

## MadCAM 4.2 Tutorial Profiling (sample from the 2D tutorial)

### About this tutorial

MadCAM®, *Mould And Die Computer Aided Machining*, is a Rhinoceros® plugin for 3D machining. The MadCAM plugin gives the ability to model and generate toolpaths inside Rhino 3D, from contour milling to advanced milling strategies with 5 axis machines.

This tutorial is an aid for the user to quickly get knowledge about the functionality and strategies within MadCAM and learn some tech tips on the way.

Command functions that have their origin from Rhino are typed in *italic*:

*OffsetSrf*

Toolbar and menu functions are also written in *italic*:

*Solid-Box-Diagonal*

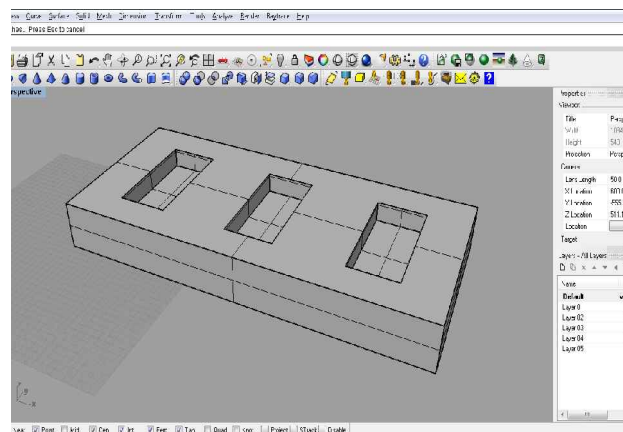
Functions from MadCAM are typed in ***italic bold***:

***Create Box-Select Region Curves***

### Profiling

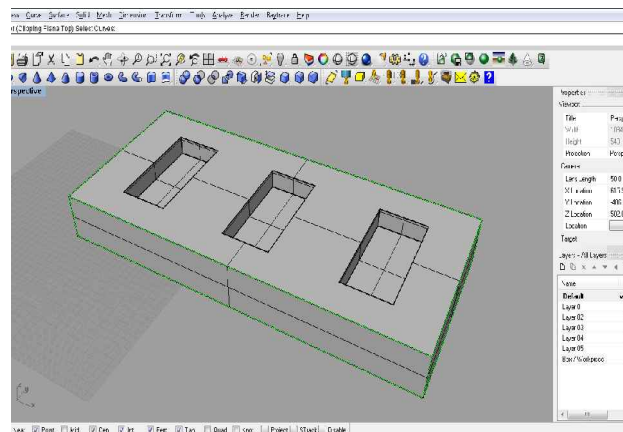
Lets say this part needs to be milled. It's a flat piece with three equally sized pockets.

To make part the command ***2,5D Toolpath-Pocketing*** is used in this example.

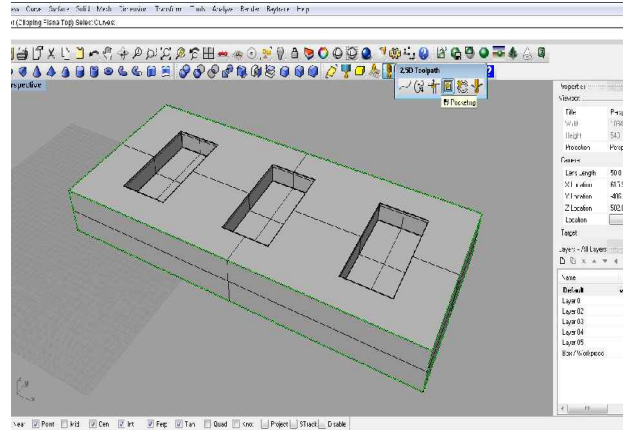


Select the workpiece and choose the tool (see the basis steps).

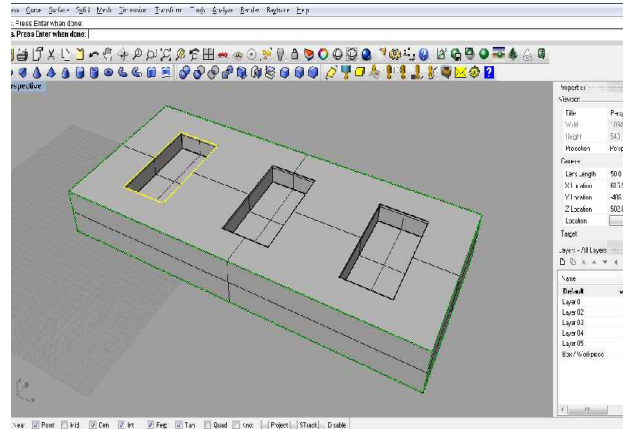
Now the green Workpiece wire frame should surround the piece.



Click on the toolbar **2,5D Toolpath-Pocketing**.



Now surface edges can be selected as polylines. Select the four top polylines in the pocket. Press enter when ready (or right mouse button).

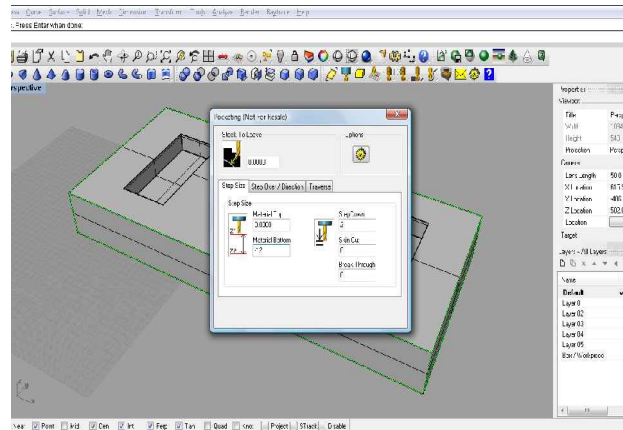


The Pocketing window appears. Set the **Material Top** to zero and the **Material Bottom** to the depth of the pocket.

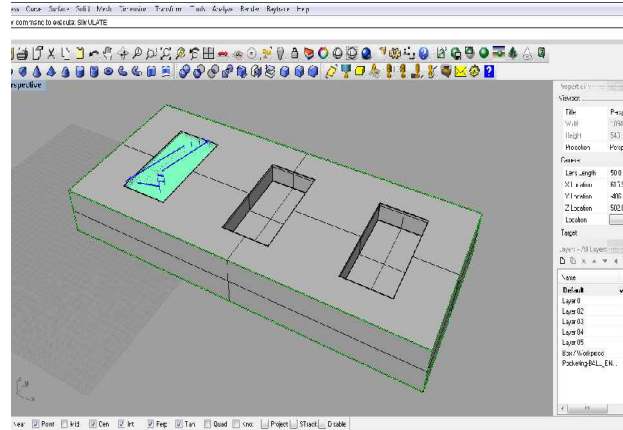
In this example the top polylines were selected, so the cut will go from the surface plane and downwards. Therefore the depth will be negative, in this case -12 mm.

Set the step down to fit the mill and material.

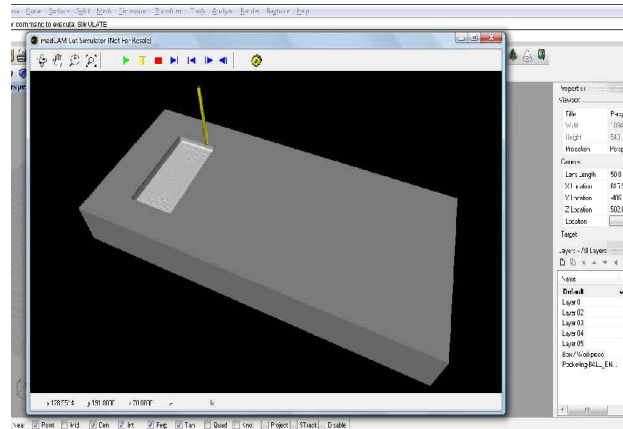
Click **OK**.



The toolpath is generated and will show up in a new layer called "Pocketing-[Tool name]".

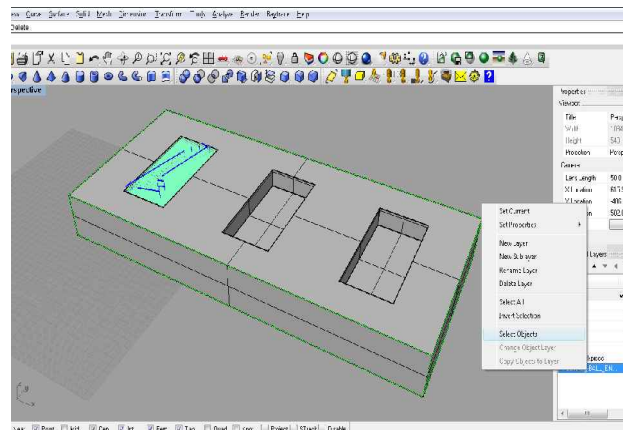


To see the toolpath, check the simulation output. Click the **Simulate** button and then **play**.



To continue with the other pockets there are several options. Either go through the procedure again, which is needed if the pocket doesn't have the same profile as the first one. Or, as in this case when the pockets are equal, a duplicate is the fastest way to go.

Right click on the layer and click **Select Objects**.

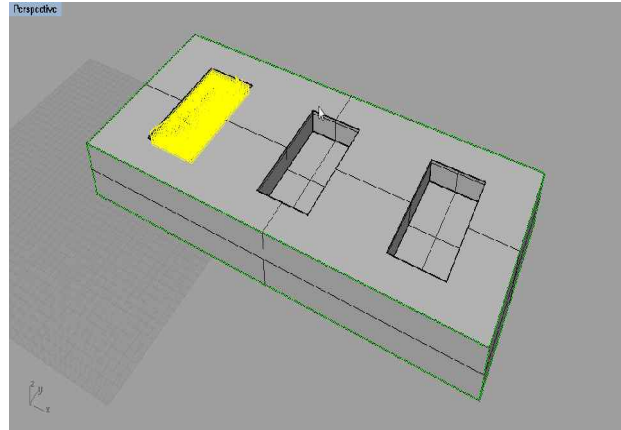


Everything in the layer will turn into the selected-colour of Rhino (default yellow).

Make sure *Object snap (osnap)* is on, and at least *End* option is selected.

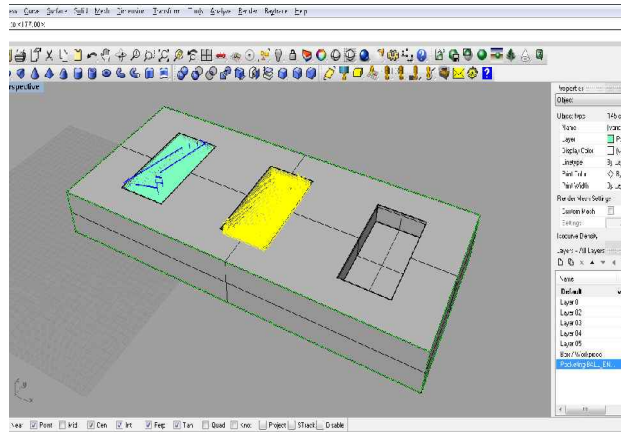
Copy-Paste (Ctrl+C Ctrl+V) everything selected. This will create a duplicate of the toolpath at the same position.

Use the *move* command, set the *Point to move from* to one of the corners of the pocket (if osnap is set it will snap to the end of the polyline).



Drag the selection to next pocket and snap to the same corner in the new pocket.

Now, the toolpath duplicate will create the new pocket exactly as the first one.



To see the result, make a simulation.

When all pockets are created, make the post processing.

