

# Strip Heater

How to use the strip heater to bend plastics.

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# What strip heaters do we have in the workshop?

The 3D workshop has 2 strip heaters available, one for smaller pieces and one for larger pieces.

You can use strip heaters, also known as line benders, to heat a narrow strip of thermoplastic like [Acrylic](#). Unlike the plastics oven or vacuum former the strip heater only heats very small areas. Once hot this plastic is flexible and can bend to create a new shape. Once cool the plastic will hold the new shape.

Strip heaters are good for creating plastic signage holders, or business card holders. They are also very popular for boxes and packaging. Boxes that fit together can be done but they take practice to get right. Plastic can be screen printed before bending if desired.



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# How do I book the strip heaters?

All students must book a workbench to be in 3D workshop. Booking a workbench for a 3 hour slot gives you a space to work and access to all necessary tools, sundries and equipment with technical supervision and guidance.

We will only be accepting booked appointments to comply with social distancing guidelines. No walk ins will be accepted.

You can book a workbench via the [Online Resource Booking \(ORB\)](#).

You must complete an online Health and Safety induction before booking a workbench.



The strip heaters are yellow machines. This means students can use the equipment but must get staff approval before each use. A member of staff will also supervise.

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# What materials can I use with the strip heaters?

Strip heaters should only be used with thermoplastics such as

- [Acrylic](#)
- [Styrene](#)
- PVC
- ABS

Some plastics can release highly toxic fumes when heated. Do not heat other types of plastics on the strip heater.

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# How do the strip heaters work?

Strip heaters consist of a wire stretched between two electrical connectors. A low voltage current passes through this wire, which causes it to heat up.

The heating element may be:

- A single wire stretched between two terminals
- 2 or more wires stretched between two terminals
- A coiled resistance wire element enclosed in a metal or plastic tube.

Before using the strip heater you should cut out the object net on the [laser cutter](#). The net is the flattened two dimensional shape of your object. When heated and folded it forms a three dimensional shape.

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# How do I use the strip heaters?

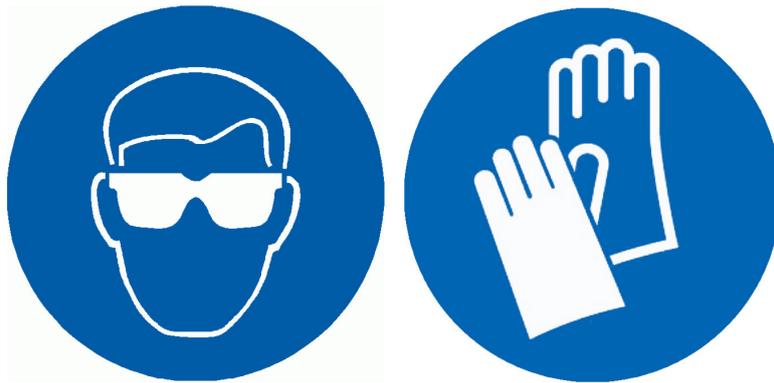
To use the strip heater:

1. Ensure you are wearing correct [PPE](#).
2. Ensure the extraction hood is open and positioned above the machine.
3. Turn on machine and allow the wire to heat for 5-10 minutes before use.
4. Leave the protective film on plastic. This will stop it getting scratched while you are working
5. Mark where you wish to bend with a permanent marker.
6. Place the plastic over the heating element. Make sure the plastic is above the element and never touching it.
7. Heat plastic until it become flexible. The amount of time this takes will depend on the material. Use the thickness guide on the front of each machine as a starting point.
8. Once flexible remove the plastic from the machine and hold in desired shape for 1-2 minutes, or until cool. Use can wooden jigs to get reliable angles or do this by eye.
9. Very thick materials may need to heating on both sides before bending.
10. When finished turn off machine and leave area clean and tidy.

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# What Personal Protective Equipment (PPE) do I need to use the strip heaters?



You must wear safety glasses and heat resistant gloves when using this machine. Tie back any long hair and tuck in loose clothing.

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