

Big Hand Planer (450x78mm)

-These plans are for my original Big Hand Planer (450x78mm) .Take the time to understand the plans, and how it works the tool.

-Plans are in metric units, you can generate plans in imperial units simply by changing the units to "imperial" in SketchUp under "window-model info", but the units will not work out to even numbers like they do in metric.

Instructions:

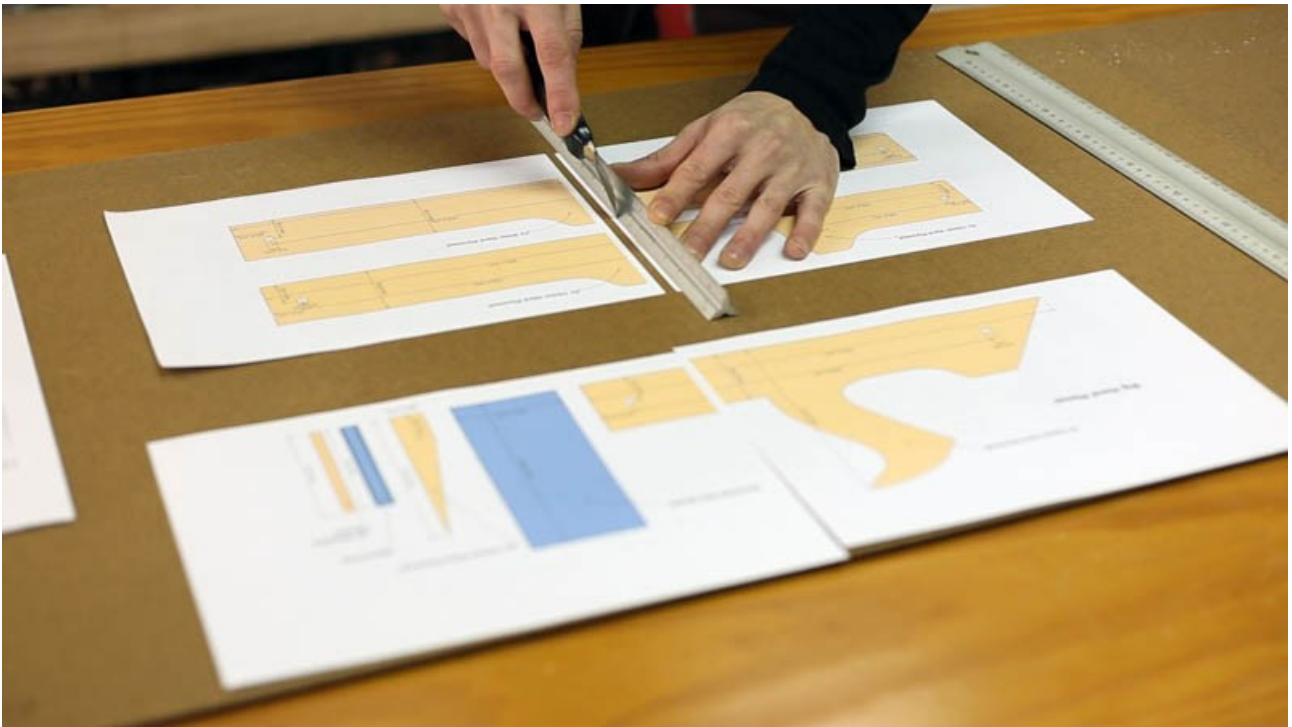
I had been searching the market for new hand planes to my workshop. There are several brands and models but they're usually so expensive tools, so after a long research on the internet, I figured out how to recycle my old cutting discs from my circular saw and plywood remains.

I started the design in Cad software, It should be easy to build and assembly, besides comfortable and stable. That's why I chose hard plywood glued by layers and an ergonomic handle built in the body itself. So well-cared for it will last a lifetime.

To build the blade I used an old disc from my circular saw. If you cut it carefully using water to keep it tempered. You'll get a sustainable and efficient edge. Take in mind that even though this blade can work as well as a commercial one it won't be as hard, so you will have to sharp it more often. The blade is 60mm wide so you can use it in long boards.

I have in mind to build a few models of different sizes for different jobs. 450mm, 350mm and other small ones in order to cover a lot of types of work.





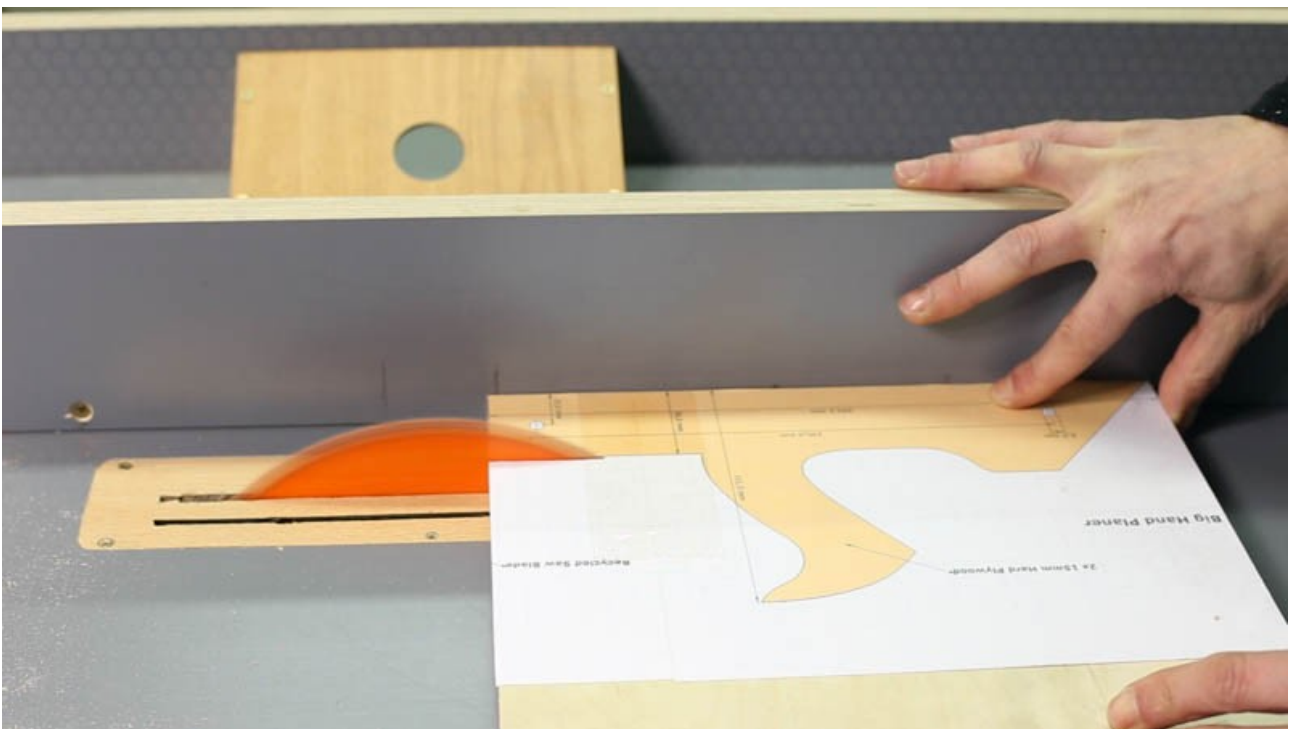
Once the plans are printed, check with a meter all measures are ok just to make sure they are in the right scale. Cut the frames taking care of the grid using a ruler, put them together by matching the grids using transparent tape.



Cut all the pieces using the cutting list. You can write a number on each piece to make the assembly easier. Remember to be careful with the saw table. Needless to say, all the pieces must be cut at exact size and squaring.



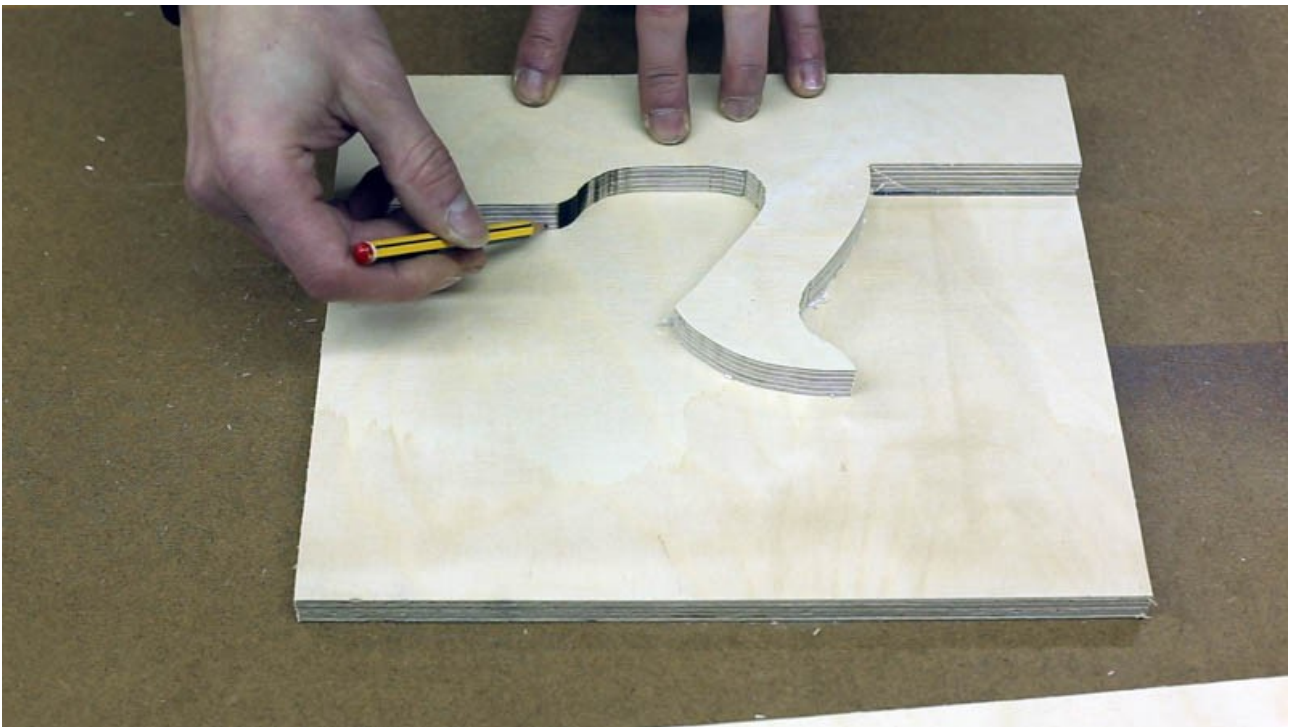
Glue all the templates to the hard plywood using spray adhesive



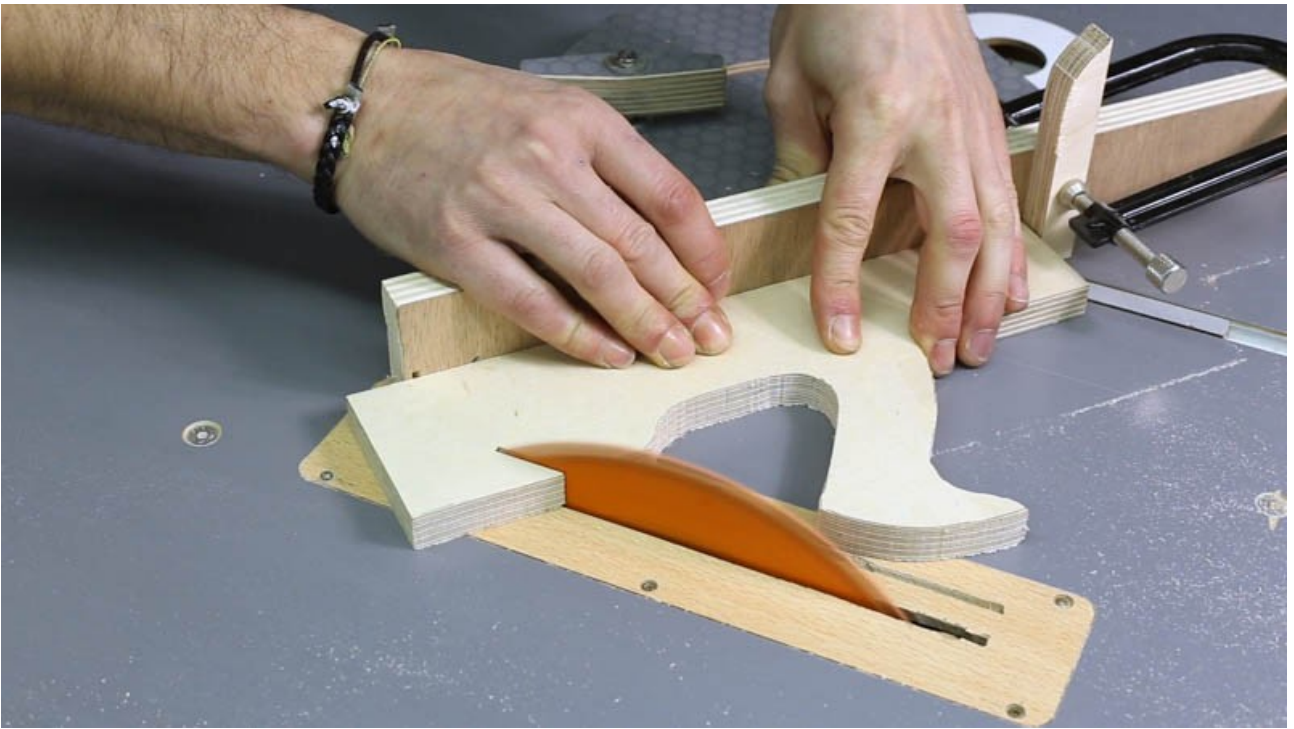
Cut all the pieces on the saw table.



You'll need a jig for the curved cuts.



You can use the pieces you've already cut as a template for the new ones



Cut the pieces for the hole of the blade on exact angle, you better use a miter gauge and a stop block to made them all equal



Drill the holes for the dowells to make the assembly faster, easier and accurate. Use a stop block again to make sure they all get exactly the same dimension.



Sand all the edges to remove all the little remaining wood fiber so we can get a perfect distribution of the glue and a better fit.



Apply the glue and get all the pieces together.



Put the dowells in place and cut them.



Hold it all with clamps



Once the glue is dry and we can start sanding.



Give the handle its final ergonomic shape to make it fit comfortably in your hand.



The more time you spend doing this the better the result will be.



It is so important at this step to leave the base where we will place the blade completely flat to avoid vibrations that could leave scratch marks when using the hand planer.



Pay careful attention here. With sandpaper glued to a wooden block, sand the base of the hand planer to leave it perfectly squared. If not, it won't work properly.



You can draw some parallel marks with a pencil so you can know when the job is done.



Here you can use a rasp to square the blade hole



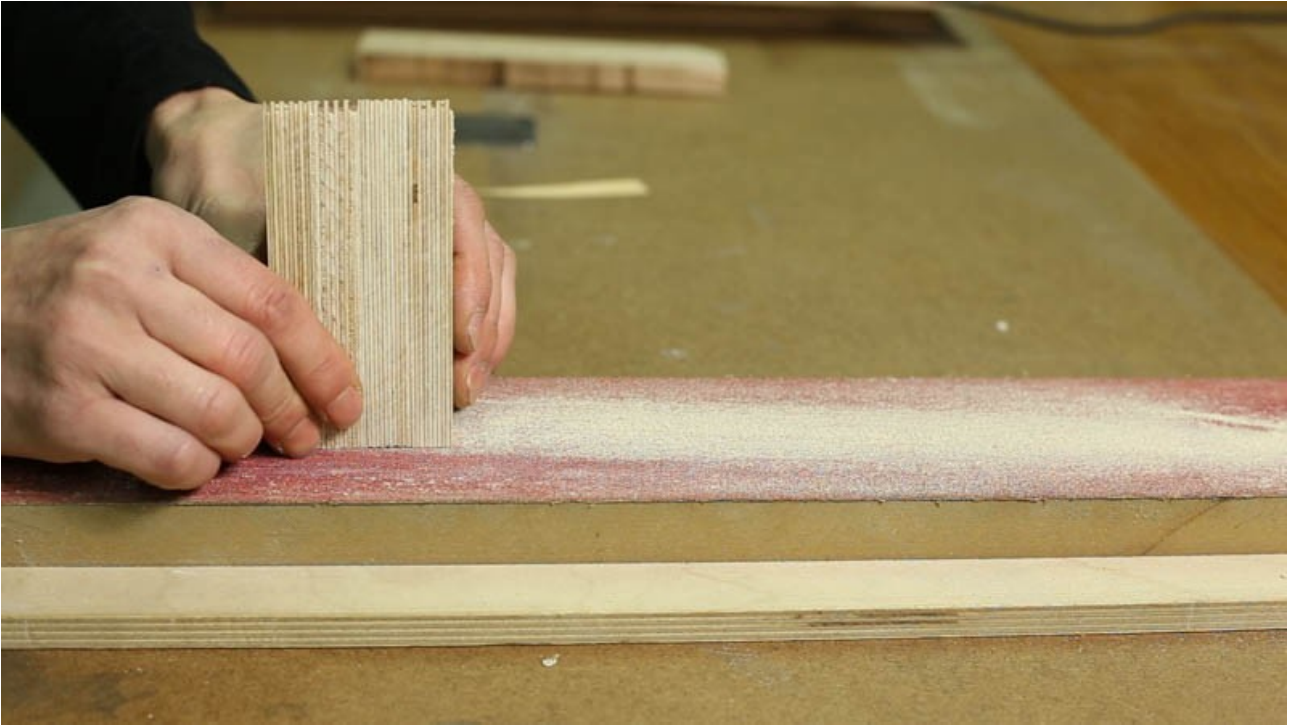
At this point, the varnish can already be applied. I used two coats of nitrocellulose spray lacquer.



Glue four pieces of plywood to build the wedge



Once it is dry, mark it and cut it on the band saw.



Sand it on the using the sandpaper



To make the blade you can recycle an old cutting disc from an circular saw.
You can use a wood template of the same size to mark the disc before cutting.



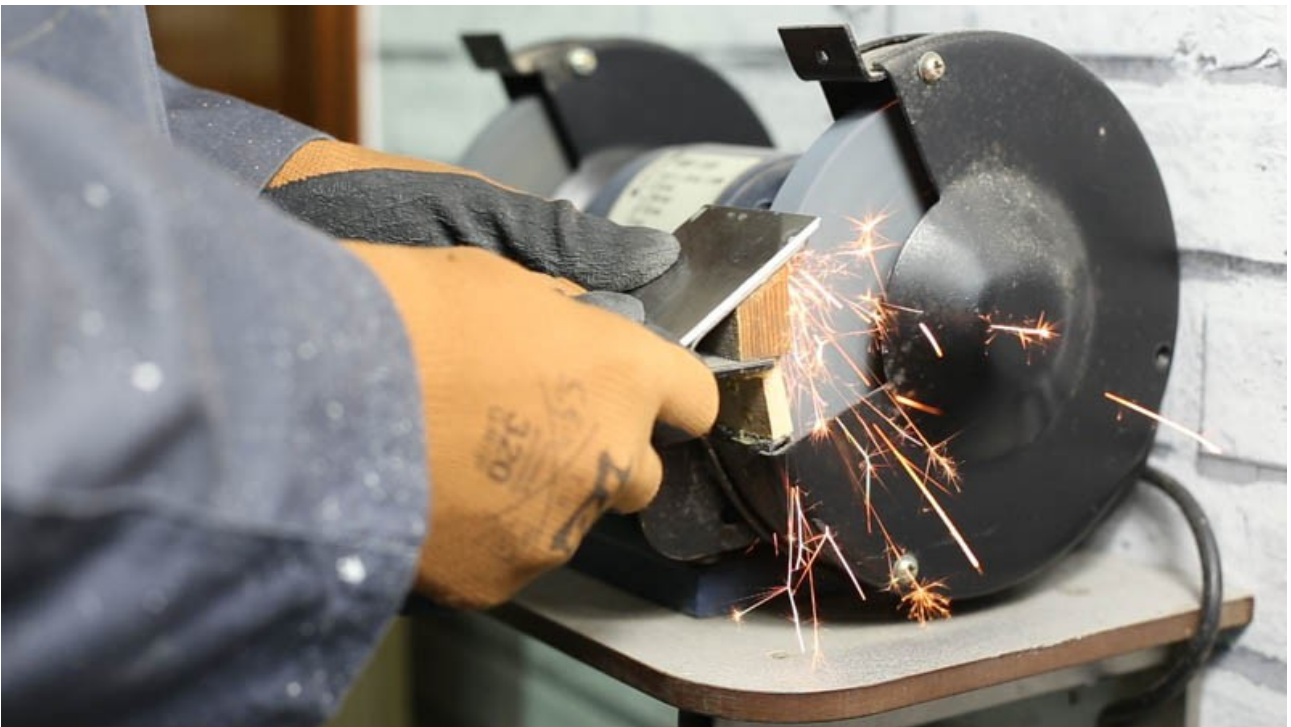
Use a pair of clamps to hold the disc firmly on a table. Don't forget to put on your gloves and safety goggles to protect your hands and face, remember the grinder is a dangerous tool.



You'll need to have some water near to cool the disc and keep it tempered



Sand it with the belt sander making sure it remains squared.



Now, use the emery to achieve the right angle of the blade. Don't forget check the squaring and use water to keep it cold



Sharp the blade using a two diferent grains (fine and coarse) sharpening stone and oil. Make sure all the surface is in contact with the stone in every moment.



You'll knnow you're doing it right checking the reflections on the edge.
It should takes at least 10 minutes each side.



Now we can cut the steel pipe.



And we will be ready to finish the assembly and try it.



To achieve a good set up, the wood chips thickness should be about 0,25mm.
Take in mind that even though this blade can work as well as a comercial one it won't be as hard, so you will have to sharp it more often

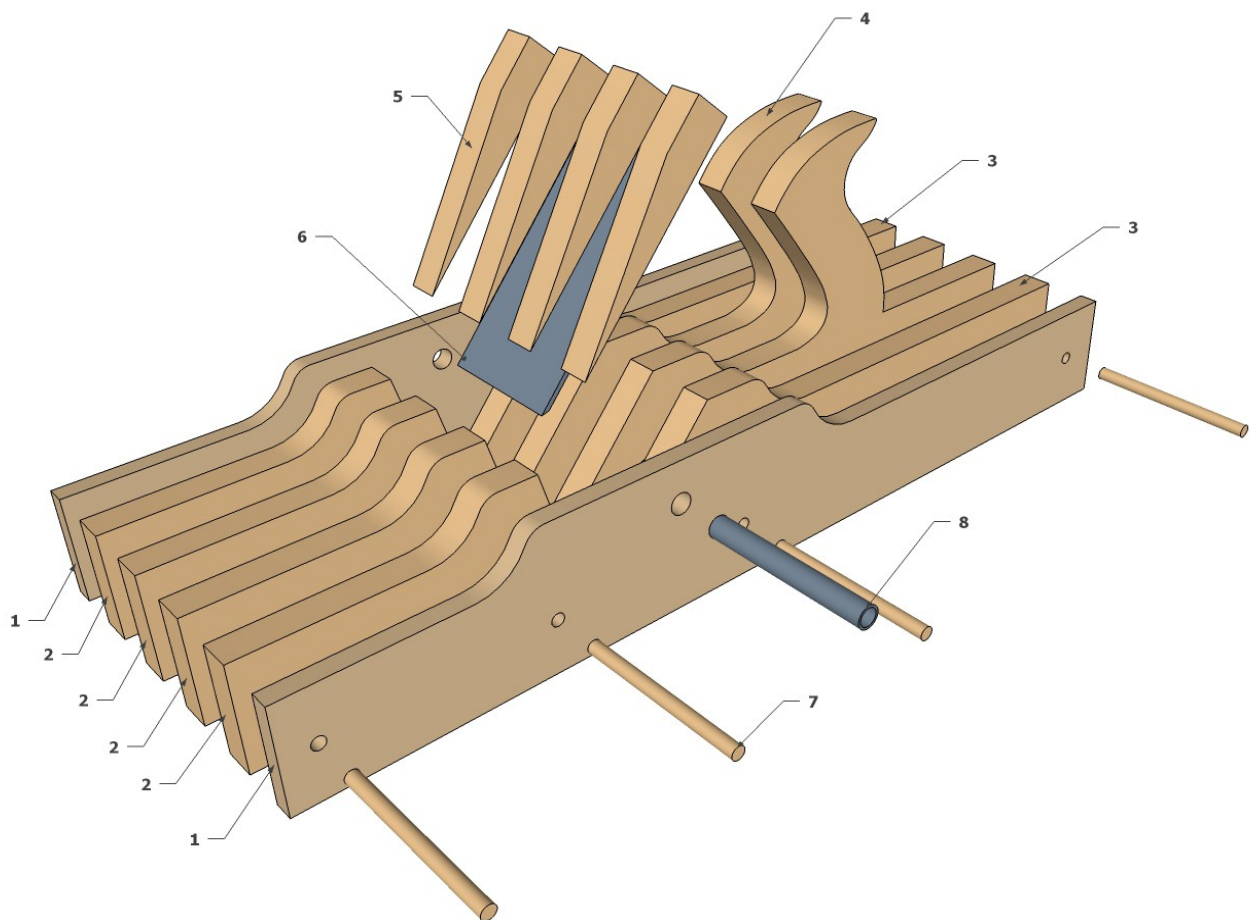
Big hand planer

Materials Needed:

A sheet of 500x150x9mm Hard Plywood
A sheet of 500x500x15mm Hard Plywood

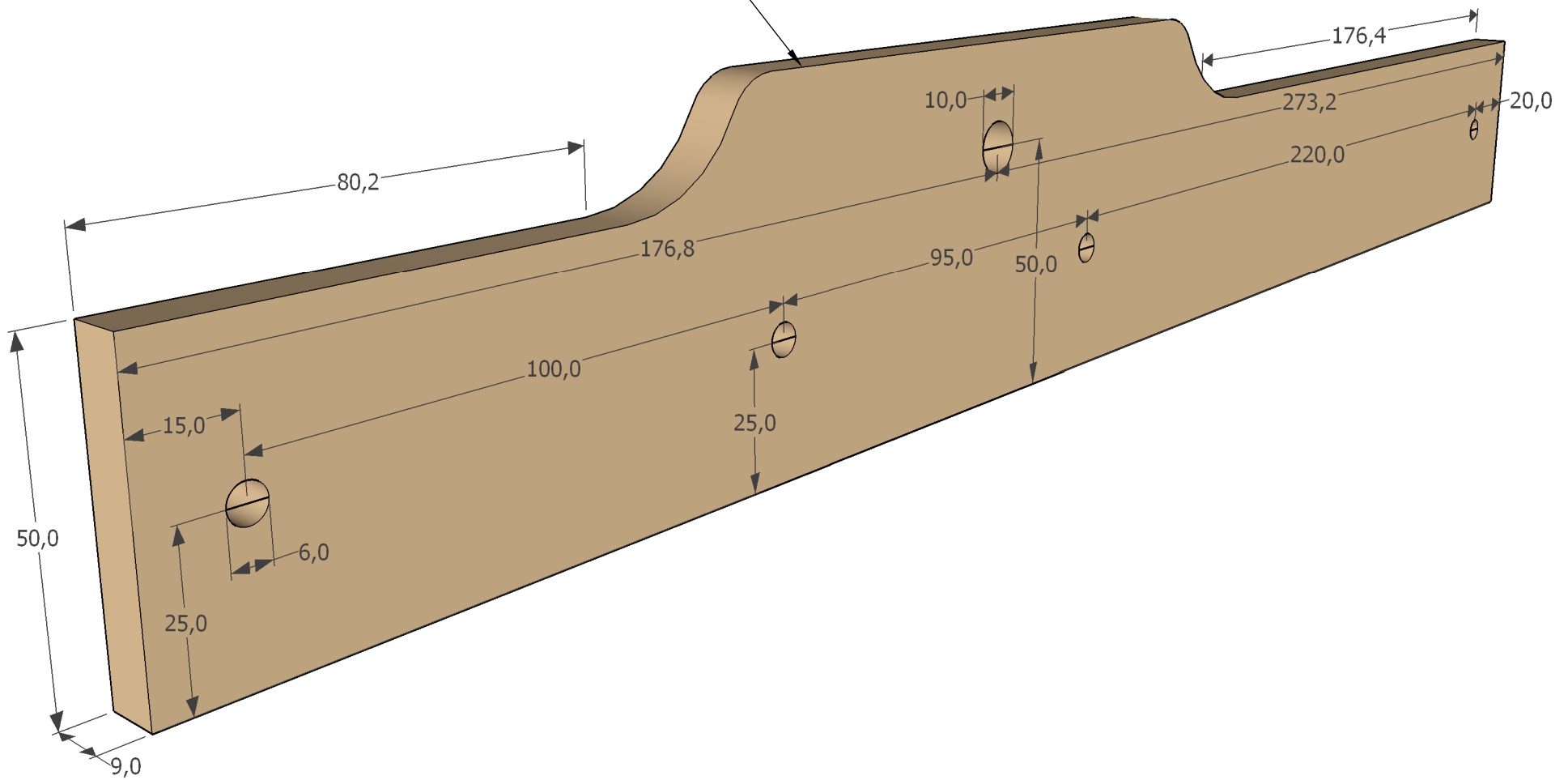
Cutting list:

- 1- 450x70x9mm (2Pieces) Hard Plywood
- 2- 150x70x15mm (4 Pieces) Hard Plywood
- 3- 292x70x15mm (2 Pieces) Hard Plywood
- 4- 292x151x15mm (2Pieces) Hard Plywood
- 5- 114x18x15mm (4 Pieces) Hard Plywood
- 6- 138x60x2,2mm (Blade) Recycled Saw Blade
- 7- 78x6mm (4xDowels) Wood Dowels
- 8- 78x10mm (Stell Pipe)

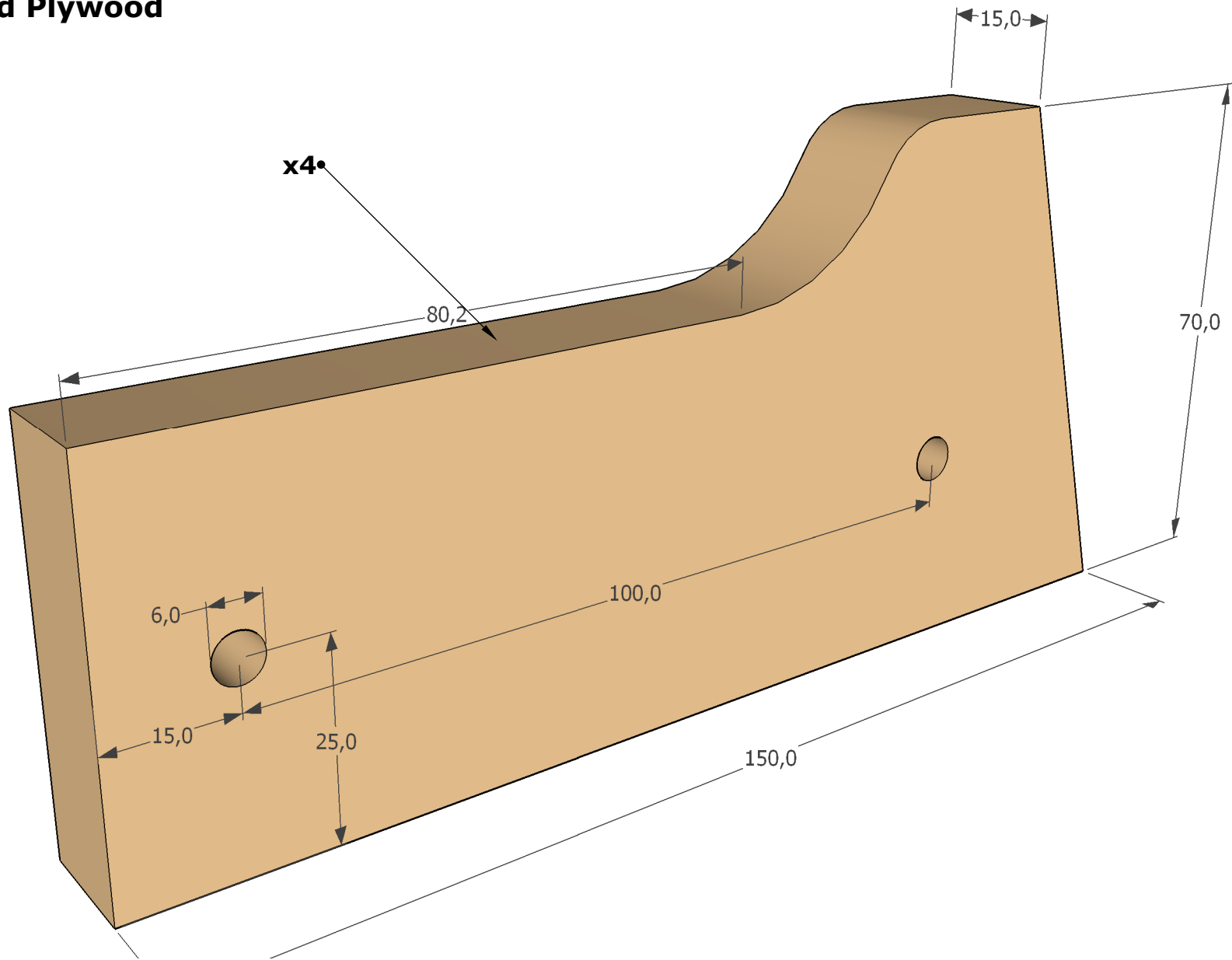


9mm Hard Plywood

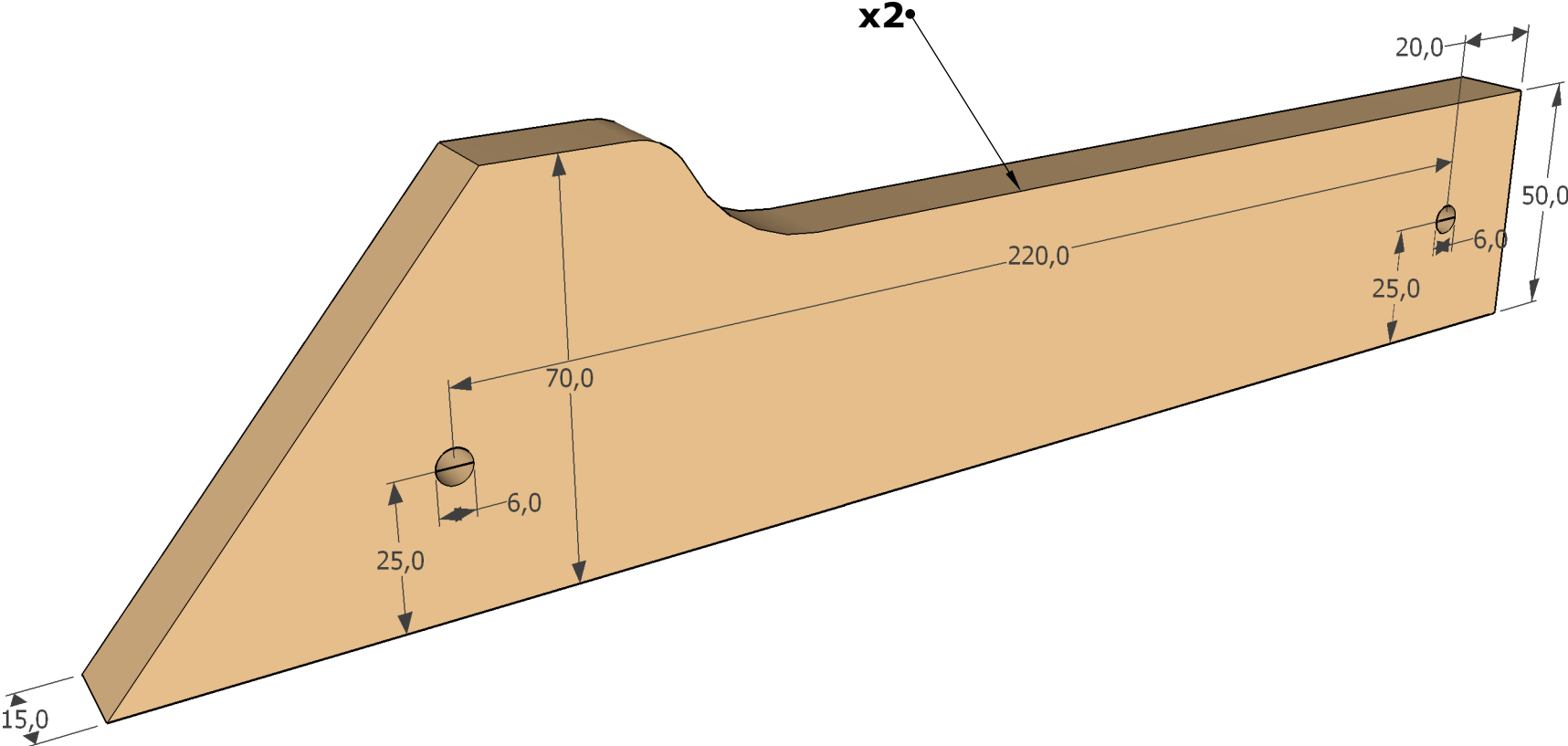
X2



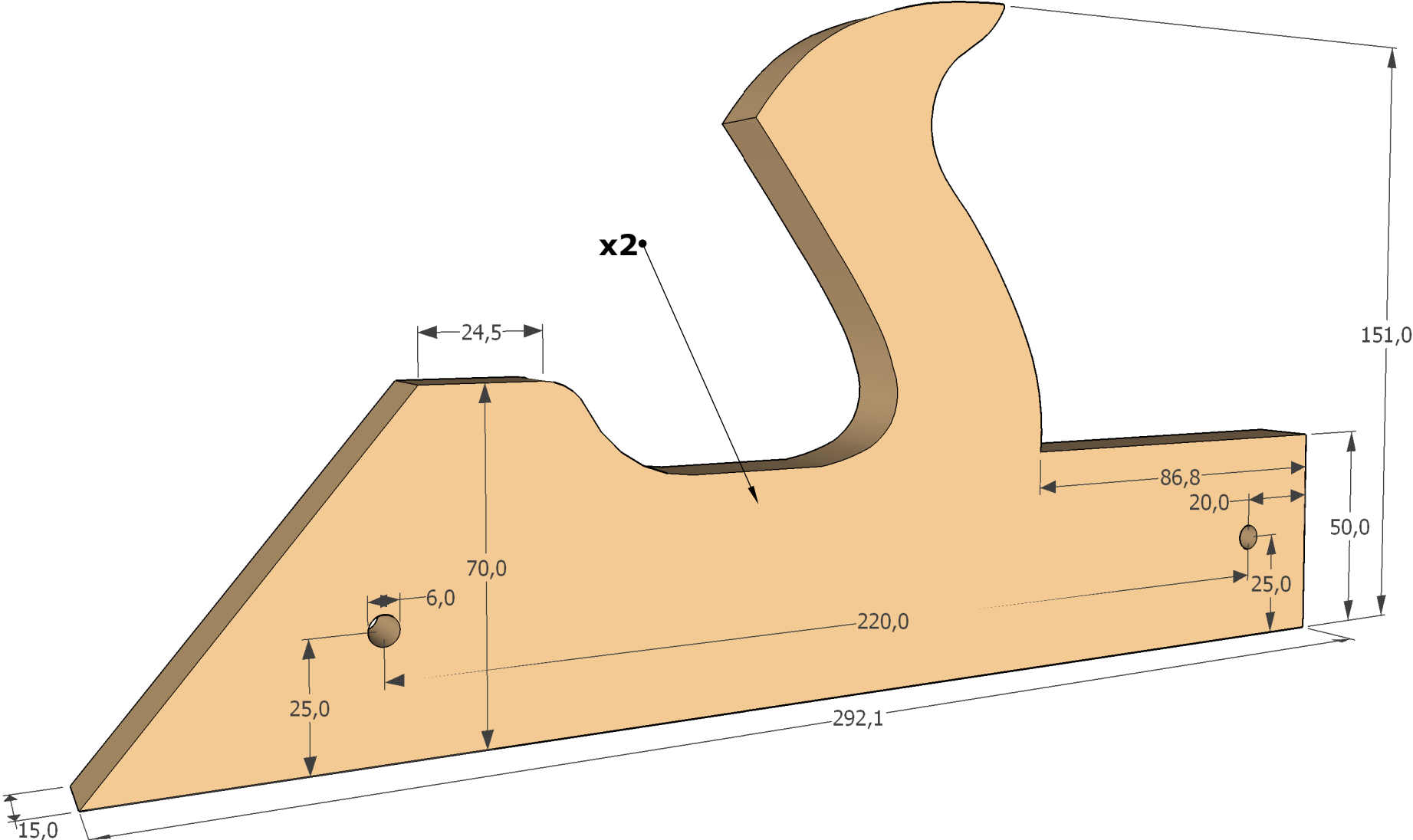
15mm Hard Plywood



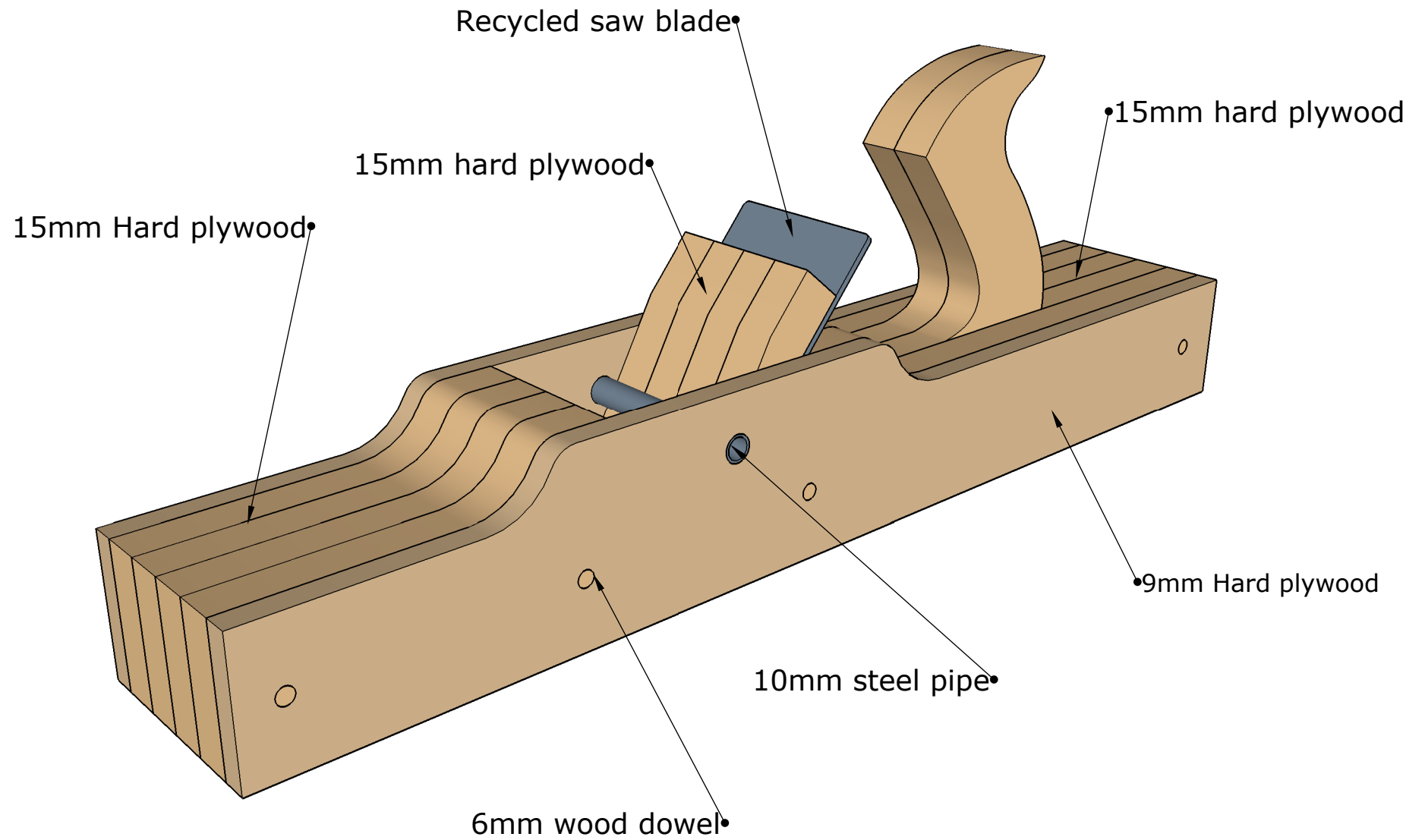
15mm Hard Plywood2

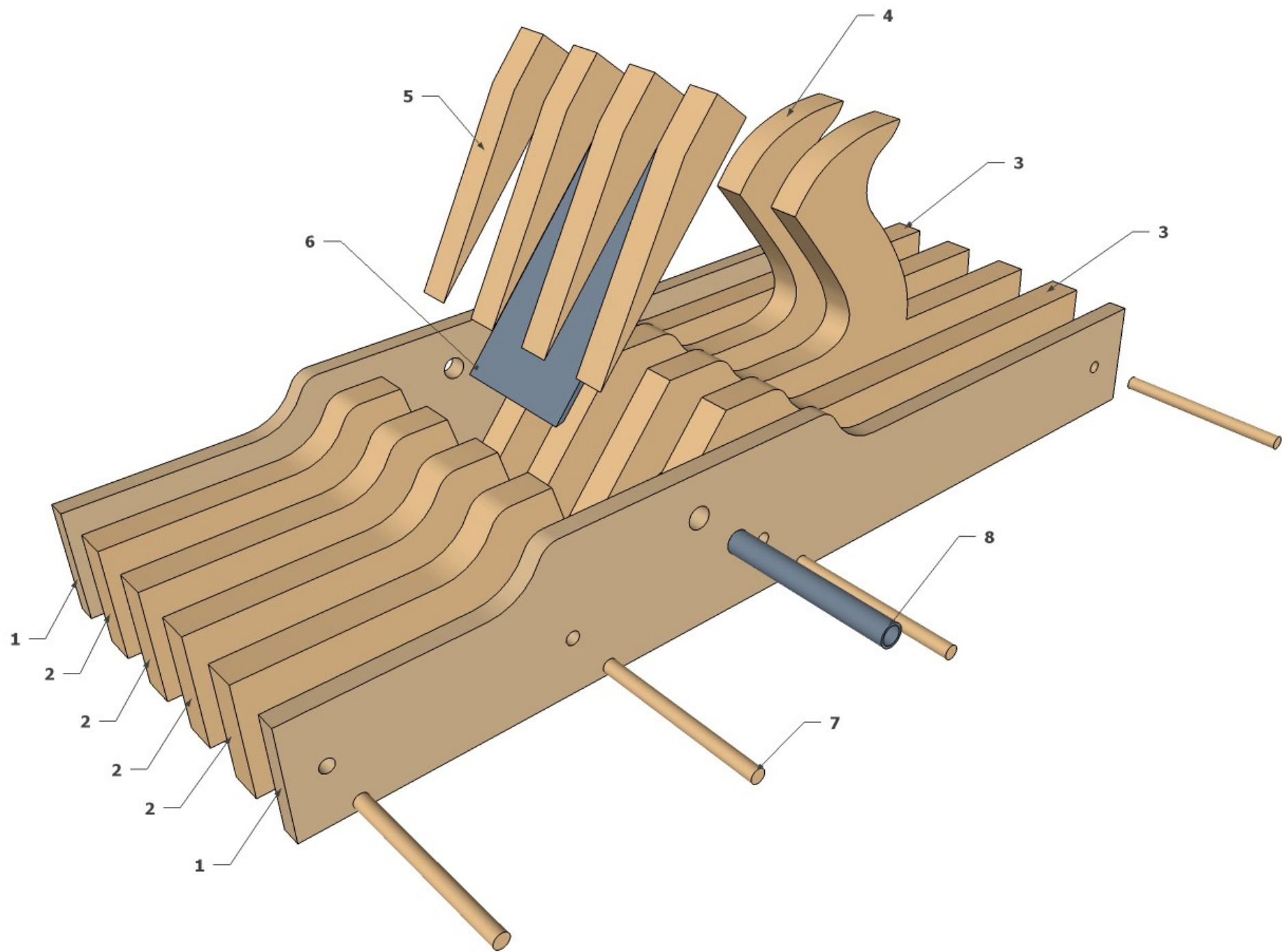


15mm Hard Plywood3

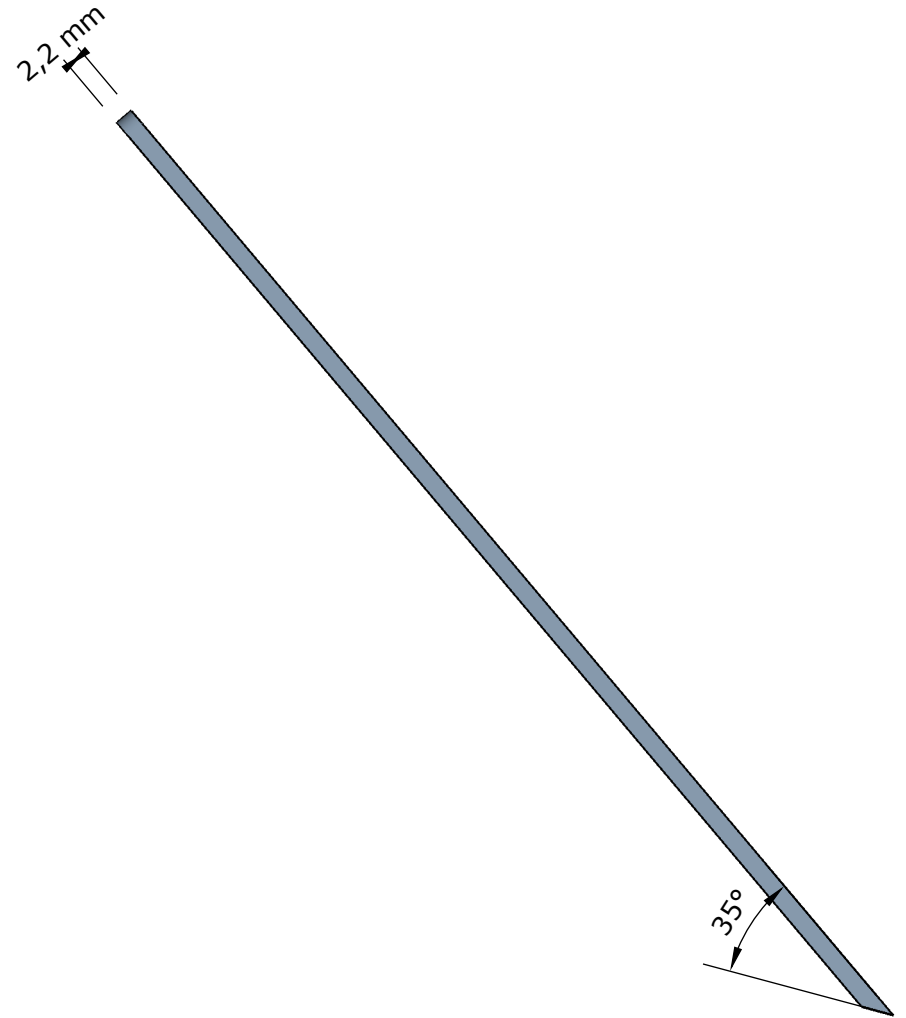
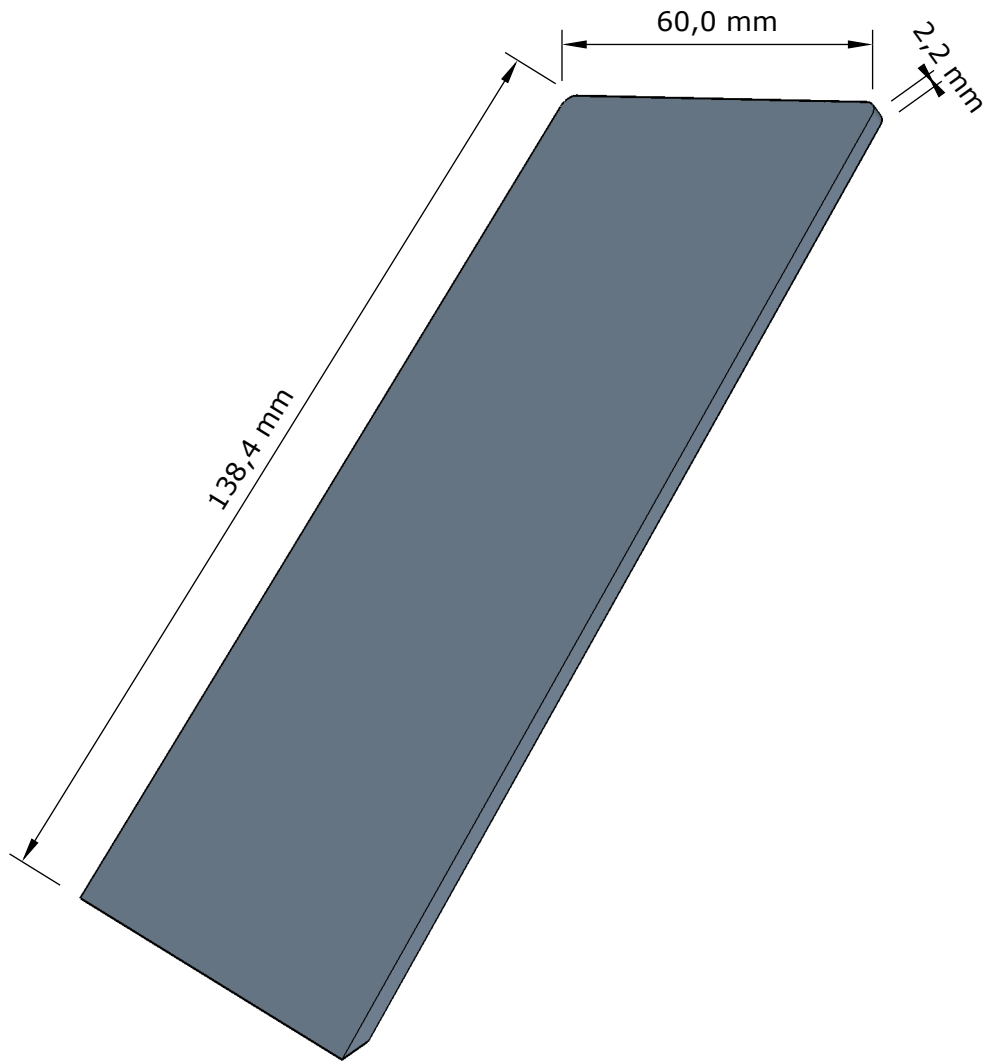


Big Hand Planer Iso

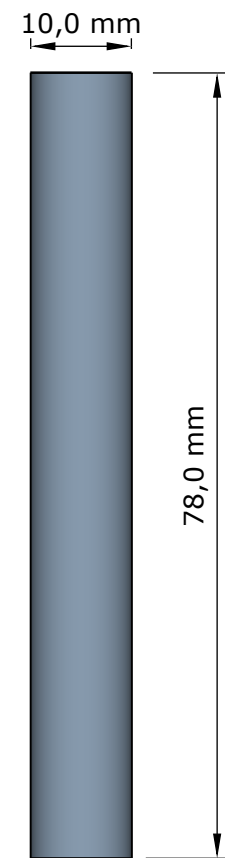
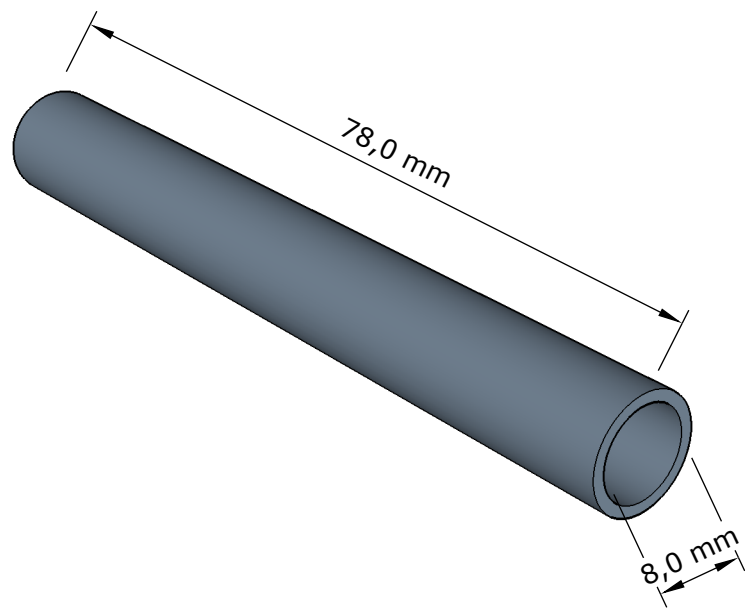




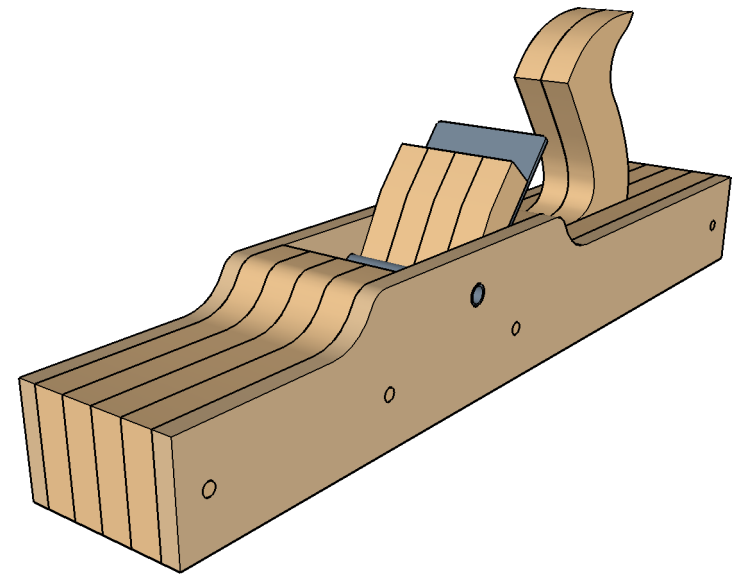
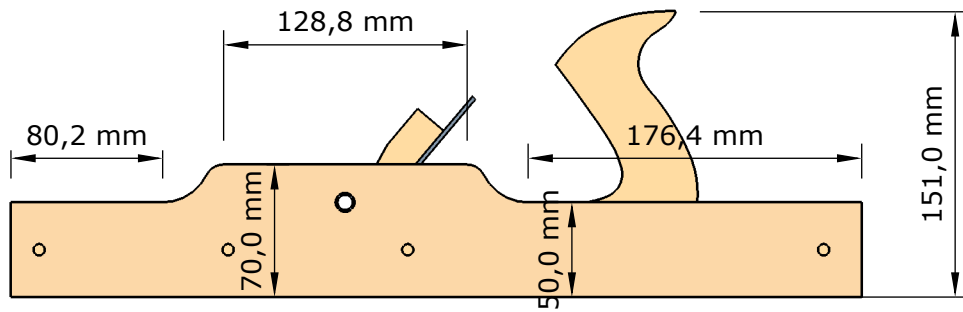
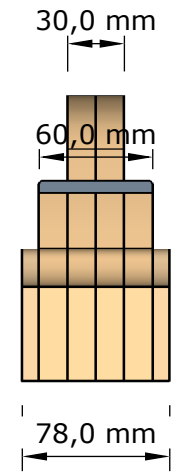
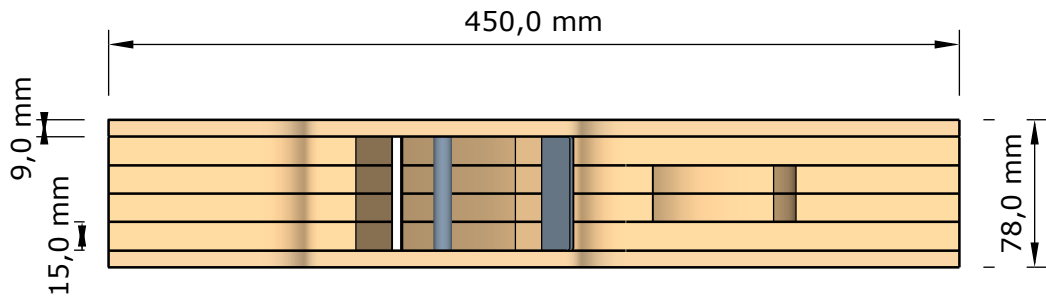
2,2Mmm Recycled Saw Blade



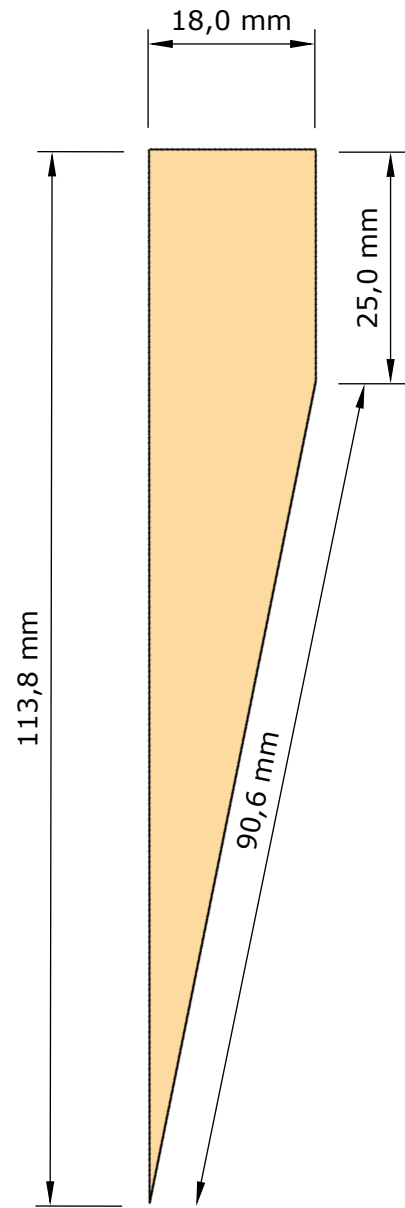
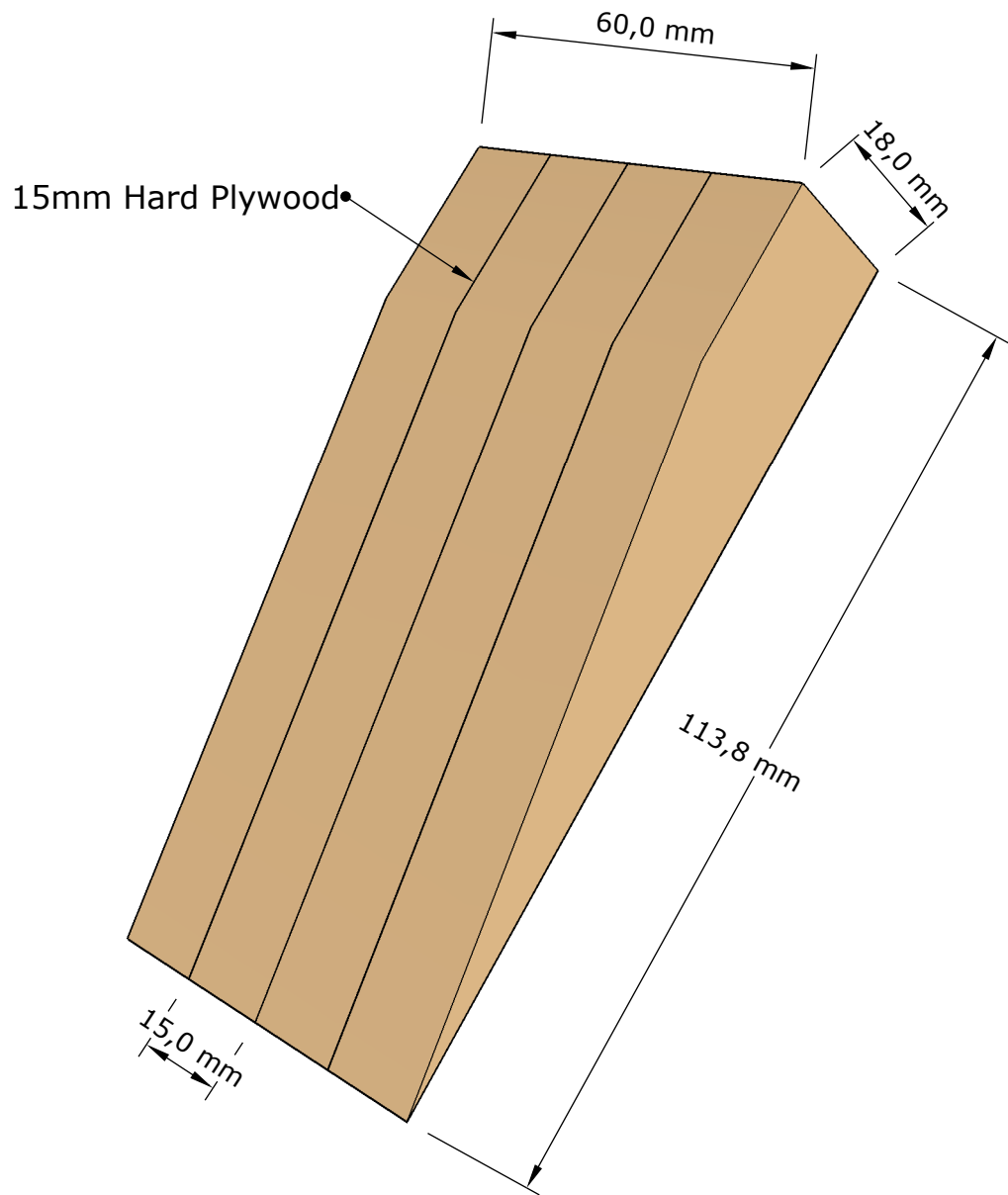
Steel Pipe



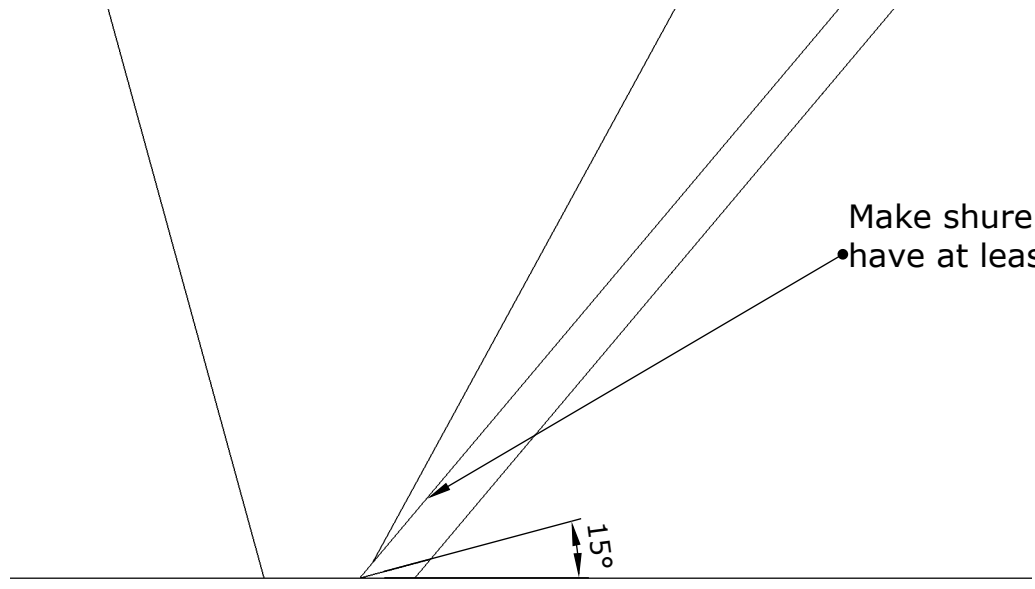
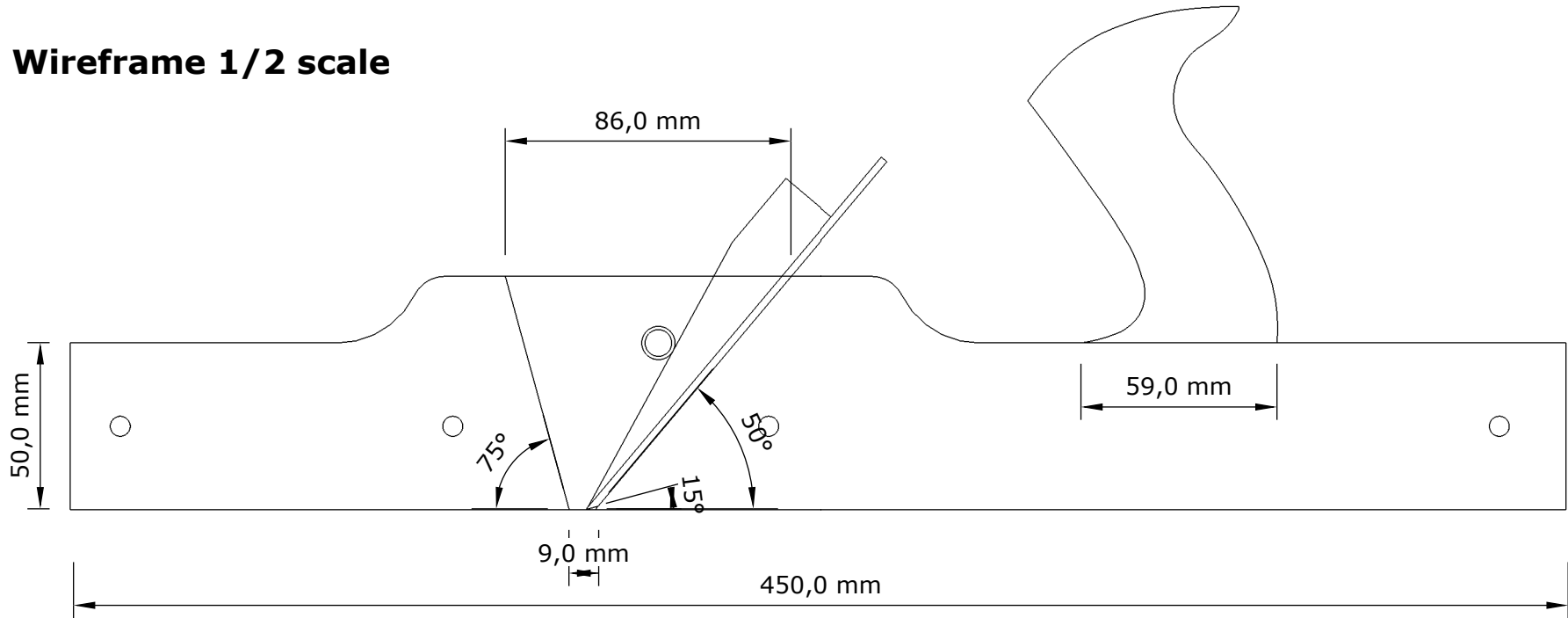
Views 1/4 scale



Wedge



Wireframe 1/2 scale



Make shure the angle of the blade
• have at least 15 degress inclination.

Wood Dowels

