



# VINYL CUTTER USER MANUAL

Ver. 1.3, May 2024

# SAFETY INFORMATION

## IMPORTANT: READ THIS SECTION IN FULL BEFORE PROCEEDING

This product is designed for use as a cutter/plotter for vinyl and similar density materials. Use of the product in ways for which it was not designed can be very dangerous and will void the warranty.

The product has fast moving parts and uses sharp blades. To avoid injury, keep fingers, hands, hair, loose clothing and other body parts away from the carriage head, rollers and other moving parts when the cutter is powered on.

Do not disassemble, repair, or remodel the plotter unless specifically instructed to do so by a qualified technician. Such action may cause electric shock or a fire hazard due to current leakage.

Use only the provided power supply and connect only to a properly grounded three prong wall outlet. Failure to do so may result in electrical shock or fire.

Do not use the cutter in an area where it will be exposed to water, rain, snow or other liquids that may get into the cutter. Fluids falling into the cutter may cause electrical shock.

If the cutter generates sparks, smoke, strange odor or otherwise functions abnormally, discontinue use, disconnect the cutter from the wall socket and contact the dealer from which you purchased the product. Never attempt to perform repair work yourself unless under the direction of a qualified service technician.



# TABLE OF CONTENTS

## SECTION 1 - GETTING STARTED

1.1 Training Videos .....	Page 4
1.2 Hardware Setup .....	Page 4-5
1.3 Control Panel Overview .....	Page 6
1.4 Setting Up The Stand .....	Page 6
1.5 Understanding Vectorized vs. Rasterized Images .....	Page 7
1.6 Software Download & Installation: Vinyl Master (Windows PC) .....	Page 7-9

## SECTION 2 - MAKING YOUR FIRST CUT

2.1 Overview Of Materials That Can Be Cut .....	Page 9
2.2 Loading Material In The Cutter .....	Page 9-10
2.3 Using The Pen Tool To Test Your Design .....	Page 10
2.4 Understanding Blades & The Blade Holder .....	Page 10-12
2.5 Speed & Force Settings .....	Page 12
2.6 Tips For Achieving Optimal Results .....	Page 12-13

## SECTION 3 - MAINTENANCE AND TROUBLESHOOTING

3.1 Care & Maintenance Of Your Cutter .....	Page 13
3.2 Calibration/Settings .....	Page 14
3.3 Troubleshooting Cutter Issues .....	Page 14-15
3.4 Warranty & Support .....	Page 16

Visit MHcutter online for video training, and to view the most current updates.

[www.mhcutter.com/videos](http://www.mhcutter.com/videos)



# SECTION 1 - GETTING STARTED

## 1.1 - TRAINING VIDEOS

If you prefer to watch instead of read, you can find training videos at: [www.mhcutter.com/videos](http://www.mhcutter.com/videos)

## 1.2 - HARDWARE SETUP

Your MH100 cutter/plotter ships with the following standard accessories:



**Power Cable**



**USB Cable**



**Grounding Cable**  
(Used With Stand)



**Software Card**



**Blade Holder**



**Pen Holder**



**Blades (30°, 45°, & 60°)**



**Dust Cover**



**Stand Hardware**  
(For Models With Stand)

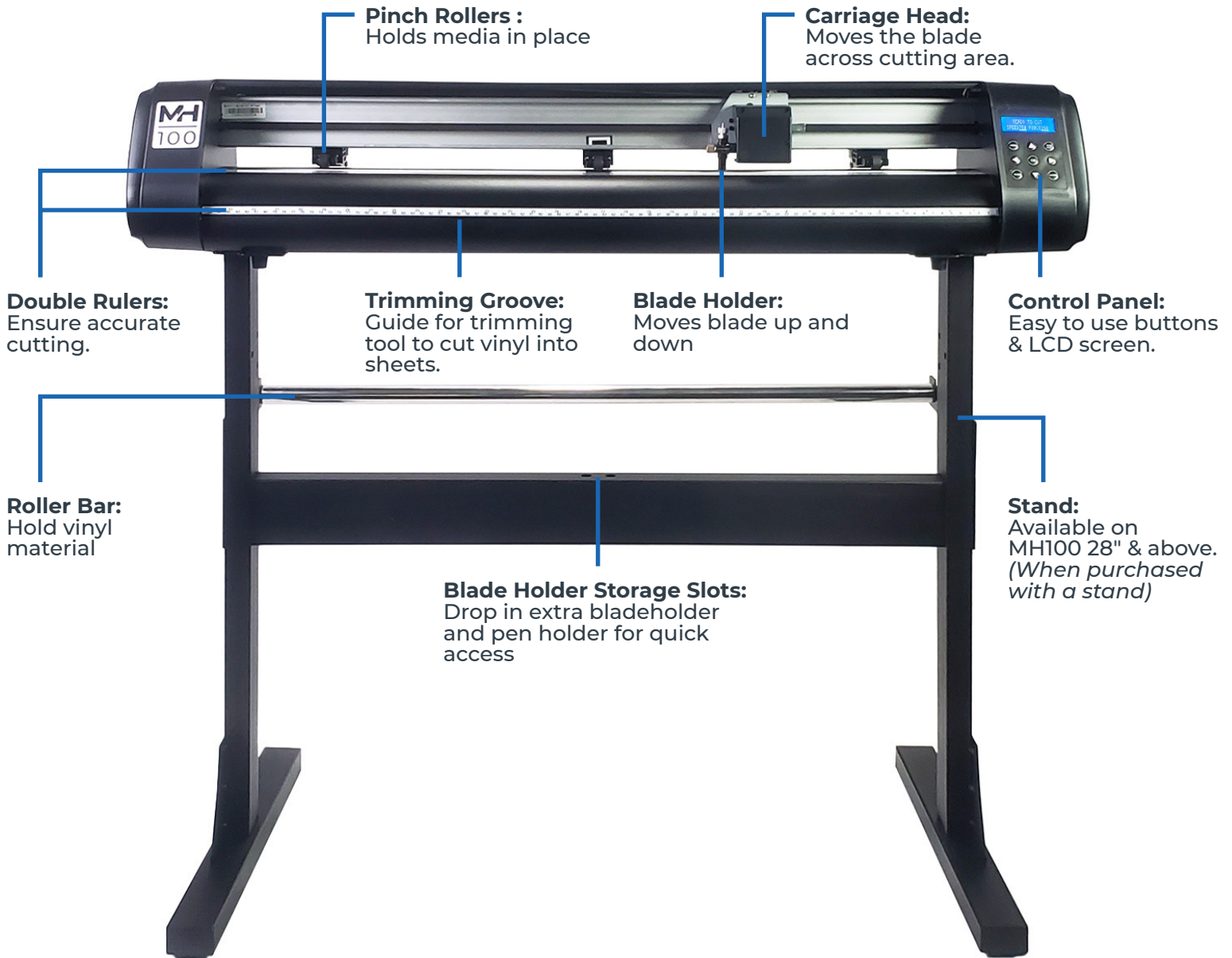


**Screwdriver**

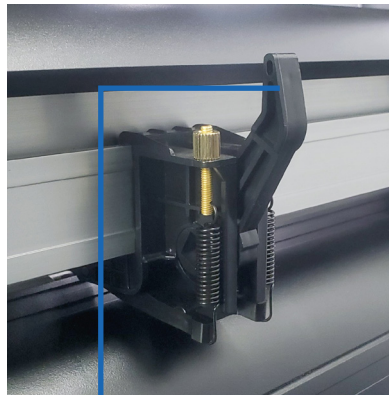


**Wrench**

## 1.2 - HARDWARE SETUP (CONTINUED)



**Power Switch:**



**Pinch Roller Lever:**  
Move pinch rollers up & down.



**USB Port:**  
Connect your MH100 to your computer

## 1.3 - CONTROL PANEL OVERVIEW



### **MENU:**

Cycles through the various configuration screens.

### **TEST CUT:**

Cuts a small design using the current force settings and exposes the cut area.

### **OK:**

Accepts the on-screen setting (Menu changes to speed/force are retained even without pressing OK)

### **RESET:**

Abandons the job and returns the carriage to its home position.

### **CANCEL:**

Pauses, then another press of CANCEL aborts the current job, resets cutter with carriage returning to right side of cutter.

### **ARROW KEYS (▲▶▼◀):**

Used to move the cursor while Ready to Cut, used to adjust speed/force settings within the MENU.

*Note: The cutter has an auto-origin-set feature so there is no need for an Origin button.*

## 1.4 - SETTING UP THE STAND (For Models That Include A Stand)

If you purchased an MH100 cutter with stand, you will get one of 4 stand configurations, based on the width of your cutter:

**MH100-28:** basic 28" stand with 1 media roller

**MH100-34:** basic 34" stand with 1 media roller

**MH100-53:** mid-tier 53" stand with 2 media rollers and catch basket

**MH100-65:** mid-tier 65" stand 2 media rollers & catchbasket

Download stand assembly instructions at [mhcutter.com/manuals](http://mhcutter.com/manuals)

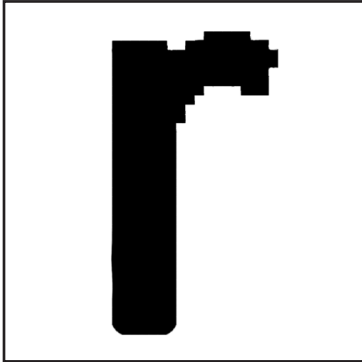
You can watch stand assembly videos at [mhcutter.com/videos](http://mhcutter.com/videos)

Use the yellow grounding wire to attach the bottom of the cutter to any part of the stand (see stand assembly manual)

*Note: You can optionally purchase a premium stand for any of the sizes listed above.*

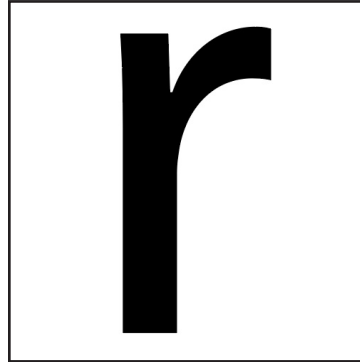
## 1.5 - UNDERSTANDING RASTERIZED VS. VECTORIZED IMAGES

There are two main ways that an image can be represented:



### Rasterized:

Rasterized images are composed of individual dots (pixels) as you might find in a photograph. These images have filename extensions such as .JPG .PNG .GIF



### Vector:

Vectorized images are made from lines (paths) between points as you might find in a scaled vector graphic drawing. These images have filename extensions such as .AI .SVG .EPS

If you try to zoom in and enlarge a (rasterized) photo, you will eventually see the individual dots (pixels) and the edges will not appear smooth. With vectors this is not a problem and you can enlarge the image to any size you want.

Your MH cutter requires vectorized artwork. If you are using Vinyl Master as your design software program, new designs you create will be in vector format. For raster images, VinylMaster has vectorization and tracing features that allow you to import many different types of pixel images that can be converted to vectorized artwork. For vectorization, images with strong contrast between the subject and the background typically work best. Please consult the training materials for VinylMaster software to use the vectorization feature.

## 1.6 - SOFTWARE DOWNLOAD SETUP: Vinyl Master (Windows PC)

Your MH cutter ships with a card that will allow you to use the serial number of the cutter to download and activate VinylMaster on a Windows PC.

**STEP 1:** The image below shows the location of your machine serial number. It is located on the front left side of the cutter's cross-beam.



**MH**  
INSTRUCTIONS FOR SOFTWARE  
DOWNLOAD & ACTIVATION



YOUR MACHINE SERIAL NUMBER LOCATION

**TO ACTIVATE YOUR SOFTWARE:**  
STEP 1: The image above shows the location of your machine serial number. It is located on the front left side of the cutter's cross-beam.  
STEP 2: Using your favorite browser, go to [mhcutter.com](http://mhcutter.com)  
STEP 3: Create an account at [mhcutter.com](http://mhcutter.com) and go to the download page.  
STEP 4: Enter your machine serial number to download the correct software.  
STEP 5: Follow the installation instructions in the software installer program.

You can watch a video that covers the entire registration, download & activation process at [mhcutter.com/videos](http://mhcutter.com/videos)

MHCARD-11223

Software Download Card



Machine Serial Number (MSN) Location



## 1.6 - SOFTWARE DOWNLOAD SETUP (Continued)

**STEP 2:** Using your favorite browser, go to [mhcutter.com](http://mhcutter.com)

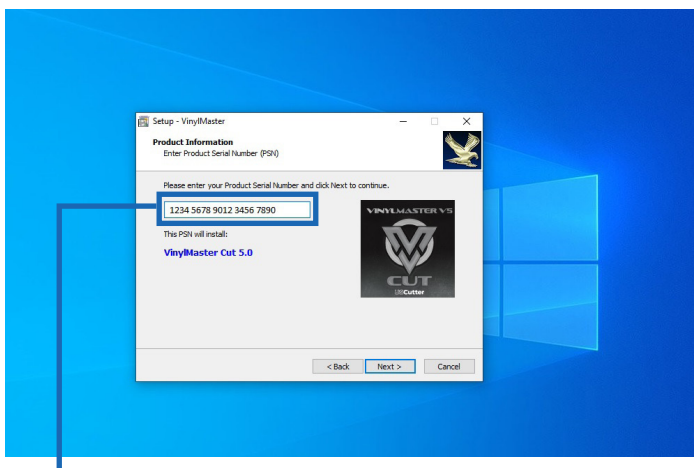
**STEP 3:** Create an account at [mhcutter.com](http://mhcutter.com) and go to the download page.

**STEP 4:** Enter your machine serial number (MSN) to download the correct software.

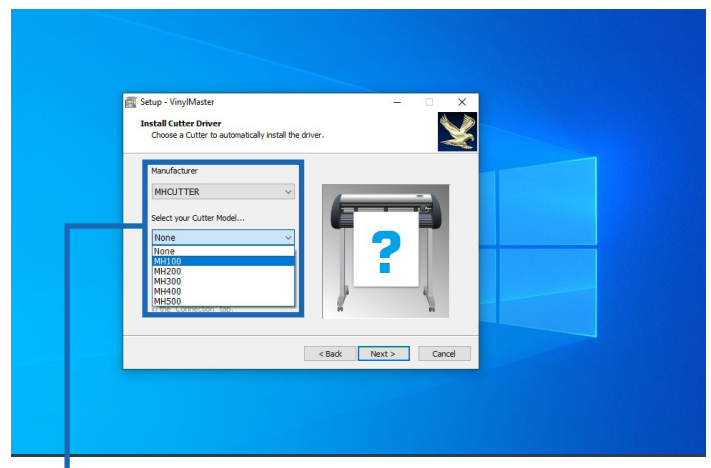
**STEP 5:** Follow the installation instructions in the software installer program.

You can watch a video that covers the entire registration, download & activation process at [mhcutter.com/videos](http://mhcutter.com/videos)

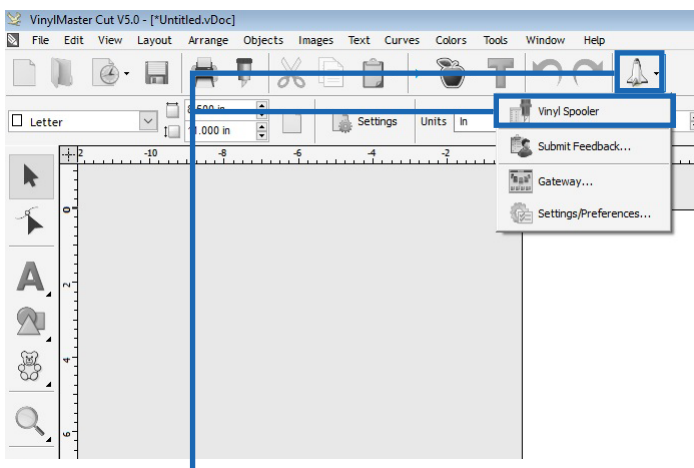
**DO NOT LOSE THE CARD & MACHINE SERIAL NUMBER (MSN) - KEEP IN A SAFE PLACE**



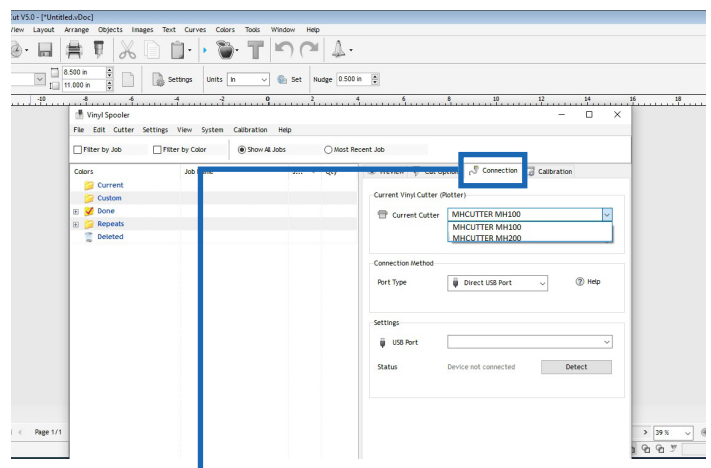
To install VinylMaster software you will need to enter the Product Serial Number (PSN) that you received from [mhcutter.com](http://mhcutter.com)



Install the cutter driver by selecting **MHCUTTER** in the Manufacturer drop down menu & **MH100** in the Select Your Cutter Model drop down menu.



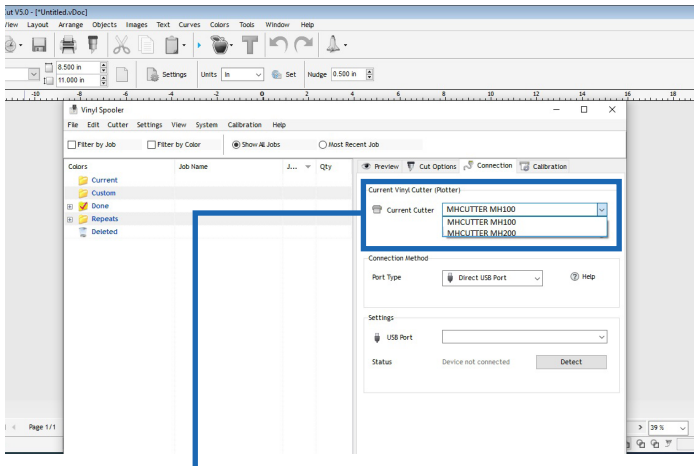
Click the shuttle icon, in the drop down click on Vinyl Spooler.



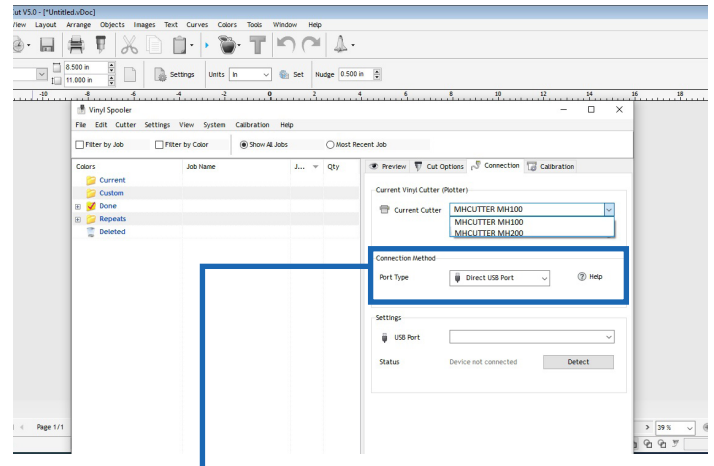
In the Vinyl Spooler Menu click on Connection



## 1.6 - SOFTWARE DOWNLOAD SETUP (Continued)



In the Current Vinyl Cutter click on the drop down menu and select **MHCUTTER MH100**



Under Connection Method click on the drop down menu for Port Type and select **Direct USB Port**.

**It is a good idea to remove the blade holder and send a small test file via the USB cable to the cutter to confirm communications.**

# SECTION 2 - Making Your First Cut

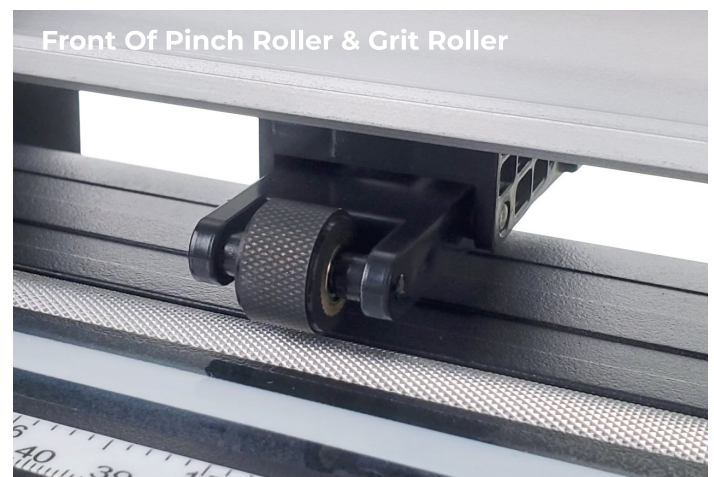
## 2.1 - OVERVIEW OF MATERIALS THAT CAN BE CUT

There are lots of different materials you can use with your MH100 including: paper, cardstock, vinyl, stencil, poster boards, fun foam, and much more. The key thing to consider is how dense the material is. Some very dense materials such as metal, sandblast mask, magnet etc. are not recommended as they may yield unsatisfactory results. As a general rule you should be able to cut any material that is less than 1 mm thick and at the approximate density of 0.5 g/cm<sup>3</sup>. Always start with a test cut, especially when changing materials.

## 2.2 - LOADING MATERIAL INTO THE CUTTER

Materials that have no backing (such as thin card stock) should be placed on a cutting mat (sold separately) and then loaded. Materials such as vinyl, which have a backing, can be placed directly in the MH100 without using a cutting mat.

The pinch rollers can be placed almost anywhere along the width of the cutter as long as the pinch rollers are above a gritted part of the roller below. The bottom grit rollers are what actually drives the media forward and the top pinch rollers hold the media down. Place the material to be cut in the MH100 so that the rollers are at the edges and will not touch the area you want to cut. In some cases, such as with wide jobs it cannot be avoided and rollers will go over the middle of the media, however this is typically not a problem even if the rollers touch the cut area.



## 2.2 - LOADING MATERIAL INTO THE CUTTER (Continued)

Lower individual pinch rollers by lowering the pinch roller levers at the back of the cutter. you can use the screws on each pinch roller to adjust the downward pressure of the pinch roller.



When cutting, the vinyl will move from the front of the cutter towards you. In most cases, vinyl on rolls is loaded from the back of the cutter and other materials on a cutting mat can be loaded from the front of the cutter.

## 2.3 - USING THE PEN TOOL TO TEST YOUR DESIGN

Before cutting valuable material, it is recommended that you first work with the pen tool on some blank paper. The pen tool will follow the same path that the blade will so you can be sure you will be cutting the exact design you thought you would be cutting. Simply place the pen tool in the blade/tool bracket on the carriage head, tighten the screw and you are ready to start.

*Note: The pen has a small cap on the tip that needs to be removed prior to use.*



## 2.4 - UNDERSTANDING BLADES & THE BLADE HOLDER

Your MH100 ships with one 30 degree (yellow tip), one 45 degree (red tip), & one 60 degree (blue tip) blade.

**30° BLADE:** 30 degree (yellow tip) blades are recommended for very thin materials and thin fabrics

*Note: You may need to place thinner materials on the sticky part of a cutting mat so they do not tear as easily when being cut*

**45° BLADE:** For most needs the 45 degree (red tip) blade is best.

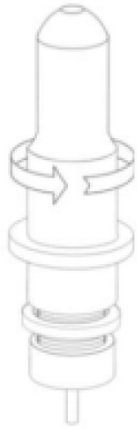
**60° BLADE:** 60 degree (blue tip) blades are only required for thicker materials or when a higher degree of precision is needed.

*Note: 60 degree blades might get dull sooner or chip easier.*

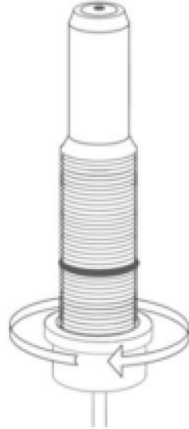


## 2.4 - UNDERSTANDING BLADES & THE BLADE HOLDER (Continued)

The diagrams below show how to insert a blade, as well as the correct way to set the blade depth so that it cuts all the way through the top layer but only lightly scratches the backing layer.



**STEP 1:** Unscrew the cap from the blade holder.



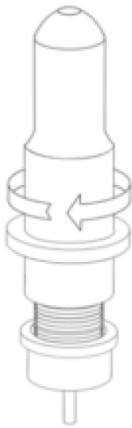
**STEP 2:** set brass ring on the blade holder to the fully down position.



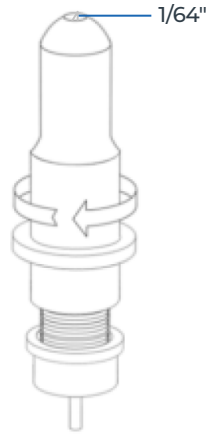
**STEP 3:** Remove the protective cover from a new blade.



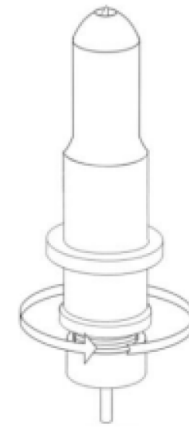
**STEP 4:** Carefully insert the blade into the top of the blade holder



**STEP 5:** Screw the cap back onto the blade holder.

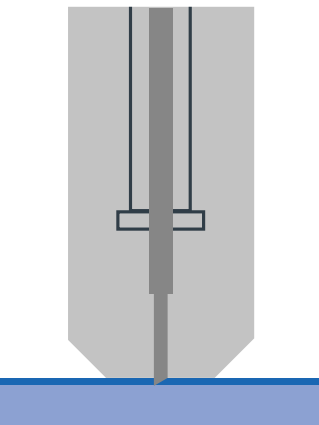


**STEP 6:** Adjust the carriage cap until the blade is protruding approximately **1/64th of an inch.**

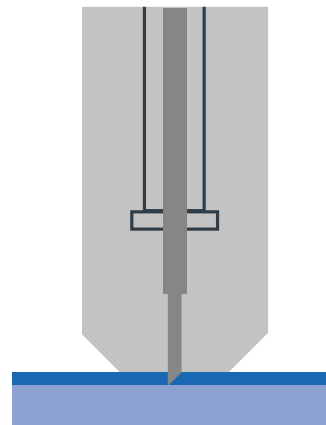


**STEP 7:** Adjust the brass ring until it fits snug against the cap.

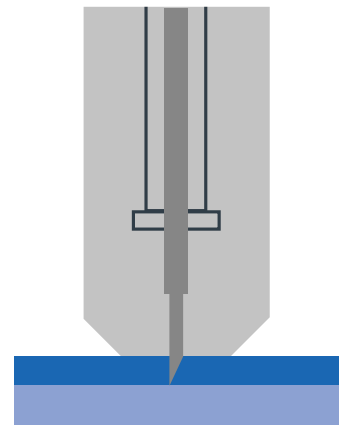
Set blade depth to cut only the material not the backer.



**30° BLADE:** Used for thinner materials.



**45° BLADE:** Used for most common uses.



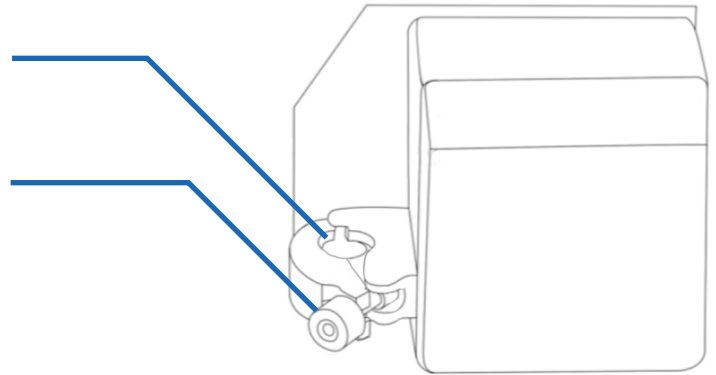
**60° BLADE:** Used for thicker materials

## 2.4 - UNDERSTANDING BLADES & THE BLADE HOLDER (Continued)

Placing bladeholder in the MH100 cutter (make sure you place the blade holder correctly in the groove for correct height position)

**CARRIAGE ARM:** The arm has an inner groove to keep the blade holder at the correct height.

**LOCKING KNOB:** Allows access to the blade/pen holder carriage arm for exchanging or replacing the blade holder. Locks blade holder in correct position.



## 2.5 - SPEED AND FORCE SETTINGS

**SPEED:** A good starting value for speed is 400

**FORCE:** A good starting value for force is 70

To achieve more precise results, you should start with moderate speed and force settings (400 and 70) and then increase speed only if the job is less complex. Increase pressure if the cut is not making it all the way through the top layer of the material being cut. As a general rule, you will try increasing pressure before you extend the blade length.

*Note: different brands of the same material (eg. glitter) may need to use more or less pressure, depending on the specifics of each manufacturer's brand.*

## 2.6 - TIPS FOR ACHIEVING OPTIMAL RESULTS

- Use a short blade depth. In most cases the blade should be exposed only a barely visible amount outside the bladeholder. New users tend to expose too much blade. The idea is to cut through only the top layer of the vinyl and to leave the backing layer with only minimal scratches. This allows you to weed the top layer off the backing easily. Take the bladeholder in your hand and cut a circle in the vinyl, to see that the vinyl layer is fully cut, but the backer layer is barely scratched. If corners or small detail do not cut all the way through, consider increasing the force before extending the blade depth. You only need to extend the blade depth or use the 60 degree (blue tip) blade for thicker materials.
- Align the pinch rollers so that they are in line with a gritted part of the bottom rollers. The pinch rollers must align with the gritted sections on the bottom roller.
- An optional cutting mat (purchased separately) can be used when cutting materials that do not have their own backing. Place your material on the cutting mat so that the pinch rollers roll on the mat, not the material. Move unused pinch rollers out of the way so they don't touch the parts of the material being cut. Use a brayer roller (not included) to flatten your material on the sticky part of the cutting mat or tape the edges of thicker materials to the cutting mat. For wider jobs it sometimes cannot be avoided and the pinch rollers will need to roll over areas of the material being cut. Typically this is not a problem. If cutting very thick materials you may want to consider purchasing a thinner mat.

## 2.6 - TIPS FOR ACHIEVING OPTIMAL RESULTS (Continued)

- When cutting long pieces of material it is important to carefully position the material so that it is completely straight and doesn't drift to one side when cutting. Use the double rulers on the cutter to align long lengths of material.

# SECTION 3 - Maintenance/Troubleshooting

## 3.1 - CARE & MAINTENANCE OF YOUR MH100 CUTTER

There is no need to oil or lubricate your cutter - simply keeping it clean should be enough to provide you with many years of service.

Keep the grit rollers and pinch rollers clean. The combination of pinch roller from above and grit roller from below is what makes your cutting mat or material move back and forth in a straight line. If one of these parts is greasy or sticky, you will see the material pull to one side, causing incorrect cutting. At the same time, you want to be sure that the downward pressure of the pinch rollers is the same for every roller. Once again, this is to keep the material straight as it goes through the cutter. You can adjust the screws on each pinch roller to get more/less pressure. Adjusting only one of the screws on the pinch roller will impact side-to-side pull of the media.

Over time, your cutting strip (the white strip located directly below the path of the blade) may need to be replaced. Use a flathead screwdriver, putty knife or other flat blade instrument to pry out the old cutting strip from the groove in which it sits. You may also need to clean out any old glue or adhesive tape so that the new replacement strip sits completely flat in the groove. You can order a new cutting strip from your local MH Series dealer.

Blades can get dull or chipped over time. In order to maintain precision cuts, it is recommended that you change to a fresh blade every 6 months, after any major use period or whenever the blade is dull, chipped or damaged.



## 3.2 - RECOMMENDED CUTTER SETTINGS

Below items cut within material thickness limits of 1 mm and density of approx 0.5 g/cm<sup>3</sup>

*Note that thicker materials may need multiple repeat passes to cut all the way through.*

MATERIAL	SPEED	FORCE	BLADE
Heat Transfer Vinyl	400	70	45°
Pressure Sensitive Vinyl	400	70	45°
Stencil Material	350	160	45°
Paper (75 gsm)	200	50	45°
Labels/Decals	500	80	45°
Cardstock (160 gsm)	500	500	45°
Foils	200	100	60°
Posterboard (250 gsm)	350	500*	60°
Felt	200	300*	30°

*\*Force settings with an asterisk may need multiple passes.*

*Note: The following materials have not been tested, so they may or may not effectively be cut by the MH100 and your own tests will decide. Wood Veneer, Thin Magnetic Sheets, EVA, Mylar, Thin Chipboard, Paint Mask, Styrene, Leather, Felt, Denim, Cotton, Wool*

**The above settings should be considered as starting points and may need to be modified depending on the characteristics of the specific brand and nature of material you are using.** When considering how to cut a material that you are encountering for the first time, look at the thickness vs. density of the material. Materials with a high density will typically need more force and a slower speed. In cases where the material is thicker, multiple passes is often a good place to start before increasing force. When working with thicker materials, some users set the blade holder above the slot where it normally sits, so that the bladeholder has sufficient distance to fall and get maximum downforce. Thin materials, and especially fabrics are best addressed with a 30° blade. Fabrics often require the use of starch or backing material to stiffen the fabric before cutting and/or using a brayer roller (purchased separately) to get the fabric to stick and lay flat on the sticky part of the cutting mat (purchased separately).

## 3.3 - TROUBLESHOOTING CUTTER ISSUES

Before contacting support, you may want to try basic troubleshooting.

### UNIT WILL NOT POWER ON:

- Make sure power cord is securely plugged into the power adapter.
- Check the exact outlet you are using by plugging in a lamp. Note that sometimes the bottom outlet in a two outlet wall plate is controlled by a light switch.

### THE VINYL PULLS TO ONE SIDE WHEN IT GOES THROUGH THE CUTTER:

- Proper alignment of top/bottom guide rulers when placing vinyl in the cutter is most important- Also, make sure the pinch rollers are over the gritted part of the bottom roller.
- Make sure the grit rollers on the bottom bar are clean of any sticky residue.
- Place your vinyl so that the pinch rollers are near the outside edges. *(Note that pinch rollers must always match up with grit rollers below.)*
- If you have a wide enough model to have multiple pinch rollers, you may have better results by adding (or removing) a middle pinch roller.

## 3.3 - TROUBLESHOOTING CUTTER ISSUES (Continued)

- Make sure the small levers on the back of pinch rollers are all down.
- You might be using too much downforce on the blade. Increase passes instead.

### **THE BLADE DOES NOT CUT ALL THE WAY THROUGH THE MATERIAL:**

- Some materials need multiple passes to cut all the way through (This can only be set in SW).
- Check that blade offset and overcut settings are set correctly in software.
- Try increasing pressure before considering extending exposed blade length.

### **CUTTER STOPS/STALLS WHEN CUTTING VERY THICK MATERIALS:**

- Try decreasing speed/force and increasing number of passes.
- Place the bladeholder higher in the jaw above the normal seat position to allow blade to drop more.

### **I CANNOT GET USB TO CONNECT:**

- Test the USB port on the computer with a different USB device.
- Make sure the connection settings on your computer show USB in the software.
- With computer on, remove and re-insert the USB cable to re-initialize the port.

### **MY CUTS SHOW TEARING:**

- Check to see that your blade is not exposed more than the thickness of the media, but not the backer.
- Try reducing the down force. Too much force can impede material movement.
- Blade may be chipped or dull and needs to be replaced.

### **THE CORNERS OF MY CUTS ARE NOT CUTTING COMPLETELY:**

- Check to see that you have the correct overcut setting in your software.
- A typical overcut setting is 1 mm but may be more/less for different blade angles.
- When using the pen, overcut will be zero.

### **I DO NOT SEE MH100 AS A PULL DOWN MENU OPTION IN VINYLMASTER:**

- This is likely due to not having the latest version of VinylMaster installed. VM 5.0 version 20240501 or higher is required.
- On the top line of VinylMaster software select Help->About to see your PSN
- Go to [mhcutter.com/downloads](http://mhcutter.com/downloads) and select Download Software.
- Input your VinylMaster PSN to allow download.
- Re-install the software and select MH100 as the cutter during install.

### 3.4 - WARRANTY AND SUPPORT

MH cutters come with a limited 1 year warranty as provided by your dealer. In the USA, your warranty and support are provided by:

## USCutter

USCutter offers a limited 1 year warranty on this cutter.

Details of our standard warranty policy can be viewed on-line at the following link:  
[www.uscutter.com/Warranty-And>Returns-Policy](http://www.uscutter.com/Warranty-And>Returns-Policy)

For support for your equipment, contact USCutter at:

Sales & Support: 1-425-481-3555

M-F 7:30-11:30am, 12:30-4pm PST

[support.uscutter.com](mailto:support.uscutter.com)