   3000.0  1500.0         5          82.6   2992.7         82.8    1483.7
 16   3000.0  1500.0         1          81.2   2991.6         81.5    1486.9
 17   3000.0  1500.0         1          85.5   2977.4         86.2    1487.8
 18   3000.0  1500.0         1          83.7   2987.2         84.1    1487.8
 19   3000.0  1500.0         1          79.7   2994.1         80.0    1479.2
 20   3000.0  1500.0         1          75.2   2983.1         75.6    1494.0
 21   3000.0  1500.0         1          82.5   2994.9         82.7    1494.0
 22   3000.0  1500.0         1          74.3   2972.2         75.0    1490.1
 23   3000.0  1500.0         1          92.0   2976.4         92.9    1469.8
 24   3000.0  1500.0         1          89.5   2992.6         89.9    1494.1
 25   3000.0  1500.0         1          91.5   2982.7         92.0    1442.1
 26   3000.0  1500.0         1          89.0   2982.7         89.7    1476.0
 27   3000.0  1500.0         1          87.9   2981.5         88.4    1442.1
 28   3000.0  1500.0         1          80.4   2982.9         80.8    1476.9
 29   3000.0  1500.0         1          86.6   2979.3         87.2    1477.7
 30   3000.0  1500.0         1          70.8   2840.8         74.8    1385.7
 31   3000.0  1500.0         1          63.3   2840.8         66.8    1385.7
 32   3000.0  1500.0         1          72.0   2940.2         73.5    1491.8
 33   3000.0  1500.0         1         101.3   2986.6        101.8    1494.1
 34   3000.0  1500.0         1          70.7   2986.0         71.1    1494.1
 35   3000.0  1500.0         1          35.3   1626.2         65.1    1228.2
Total Xsize --- 135000.0
Total Cuts ---------- 45
Average Efficiency ---------- 83.0
```

reportSS_134.txt - Blocco note di Windows

File Modifica Formato Visualizza ?

NESTING SUMMARY|

Nest Run	SS_134
Material Code	FE
Material Thickness	2.0
Machine name	LG+1530_PINZON

INFO SHEETS|

Plate	X-Size	Y-Size	Num.Of Cuts	Efficiency(%)	X-Used	X-Used(%)	Y-Used
1	3000.0	1500.0	1	93.2	2995.1	93.3	1486.9
2	3000.0	1500.0	1	93.0	2986.3	93.5	1487.4
3	3000.0	1500.0	1	93.5	2995.1	93.6	1490.8
4	3000.0	1500.0	1	92.0	2993.9	92.2	1494.0
5	3000.0	1500.0	1	91.2	2993.9	91.4	1486.1
6	3000.0	1500.0	1	92.4	2993.1	92.7	1494.0
7	3000.0	1500.0	1	88.5	2995.1	88.7	1491.7
8	3000.0	1500.0	1	89.2	2985.1	89.6	1494.1
9	3000.0	1500.0	2	87.9	2990.3	88.2	1445.6
10	3000.0	1500.0	1	86.7	2995.0	86.8	1456.4
11	3000.0	1500.0	1	89.7	2994.2	89.9	1494.1
12	3000.0	1500.0	5	79.5	2988.9	79.8	1458.0
13	3000.0	1500.0	1	79.0	2988.0	79.4	1494.0
14	3000.0	1500.0	2	84.8	2992.7	85.0	1487.4
15	3000.0	1500.0	5	82.6	2992.7	82.8	1483.7
16	3000.0	1500.0	1	81.2	2991.6	81.5	1486.9
17	3000.0	1500.0	1	85.5	2977.4	86.2	1487.8
18	3000.0	1500.0	1	83.7	2987.2	84.1	1487.8
19	3000.0	1500.0	1	79.7	2994.1	80.0	1479.2
20	3000.0	1500.0	1	75.2	2983.1	75.6	1494.0
21	3000.0	1500.0	1	82.5	2994.9	82.7	1494.0
22	3000.0	1500.0	1	74.3	2972.2	75.0	1490.1
23	3000.0	1500.0	1	92.0	2976.4	92.9	1469.8
24	3000.0	1500.0	1	89.5	2992.6	89.9	1494.1
25	3000.0	1500.0	1	91.5	2982.7	92.0	1442.1
26	3000.0	1500.0	1	89.0	2982.7	89.7	1476.0
27	3000.0	1500.0	1	87.9	2981.5	88.4	1442.1
28	3000.0	1500.0	1	80.4	2982.9	80.8	1476.9
29	3000.0	1500.0	1	86.6	2979.3	87.2	1477.7
30	3000.0	1500.0	1	70.8	2840.8	74.8	1385.7
31	3000.0	1500.0	1	63.3	2840.8	66.8	1385.7
32	3000.0	1500.0	1	72.0	2940.2	73.5	1491.8
33	3000.0	1500.0	1	101.3	2986.6	101.8	1494.1
34	3000.0	1500.0	1	70.7	2986.0	71.1	1494.1
35	3000.0	1500.0	1	35.3	1626.2	65.1	1228.2

Total Cuts	45
Average Efficiency	83.0
Total Xsize	135000.0

Configure NCeXpress.ini to enable it under the section **[Nest]**.

This logic is enabled inside file INI because ERP systems of some customers use this textual report as an input. In that case we cannot use translated strings because they are considered as a language format.

Add/set the parameters:

- **Translate Txt Nest Report=1**
- **Translate Txt Job Sheet=1**
- **Txt report separator =|**

```
…
[Nest]
…
Translate Txt Job Sheet=1
Translate Txt Nest Report=1
Txt report separator =|
…
```

Where the meanings of parameters are the following:

- **Translate Txt Nest Report=1**
  - Enable/disable the translation of the fields of the textual report about nesting and the usage of the format of indentation with explicit separator:
    - 0 = logic disabled.
    - 1 = logic enabled.
- **Translate Txt Job Sheet=1**
  - Enable/disable the translation of the fields of the textual report about a single sheet of a nesting and the usage of the format of indentation with explicit separator:
    - 0 = logic disabled.
    - 1 = logic enabled.
- **Txt report separator =|**
  - When *Translate Txt Job Sheet* and/or *Translate Txt Nest Report* are enabled, NC Express uses this special character as field separator inside txt report. A variable number of spaces can be present between fields

of report to maintain the indentation of txt tables. The default value is '|'.

Faster operation on network installation

There are following internal changes in order to make everyday operation smoother:

- Tulus files are copied locally when NC Express starts
- License check is executed on parallel thread

Tulus time calculation enhancements

GeneralRules.xml can be now configured to time calculation. We read now the values from this file. It affects to the estimated time calculations. We get even better accuracy for time calculations compared to real machines than before.

New row in TimeCalcSettings.ini file which defines the location of that file:

GeneralRules=c:\prima power\ncexpress\SG1530\WORK\GeneralRules.xml

The gas consumption for laser cutting gas type **GasMix** which contain 98% N2 and 2% O2 can be calculated now.

Windows support

NC Express e^3 23.1 supports Windows 7 and Server 2012 to 2022 up to the latest Windows 10 and Windows 11 version.

This version is available also as a 64-bit build. New installations are recommended to be made in 64-bit, whereas updates remain in 32-bit.

If you update an existing installation to 64-bit and it uses customized report templates, please be prepared to redo those report templates for new reporting.