

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



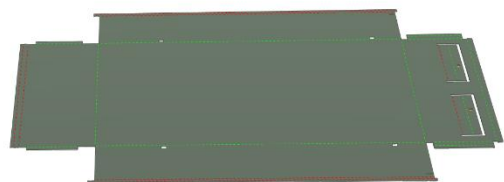
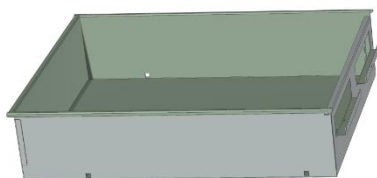
- Autodesk Inventor (*.ipt, *.iam), up to 2025
- SolidWorks (*.sldprt, *.sldasm), up to 2025
- Solid Edge (*.par, *.psm, *.asm), up to 2025
- Siemens JT (*.jt), up to 10.10
- Siemens NX (*.prt), up to 2406.4000
- PTC Creo (*.prt.x, *.asm.x), up to 11.0
- Catia (*.catproduct, *.catpart), V4 (4.15 to 4.26) 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

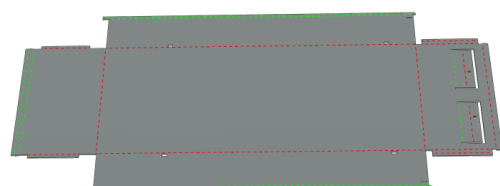
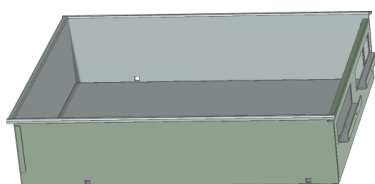


In earlier NC Express versions from 19.10 to 24.2, the top side of a blanked part has been presented as grey, and the bottom side has been presented as blue. Now in 25.1 and later versions, the bottom side is presented as grey, and the top side is presented as green or blue depending on whether the applied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

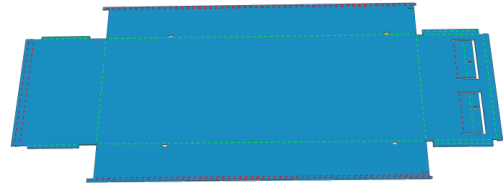
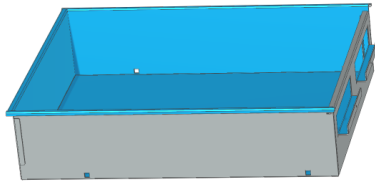
A part without plastic protection blanked with upward bends, green on the inner side of the part:



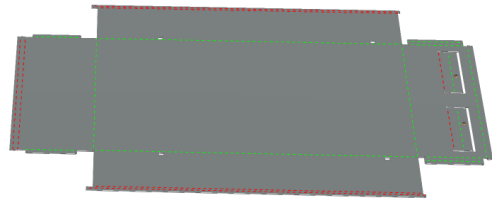
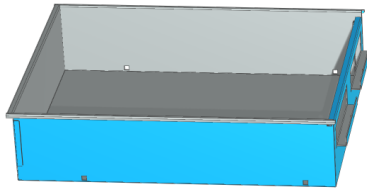
A part without plastic protection blanked with downward bends, green on the outer side of the part:



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



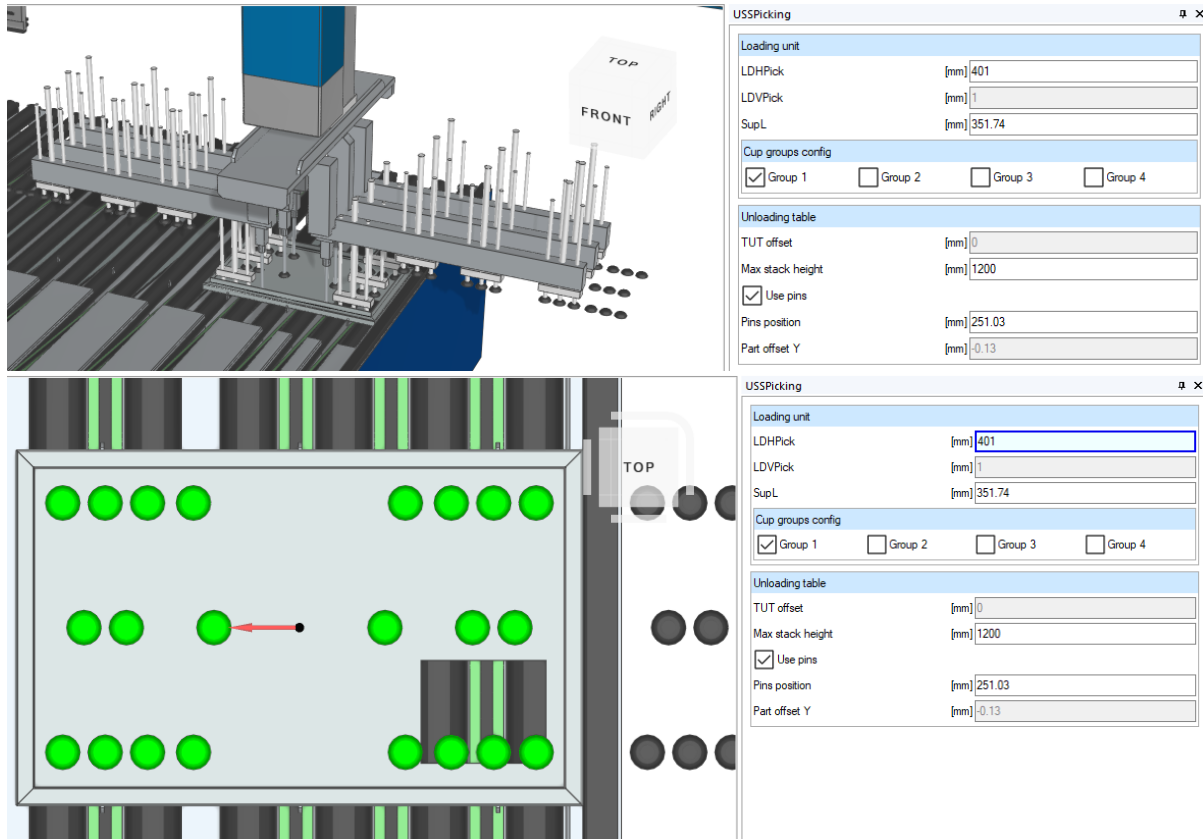
A part with plastic protection blanked with downward bends, blue on the outer side of the part:



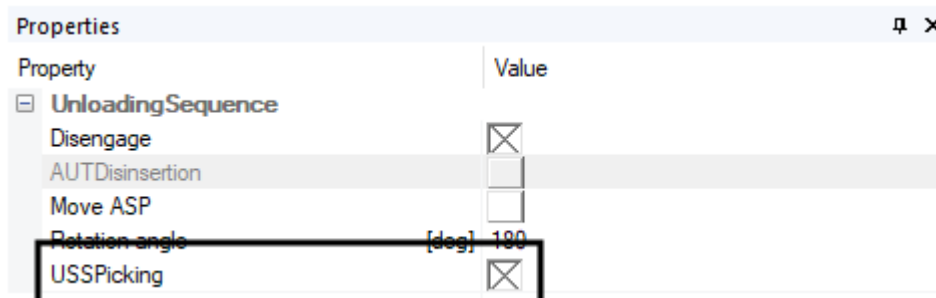
The BEND machines

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:

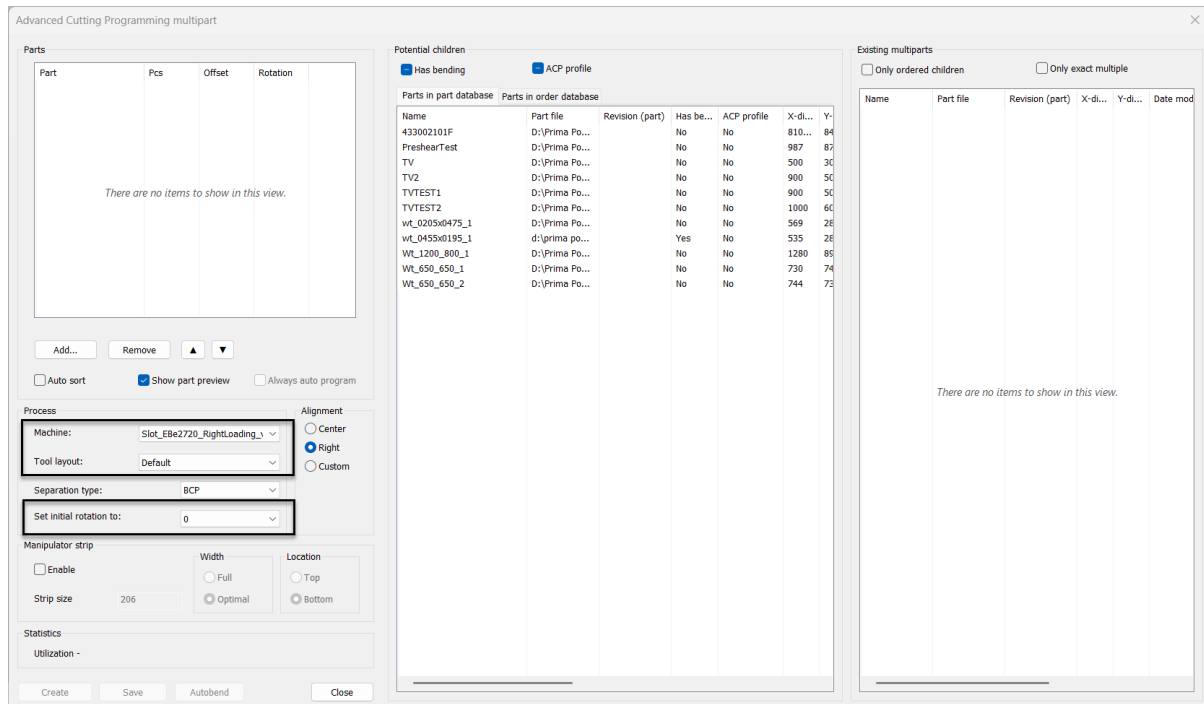


It can also be set to be added automatically from the default program parameters of the bending machine.

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.

The screenshot shows the 'Laser optimizer' dialog box with the 'General' tab selected. The dialog is divided into several sections:

- Cutting sequence:** Includes 'Direction' (radio buttons for X, Y, X/Y, Y/X) and 'Swath' (radio buttons for Horizontal, Vertical, Any). 'Vertical' is selected. There are checkboxes for 'Sparse sequence' and 'Unidirectional move'.
- Scrap cut:** Includes a 'Crop line' checkbox and 'Scrap distance' fields for X (500) and Y (500), each with an 'Enabled' checkbox. There are also checkboxes for 'Post cutting', 'Away from pins', and 'Save remnant'.
- Special:** Includes checkboxes for 'Generate G41/G42 commands', 'Prepierce', 'Common line', 'Cut narrow bend reliefs', 'Explode multiparts', 'Do all sheet marking first', 'Use micro-joint macro-commands in post-processor', and 'Relocate leads'.
- Repositioning:** Includes 'Head down' (checkbox 'Enabled', 'Max. distance: 150') and 'Move over skeleton' (checkbox 'Enabled', 'Safety zone width: 6').
- Mark sheet:** Includes checkboxes for 'Remnant ID' (with a 'Size + Mat Code' dropdown) and 'Sheet ID' (with a 'Font size: 5' field). There is also a 'Serial numbers base: 0' field.

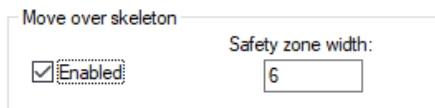
At the bottom of the dialog, there are buttons for 'Use as default', 'Reset default', 'OK', 'Annulla', and a help icon (?).

No hit motion support

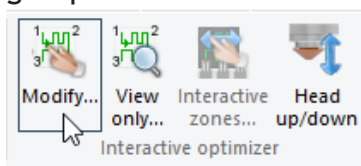
The Tulus laser machine post processor supports consecutive rapid movements to allow motion over the skeleton.

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*.

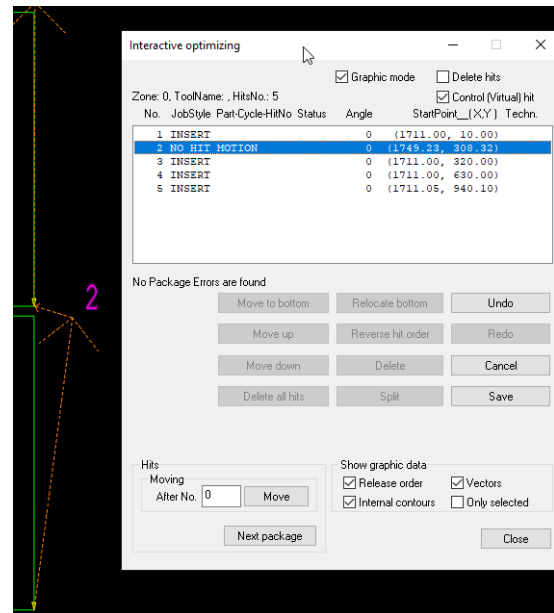
The type of motions then visualized inside the list of operations:

- 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:

Project 'current' sheets			
<input checked="" type="checkbox"/> View nest 5 Sheets (22.50 m²)			
Nest	Sheets	Utilizat...	Status
200x300_nocomm001	1	74.6	Postprocessed
200x300_nocomm002	1	76.0	Postprocessed
UU_246001	1	81.0	Postprocessed
UU_246002	1	75.5	Postprocessed
UU_246003	1	71.9	Postprocessed

Example of multi runs:

- 200x300_nocomm
- UU_24600

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

Nest: 200x300_nocomm001 Material: FE Thickness: 1 Size: 3000 x 1500 Utilization: 74.6% #Sheets: 1
Part: "200x300_nocomm" Quantity: 56

1	2	3	4	5	6	7	8	9	10	11	12	13	14
28	27	26	25	24	23	22	21	20	19	18	17	16	15
29	30	31	32	33	34	35	36	37	38	39	40	41	42
56	55	54	53	52	51	50	49	48	47	46	45	44	43

Sheets 2 Sheets (9.00 m²)

☐ View nest

Nest	Sheets	Utilizat...	Status
200x300_nocomm001	1	74.6	Postprocessed
200x300_nocomm002	1	76.0	Postprocessed

Process Accept Open Stacking

Parts

Part name	Order ID	Quantity/Ordered
200x300_nocomm	UNKNOWNS	56/56

☒ Show part preview
☐ Indicate sheet for part Order...

Part preview

1

2 Sheets (9.00 m²)

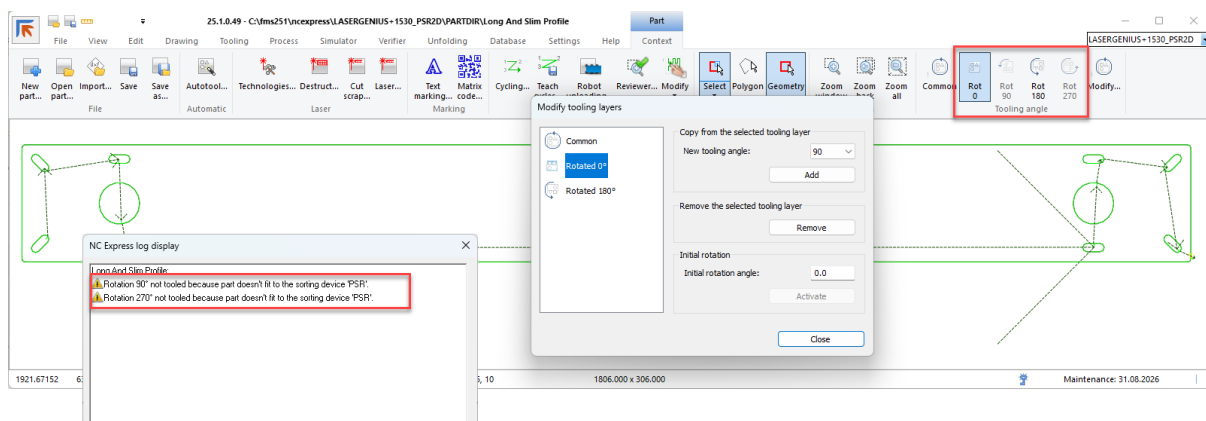
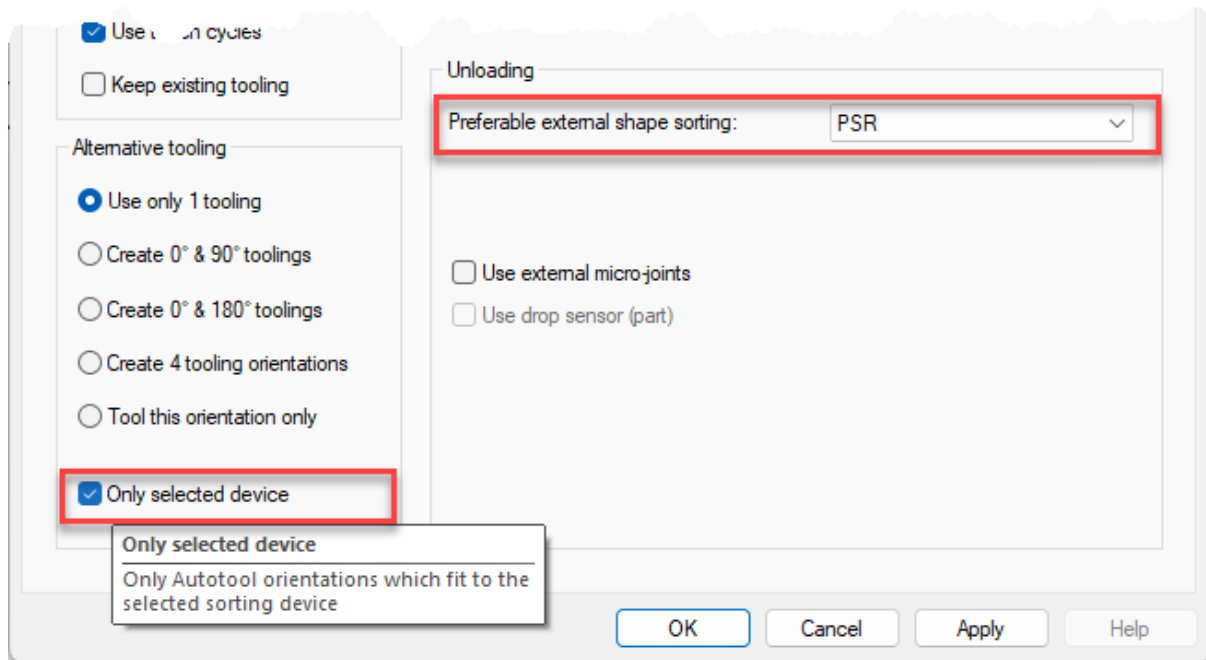
☐ View nest

Nest	Sheets	Utilizat...	Status
200x300_nocomm001	1	74.6	Postprocessed
200x300_nocomm002	1	76.0	Postprocessed

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*.

Sorting device

General

Sorting type: 0
Address: 601
Description: PSR
Part priority: 5
Scrap priority: 0
☐ Presorting ☐ Continuous part flow

Trap door & Work chute

Trap door number: Not connected
Length: - Offset X: -
Width: - Offset Y: -
Mode:
Delay time (sec):
Machine auto move:

Operation mode

☐ Manual [M0]
☐ Trap door [Sorting (...)] (Laser)
☐ Work chute [Sorting(...)] (Punch)
☐ Slug hole [no command]
☒ Robot [Sorting (...)]
☐ Conveyer
☐ Scrap box

Drop sensor

☐ Enabled
Minimum component sizes
☐ Restrict component sizes
Length:
Width:

Shaking mode

☐ Enabled
Shaking distance X:
Shaking distance Y:
Number of shakes:

Component sizes

☒ Restrict component sizes
Length min: 150
Width min: 120
Length max: 3074
Width max: 1565
Offset X: 0
Offset Y: 0
Diagonal max: 0

Autotool settings

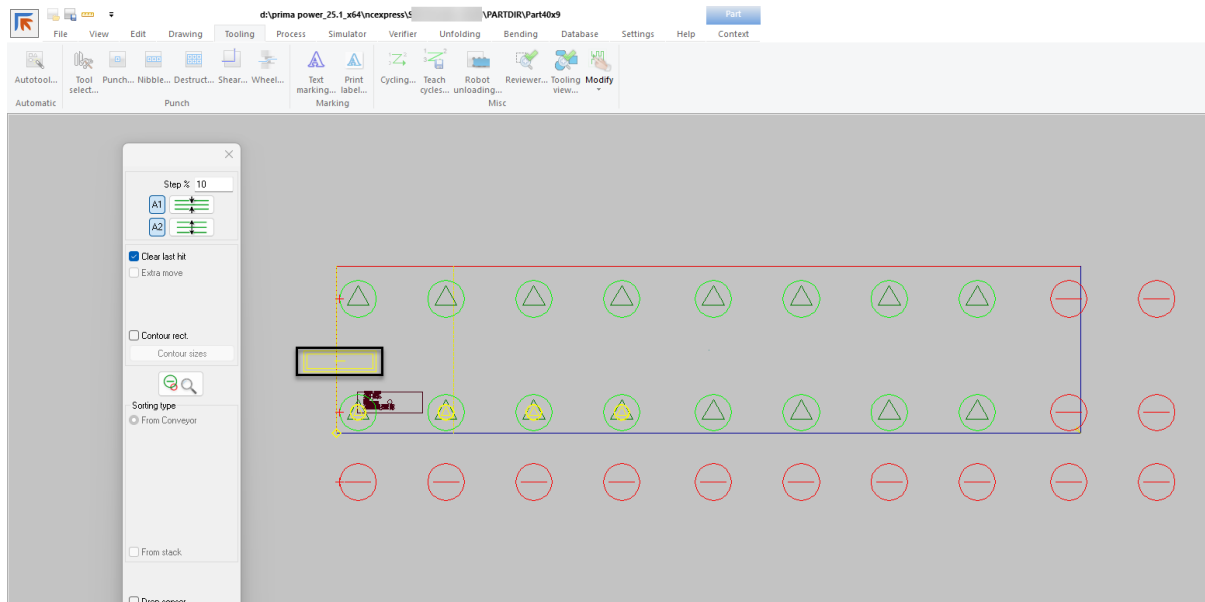
☒ Restrict lead-out location
Angle: 0
Orientations: Default
☒ Only selected device

Stacking Only selected device
Start address: Tool part only in orientations which fit to this device in Autotool
End address: 601
Device type: ROBOT

OK Cancel

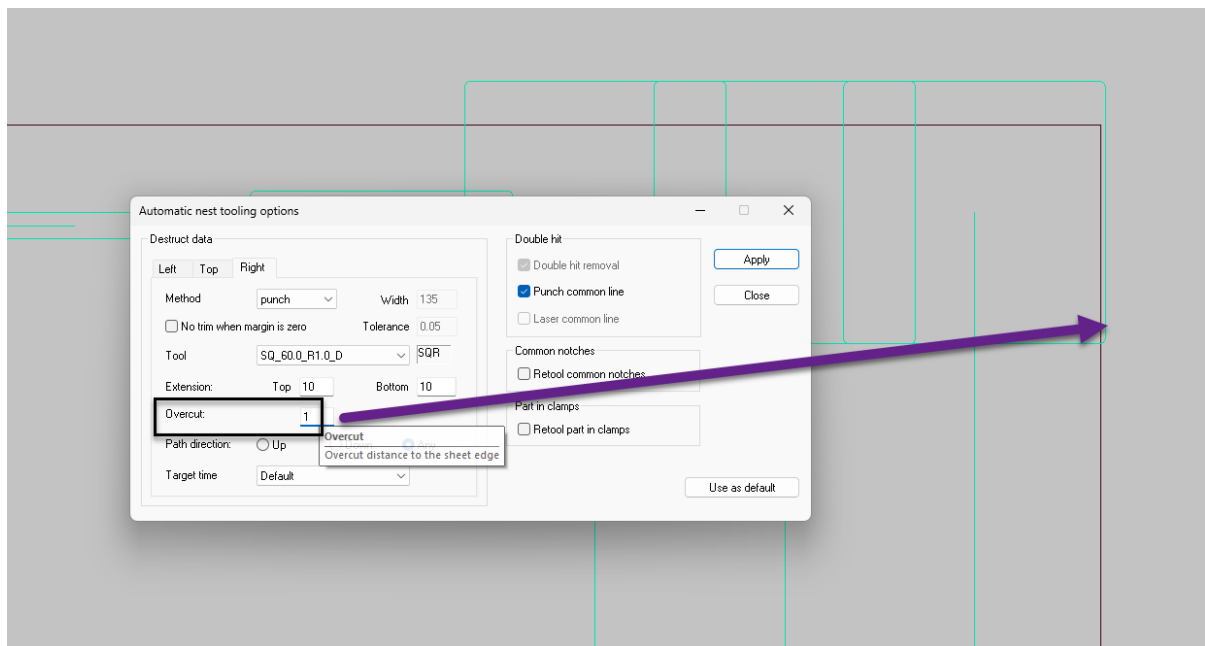
Robot placement with Double Sheet Detector (DSD)

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.

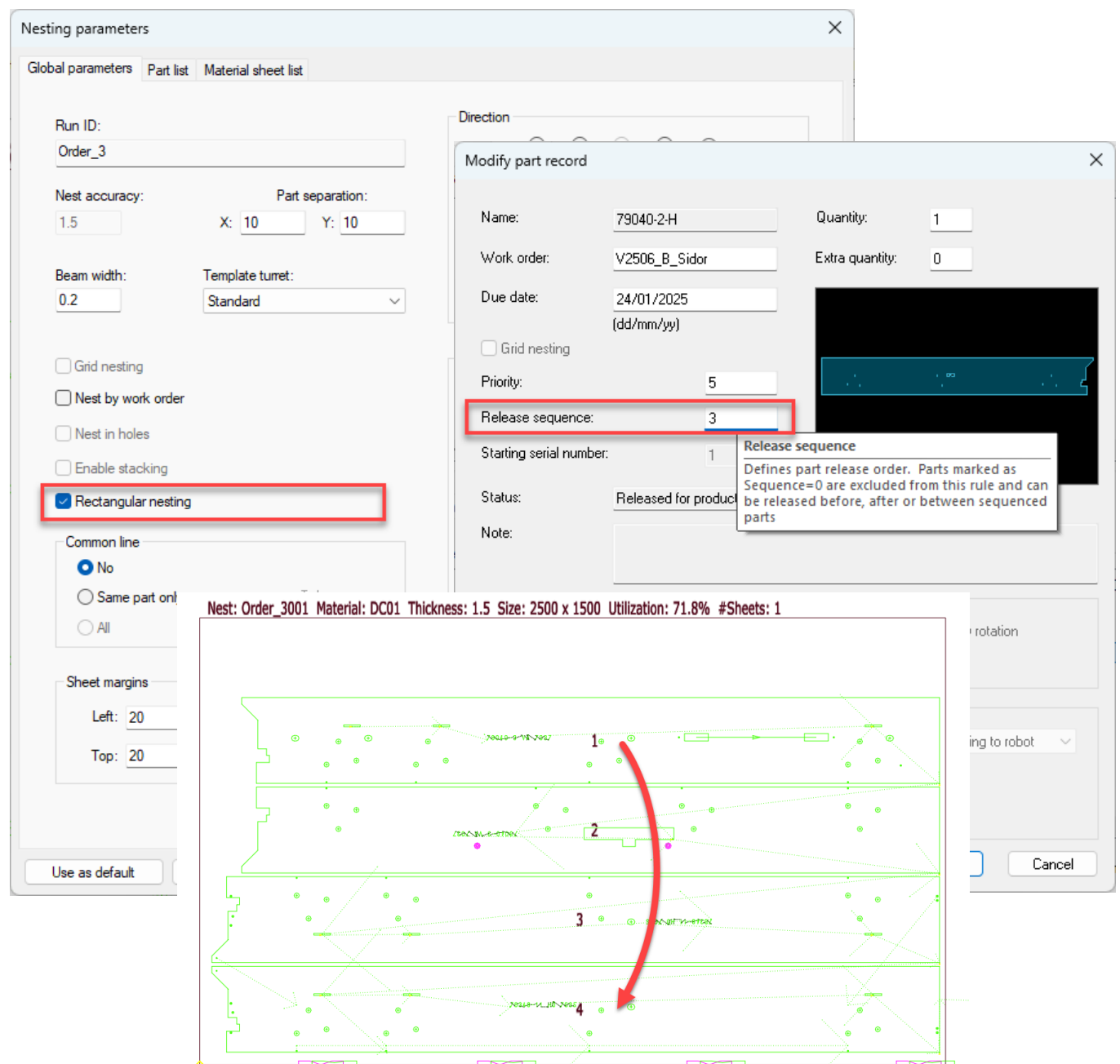


The COMBI, laser-punch machines

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

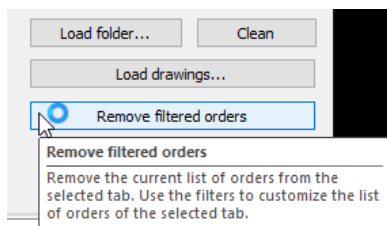
The screenshot shows a 'Filter' dialog box with various search criteria. The 'Part name' and 'Note' fields are highlighted with red rectangles. Below the filter fields, there are tabs for 'Active' and 'Completed'. At the bottom, there is a table with columns: Order, Part, Ordered, Extra, Nested, Completed, Priority, Due date, Status, and Note. The 'Part' and 'Note' columns are highlighted with red rectangles.

Buttons

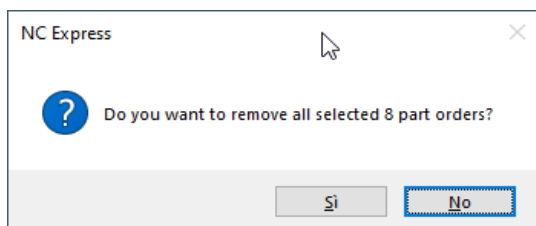
Remove filtered orders

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.



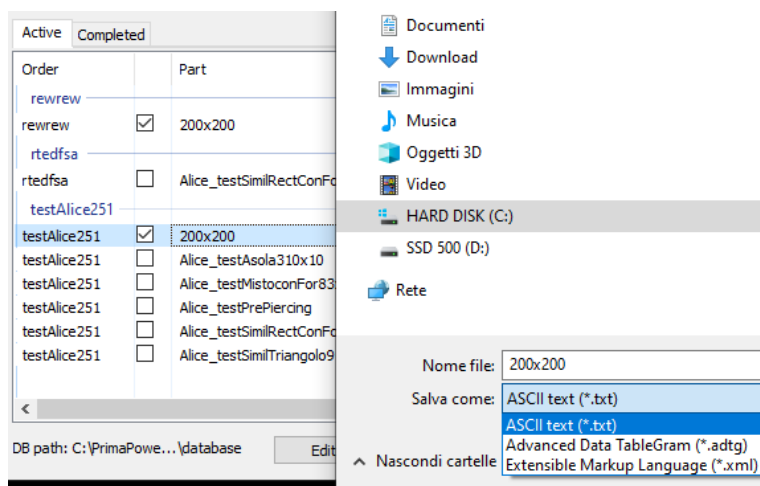
Export

Export exports

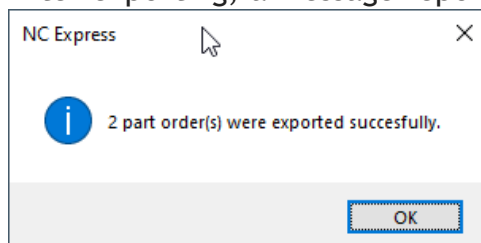
- Or the complete list or order.
- Or a customizable list of orders (since this version).

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.



The screenshot shows an Excel spreadsheet with the following data:

	A	B	C	D	E	F
	OrderID	PartName	QuantityOrdered	QuantityNested	QuantityCompleted	ExtraAllowed
1	rewrew	200x200	1	0	0	0
3	testAlice251	200x200	8	0	0	0

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).

Active		Completed						
Order		Part	Ordered	Extra	Nested	Completed	Priority	Due date
rewrew	<input type="checkbox"/>	200x200	1	0	1			/2
rtdfsa	<input type="checkbox"/>	200x200	9	0	9			/2

Open part

Edit...

Remove...

Set static nest ...

Unset static nest

Set as Completed

Set as Active

Target machine

Active		Completed				
Order		Part	Ordered	Extra	Nested	Completed
rewrew	<input type="checkbox"/>	200x200	1	0	0	0
rtdfsa	<input type="checkbox"/>	Alice_testSimilRectConFori43...	10	0	0	0
testAlice251	<input type="checkbox"/>	200x200	8			
	<input type="checkbox"/>	Alice_testAsola310x10	10			
	<input type="checkbox"/>	Alice_testMistoconFor83x110	9			
	<input type="checkbox"/>	Alice_testPrePiercing	3			
	<input type="checkbox"/>	Alice_testSimilRectConFori43...	5			
	<input type="checkbox"/>	Alice_testSimilTriangolo913x781	3			

Open part

Edit...

Remove...

Set static nest ...

Unset static nest

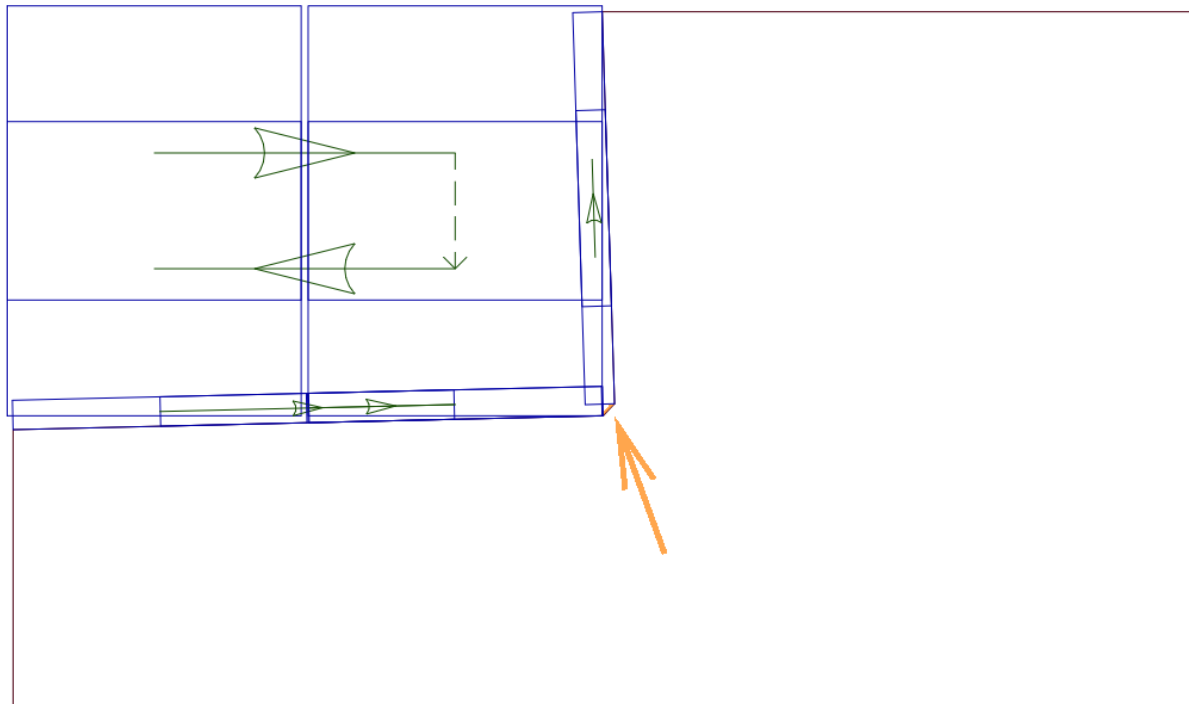
Set as Completed

Set as Active

Target machine

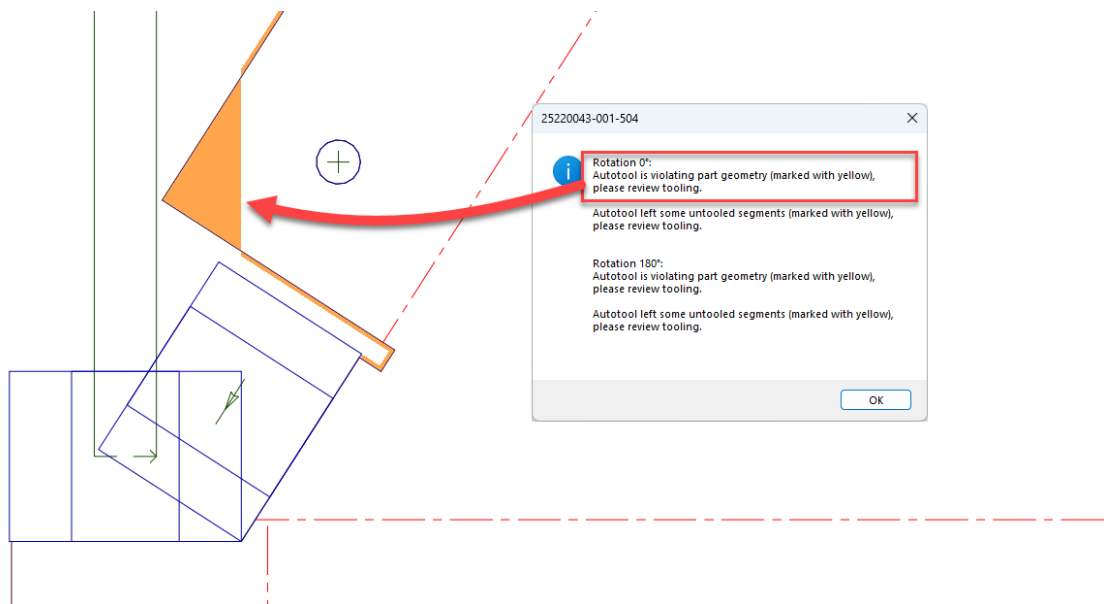
Indicating small slugs and untooled segments with an arrowhead

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.

Sheets

☐ View nest

1 Sheets (3.13 m²)

Nest	Sheets	Utiliz...	Status
TVTEST1001	1	56.2	Optimized

Process + O,P

Accept

Open

Stacking

Parts

Part name	Revision (part)	Order ID	Quantity/Ordered
TVTEST1	Rev2	UNKNOW	

☒ Show part preview
☐ Indicate sheet for part

Part Preview

Group by: Quantity/Ordered

✓ Part name

✓ Revision (part)

✓ Order ID

Assembly

Customer

✓ Quantity/Ordered

X

Y

Bend time

Sorting device

Reset columns default

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.

The screenshot shows the 'Part database' dialog box. At the top, there's a 'Machine' dropdown set to 'PG1530' and a 'Part loading directory' field set to 'D:\Prima Power_25.1_X64\ncexpress\PG1530'. Below these are 'Load' and 'Clean' buttons, and a 'Show part preview' checkbox which is checked. To the right are 'Svg' and 'Pdf' buttons. The main area is a table with columns: Part name, Machine, Material, Thic..., "CP" File, Sort..., Sort..., Turret, Slug..., Revision, Comments, Customer na, and Assembly. The table contains 14 rows of data. A right-click context menu is open over the 'Comments' column, showing a list of items with checkboxes. The 'Next phase' item is highlighted with a black box. At the bottom of the dialog, there's a 'Database location' field set to 'D:\Prima Power_25.1_X64\ncexpress\database' and buttons for 'Edit...', 'Add...', 'Remove', and 'Export...'. Below the table is a preview area showing a series of colored trapezoidal shapes.

Part name	Machine	Material	Thic...	"CP" File	Sort...	Sort...	Turret	Slug...	Revision	Comments	Customer na	Assembly
433002101F	PG1530_GE...	DC01	0.880	D:\Prima Po...	0	0	turret	0				
Lochbild	PG1530_GE...	DC01	0.700	D:\Prima Po...	0	109	PG_...	0				
PreshearTest	PG1530_GE...	DC01	0.880	D:\Prima Po...	0	0	PG_...	0				
TV	PG1530_GE...	DC01	0.880	D:\Prima Po...	8	30	PG_...	0				
TV2	PG1530_GE...	DC01	0.880	D:\Prima Po...	0	0	PG_...	0				
TVTEST1	PG1530_GE...	DC01	0.880	D:\Prima Po...	252	0	PG_...	0				
TVTEST2	PG1530_GE...	DC01	0.880	D:\Prima Po...	0	0	PG_...	0				
wt_0205x04...	PG1530_GE...	DC01	0.880	D:\Prima Po...	8	30	turre	0				
wt_0455x01...	PG1530_GE...	DC01	0.880	d:\prima po...	8	30	PG_...	0				
Wt_1200_80...	PG1530_GE...	DC01	0.880	D:\Prima Po...	0	910	PG_...	0				
Wt_650_650_1	PG1530_GE...	DC01	0.880	D:\Prima Po...	8	30	PG_...	0				
Wt_650_650_2	PG1530_GE...	DC01	0.880	D:\Prima Po...	0	910	PG_...	0				

Database location: D:\Prima Power_25.1_X64\ncexpress\database

Buttons: Edit..., Add..., Remove, Export...

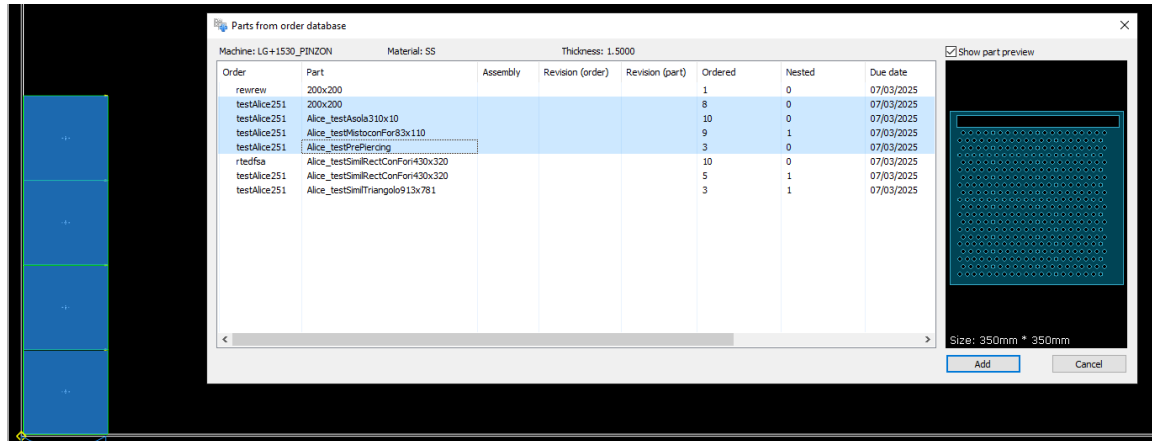
Context menu items (checked items are marked with a checkmark):

- Part name
- Machine
- Material
- Thickness
- "CP" File
- Sorting type
- Sorting address
- Turret
- Slug hole
- Revision
- Comments
- Customer name
- Assembly
- X-dimension
- Y-dimension
- Date modified
- Last modifier
- Source file date
- Expiration date
- Status
- Process data
- ACP profile
- Drawing file
- Next phase**
- Reset columns default

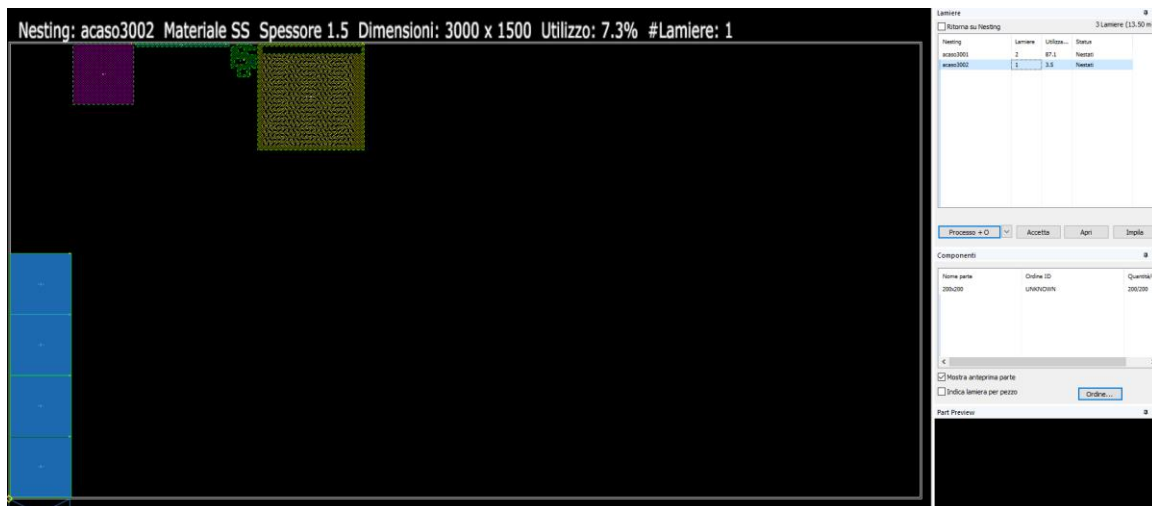
Multi-selection in Add part from Order database

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

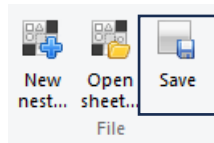
User selects the parts and clicks the **Add** button to add one of each selected part to the current sheet.



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.



Nest: acaso3002 Material: SS Thickness: 1.5 Size: 3000 x 1500 Utilization: 7.3% #Sheets: 1

Nesting parameters

Parts in part database

Name	Part file	Turned	Revision (part)	Sortin...	Sortin...	Skag...	Date modified	Customer	Assembly	Notes
100x100			253	101	0		10/03/2025			KAAK (OFF INL...
100x100_1x2			253	101	0		10/03/2025			KAAK (OFF INL...
1700x300			0	601	0		24/03/2025			KAAK (OFF INL...
200x200			253	101	0		10/03/2025			KAAK (OFF INL...
200x200			0	601	0		24/03/2025			KAAK (OFF INL...
270_204_100			0	601	0		11/03/2025			KAAK (OFF INL...
Alice_testReo...	turnel		253	101	0		07/03/2025			
Alice_testRea...	turnel		253	101	0		10/03/2025			
Alice_testRea...	turnel		0	601	0		07/03/2025			
Alice_testRea...	turnel		0	601	0		07/03/2025			
Alice_testRea...	turnel		0	601	0		07/03/2025			

Scheduled parts

Name	Work order	Quantity	Extra	Initial mt	Any mt	0/180	90/270	Point	Release sequen...	Grid	Due date	Bending	Assem
200x200	testAlice251	8	0	0	0	NO	NO	5	0	NO	07/03/2025	0	
Alice_testRea...	testAlice251	10	0	0	0	NO	YES	5	0	NO	07/03/2025	0	
Alice_testRea...	testAlice251	8	0	0	0	NO	YES	5	0	NO	07/03/2025	0	
Alice_testRea...	testAlice251	3	0	0	0	NO	YES	5	0	NO	07/03/2025	0	

Part Preview

Part name	Order ID	Quantity
200x200	testAlice251	18
Alice_testRea...	testAlice251	10
Alice_testRea...	testAlice251	18
Alice_testRea...	testAlice251	17

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

Search

Machine: Nesting name: Part name: X sheet dim:

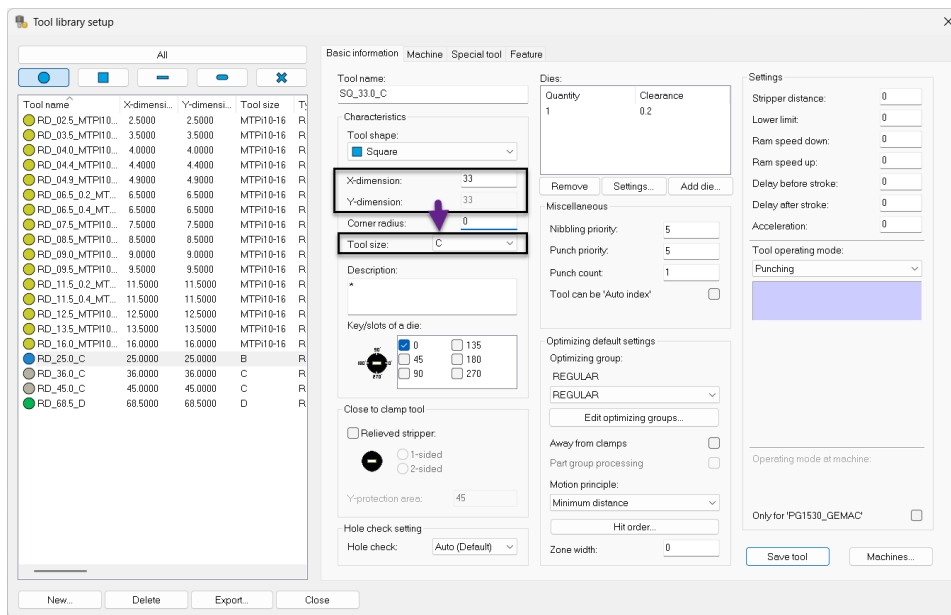
Material: Thickness: Order ID: Y sheet dim:

Default tool size

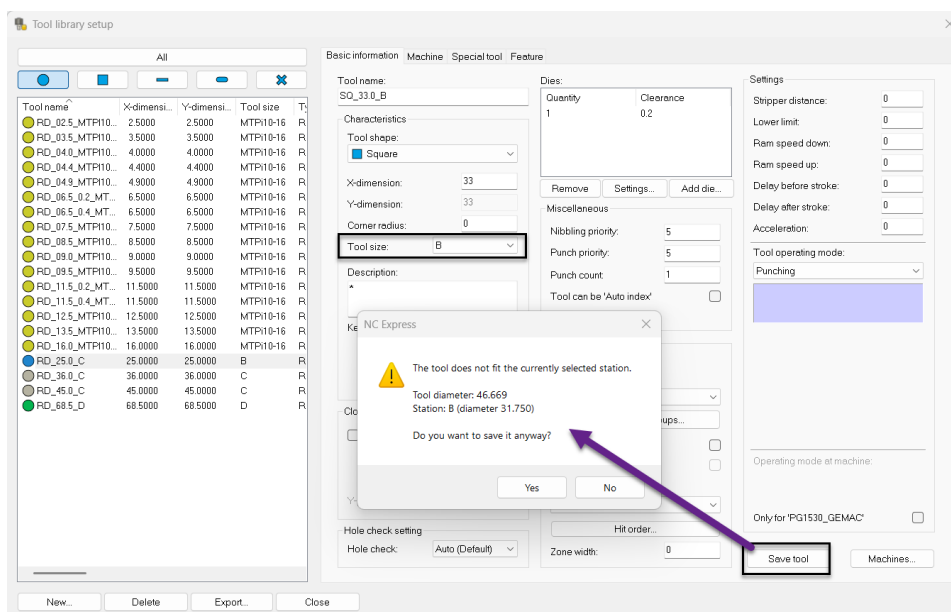
Standard tool size is checked when a new tool is created in the tool library. The tool size is checked from the ToolsCommon.xml file, which has all the basic data of the tools.

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.