

Fixperts

Wheelchair PhotoStick

Taking photos easily
with a smartphone
from the wheelchair

Building instructions

by Marva Tuval and Tamir Glass

HiT

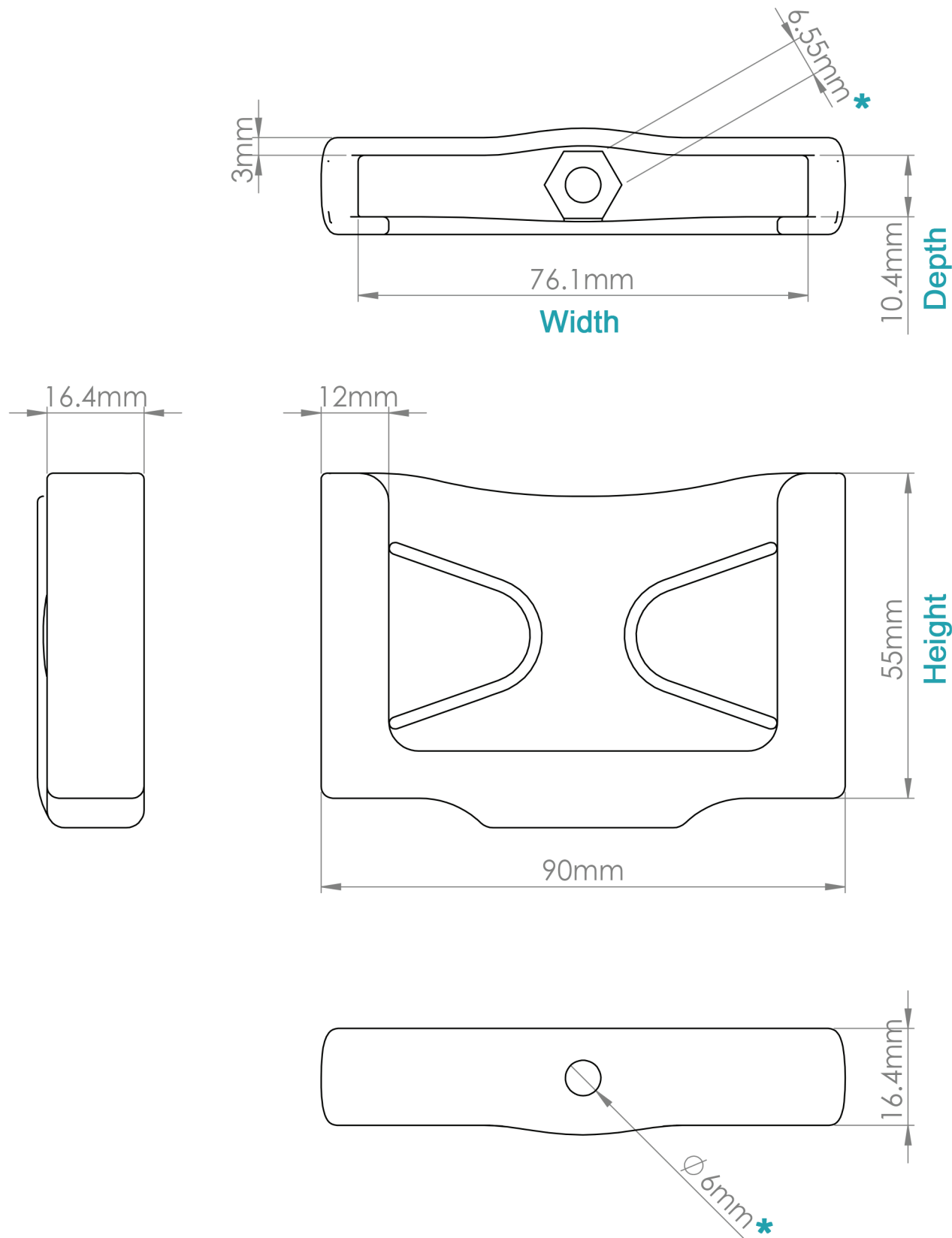
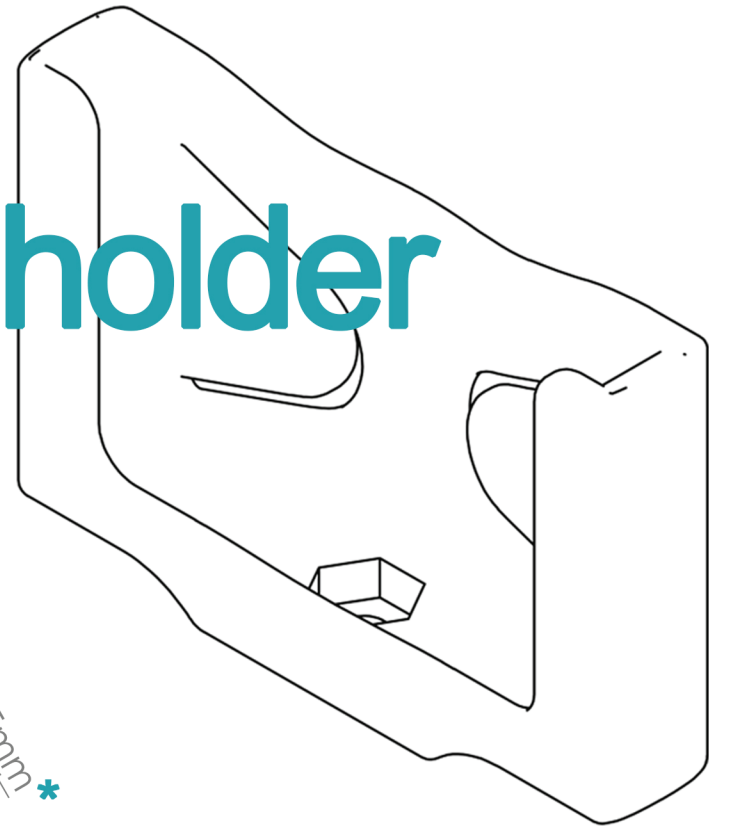
Holon Intitute of Technology
prof. Gad Charny and Yael Avni



[1]

3D Printed phone holder

Measurements compatible with LG G3



* To fit a similar bolt size and nut size.

To adjust holder size to fit other types of smartphones, change the “depth”, “height” and “width” values in the SolidWorks part file.

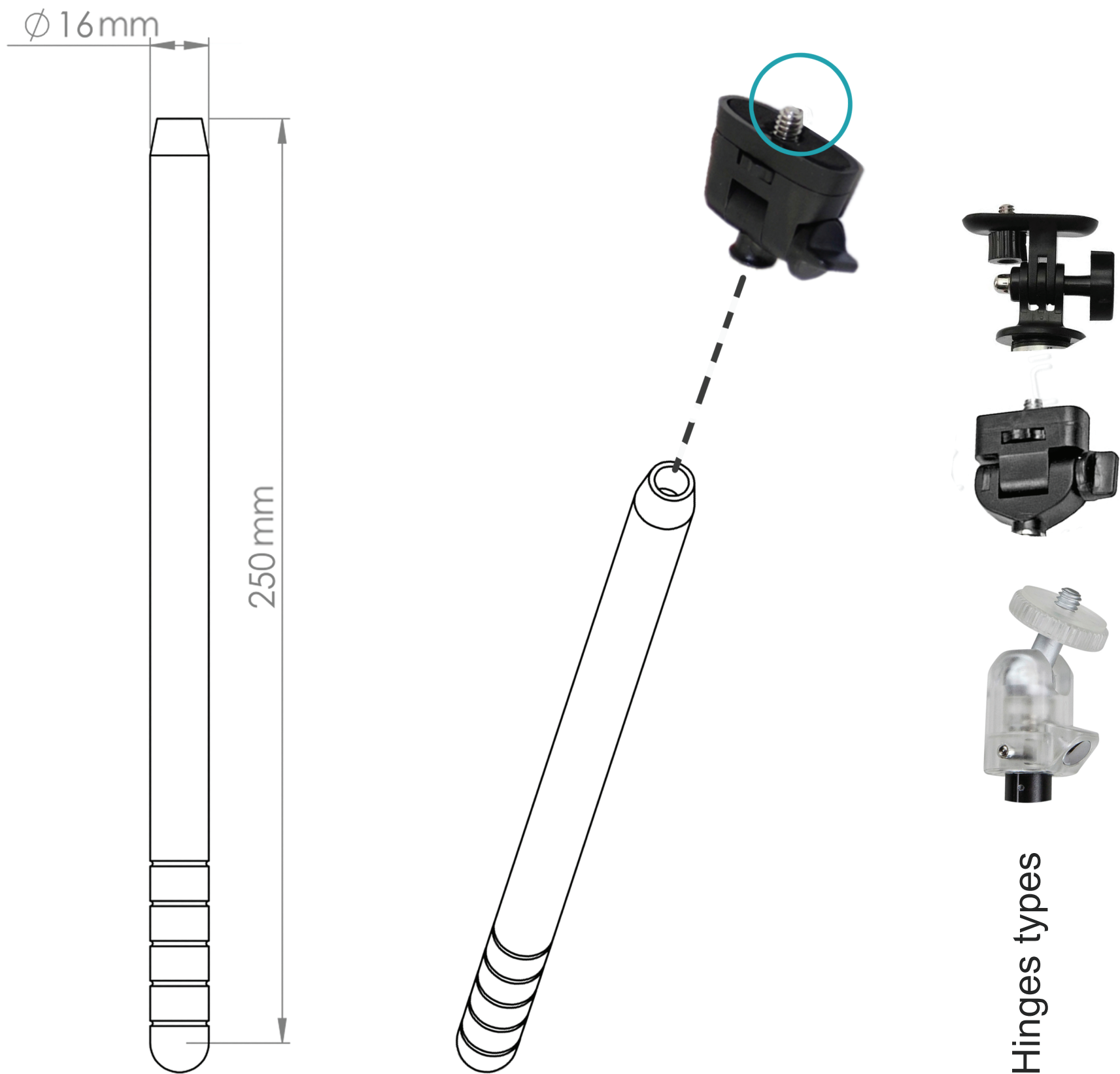


Make sure measurements are slightly larger than the actual size of the phone (a gap of ~1.5 mm) to allow an easy insert when in use.

[2]

Stick and Hinge

16mm diameter PVC rod, 25cm long, round on one end
Ready-made hinge taken from a common selfie stick



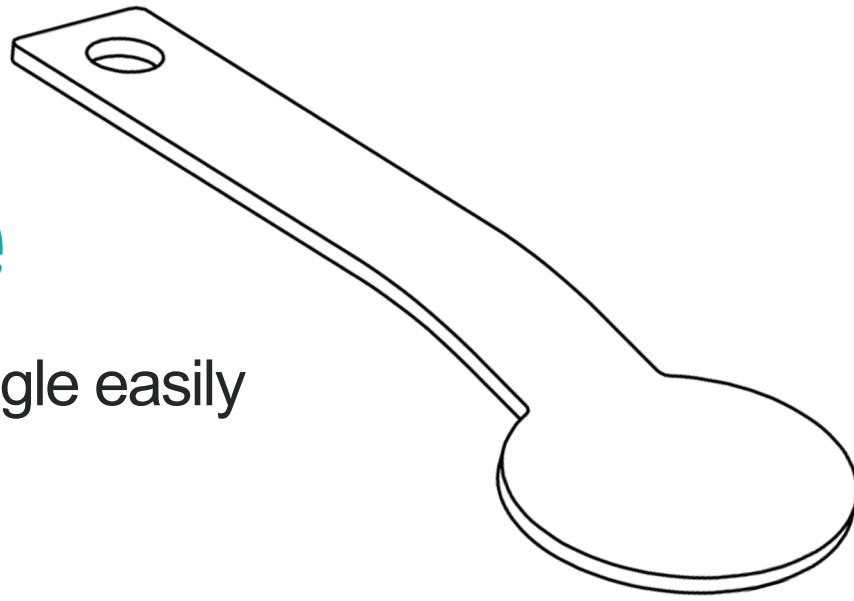
The hinge can vary in size and type, but should always have a bolt on top, to which the phone holder [1] will be screwed.

To join the stick and the hinge easily, drill a hole at the top of the stick.

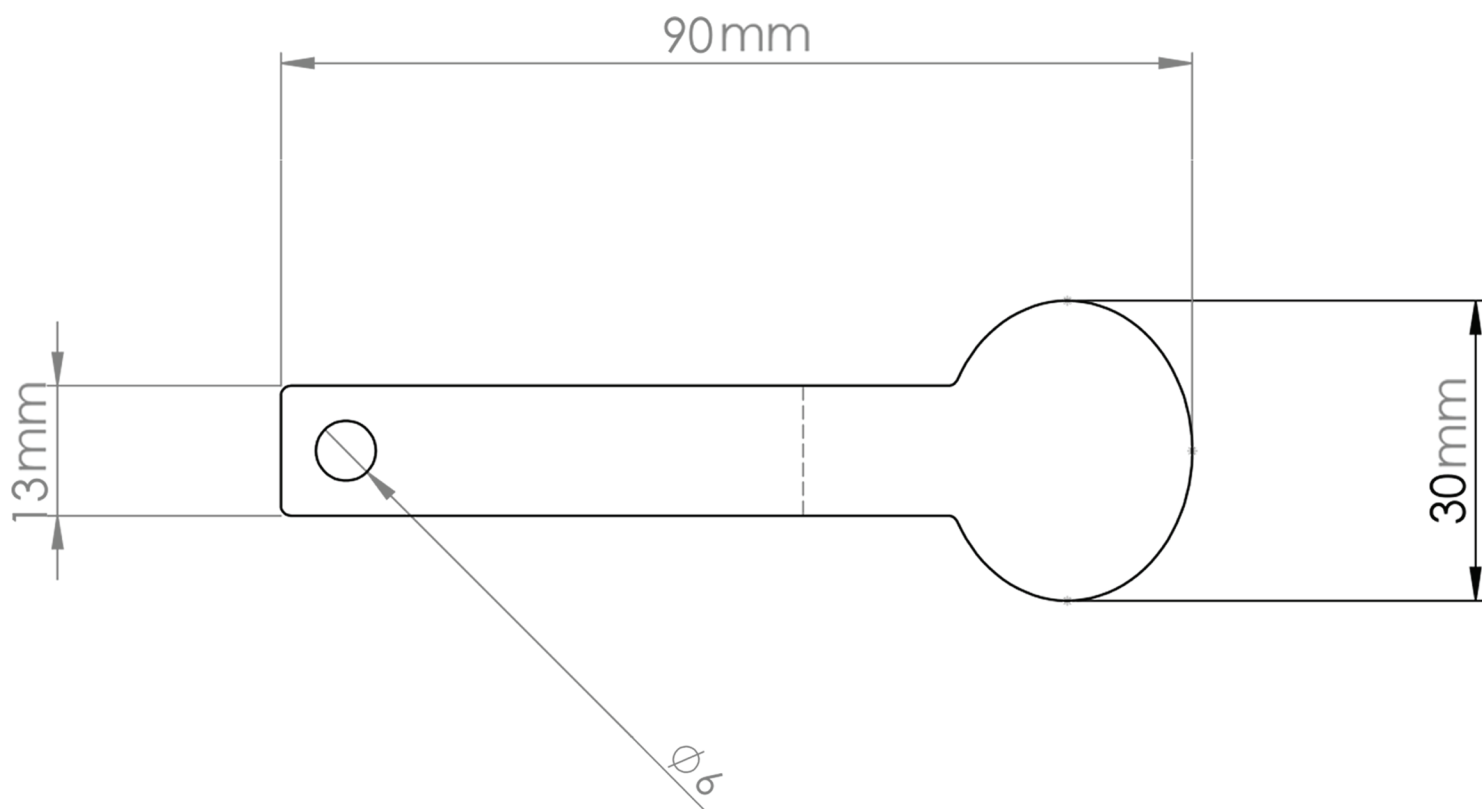
[3]

Handle

Adjust shooting angle easily



[1] Cut metal sheet (1.5 mm thick) to measurements and drill a hole



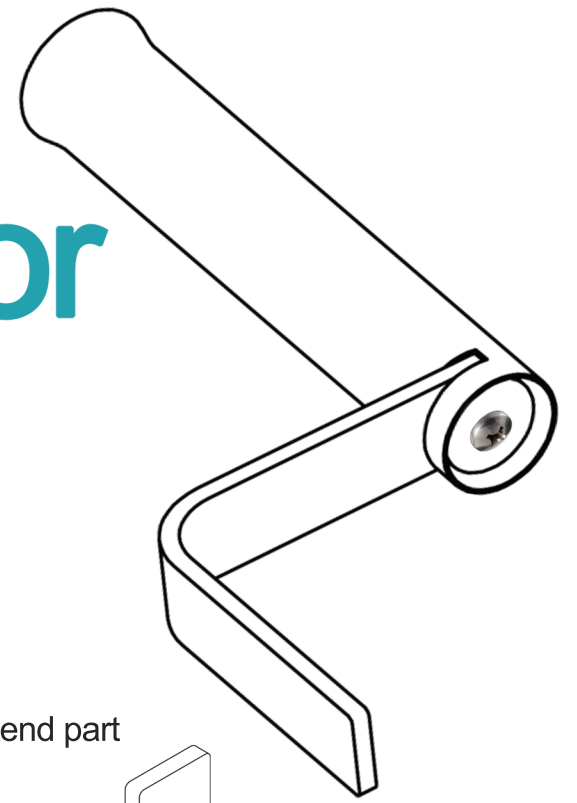
[2] Bend handle slightly (for a comfortable grip)



You can also cut the handle using a laser cutting machine, with the provided "handle.dxf" file

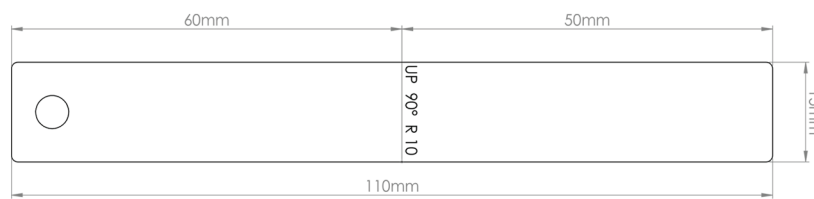
[4]

Wheelchair connector

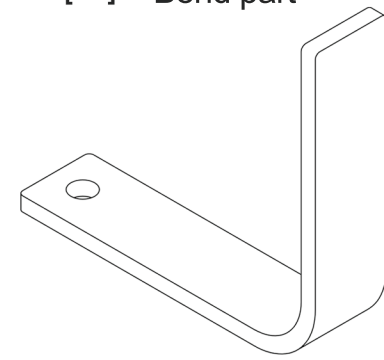


Part 1

- [1] Cut a flat metal bar (3mm thick) to measurements and drill a 5mm hole at one end



- [2] Bend part



Part 2

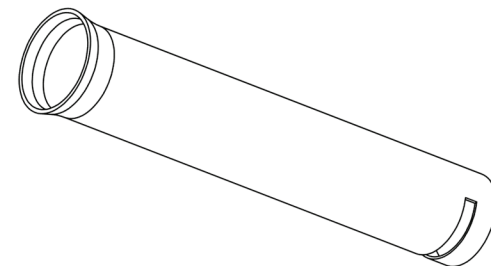
- [1] Cut a PVC tube (19mm inner diameter) to measurements



- [3] Make a cut as specified (to fit part 1)

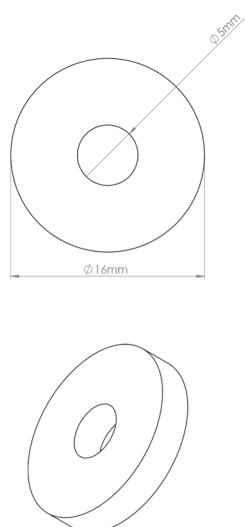


- [2] Heat one end of the part and slightly widen it

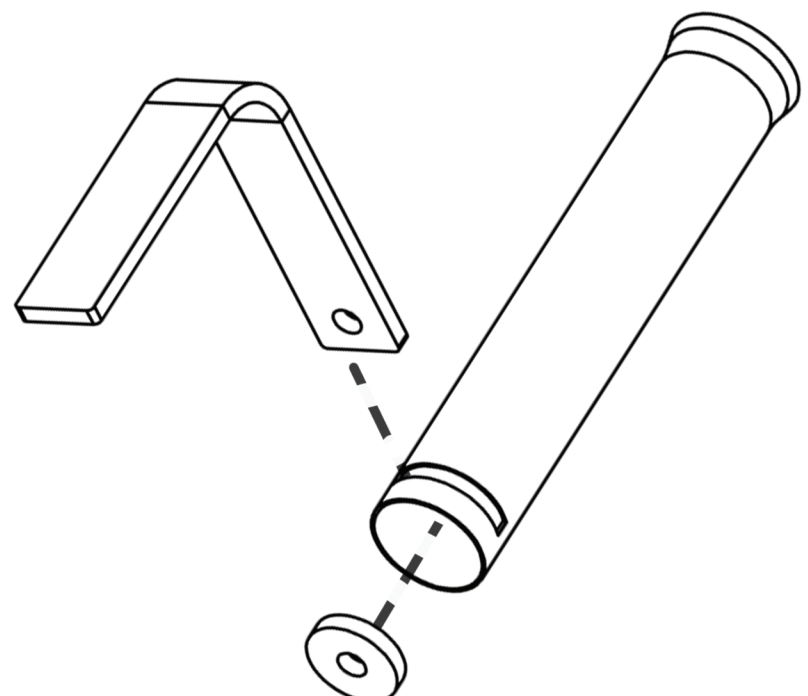


Assembly

- [1] Cut a slice from the rod used to create stick and drill a 5mm hole in it

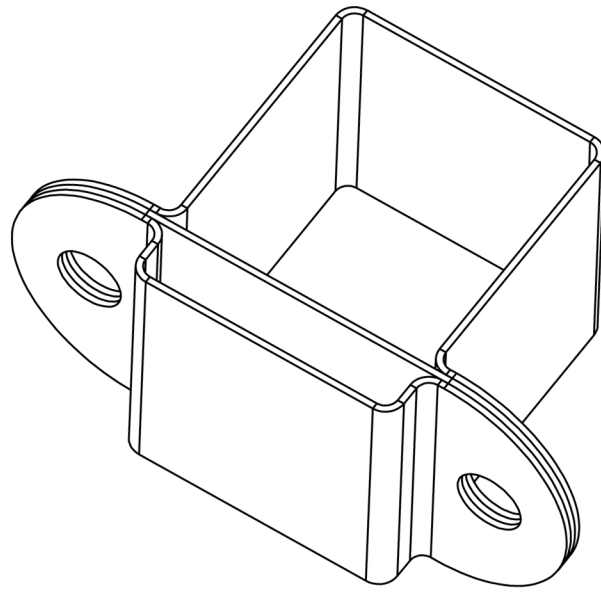


- [2] Insert part 1 into cut in part 2, insert slice [1] to seal. Tighten parts together using bolt and nut



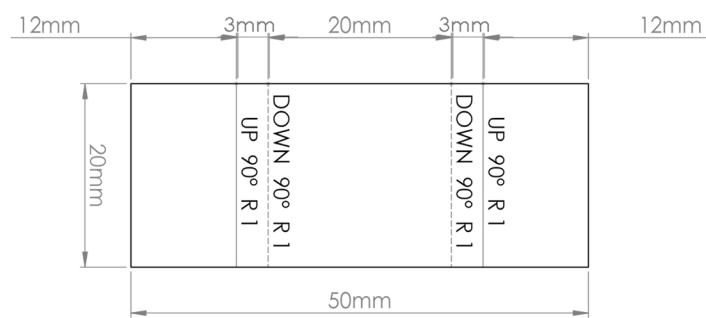
[5]

Clamp

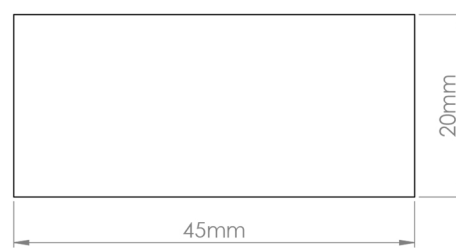


Part 1

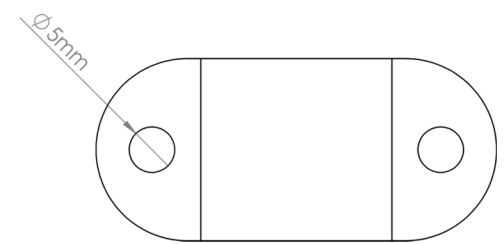
[1] Cut metal sheet (0.5mm thick) to measurements



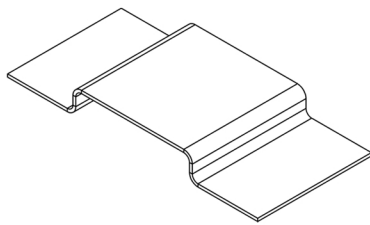
[3] Cut metal sheet (0.5mm thick) to measurements



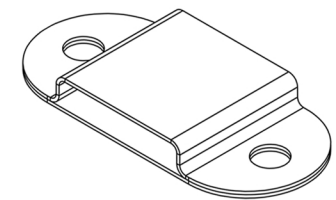
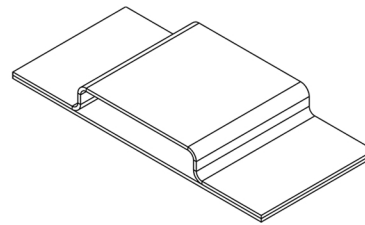
[5] Cut edges and drill holes



[2] Using tools, fold as specified

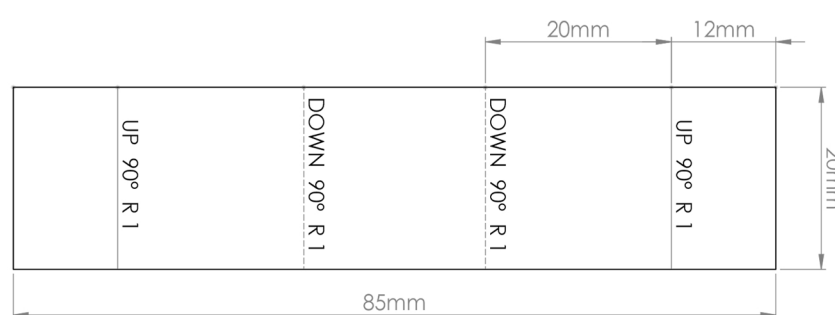


[4] weld together [2] + [3]

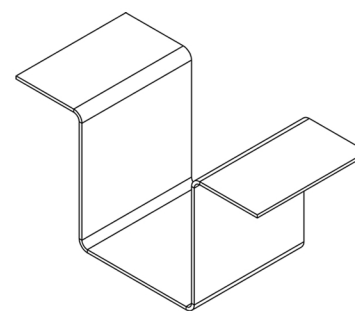


Part 2

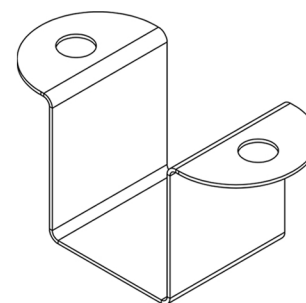
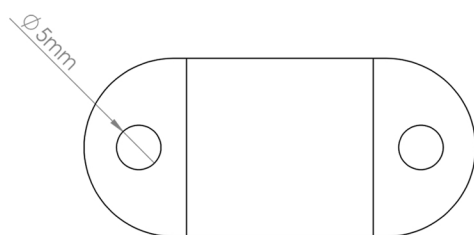
[1] Cut metal sheet (0.5mm thick) to measurements



[3] Using tools, fold as specified



[2] Cut edges and drill holes matching to part 1.



Clamp is mounted to the wheelchair separator with bolts and nuts.