

Handheld fan



duration: 30 - 45 minutes
age: from 7 years

Make a working hand fan.

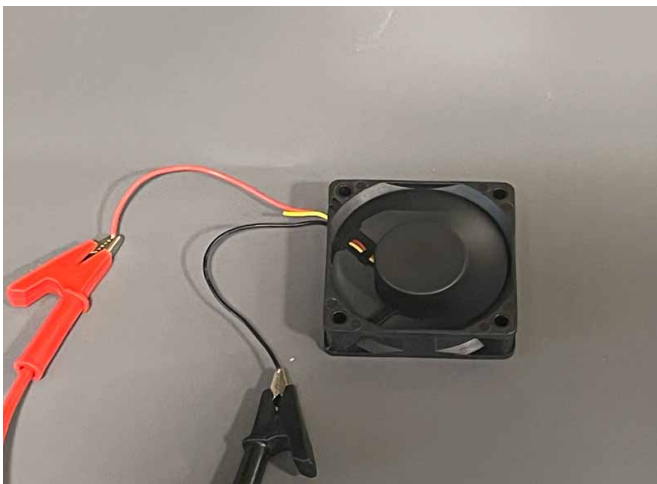
undefined

tools

- ☐ laser cutter
- ☐ awl
- ☐ soldering iron
- ☐ wire cutters
- ☐ wire stripper
- ☐ caliper
- ☐ drill with 4mm bit

materials

- ☐ wooden plate
- ☐ fan
- ☐ cable ties
- ☐ push button
- ☐ 9V battery connector



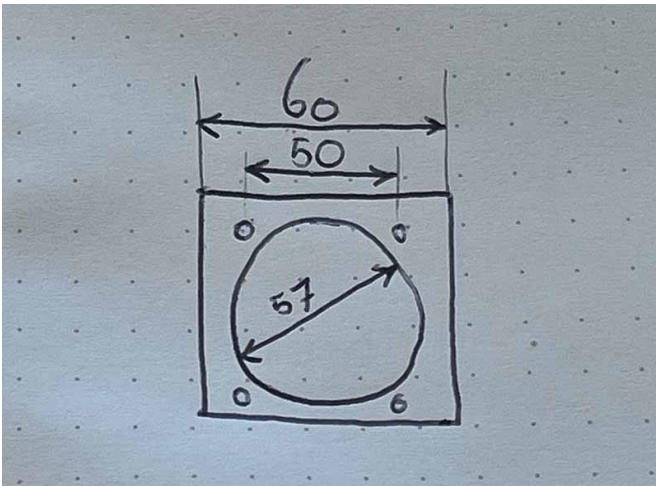
1 Test the fan

- Test the fan to see if it works with 9 volts.
- Most fans have an arrow indicating which way they blow. If not, mark it on your fan now.



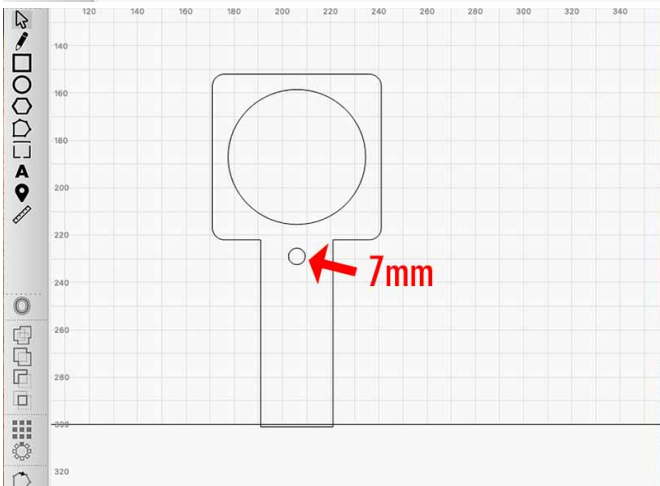
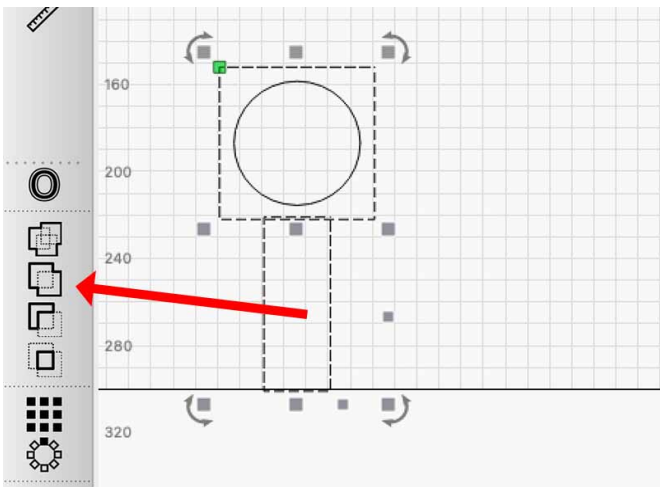
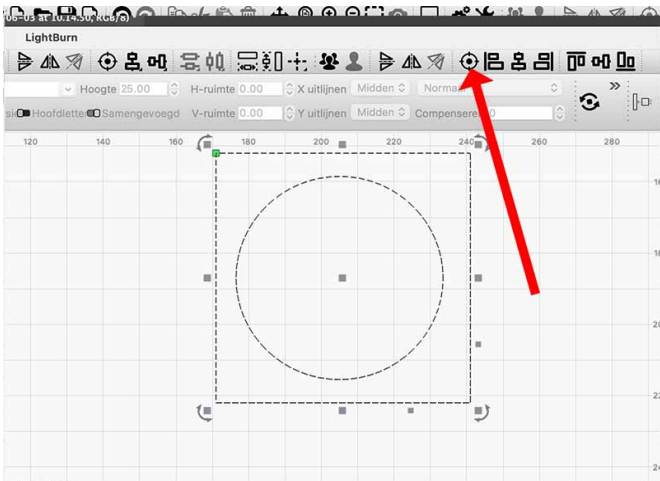
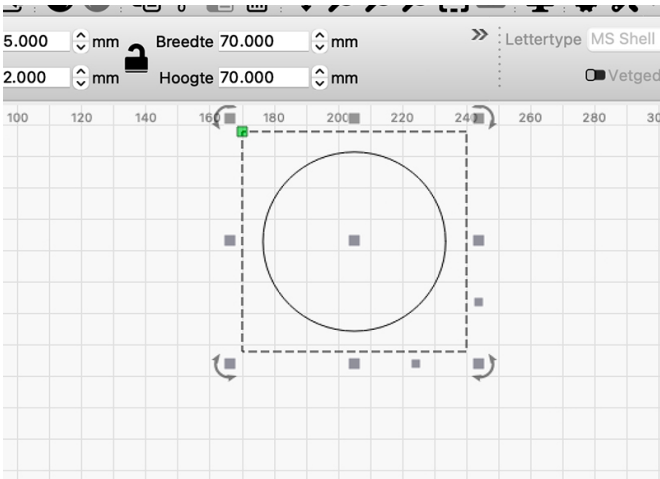
2 Measure and sketch

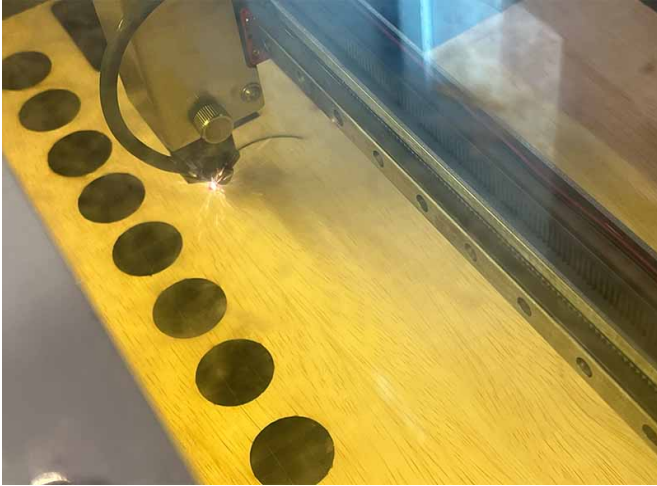
- Measure how big your fan is.
- Make a small sketch and write down the required dimensions.



3 Draw your design

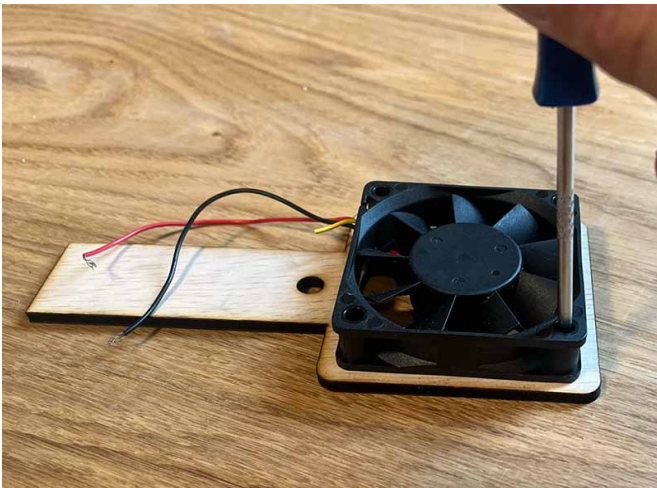
- Open LightBurn and draw a circle. By entering the width and height you can ensure the size is exact.
- Make the outer edge slightly larger than the fan. This gives extra strength.
- You can center the hole using the align button. (2nd photo)
- You can combine the handle and the top with the `combine` button. (3rd photo)
- Finally make a hole for the button. It should have a diameter of 7mm.





4 Cut out the design

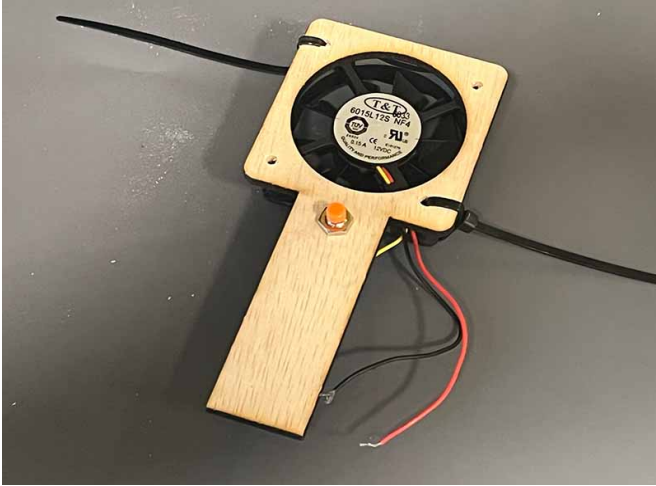
- Use the laser cutter to cut out your design.



5 Mark and drill holes

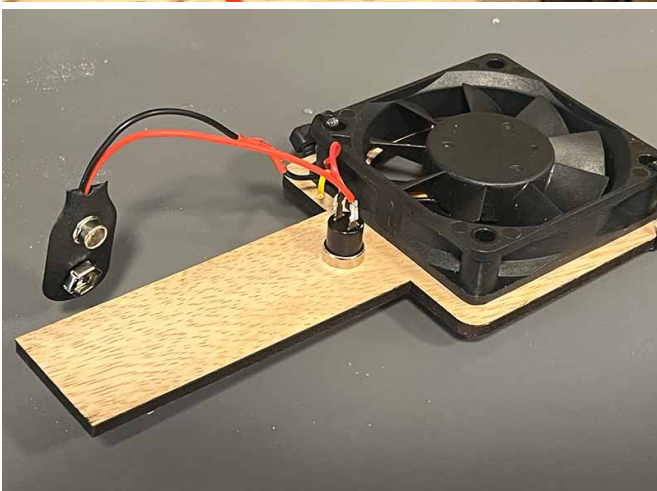
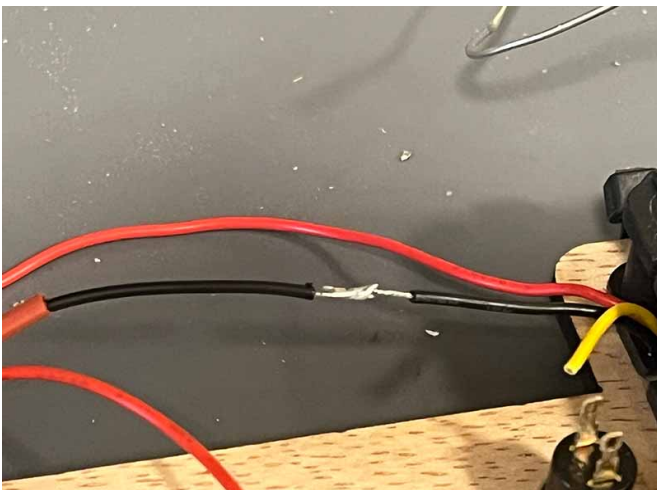
- Use an awl to mark the positions of the holes.
- Drill holes at the marked spots.





6 Assemble

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- Make sure the fan is blowing in the correct direction when you attach it.
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- Use cable ties to fasten the fan to the wooden plate.
 - Screw the button into the hole.



7 Soldering

- Cut the wires of the fan and the battery clip to length.
- Strip the ends.
- Slide a piece of heat shrink over a black wire and solder the black wires together.
- Solder the two red wires to the button terminals.



8 Insert battery

- Place the battery and tape it to the handle.



9 Done!

- Your hand fan is ready. Let the summer come!