

## Simulation

You can use the simulation to check your milling data. The CNC simulation visualizes the programmed NC milling paths either in 2D or in 3D.



A **2D simulation** with the cutter center line or the wide cutter track, the **Simulate on a form** and the **virtual 3D milling** are offered.

### 2D simulation

The 2D simulation shows the milling paths on the flat surface. This simulation is suitable for flat work such as signs, front panels, etc.



**Wide tool path / Middle line:**

Select the tool path representation in the graphic.

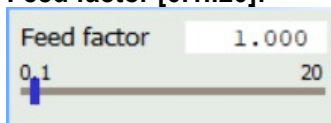
**Wide tool path** shows the milling cutter trace at the level of the material surface.

**Middle line** shows the cutter center line (wire model).

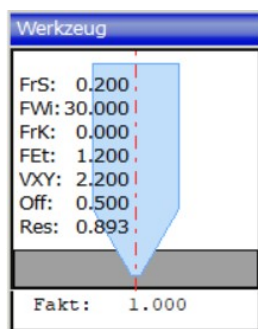
**Show / Don't show raised movements:**

Tool simulation with or without raised tool movements.

**Feed factor [0.1..20]:**



With setting 1 the graphic is created with the original tool feed. The feed factor reduces or increases the tool feed. The feed factor <1 reduces the tool feed a factor >1 increases the tool feed.



The feed factor can also be changed during the display. To do this, press the <F2> key. The simulation stops and the feed factor can be changed.

**Start:**

The display begins with Start.

## Simulate on form

Like the 2D simulation, this shows milling paths on surfaces. Before the simulation, however, a relief of the milling data is generated. This allows you to visualize the processing on the virtual workpiece.



Simulate on relief

Simulate on rendered relief

### Wide tool path / Middle line:

Select the tool path representation in the graphic.

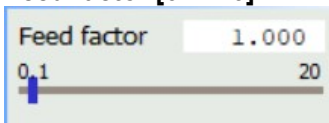
**Wide tool path** shows the milling cutter trace at the level of the material surface.

**Middle line** shows the cutter center line (wire model).

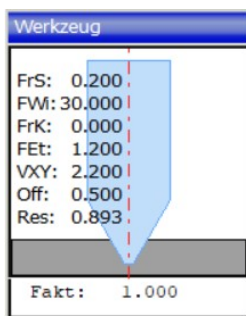
### Show / Don't show raised movements:

Tool simulation with or without raised tool movements.

### Feed factor [0.1..20]:



With setting 1 the graphic is created with the original tool feed. The feed factor reduces or increases the tool feed. The feed factor <1 reduces the tool feed a factor >1 increases the tool feed.



The feed factor can also be changed during the display. To do this, press the <F2> key. The simulation stops and the feed factor can be changed.

### Quality level:

Setting the quality level for the background relief.

'very fine', 'fine', '**normal**', 'medium', 'coarse', 'very coarse'.

In addition to the surface quality, the pre-calculation time for the relief depends on this setting.

### Render Yes / No:

**YES:** The background relief is shown as a rendered picture.

### Color:

Select the color table for the background relief or the rendered picture.

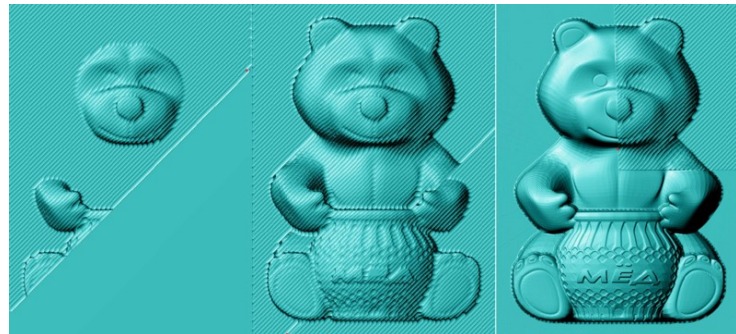
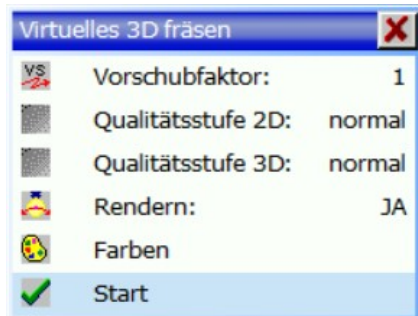
### Start:

With Start, the background relief is first calculated (display: **Calculate Relief**), then the milling path display begins.

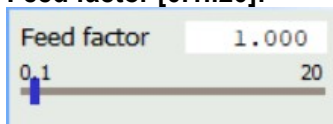
## Virt. 3D milling

The virtual 3D milling makes the processing of 3D data from relief, projections or point-out calculations visible. The material removal in the 3D machine simulation is shown in real time on the model. That means the workpiece is created before your eyes.

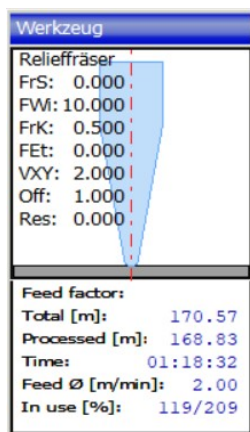
Virtual milling is very CPU intensive, especially for high resolutions, high feed rates and rendering. A powerful computer with a fast multi-core processor is required for this display.



### Feed factor [0.1..20]:



With setting 1 the graphic is created with the original tool feed. The feed factor reduces or increases the tool feed. The feed factor <1 reduces the tool feed a factor >1 increases the tool feed.



The feed factor can also be changed during the display. To do this, press the <F2> key. The simulation stops and the feed factor can be changed.

### Quality level 2D:

Setting the relief quality level.

'very fine', 'fine', '**normal**', 'medium', 'coarse', 'very coarse'.

In addition to the surface quality, the pre-calculation time for the relief depends on this setting. Fine settings increase the computing time and can lead to jerky movements.

### Quality level 3D:

Setting for 3D movements.

'very fine', 'fine', '**normal**', 'medium', 'coarse', 'very coarse'.

With a coarse setting, stairs become visible in 3D movements. With a fine setting, the stairs become smaller or even invisible, but the calculation time increases.

### Render Yes / No:

**YES:** The relief is shown as a rendered picture.

### Color:

Select the color table for the relief or the rendered picture.

### Start:

With Start the display of the 3D processing begins.