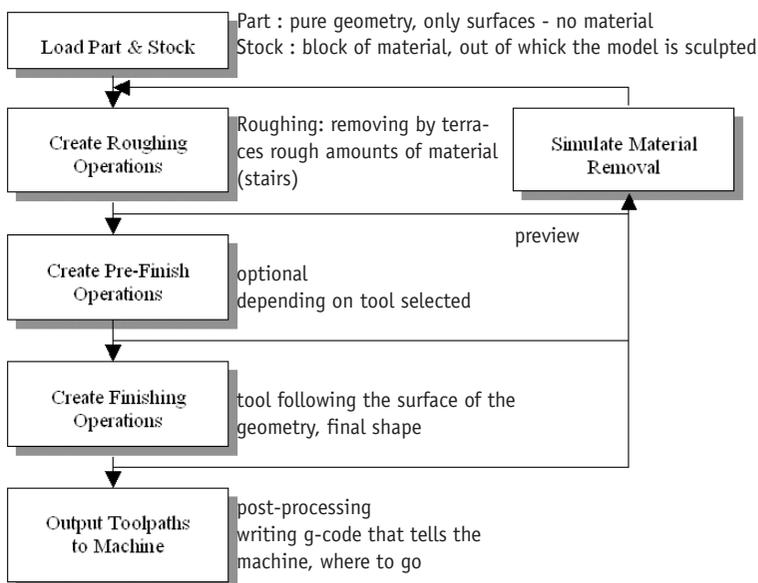


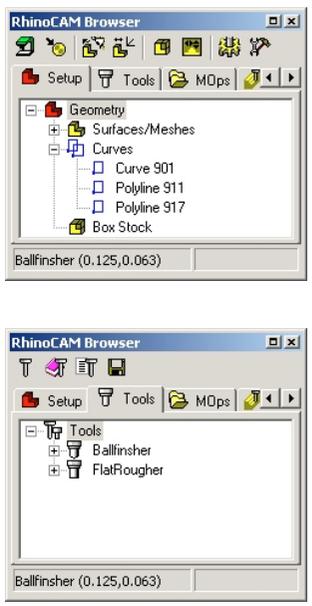


1. Workflow



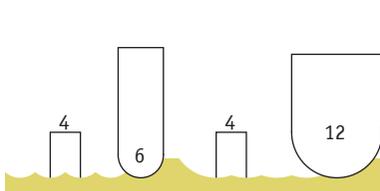
Booting the Windows7-Computer at the Workshop with RhinoCAM (ZHAW Building ZB)
 Login: `clt-dsk-p-1364\student`, Password: `wel-come123`
 On the Precix-Control start Desktop with QNX > Desktop Manager
 Click first symbol on the left in the «Applications»-list
 «Share Connector» starts and closes by itself, as soon as the connection is established
 Files are under «/files/rhino» on the Precix-Control
 On the Windows7-Computer there is a link on the desktop «qnx-share»

2. Setup



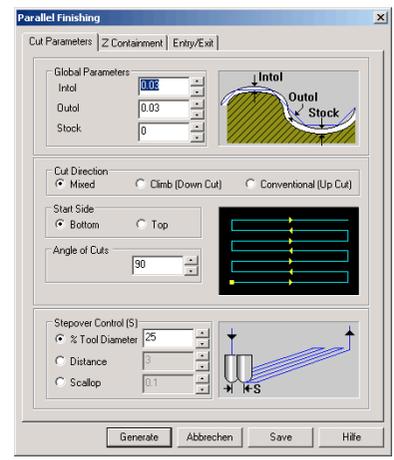
- Setup-tab:
- list of all the geometry (surfaces, meshes and curves)
 - stock if defined
- 0 make sure, your part is positioned as : +X/+Y/-Z
 - 1 click on Create/Load Stock
 - 2 select Box Stock
 - 3 define size (in mm) of material
 - ! attention: negativ z !
 - 4 switch to the Tools-tab
 - 5 click on Load Tool Library
 - 6 browse for raplab-toollib.csv
 - 7 select a tool
- If the tool (also: milling-bit) is not in the list, or if you can't find the .csv-file, define a new tool by choosing Create/Select Tool

note:
 for flat surfaces, select flat-nose tools
 for slopes, select ball-nose tools
 for smooth surfaces, select larger tools
 for narrow valleys, select thinner tools

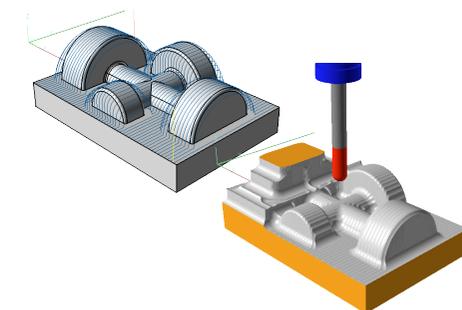


different results with different tools
 left: 6mm-Ballnose-Tool, Stepsize 4mm
 right: 12mm-Bn-Tool, Stepsize 4mm

4. Machining Operations: Parallel Finishing



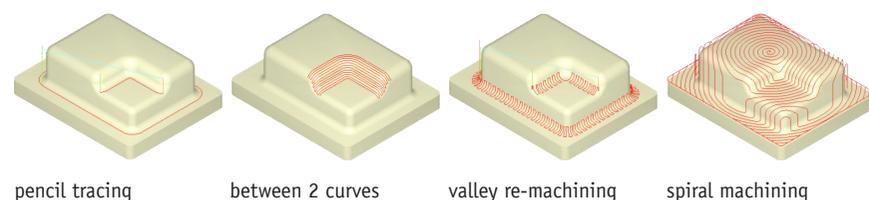
- 13 click Milling Methods > 3 Axis Milling > Parallel Finishing
- 14 define the Angle of Cuts (default 0)
- 15 adapt - if necessary - the Stepper-%
- 16 click Generate
- 17 Verify



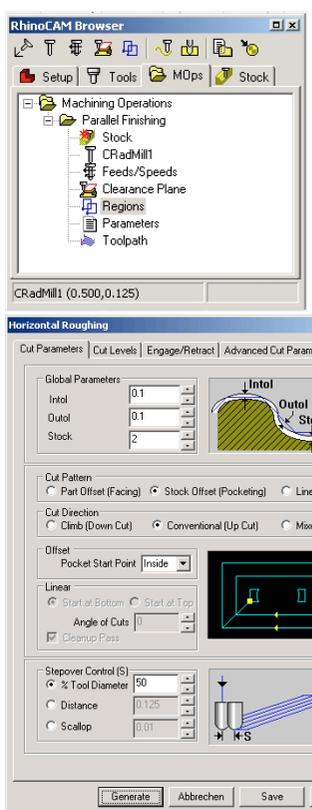
tip: doubleclick on Regions and select one or more closed curves to delimit cutting area.



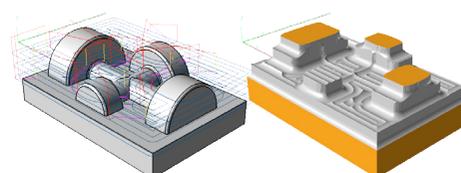
14 create as many different Machining Operations as necessary for your project or change the existing ones and always double-check with the simulation; consult the RhinoCAM-Help for explanations



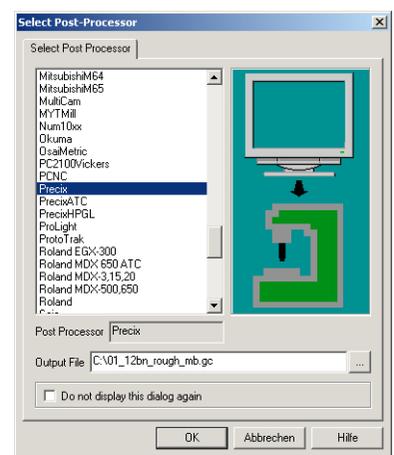
3. Machining Operations: Horizontal Roughing



- 8 switch to the MOps-Tab
 - for each newly created job (Machining Operation) a folder is created, containing all the information defining this job. To change one of the elements, double-click corresponding icon.
 - 9 click Feeds and Speeds: put Spindle Speed to 10'000
 - 10 click Milling Methods > 3 Axis Milling > Horizontal Roughing
 - 11 in the dialog-box, that pops up
 - a set the Stock (e.g. 2 mm for foam, 1 mm for wood)
 - b under Cut Direction, select Conventional
 - c under Stepper Control put % Tool Diameter to 50 for foam, less for harder materials...
 - d in the Cut Levels-Tab under Stepper Control put % Tool Diameter to 100% for foam, 50% for wood
 - 12 click Generate to calculate the toolpath
 - 13 Verify (switch to the Stock-Tab and hit play)
- note: turn displaysettings to shaded mode



5. Post-Processing



- 15 once satisfied with the result, go back to the MOps-Tab
- 16 select each MOp-Folder subsequently and click Post Process
- 17 out of the list of all the post-processors, choose Precix
- note: to post several MOps that use the same tool in one file, add all the folders to the selection (with SHIFT)
- 18 under Output File, specify the path and the filename (e.g.: „01_12b_rough_mb.gc“ „02_6f_fine_mb.gc“)
- 19 click OK to write G-Code-file
- 20 open the .gc-file with a text editor and change the spindle-speed in line 2 and line 6 to: S10000 - save.
- 21 upload all the .gc-files on the Precix-Computer (see Chapter «1. Workflow: Booting»)

important: the machine needs to be turned on!