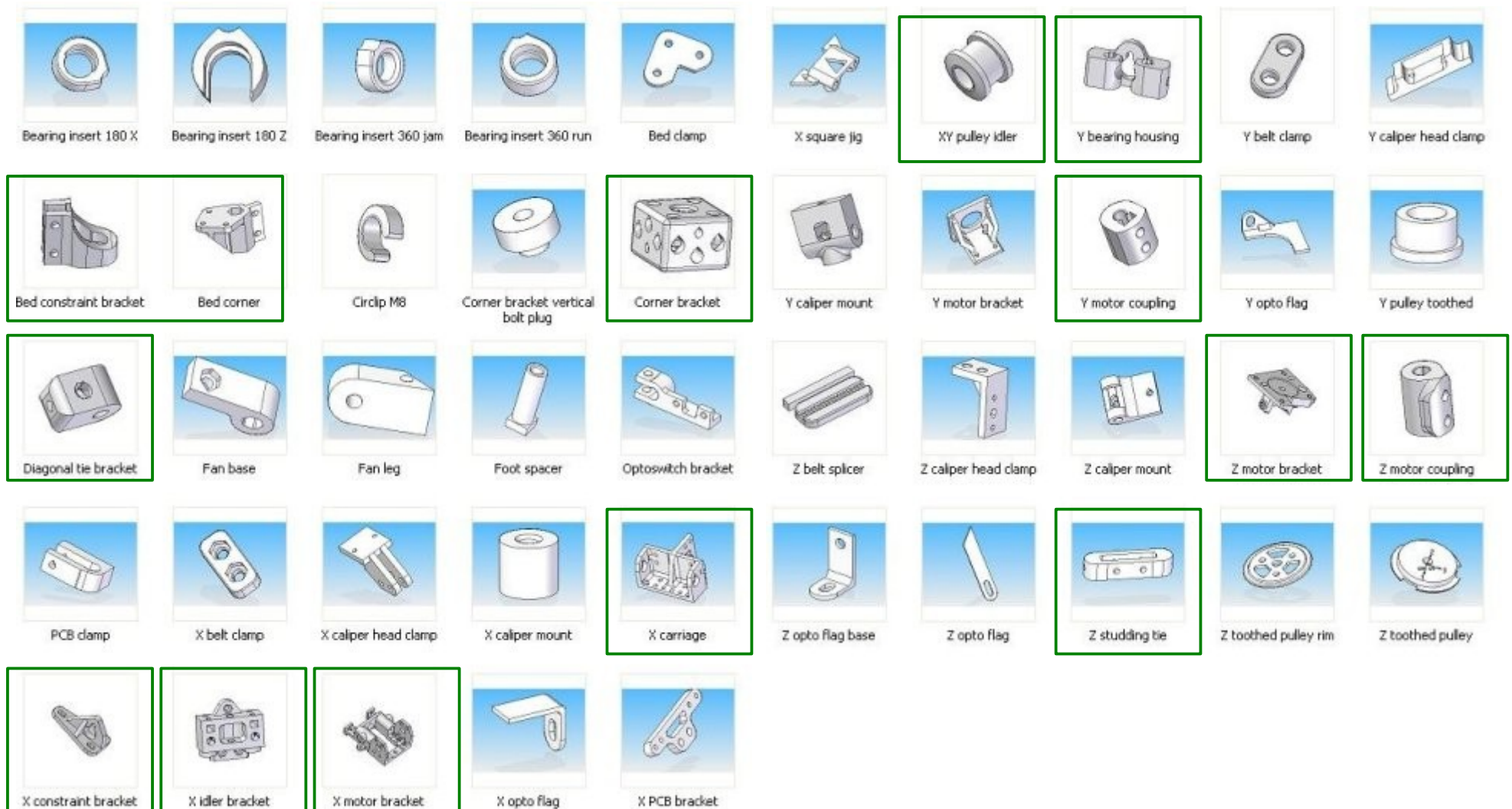
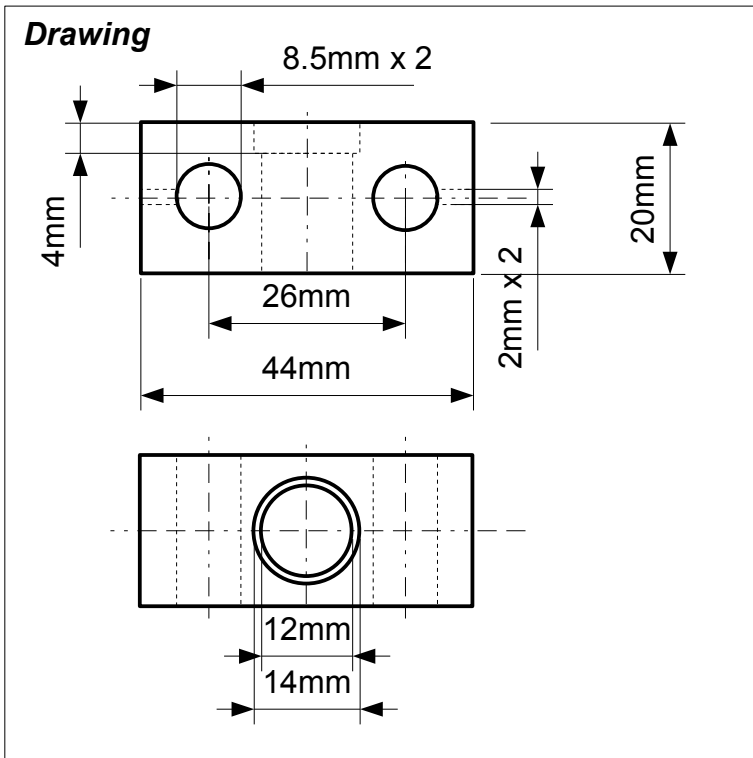


# Components

- This guide describes alternatives for some of the RP parts in Darwin using other materials. The components that are described are marked with a green square in the overview below
- See also <http://www.reprap.org/pub/Main/CartesianBOM/RPpartsglossary.JPG>



# Y Bearing Housing



**Materials:** 19mm plywood, bearing (14mm outside diameter, 8mm inside),  
**Tools:** power drill, drill press, clamp, drill bit: 2mm, 8.5mm, 12mm, 14mm, jigsaw, ruler or pair of calipers, pencil, piercer  
**Additional:** wood glue  
**Gives:** 3 x Y bearing housing

Cut 3 pieces of plywood of 50mm x 20mm. Mark the location of the holes. Clamp the piece the clamp and drill the 2 x 8.5mm holes first. Then flip the piece, clamp it again and drill the 14mm hole - **just deep enough** so the bearing fits in (approx. 3-4 mm)

Put in the 12mm drill bit and use the center of the 144mm hole to align and drill through.

Finally, drill the 2 x 2mm holes on the sides. These can be used to put in wood screws to fixate the housing

Next step is to put in the bearing. Add a little bit of glue on the outside of the bearing and lightly press it in the 14mm hole until it tightly fits. Check if you can rotate the inner part of the bearing freely.

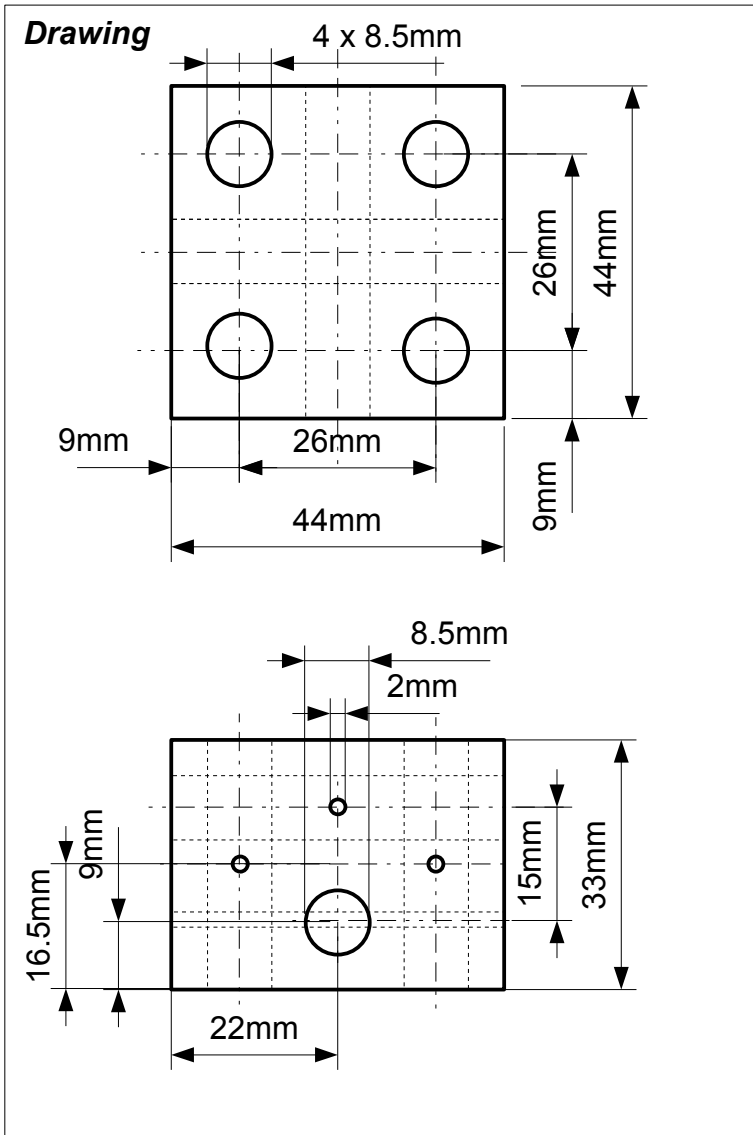
Let the glue dry before attempting to put in a 8mm rod

Left the finished part with bearing



Bearing

# Corner Bracket - 1



Materials: 44mm x 44mm hardwood

Tools: power drill, drill press, clamp, drill bit: 2mm, 8.5mm, good saw (a bandsaw or circular saw would be good), carpenter's square, marker pen, ruler or pair of calipers, pencil, piercer

Gives: 8 x Corner Brackets

*Note: wood is probably not the best alternative for this part. Plastic or aluminum would be stronger but also requires better and more expensive tools*

First, cut some 33mm block from the wood beam. Since this is wood, it is very likely that it is not entirely angular. But it is usually possible to find 2 faces of the blocks that are. Use the square to find these 2 faces, and mark that corner. This is going to be the base for clamping. See also the images below.



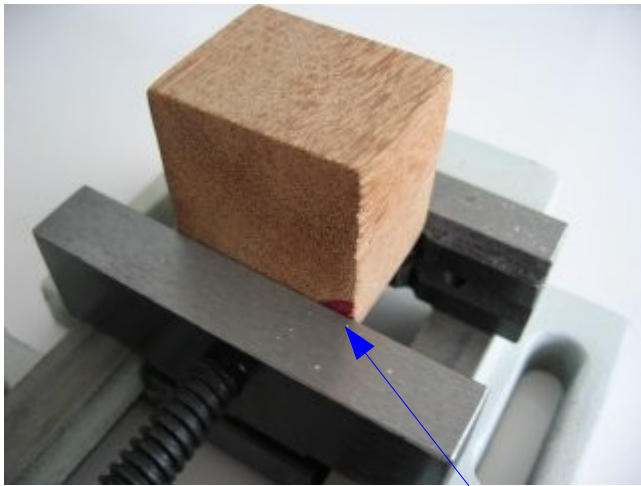
Bad Square



Base mark

Good square

# Corner Bracket - 2



Base mark

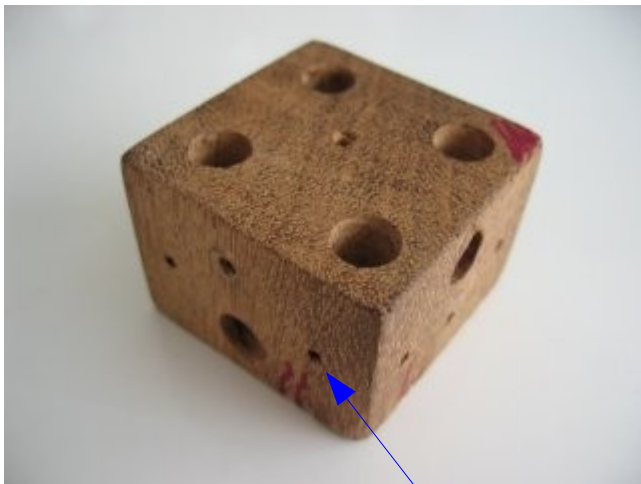
Next, mark the 2 x 8.5mm and the 3 x 2mm holes on the sides that need to be drilled as shown in the drawing. Pierce a small dent in the wood for all the marks. Then mark the 4 x 8.5 holes on the top and pierce them as well.

Now clamp the block **with one of the base sides down** in the clamp and drill the first 8.5mm hole. See the top image left.

Unclamp and rotate 90 degrees so the other side of the base is down in the clamp. Drill the other 8.5mm hole. This more or less ensures that these 2 holes are perpendicular to each other.

Unclamp and drill the 4 top holes. When all is done, switch the drill bit and drill all the remaining 2mm holes. These can later be used to put in a screw to fix the corner bracket to the rods horizontal and vertical rods.

The finished block is on the image left below.



2mm holes