

DREMEL[®]

DIGILAB

LASER CUTTER QUICK START GUIDE

READ THE DREMEL LC40 OPERATING/SAFETY INSTRUCTION BEFORE SETUP AND USE.
FAILURE TO COMPLY WITH THE WARNINGS AND INSTRUCTIONS MAY RESULT IN FIRE,
EQUIPMENT DAMAGE, PROPERTY DAMAGE OR PERSONAL INJURY.

OPERATING/SAFETY INSTRUCTIONS

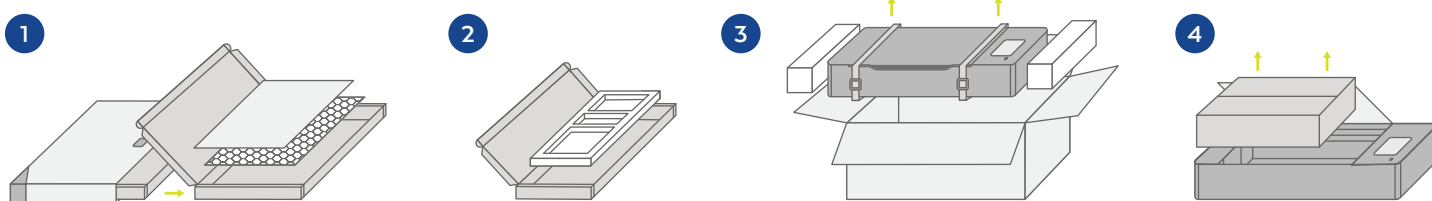
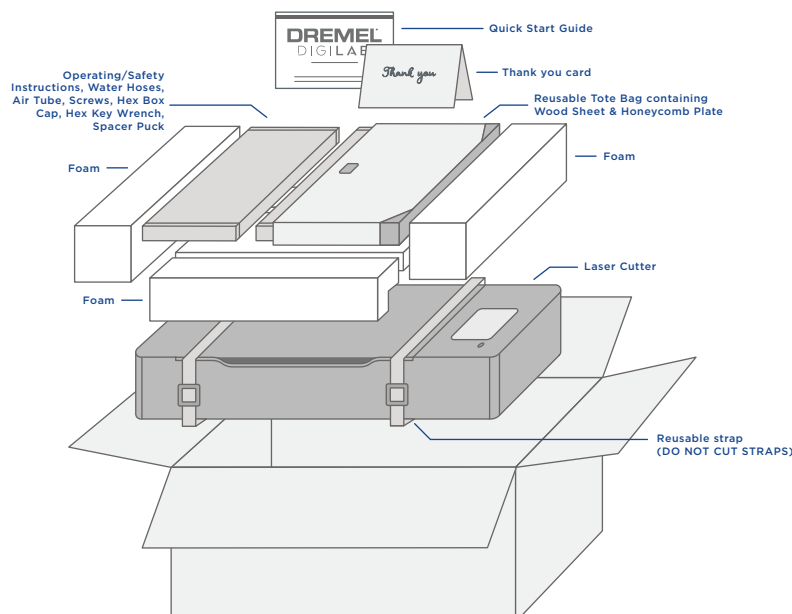
UNBOXING

Create a workstation.

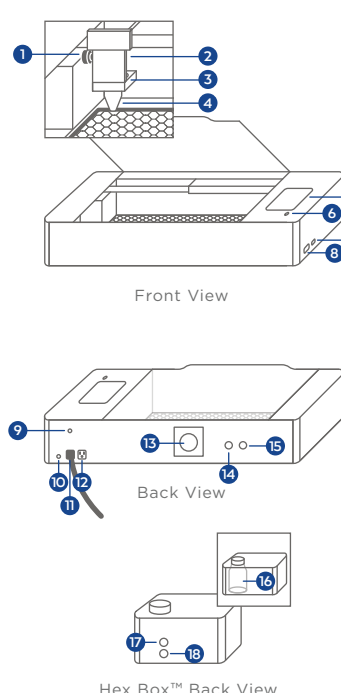
Carefully open the top of the box.

1. **Remove Reusable Tote Bag from packing and pull out the inside box.** Open lid to reveal the test material and the Honeycomb Plate.
2. **Remove Operating/Safety Instructions, Water Hoses, Air Tube, Screws, Hex Box Cap, Hex Key Wrench, Spacer Puck** from the other box.
3. **Remove foam to reveal the Laser Cutter.** Use two people to lift the Laser Cutter out of box by straps. After the Laser Cutter has been taken out of the box, hook straps to the Reusable Tote Bag. DO NOT CUT STRAPS.
4. **Open the lid of the Laser Cutter** to reveal box with Hex Box, Exhaust Duct, & Exhaust Shroud.
5. **Use two people** lift the laser cutter and place on your workstation.

Note: Save your Dremel DigiLab Laser Cutter packaging for future transport and storage.



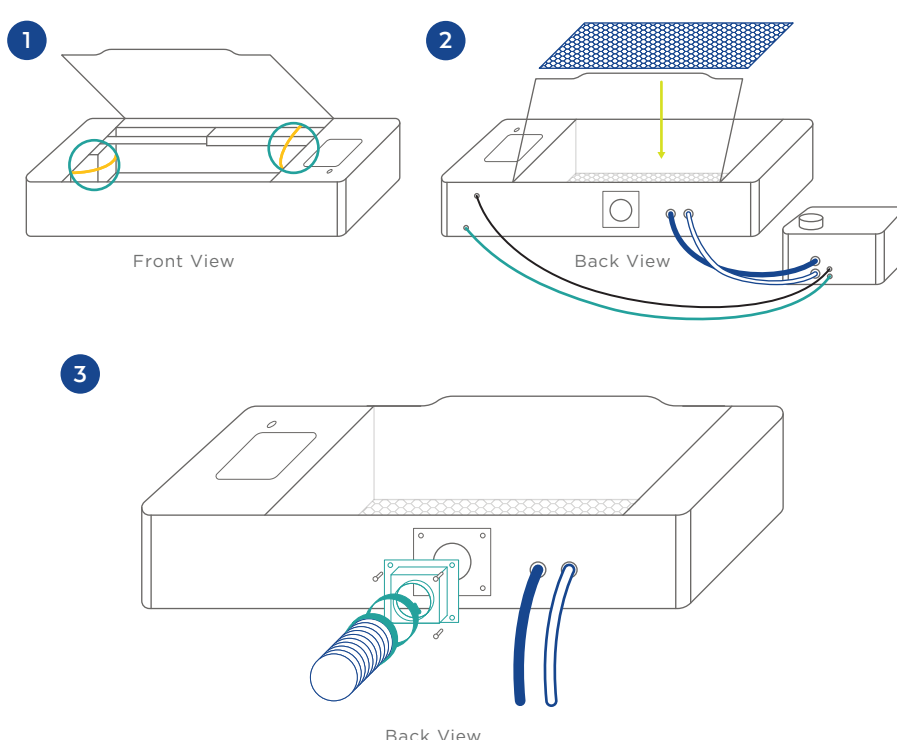
KIT CONTENTS | KNOW YOUR LASER CUTTER



1. Laserhead Knob
2. Wide Angle Camera
3. Lens
4. Laserhead
5. Touchscreen
6. Pause/ Stop Button
7. Ethernet Port
8. USB Port
9. Air Inlet
10. Power Switch
11. Power Outlet (with power cord attached)
12. Exhaust Fan Power Outlet
13. Exhaust Flange
14. Water Outlet
15. Water Inlet
16. Water Tank
17. Hex Box™ Water Outlet
18. Hex Box™ Water Inlet

HARDWARE SET UP

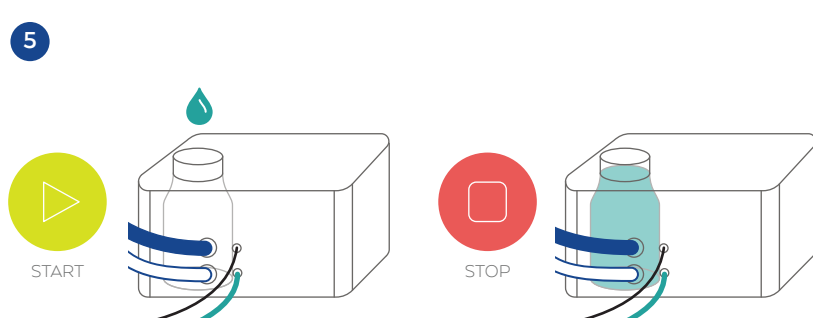
1. **Locate and remove zip ties.** Open lid to identify two zip ties. Use a small pair of scissors to carefully cut and remove each one.
2. **Connect the Hex Box™.**
 - Match Water Hoses to the appropriate fitting labels on the Laser Cutter and appropriate fittings on the Hex Box™.
 - Connect the Air Tube to the Laser Cutter and the Hex Box™.
 - Connect the Hex Box™ Connector Cord to the Laser Cutter and the Hex Box™.
 - Carefully place the Honeycomb Plate on the bottom of the Laser Cutter.
3. **Connect the Exhaust Duct**
 - Attach the Exhaust Shroud to the Laser Cutter and secure with Screws.
 - Secure one end of the Exhaust Duct to the back of the Laser Cutter with the Duct Clamp.
 - Attach the other end of the Exhaust Duct to either a filtration system (not included), an exhaust port, or place outside a window.



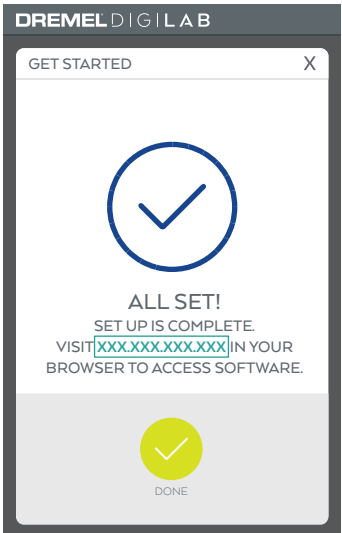
HARDWARE SET UP CONTINUED

4. **Connect power source.** Plug the **Power Cord** into a power outlet.
5. **Fill Hex Box™ with water**
 - Using a funnel, add water until tank looks full.
 - Start the pump (water level in tank should go down).
 - Fill the tank again, while pump is running, until tank is full and no bubbles are visible in the Laser Tube.
 - Screw on the cap.

Note: Refer to the Laser Cutter's LCD Screen to check if the Laser Cutter has been set up properly. The SMART Laser™ sensors will indicate a white icon when each step has been installed correctly.



NETWORK SET UP



CONNECT TO YOUR COMPUTER

For a hardwire connection, connect the Ethernet Cord to the Laser Cutter and your computer.

For a wireless connection, select your network from the menu and enter password to connect the Laser Cutter.

1. **Open an internet browser** window on your computer.
2. **Type in the "IP" number** from the bottom of the Laser Cutter's LCD Screen into the browser's URL bar.

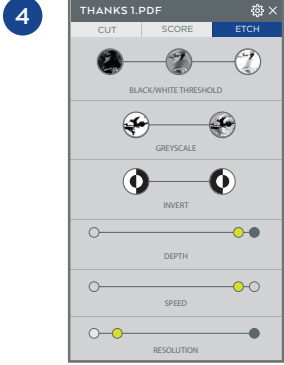



TIP: If you notice things taking a while to load, or not working properly simply refresh your browser to reboot the software.

SOFTWARE SET UP

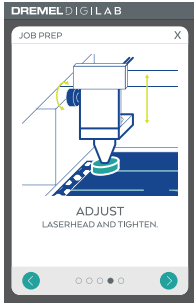

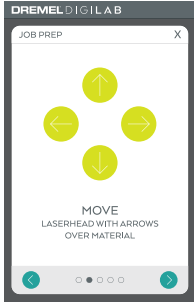
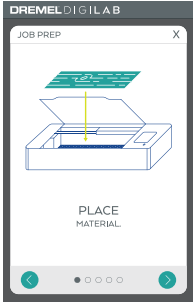
1. **Begin your project by:**
Directly importing files into the Dremel DigiLab software
Or
Use Camera Capture to transform sketch into file

The Dremel DigiLab software accepts both vector (SVG) and image (JPEG, PDF, PNG, etc.) based files. For best practices, use vector-based files for cutting and scoring and image-based files for engraving.
2. **Select material type and thickness.** The Dremel DigiLab software has a library of materials to choose from with recommended print settings. To create your own setting, select "more" from the materials menu.
3. **Move, scale, and adjust your file to desired orientation.**
4. **Adjust print settings as needed.** Settings will auto populate based on the material you've selected, but may need adjustments based on your project.
5. **Select the START button** on the computer software when ready to begin your job.
6. **Review job and send to Laser Cutter.**

Note: For more information on software refer to the Operating/Safety Instructions.



PROJECT SET UP

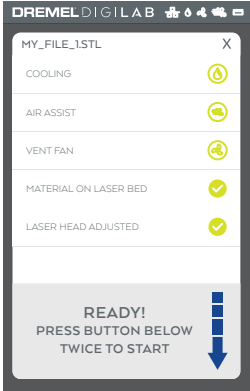


TIP: The mirrors have been aligned at the factory, but might need realignment due to shipping. For more information see Operating/Safety Instructions.

FOCUS LASERHEAD

1. **Lay Honeycomb Plate flat** inside the Laser Cutter.
2. **Remove cap from lens** on the camera.
3. **Place your material piece on top** of the Honeycomb Plate.
4. **Use arrows on the Laser Cutter's LCD Screen** to move the Laserhead so that it hovers over your material.
5. **Loosen the screw** on the left side and raise the Laserhead.
6. **Place Spacer Puck** in between your material and the Laserhead.
7. **Adjust the height of the Laserhead** to sit on top of the Spacer Puck.
8. **Tighten the screw to secure Laserhead** in place and remove the Spacer Puck from the workspace.

CHECK SYSTEMS



SMART Laser™ verify that all systems are up and running on the LCD touchscreen. The sensors will alert you and help trouble shoot if something needs to be corrected. Double press start button to begin job.

TERMINOLOGY

Air Assist: A system that blows air from the Hex Box to the Laserhead and onto the work piece to help extinguish flare ups.

.bin File: A binary file format used to save and load your jobs to and from your computer. Print settings will also be remembered.

Greyscale: Also called "dither," takes your black and white image and assigns different densities of dots to visually create a number of different shades of gray. Darker areas of your image will have more dots, while lighter areas will have less dots.

Material Library: A listing of materials for which suggested laser settings are predefined in the Laser Software. This library is accessed from the Actions Bar and can be edited and expanded.

Cut: Use this function when you're attempting to cut through a material. This function is also called "vector" since a vector, or line file is needed in order to execute. The Laserhead will follow the lines of your file.

Etch/Engrave: Use this function when you're attempting to darken or remove the surface of your material, rather than cut through. This function is also known as "raster" and will require an image file to execute. The Laserhead will move side to side like an inkjet printer.

Honeycomb Plate: An aluminum tray that supports proper ventilation as you cut and engrave.

Score: Use this function when you want the Laserhead to follow the lines of your file, but don't want it to cut all the way through your material. This function requires a vector, or line type file and is most useful when you want to emphasize the outline of text or an object.

Touch Screen: Full color display that is touch activated. It allows you to monitor your Laser Cutter while also providing commands directly to your Laser Cutter without the use of a computer.

Spacer Puck: A small cylinder that is placed on top of the material to focus the Laserhead.

Laserhead: An assembly of components, including a mirror, lens, and cone, which the laser passes through before making contact with the work piece.

Laser Software: The Laser Control Software that is provided on your machine and accessed by a computer on the network. From here you can import graphic files, adjust laser settings, and run your jobs.

Laser Tube: A glass tube located at the rear of the laser unit that generates the laser beam.

Hex Box™ (Cooling Box): An enclosed box that integrates the water circulation and air assist functions of your Laser Cutter.

BEST PRACTICES

1. **Double check that the Laserhead is focused** before starting your job.
2. **Ensure that you are using safe materials in the Laser Cutter.** See list of prohibited materials in Operating/Safety Instructions.
3. **Stay close and monitor the Laser Cutter** when a job is running.
4. **When removing your job material or Honeycomb Plate, do so carefully** to prevent damaging the Laserhead or tube.
5. **Use a vacuum to clean small pieces from the laser bed regularly.**
6. **Use alcohol wipes to clean mirrors and lens** after completing several prints.
7. **Keep a 5lb Class A or larger fire extinguisher on hand.**

For inspiration and product information go to:

dremel.com/digilab-laser-cutter

LASER CUTTER RESOURCES	
For Makers & Educators (DigiLab Website)	digilab.dremel.com/support/laser-support
Laser Cutter Customer Support	1-844-437-6533 http://www.dremel.com/digilab-support
More Details on Laser Cutter Setup & Maintenance	Refer to Dremel.com or Operating/Safety Instruction Manual

LASER CUTTER