

# Rittal Configuration System

Application Note 2018-07-01

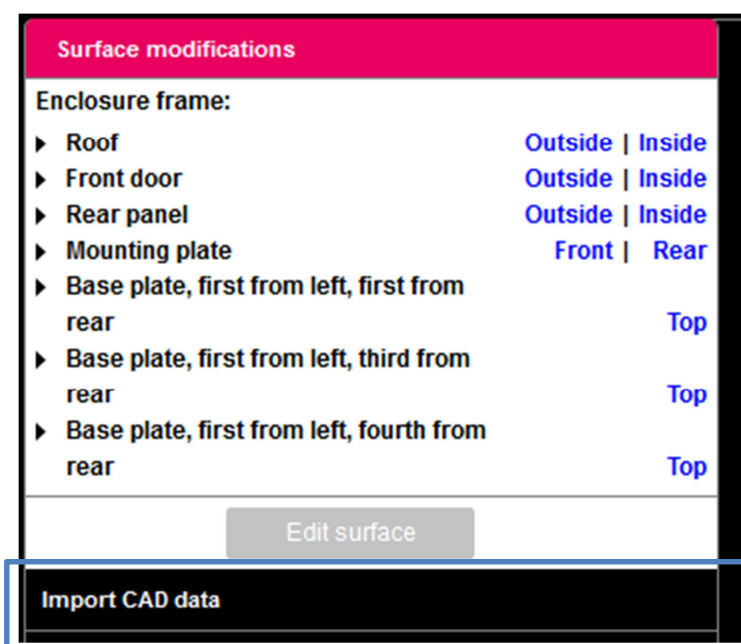
## CAD data import



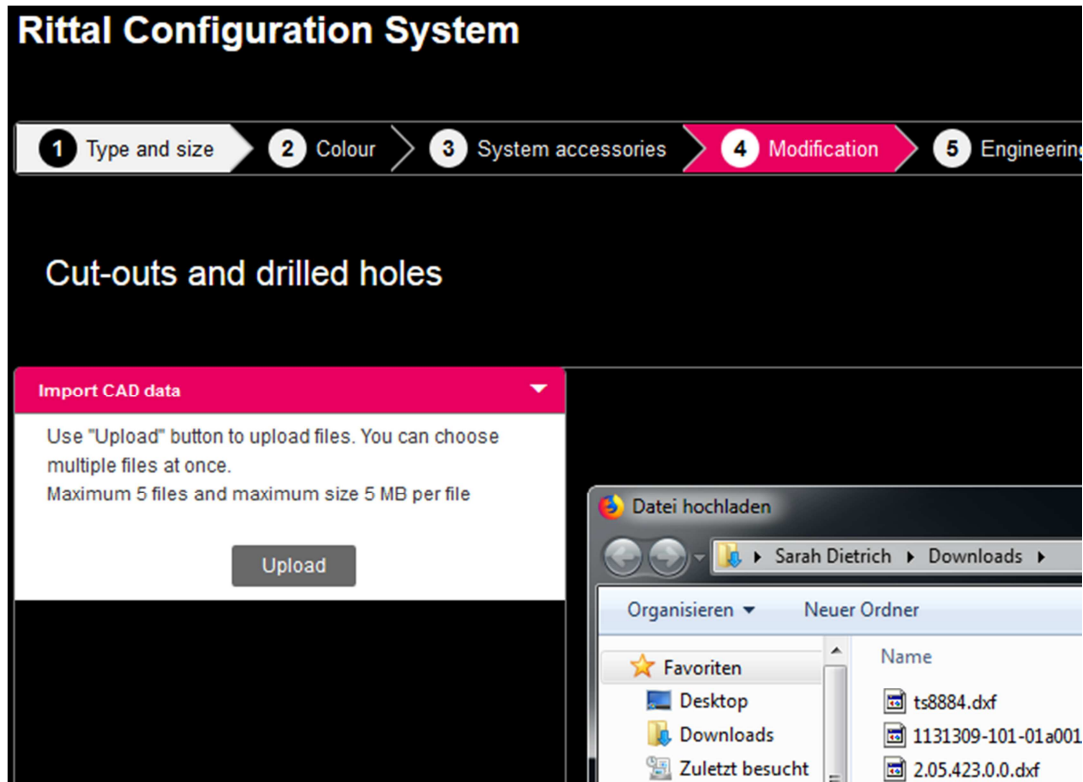
This application note describes the process to import CAD data from dxf files and from dwg files into Rittal Configuration System. Any imported item has to be checked according to the original data w.r.t. to type, size and position.

### 1. Start CAD import

Go to “modification” tab and select „Import CAD data“:

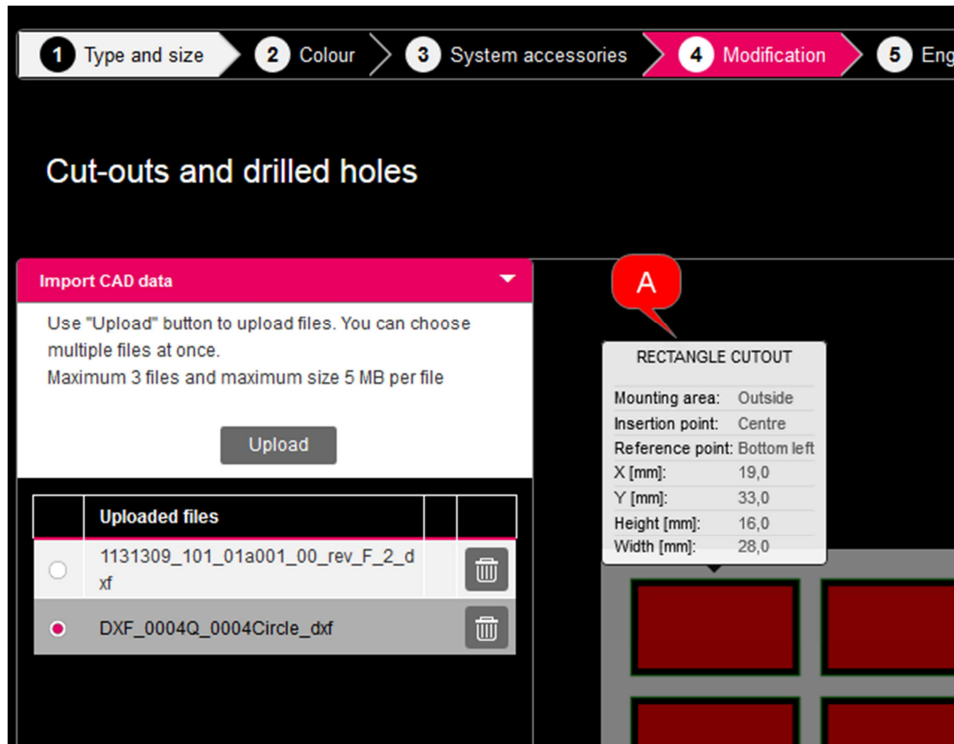


## 2. Select source files (AutoCAD DXF and AutoCAD/Inventor DWG)



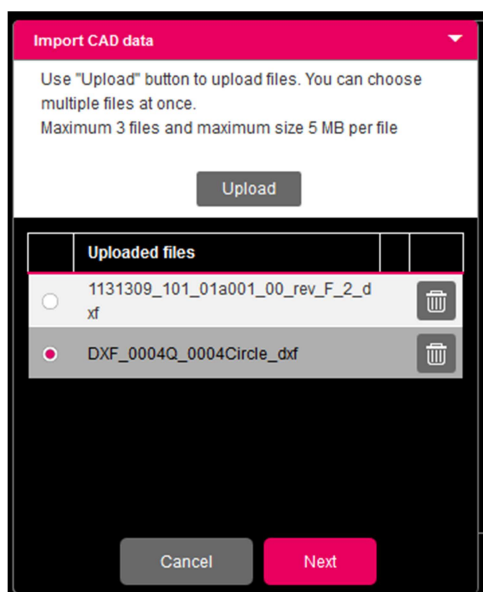
Use "Upload" button to upload files. Select up to 5 files, with up to 5 MB per file.

3. Select one uploaded CAD file to see preview:

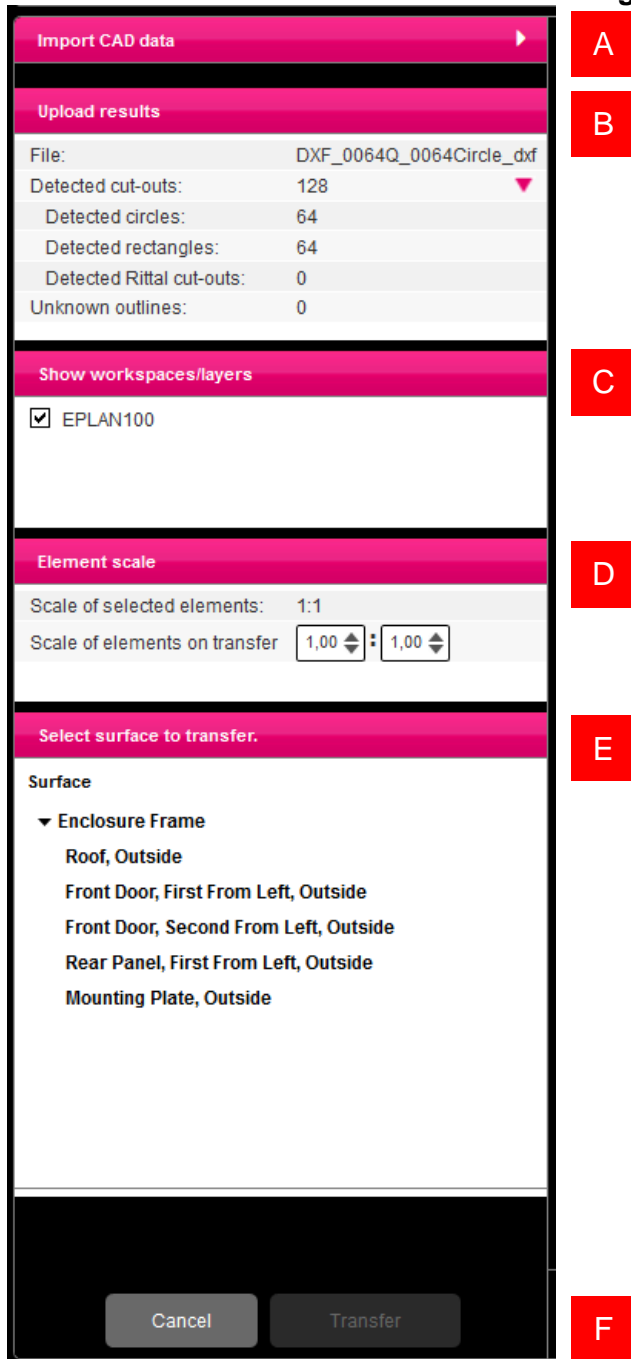


A) Mouse over shows cut-out information.

To proceed to transfer cut-outs press “Next” button on left side.



4. On the left sides a menu with the following functions appears:



The screenshot shows a vertical menu on the left side of the software interface. The menu is divided into six sections, each with a red label (A-F) to its right:

- A:** Import CAD data (with a right-pointing arrow)
- B:** Upload results (with a summary table below it):
 

File:	DXF_0064Q_0064Circle_dxf
Detected cut-outs:	128
Detected circles:	64
Detected rectangles:	64
Detected Rittal cut-outs:	0
Unknown outlines:	0
- C:** Show workspaces/layers (with a list containing a checked item:  EPLAN100)
- D:** Element scale (with input fields for "Scale of selected elements: 1:1" and "Scale of elements on transfer" set to 1,00)
- E:** Select surface to transfer. (with a list of surfaces under "Enclosure Frame", including "Roof, Outside", "Front Door, First From Left, Outside", "Front Door, Second From Left, Outside", "Rear Panel, First From Left, Outside", and "Mounting Plate, Outside")
- F:** A dark bar at the bottom containing "Cancel" and "Transfer" buttons.

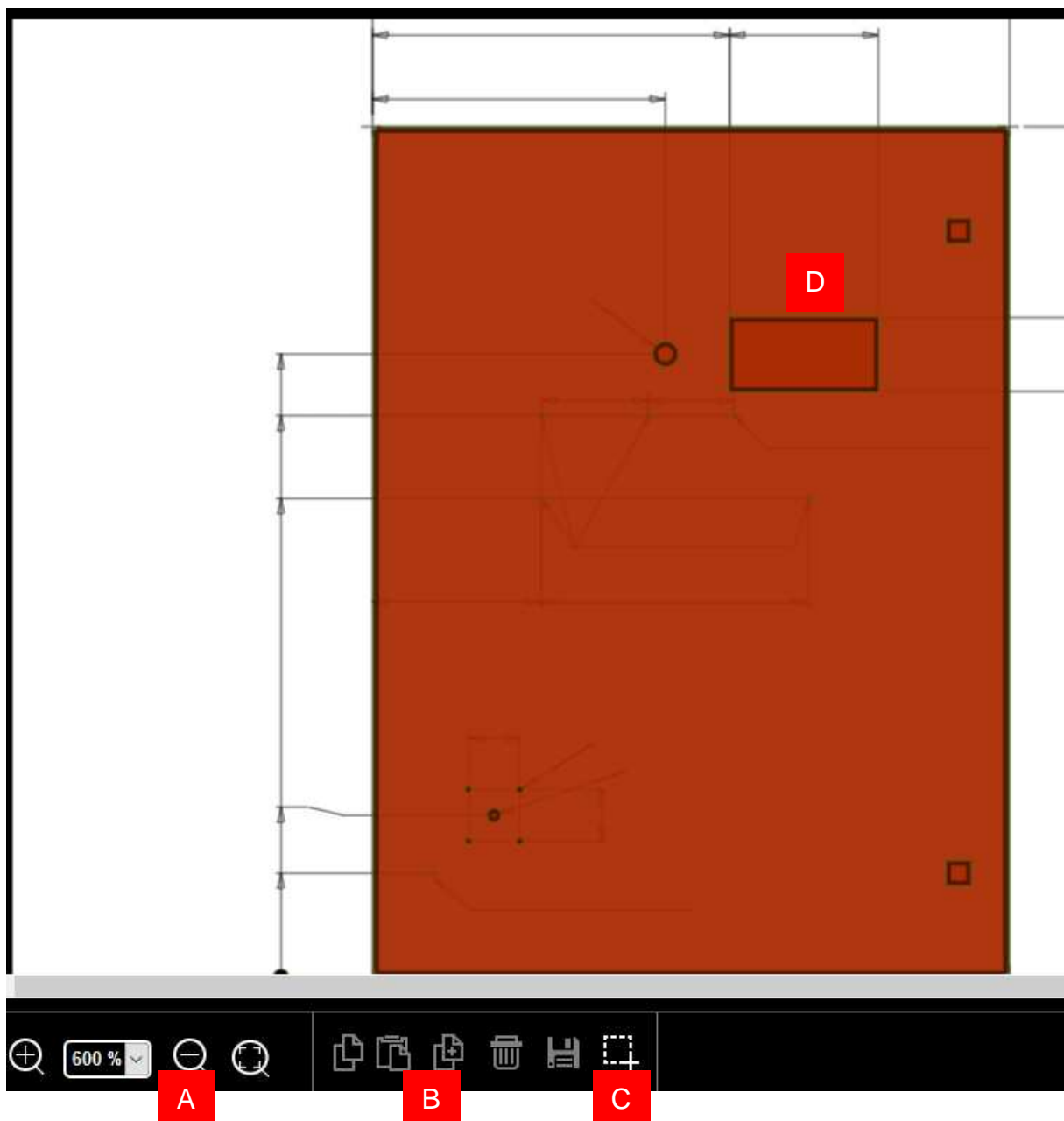
- A) Go back to uploaded CAD file selection
- B) Check detected cut-outs in summary, for circles, rectangles, and threaded holes
- C) Show/hide CAD drawing layer (e.g. frame, description)
- D) Scales for different cut-outs can be different in the imported CAD drawing (“Scale of selected elements:”). For selected cut-outs you can change scale. You can change scale only

for same scaled cut-outs. You cannot scale predefined elements, like threaded holes.

E) Select target surface for cut-out transfer

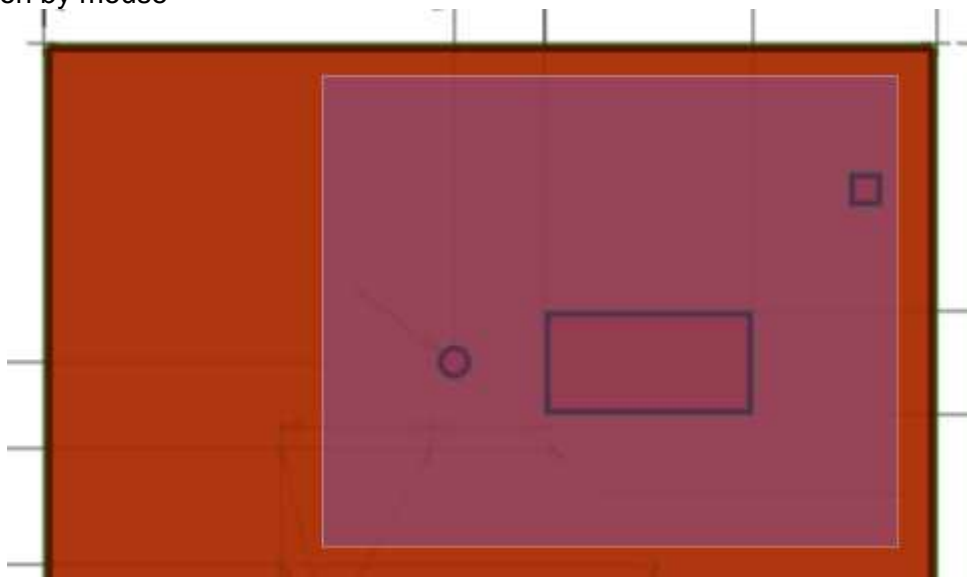
F) Transfer selected cut-outs with selected scale factor. You'll be moved to a modification tool.  
Uploaded CAD data will be available online for the next transfers.

### 5. Selection of cut-outs

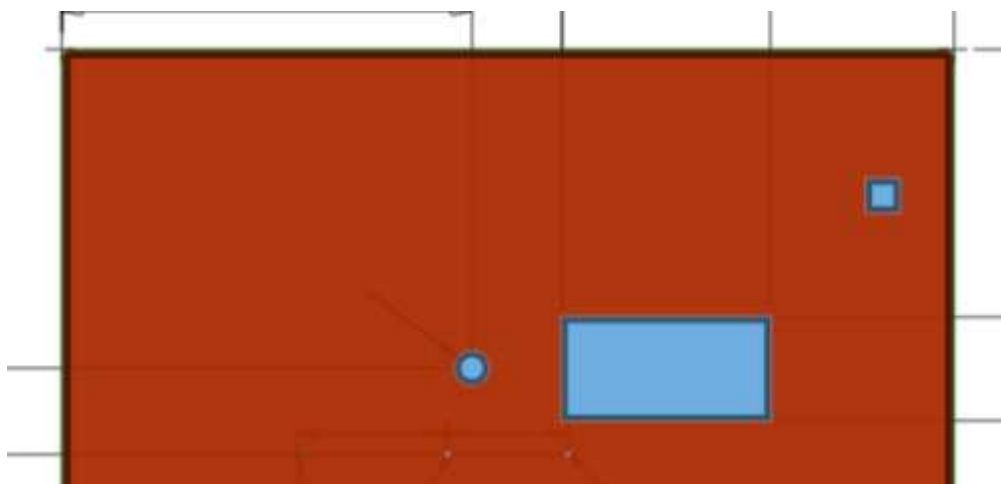


- A) Change zoom factor or fit to page
- B) Modification tool functions “copy”, “insert”, “duplicate”, “delete”, and “save” is deactivated in that step
- C) Click to the “selection symbol”. The mouse pointer turns into a cross and the cut-outs which shall be transferred can be selected.

Selection by mouse



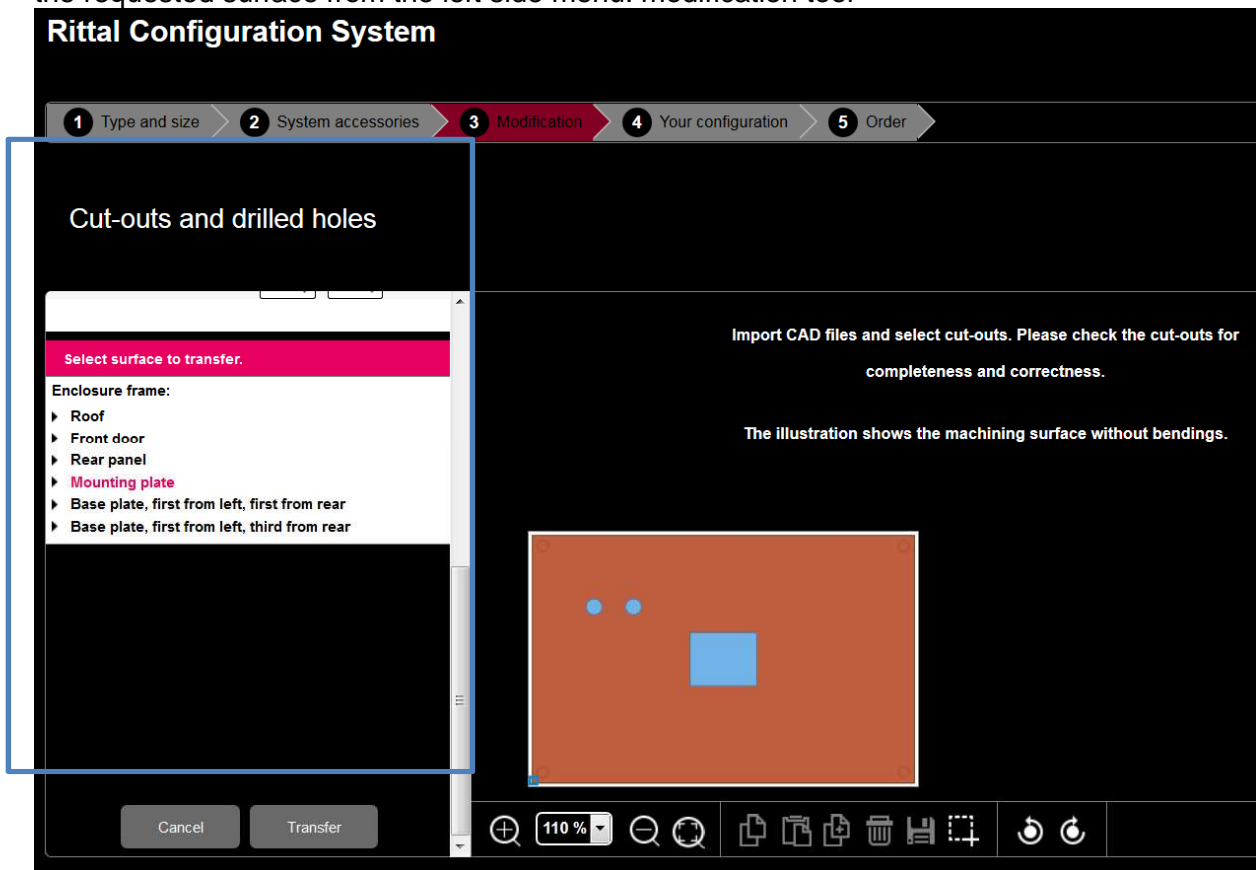
Selected cut-outs via:



- D) Another way to select objects is to click directly on the cut-out and select the cut-out that shall be transferred. A multi selection of cut-outs is possible by shift key and mouse click.

## 6. Transfer cut-outs to surfacemodification tool

The selected cut-outs can now be transferred to another surface of the enclosure by selecting the requested surface from the left side menu. modification tool



Select the “transfer” button and place the cut-outs on the new surface in the required position with the “place” button.

## Rittal Configuration System

1 Type and size > 2 System accessories > **3 Modification** > 4 Your configuration > 5 Order

### Cut-outs and drilled holes

**Surface modifications**

---

**Edit cutout - Multi-selection**

X[mm]:  Y[mm]:

Absolute position (XYZ) [mm]: 376.6 673.4 380.0

Width [mm]:  Height [mm]:

Reference point:  Corner radius [mm]:

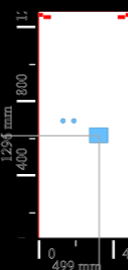
Insertion point:  Angle:

Description:

Chain dimensions

Import CAD files and select cut-outs. Please check the cut-outs for completeness and correctness.

The illustration shows the machining surface without bendings.



+ 30% - ? Я RITTAL

You can add additional cut-outs from the selection in the left side menu or just save your work using “ave changes” button.



**Rittal Configuration System**

1 Type and size > 2 System accessories > **3 Modification** > 4 Your configuration > 5 Order

### Cut-outs and drilled holes

**Modification type**

- Threaded hole
- Bolts
- Nut

**Edit cutout - Multi-selection**

X[mm]:  Y [mm]:

Absolute position (XYZ) [mm]: 376.6 673.4 380.0

Width [mm]:  Height [mm]:

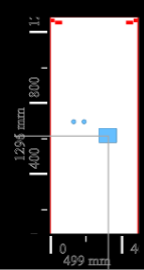
Reference point:  Corner radius [mm]:

Insertion point:  Angle:

Description:

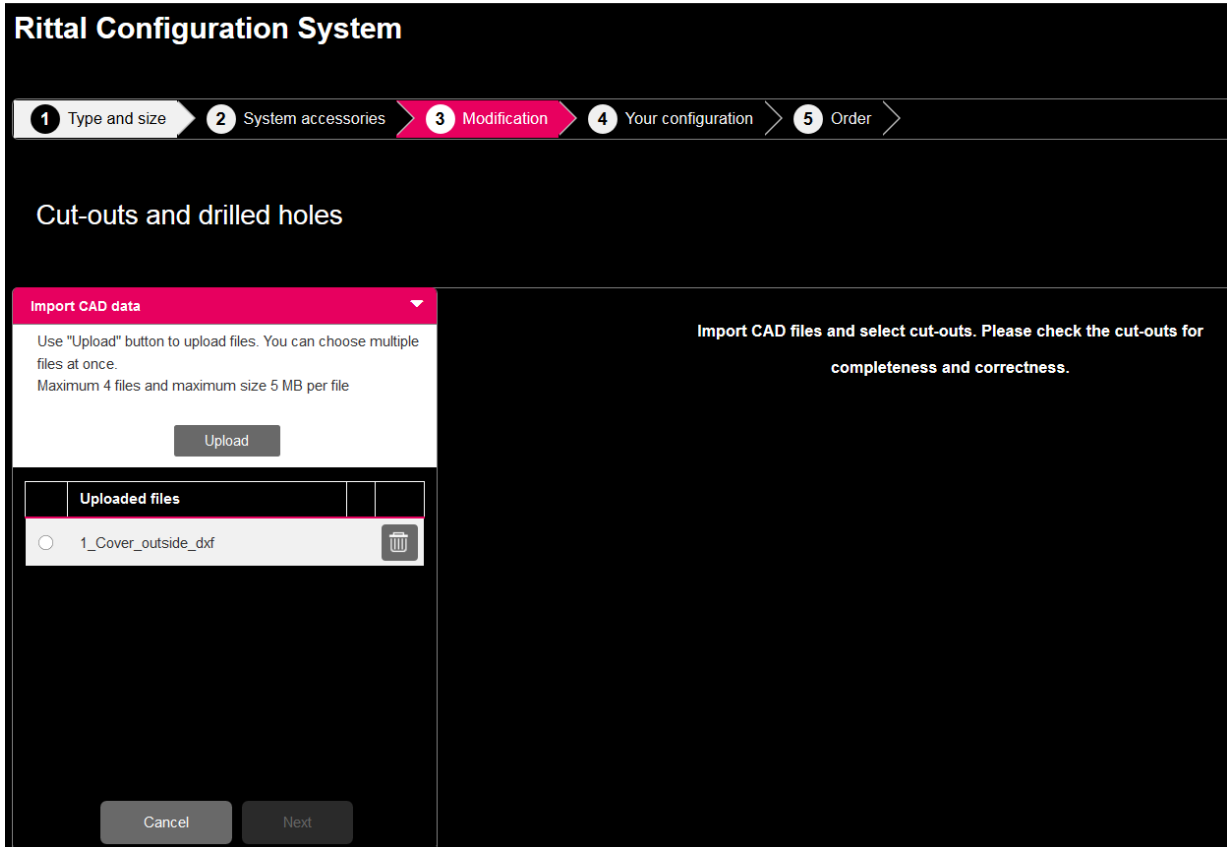
Please add element to area or select existing.

The illustration shows the machining surface without bendings.



30%

After saving go back to left menu "Import CAD data". Uploaded files are available in current configuration, edit next surface.



## 7. Recognition of Rittal Configuration System known cut-outs

- Threaded holes: circles with specific diameter will be recognized as threaded holes. Also circles surrounded by arcs will be recognized as threaded holes, when specific conditions will be met. For now, only M2.5, M3, M4, M5 and M6 threaded holes are recognized.
- Hole cut-outs – rest of circles: will be recognized as regular hole cut-outs.
- Rectangular cut-outs: rectangles drawn in CAD file as polylines, or just four lines will be recognized as rectangular cut-out. Rounded corners rectangles drawn as 4 lines and 4 arcs in the CAD file will be also recognized correctly. Only *straight* rectangles are recognized, no rotation except 90, 180 and 270 degrees are allowed.

**Please note, that shape dimensions in CAD files are translated to inside dimensions of the cut-out itself, additional outside restricted areas might be drawn in the modification tool.**



## 8. Limitations

To achieve the best performance with the modification tool, only the first 10,000 elements of the uploaded CAD file will be analysed. Additionally only the first 1,000 of analysed elements will be transferred to the configurator.

The recognition precision for complex shapes (rectangles from lines, threaded holes from circles and arcs) is set to 0.1 mm. This means, that points are recognized as connected or aligned even if their X and Y coordinates are different, up to 0.1 mm.

Threaded holes from circles and arcs are processed only if the distance between the circle and the arc is between 0.1 and 2.0 mm. Additionally, the total angle of the arc has to be between 260 and 280 degrees.

Correctly drawn threaded holes (from circle with specific diameter) bigger than M6 will be recognized as regular holes.

Correctly drawn threaded holes (from circles and arcs) bigger than M6 will be not recognized at all.