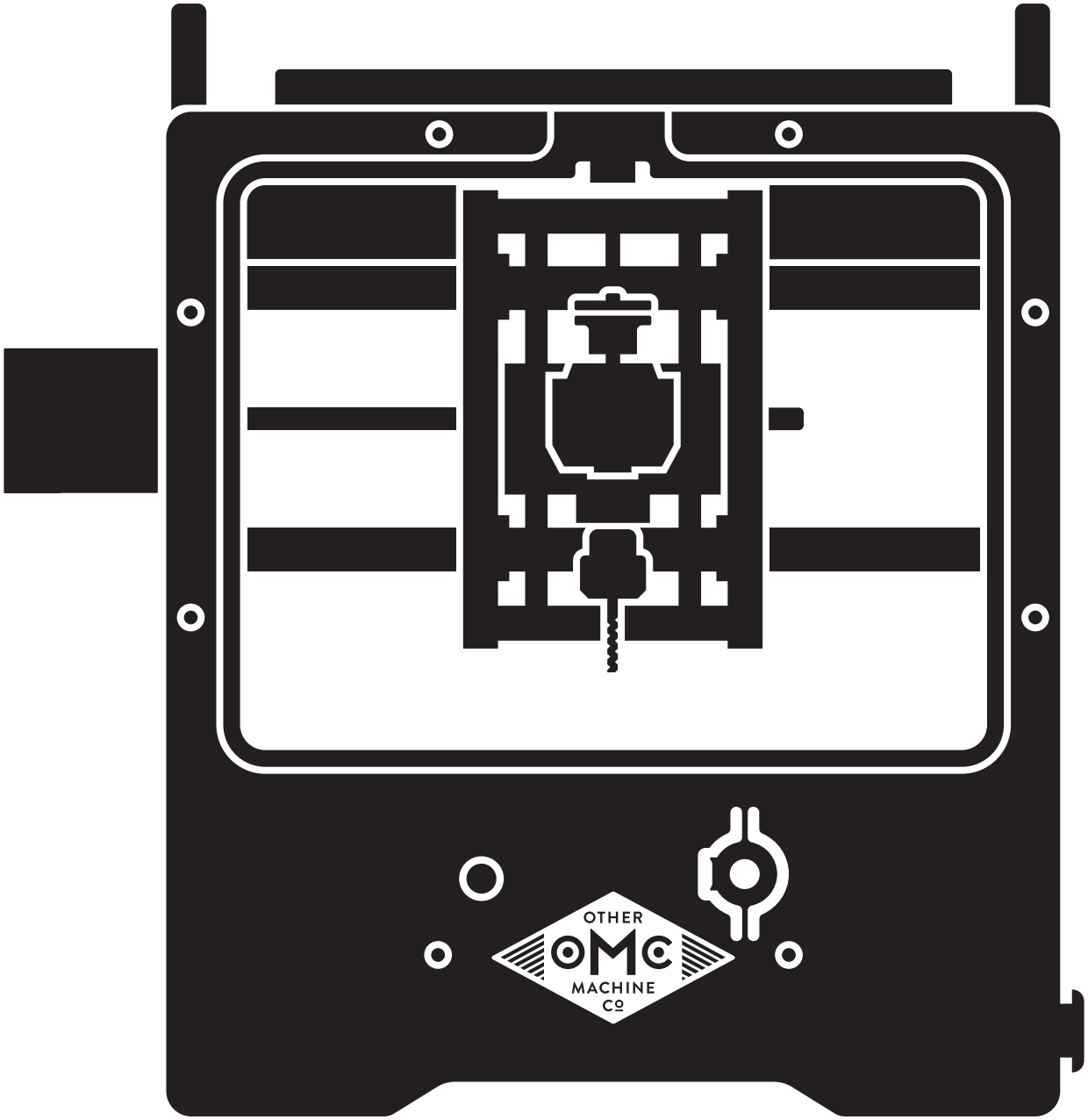
OTHERMILL

TINY MACHINES
FOR GIANT DREAMS
OTHERMACHINE.CO



MECHANICS

MAX XYZ TRAVERSE SPEED 60 in/min (1,500 mm/min)

SPINDLE SPEED 7,000–16,500 rpm

MAX RESOLUTION 0.001 in (0.025 mm / 25 microns)

DEFAULT TRACE CLEARANCE 0.041 in (1.03 mm)

TOOL HOLDING ER-11 Collet

ELECTRONICS

POWER REQUIREMENTS
100–120 V AC, 4 A
200–240 V AC, 2 A
50/60 Hz

OPERATING TEMPERATURE
40–110 °F (4–43 °C)

CONSUMPTION 150 W

SOFTWARE

FILE INPUT
Eagle BRD (.brd), SVG (.svg)
Gerber RS-274X (.gtl and .grb)
G-Code (.nc and .tap)

SYSTEM REQUIREMENTS
MAC OS X 10.8 or higher

INTERFACE USB

DIMENSIONS

FRAME DIMENSIONS
10.25 × 10 × 12.75 in
26 × 25.4 × 32.4 cm

BUILD VOLUME
5.5 × 4.5 × 1.25 in
14 × 11.4 × 3.175 cm

WEIGHT 16.8 lbs (7.62 kg)

GETTING STARTED

Welcome to your Othermill!

This guide will help explain setting up and using the Othermill and Otherplan, as well as what you'll need to get milling.

1 UNPACKING & SETUP

Remove the Accessory Kit box, power supply, and cables from the top tray. Remove the top tray and top layer of packing foam from the box. Remove the Othermill from its antistatic bag.

Remove the three cardboard covers from the rails inside the Othermill. Save these covers, and replace them when transporting the machine.

Now it's time to insert the collet: (**FIGURE A**).

- Remove the collet and the two wrenches from the Accessory Kit.
- Remove the collet nut from the bottom of the tool holder. To do this, use the smaller wrench on the flat part of the tool holder to secure it in place while loosening the nut with the larger wrench.
- Insert the collet into in the collet nut, and snap it into place.
- With the collet in place, thread the collet nut back onto the tool holder by hand.
- Tighten by two or three turns, holding the tool holder in place with the small wrench if necessary. Do not fully tighten the nut without a tool.

Place your wrenches on the Othermill. There are magnetic pockets on the top of the Othermill to keep the wrenches handy while you're working.

Connect the power supply to the power jack on the back of the Othermill with the built-in cable. Connect the power cable to the power supply and plug it into a grounded electrical outlet.

IMPORTANT! The power cable has a locking connector. To remove the cable, always pull by the connector. Do not pull by the cable.

Plug in the USB cable to the USB jack on the back of the Othermill. Connect the other end to your computer.

2 INSTALLING OTHERPLAN

You'll need to install Otherplan on your computer to operate the Othermill. Otherplan is available for Mac OS X 10.8 and above. Download at *othermachine.co/otherplan*.

Once the download completes, open the DMG file, and drag the Otherplan application to your Applications folder. Open Otherplan by double clicking the application icon.

The Otherplan window is composed of three parts:

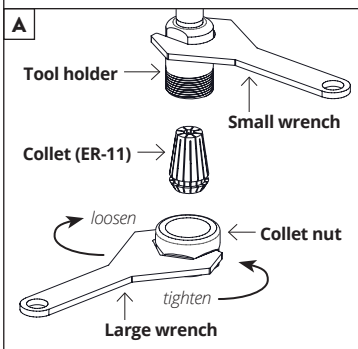
1. **The simulation area,** in the middle of the window, shows your project as it will be cut on the Othermill.
2. **The setup area,** on the right side of the window, allows you to import design files, configure the Othermill, and run milling jobs.
3. **The status area,** on the left side of the window, shows the current location of the Othermill's tool.

With the safety windows in place, turn on the Othermill by twisting the red emergency stop button clockwise and pushing the power button on the back of the machine. The interior lights will turn on and the Othermill will beep.

If the firmware on your Othermill needs to be updated, Otherplan will guide you through the process.

When prompted, home (calibrate) the Othermill by clicking the Start Homing button.

A



3 BEFORE MILLING

Whenever you use the Othermill, you will need:

DESIGN FILE

The Othermill needs to know what to cut! Once you've created a design, import it into Otherplan to scale and orient it the way you want.

Otherplan imports SVG, BRD, Gerbers, and G-Code. For more information about file types, go to *othermachine.co/support*.

If you're just getting started, our fun "Hello, World" kit includes a design file. You can find yours in the Accessory Kit.

MILLING MATERIAL

The Othermill cuts most anything softer than steel, and you'll need a piece of material to cut. People often call this object the "material," "stock," or "workpiece," but all it really means is "the thing you're cutting."

For more information on materials supported by the Othermill, go to *othermachine.co/tools-materials*.

Before you start cutting, you'll need to attach your material to the Othermill's machining bed. This is called "fixturing." We've included a roll of double-sided tape, which works great with flat, thin material like circuit boards and thin metal or plastic pieces.

If the tape isn't enough, a bead of hot glue around the edges of larger or rougher materials, like wood, plastic, and machining wax, works great.

The machining bed is also equipped with tiny T-slots that can be used for fixturing. A complete set of bed diagrams and instructions can be found at *othermachine.co/support*.

MILLING TOOL

We've included 1/32" and 1/64" flat end mills to get you started, but you can use any cutting tool with a 1/8" shank.

Remember, the smaller the tool, the more fragile it will be, and the slower you'll need to cut. Big tools are great for roughing passes and clearing out lots of material.

If you need help selecting an appropriate tool or material, refer to the Othermill material and tool guide at *othermachine.co/tools-materials*.

Once you've imported a design file and loaded a tool and piece of material, you'll be ready to mill!

4 HELLO, WORLD!

Our "Hello, World!" kit guides you through using the Othermill for the first time. You'll need a soldering iron to complete the project, but everything else is included in the box.

If you've never encountered it before, "Hello, World!" is a tradition that comes from the computer programming world. Teaching a computer how to say "Hello, World!" is often the first project that people make when learning a new programming language. It's simple and easy to understand, but also illustrates many important concepts.

A full tutorial, including photos, is available at *othermachine.co/hello-world*. If you've used the Othermill before, here are the basic steps:

- Open your "Hello, World" Kit and take out the FR-1 circuit board and double-sided tape. Remove the 1/32" flat end mill from the Accessory Kit.
- Attach the board to the Othermill bed using the double-sided tape, lining up the lower-left corner of the board with the lower-left corner of the bed.
- In Otherplan, click *Setup Material* and choose Single-Sided FR-1. Choose the standard 5×4 inch board. Click *Done*. Make sure the *Material Origin* is at X=0, Y=0, Z=0. Click *Done*.
- Click *Import Files* and locate the Hello World design file (*other machine.co/hello-world)*. You'll see it overlaid on the material.
- Click the *Change* button next to *Tool* in the upper-right panel. Carefully follow the prompts to insert and locate a 1/32" flat end mill.
- In the *Hello World* plan panel, choose a 1/32" flat end mill. Make sure *Traces*, *Holes*, and *Outline* are all selected.
- When you're ready, click the *Cut* button. Sit back and enjoy the mesmerizing process.

Once it finishes cutting:

- Solder the battery clip to the left board.
- Solder the LEDs and resistors to the right board.
- Solder the top rack and bottom rack boards to the right board.
- Attach the base board to the bottom rack board with double-sided tape.
- Solder the right and left boards to the front board.
- Bend the LEDs to point toward the back of the front board.
- Insert the battery and watch it light up!
- Optionally, store your mounting bracket, screws, hex wrench, and end mills into their receptacles in the project.

Happy milling!

OTHERMACHINE.CO/START

SAFETY FIRST

Using Your Othermill Safely

Please review the following precautions carefully.
Have a safe and enjoyable experience using the Othermill.

MODIFY OR REPAIR YOUR OTHERMILL AT YOUR OWN RISK. Doing so voids your warranty and may result in abnormal operation, which could cause injury to you or damage to your machine.

HAVE A QUESTION?

If you have a question about the handling or operation of your Othermill, or about the material you are using, please send us an email at *support@othermachine.co*.

WORK AREA SAFETY

Make sure to use your mill on a flat and stable surface.

Work in a clean and well-lit area.

Keep a vacuum nearby for chip cleanup.

PERSONAL SAFETY

Do not allow children to operate without close adult supervision.

Do not leave the Othermill unattended while in use.

Prior to operation, make sure the collet and tool are secure, and remove the wrenches and other tools from inside the Othermill.

Do not use the Othermill if its safety windows are cracked.

SHARP ELEMENT

Do not touch the sharp ends of bits, even when the Othermill is not in operation, as they may cause injury.

PINCH HAZARD

Do not touch or place hands near moving parts — such as the carriages, rails, frame, spindle, and pulleys — while the Othermill is in operation.

ROTATING PARTS

When using the Othermill, tie back long hair and avoid clothing or jewelry that may get caught.

DISCONNECT MAIN PLUG FROM OUTLET

Unplug and store the Othermill when not in use.

ELECTRICAL SAFETY

Make sure to turn off the Othermill before unplugging or plugging back in. Do not unplug by pulling on the power cord.

Do not use the Othermill if the power cord is damaged.

Do not abuse the power cord. Do not twist, bend, scrape, pull, pinch, or put a heavy object on it. Keep the cord away from heat, sharp edges, and oil.

ELECTROCUTION

Only use the power cord supplied with the Othermill. To do otherwise may result in electrocution or fire.

CONNECT AN EARTH TERMINAL TO THE GROUND

Always plug the Othermill into a grounded outlet that matches the plug. Do not modify the power cord or plug in any way.

DO NOT SPRAY WITH LIQUID

Make sure the Othermill stays dry. Do not use in rainy or wet conditions, and do not use cutting fluid, coolant, or liquid lubrication on the Othermill.

MACHINE & TOOL SAFETY

As with any power tool, do not use the Othermill if you are tired, distracted, or otherwise impaired.

Do not operate the Othermill with damaged or dull bits.

Use the Othermill's Emergency Stop button to immediately stop the machine when necessary.

HOT SURFACE; DO NOT TOUCH

Do not touch moving parts after use. They may be hot.

DUST INHALATION / EXPLOSION HAZARD

Ensure that the Othermill is clear of debris before and after operation. Use a brush to clean metal debris, as vacuum-cleaning metal shavings could cause a fire in the vacuum cleaner. A vacuum may be used to clean other material debris. Never clean the Othermill while in use.

MATERIAL TIPS & TRICKS

If you're cutting hard materials, shallower cuts will improve the longevity of your cutting tool.

If you're cutting a small, deep hole, make sure that the flutes on your tool are at least as deep as the hole. Otherwise, material will fail to eject, gumming up the cutting tool. This can damage or break the tool.

To improve milling times on jobs with large areas to clear, use a larger tool in addition to a smaller tool. For example, to mill a circuit boards faster, use 1/16" and 1/64" tools. The 1/16" tool will clear large spaces quickly, and the 1/64" will only be used for details.

MATERIAL SAFETY

The Othermill can cut a wide variety of materials. Some work great all the time, some work great if you know what you're doing, and some don't work at all. Here are some suggestions.

MATERIALS THAT WORK GREAT

- FR-1 circuit boards
- Machining wax
- Soft and medium-hard wood (such as birch plywood)
- Linoleum
- Machinable foam
- Soft plastics (for engraving)
- Brass (for engraving)
- Aluminum (for engraving)
- Silver (for engraving)

MATERIALS THAT WORK GREAT IF YOU KNOW WHAT YOU'RE DOING

- Hard plastics, like Delrin and HDPE
- Aluminum
- Brass
- Hard wood (such as mahogany)
- Soft stone (such as soapstone)
- Leather (for engraving)

DO NOT MILL IN THE OTHERMILL

- Steel, stainless or otherwise — will dull/melt the cutting tool.
- Iron — will dull/melt the cutting tool.
- Titanium — will dull/melt the cutting tool.
- Hard stone and precious gems — will dull/melt the cutting tool and make unhealthy dust.
- Fiberglass, including FR-4 circuit boards — makes unhealthy dust.
- Magnesium — chips can ignite and are difficult to extinguish.
- Glass — will shatter, creating dangerous shrapnel.
- Silver chloride or other powdery materials — very crumbly, will not hold its shape.
- Chocolate, cheese, or other food products — the Othermill is not food safe.

THE NITTY-GRITTY

Exclusive Limited Warranty & Disclaimer for the United States Territories

Please read the following carefully. It affects your rights as a purchaser of this product.

Other Machine Company's warranty obligations and liability for all hardware products sold by Other Machine Company in the fifty United States, the District of Columbia, and U.S. Territories are limited exclusively to the terms set forth below (this "Limited Warranty").

Other Machine Company (hereinafter referred to as "OMC") warrants our hardware products against defects in materials and workmanship under normal use for a period of ninety (90) days from the date of purchase by the original purchaser. Ninety (90) days is designated as the "Warranty Period." If a hardware defect arises, and a valid claim is received within the Warranty Period, at our sole option and to the extent permitted by law, OMC will either:
(1) Repair the hardware defect at no charge, using new or refurbished replacement parts;
(2) Exchange the product with a product that is new or reconditioned by OMC or that has been manufactured from new or serviceable used parts and is functionally equivalent to the original product;
(3) Refund the purchase price of the product.

A repaired or replacement product assumes the remaining warranty of the original product or ninety (90) days from the date of replacement or repair, whichever is longer.

When a product is exchanged, any replacement item becomes your property and the replaced item becomes OMC property. When a refund is given, the product for which the refund is provided must be returned to OMC and becomes the property of OMC.

EXCLUSIONS FROM & LIMITATIONS TO WARRANTY
This Limited Warranty applies only to hardware products manufactured by or for OMC. The Limited Warranty does not apply to any non-OMC hardware products or any software, even if packaged or sold with OMC hardware. Manufacturers, suppliers, or publishers other than OMC may provide their own warranties to the end user purchaser. Software distributed by OMC with or without the OMC brand name (including, but not limited to system software) is not covered under this Limited Warranty. Refer to the Terms and Conditions for the software for details of your rights with respect to its use.

OMC does not warrant that the operation of the product will be uninterrupted or error-free. OMC is not responsible for personal injury or property damage arising or resulting from failure to follow instructions relating to the product's use, storage, or handling.

This Limited Warranty does not apply to:
(1) Damage caused by accident, abuse, misuse, neglect, flood, fire, earthquake, or other external causes;
(2) Damage caused by operating the product outside the permitted or intended uses described by OMC;
(3) Damage to a product or part caused by or resulting from a modification to alter its functionality or capability without the written permission of OMC;
(4) Cosmetic damage, including but not limited to scratches, dents, and ordinary wear and tear.

This limited warranty gives you specific legal rights, and you may also have other rights which vary from state to state. OMC's responsibility for hardware defects is limited to the repair or replacement service, or to refund, as described in this limited warranty and determined by OMC in its sole discretion.

DISCLAIMER OF WARRANTIES; LIMITATION OF LIABILITY
Except as explicitly provided in this Limited Warranty, we do not guarantee, represent, or warrant that your use of our service or any OMC product will be uninterrupted, timely, secure, or error-free. We do not warrant that the results that may be obtained from the use of the service or the product will be accurate or reliable.

The products delivered to you by OMC are (except to the extent otherwise expressly stated by us) provided "AS IS" and "AS AVAILABLE" for your use, and except as expressly set forth in this Limited Warranty, without any representation, warranties, or conditions of any kind, either express or implied. OMC further disclaims all implied warranties or conditions of merchantability, merchantable quality, fitness for a particular purpose, durability, title, and non-infringement.

Some states restrict or do not allow limitations on warranties, which may affect your rights, and this Limited Warranty will be adjusted to maintain compliance with such state limitations or restrictions.

No OMC reseller, agent, or employee is authorized to make any modification, extension, or addition to this Limited Warranty. If any term is held to be illegal or unenforceable, the legality or enforceability of the remaining terms shall not be affected or impaired.

Except as provided in this Limited Warranty and to the extent permitted by law, OMC is not responsible for direct, indirect, special, incidental, or consequential damages resulting from any breach of warranty or condition or any other reason, or under any other legal theory, including but not limited to loss of use; loss of revenue; loss of actual or anticipated profits (including loss of profits on contracts); loss of the use of money; loss of anticipated savings; loss of business; loss of opportunity; loss of goodwill; loss of reputation; loss of, damage to, or corruption of data; or any indirect or consequential loss or damage howsoever caused, including the replacement of equipment and property, any costs of recovering, programming, or reproducing any program or data stored or used with OMC products and any failure to maintain the confidentiality of data stored on the product.

Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation may not apply to you.

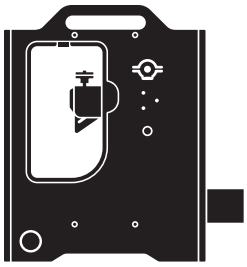
OBTAINING WARRANTY SERVICE
Please access and review the online help resources referred to in the documentation accompanying this hardware product before requesting warranty service. If the product is still not functioning properly after making use of these resources, please contact OMC at *support@othermachine.co*.

Help us help you. You must provide reasonable assistance to OMC in diagnosing issues with your product and follow OMC's warranty processes.

OMC restricts service to the United States of America and the District of Columbia and U.S. territories. For qualifying warranty service, OMC will send a prepaid shipping label to enable you to ship the product in its original packaging to OMC's repair service location for service. Upon receipt of the replacement product, the original product becomes the property of OMC and you agree to follow instructions, including, if required, arranging the return of original product to OMC in a timely manner.

Service options, parts availability, and response times may vary. In accordance with applicable law, OMC may require that you furnish proof of purchase details and/or comply with registration requirements before receiving warranty service. Please refer to the according documentation for more details on this and other matters on obtaining warranty service.

OMC will maintain & use customer information in accordance with the OMC Privacy Policy. The contents of your product will be deleted and the storage media reformatted in the course of warranty service. Your product will be returned to you configured as originally purchased, subject to applicable updates.



PLEASE SAVE YOUR ORIGINAL OTHERMILL PACKAGING!
It'll be super helpful if you ever need to ship your machine or travel with it. Plus, it is required to complete a return (within 30 days of purchase).

NEED HELP? WE'RE HERE FOR YOU!

One of the great things about owning an Othermill is knowing that us folks at Other Machine Co. have your back. We want to help you bring your ideas to reality.
Go to *othermachine.co/support* for guides
Email us at *support@othermachine.co*
Tweet us at *twitter.com/othermachine*

OTHER OMC MACHINE Co

OTHERMACHINE.CO/WARRANTY