



HEXAGON

RADAN Release Notes

RADAN 2022.0

RADAN Release Notes
6 July 2021

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RADAN CAD/CAM

3D File Import

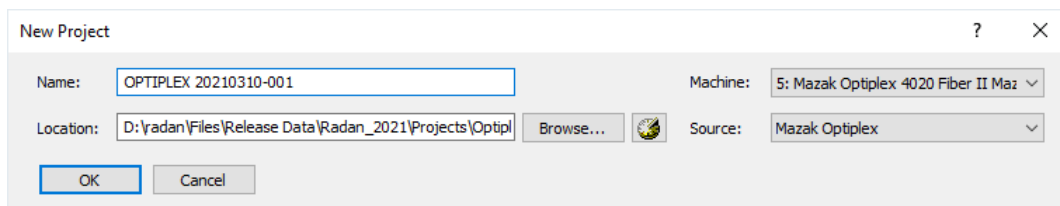
3D File Import now supports the following file formats and versions:

Readers	File Extensions	Versions Supported
ACIS	.sat, .asat	R1 – 2017
CATIA V4	.model, .exp	4.1.9 – 4.2.4
CATIA V5	.CATPart, .CATProduct, .CGR	V5R8 – V5-6R2021x
IGES	.igs, .iges	up to 5.3
Inventor	.ipt, .iam	V6 (V11 for .iam) – V2021
NX Unigraphics	.prt	UG11 – NX 1899
PARASOLID	.x_t, .x_b, .xmt_bin, .xmt_txt	33.0.247
Pro/E - CREO	.prt, .prt.*, .asm, .asm.*	16 – Creo 7.0
Solid Edge	.par, .asm, .psm	V18 – 2020
SolidWorks	.sldprt, .sldasm	98 – 2021
STEP	.stp, .step	AP203, AP214, AP242

Nest Projects Changes

RADAN 2022.0 has an improved user experience when working with Nest Projects.

New Project Dialog



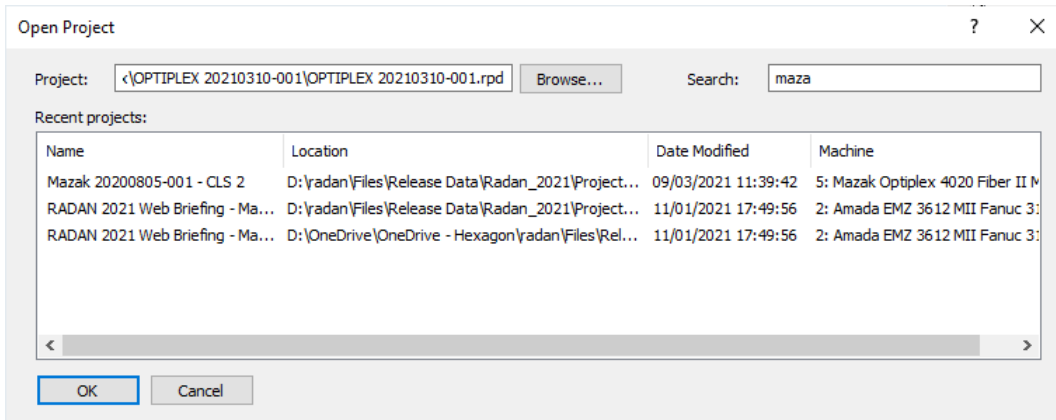
The New Project dialog replaces the Quick Nest functionality that was introduced a few releases ago. It asks for pertinent information up-front, removing an extra step:

- Name of the project; effectively the name of the .rpd file that will be created
- Machine; this selection has two functions:
 - set the active machine tool for the new project
 - filter the list shown underneath (source)

- Source; the new project can be created from defaults, the existing project or a template. The list of templates is filtered by choosing the target machine tool
- Location; the location of the new nest project

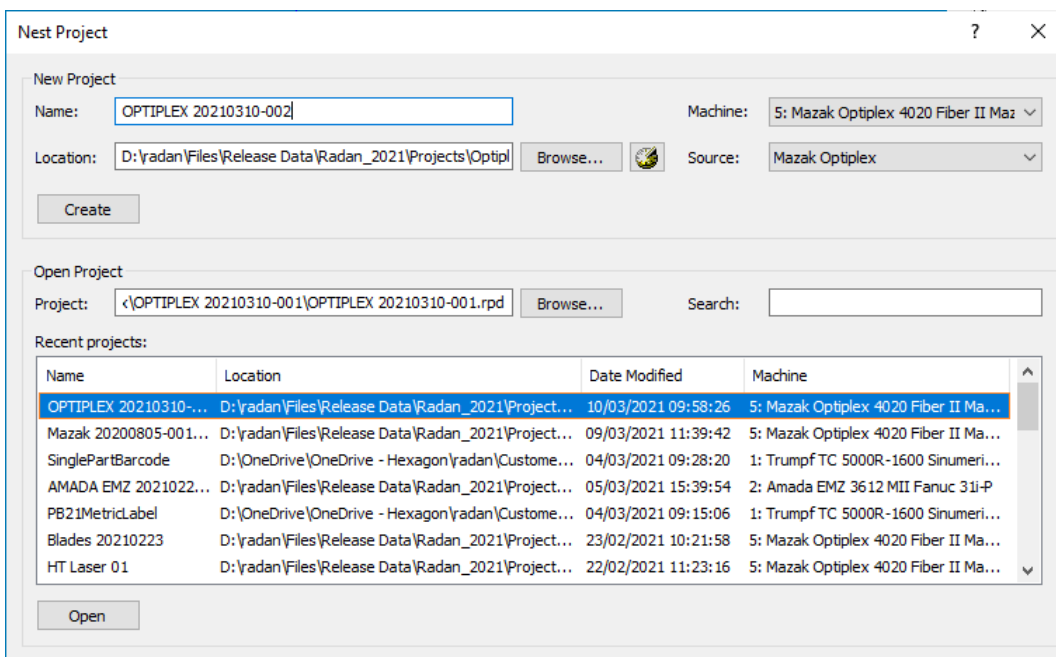
The new project will be created in a subfolder of the given location and the nests will be saved in the 'nests' subfolder, as with 'saved projects' in RADAN 2020 and RADAN 2021.

Open Project Dialog



This new dialog shows a most recently used list of nest projects on the user's system. By default, this list is ordered such that the most recent project is found at the top. The search box can be used to filter the list by their names.

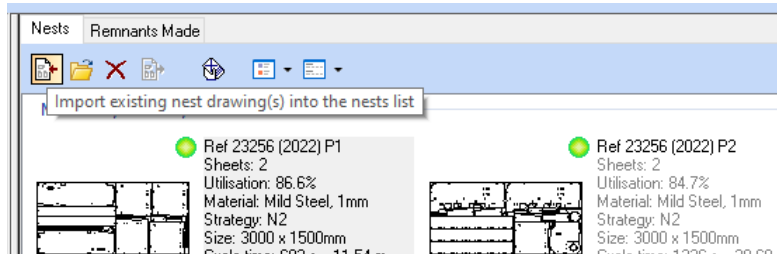
Parts from 3D



When unfolding into a project from RADAN 3D, the user is offered a combined dialog which allows them to add the newly unfolded parts to a new project or an existing project.

Importing Existing Nests

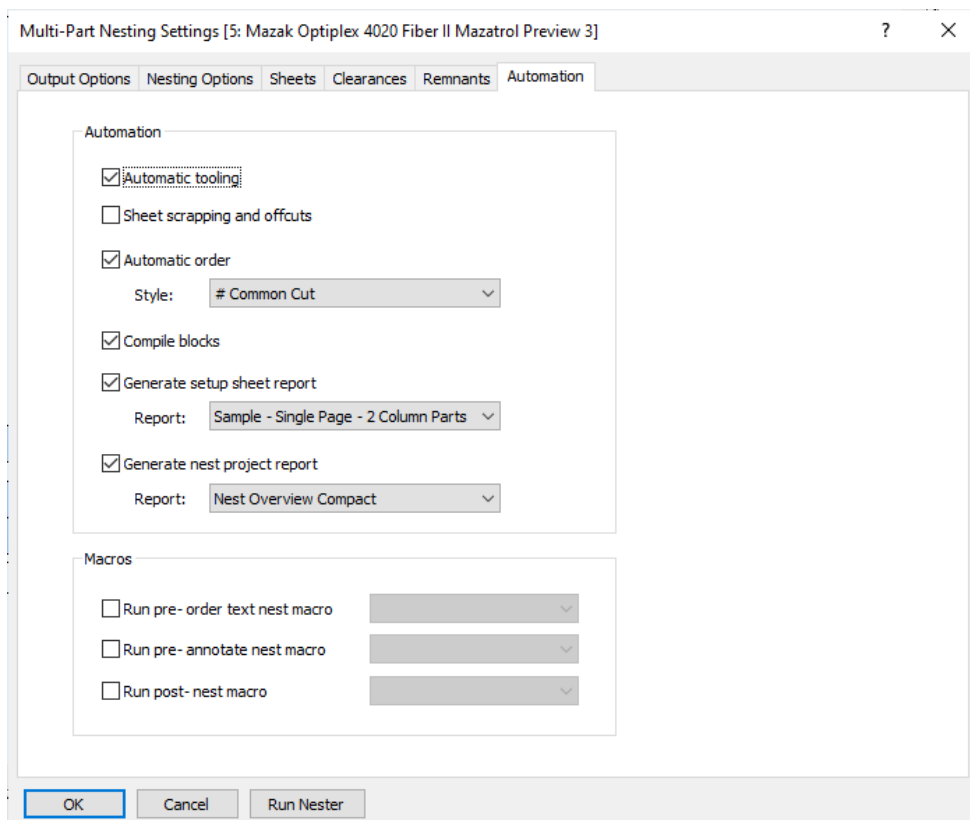
It is now possible to select multiple files when importing existing nests into a project.



Reporting

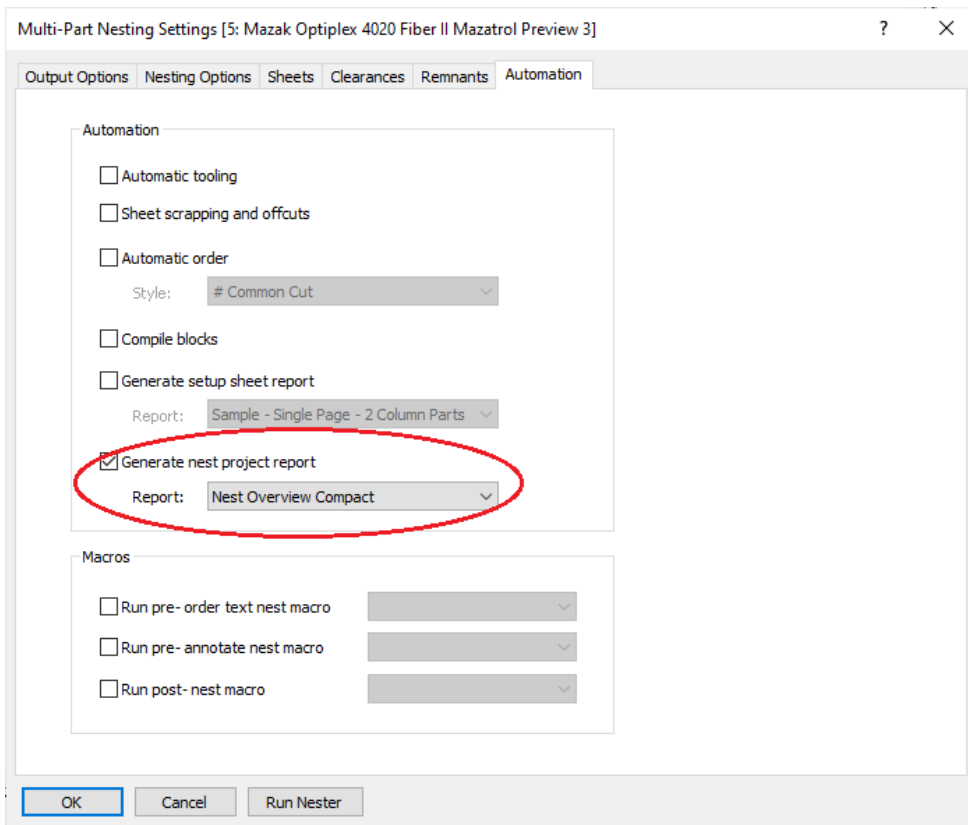
Automatic Setup Sheets

If the user has selected to automatically issue setup sheets for nests, they will automatically be updated each time the postprocessor is run.

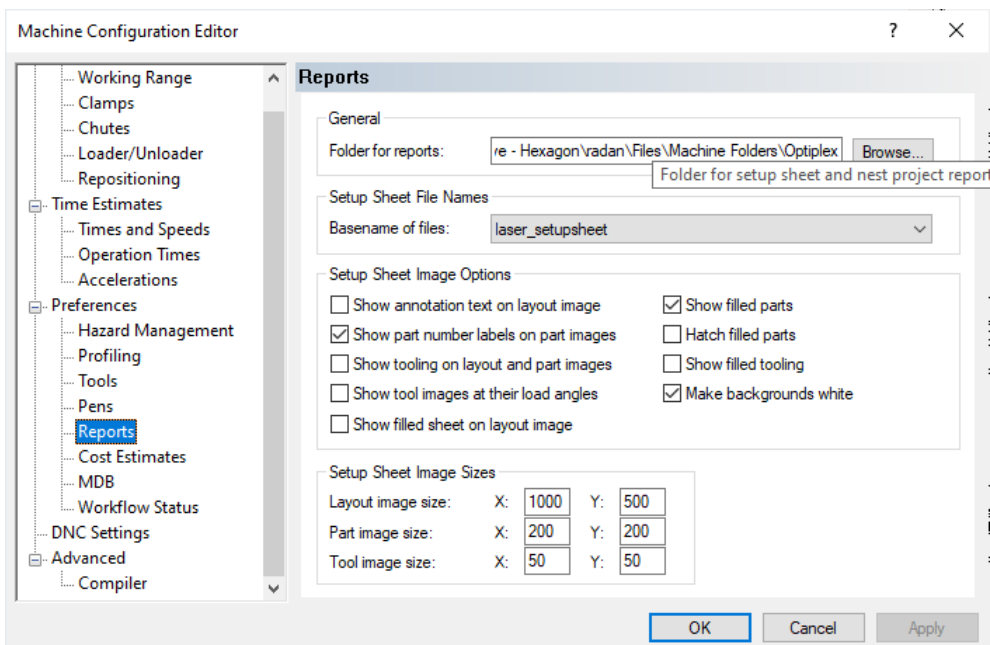


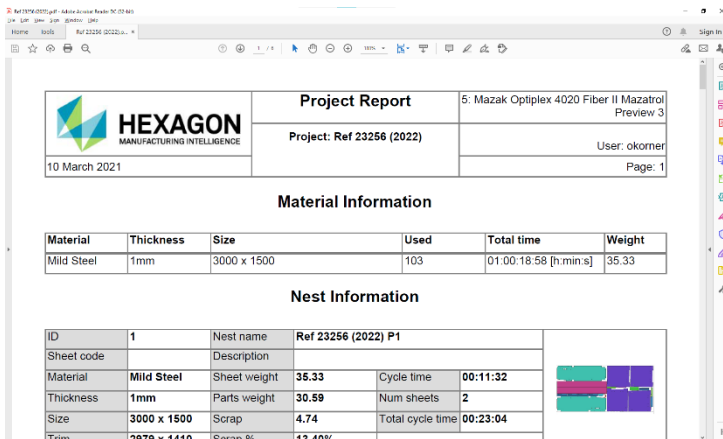
Automatic Nest Project Reports

In the multi-part nesting settings, the user can now specify that a nest project report should be automatically generated at the end of the nest run. In the dialog, the required template can be specified as shown.



The location for the reports is specified in the Machine Configuration Editor.



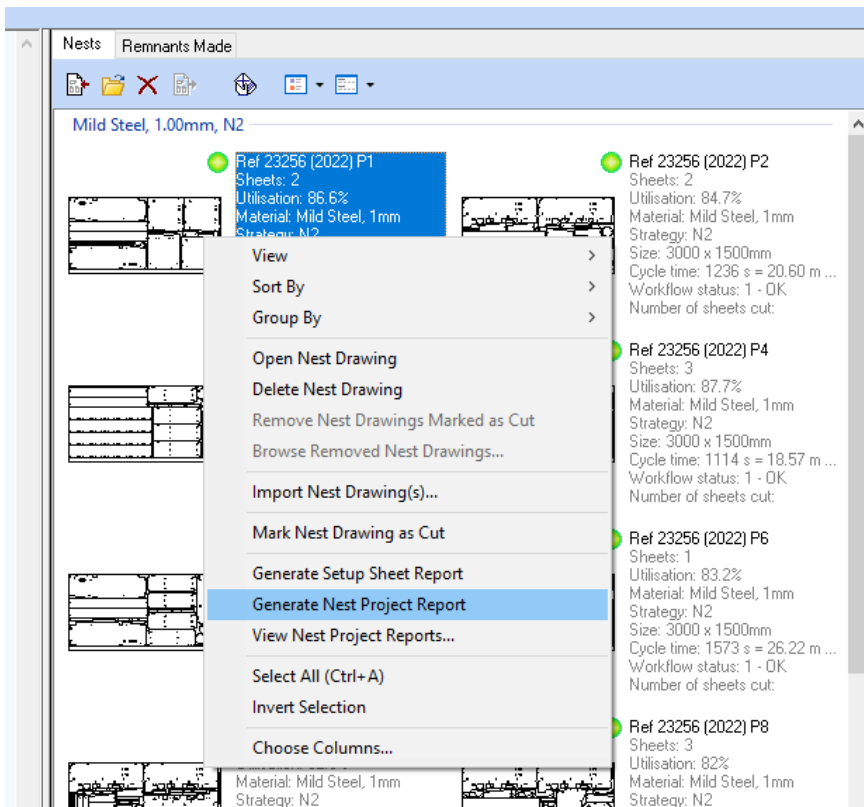


HEXAGON MANUFACTURING INTELLIGENCE		Project Report		5: Mazak Optiplex 4020 Fiber II Mazatrol Preview 3	
10 March 2021		Project: Ref 23256 (2022)		User: okomer	
				Page: 1	

Material Information					
Material	Thickness	Size	Used	Total time	Weight
Mild Steel	1mm	3000 x 1500	103	01:00:18:58 [h:min:s]	35.33

Nest Information					
ID	1	Nest name	Ref 23256 (2022) P1		
Sheet code		Description			
Material	Mild Steel	Sheet weight	35.33	Cycle time	00:11:32
Thickness	1mm	Parts weight	30.59	Num sheets	2
Size	3000 x 1500	Scrap	4.74	Total cycle time	00:23:04
Trim	2974 x 1410	Scrap %	13.40%		

Manual Nest Project Reports

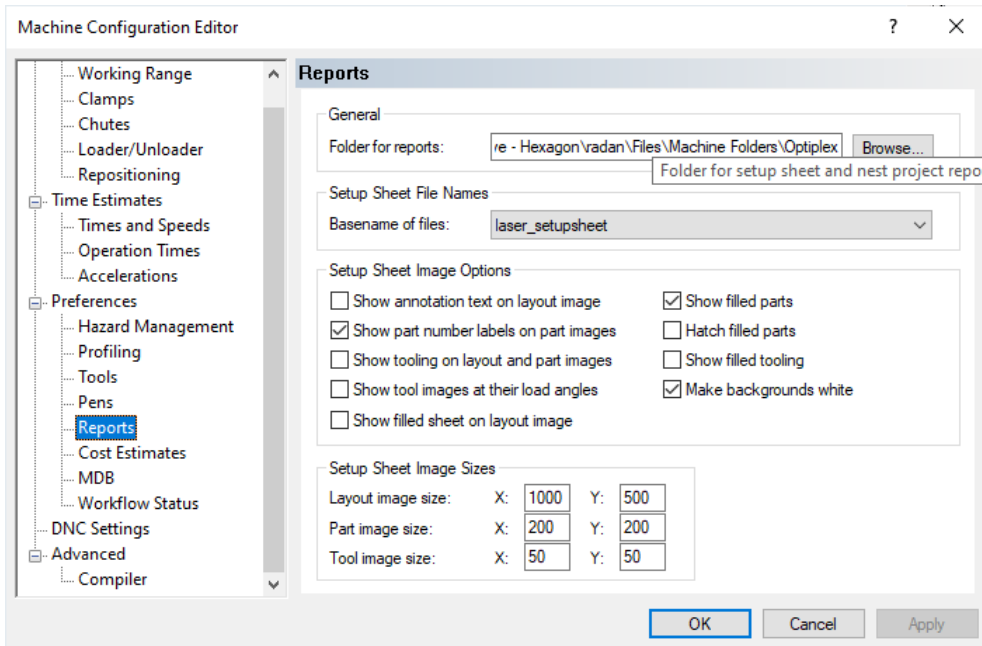


Mild Steel, 1.00mm, N2

- Ref 23256 (2022) P1
 - Sheets: 2
 - Utilisation: 86.6%
 - Material: Mild Steel, 1mm
 - Strategy: N2
- Ref 23256 (2022) P2
 - Sheets: 2
 - Utilisation: 84.7%
 - Material: Mild Steel, 1mm
 - Strategy: N2
 - Size: 3000 x 1500mm
 - Cycle time: 1236 s = 20.60 m ...
 - Workflow status: 1 - OK
 - Number of sheets cut:
- Ref 23256 (2022) P4
 - Sheets: 3
 - Utilisation: 87.7%
 - Material: Mild Steel, 1mm
 - Strategy: N2
 - Size: 3000 x 1500mm
 - Cycle time: 1114 s = 18.57 m ...
 - Workflow status: 1 - OK
 - Number of sheets cut:
- Ref 23256 (2022) P6
 - Sheets: 1
 - Utilisation: 83.2%
 - Material: Mild Steel, 1mm
 - Strategy: N2
 - Size: 3000 x 1500mm
 - Cycle time: 1573 s = 26.22 m ...
 - Workflow status: 1 - OK
 - Number of sheets cut:
- Ref 23256 (2022) P8
 - Sheets: 3
 - Utilisation: 82%
 - Material: Mild Steel, 1mm
 - Strategy: N2

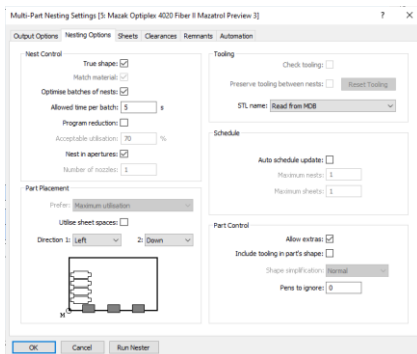
Material: Mild Steel, 1mm
Strategy: N2

From the nest panel, a new option allows the user to quickly issue a new version of the nest project report as a PDF file. The folder location is specified in the machine settings:



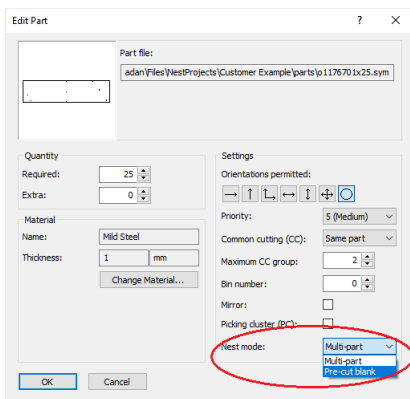
Automatic Nesting

Common Cutting



Common cutting using Radnest Ultimate is now supported. Only same-part common cutting is used.

Automatic Pre-Cut Blanks



Parts in a project can now have a 'Nest mode' set against them. This nest mode can be:

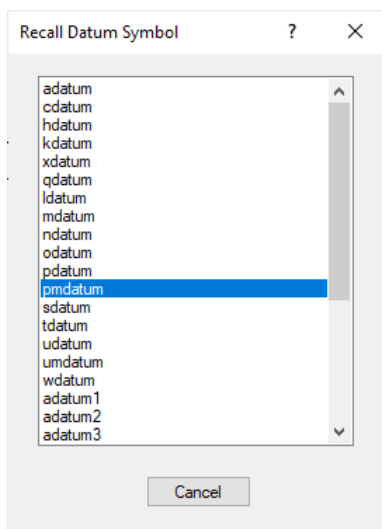
- Multi-part; this indicates that the part is to be nested as normal, together with other multi-part parts
- Pre-cut blank; with this set, the part will be nested as a 'pre-cut blank' by the automatic nester

Part Marking

RADAN 2022.0 has support for adding QR codes or DataMatrix codes in NC Programs.

Location of the Mark

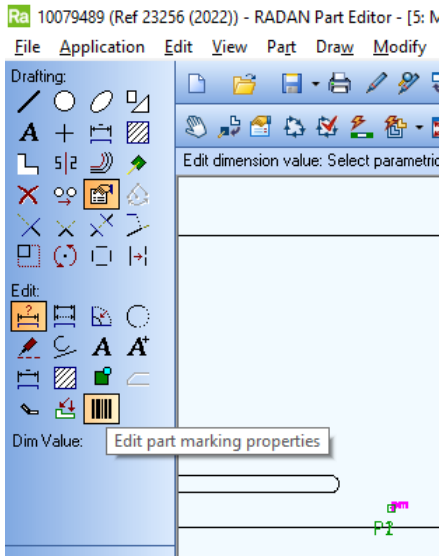
To achieve this, the software needs the location of the mark - the user specifies this by placing a 'pmdatium':



This pmdatium can be placed on a part or on a nest. The location of the pmdatium will be used as the 'bottom left' corner of the mark.

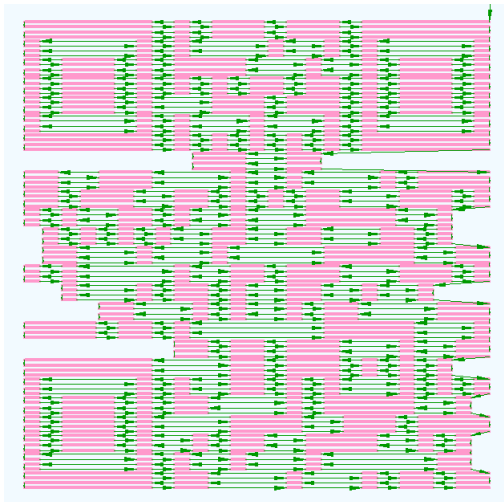
Contents of the Mark

Use the new function to add the contents of the mark:



Tooling Features

The tooling features will be added in order mode and depend on the type of machine tool and its capabilities. In this example, we are etching a QR code on a Mazak Laser using horizontal 'hatch lines':



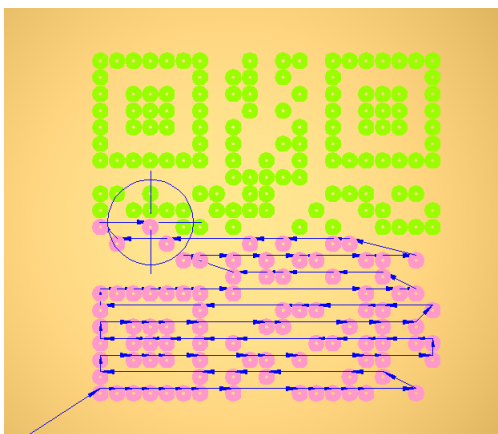
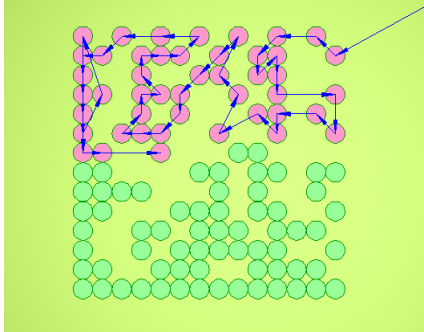
The sequence is fixed and can use fly-cutting if the machine / postprocessor supports it.

Different Styles

Part marking supports various styles of part marking - it depends on the machine tool which is appropriate:

- 'hatch lines'; shown in the example above, the mark is etched using a collection of etched lines cut in a particular sequence
- 'etched circles'; here, the black modules are represented using small etched circles
- 'punch mark tool'; on a punch/combi machine, uses a specific marking tool to make indentations for the black modules

- 'canned cycle'; on profiling machine, relies on the postprocessor to generate a canned cycle call which causes the machine tool to make the mark

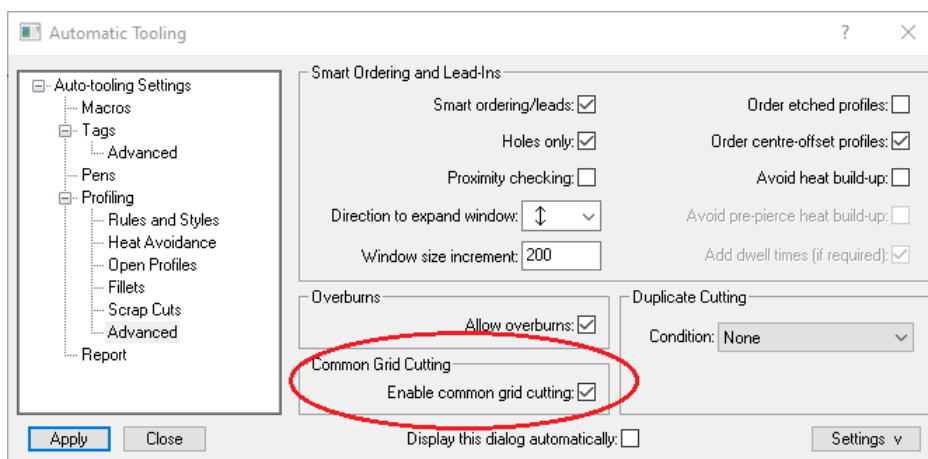


On profiling machines, the GPP can automatically output fly-cut codes for part marks even if the user doesn't use 'FLYCUT SCAN' in the order text. We have found that the use of fly-cutting is recommended on MAZAK machines.

Other Changes

Grid Style Common Cutting

The user can now choose the common cutting style in the automatic tooling settings - this setting can be saved in the materials database.



Open Clamp Check when Removing Sheet Skeleton

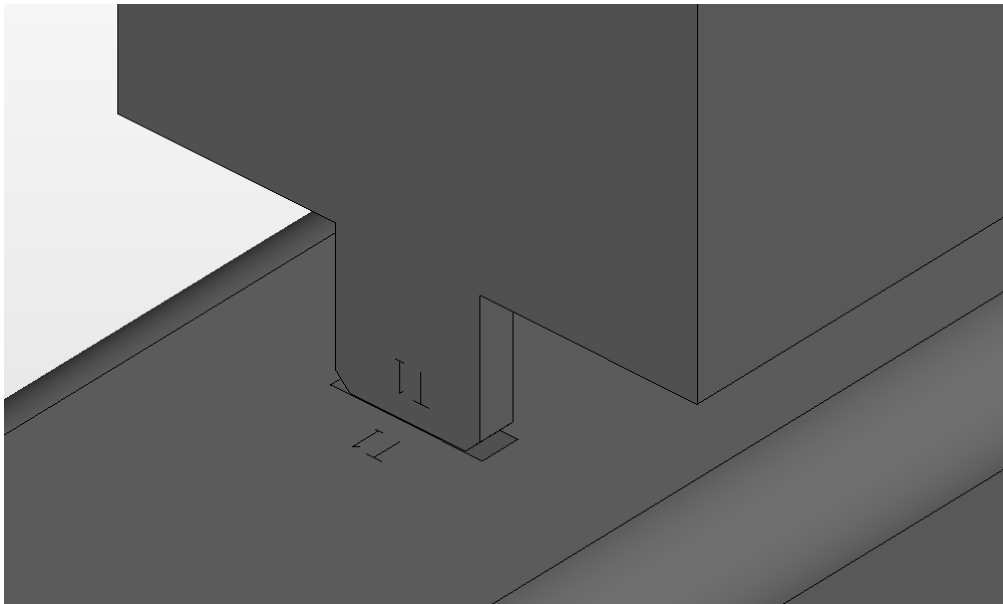
The software will now issue a warning if an attempt is made to remove material that is still held by the clamps on the machine tool.

Radm-ax / Radtube

Cutting

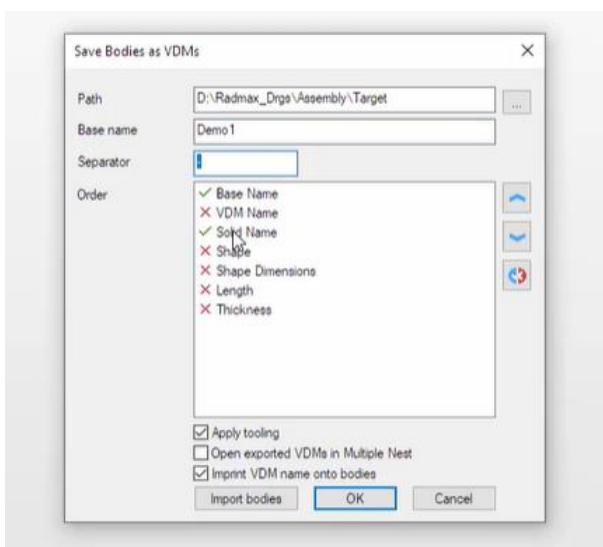
Tenons

The software can now automatically label tenon pairs so they can be easily identified and matched up during fabrication.



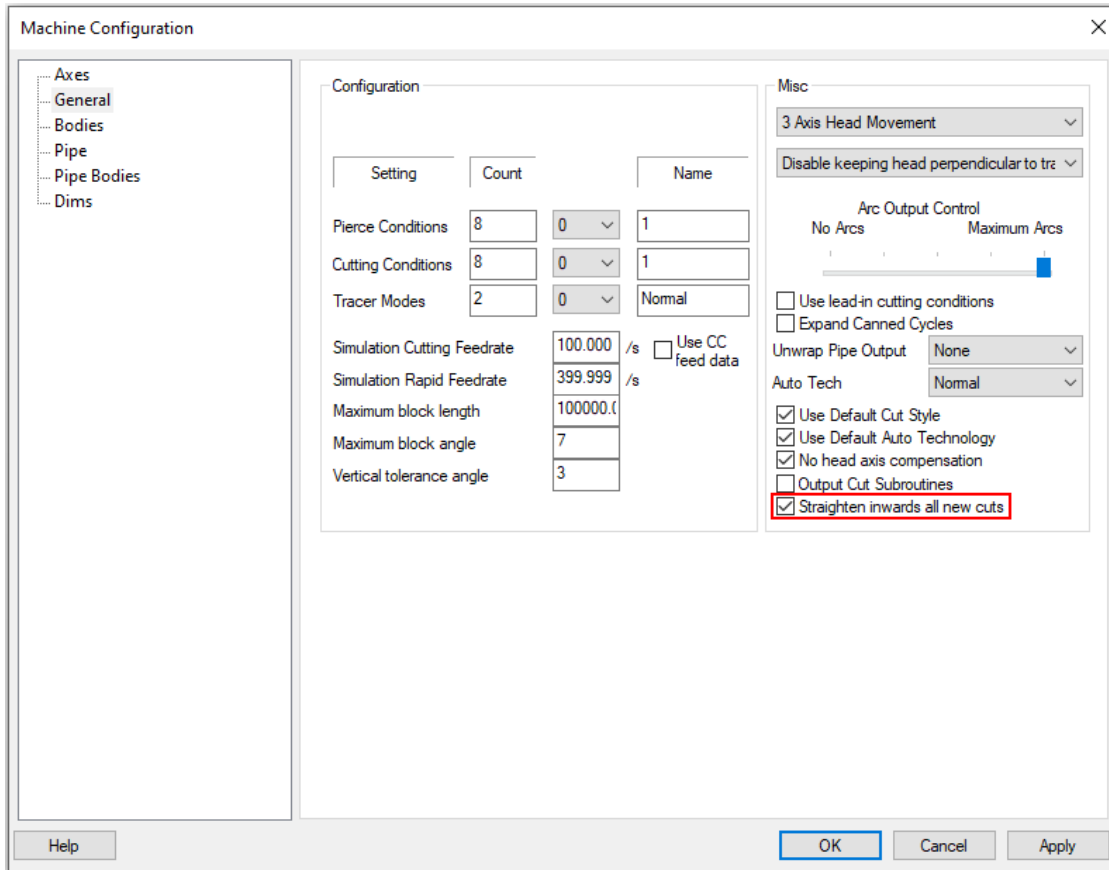
Part Marking

Part marking (name, shape, dimensions) can automatically be added to the parts when saving parts in an assembly to individual part files.



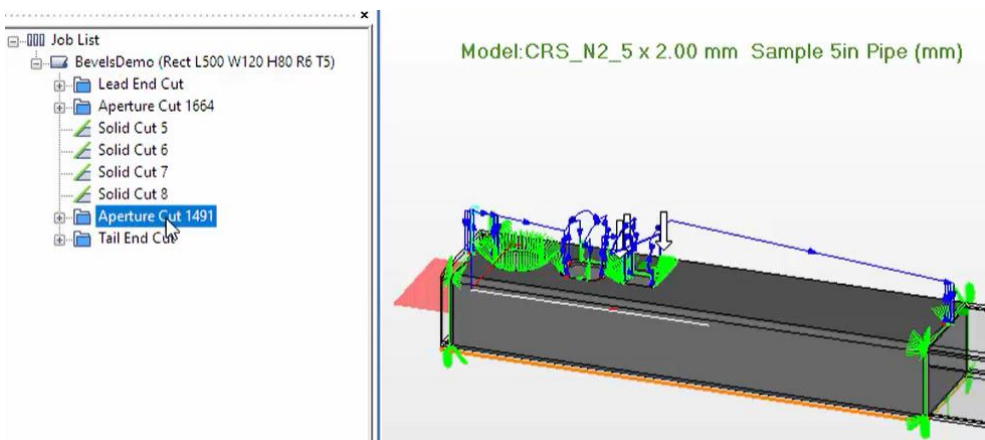
Straightening Cuts Now Optional

In Radtube 2022.0, a new option controls whether solid cuts should be straightened automatically for 2- or 3-axis cutting machines.



Cutting Groups

The cutting operations can be grouped to more easily identify. Automatic naming reduces user input. Naming grouping operations allows the user to quickly re-sequence complex cuts.



Reporting

Images

To improve the clarity of images on the reports, part images can now be shown as wire frames if desired:



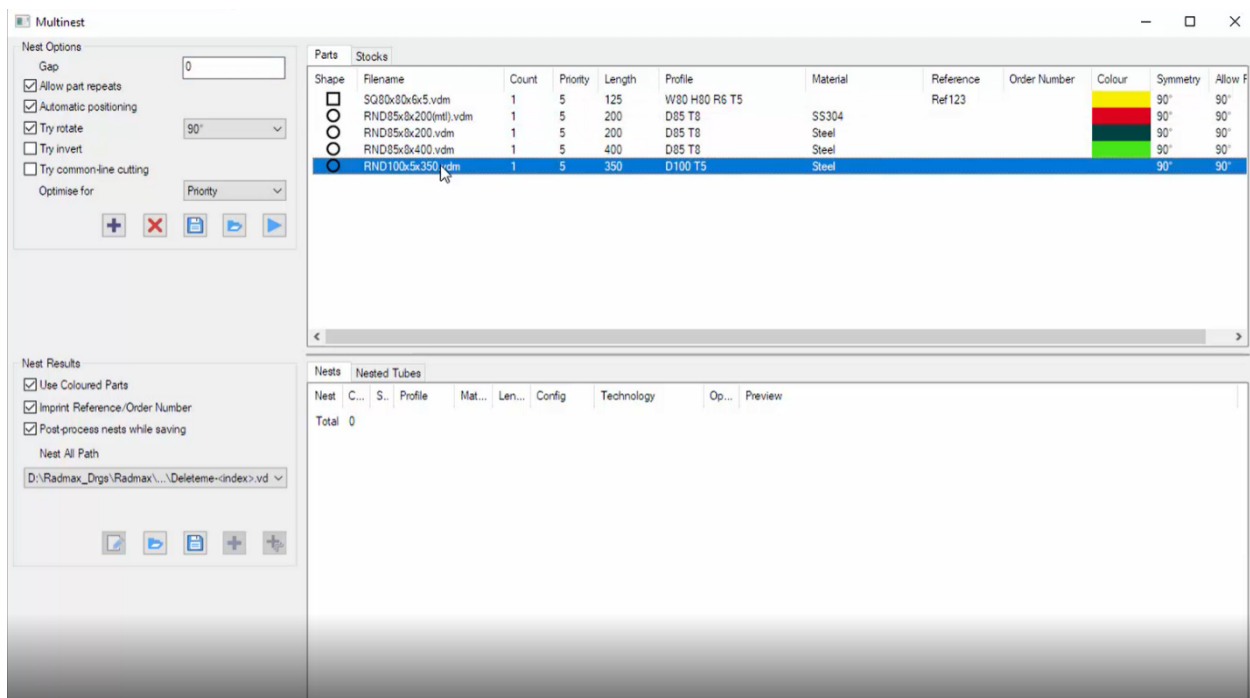
Operator Name

The operator name can now be added to the setup reports.

Nesting

Environment

Nesting in Radtube has been made more user friendly by re-designing the user interface in its entirety. A new dialog shows parts, stock and the generated nests in a clear layout. When you run the nester, all nests are shown in the display allowing you to refine the nester settings and re-running without switching through multiple views. As you move the cursor over nested parts the relevant row in the parts tab is highlighted so you can easily identify them.



Customer Data

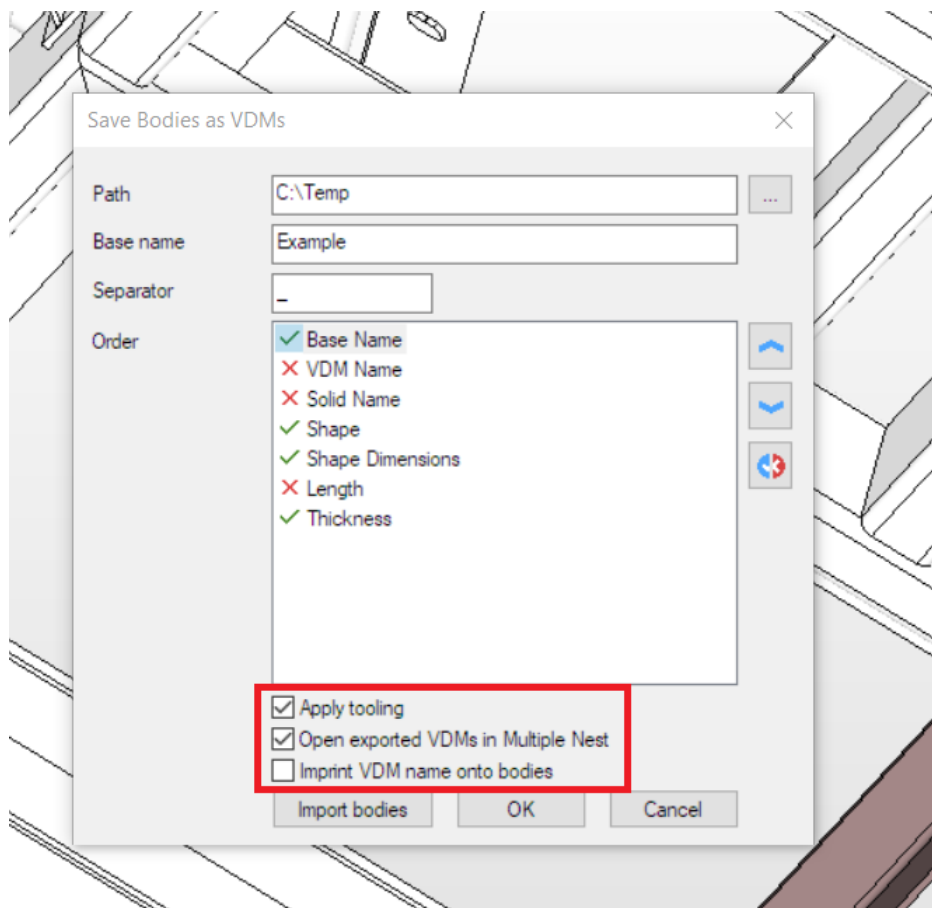
Each part can be given a colour, reference and order number which is tracked through nesting and onto the reports. These details can also be etched onto the parts automatically during nesting.

Automation

In addition, nests can automatically be postprocessed to save additional work by the user.

Workflow

To improve throughput, it is now possible to launch the nester as part of the “Save Bodies as VDMs” process, so models from third party systems can be imported, split to individual parts, tooled and nested in a single action.



Radbend

Postprocessors

The following new postprocessors have been created:

- Cybelec VisiTouch controller with *.xml file format + Graphical pictures
- Ermaksan ERTouch postprocessor for XML-format
- Durma DT15 postprocessor



N	Nom	Suivant	Epaisseur	Poinçons	Matrices	Modifier
1	JGJGJ		2.0	1	1	18.02.2021 16:51
2			3.0	1	9	18.02.2021 16:51
3	test		2.0	1	1	18.02.2021 16:51
6	Piece6		2.0	1	1	12.03.2021 14:41
15	u test		2.0	1	5	18.02.2021 16:51
99	test cw num		2.0	1	1	12.03.2021 18:07

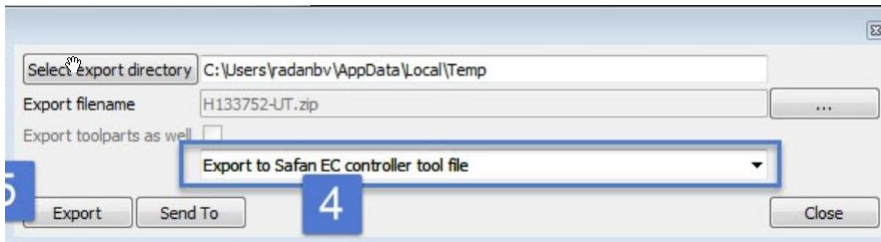


There have been updates to the following postprocessors:

- Bystronic Byvision postprocessor : control over holes output
- LVD CadmanCNC/MNC
- Amada OPE

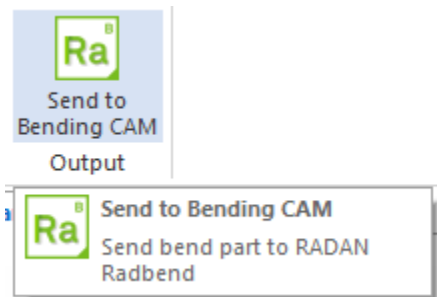
Tool Export to Safan EC Controller

It is now possible to export tooling data to be used on the Safan EC Controller.



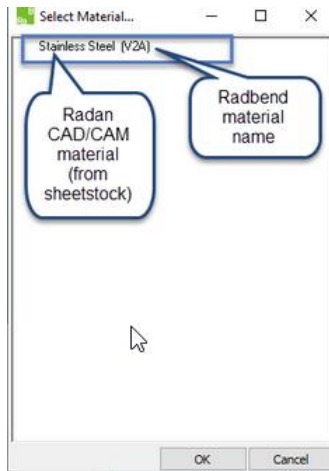
DESIGNER Send to Radbend

3D models can now be sent from DESIGNER to Radbend.



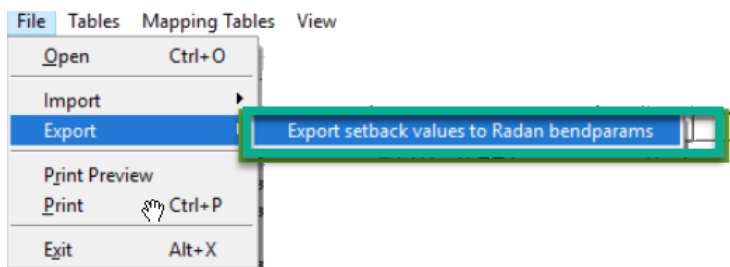
Material Selection

When selecting a material in Radbend, the user can now choose from the material list as used in the RADAN CAD/CAM system.



Create Unfold Table for Radan

There is now an option to create a Radan bendtable from the Radbend database.



Radquote

File Support

Files that contain parts that are not made out of sheet metal can still be important. During the quote building process, these parts can be replaced with manual parts or purchased parts.

When browsing for 3D files, it is possible to open the file in DESIGNER before adding it to Radquote if DESIGNER is installed on the system.

VDF Files from DESIGNER

Radquote 2022.0 is able to accept files from DESIGNER. These files can be single or multiple part files and the flat pattern is automatically read. From within DESIGNER, a part or assembly can also be sent to Radquote.

IGES Files

Radquote can now also read 3D IGES files.

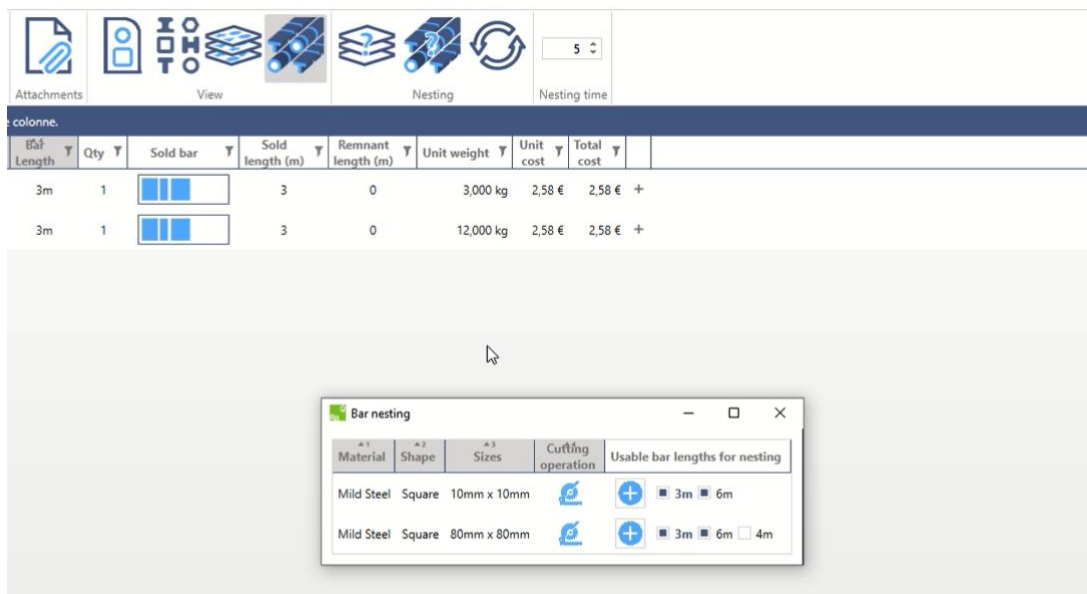
Purchased Parts

Purchased parts in a quote can now be treated in specific ways. For example, they can be excluded from costs that are spread across manufactured parts.

It is also possible to replace a purchased part with a manufactured part.

Bar Nesting

It is now possible to choose the bar lengths which can be used for bar nesting. It is also possible to add a custom bar length, with a custom price.



The screenshot shows the Radquote software interface. At the top, there is a toolbar with icons for Attachments, View, Nesting, and Nesting time. Below the toolbar is a table with the following columns: Bar Length, Qty, Sold bar, Sold length (m), Remnant length (m), Unit weight, Unit cost, and Total cost. The table contains two rows of data:

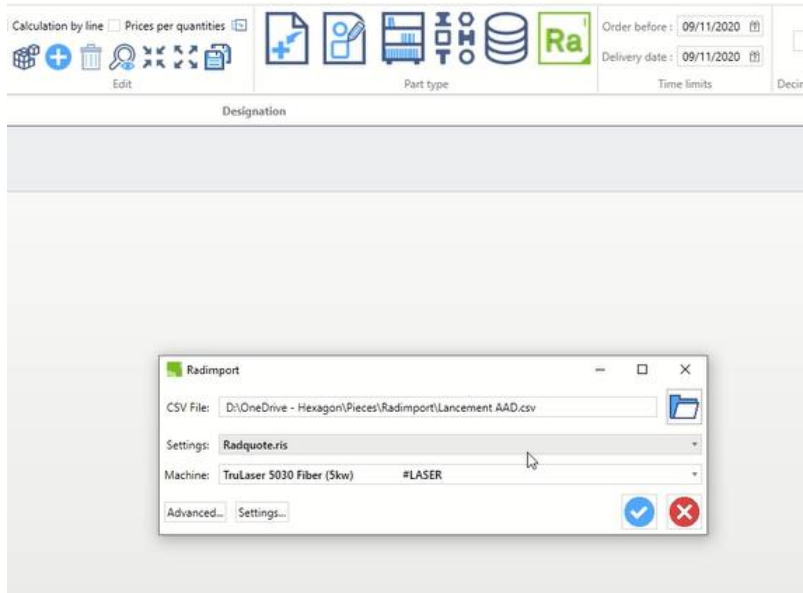
Bar Length	Qty	Sold bar	Sold length (m)	Remnant length (m)	Unit weight	Unit cost	Total cost
3m	1		3	0	3,000 kg	2,58 €	2,58 € +
3m	1		3	0	12,000 kg	2,58 €	2,58 € +

Below the table, a 'Bar nesting' dialog box is open. It has a title bar 'Bar nesting' and a close button. The dialog box contains a table with the following columns: Material, Shape, Sizes, Cutting operation, and Usable bar lengths for nesting. The table contains two rows of data:

Material	Shape	Sizes	Cutting operation	Usable bar lengths for nesting
Mild Steel	Square	10mm x 10mm		<input checked="" type="checkbox"/> 3m <input checked="" type="checkbox"/> 6m
Mild Steel	Square	80mm x 80mm		<input checked="" type="checkbox"/> 3m <input checked="" type="checkbox"/> 6m <input type="checkbox"/> 4m

Radimport

Radquote can now use Radimport to import parts over a csv file. A new button is available in the ribbon when Radimport is installed on the machine.



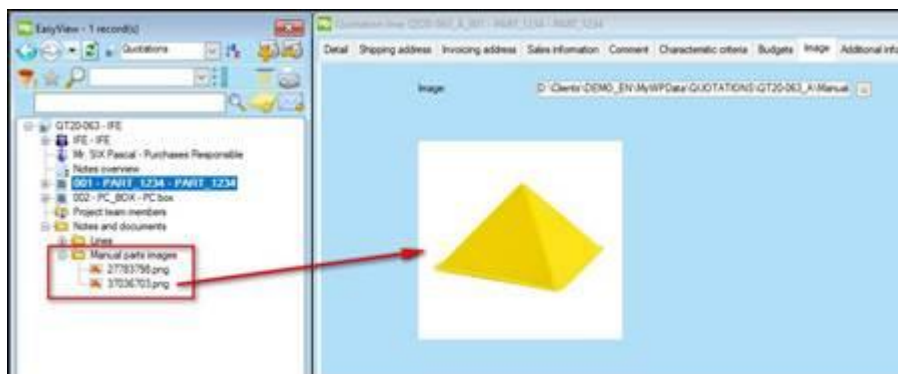
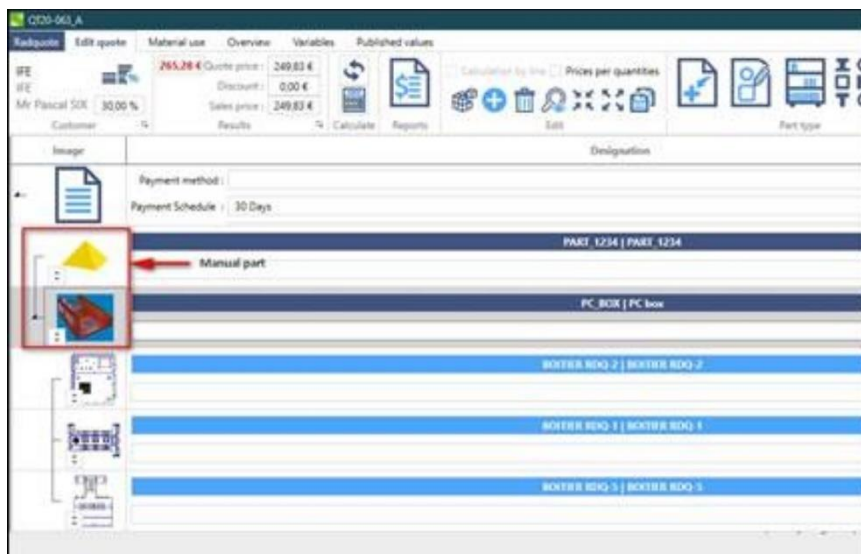
WORKPLAN

Material Mapping

The material databases of WORKPLAN and Radquote can now be mapped to avoid duplicate data entry.

Images

Any images used when building the quote in Radquote are now also used in WORKPLAN.



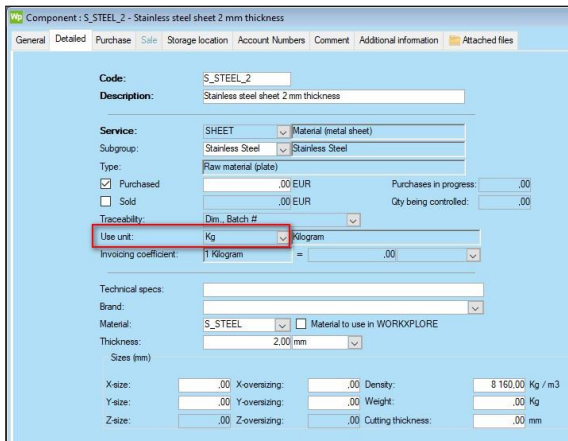
Coil Management

Starting with version 2022.0 it is possible to register and manage coils for materials in WORKPLAN.

The coil is a raw material (type plate) managed only in weight unit... it is very difficult to determine the exact length of the material when it is coiled.

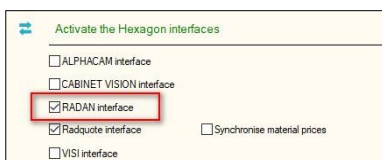
The length of the raw material will have an approximative value based on weight, width, and material density.

Every plate material could be managed as coil as long the "Use unit" on the component sheet is defined as a **weight** unit.

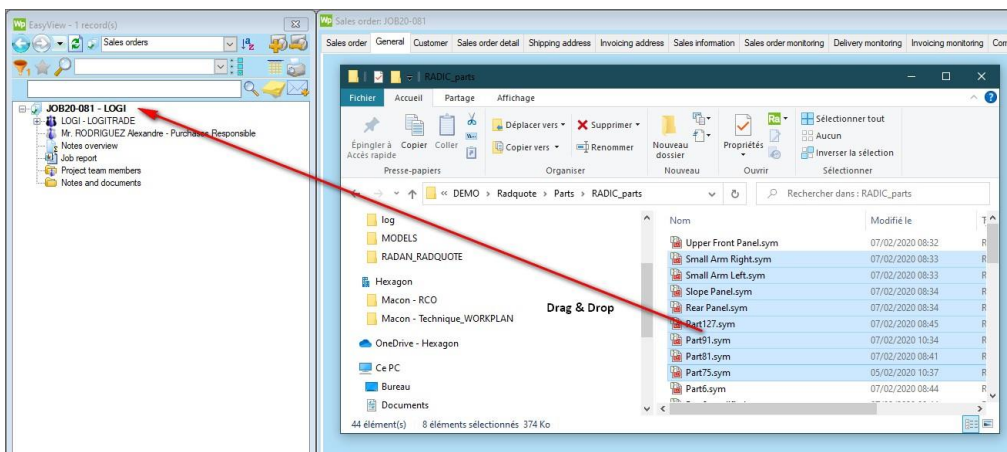


Create Job Lines by Drag and Drop of Symbol Files

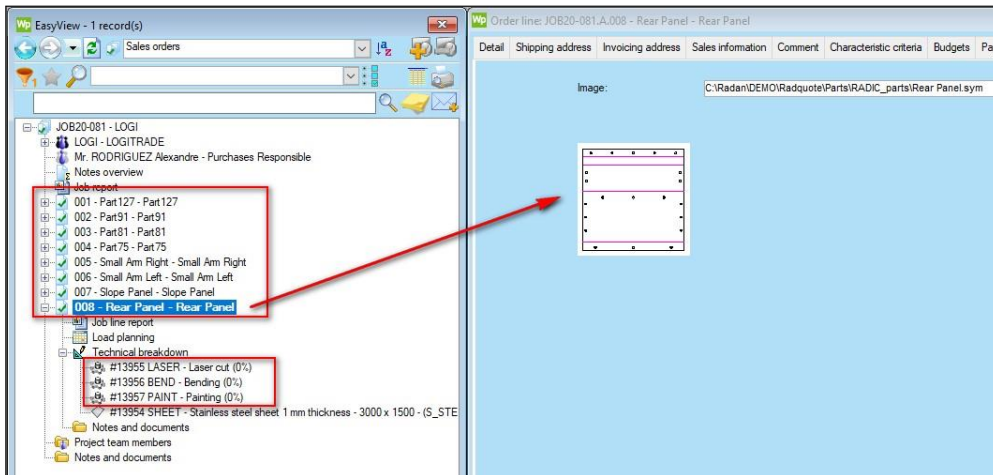
You can add Sales Orders lines to an existing sales order by drag & drop of SYM files. For this RADAN Interface must be active.



You can drag and drop several SYM files onto an existing Sales Order.



The system automatically will create Sales Order Lines for each SYM file.

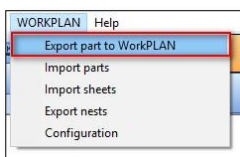


The file name will be used as “Component Code” and “SO line description”.

A BOM task will be added if the Material and the Thickness from the SYM have a correspondence in WORKPLAN.

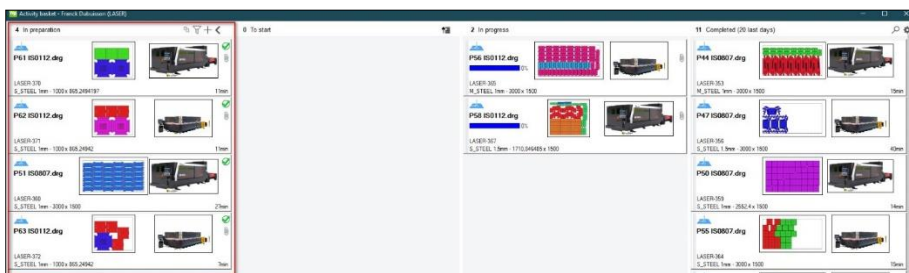
Using RADAN Parts

Parts from RADAN CAD/CAM can now easily be sent to WORKPLAN. In RADAN, use the menu item WORKPLAN -> Export part to WORKPLAN:



Processing Nests in WORKPLAN

Nests imported from RADAN will automatically be displayed in the **Activity Basket Module**. The default status is **In Preparation**.



DESIGNER

Companion

As of version 2022.0, DESIGNER is available to anyone with a qualifying product on maintenance. Users of the following products on maintenance can make use of DESIGNER Companion:

- RADAN CAD/CAM (without 3D); you can use DESIGNER to import 3D files, assign material properties and unfold the parts. The parts can then be sent to RADAN CAD/CAM for nesting, to Radquote or to Radbend
- Radbend; you can use DESIGNER to import 3D files and unfold them as with RADAN CAD/CAM above
- Radan 3D; in addition to the functionality described above, you can use DESIGNER to create and/or modify sheet metal parts

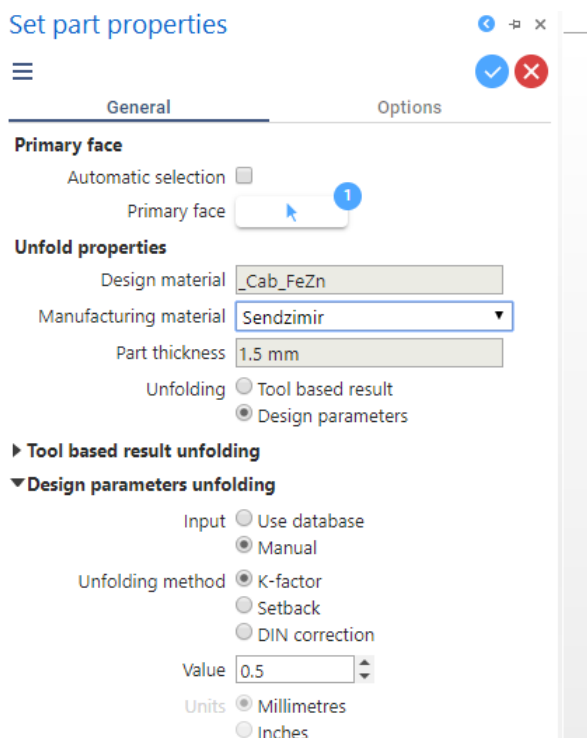
Automation

Many of the functions in DESIGNER can now be recorded and played back to automate repetitive tasks.

Materials

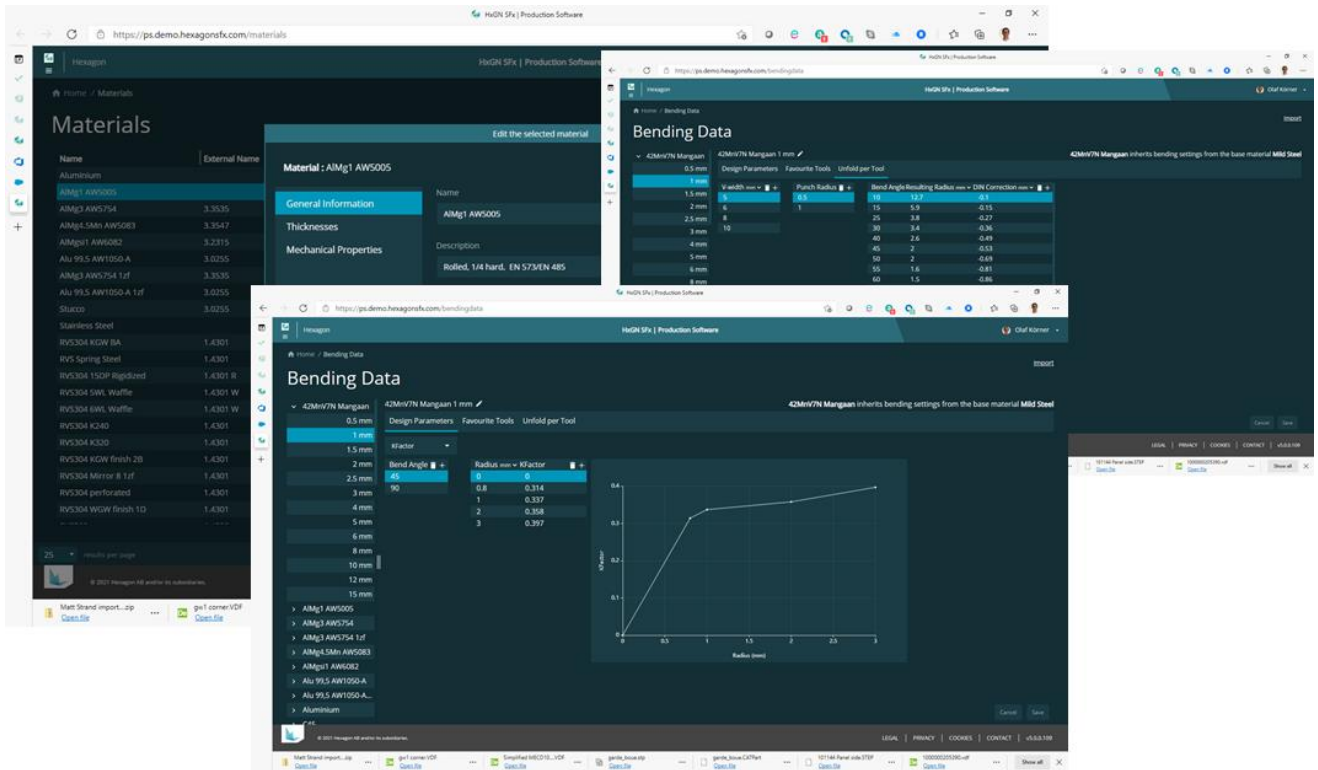
Design Material

DESIGNER 2022.0 is capable of reading the design material from a 3rd party 3D file. This material is shown and can then be matched with a material from the materials database:



Materials Database

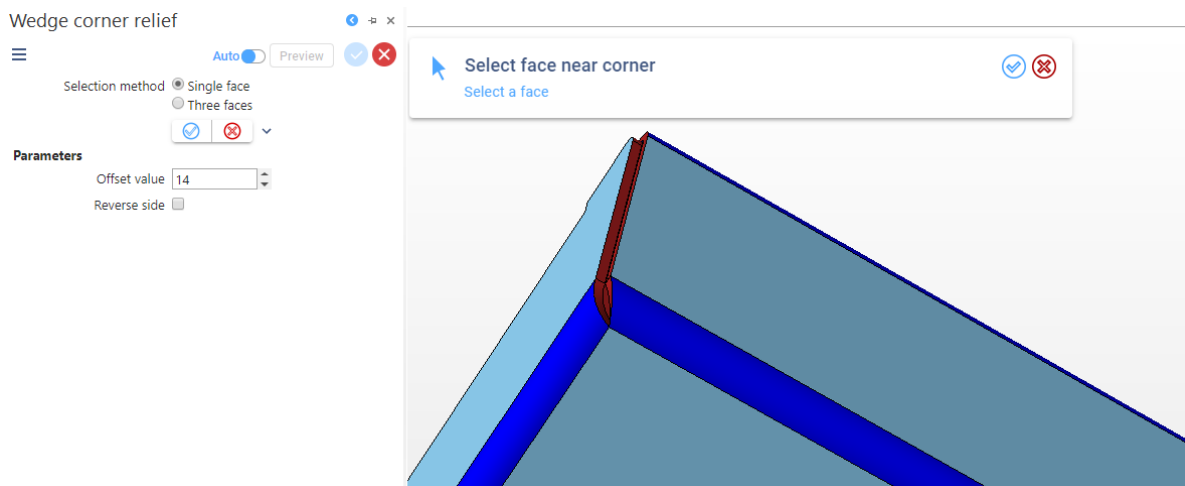
DESIGNER 2022.0 uses a comprehensive materials and bending database, stored in the cloud at Hexagon SFX. The connection with this database gives access to advanced material properties and bending data, such as favourite unfolding methods, v-widths and tools.



Bends and Corner Reliefs

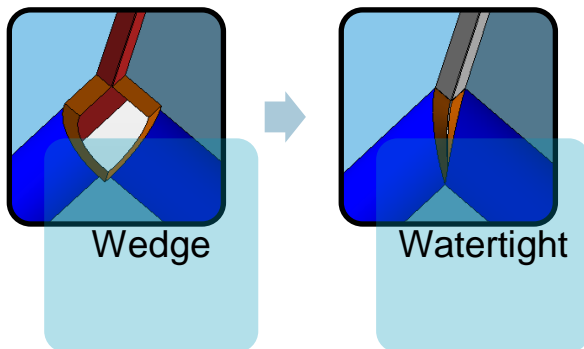
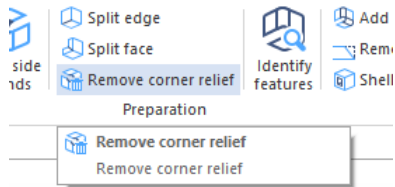
Fast and Automatic Selection

When applying any kind of corner relief (wedge, circular or watertight), it is now possible to select the corner with a single click:



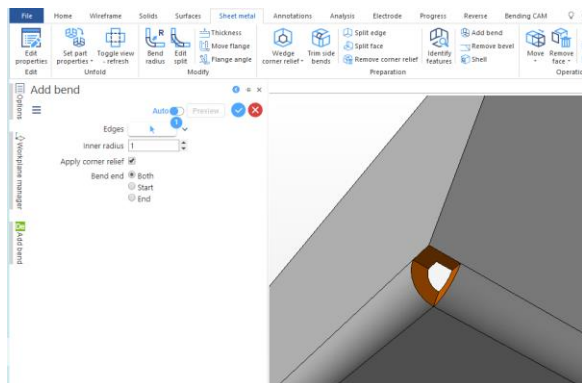
Delete Corner Relief

A new function allows the user to remove a pre-existing corner relief – making it really easy to change corner solutions:



Automatic Reliefs

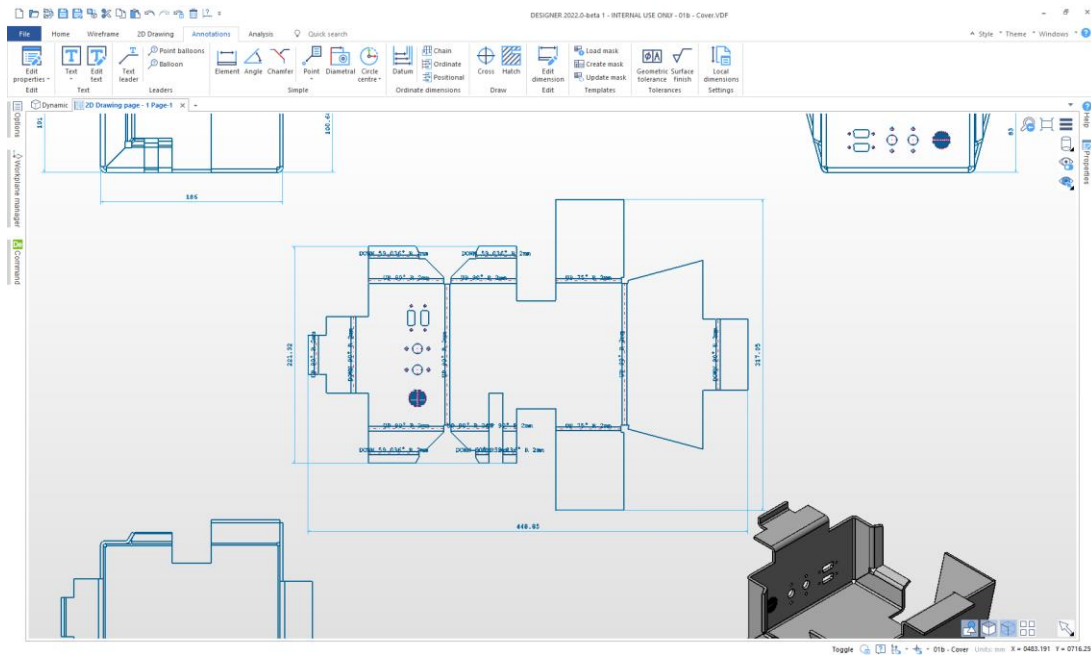
Bend reliefs can now be automatically added when adding bends to the part.



Enhanced Unfolding

Bend Lines and Data in 2D Drawing

Both bend extents, bend lines and bend details are now shown in the 2D drawing.



Difficult Parts

Many more difficult part shapes can now be successfully unfolded. Here is a small gallery.

