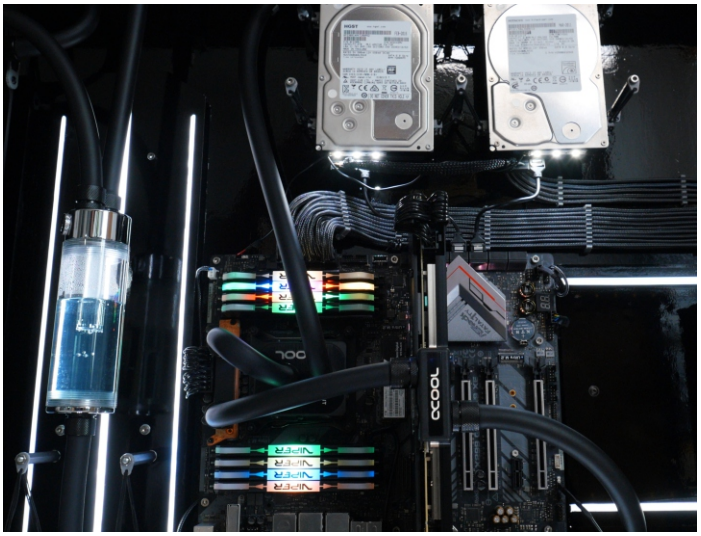
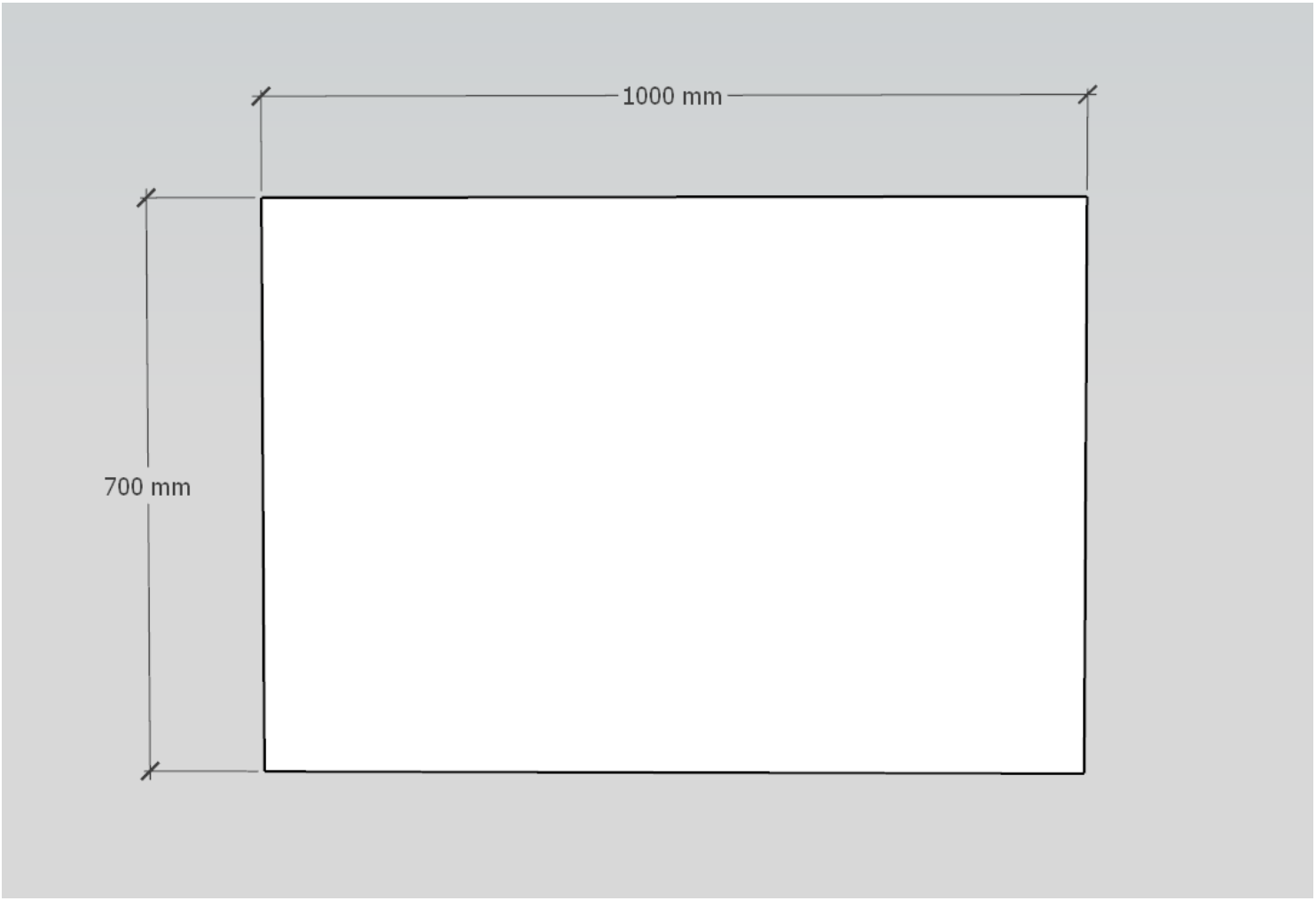
DIY Perks PC Case – Sizing Guide



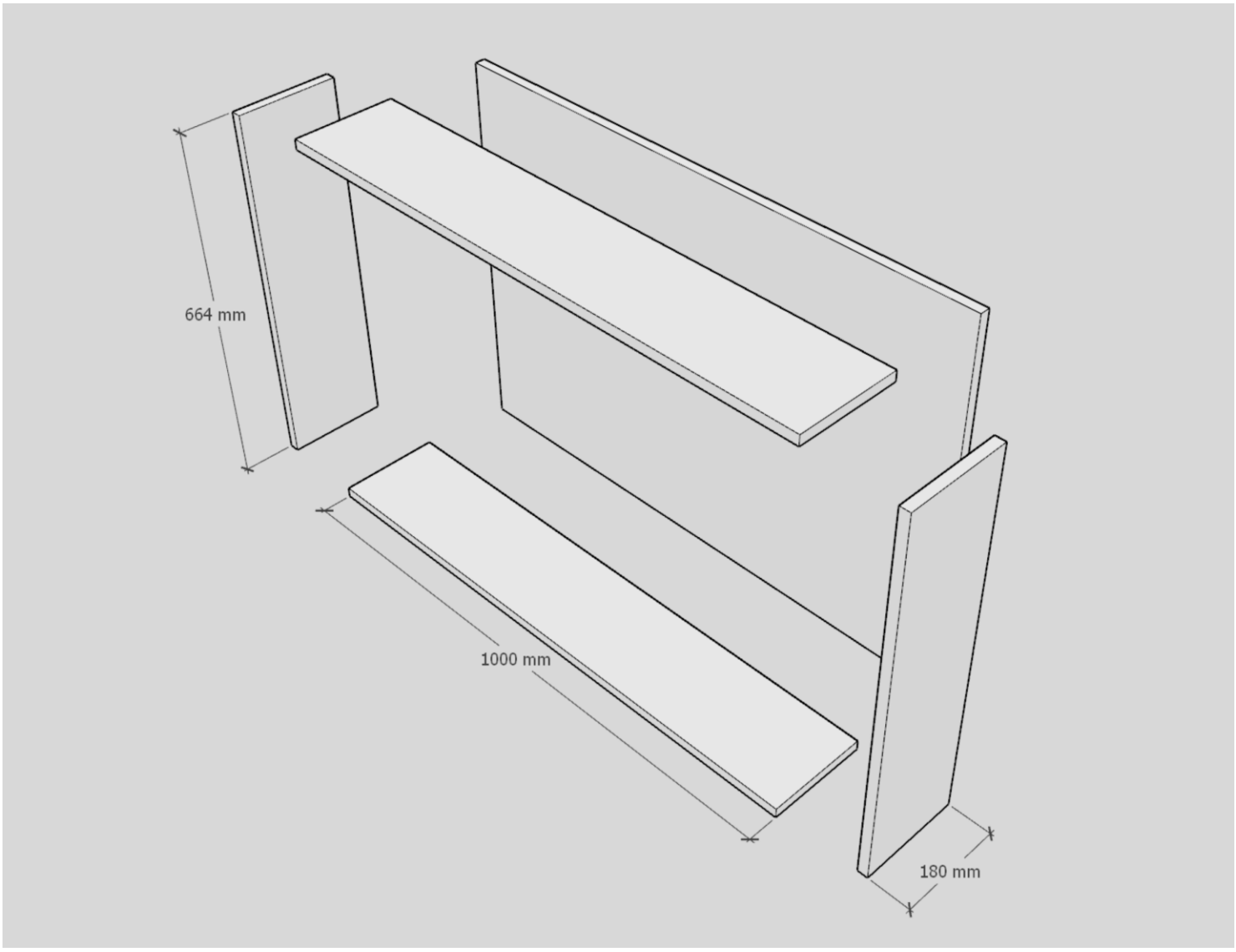
This is a short guide to help you with the dimensions and sizing of the DIY Perks ‘fold out’ desk PC build.

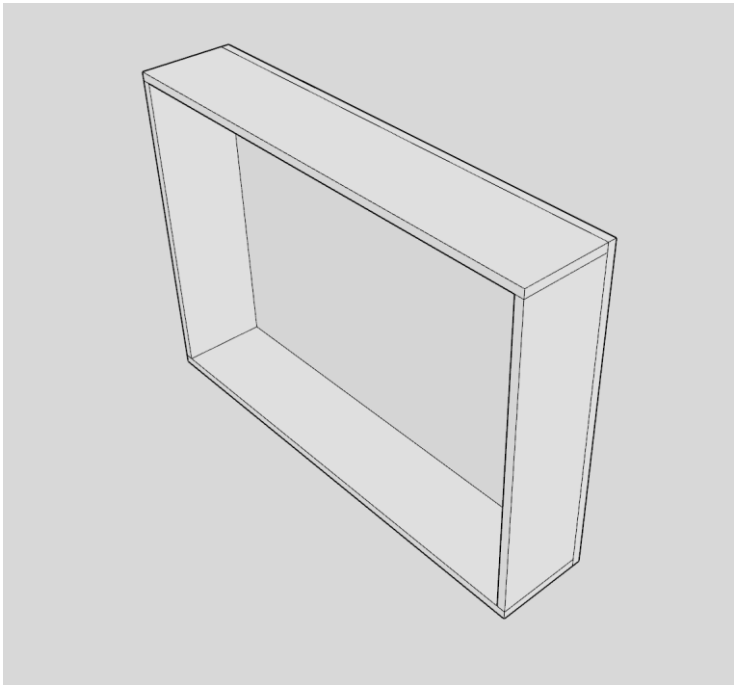
The recommended material is 18mm thick MDF, as it’s strong, flat, dense (good for blocking sound), and has no wood grain so can be easily drilled into from the sides (good for mounting purposes).

The first piece you’ll need is a large sheet for the central component chamber’s backing. This needs to be 700mm high by 1000mm wide, providing plenty of internal volume for components.

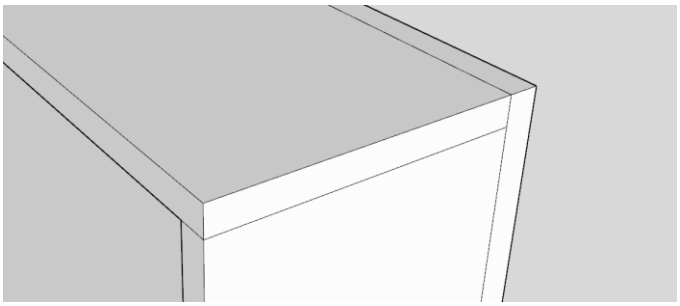


You'll next need to cut out the side pieces that fit around its perimeter. These all have a depth of 180mm as that will leave enough room inside for components like the graphics card, which can sometimes stick surprisingly far out of the motherboard, especially when a waterblock is added. You can see the other dimensions in this picture:



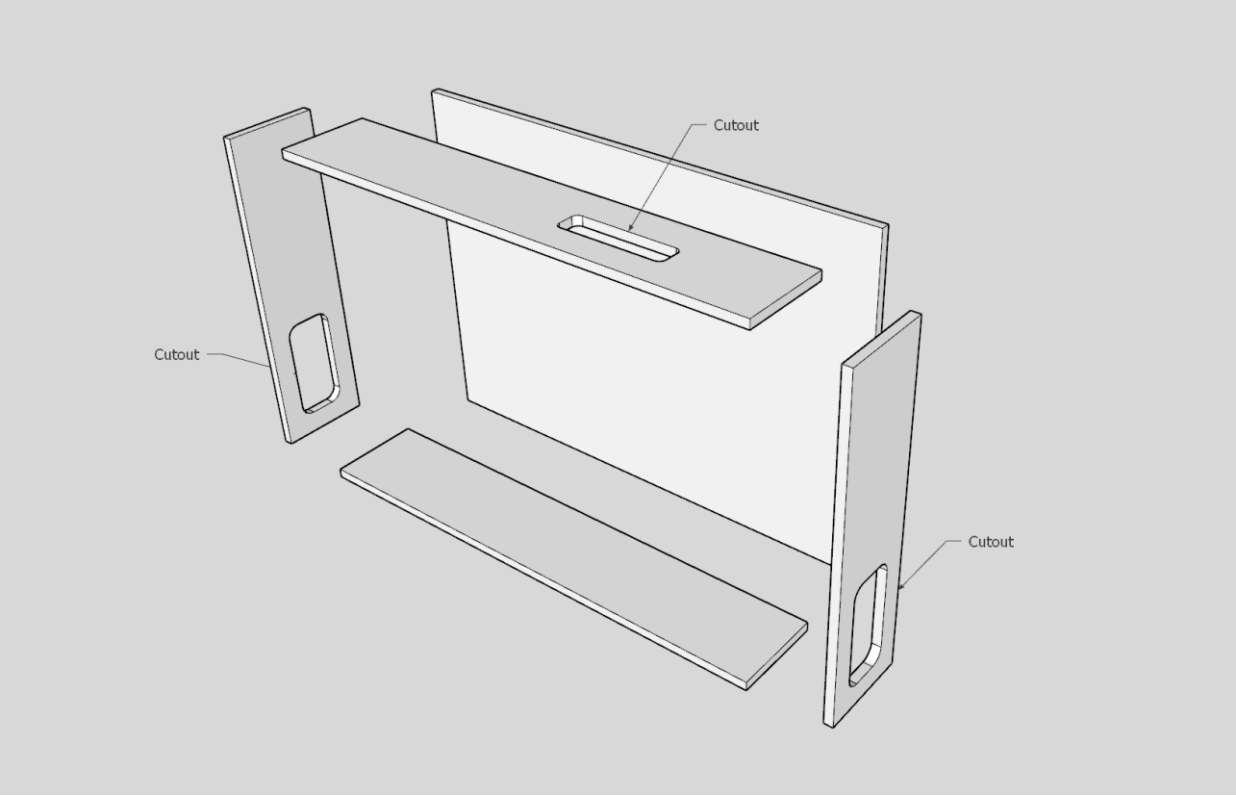


These side pieces will later be fitted to the back sheet with glue and countersink screws (see video for more details).



Before this is done however, some holes and cutouts need to be made in them, which I'll cover on the next page.

The cutouts on the two side pieces are for the connector extension panels, as seen in the video. They don't need to be any particular size or dimension, and you could make them significantly smaller (or even omit one side entirely) if you only want to extend a few ports.



My cutouts had curved corners 'just because', but it's not necessary - I just thought it would look nicer for the video. Typically they won't be seen so just going with square corners will be fine. Either way, using a coping saw is a good cheap way of making them, though borrowing/buying a router would be a good alternative.

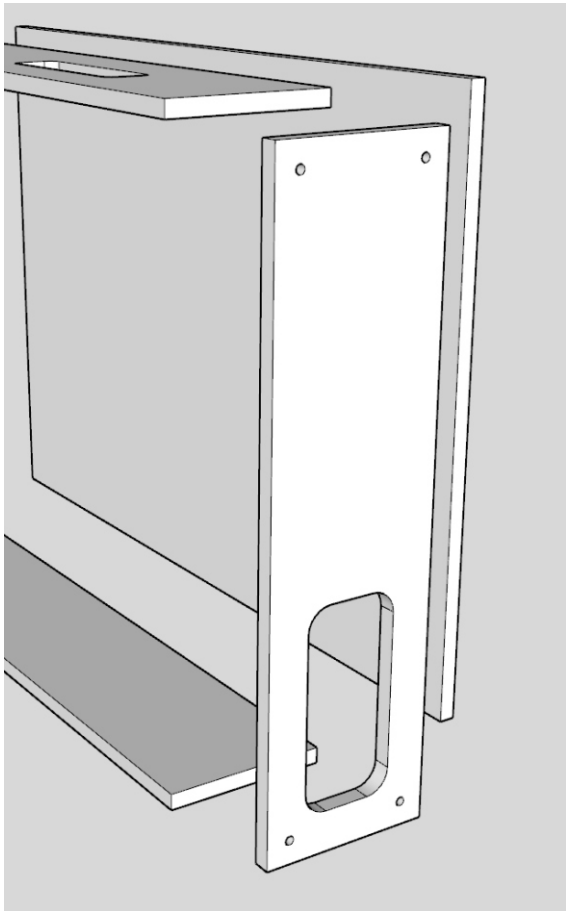
The panels that fit into the side cutouts need to be slightly smaller so that they can fit in without resistance, and you can glue them to a thin 3mm sheet of MDF to make a lip around the edge to give it something to rest on.

Underneath this lip you can use some black tack (industrial blu tack) or draught* (draft) excluder to lock in any sounds emitted from the components.

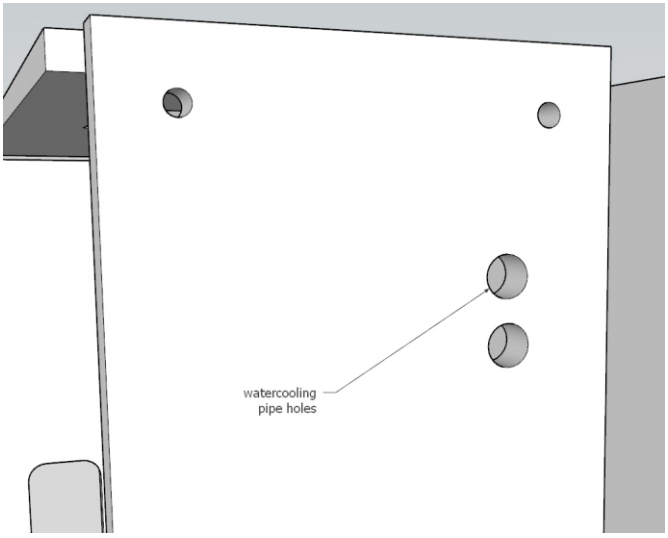
The cutout on the top sheet just allows space for a variety of buttons or ports (USB ports or SD card reader, for example) to be added onto the top panel, which gets made later.

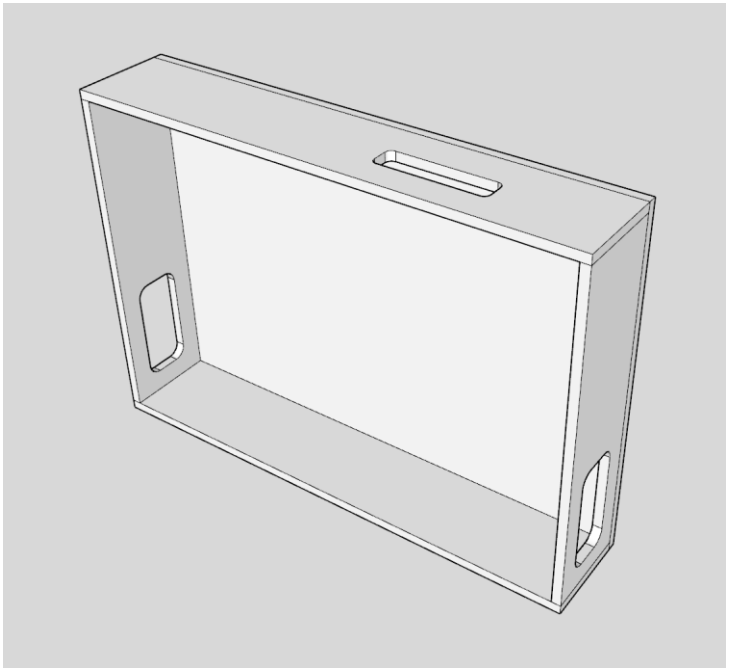
*British spelling.

In addition to the cutouts we need to make four holes in each of the side pieces so that the some units can be bolted to it later (see page 6 for the construction of these). I suggest making these holes 9mm wide for use with 8mm diameter bolts (M8).



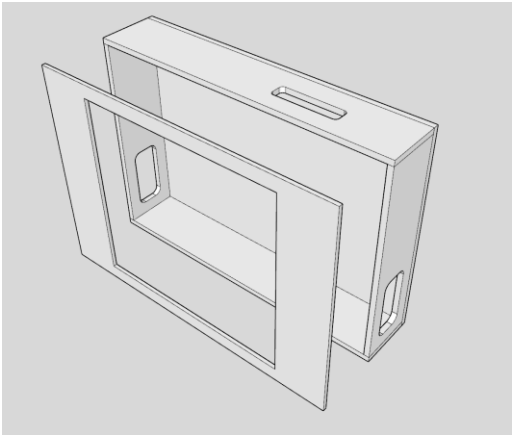
In addition to these holes the side pieces need to have two additional holes made in them near the top for the watercooling pipes to be pushed through later. It goes without saying that these need to be the same diameter of your tubing, and to make a good airtight seal again you could always use some black tack around them when finished.





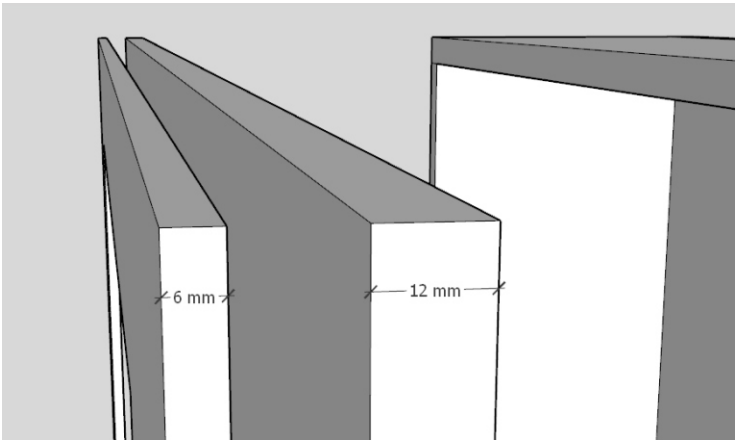
Once it's screwed/glued together as per the video, a front panel needs to be made which will house the glass window. It can be the same dimensions as the back sheet (1000mm by 700mm).

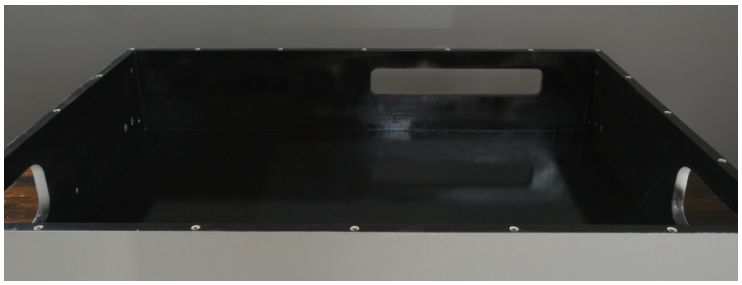
To make the 'frame' for the window to sit into requires this front layer to be made out of two sheets of different thicknesses...



The front layer of this ‘frame’ can be 6mm MDF, and the back layer can be 12mm MDF (6mm + 12mm = 18mm)

This is so that the window cutout in the front layer can be slightly smaller than the one in the back layer, which makes a lip that the glass can be glued to from the back.





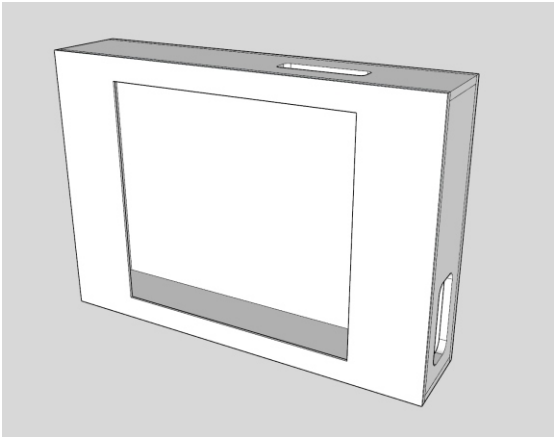
Just like in the video, you’ll need to add several threaded inserts around the perimeter of the enclosure so that you can screw the front panel in place. These should be made by clamping the front panel in place on top and drilling through it into the edges of the chamber for accurate positioning. In hindsight I added too many of these - three for each edge should be enough.

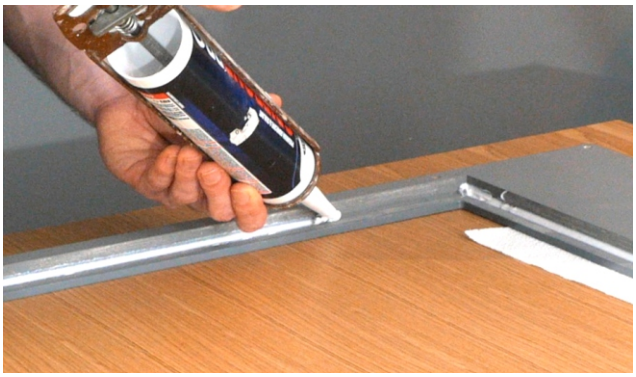
To make an airtight seal you’ll need to use some draught (draft) excluder, which will do a good job of locking in any noises made by the components.

I used a general purpose silicone to glue the glass in place, being careful not to put too much down so that it would squash onto the glass and be visible on the front.

That said, if this does happen just wipe it off with some tissue, but it is generally best to avoid if possible.

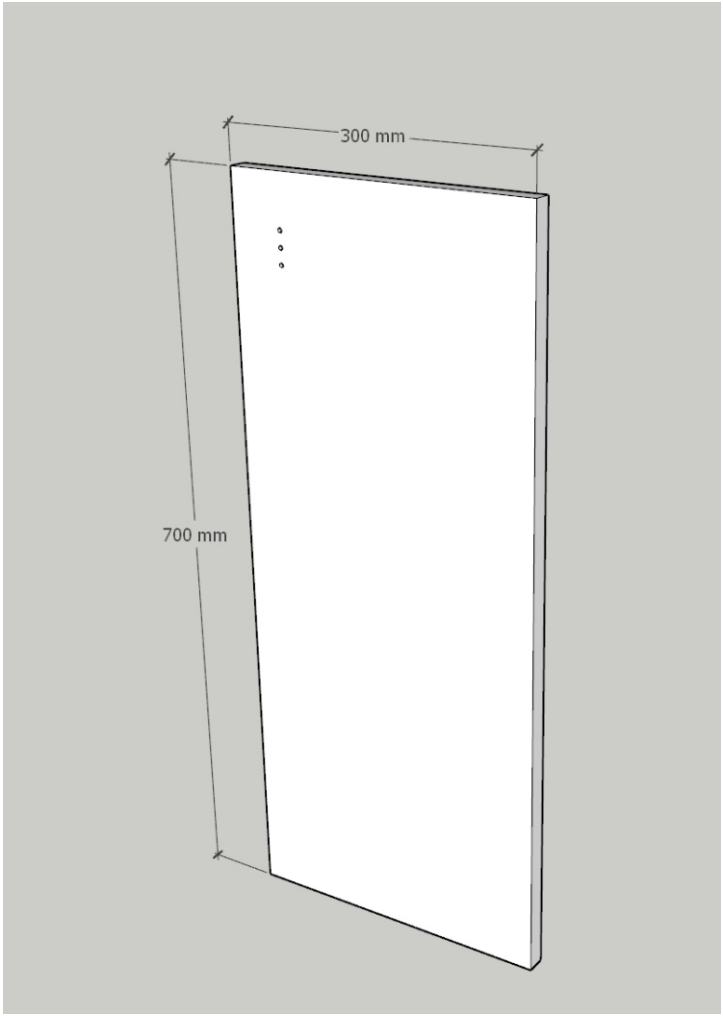
Remember, it’s always best to do a test beforehand to make sure that your glue sticks to the glass.





Part 2 – Side Units!

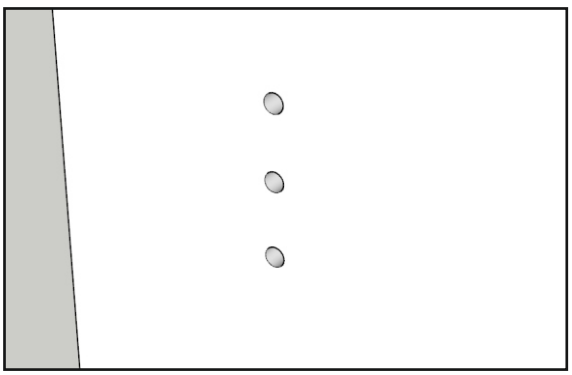
So now it's time to make the side units themselves. These flank the main chamber and allow space for the radiators and power strip, and also hide any cables that get plugged in.

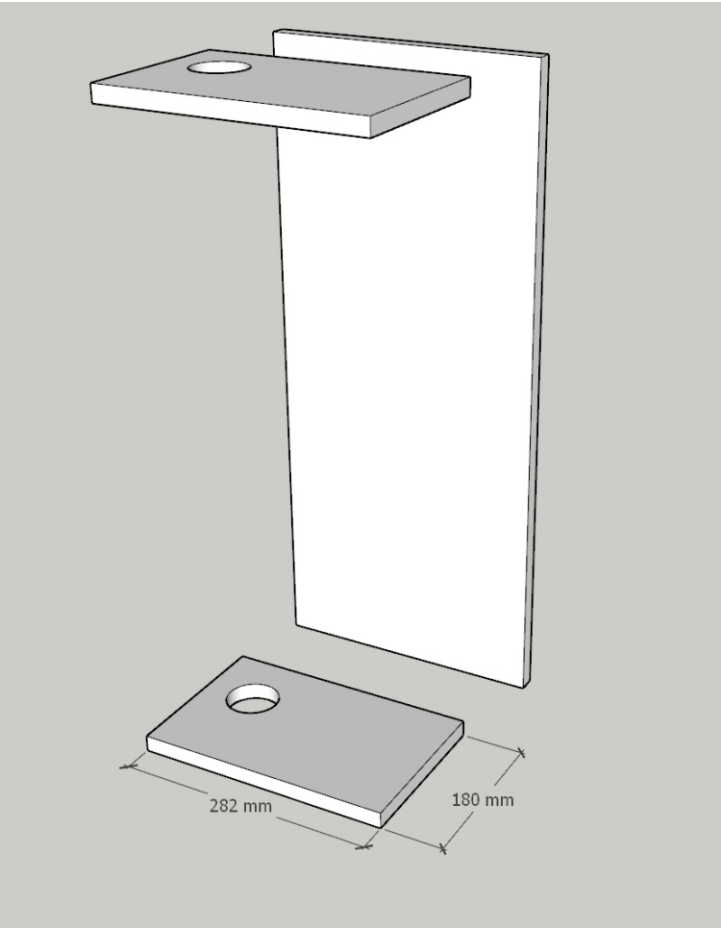


The reason for them being made separately from the central chamber is so that the case can be dismantled if needed, making it much easier to transport.

Just like the central chamber, these can be made out of 18mm thick MDF, and again we'll start with the back panel.

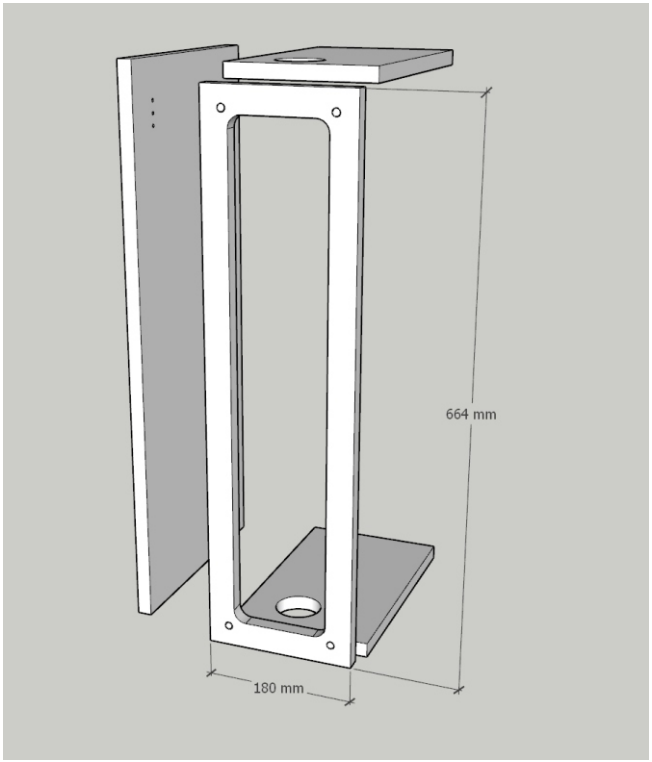
This needs to measure 300mm by 700mm, and at the top corner it needs three holes drilling through it. These are for a set of screws that can tie the case into the wall once it's finished to make it solid and stop it from rocking or falling over.





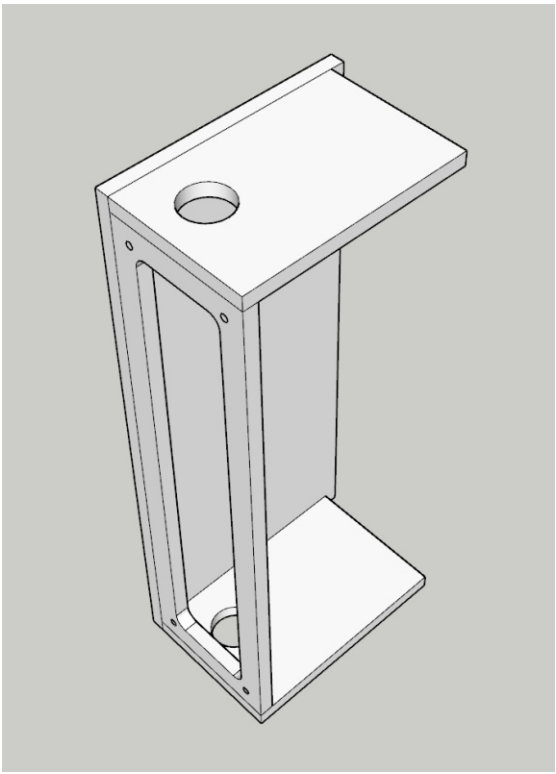
Next we'll need to cut out two pieces measuring 282mm by 180mm to create the top and bottom of the unit, and two large holes need to be cut in them.

These large holes allow wires to be routed through them, either up to the top of the desk, or down underneath. Great for the power strip etc.

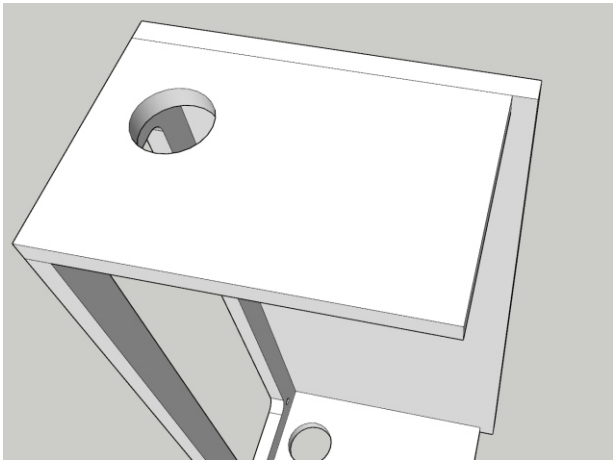


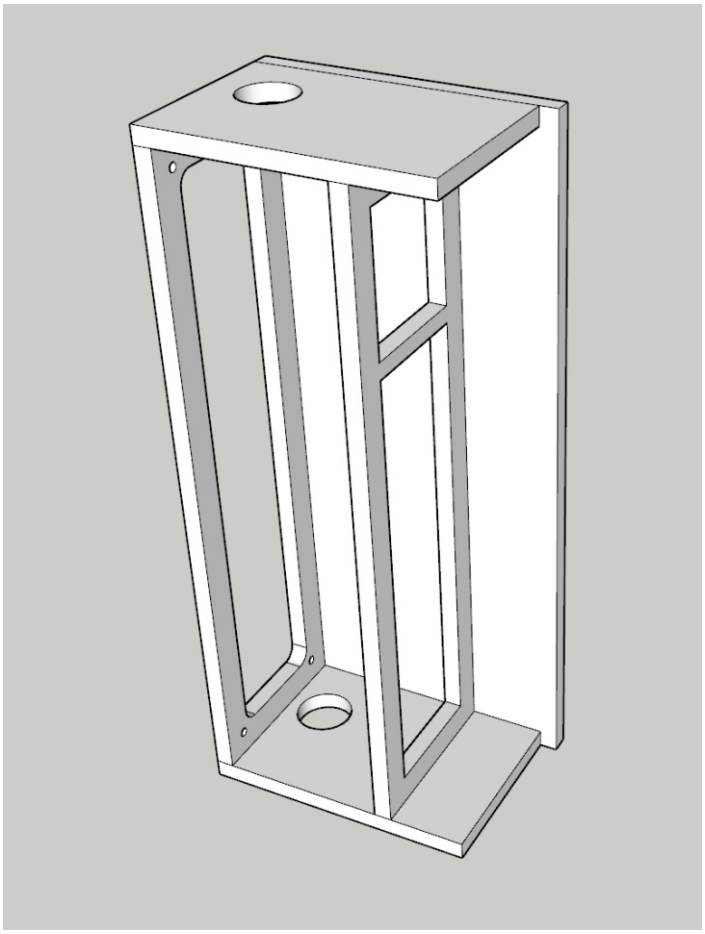
With those done, a large 664mm by 180mm panel now also needs to be cut out, with a very large cutout inside it. This is so that it can fit directly against the side of the central chamber and not block the port access, watercooling pipes, or the power strip.

It does of course need four corresponding 9mm holes in it for the M8 bolts to be threaded through, matching the ones in the sides of the central chamber.



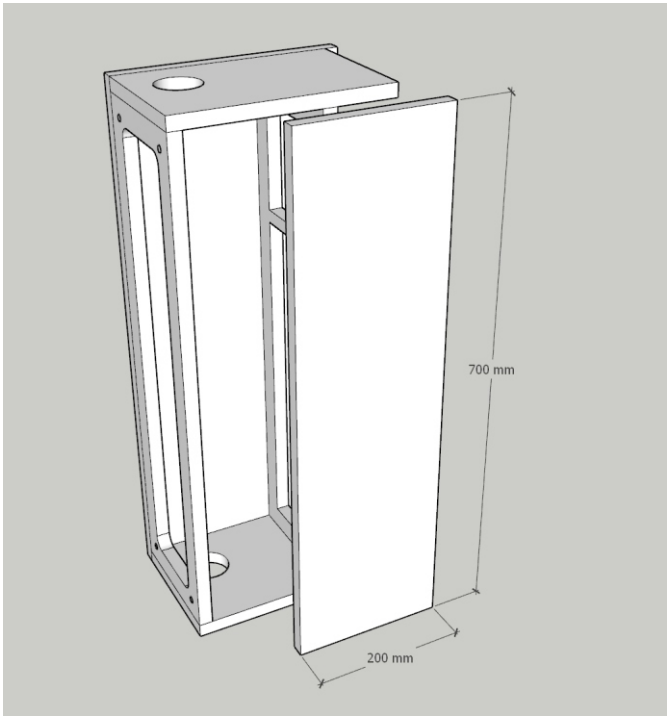
This can then all be mounted together with screws and glue as before.

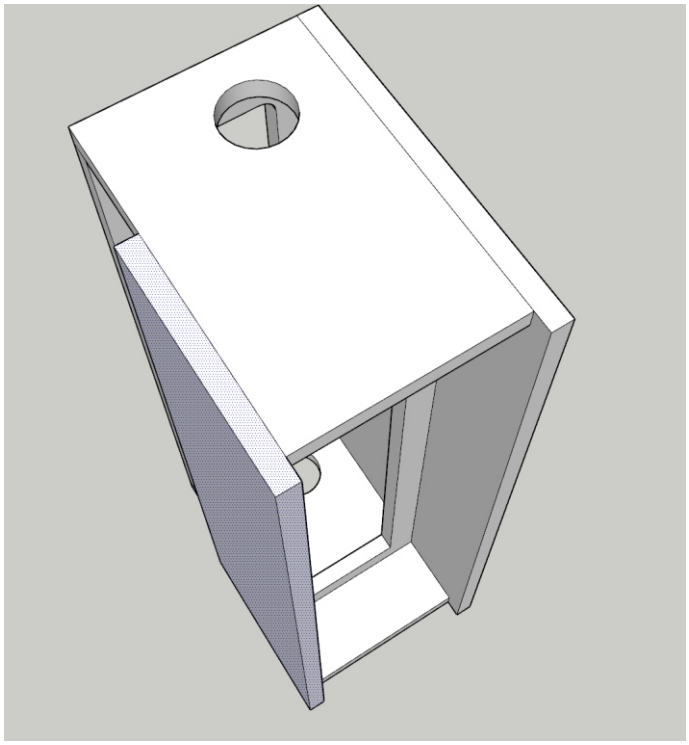




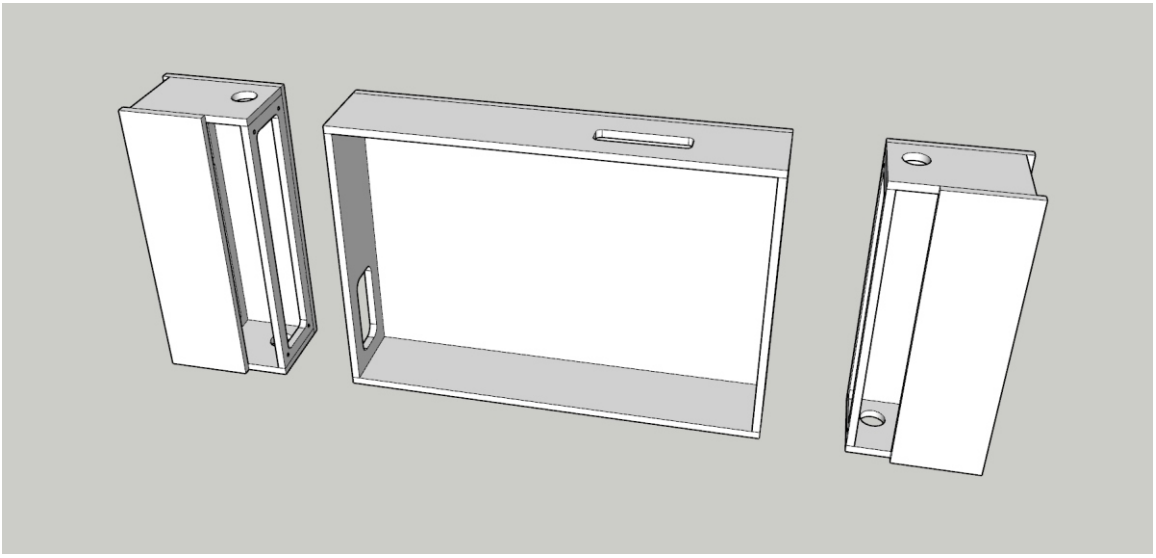
If you look closely at this image you'll notice an additional sheet has been added to the inside. Again, this is just a 664mm by 180mm sheet with large cutouts - only this time there's a piece left in. This piece acts as a brace to support the hinged desktop, while the rest of the sheet provides a mounting surface for the radiator and fans. Radiator on the inside, fans on the outside (pushing air inwards). See video for more info.

Lastly, the side unit can be finished by adding the front - 200mm by 700mm. This doesn't want to extend all the way across, as the gap left provides plenty of room for airflow and also access to the ports.

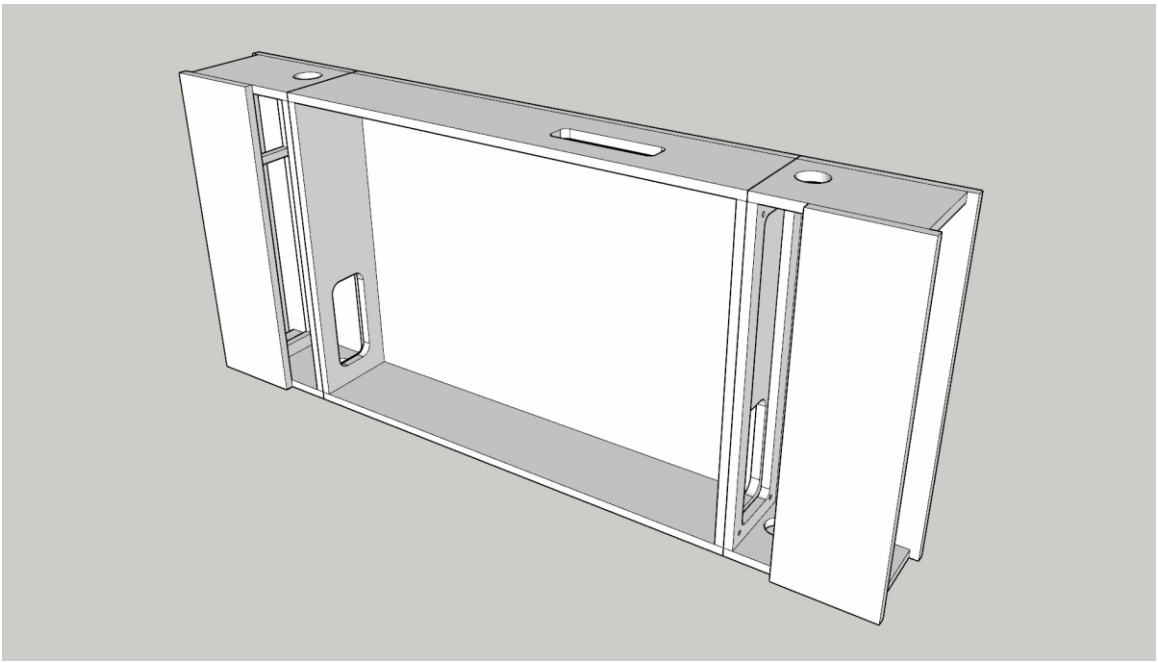


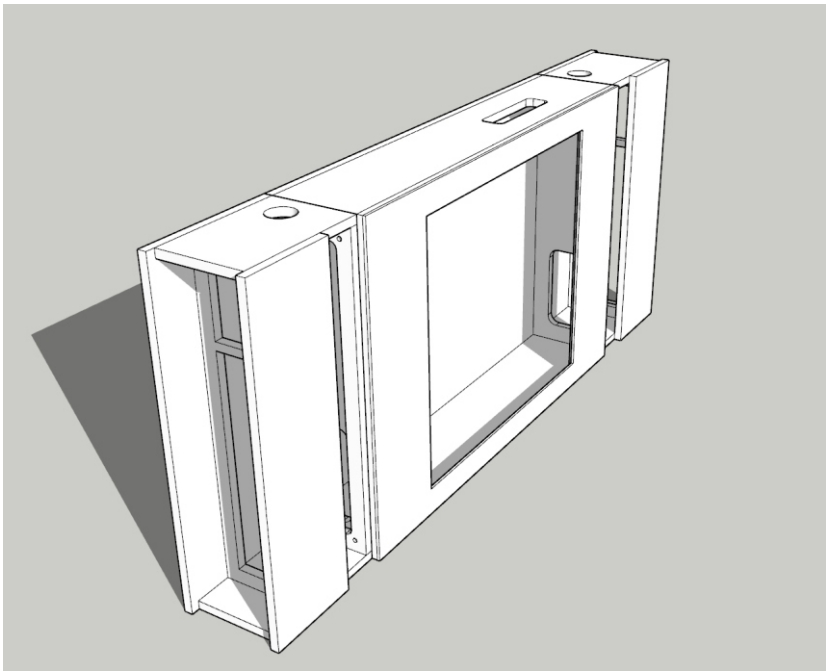


It can be screwed in place like so. Notice the slight overlap - this simply leaves room for the vent design.

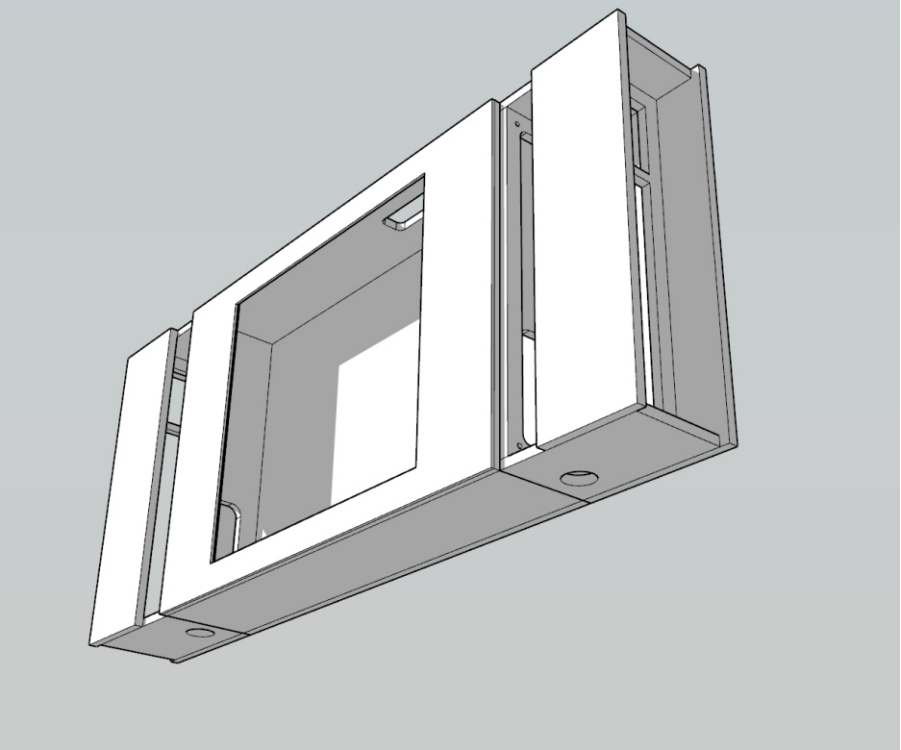


Once you have two side units they can be bolted to the central chamber like so.





With that done there are only a few things left. The first is to make a ‘footing’ for it, which I’ll cover on the next page...



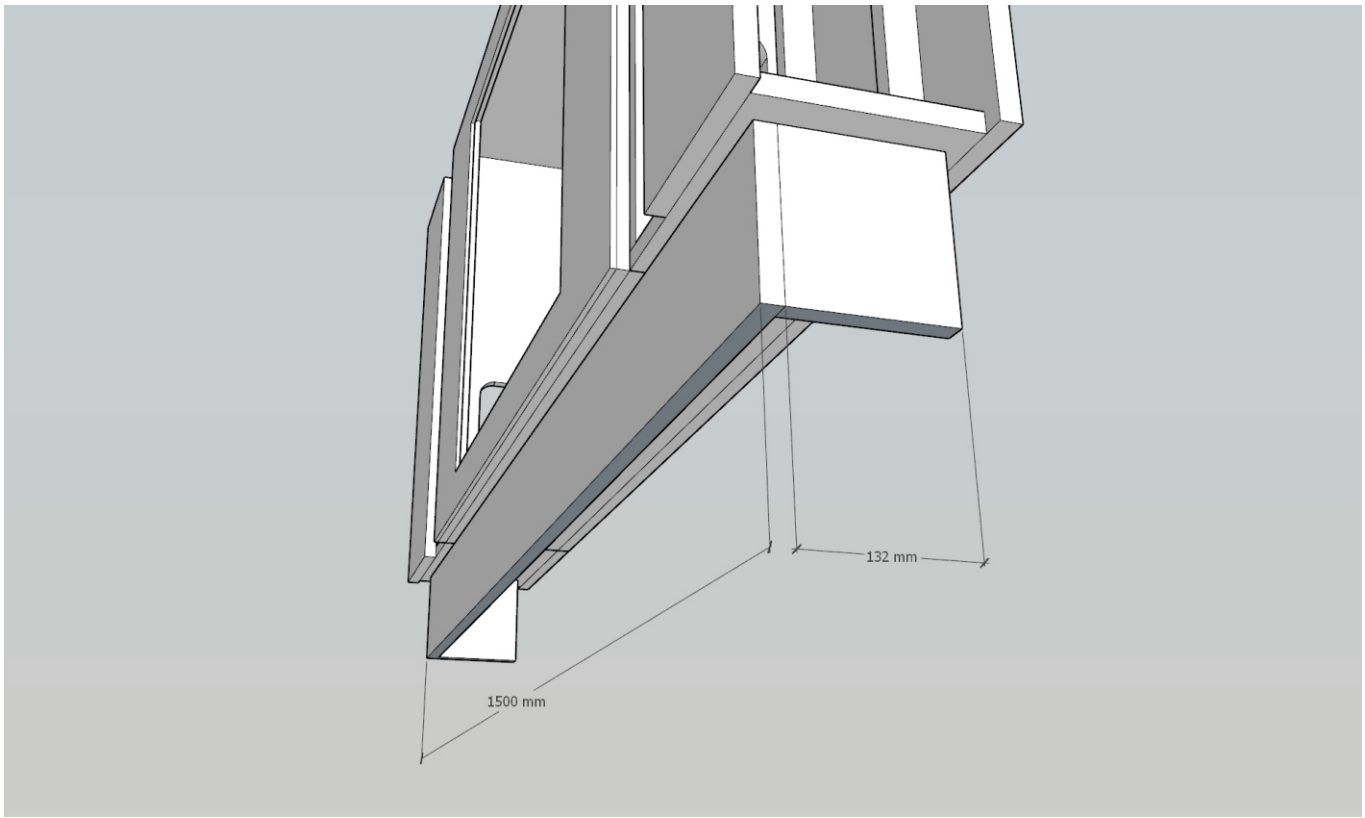
As you can see, underneath the case is completely flat, but ideally this must be raised up for a couple of reasons.

Reason 1: it allows space for wires to be routed, in particular LAN wires and power wires.

Reason 2: it allows easier drainage as the case will be lifted up allowing you to drain into a tray when needed.

Reason 3: it lifts the case up above any skirting board so that the whole thing can be flush with the wall.

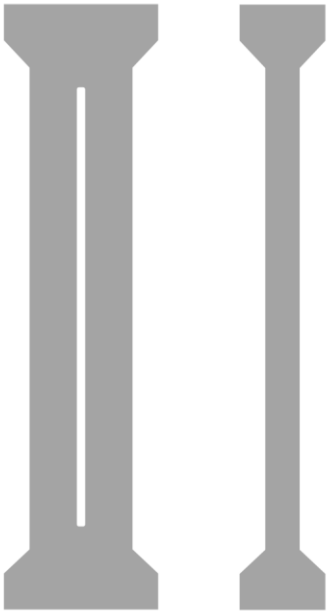
Reason 4: it looks better.



To make it, just get a few strips of MDF and mount them to the bottom using right angle brackets. The height of these MDF strips should be a couple of CM higher than the height of any skirting board in the room. Generally, 140mm should be a good enough. Don’t forget to leave a gap at the back for any wires to go through.

Lastly some decorative covers can be made to go over the aiflow gaps. You can do anything you like for these - just make sure there's enough cutout space for the air to actually flow through unrestricted.

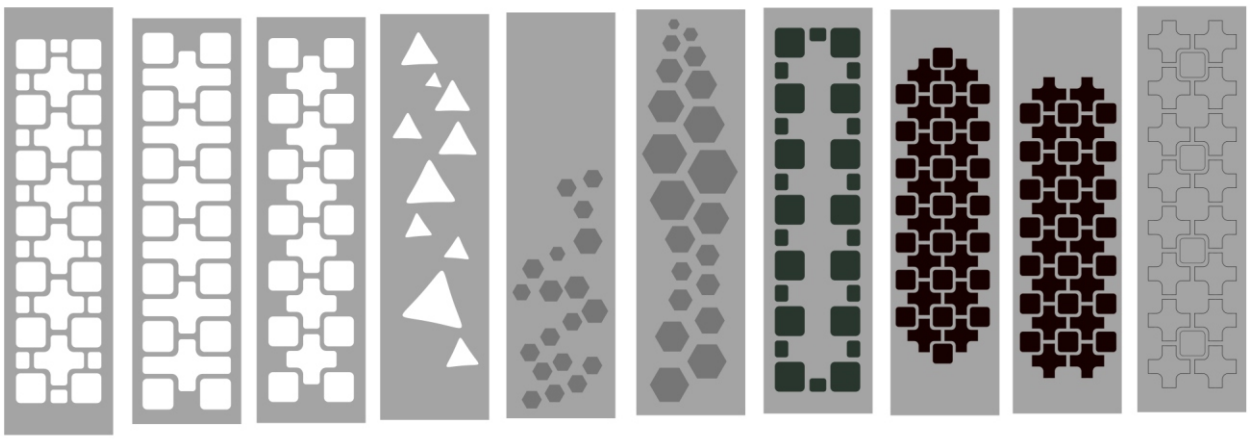
My cutouts ended up looking like this:



The smaller one is 100mm wide at its largest point to fit into the gap as shown in the photo on the right.

The larger one measures 180mm at its widest point and firs into the gap in front of the fans.

A few more ideas:



So in conclusion I hope you have found this guide useful and that you have good success in building your very own folding desk PC!

Don’t forget to check out the YouTube channel for more information and to view the other projects to see if anything catches your interest. Here are a few images to wet your appetite: