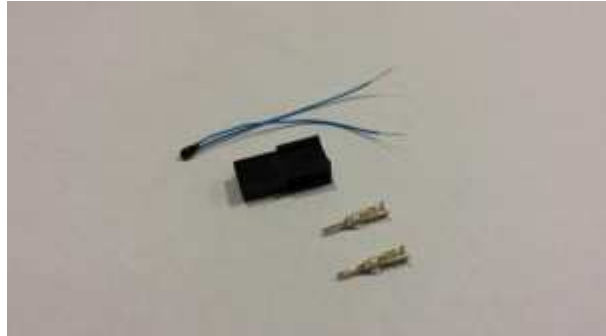


Heated bed assembly

Thermistor assembly

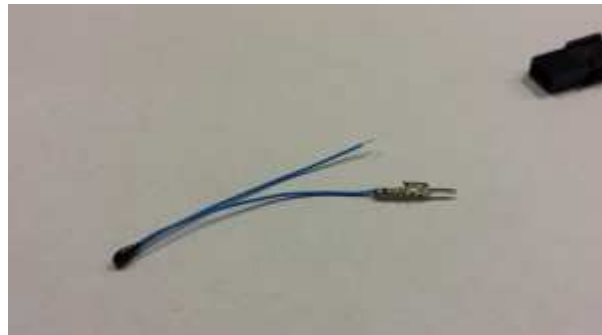
The first step requires assembly of the heated bed thermistor. The following are required:

Component	Type	Quantity
10k Thermistor	Electronics	1
2 way female housing	Electronics	1
Male crimp terminal	Electronics	2



NOTE: In the Introduction pages, we recommend using [this tool for crimping](#). You can try crimping with pliers, as [shown in this video](#), but the thermistor wire is very thin. If you have problems, consider using any other method to connect the thermistor to the wiring, for example using small ‘chocolate block’ style screw terminal connectors. If you solder them together, you won’t be able to remove the bed easily. Any connector you use **MUST** provide a robust connection, while insulating the wires from each other, or the bed temperature sensing will be inconsistent.

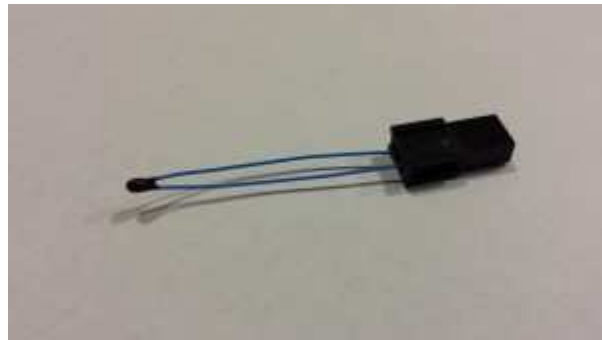
Fold the unsheathed part of one thermistor leg in half (it makes the wire fatter, and more likely to grip), then crimp the terminal onto it. Ensure the sheath is secured by the rear part of the crimp terminal.



Repeat for the other thermistor leg.



Push the crimp terminals into the 2way female housing.



Heated bed assembly

The heated bed assembly requires the following parts:

Component	Type	Quantity
Thermistor assembly	Assembled	1
PCB heatbed	Electronics	1
Aluminium heat spreader	Lasercut	1
Cardboard insulator	Lasercut	1
M3x12mm cap head screw	Fastener	5
M3 Nut	Fastener	10



The thermistor bead fits into the central hole in the heated bed PCB. Secure it in place with some Kapton tape.

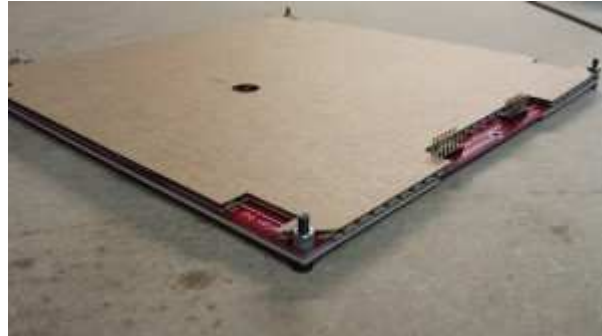


CAUTION!

The pin connectors on the heated bed are off-centre, as is the notch in the Aluminium heat spreader. When assembling the heated bed, make sure that the Aluminium heat

spreader is the correct way around. It **MUST NOT** be assembled so that it can touch the electrical contacts of the heated bed, or the heat spreader will be +12V. This can then be passed to the hot end or IR sensor if they touch one of the metal clips, potentially destroying the Duet electronics.

Assemble the heated bed as shown, using the five cap head screws to fix the Aluminium heat spreader plate to the heatbed PCB. The fifth central screw between the heated bed connectors is not shown in these pictures, but should be installed. Use two M3 nuts on each screw. This gives enough spacing for the cardboard insulator to fit beneath this assembly when it is fitted to the Y axis of the machine.



Make sure the thermistor connector protrudes through the hole in the cardboard. Make a dent in the cardboard where the thermistor is, so the cardboard sits flat on the PCB. Use Kapton tape around the edges to hold the cardboard onto the heated bed. The picture shows the cardboard on one way up, but it actually fits better around the heated bed terminals the other way!



Print surface

NOTE: Adhesive-backed Aluminium foil is NO LONGER supplied with the kits. Followed by testing in house, and by Ormerod owners, we have found that plain white paper actually works better! So take a sheet of paper, and cut the targets from that.

The glass print surface must be prepared before fitting onto the machine. The following parts are required:

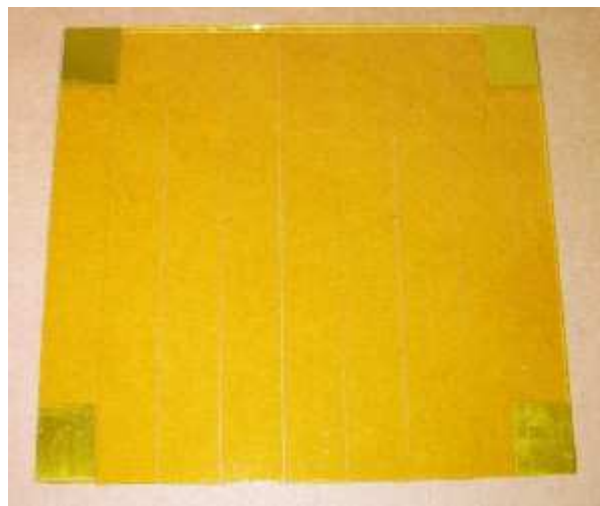
Component	Type	Quantity
Glass plate (standard float glass, 200mm x 214mm x 3mm)	Heated bed	1
Plain white paper / Adhesive backed Aluminium foil	Heated bed	1
Kapton tape	Consumable	1
Foldback clips (not shown)	Hardware	4



Cut the plain white paper (or foil) into four 20mm x 20mm squares. It doesn't need to be exactly this size; whatever is convenient.



Stick the paper (or foil) squares to the four corners of the glass plate and cover the glass plate (foil side up) in Kapton tape. With paper squares, they will need to be 10mm in from the edge, so they can stick. When applying the Kapton tape, take care to exclude bubbles. Don't pull the tape too tight before you lay it down. Gaps between the strips are preferable to overlaps. Another way to apply the Kapton tape is to slide it on with soapy water, move it into position, then squeegee out the water. You have



to wait for it to dry out before use.

We use the Kapton as the print surface, so when you install it onto the bed, it should be installed Kapton-side-up. This means that the squares are also on the top surface, so we can use the close accuracy of the proximity sensor for homing. The side without Kapton on it is just plain glass, and sits against the Aluminium heat spreader.