

How to Carve with Carvey

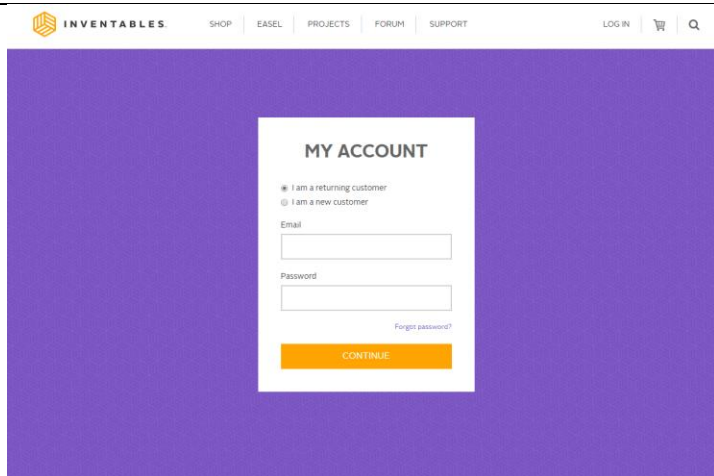
The Carvey is a carving machine that carves a design into a piece of material (either wood or plastic) based on information given to it by the computer. Using the Easel program, you can create/import a design and send it to the Carvey to be carved into a piece of wood or plastic. Despite the size of the machine it is very simple to set-up and use. If you would like to bring your own material to use with the Carvey, please make sure the material is no more than 8 inches wide by 12 inches long and 2.5 inches thick, 1 inch thick if you'd like to cut through the material completely. Please check the "Bringing Your Own Material" section for full details.





Pre-Production

Make sure the interior of the Carvey is clean of most of the leftover bits from the previous carving. If it is not, ask the Maker Space staff to clean it when they get a chance. (Cleaning is at the end of the documentation)

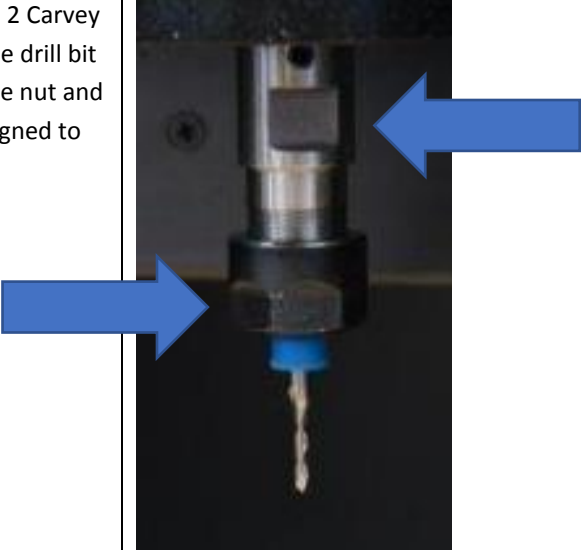


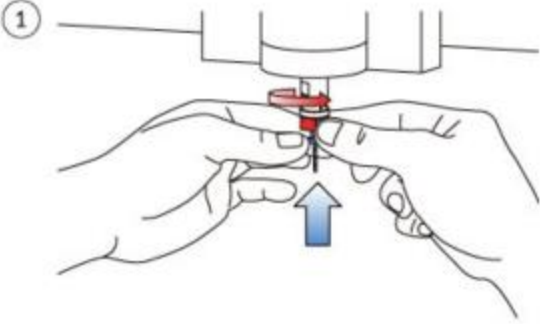
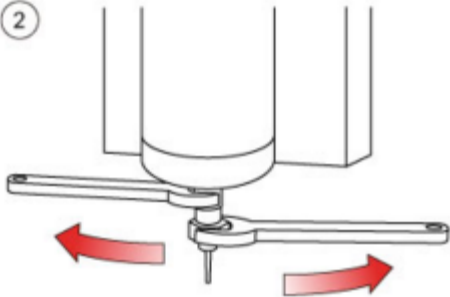
Sign into your Inventables Account and open your design in Easel



<p>Measure the material you will be using and enter the information into Easel along with the type of material. Resize your design as needed.</p>	<table><tr><td></td><td>Material: Birch Plywood</td><td>Bit: 1/8 in</td><td>+</td><td>Cut Settings </td></tr></table> <p>Material dimensions:</p> <p>X: <input type="text" value="12 in"/></p> <p>Y: <input type="text" value="8 in"/></p> <p>Z: <input type="text" value="0.5 in"/></p>		Material: Birch Plywood	Bit: 1/8 in	+	Cut Settings 
	Material: Birch Plywood	Bit: 1/8 in	+	Cut Settings 		
<p>Check the carving bit to make sure it is the right type for the material/level of detail. (Skip the next Section if it is)</p>						

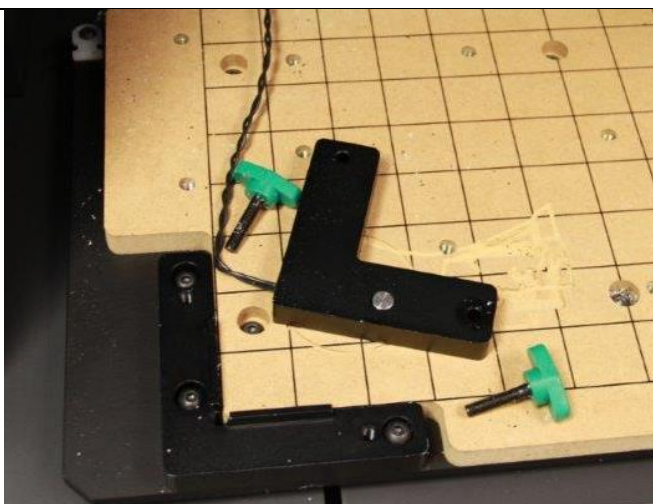
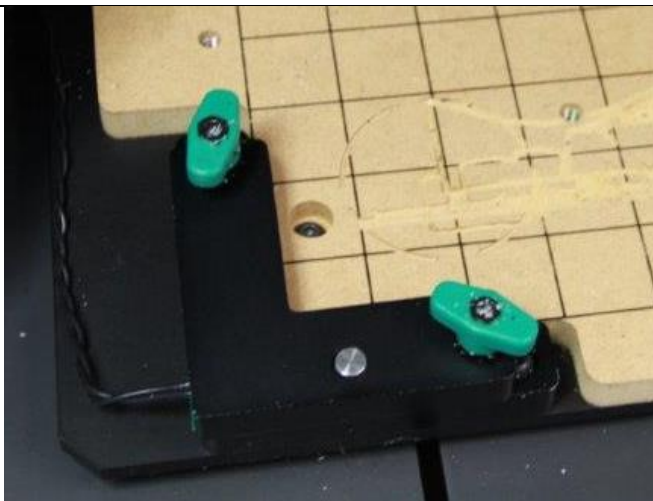
Replacing the Carving Bit (Make sure Carvey is off!)

<p>Make sure the Carvey is turned off. Using the 2 Carvey wrenches, firmly grasp both the nut above the drill bit and the piece of steel (the collet) between the nut and the spindle (You will notice each piece is designed to fit the wrenches).</p>	
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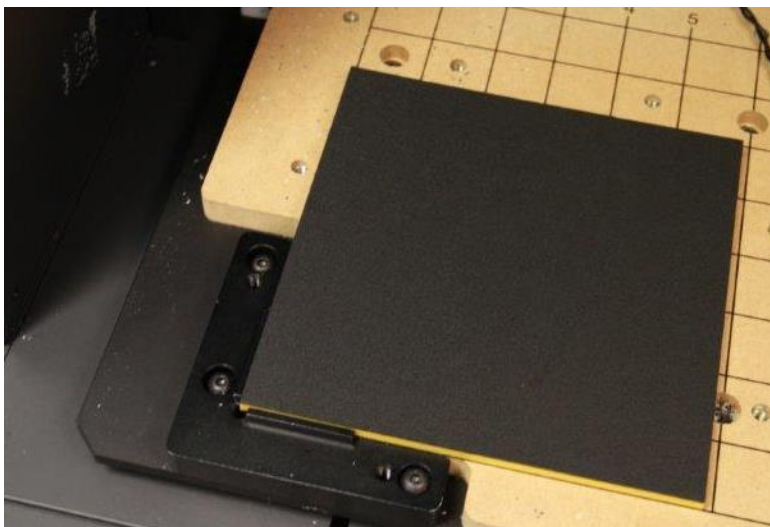
<p>Keeping the wrench on the collet steady, use the other wrench to turn the nut clockwise. This should loosen it enough that you can turn it by hand to get the previous carving bit out.</p>	
<p>Place the new carving bit into the machine. Push it all the way up until the band around it hits the black nut. Tighten the black nut by turning it counter clockwise until the carving bit can stay in place.</p>	
<p>Using the 2 Carvey wrenches, firmly grasp both the bolt above the drill bit and the piece of steel holding said bolt in place. Turn both wrenches away from the middle to tighten the bolt. Make sure the carving bit isn't loose, repeat this step if it is.</p>	

Getting the Material Ready (Make sure the Carvey is Off!)

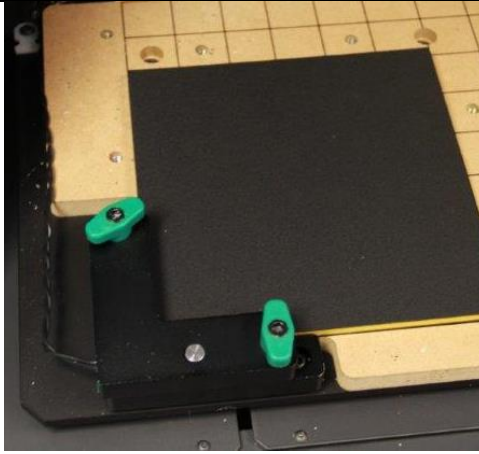
Make sure the Carvey is turned off. Remove the green thumb screws from the Smart Clamp in the bottom left corner of the Waste Board. Then take off the top of the smart clamp.



Place the Carving board onto the Waste board, making sure the bottom left corner is correctly aligned with the grid on the wasteboard.



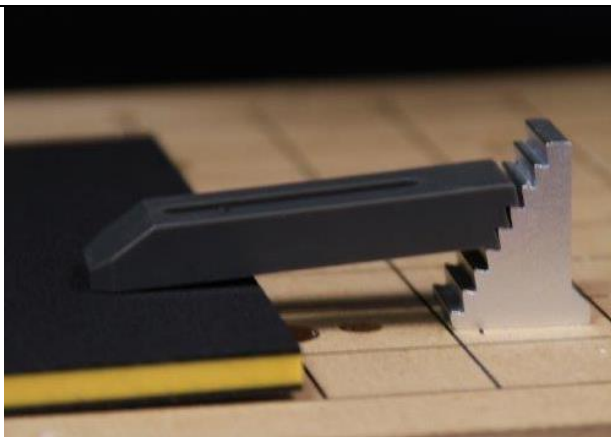
Put the top of the Smart Clamp back on top and screw it back into place.



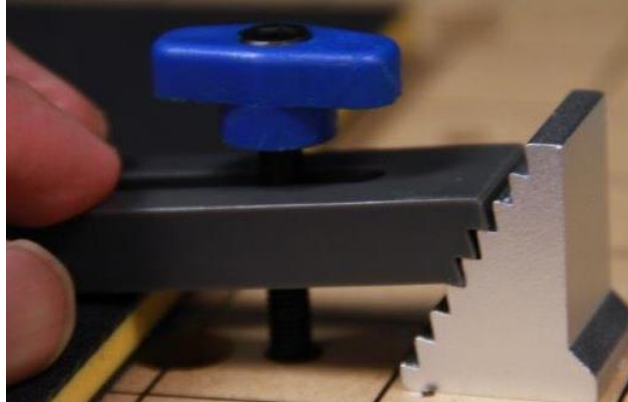
The other clamps are a straight block with a hole in the middle that come with a stepped block to keep the material steady. Align the hole in each clamp with one of the Waste Board.



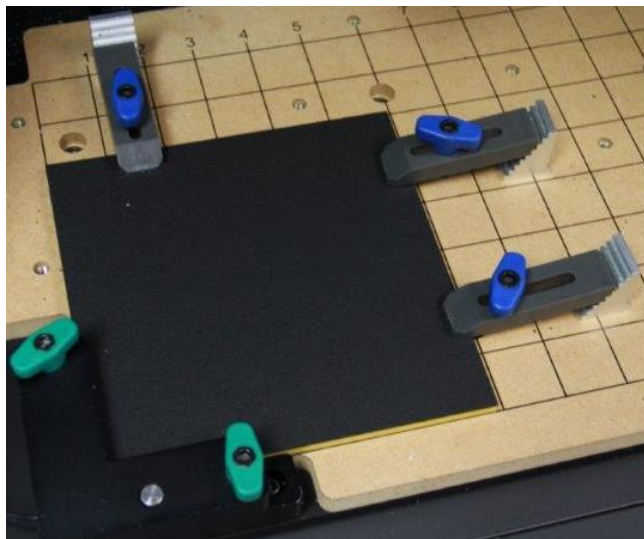
Angle the material slightly so it rests on the step block.



Use a thumb screw to tighten the clamp.

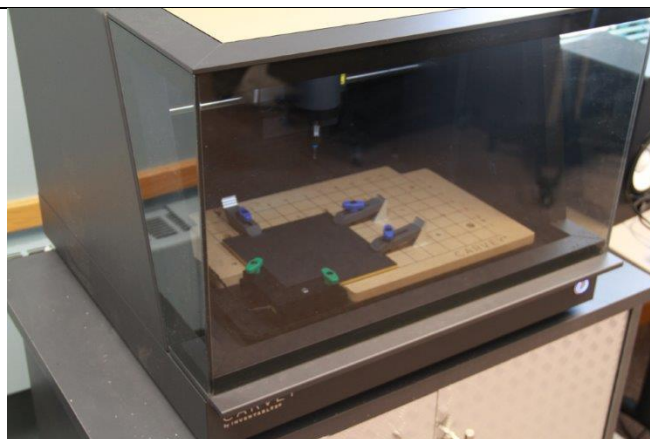


Repeat these steps for each clamp. You usually want 2 along the top and 2 on the right side of the board. Make sure the board is secure.

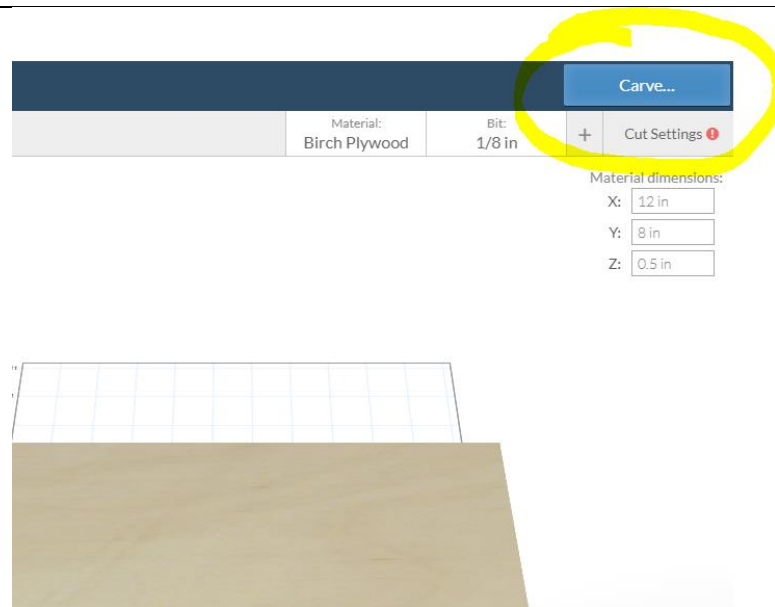


Carving

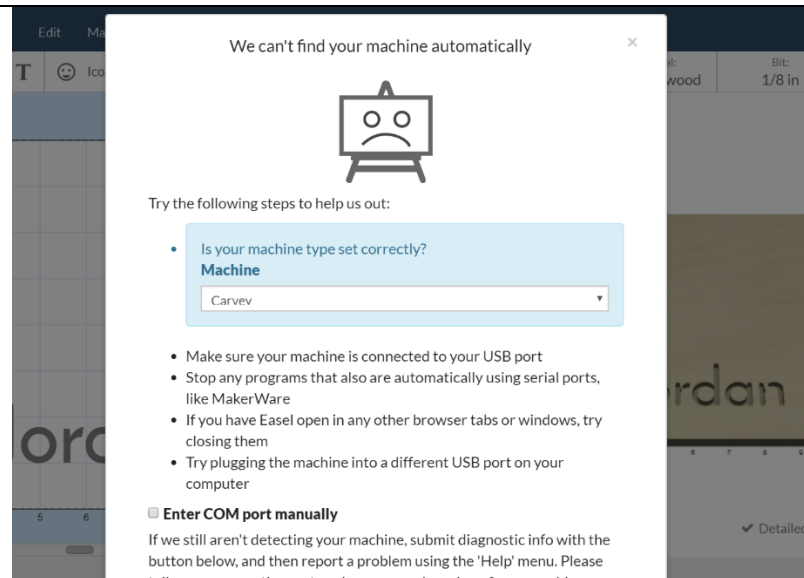
Close the lid and turn on the Carvey. The switch is behind the machine. The light should turn on.



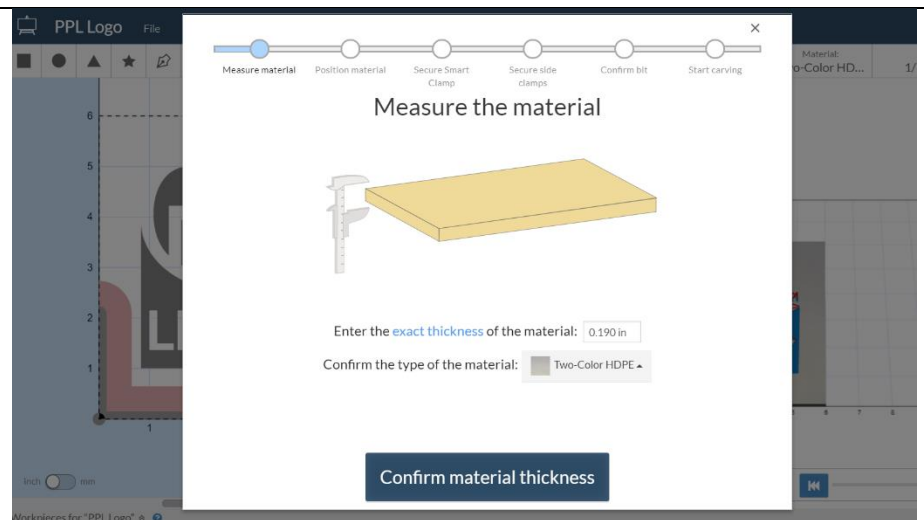
On the computer, click the “Begin Carving” button.



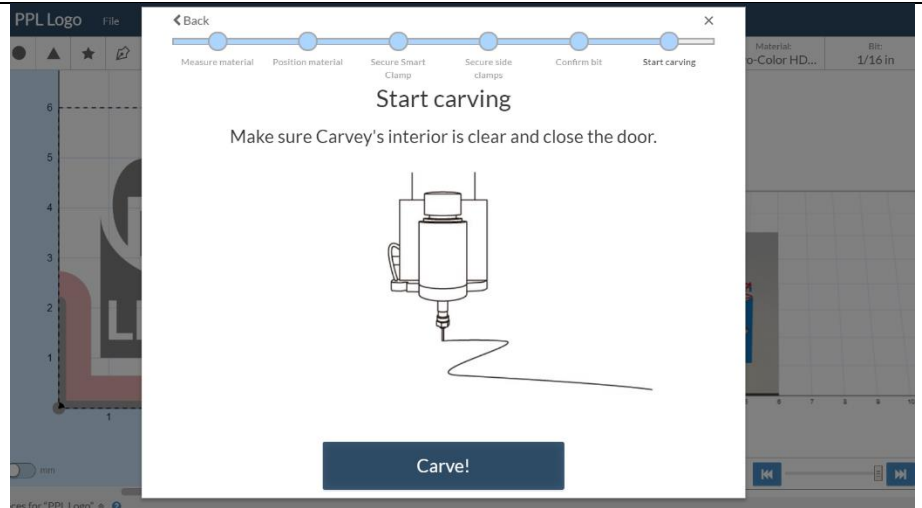
The computer should walk you through all the steps we have already completed. If it says “Cannot Detect Carvey”, make sure the USB is firmly attached to both the computer and the Carvey and try again. If it still doesn’t work, ask a Maker Space staff person to help you.



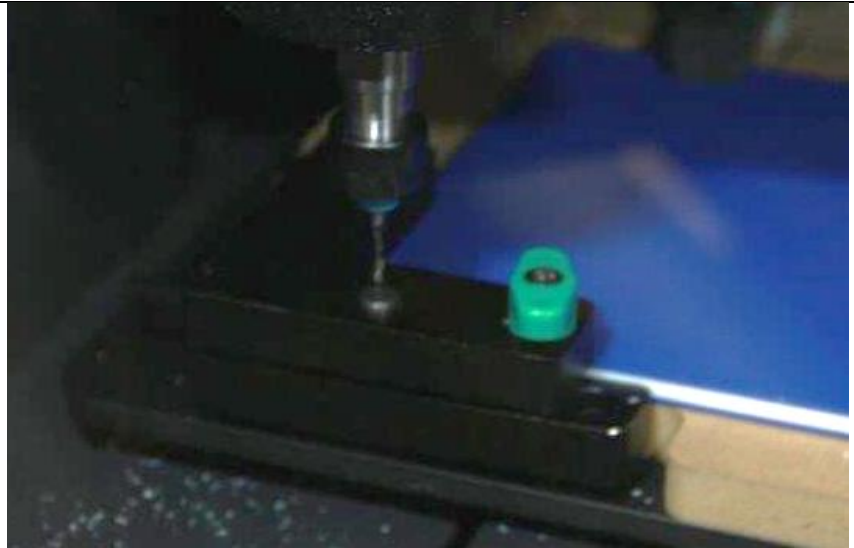
The program will walk you through all the steps that should’ve been completed already.



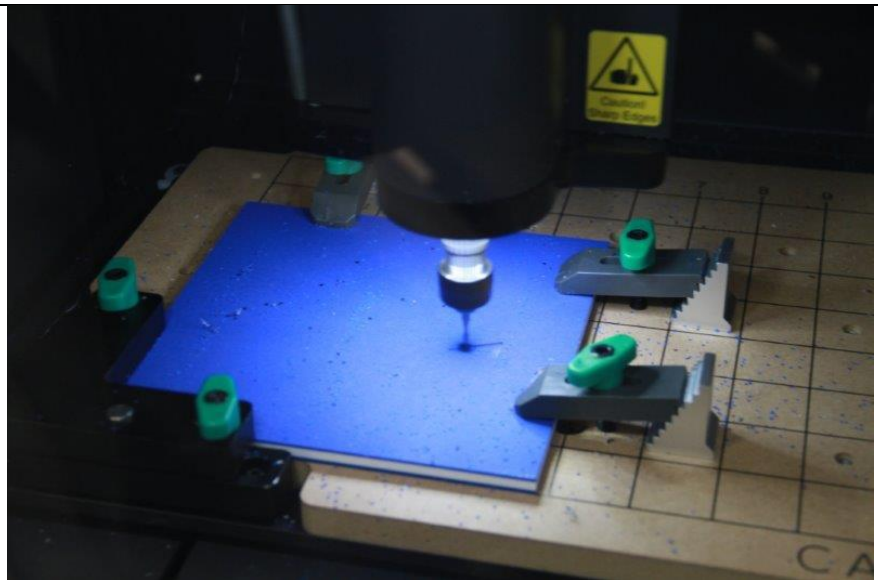
Once you go through all the steps, click the “Carve!” button and the machine should start carving.

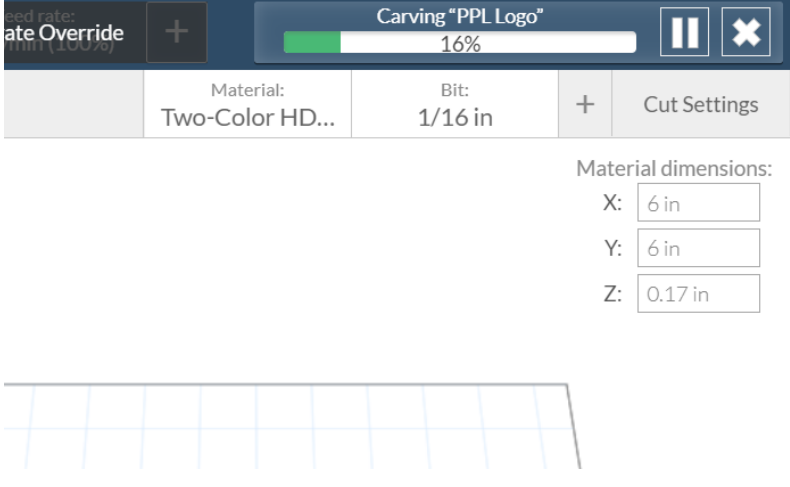
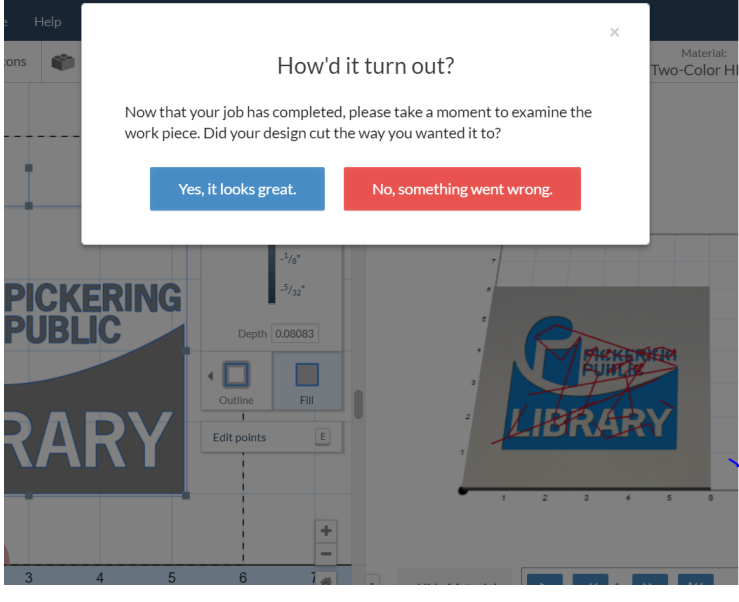
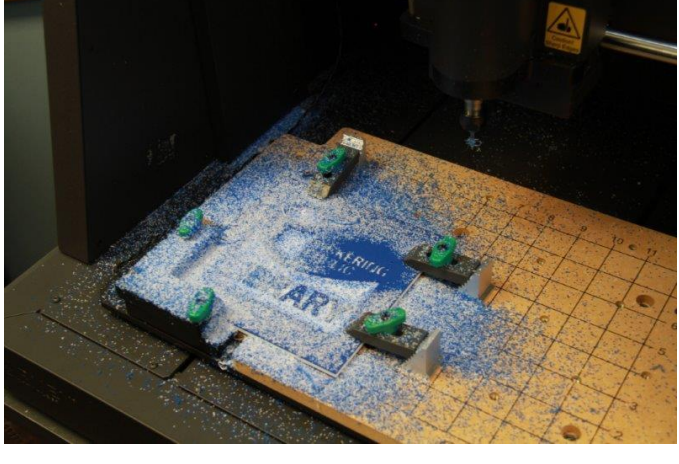


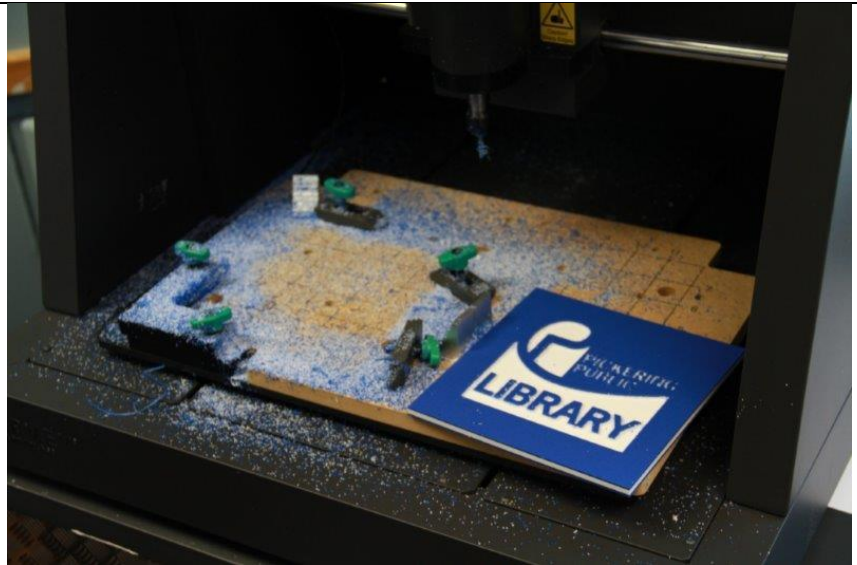
Before the machine starts carving it will touch the metal circle on the Smart Clamp to calibrate.



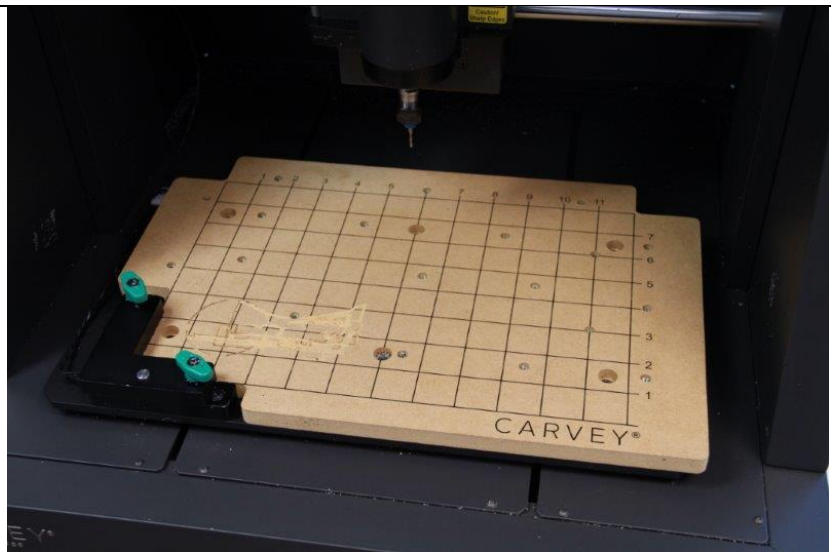
Watch the machine as it is carving to make sure it is carving correctly. Click the Pause (||) or Cancel (X) button on the Easel program if something goes wrong.



	
<p>Once the Carvey is finished, a completed message should appear on the computer.</p>	
<p>Open the lid, loosen the clamps and remove the finished product.</p>	

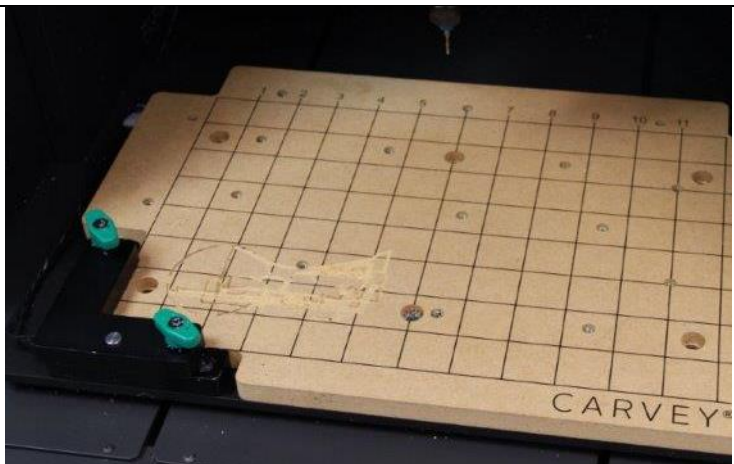


Let a staff member know the item is finished so they can clean the Carvey for the next person.

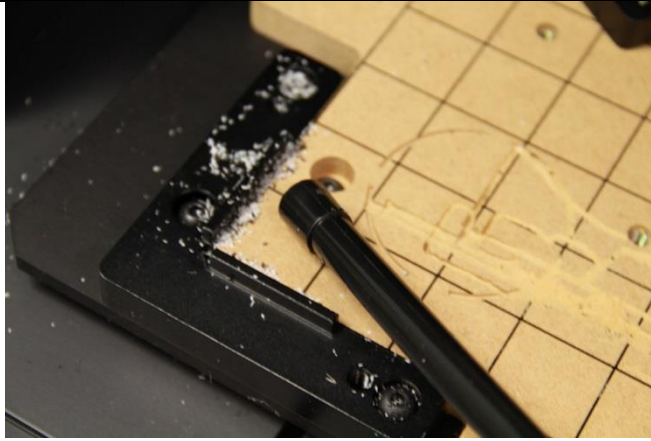


Cleaning

Turn off the Carvey and remove all clamps (minus the smart clamp). Plug in the vacuum and attach one of the small extensions to the end of the vacuum tube.



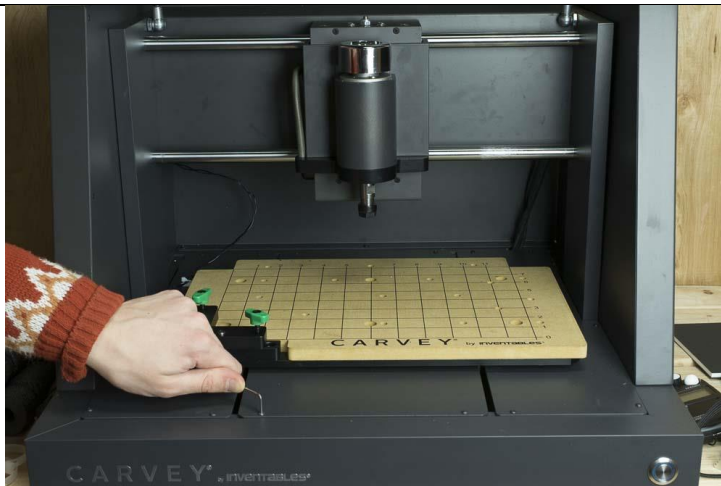
Turn on the vacuum and vacuum the interior of the Carvey.



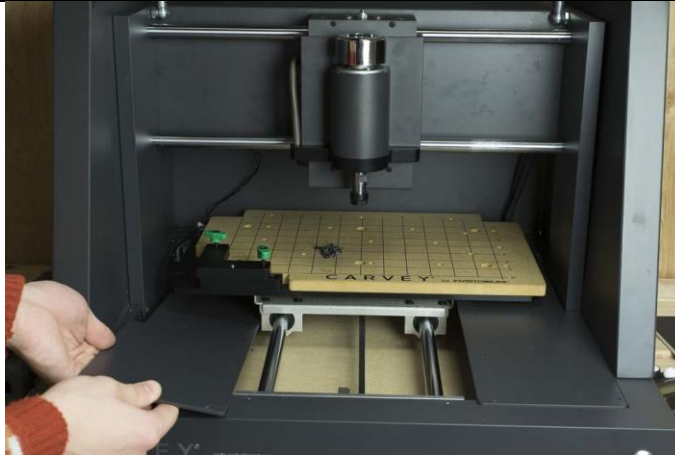
Switch extensions as needed to reach small areas.



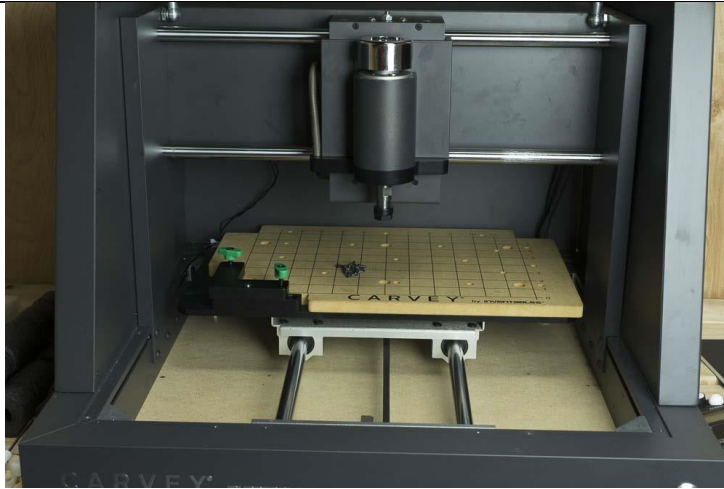
For heavy duty cleaning, unscrew the 14 screws on the plates underneath the waste board.



Remove the plates.



Vacuum the area underneath the plates, then put the plates back and screw them in.



Bringing your Own Material

If you would like to bring your own material to use with the Carvey, please make sure the material is no more than 8 inches wide by 12 inches long and 2.5 inches thick. The Carvey also cannot completely cut through material that is longer than the drill bit, our longest drill bit can carve through materials up to 1 inch or 25mm thick.

We currently support the following materials that are pre-set for the Carvey:



ABS



Aluminum



Bamboo



Birch Plywood



Bubinga



Cast Acrylic



Cherry Plywood



Corian



Expanded PVC



Hard Maple



Linoleum



MDF



PCB



Soft Maple



Two-Color HDPE



Walnut

Additional Resources:

Online Carvey Manual

<http://carvey-instructions.inventables.com/>

Inventables Carvey Demo

<https://www.youtube.com/watch?v=s1NU2GDBCME>

How To properly clamp your material on Carvey

https://www.youtube.com/watch?v=-wyU8PNt_4Q

Easel Tutorials

<https://www.youtube.com/watch?v=cmwBltnHeHI&list=PLFr1ntD6SYNQZOWP86gg4-NEyKay3qvPx>

Inkscape Tutorial on Lynda.com (Free Vector Program that creates files that can be imported into Easel)

<https://www.lynda.com/Inkscape-tutorials/Inkscape-Essential-Training/418854-2.html?org=picnet.org>

Cleaning and Maintenance

<http://carvey-instructions.inventables.com/cleaning/>