NC Express

Software version release: 25.1

26th August 2025

New features in NC Express 25.1

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Unfolding

Supported 3D formats and versions

PREMIUM

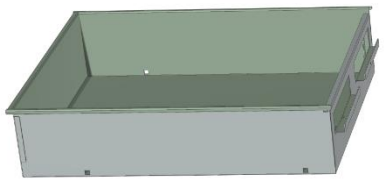
- Autodesk Inventor (*.ipt, *.iam), up to 2025
- SolidWorks (*.sldprt, *.sldasm), up to 2025
- Solid Edge (*.par, *.psm, *.asm), up to 2025
- Siemens JT (*.jt), up to 10.10
- Siemens NX (*.prt), up to 2406.4000
- PTC Creo (*.prt.x, *.asm.x), up to 11.0
- Catia (*.catproduct, *.catpart), V4 (4.15 to 4.26) and V5-3DX (R10 to R32, R2023, R2024), 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 2023 1.0
- Parasolid (*.x_t, *.x_b), up to 37.0

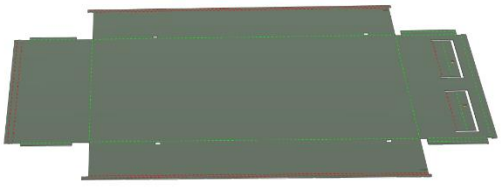
Part top side colouring changed

PREMIUM

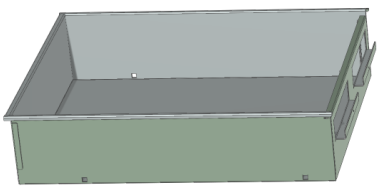
In earlier NC Express versions from 19.10 to 24.2, the top side of a blanked part has been presented as grey, and the bottom side has been presented as blue. Now in 25.1 and later versions, the bottom side is presented as grey, and the top side is presented as green or blue depending on whether the applied material has plastic protection enabled or not.

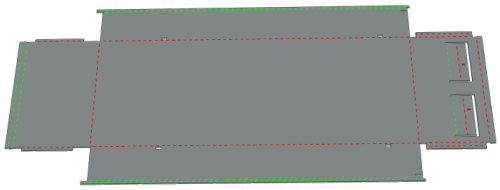
A part without plastic protection blanked with upward bends, green on the inner side of the part:



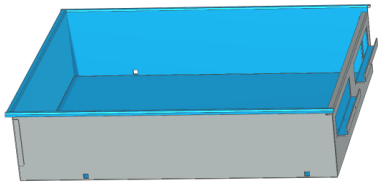


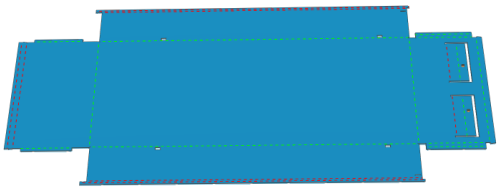
A part without plastic protection blanked with downward bends, green on the outer side of the part:



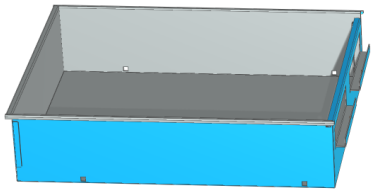


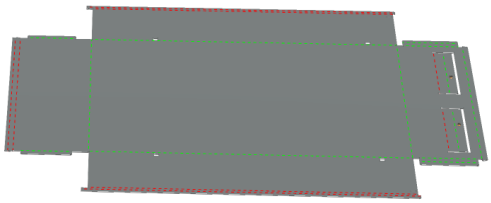
A part with plastic protection blanked with upward bends, blue on the inner side of the part:





A part with plastic protection blanked with downward bends, blue on the outer side of the part:

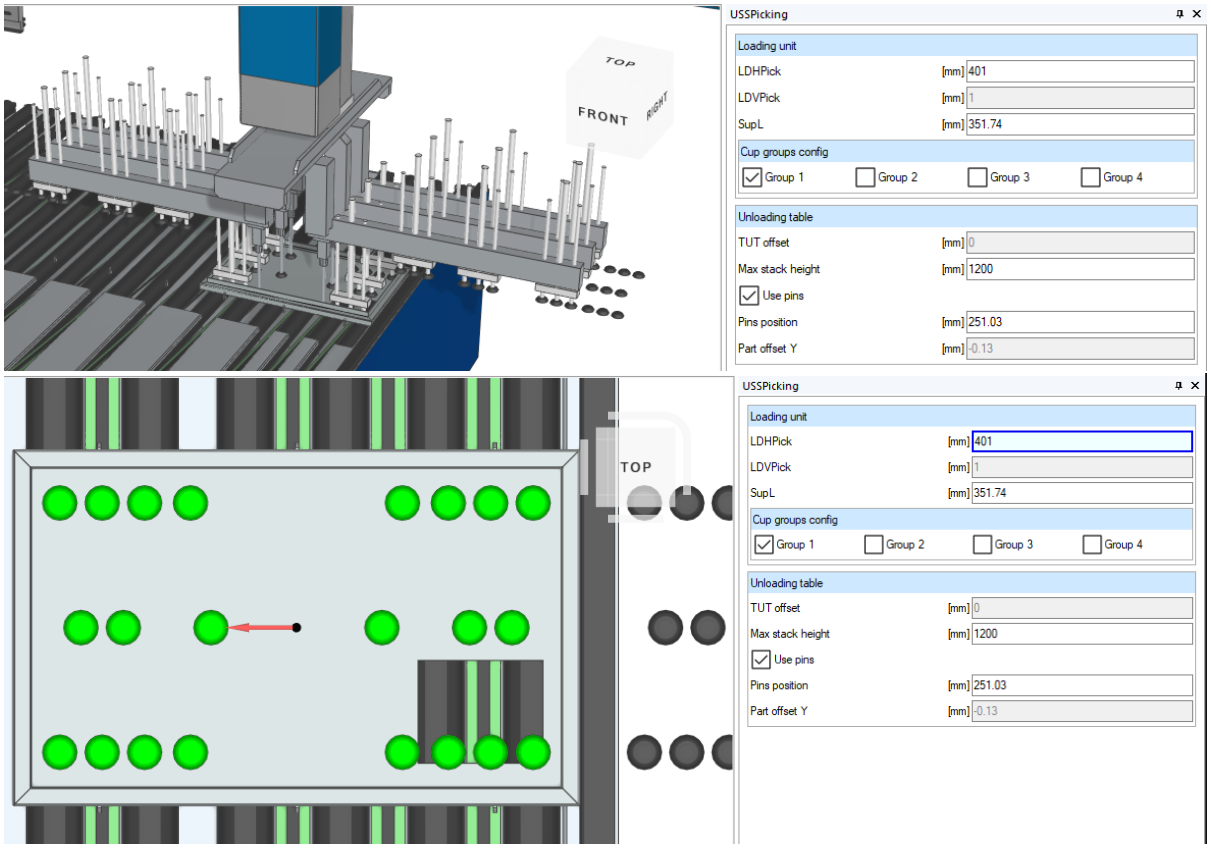




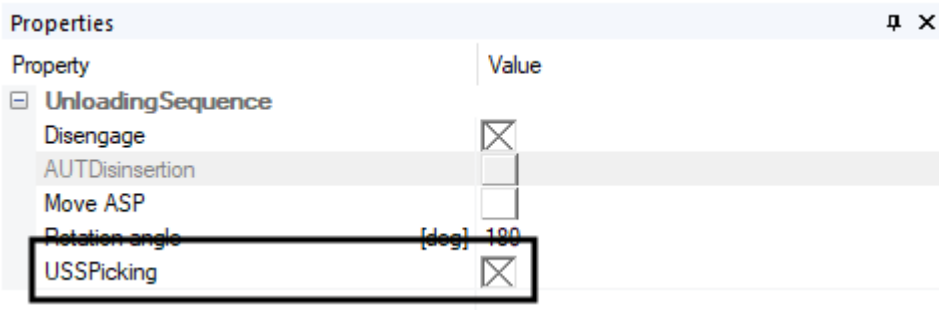
The BEND machines

USSPicking phase

You can now program the USSPicking phase to define gripper positioning and other related parameters in NC Express Bend.



This functionality is automatically available in machines for which TulusParameters.xml has related options enabled. The USSPicking phase can be added by selecting it from BeltUnloadingSequence properties:

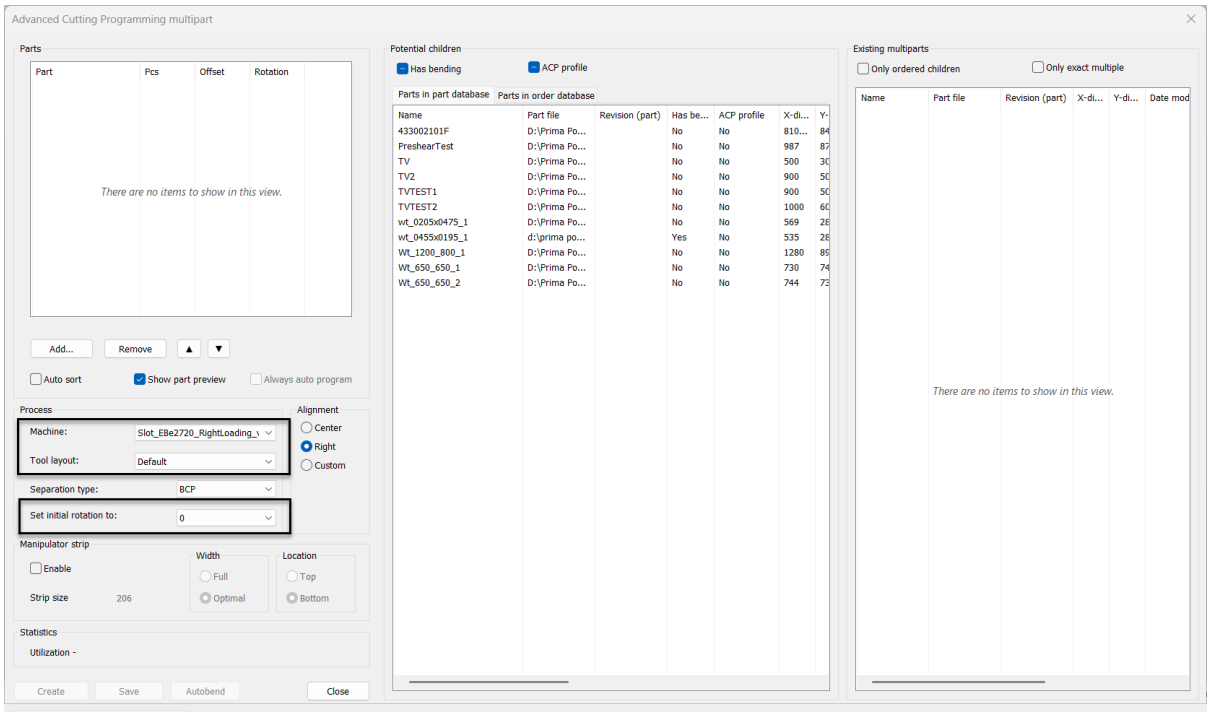


It can also be set to be added automatically from the default program parameters of the bending machine.

ACP enhancements

From the ACP dialog, users can select the bending machine used and the tool layout for processing the created ACP part.

Users can now also set the part initial rotation. The part will be still prepared in the normal (0-degree) orientation, but nesting will add the part in the given new “Initial rotation” angle. This is useful for UCP parts, allowing pincher wheel to run away from clamps.



The LASER machines

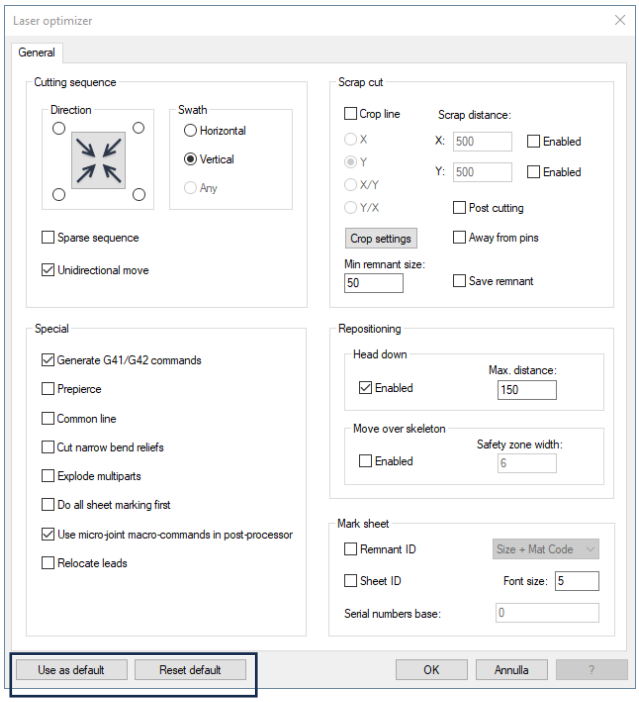
Default laser optimization settings

Users can save and restore the settings of the Laser optimizer dialog through new buttons:

- *Use as default*
- *Restore default*

Use as default saves the currently selected settings in the optimization window as default.

Restore default resets the settings currently displayed in the optimization window to the ones saved as default. A new nesting will automatically use the last settings saved as default.



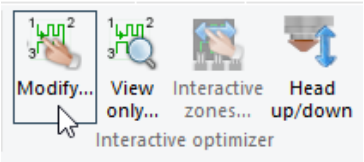
No hit motion support

The Tulus laser machine post processor supports consecutive rapid movements to allow motion over the skeleton.

These movements can be created:

- Automatically: enabling the relevant configuration and the value of how close the trajectory can be near the part boundary within the *Laser optimizer* dialog.

- Manually: using the *Modify* command of the *Interactive optimizer* ribbon group.



The *Modify* command of the *Interactive optimizer* ribbon group allows the customization of the movements between parts for laser machines, reusing the graphic interface of punch-shear and COMBI machines.

Users can graphically add and remove “virtual hits” to move over the skeleton of the sheet.

The type of movement to be used is *No hit motion*.

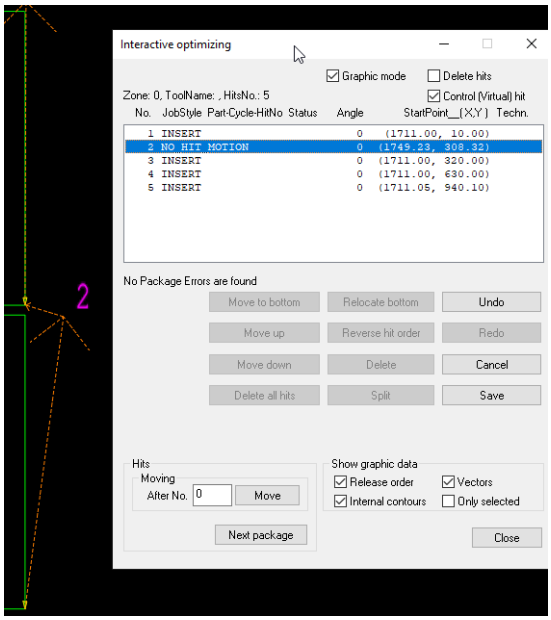
The type of motions then visualized inside the list of operations:

- The no hit motion has a type equal to NO_HIT_MOTION.
-
-

- The execution of the part cutting routine has a type equal to INSERT (as before)

You can configure the type of virtual hit to *No hit motion* to maintain it during the interactive optimization session.

When closing the session, the user must confirm the changes made during the session.

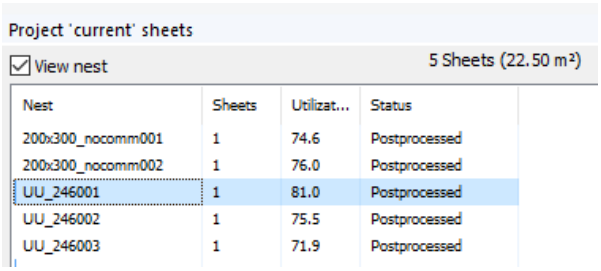


Warning when parts are outside the sheet

A parts position check is done when the ***Sheets*** list contains a single run and when you are either:

- Loading the run (all sheets)
- Processing the run (selected sheets)
- Accepting the run (all sheets)

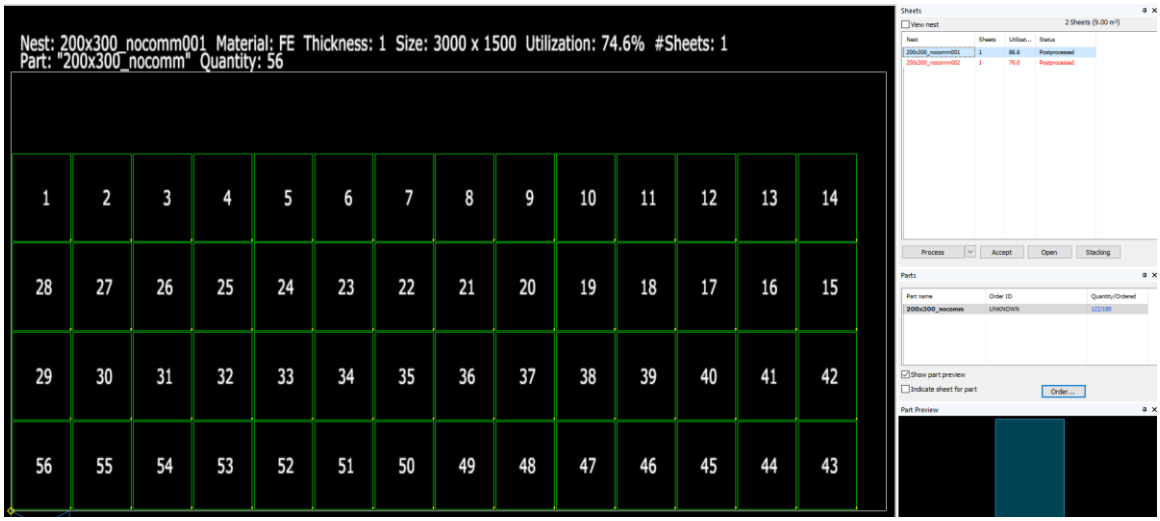
When *Multiple runs in Nest Explorer* is enabled in ***Options-Order***, you must clear current sheet list to allow the check:

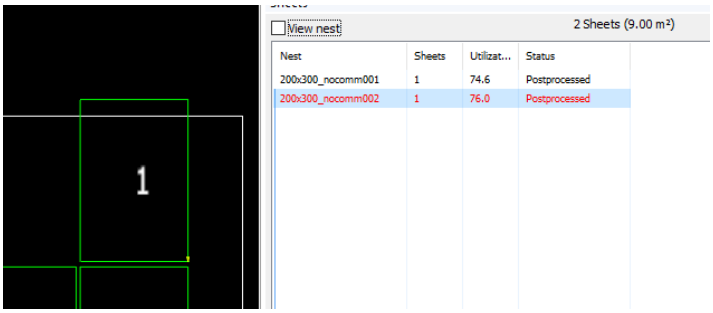


Example of multi runs:

- 200x300_nocomm
- UU_24600

Sheets that contain parts outside the sheet are highlighted in red in the ***Sheets*** list.

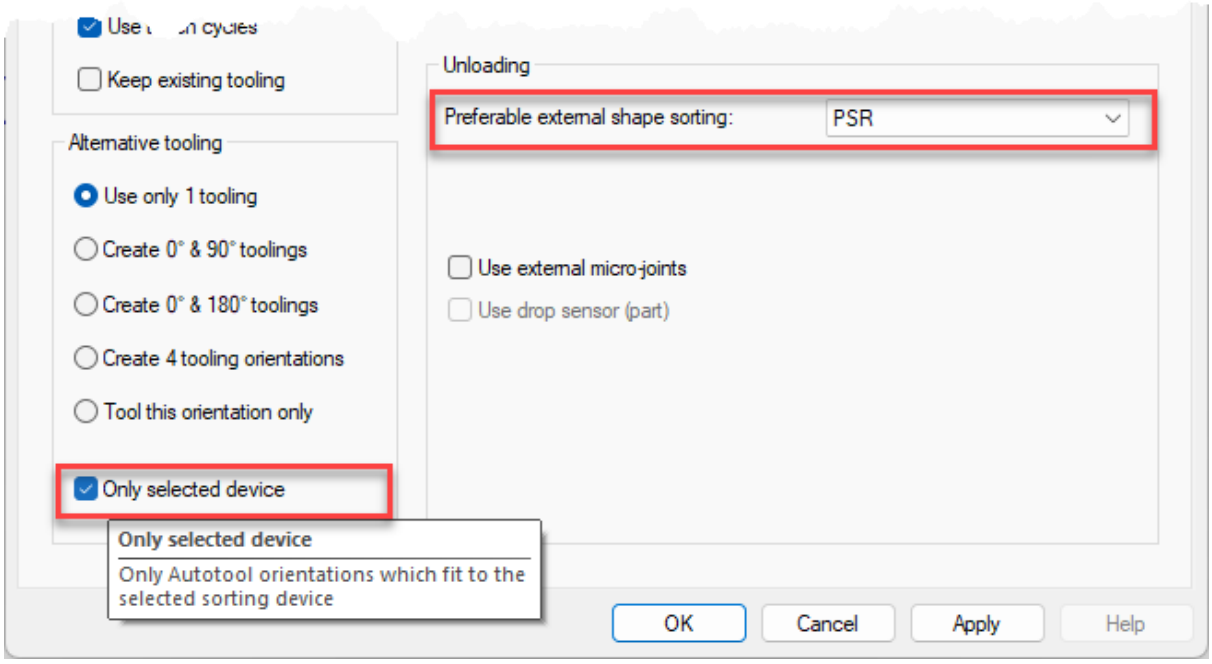


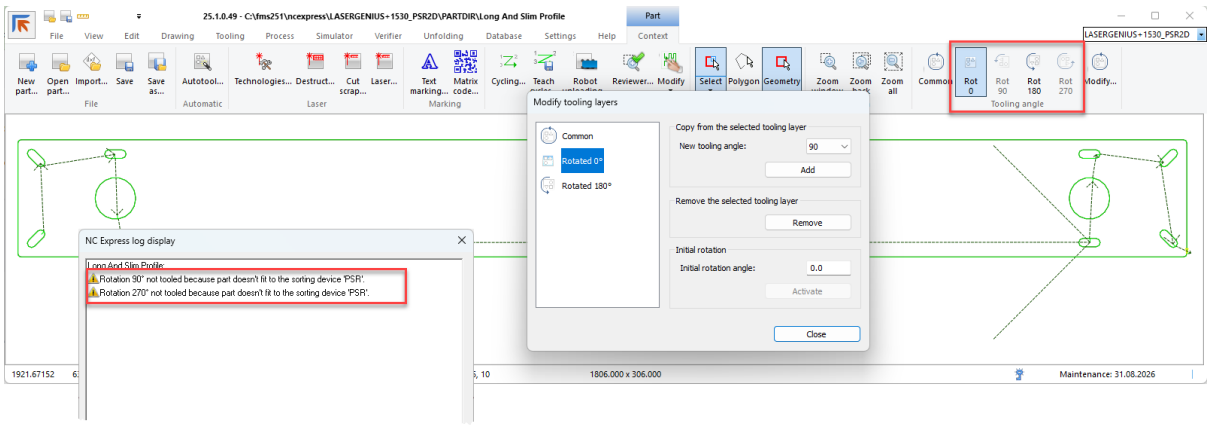


The COMBI, punch-shear machines

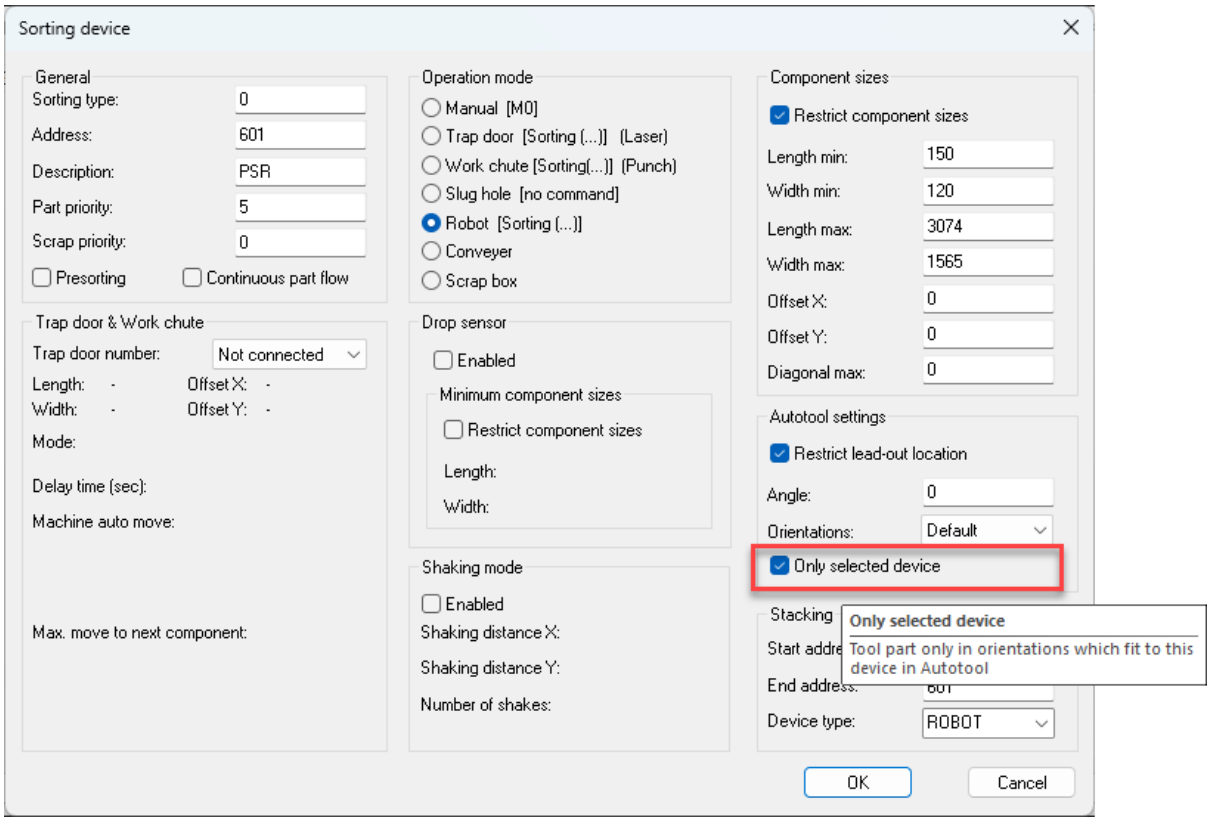
Autotool only for selected device

Autotool has a new option called ***Only selected device***, which allows it to prepare tooling layers exclusively for the selected sorting device (***External shape sorting***). The availability of a sorting device can be limited either by the part dimensions or by the placement of the robot vacuum.



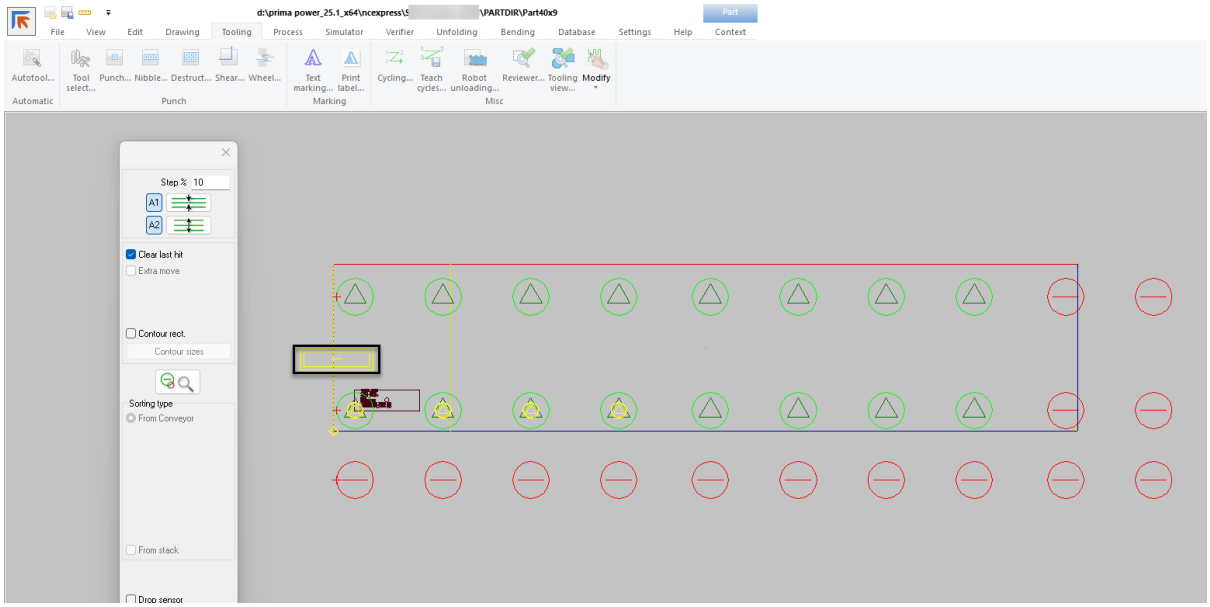


You can also turn this setting on as default in ***Machine settings – Sorting devices***.



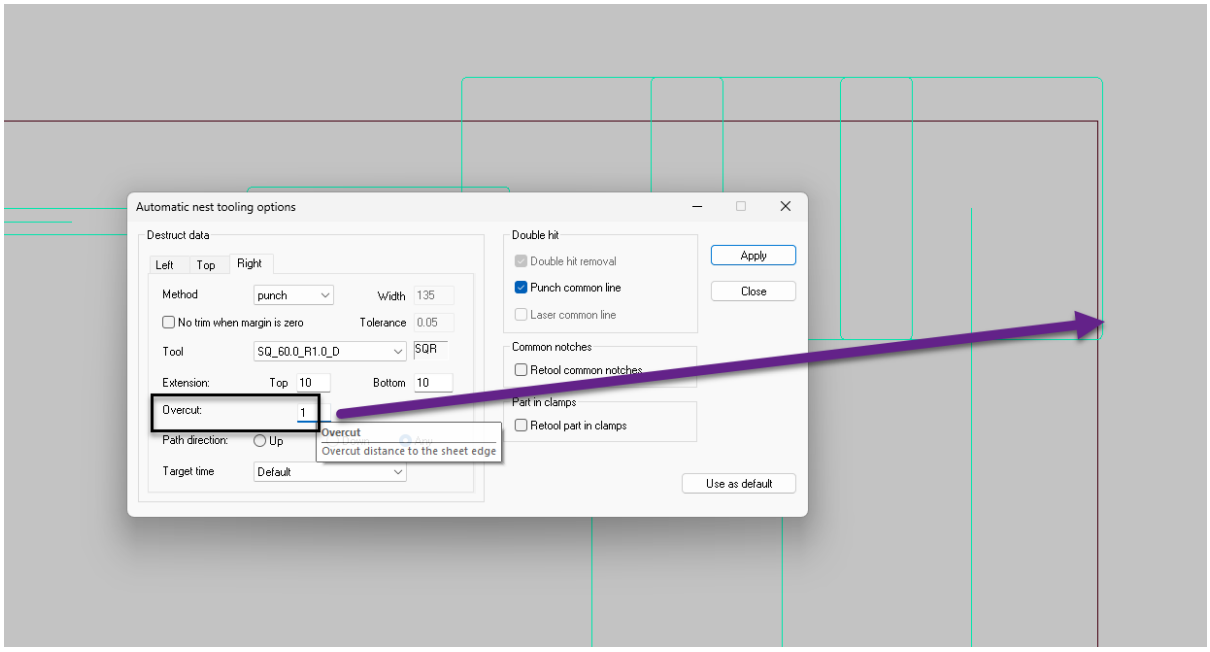
Robot placement with Double Sheet Detector (DSD)

The improved robot placement algorithm uses the upper bars instead of the bottom bars if the DSD is located between the upper bars. It is helpful in cases where the robot is feeding parts from a stack to bending machines, and you need to ensure that only one part is lifted from the stack.



More edge destruct parameters

The automatic nest tooling options dialog now has the possibility to define the minimum punch overcut distance, which defines how much over the sheet nominal size the edge destruct is done. The default value is 5 mm and 0.2 inch.

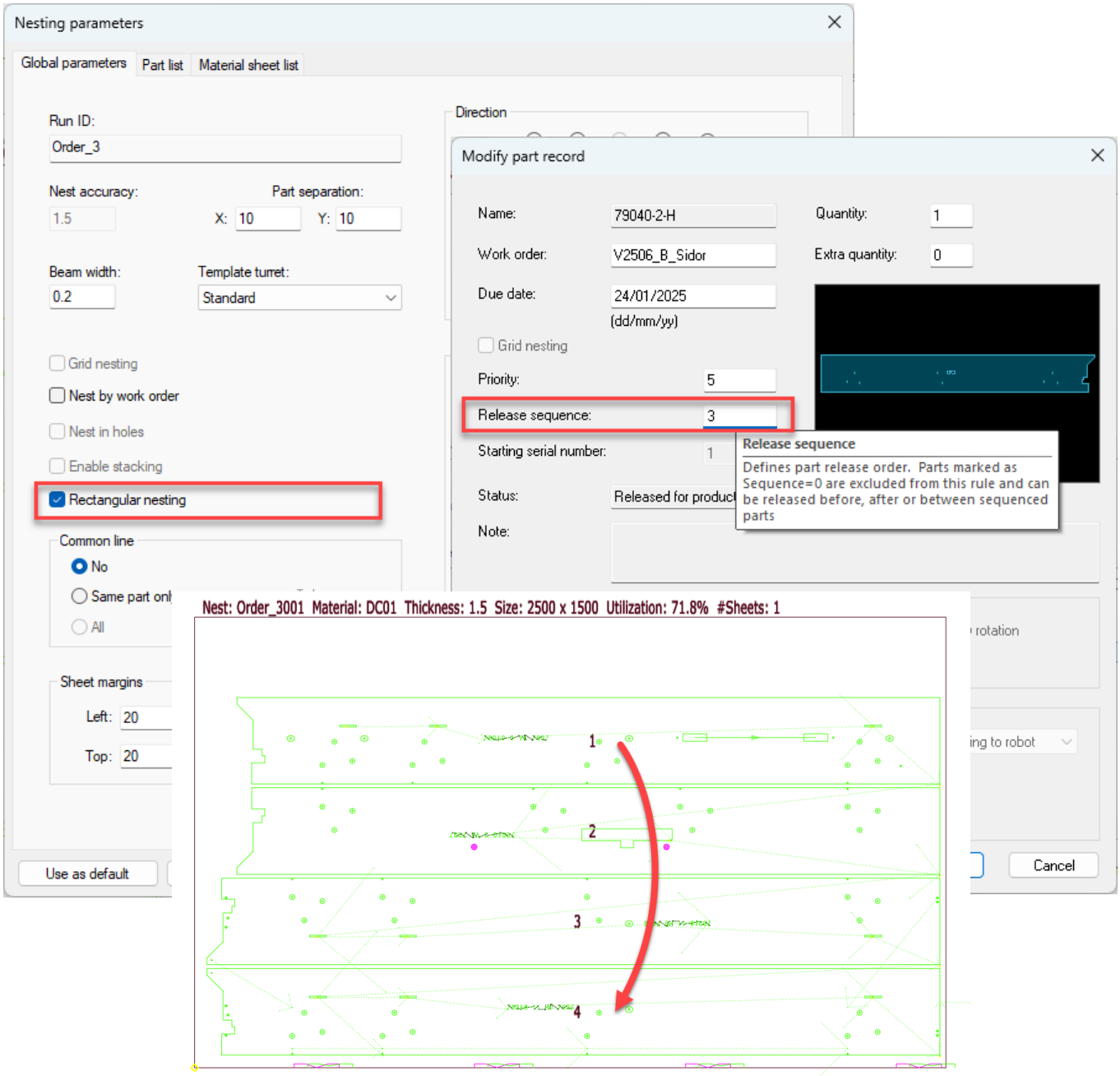


The COMBI, laser-punch machines

Release sequence support

As with punch-shear machines, the ***Release sequence*** can now be used with laser-punch machines as well. To do this, you need to first activate ***Rectangular nesting*** in the ***Nest*** dialog and then input the ***Release sequence*** number.

The ***Release sequence*** can be input either manually through the ***Modify part record*** or by using an order file from ***Database - Orders***.



Other usability enhancements

Order database enhancements

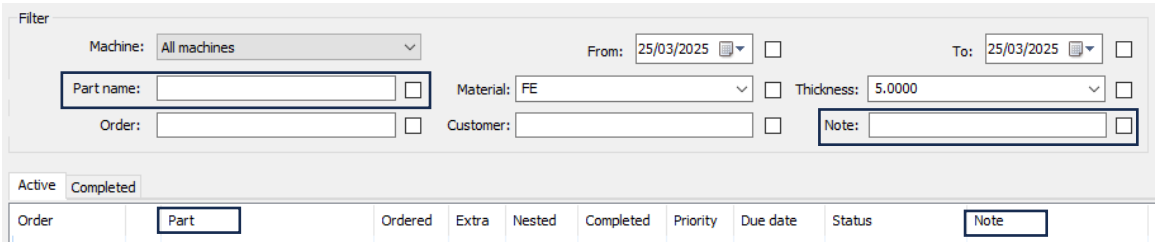
Filters

The new filters in Order DB fields are:

- *Part name*
- *Note*

Operability is like previous filters:

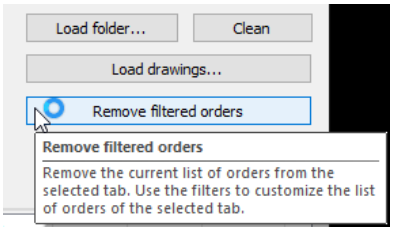
1. Type the text you want to search for in the required field (complete or partial)
2. Activate the checkbox next to the filter to perform the search



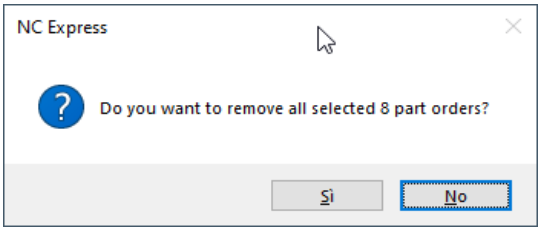
Buttons

Remove filtered orders

The *Remove filtered orders* button deletes the list of orders displayed in the current tab from the database: *Active* or *Completed*.
Filters allow you to further narrow down the group of orders to remove.



When clicking the button, a confirmation message will be shown before continuing.



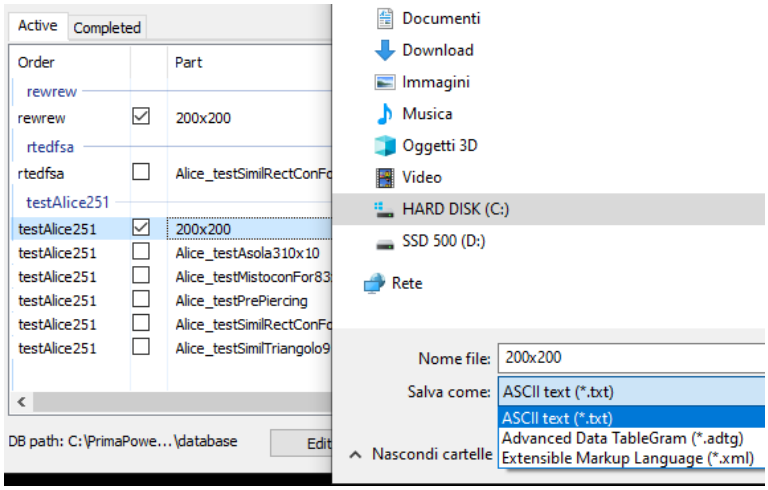
Export

Export exports

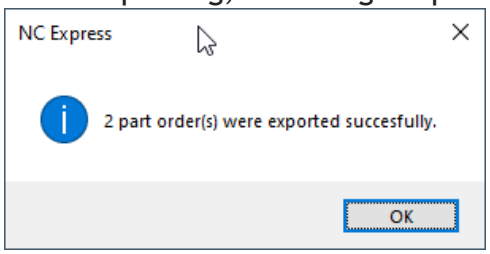
- Or the complete list or order.
- Or a customizable list of orders (since this version).

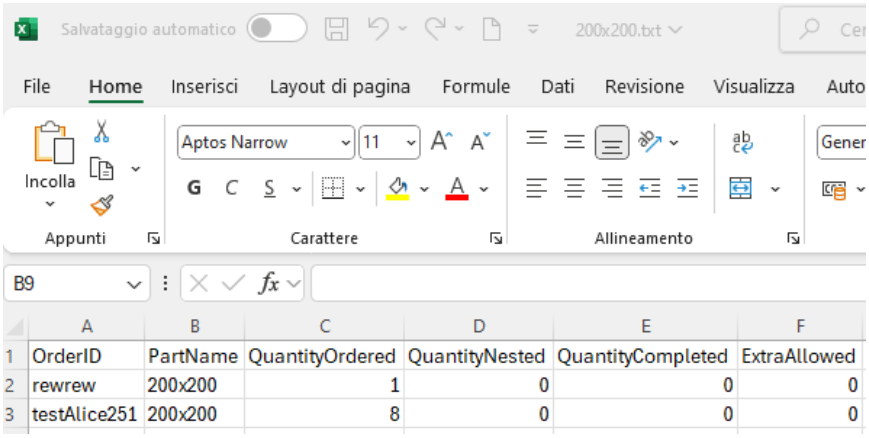
Operability is as follows:

- When no checkbox is enabled, all orders in the database are exported to a file as before.
- When the customer enables at least one checkbox, only orders with enabled checkboxes are exported.



After exporting, a message reports the number of part orders exported correctly.





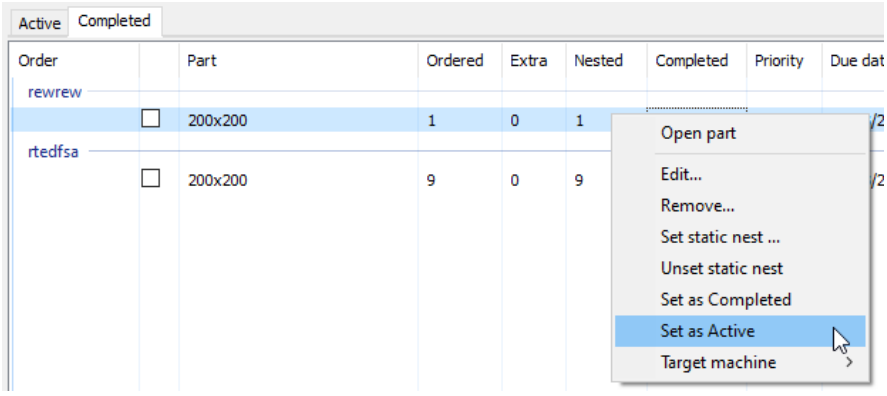
Menu on selection

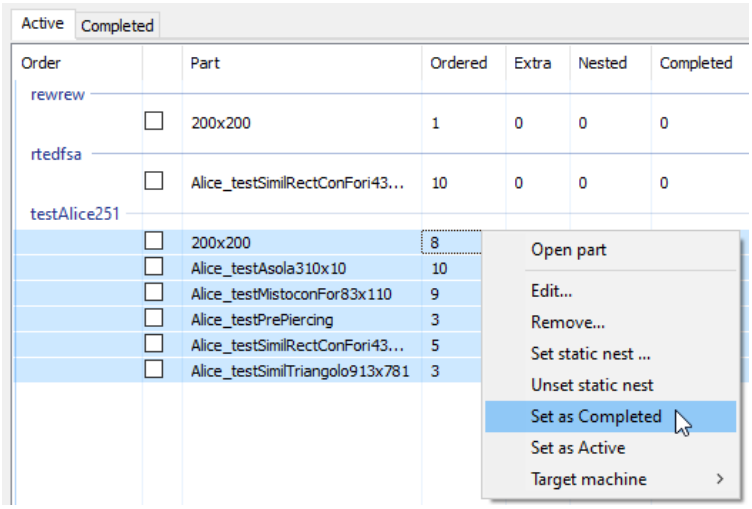
Selecting a group of orders and clicking the right mouse button displays a context menu containing two new commands:

- *Set as active*
- *Set as completed*

Set as active brings the selected parts back to the Active tab, resetting the values of the nested and completed parts to zero.

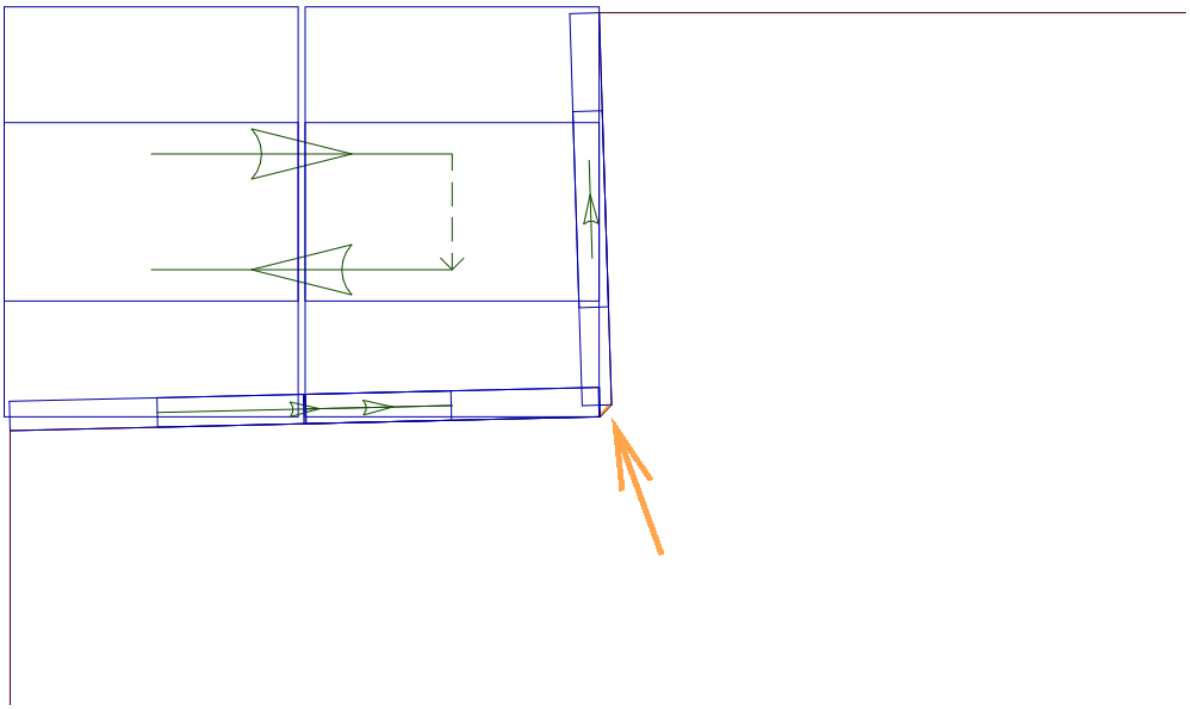
Set as completed brings the selected parts back to the Completed tab, setting the value of the ordered parts equal to that of the nested parts (Nested column).





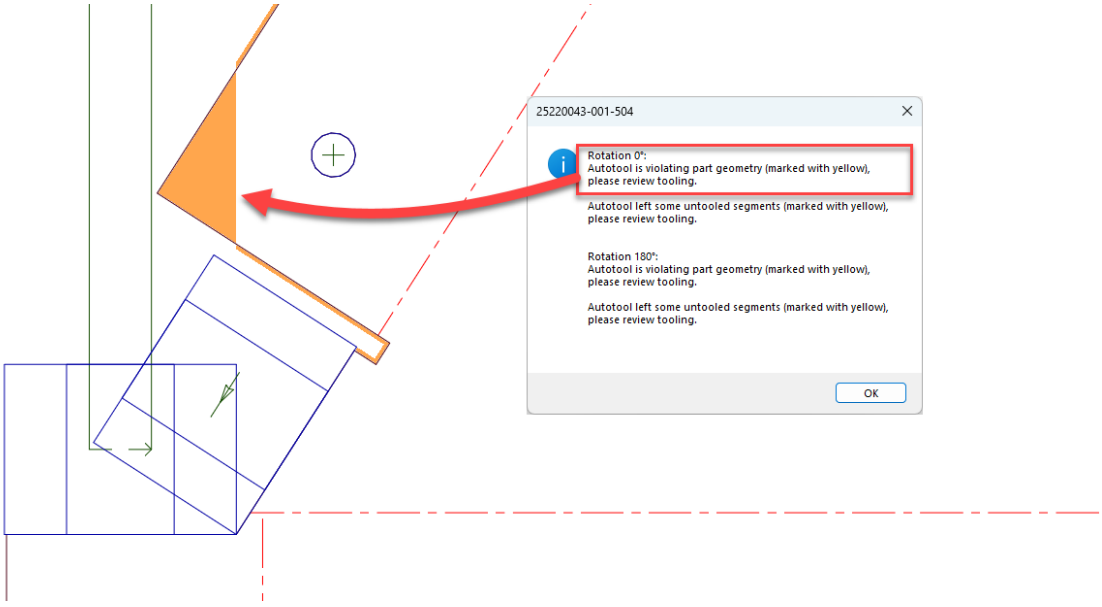
Indicating small slugs and untooled segments with an arrowhead

If Autotool leaves a small untooled segment or a small slug, it is indicated with an arrowhead symbol to make it easier to locate.



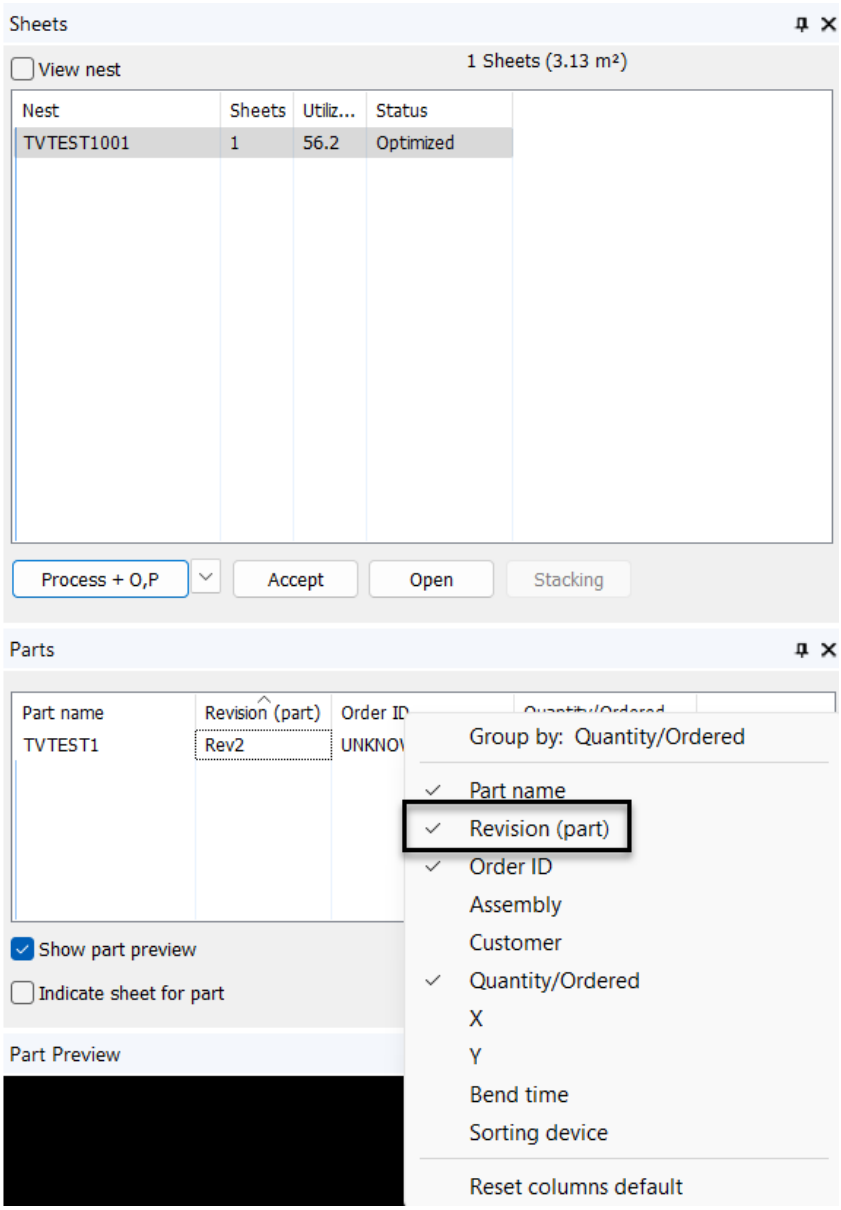
Autotool geometry violation warning

Despite the best efforts of Autotool, it can sometimes place a tool in a way that violates geometry. When this happens, you will receive a warning.



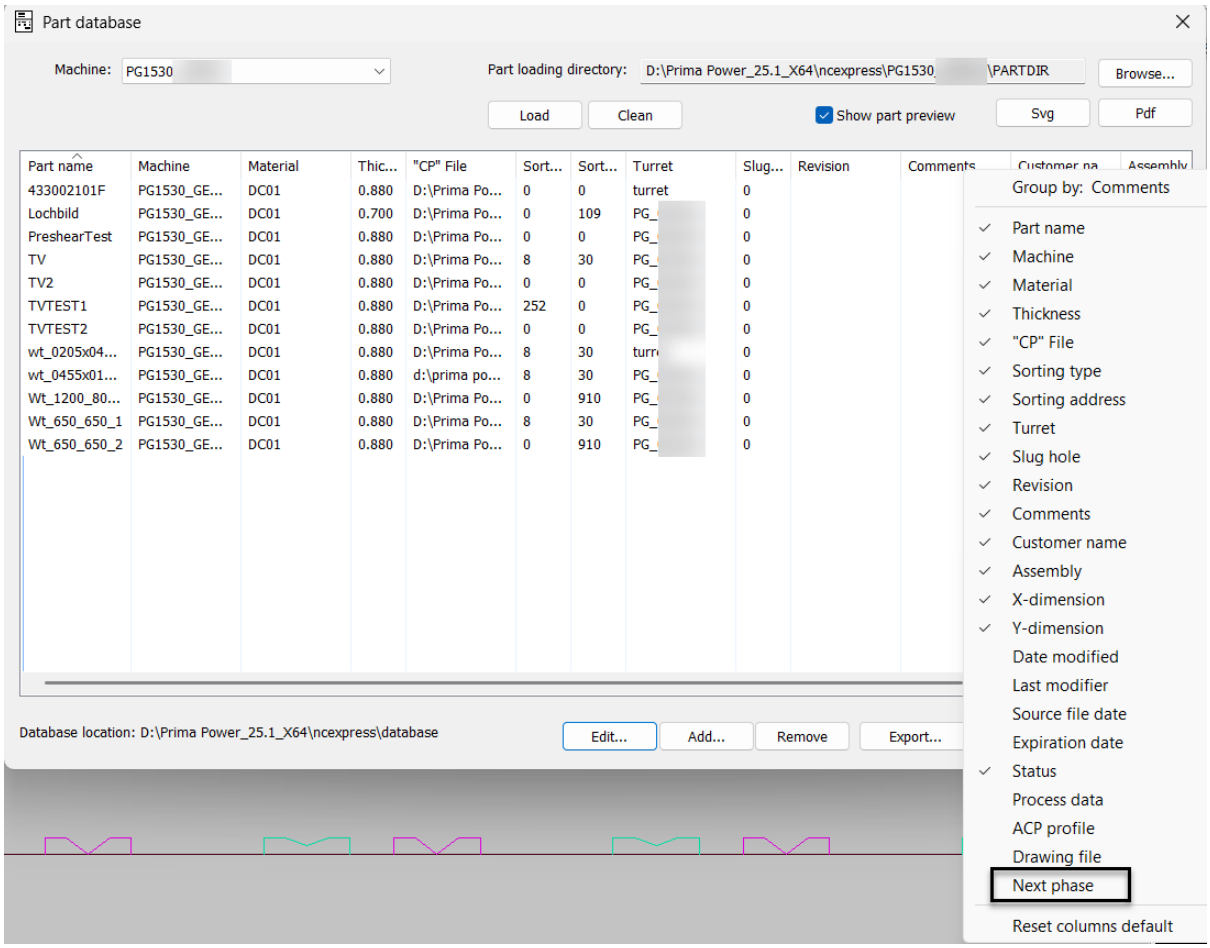
More information in the Parts list

Part revision can now be displayed in Part Explorer by activating the visibility with a right mouse click on top of the dialog header.



More information in the Part database

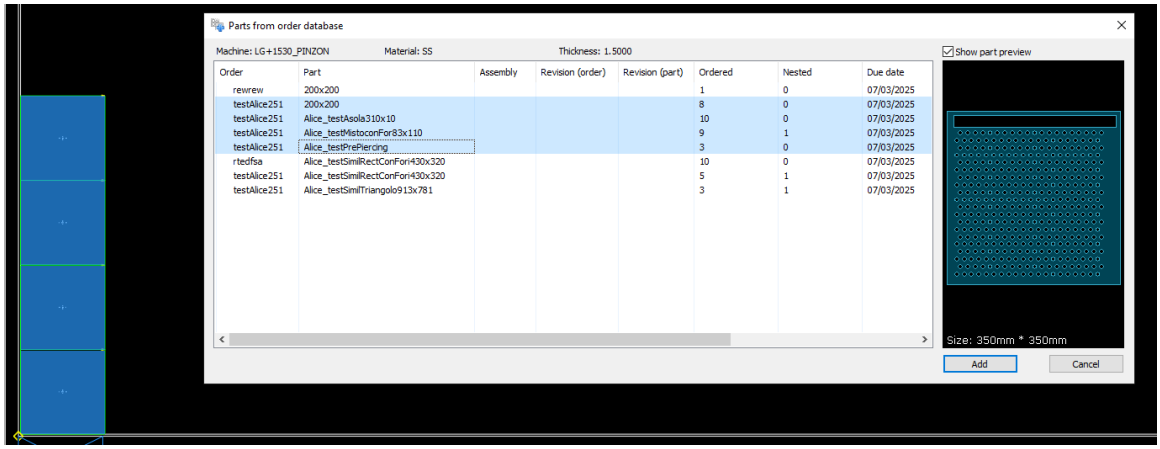
Next phase can now be displayed in the Part database by activating the visibility with a right mouse click on top of the dialog header.



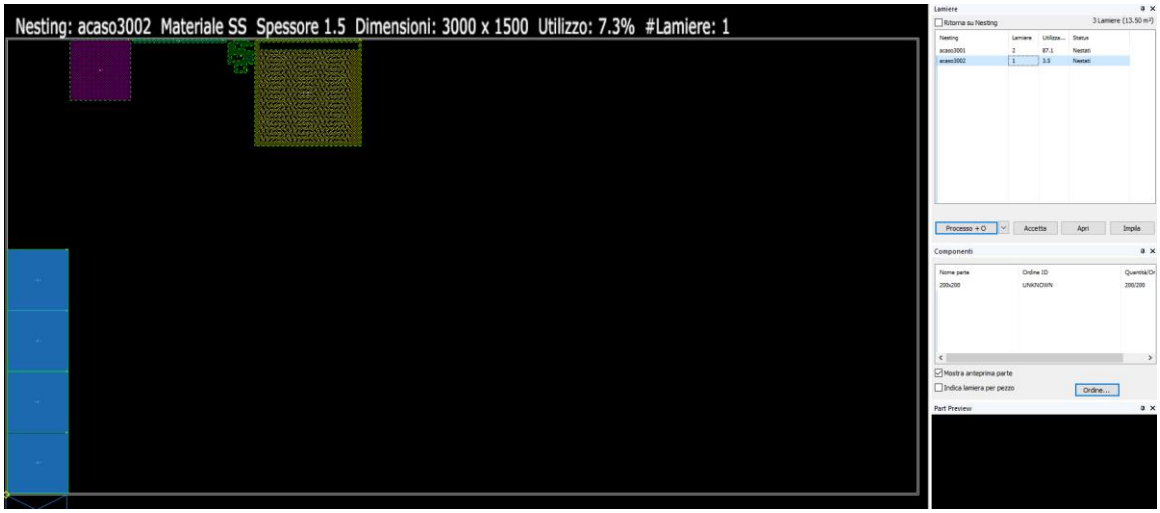
Multi-selection in Add part from Order database

You can add multiple parts from the ***Order database*** to the current nesting run.

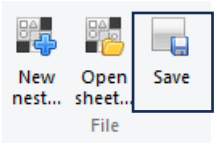
User selects the parts and clicks the ***Add*** button to add one of each selected part to the current sheet.

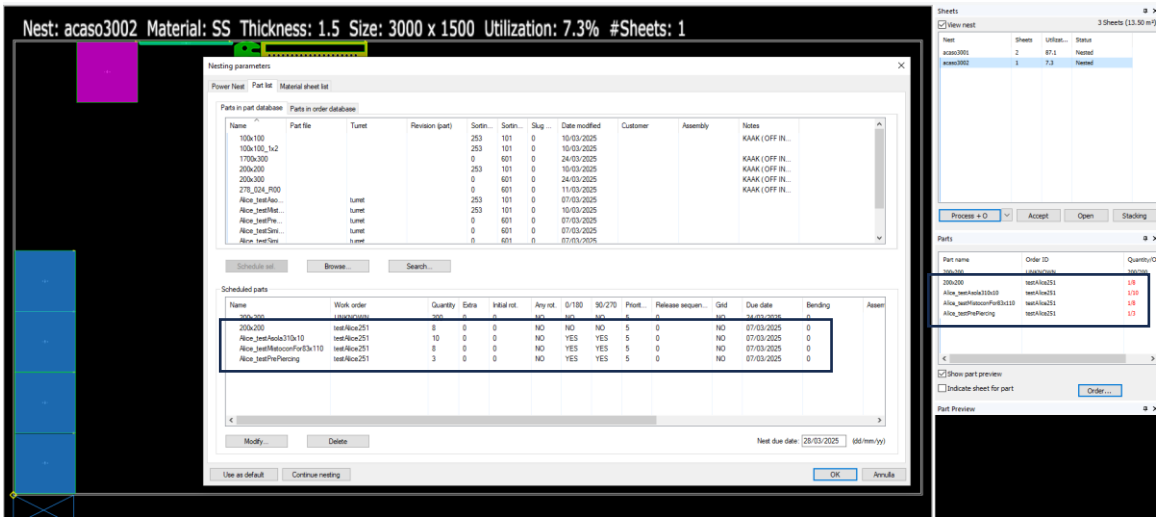


Parts are added inside the sheet when there is enough space and also to the ***Part List*** of the ***Nesting parameters*** dialog.



Nesting data is updated inside the ***Parts*** list after saving the nesting run by clicking the ***Save*** button from the ribbon group.





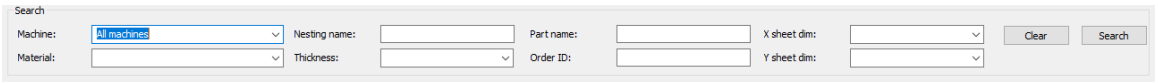
Filtering in Nest database

These are the new filters on Nesting DB fields:

- *Thickness*
- *Sheet Size on X and Y*
- *Nesting name*

The operability is like previous filters:

1) Edit/select the field to search
2) Click the *Find* button to perform the search

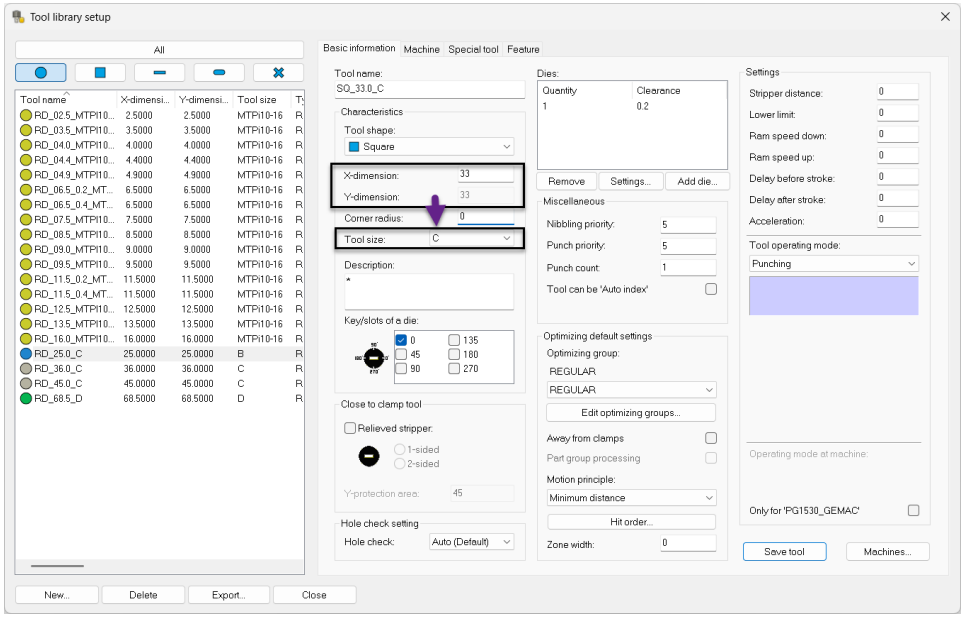


Default tool size

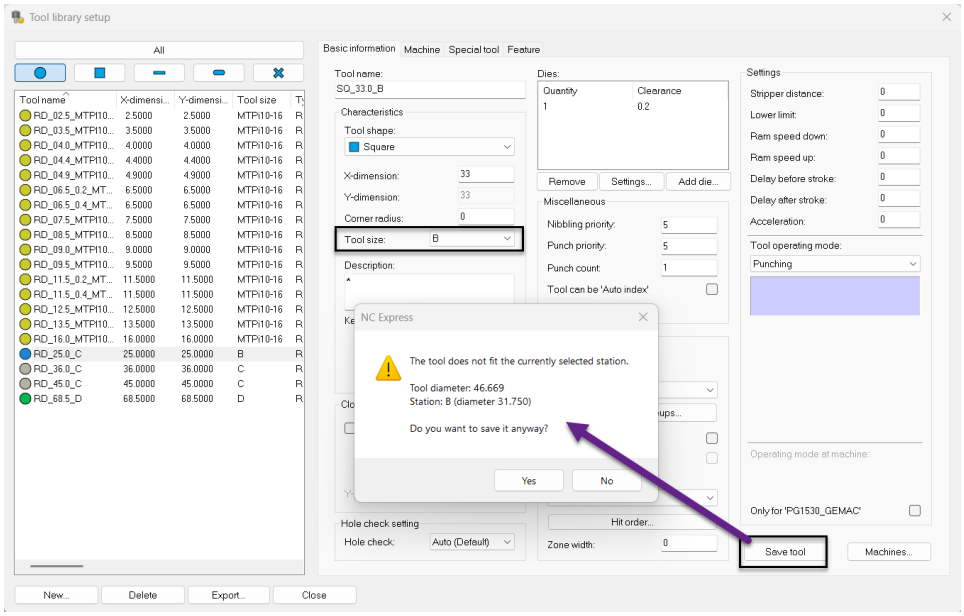
Standard tool size is checked when a new tool is created in the tool library. The tool size is checked from the ToolsCommon.xml file, which has all the basic data of the tools.

Notice: this works only with machines that have Tulus software, and Machine settings page – Tools and turret – Use ToolsCommon.xml selection must be turned on in NC Express.

When a new tool is created and the tool shape and size are set, NC Express automatically selects the tool station size where it fits:



If the calculated tool size is larger than the user selected tool size, NC Express gives a message about it, but the user can still force a “too small” station to be used.



Windows support

NC Express 25.1 supports Windows 7 and Server 2012 to 2025 up to the latest Windows 10 and Windows 11 versions.

This version is also available 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, be prepared to redo those report templates for future reporting.