

Soirée Pratique: Sumo

**Introduction Fablab + building a frame
22/02/2016**

slides + extra information:

<http://www.ieee-sb-leuven.be/soireepratiques>

<http://www.ieee-sb-leuven.be/node/406>

<https://www.fablab-leuven.be/>

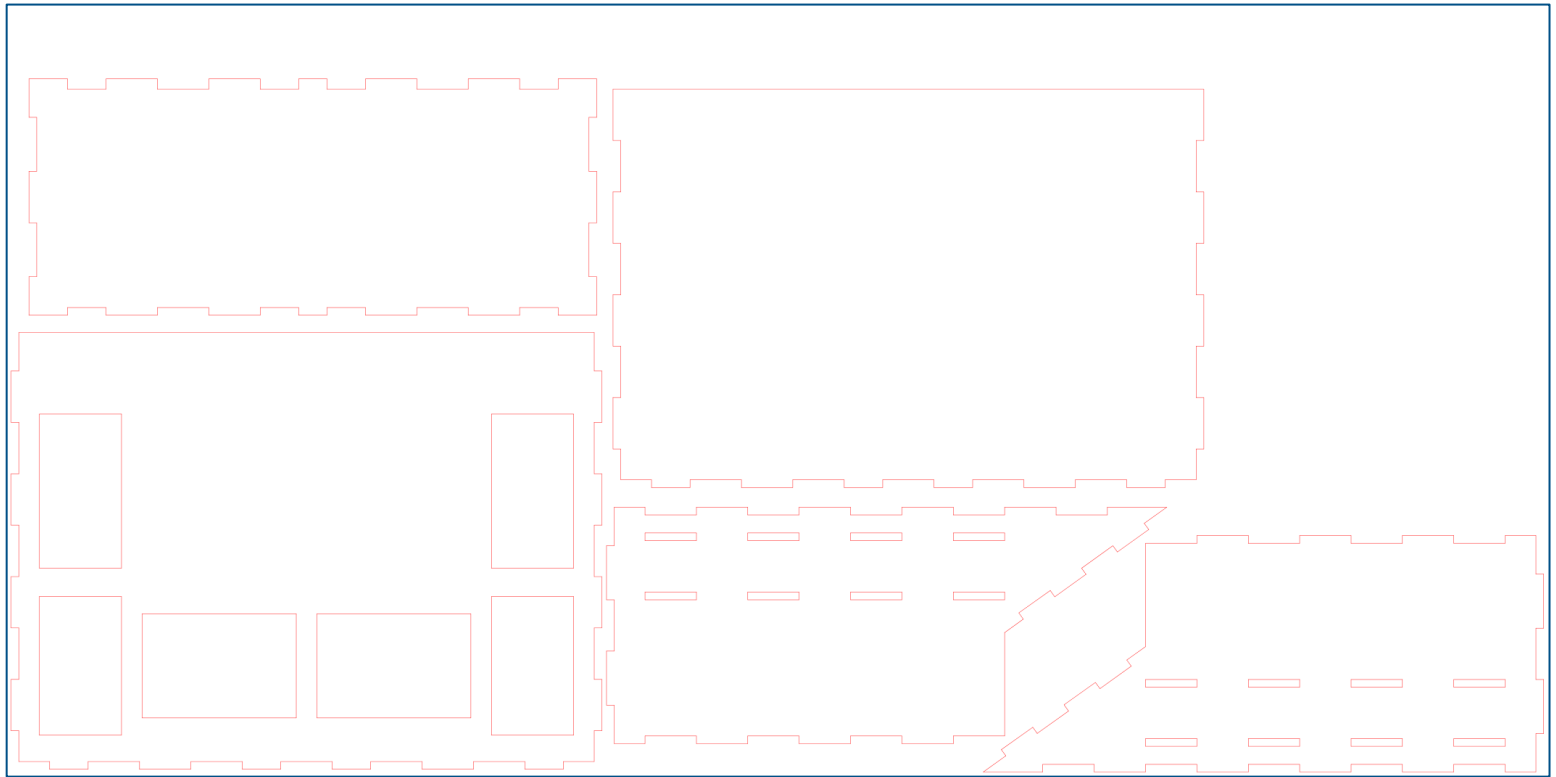
Fablab

- Open source hardware: use of machines is free (only pay/bring materials)
- Lasercutters, 3D printers...
- Mainly wood and plastics
- site with info: <https://www.fablab-leuven.be/>
- Only open during working hours

Fablab

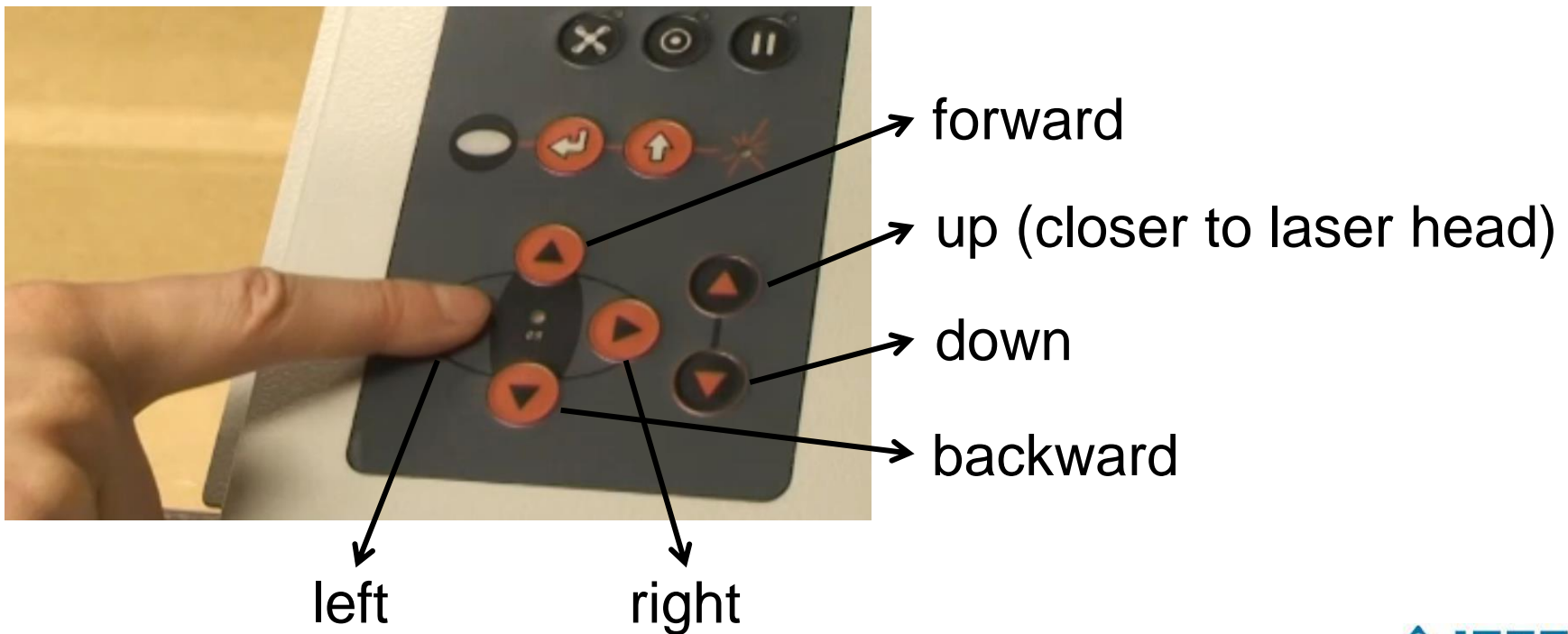
- For the frame we use the laser cutter
- Plates of 600mm to 300mm
- Red will be cut, black is engraved!
- Make figures in inkscape (harder to check if everything fits)
- Alternative: solid edge -> pdf -> small adjustments in inkscape

Example sketch



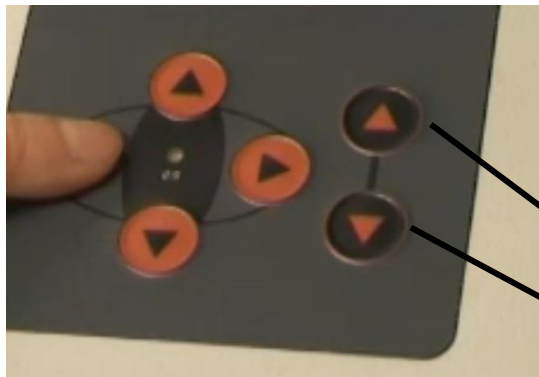
Operating the laser cutter

- Hardware:
 - Buttons to move laser cutter head

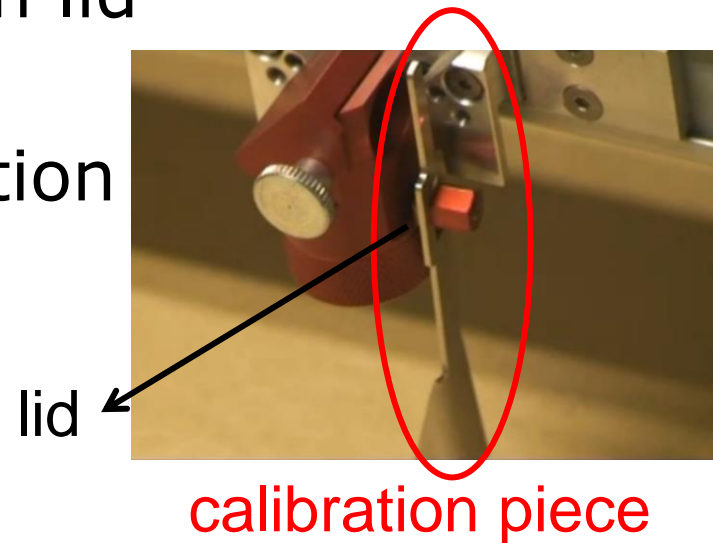


Operating the laser cutter

- Hardware: Calibrate laser head
 - Move plate down + insert mdf plate
 - Put calibration piece on lid
 - Move plate up slowly, until it hits the calibration piece



up (closer to laser head)
down

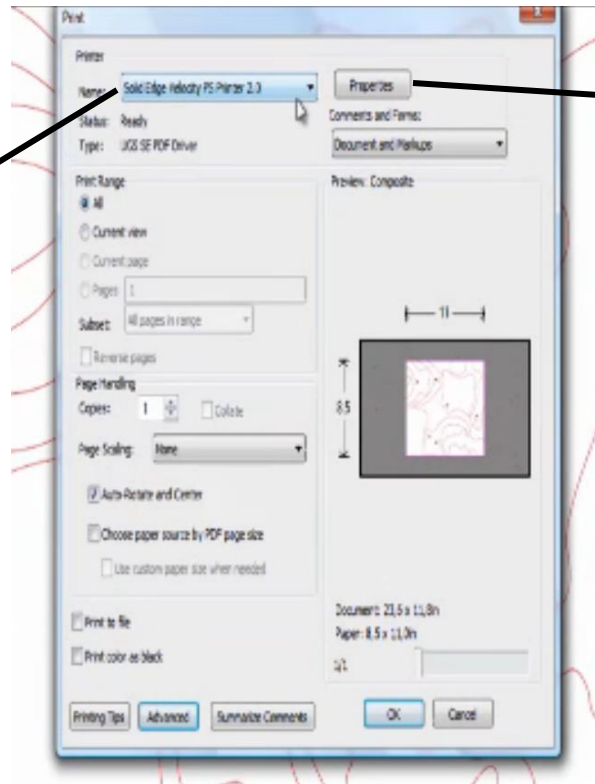


Operating the laser cutter

■ Software

- Open your pdf/inkscape drawing
- print

printer should be ok (trotec engraver)



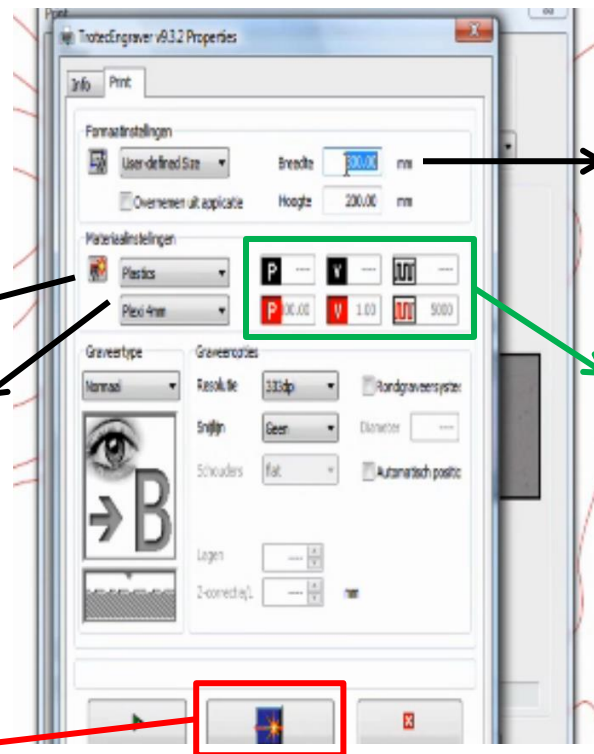
properties

Operating the laser cutter

■ Software

- Adjust properties + press OK (pick a name)

material = wood
mdf 3mm (thickness
your plate)



Set width and height
of plate

Setting for material
and thickness
(predefined for each
material!!)

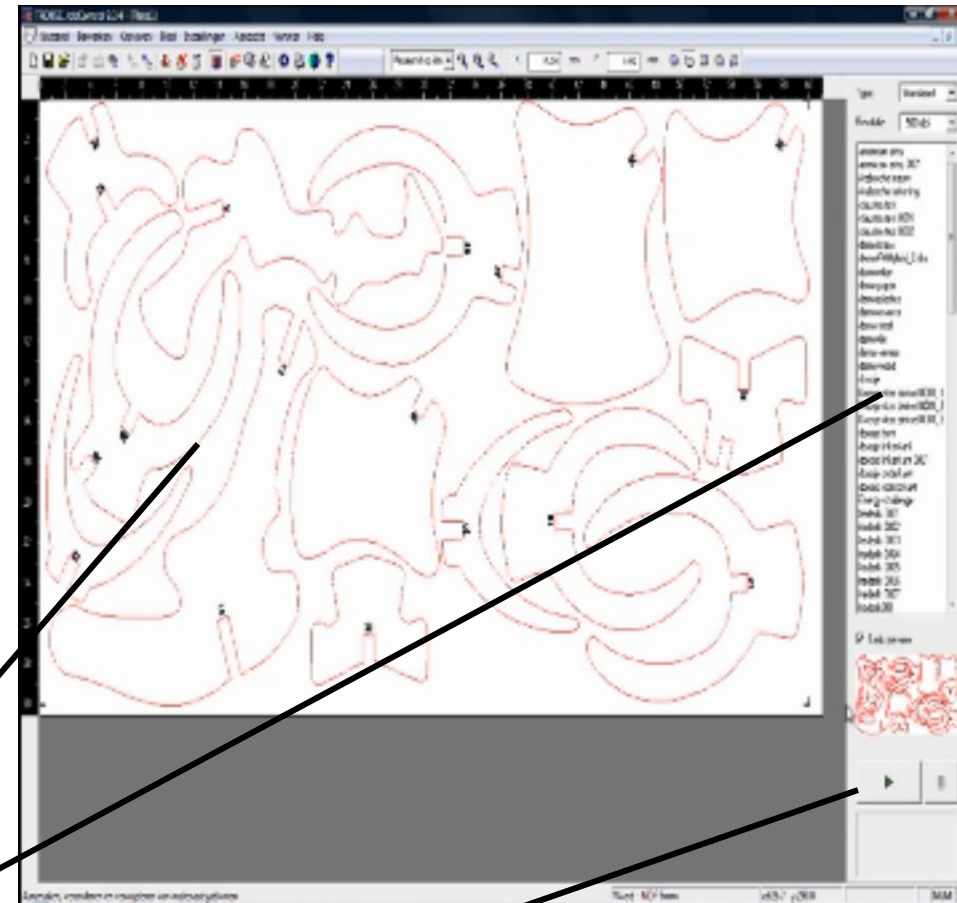
OK button

Operating the laser cutter

Trotec job control

■ Software

- Then press print or OK (send to job control)
- Go to Trotec job control
- Start cutting when everything is fine



preview

Available jobs (pick your job name by double clicking)

Start cutting

What does it cost?

- MDF plate 600x300mm:

3mm	4mm	6mm	9mm
1€	1,5€	2€	3€

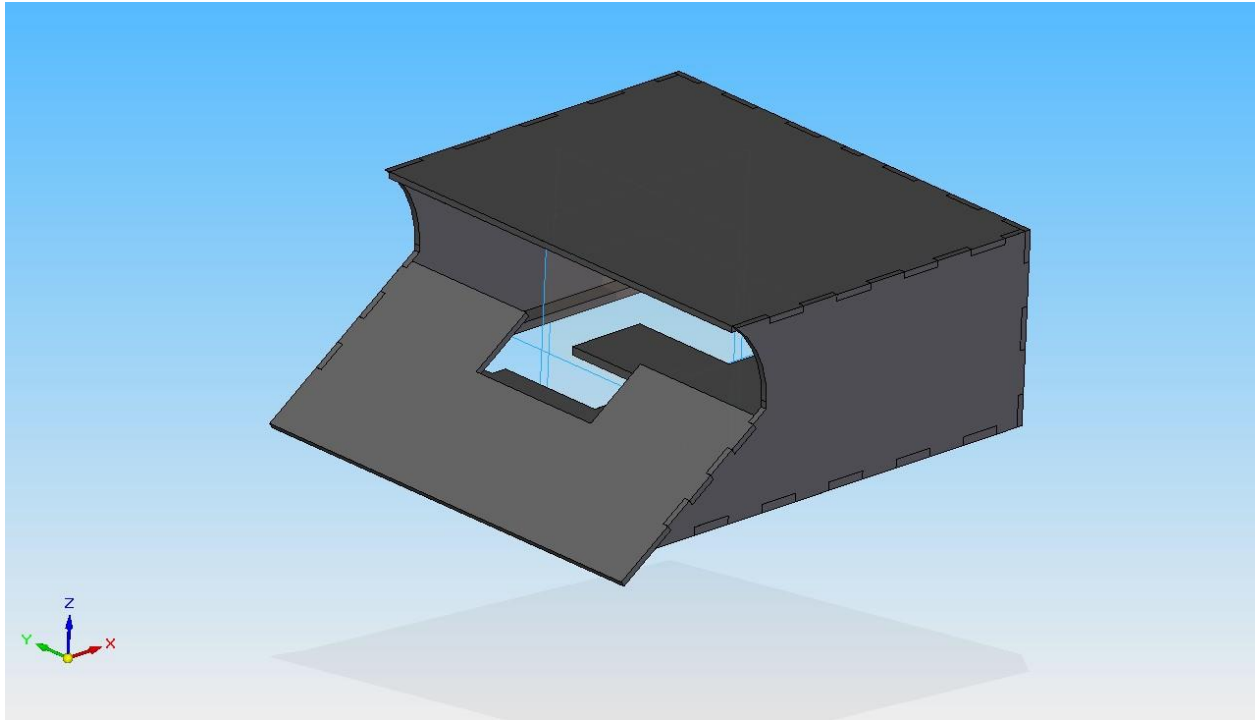
- Plexiglas plate 600x300mm:

2mm	3mm	4mm	5mm	6mm	8mm
5€	7€	9€	11€	13€	17€

Making drawings for laser cutting

- Directly in Inkscape:
<https://inkscape.org/nl/> (free and open) -> vector graphics (like pdf)
- Make assembly in Solid Edge or similar CAD program -> make drawing -> print in pdf -> open in Inkscape
- Advantage of CAD -> check that everything fits

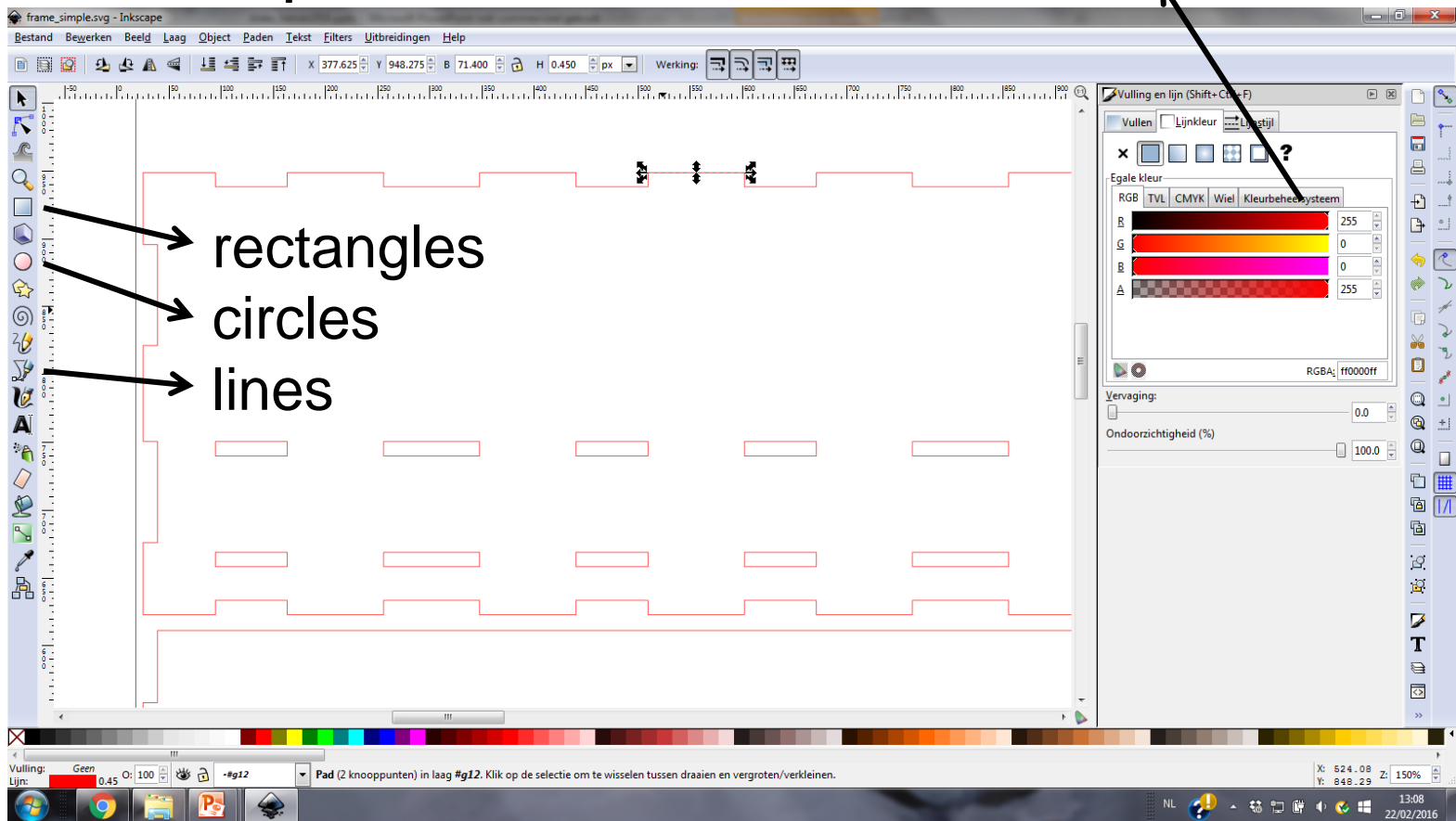
Making drawings for laser cutting



Making drawings for laser cutting

■ Inkscape:

red: RGB = 255,0,0



Making drawings for laser cutting

- Inkscape further information:
<https://inkscape.org/nl/learn/tutorials/>
- Ask for help
- Important points of attention:
 - Red = cut: RGB = 255, 0, 0!!
 - Black = engrave: RGB = 0, 0, 0!!
 - Draw circles for cables, LEDs, bolts...
- Customize your own frame