Tool Setup in CAM Manager

This document explains how to set up a new tool in the CAM Manager.

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: November 2015
Used Version: 12.0; Standard CAM Installation with an CNC Weeke Venture machine

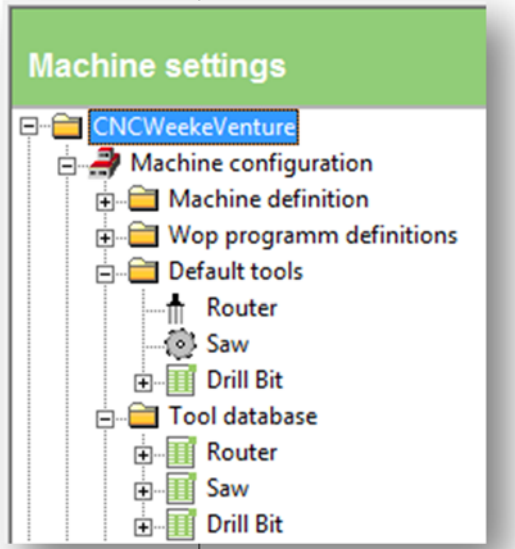
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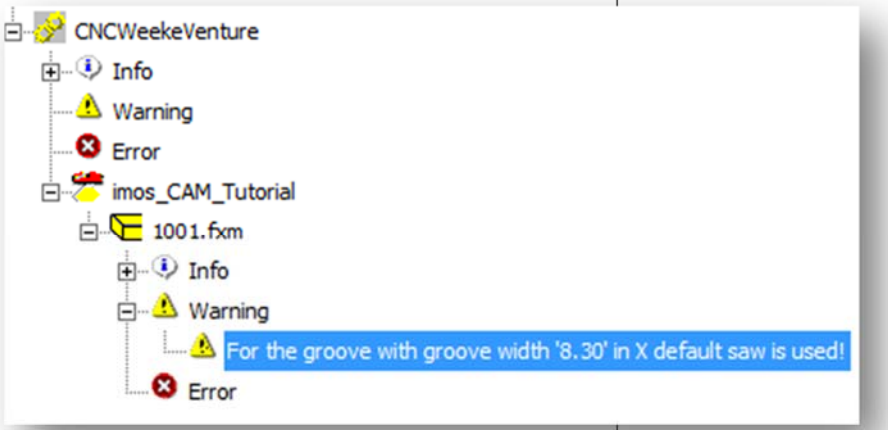
1. Navigation

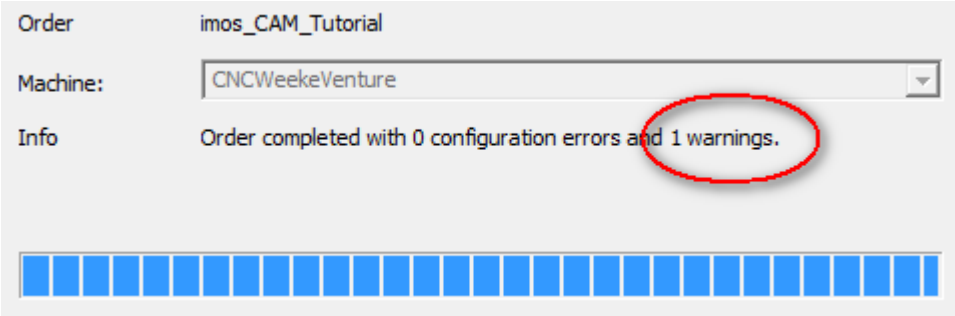
In the field of **machine configuration** are the **default-tools** and **tool database** sections.
With these the tools for the imos IPP can be created.

The difference between **default-tools** and **tool database** is that, if no tool is found with the tool assignment, then the default tool can be used. Only one tool can be created per **default-tool type**.



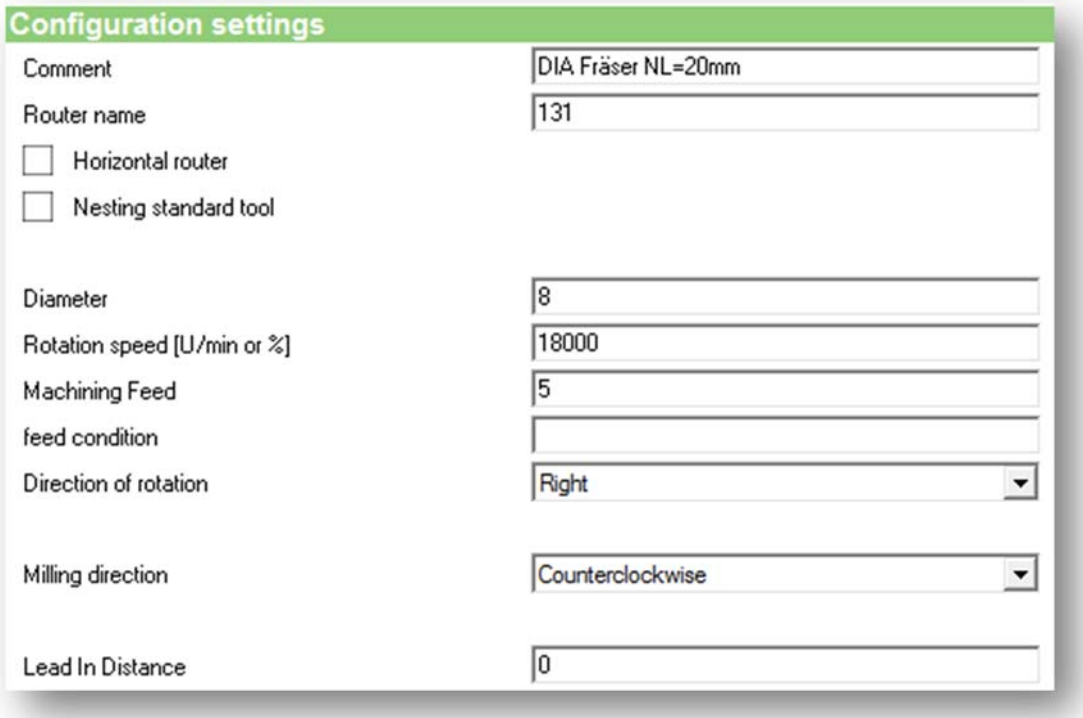
The default-tool is always highlighted, because **warnings** appear in the report. Then the default- tool is assigned here


CNCWeekeVenture
Info
Warning
Error
imos_CAM_Tutorial
1001.fxm
Info
Warning
For the groove with groove width '8.30' in X default saw is used!
Error


Order
imos_CAM_Tutorial
Machine:
CNCWeekeVenture
Info
Order completed with 0 configuration errors and 1 warnings.

2. Settings of the default tools

2.1 Router

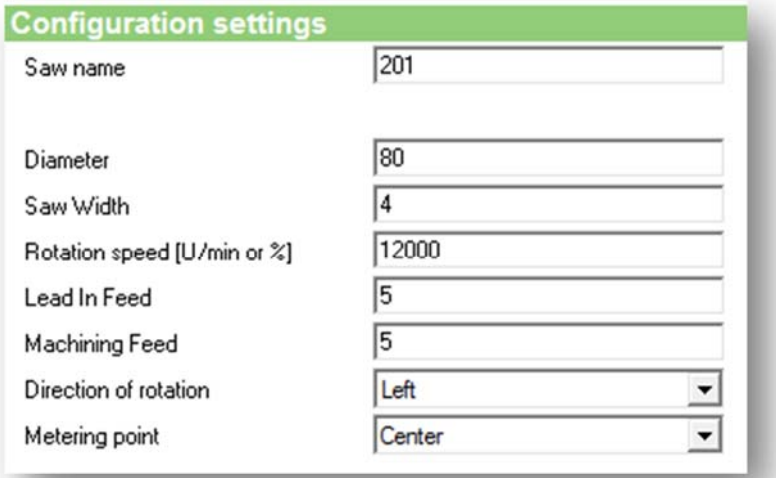


Name	Description
Comment	A short description about the router can be entered here. This field is not evaluated!

Name	Description
Router name	The router name from the tool datanbase of the machine must be entered.
Nesting standard tool	If the tool is a Nesting router, then the checkbox must be activated.  The router in the Nesting process is only then evaluated if the checkbox is activated.
Diameter [mm]	Definition of the router diameter.
Rotation speed [U/min or %]	Definition of the rotation speed of the router. The rotation speed is stored in the tool database of the machine.
Machining Feed [m/min]	Definition of the machining feed with which the router should run through the material.
Direction of rotation	Rotation direction of the router. The direction of the rotation is very important for rectangular pockets and circular pockets which are separated as contours.
Direction of router	The direction of the router defines how to output the contours.
Lead In Distance [mm]	If the lead in is created via CAM Center, the lead in distance must be defined.
Lead In/Safety in Z Direction [mm]	If the lead in is created via CAM Center, the lead in distance must be defined here. The height must be set here to tangentially lead in, for example.
Lead out distance [mm]	If the lead out is created via CAM Center, the lead out distance must be defined here.
Lead Out/Safety in Z Direction [mm]	If the lead out is created via CAM Center, the lead out distance must be defined here.

Name	Description
	The height must be set here to tangentially lead out, for example.
Priority	Defines the sequence, in which the machining should be written in the CNC Program. 1 is the highest and 100 the lowest. With **-1** the machining is not transferred.
Twin Tool	If there is a left rotating and a right rotating tool, then the other tool must always be entered. This is important for the function **lead in/lead out strategy**.
Usable tool length [mm]	Defines the usable tool length. This is selected when creating the router in the tool allocation.

2.2 Saw



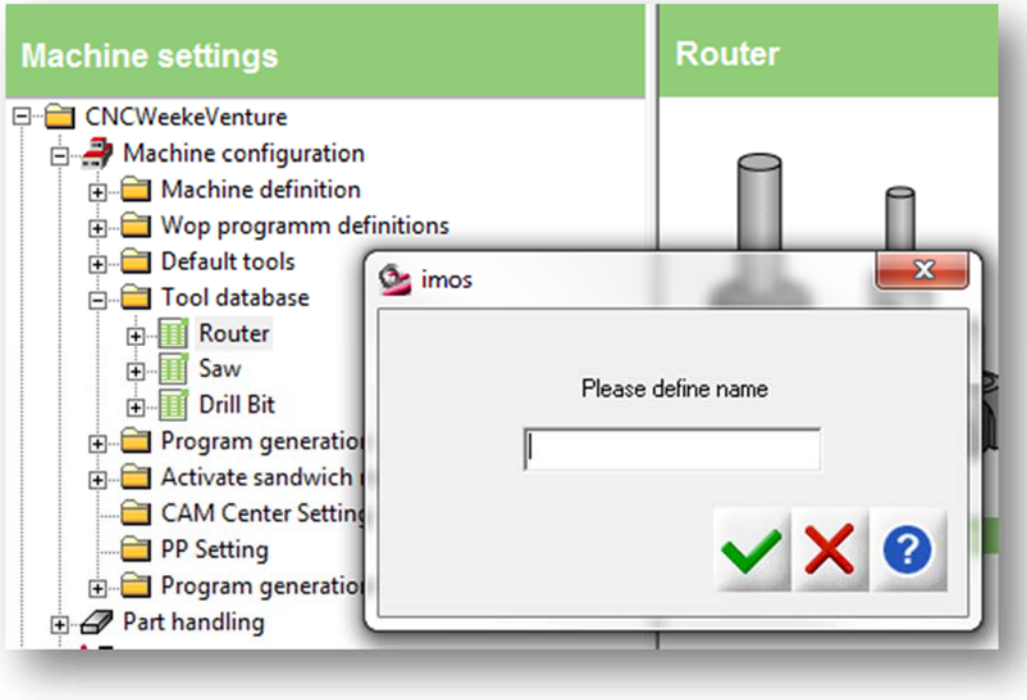
Name	Description
Saw name	Defines the saw name from the tool database.
Diameter [mm]	Defines the total diameter of the saw. The diameter out of the tool database of the machine must be set here.
Saw width [mm]	Defines the saw blade width of the saw. The diameter out of the tool database of the machine must be set here.
Rotation Speed [U/min or %]	Defines the speed of the machine. The speed can be entered in %.
Lead In feed [m/min]	Defines the lead in feed for the saw blade.
Machining Feed [m/min]	Definition of the feed rate with which the saw blade runs through the material.
Direction of rotation	Definition of the rotation direction of the saw.
Metering point	Definition of the metering point for the saw.

By default this is on **center**.

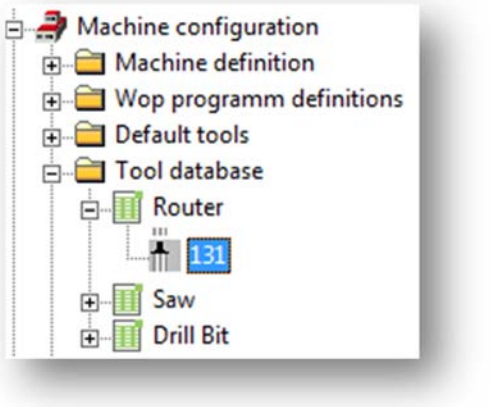
3. Create a tool in the tool database

For creating a new tool in database, go to **tool database** in the field of the **machine configuration**.
The desired tool type must be selected by right clicking and then select **add** in the context menu.
In the appearing dialog the name of the new tool must be entered and afterwards leave the dialog via the green checkmark.

The name of the tool with **routers and saws** must be numerical (without letters or special characters).



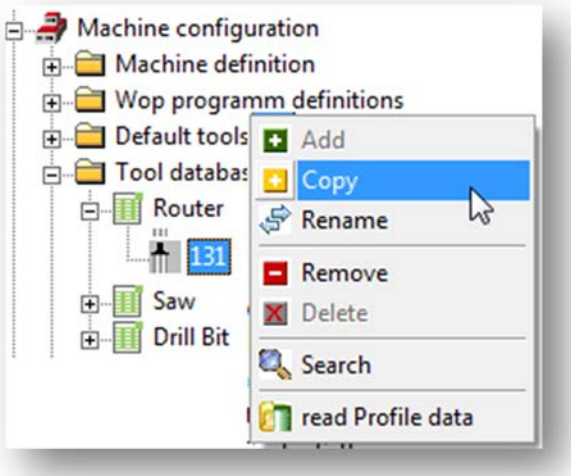
Afterwards the tool is written in the database.



4. Copy tools

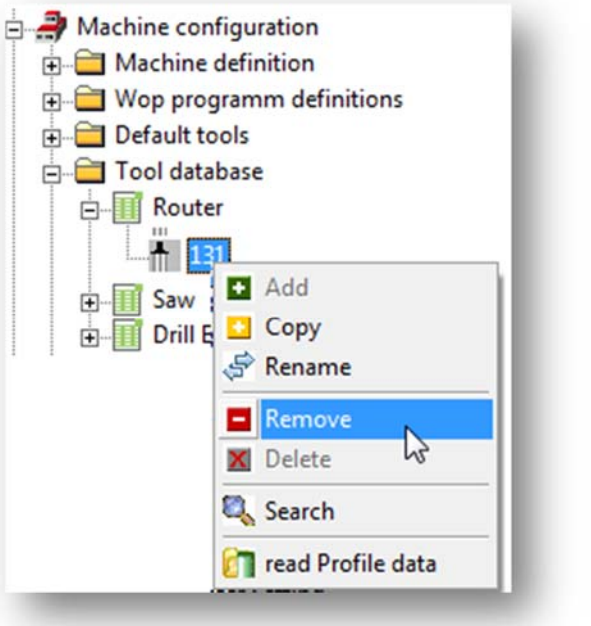
For copying a tool, the desired tool must be selected by right clicking and afterwards in the appearing context menu select **copy**.

The numbers are not allowed to be entered double.



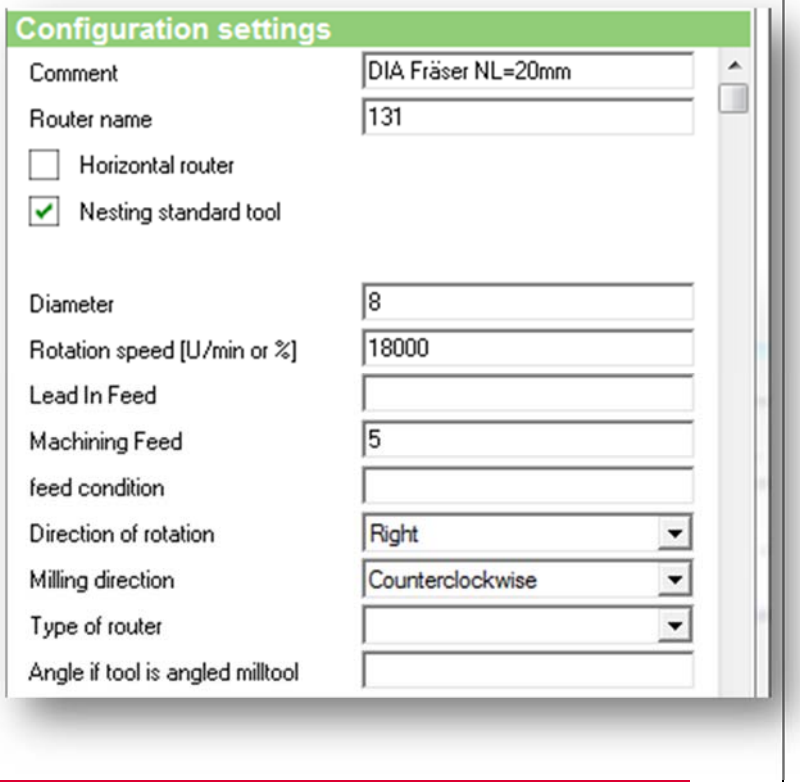
5. Remove tools

For deleting a tool, the corresponding tool must be selected by right clicking and afterwards in the appearing context menu select **remove**.



6. Settings in the tool database

6.1 Router

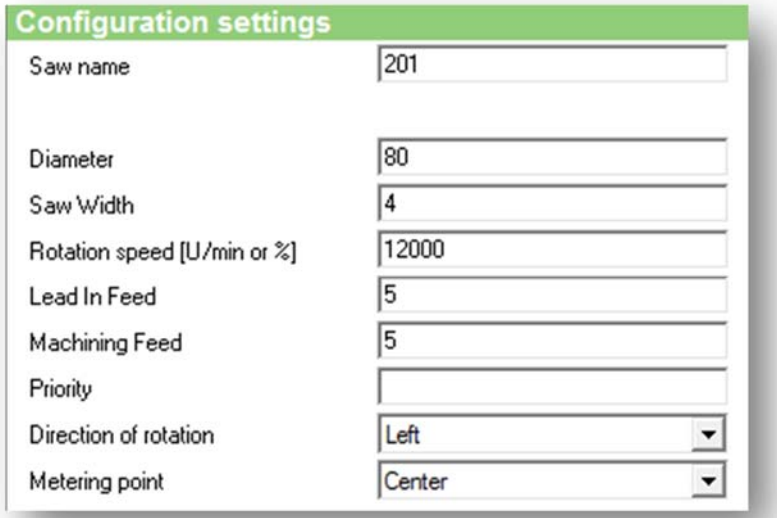


Name	Description
Comment	A short description about the router can be entered here. This field is not evaluated!
Router name	The router name must be defined, which was entered in the number field in imosIPP.
Nesting standard tool	If the tool is a Nesting router, then the checkbox must be activated.

	The router in the Nesting process is only then evaluated if the checkbox is activated.
Diameter [mm]	Definition of the router diameter.
Rotation speed [U/min or %]	Definition of the rotation speed of the router. Here the diameter must be set out of the tool database of the machine.
Machining Feed [m/min]	Definition of the machining feed with which the router should run through the material.
Direction of rotation	Rotation direction of the router. The direction of the rotation is very important for rectangular pockets and circular pockets which are separated as contours.
Milling direction	The direction of the router defines how to output the contours.
Lead In Distance [mm]	If the lead in is created via CAM Center, the lead in distance must be defined. Tip: If "AUTO" is to be written in the ima configuration, then a 0 must be enter for starting here. If a pure is 0 needed for start-up, then you must enter here a 0.001.
Lead In/Safety in Z Direction [mm]	If the lead in is created via CAM Center, the lead in distance must be defined here. The height must be set here to tangentially lead in, for example.
Lead out distance [mm]	If the lead out is created via CAM Center, the lead out distance must be defined. Tip: If "AUTO" is to be written in the ima configuration, then a 0 must be enter for starting here. If a pure is 0 needed for start-up, then you must enter here a 0.001.
Lead Out/Safety in Z Direction [mm]	If the lead out is created via CAM Center, the lead out distance must be defined here. The height must be set here to tangentially lead out, for example.

Priority	Defines the sequence, in which the machining should be written in the CNC Program. 1 is the highest and 100 the lowest. With **-1** the machining is not transferred.

6.2 Saw



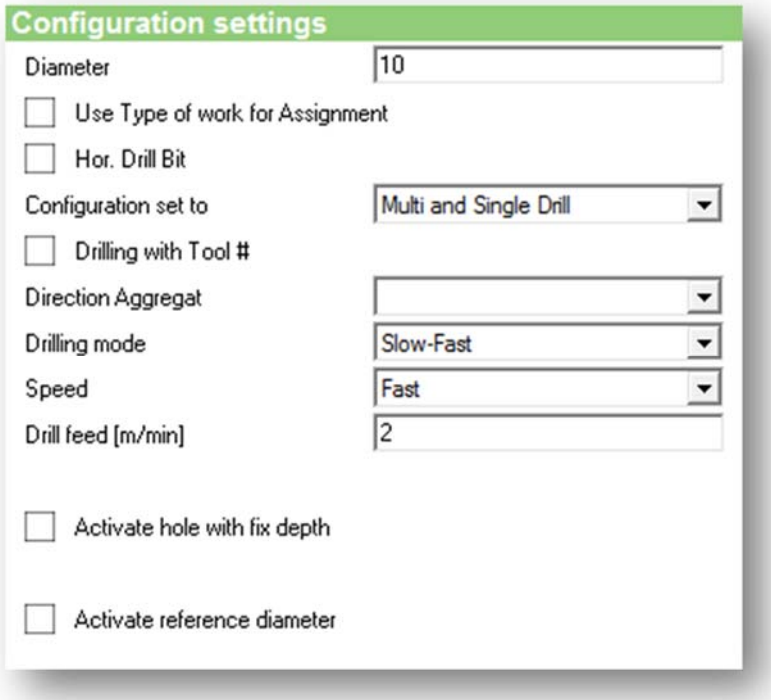
Name	Description
Saw name	Defines the saw name from the tool database.
Diameter [mm]	Defines the total diameter of the saw. The diameter out of the tool database of the machine must be set here.
Saw width [mm]	The diameter out of the tool database of the machine must be set here.
Rotation speed [U/min or %]	Defines the speed of the machine. The speed can be entered in %.
Lead In feed [m/min]	Defines the lead in feed for the saw blade.
Machining Feed [m/min]	Definition of the machining feed with which the saw blade should run through the material.
Direction of rotation	Definition of the rotation direction of the saw.

Metering point	Definition of the measuring point for the saw. By default this is on **center**.

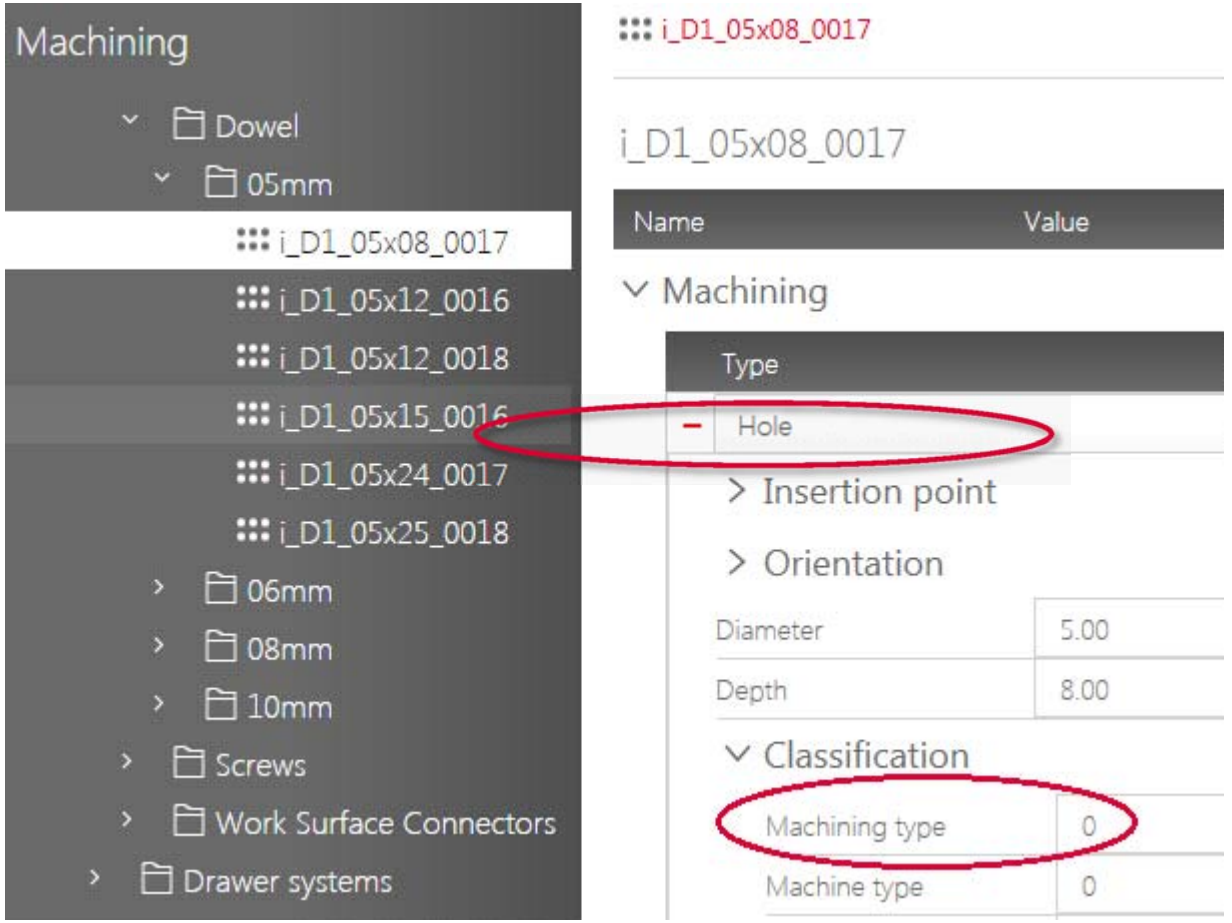
6.3 Drill Bit

Under the field **drill bit** some drill properties can be entered, that are later written in the CNC Program

If no drill is created, then the properties can be taken from the Technology-Parameter.

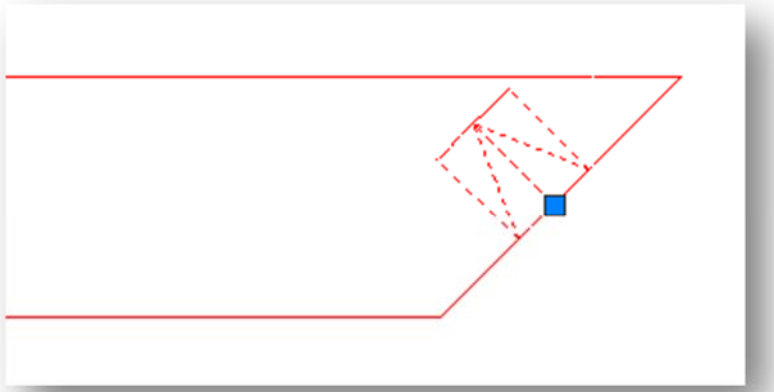


Name	Description
Diameter [mm]	Set the diameter as it should be in the machining in the CAD here.

Use type of work for assignment	If the drilling has a machining type and this has to be considered, then the checkbox must be activated and the **machining type** has to be assigned. The machining type is in imos CAD in the machining information. 
Hor. Drill Bit	If all horizontal drills have the same properties, the checkbox can be activated. Otherwise the side must be selected via **configuration set to**.

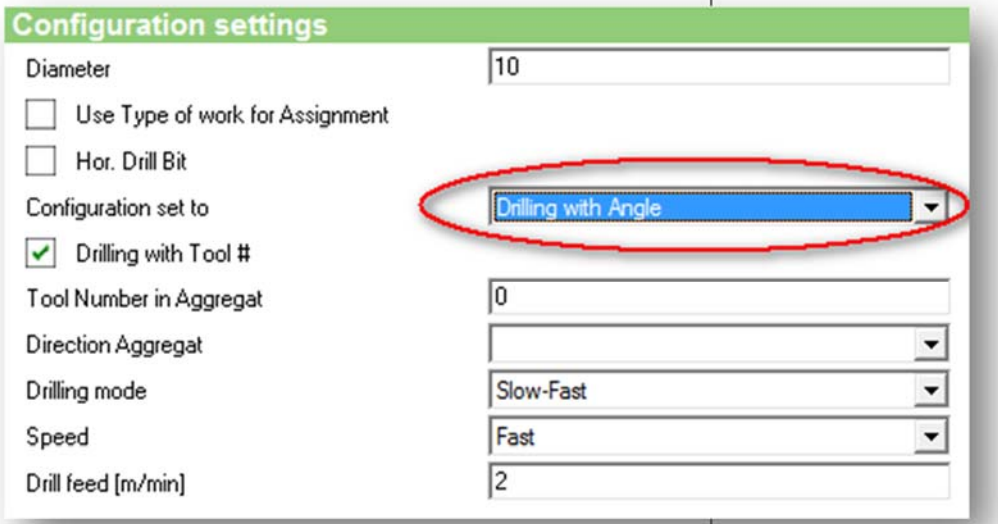
Configuration set to	Select the suitable direction here.
Drilling mode	Defines the drilling mode. It is possible to select between **Fast-Fast** and **Slow-Fast**.
Speed	Defines the speed of the drill.
Drill feed [m/min]	Defines the drill feed of the drill.
Fixed depth [mm]	If the drill has a fixed depth, this can be selected here.  The field is only then displayed if the checkbox **activate drilling with fixed depth** is activated.
Reference Diameter	Here a reference diameter can be set. This means that if the drilling with 8.1 is transferred from the CAD, then the drilling can be written on another diameter in your CNC Program.  The field is only then displayed if the checkbox **activate reference diameter** is activated.

6.3.1 Horizontal drilling in angle (Uni Drilling)

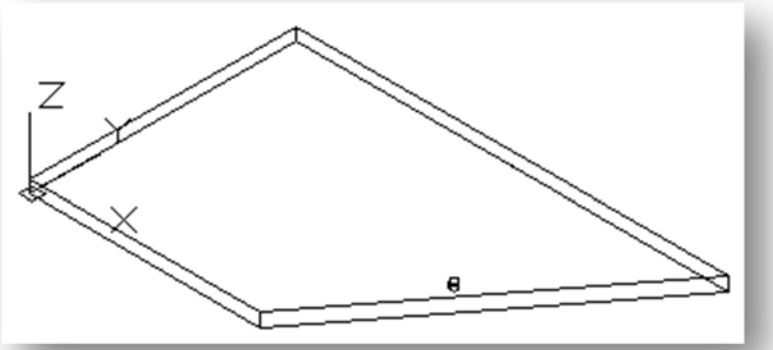


For drilling in an angle, the **configuration set to** must be set on **drilling with angle** in the configuration settings.

Additionally, no direction aggregate can be assigned. Only then the drilling is correctly assigned.



6.3.2 Drilling in the Angle



If you have a drilling in an angle, then the setting **configuration set to** and the **direction aggregate** must be set on **drilling with angle**.

