Positioning part

Additionally, parts can be rotated, mirrored and flipped with the support of the part positioning in CAM Center.

We have attempted to keep the content of the document complete, accurate and under permanent review.
However, due to the continuous development of described software, it is not possible to guarantee up to date and accurate information, integrity or quality of the content at all times.
As far as we are able to detect errors or omissions or those, which have been reported to us, our attempt is to correct these with the following versions.
imos is not responsible for any direct or indirect damages caused by the use or non-use of the presented information or through the use of faulty and incomplete information. The descriptions in this document can be changed at any time without prior notice.

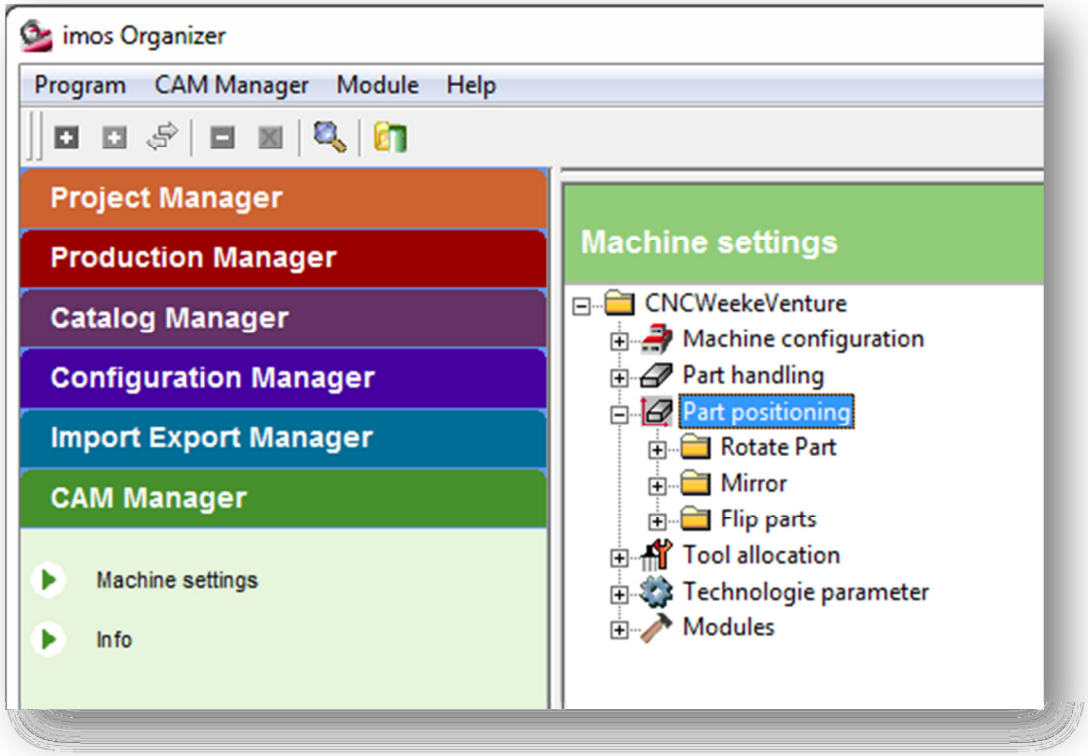
Creation date: June 2015
Used Version: 12.0; Standard CAM Installation mit einer CNC Weeke Venture Maschine

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1. Navigation

The functions for the part positioning are in the **machine settings** of the **CAM Managers**.



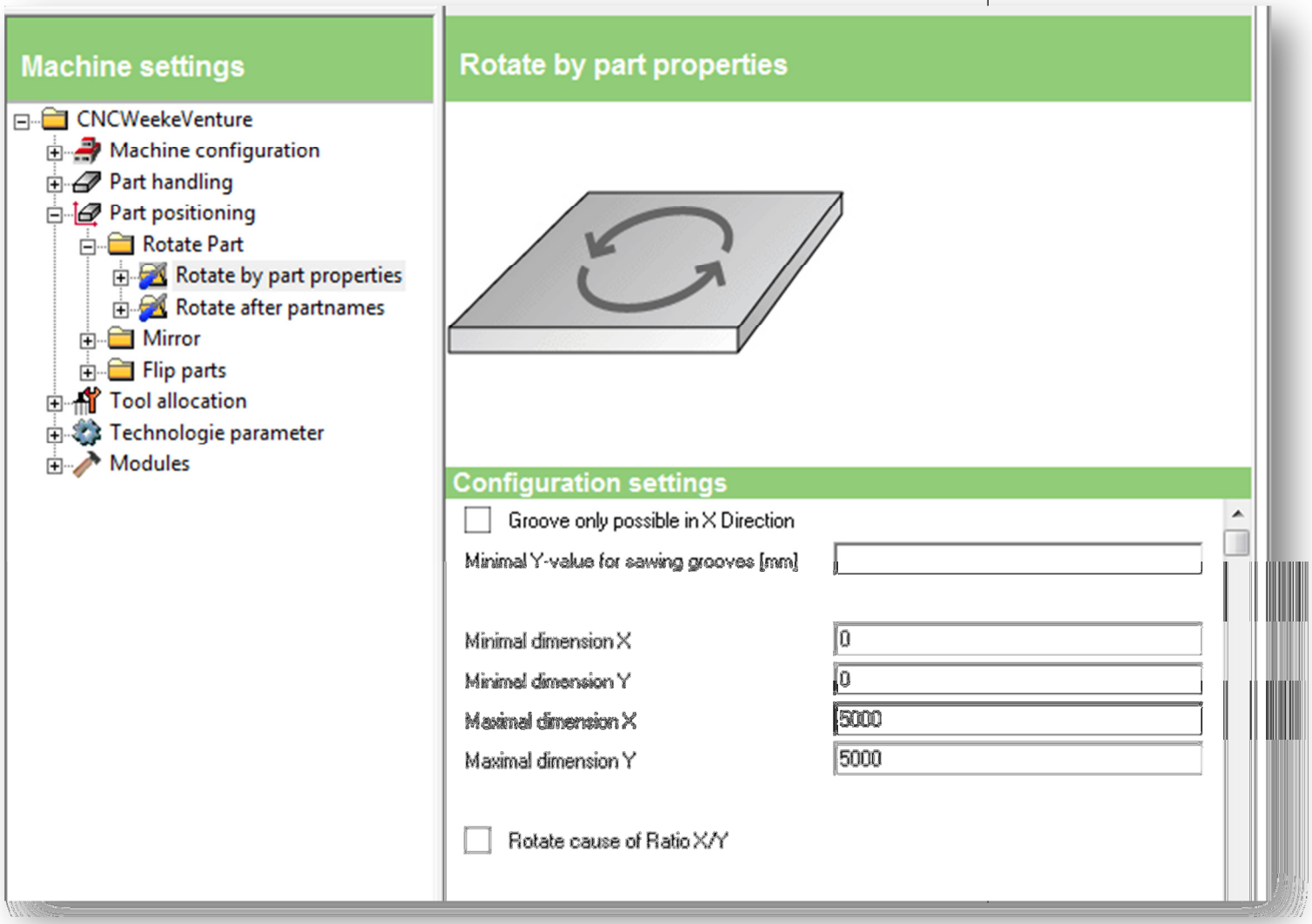
Positioning part in the CAM Manager

2. Rotate part

2.1 Rotate by part properties

2.1.1 Parameter settings

By clicking on the function **rotate by part properties** in the machine settings, the parameter settings of the selected machine are displayed on the right side. These can be user-specific configured.



Positioning part in the CAM Manager

Following options are available for this purpose:

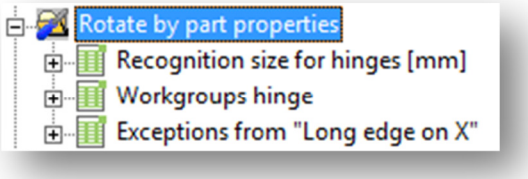
Description	Explanation
Groove only possible in X direction	With an activated checkbox a part with groove is rotated until the groove is in X direction. If the part cannot be aligned in X, then a configuration error will appear in the CAM Center Report.
Min. dimension X	Defines the minimum dimension of the part which is clamped on the machine in X-direction. If the defined profile class does not match with the part, then a configuration error will appear in the CAM Center Report.
Min. dimension Y [mm]	Defines the minimum dimension of the part which is clamped on the machine in Y-direction. If the defined profile class does not match with the part, then a configuration error will appear in the CAM Center Report.
Max. dimension X [mm]	Defines the maximum dimension of the part which is clamped on the machine in X-direction. If the defined profile class does not match with the part, then a configuration error will appear in the CAM Center Report.
Max. dimension Y [mm]	Defines the maximum dimension of the part which is clamped on the machine in Y-direction. If the defined profile class does not match with the part, then a configuration error will appear in the CAM Center Report.
Rotate cause of ratio X/Y	With an activated checkbox the ratio of X to Y can be set where the part should be rotated.
Horizontal drilling only producing in X direction	With an activated checkbox the part is rotated so that the horizontal drilling in X-direction can be produced. If it is not possible, a configuration error will appear in the CAM Center Report.
Possible drill horizontal directions individually configured	If the checkbox **horizontal drillings only producing in X direction** is not activated and activates this checkbox, then it is possible to define in which direction the horizontal drilling should be produced on the machine.

Positioning part in the CAM Manager

Produce hinges at edge	Defines the alignment of the hinges at edge. For more details see section **2.1.2 S**
Lineboring only in X direction	With an activated checkbox the lineboring of the part is aligned in X-direction. The requirement for this is that the machining is on **lineboring** in imos.
Rotate because of veneer grain in X direction	If the length of the part in Y-direction is greater than in X-direction, then the part is aligned on X with an activated checkbox.
Rotation	Defines the fundamental rotation direction of the part.

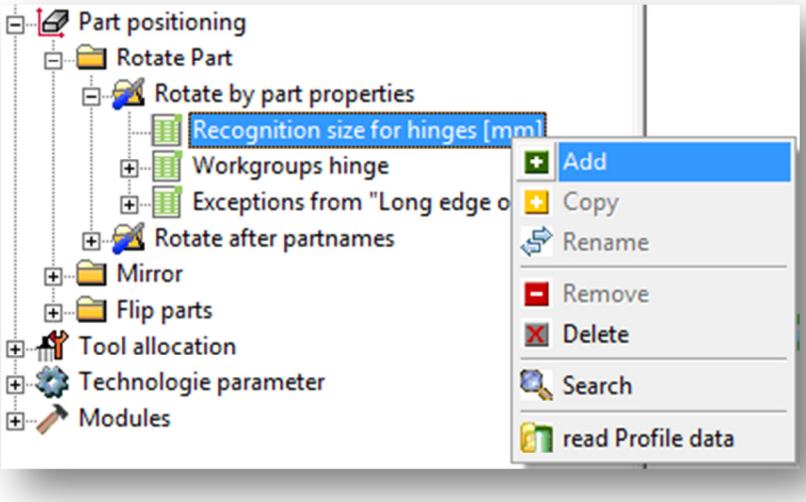
2.1.2 Special functions

Additional special functions described in the following sections are available for **rotating by part properties**.

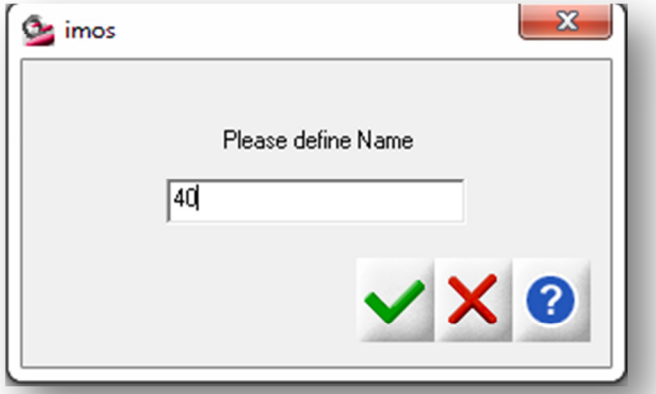


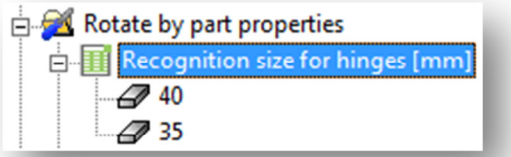
2.1.2.1 Recognition size for hinges [mm]

The **recognition size hinge** of the diameter of the hinge must be set so that the function hinge at edge is activated.
In order to do this, the entry must be marked by right clicking and the function **add** has to be selected in the context menu.

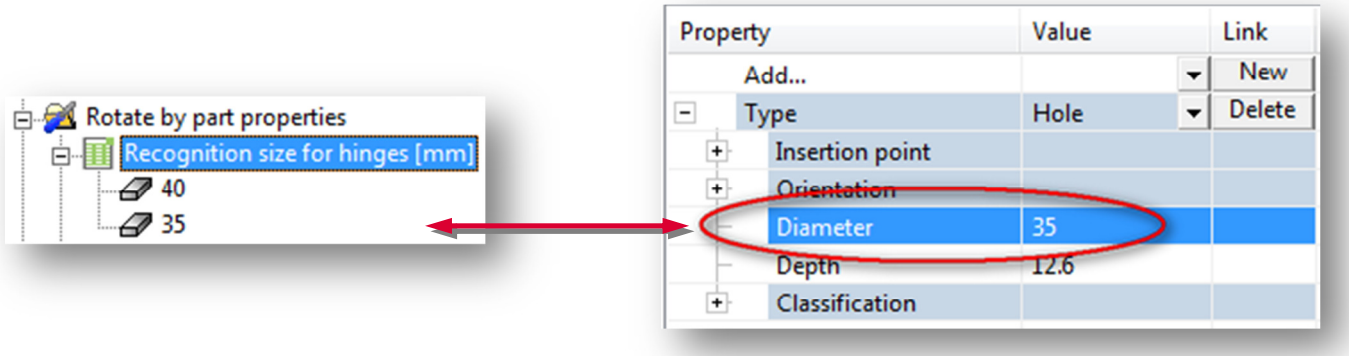


Thereby, a dialog appears in which the value for the diameter can be entered.
By leaving the dialog via the green checkmark, the value is applied.



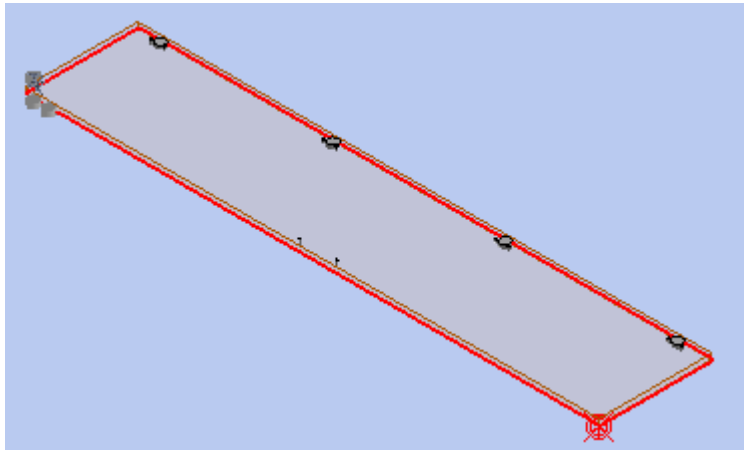


This diameter is equivalent to the details of the diameter for the drilling in the workgroup of the hinge.

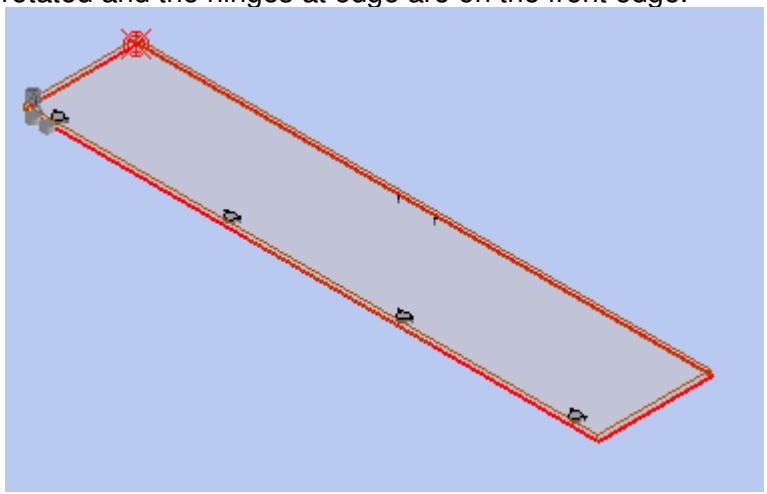


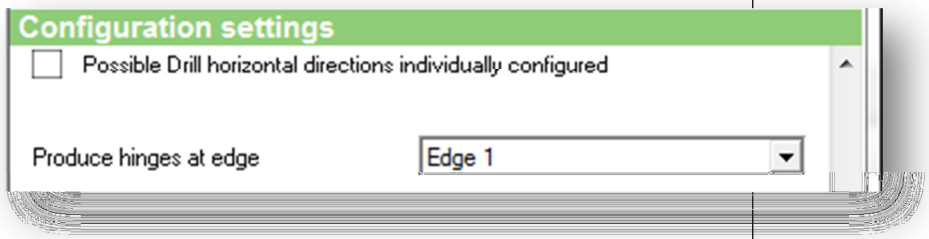
Positioning part in the CAM Manager

Example:
If no recognition size for the hinge is defined with a double door, then on the machine the hinges are at the back edge of the left door.



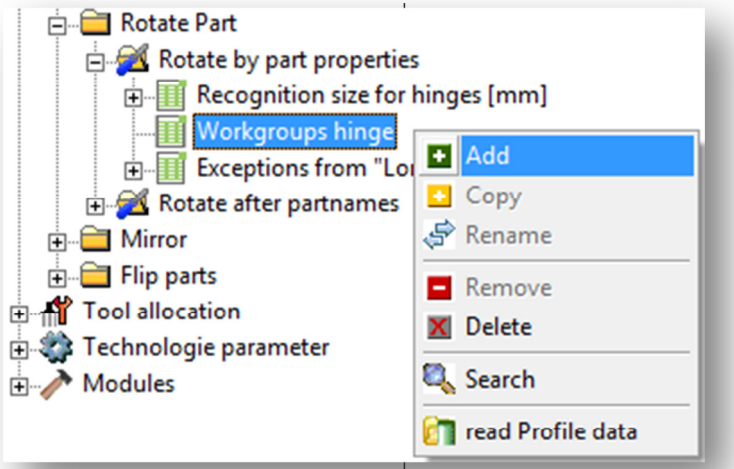
But if **edge 1** for **produce hinges at edge** and a value for the **recognition size** is entered, then the part can be accordingly rotated and the hinges at edge are on the front edge.





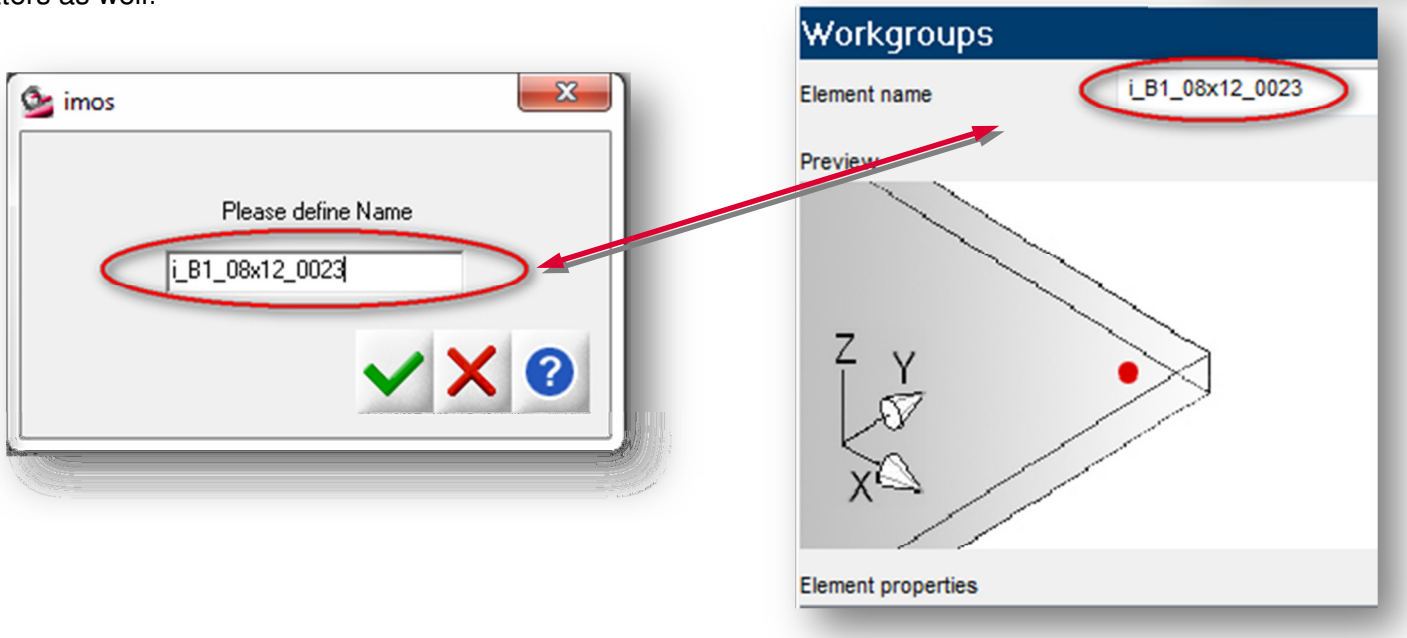
2.1.2.2 Workgroup hinges

This function can also be added for the definition of the function **produce hinges at edge.**
Here the rotation is defined via the **workgroup** of the produce hinges at edge.
For the definition the entry must be marked by clicking on the right mouse button and the function **add** selected in the context menu.

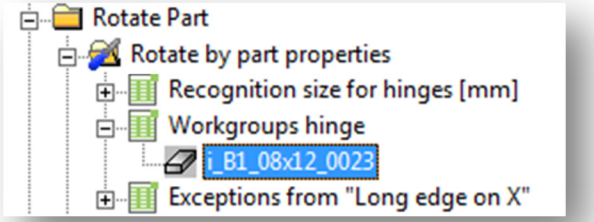


In the appearing dialog the name of the workgroup must be entered.

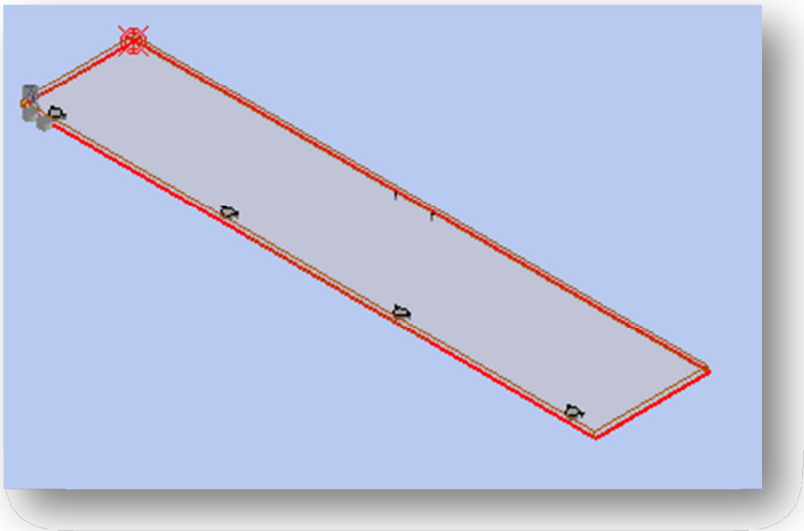
It is important that the name matches exactly with the element name of the workgroup.
Please pay attention to the use of lowercase and capital letters as well!



By leaving the dialog via the green checkmark, the value is applied.



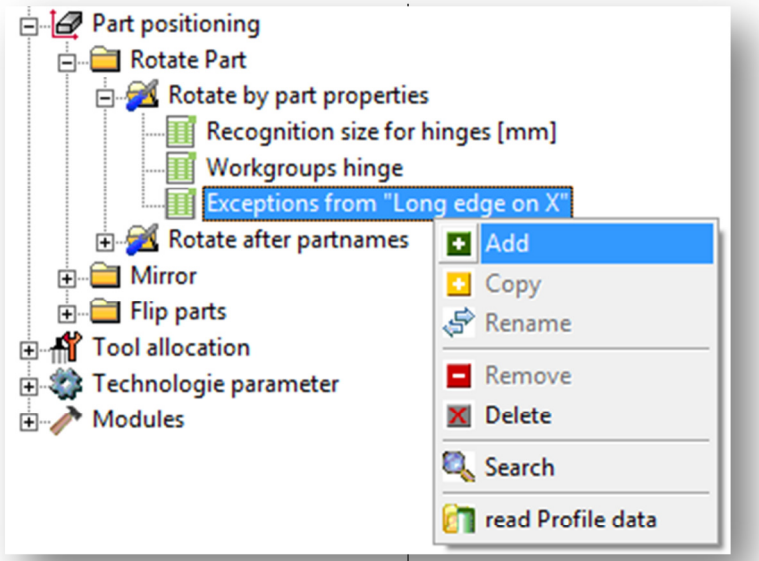
In addition to this, the part is also rotated on the machine so that the edge with the hinges is rotated equivalent to the basic settings (see example recognition size hinges).

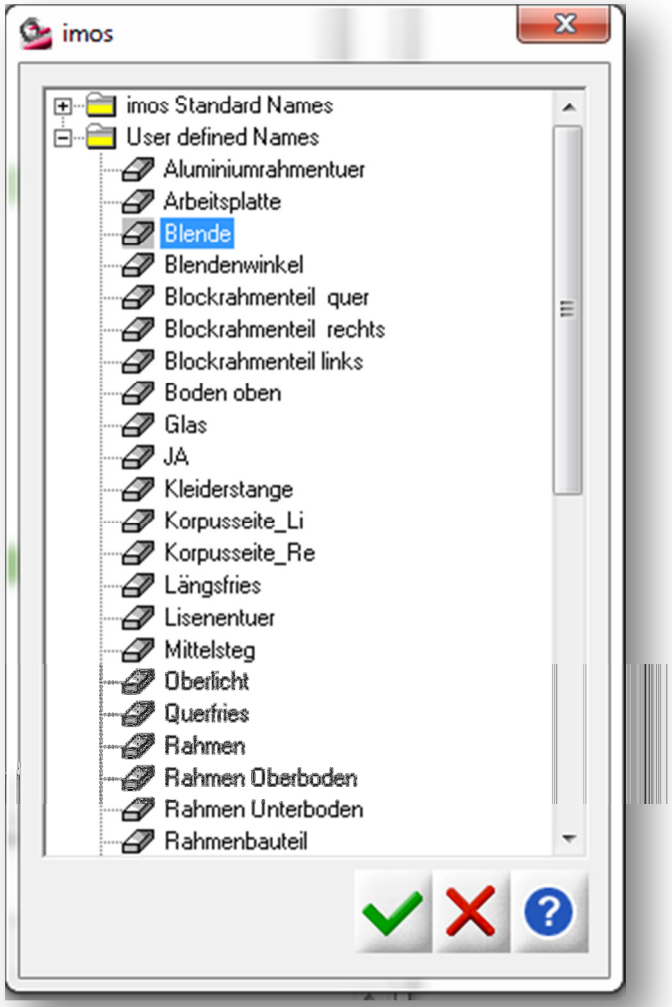


Positioning part in the CAM Manager

2.1.2.3 Exceptions from “Long edge on X“

Here the part names can be defined where the functions **“Long edge on X“** should not take effect.
For defining, the entry must be marked with a right mouse click and the function **add** must be selected in the context menu.

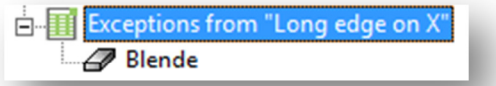




Positioning part in the CAM Manager

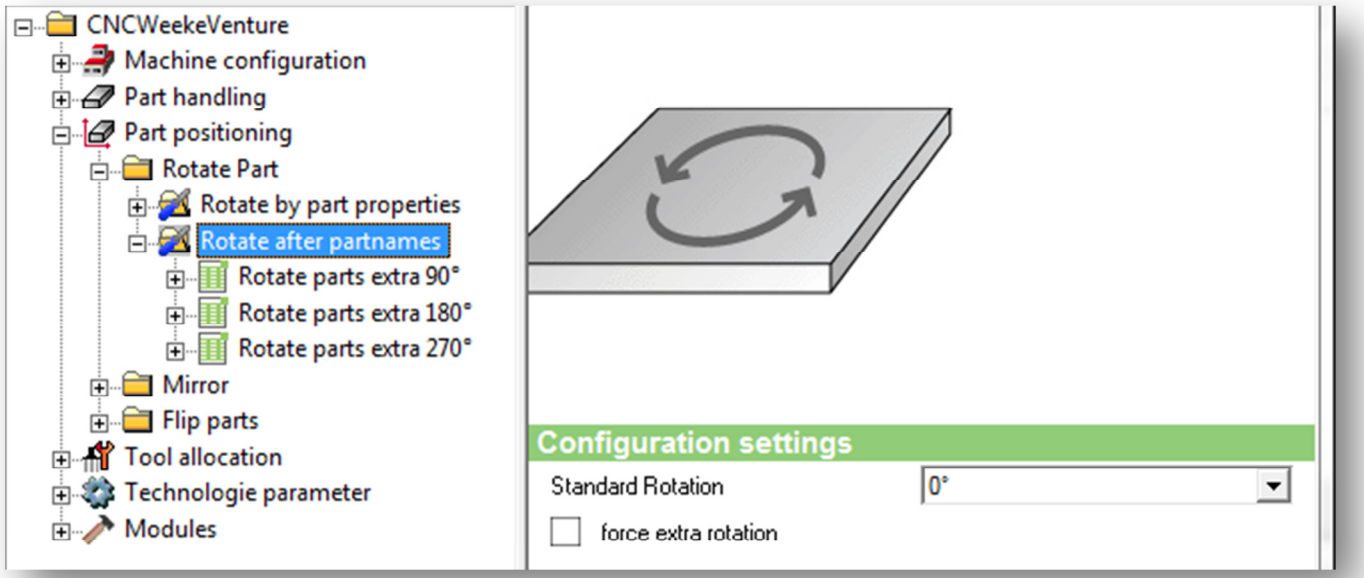
In the appearing dialog select the name that forms the exception and leave the dialog via the green checkmark. Thereby the name below the entry **“Exceptions from Long edge on X“** is taken**.**

Repeat the process for all further names which should form the exception.



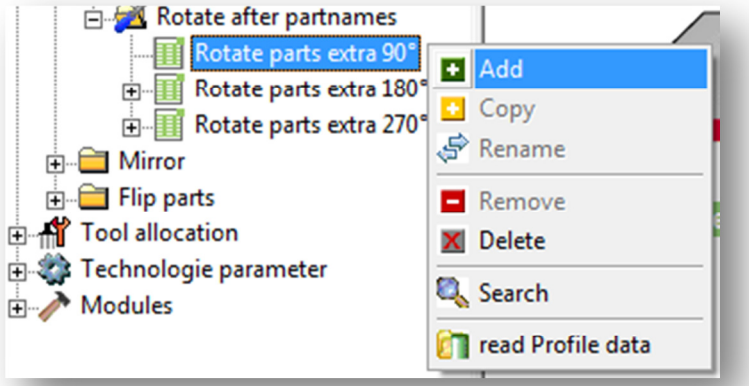
2.2 Standard rotation

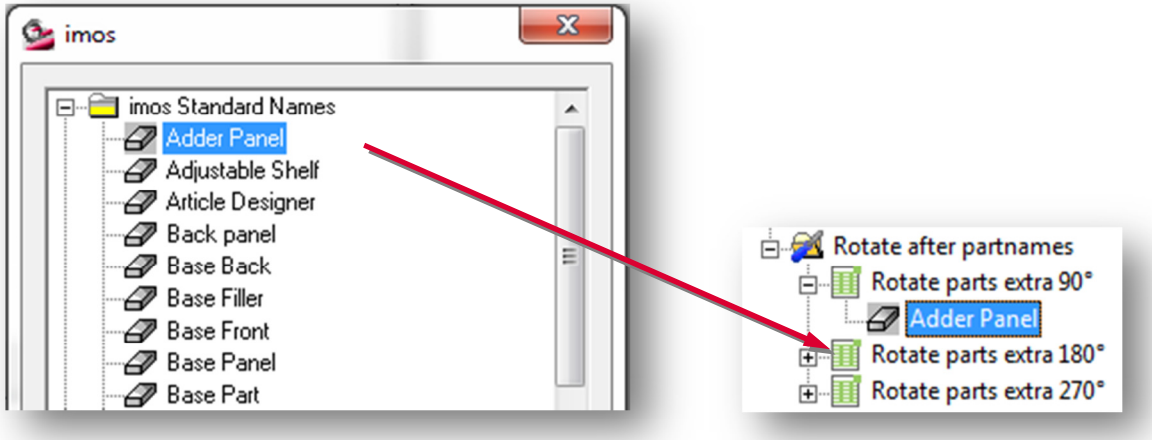
Parts can be completely rotated by **rotating by part names** via the function **Standard rotation**.



Only if the Checkbox **force extra rotation** has been activated, the ranges **rotate parts extra 90°, rotate parts extra 180°, rotate parts extra 270°** can take effect then.

Click the individual parts by clicking on the right mouse button and then select **add** to assign the desired parts with the part names.





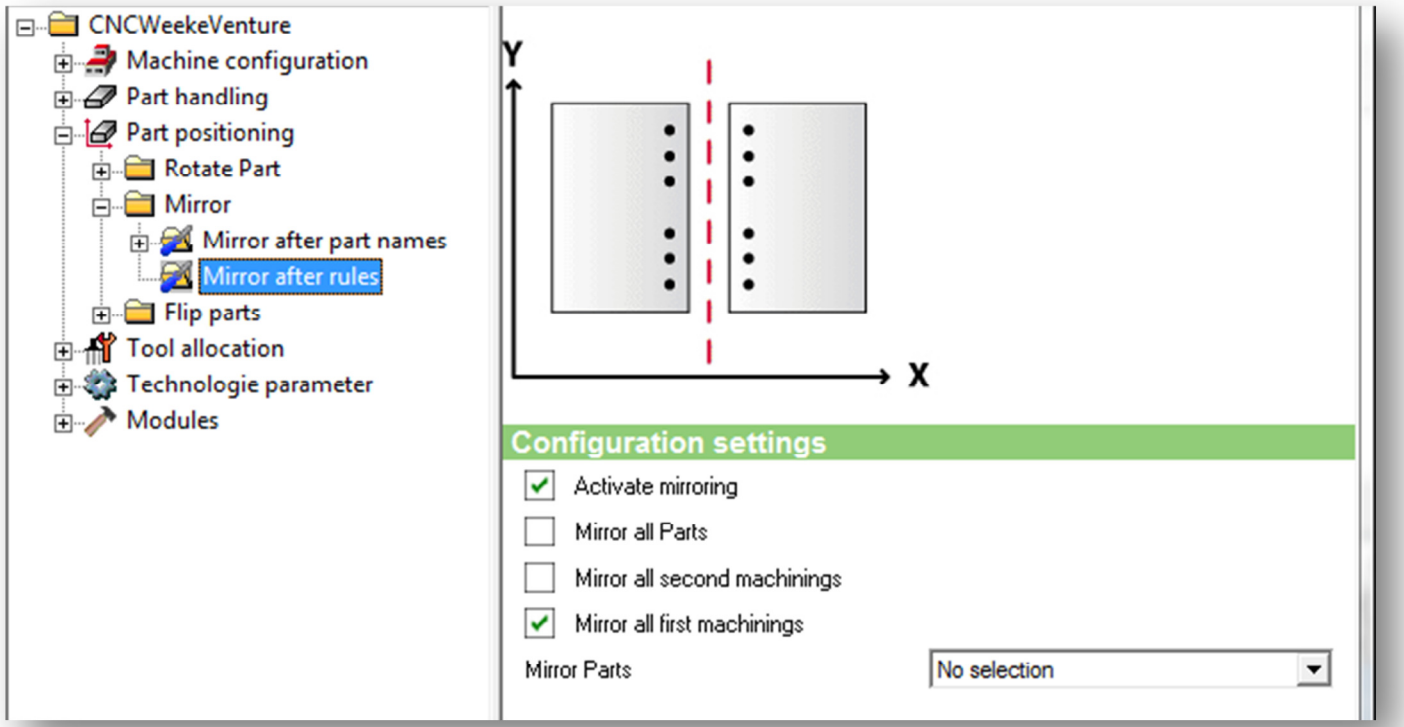
Positioning part in the CAM Manager

3. Mirror parts

Parts on the machine can be mirrored displayed via the function **mirror parts**.

3.1 Mirror after rules

Via the settings **mirror after rules** essential rules for mirroring the parts can be defined.



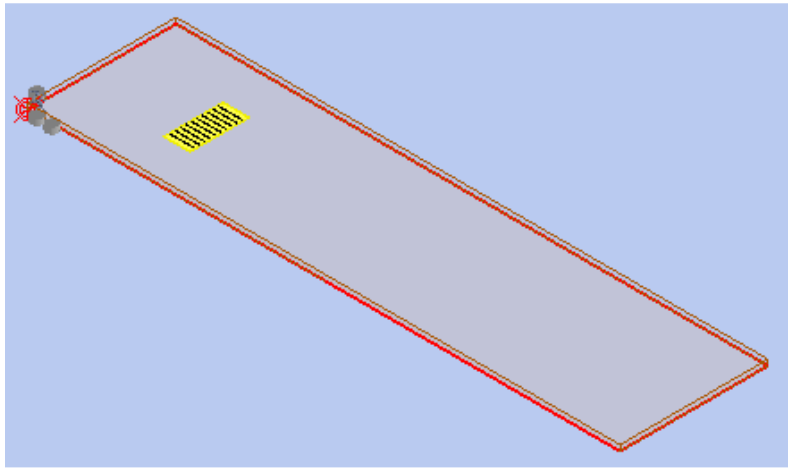
Positioning part in the CAM Manager

Following options are available:

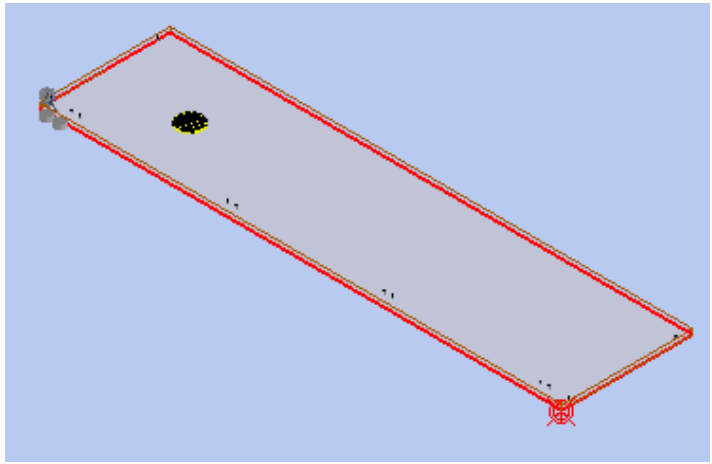
Description	Explanation
Activate mirroring	Activate mirroring It must be generally activated so that the following settings can take effect. **Mirror all parts**, **mirror all second machinings** and **mirror all first machinings** defines which parts have to be mirrored.
Mirror all parts	With an activated checkbox all CNC Programs are mirrored.
Mirror all second machinings	With an activated checkbox all second machinings (2000 files) are mirrored.
Mirror all first machinings	With an activated checkbox all first programs (1000 files) are mirrored.
Mirror parts	Here you can select if flipped or not flipped parts should be mirrored.

It is important with these settings that always only one function is selected or activated.
If either the checkbox of **mirror all parts, mirror all second machinings** or **mirror all first machinings** is activated, then the function mirror parts should be on no selection.

Example:
A side element has machinings from the top and bottom. Without mirroring the machinings are placed on the machine as follows:

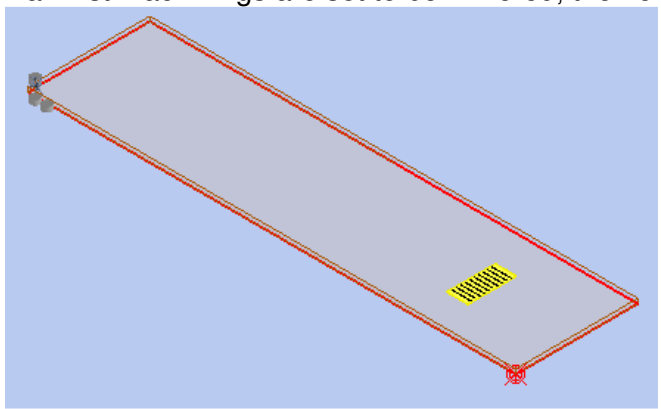


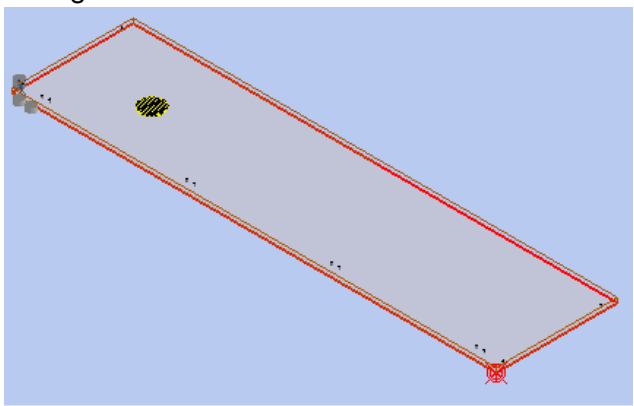
First operation



Second operation

If all first machinings are set to be mirrored, then only the first machining is mirrored and the 2000 files remain unaffected.





Positioning part in the CAM Manager

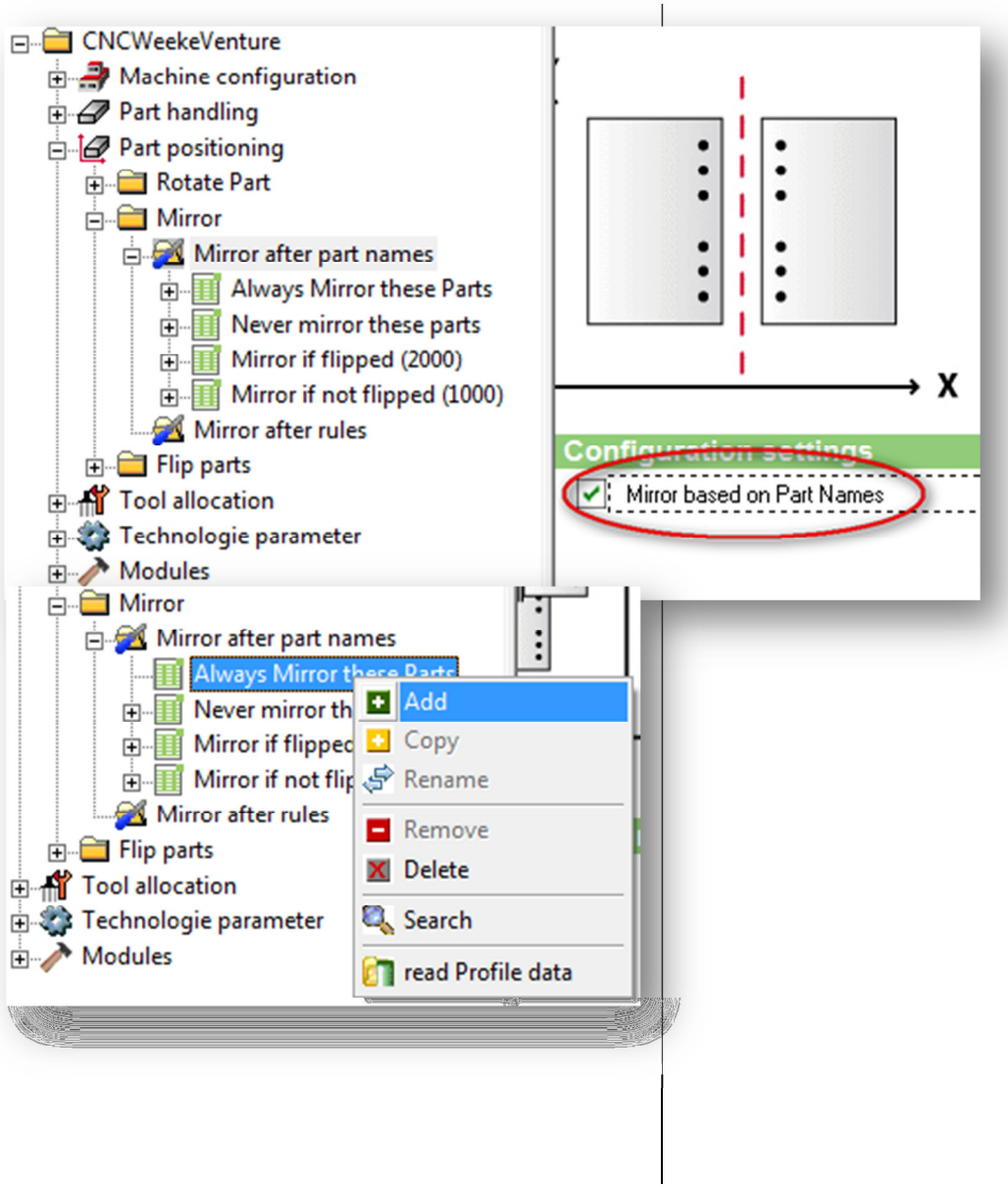
3.2 Mirror after part names

If the parts have to be mirrored or not mirrored by their part names, then the entry **mirror after part names** must be marked first and there the checkbox **mirror only after part names** is activated.

Only then the functions **always mirror these parts**, **never mirror these parts**, **mirror if flipped** and **mirror if not flipped** are activated in imos CAM.

Additionally, the functions mirror all parts, mirror all second machinings and mirror all first machinings should not be activated in the area **mirror after rules.**

For assigning a part name to an individual function, it must be marked by clicking once on the right mouse button and the function **add** must be selected in the appearing context menu. Then the part names can be selected in the appearing dialog and by leaving the dialog via the green checkmark, all entries are applied.



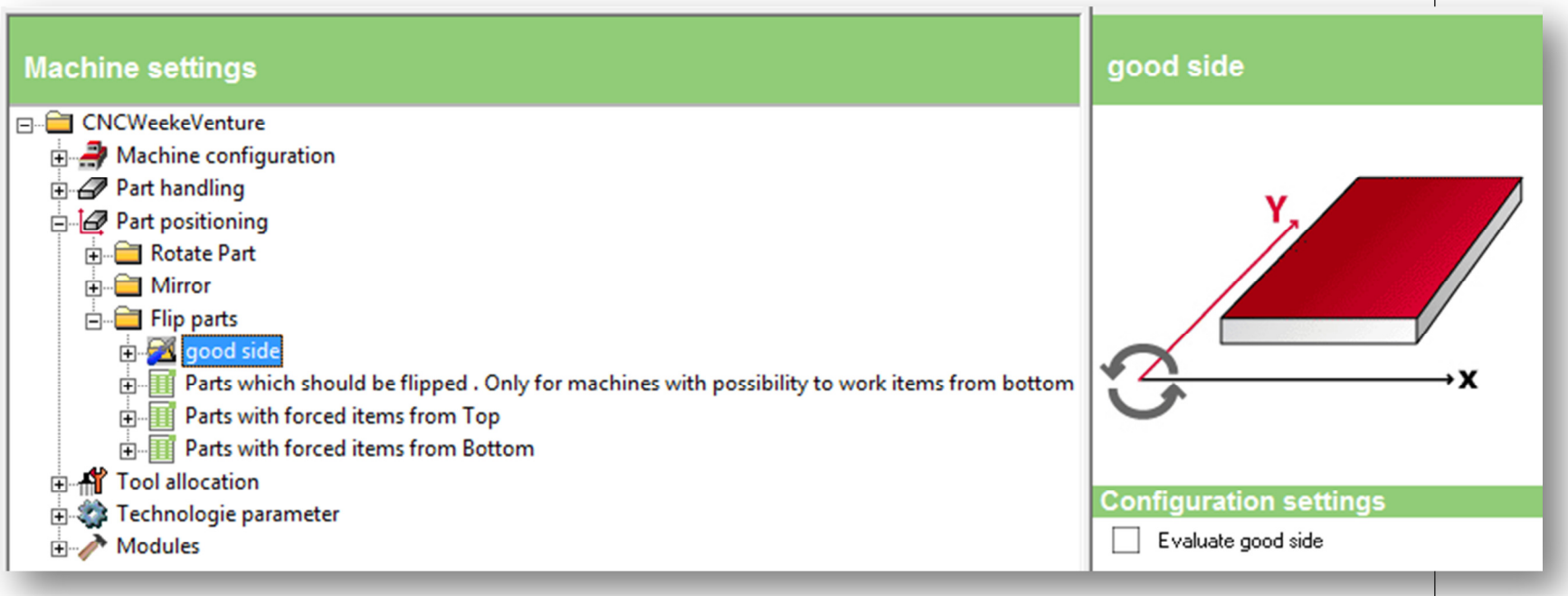
Positioning part in the CAM Manager

4. Flip parts

With the support of different functions parts can be flipped, for example, parts that have a first- and second machining via the **range flip parts**.

4.1 Good side

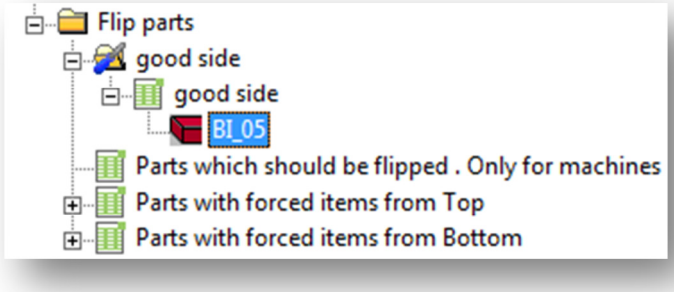
If the option **evaluate good side** is activated, parts can be flipped on the basis of surfaces.

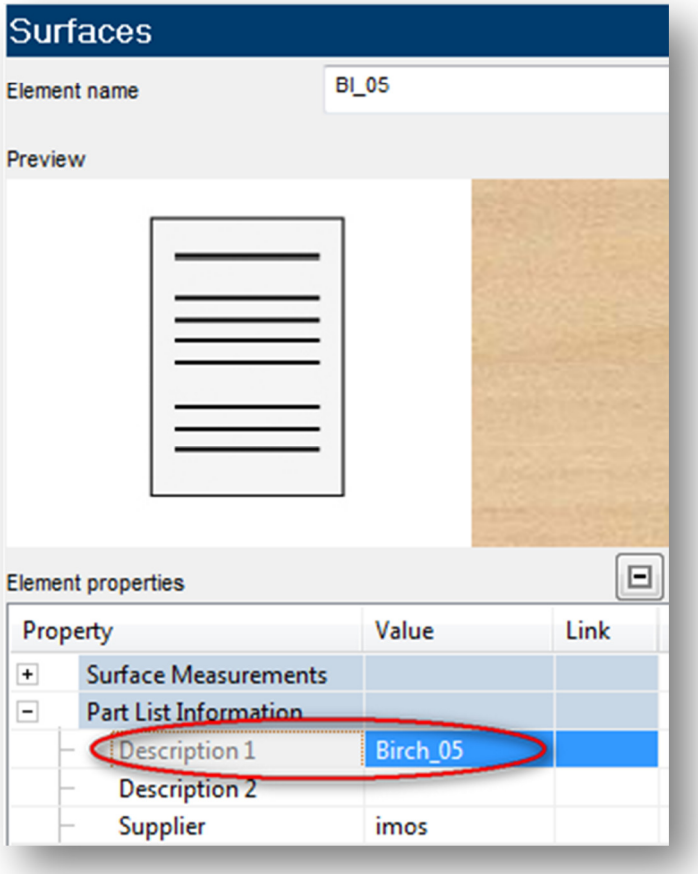


Positioning part in the CAM Manager

Flipping is always executed if the corresponding entry for **designation 1** of the surface has been added to the function **good side**.





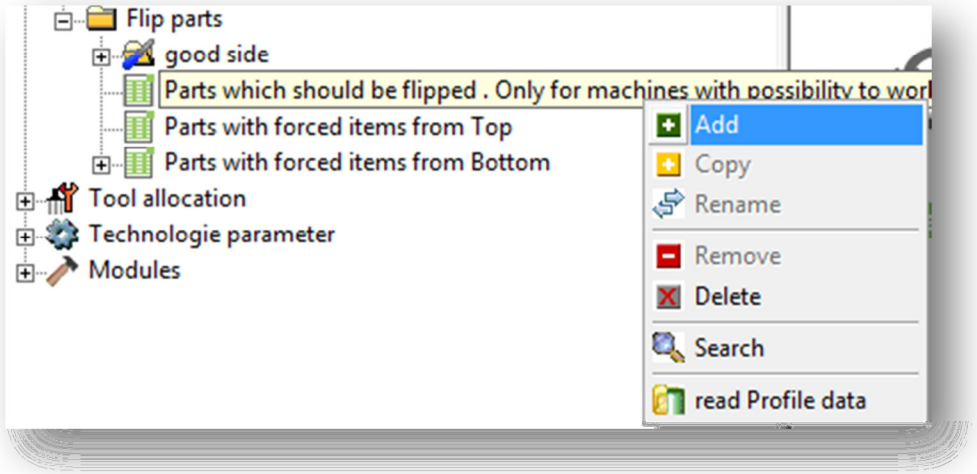


Positioning part in the CAM Manager

4.2 Parts from imos „flipped“ only for machines with the possibility to work items from bottom

Via this function parts can be flipped due to their names.
This is always evaluated if the part has a first machining and second machining and thereby replaced (e.g. left side has a first and second machining and still has to be flipped so that the first machining goes into the 2000 file and the second machining goes into the 1000 file).

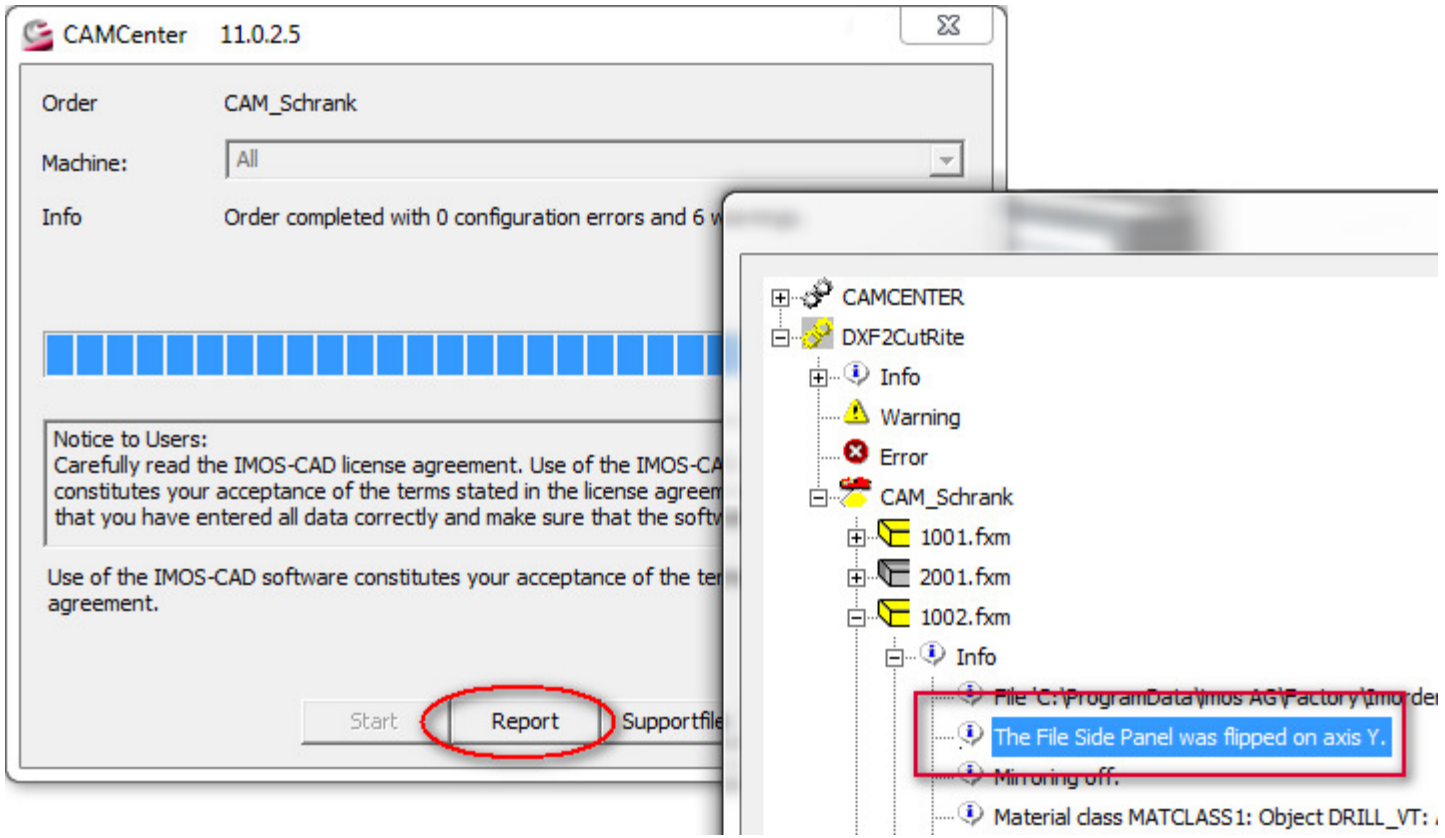
For assigning a part name to a function, it must be marked by clicking once on the right mouse button and the function **add** must be selected in the appearing context menu.



Then the part names can be selected in the appearing dialog and by leaving the dialog via the green checkmark, all entries are applied.

5. Tracing

After completing the APG drive in imos, information about the part positioning to every part can be viewed via the **Report**.



Positioning part in the CAM Manager