
muse
User Manual
REV 2/5/2021

1

Introduction and Safety

1.0 Support

Thank you for choosing a Muse vinyl cutter.

For Muse support, please go to
https://techsupport.signwarehouse.com/muse-vinyl-cutter-support-resources/

1.1 Safety & Warnings

Please read the following safety guidelines regarding use of your Muse cutter:

Symbols inside triangles represent important notes that warrant your full attention. There are different symbols denoting specific warnings. The symbol at left, for example, warns of a possible danger of electric shock.

The cross-bar indicates activities that are prohibited because of risk of injury or possible damage to your equipment. This particular symbol at left warns against the use of tools to remove parts of the equipment.

Don't use with an electrical power source which doesn't meet the required voltage rating. Using with substandard sources of electricity may result in fire or electric shock.

Don't use your Muse if it begins to emit an odor or smoke.

Don't un-plug your Muse while powered on. Doing so may damage the equipment.

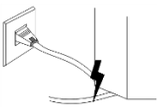
Make sure your Muse is grounded. Using your Muse without it being grounded may result in risk of equipment damage or electric shock.

Don't disassemble your Muse or attempt repairs unless directed by SignWarehouse technical support.

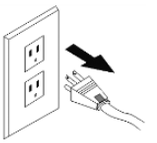
Don't drop any liquids or metal objects into your Muse. Liquids or impact from hard or heavy objects may damage the equipment.

Touching your Muse's blade with your finger may result in injury.

Don't damage or replace the power cable supplied with the vinyl cutter. Don't excessively bend, pull, or fold the power cable or place weight on it. Crimping the power cable may result in risk of failure or electric shock.



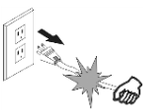
If you're not going to use your Muse for a long time, unplug the power cable from the outlet.



Placing your hands on the cutting platen during operation may result in injury.

Place your cutter on a stable surface. Operating the vinyl cutter on an unstable surface may result in a fall that can damage the equipment or internal components.

To unplug the power cable from a receptacle, always grasp the plug instead of the cable. Pulling the cable may damage it and increase the risk of fire or electric shock.



Don't operate during an electrical storm where lightning is present. For protection against power surges, a surge protector is recommended.

Don't physically move the cutting head while your Muse is powered on. Manually moving the cutting head during operation may damage the main board.

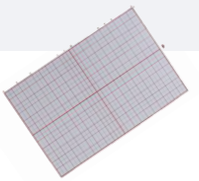
1.3 Warranty

The Muse cutter comes with a one-year parts warranty. If you have any questions about your cutter's warranty, please contact SIGNWarehouse via our warranty claim form at techsupport.signwarehouse.com.

It is recommended that you keep your original box with the Styrofoam packing materials in case your Muse must be shipped or returned to SIGNWarehouse.

1.4 Muse Contents & Accessories

Besides the cutter, your box should also contain the following items:

		M15	M24	M60
	Accessories Box containing all of the following except for the Cutting Mat	1	1	1
	Power Adaptor	1	1	-
	Power Cable	1	1	1
	USB Cable (white or blue)	1	1	1
	30° Blade	-	-	1
	45° Blade	2	2	2
	60° Blade	1	1	-
	Blade Holder	1	1	2
	Test Pen	1	1	2
	Engraving Tool	-	1	-
	Creasing Tool	-	-	1
	Cutting Mat	1	1	1

1.5 Parts of the Muse Cutter

1.5.1 Parts of the Muse 15 and 24

Fig. 1.5.1

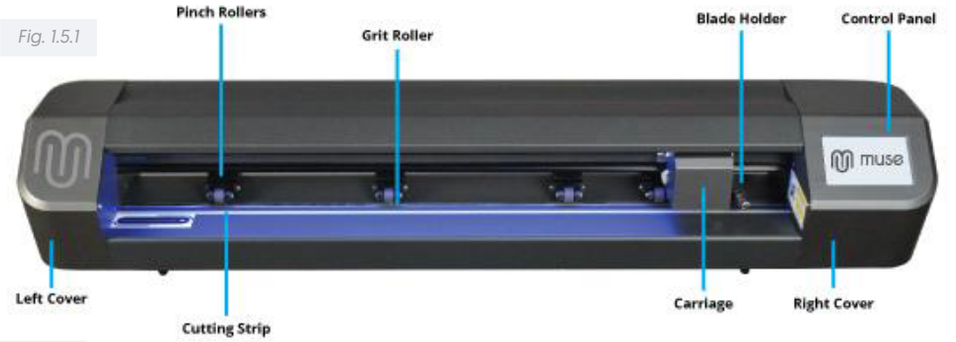


Fig. 1.5.2

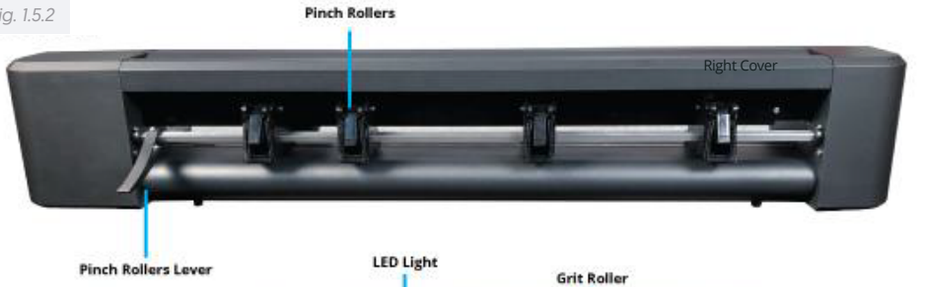


Fig. 1.5.3

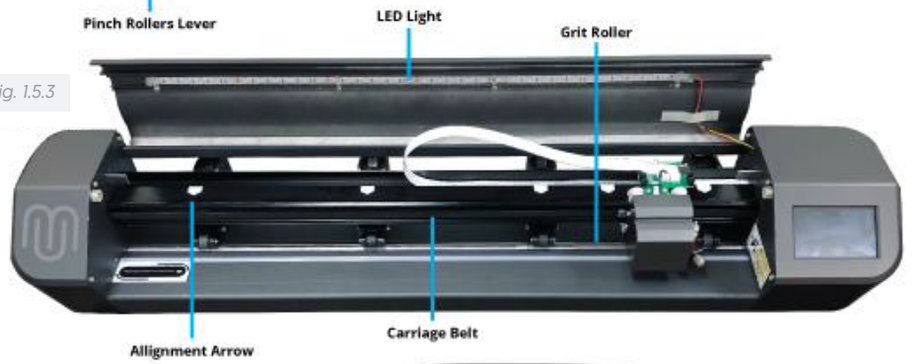


Fig. 1.5.4

1.5.2 Parts of the Muse 60

Fig. 1.5.5

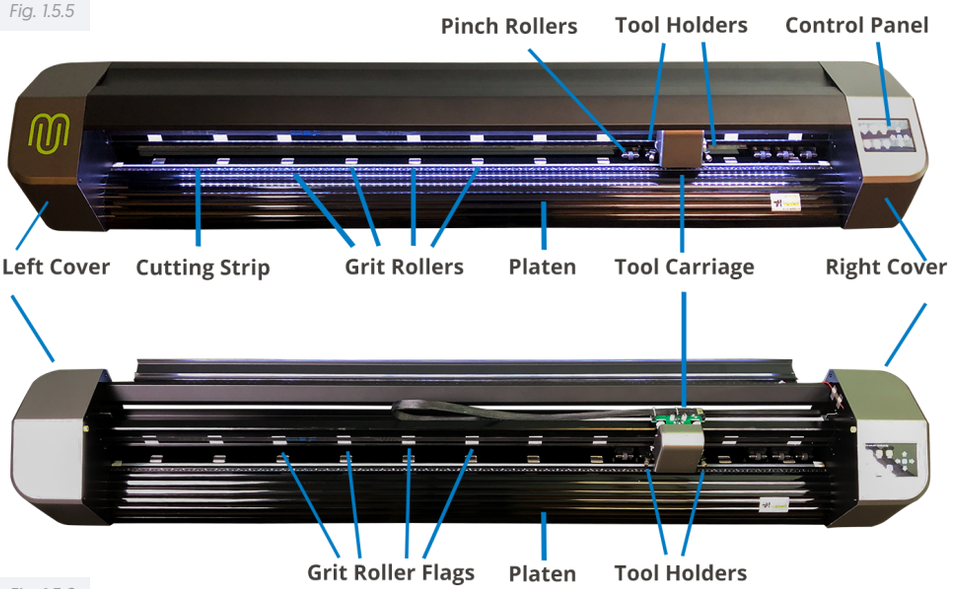


Fig. 1.5.6

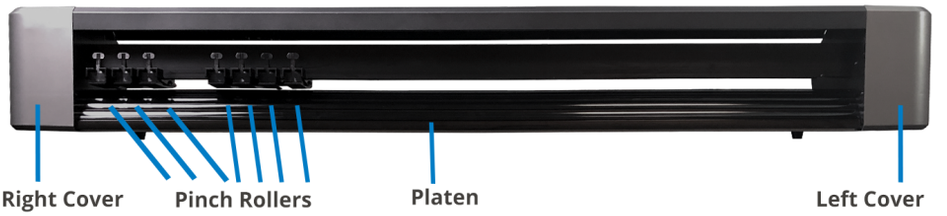


Fig. 1.5.7

1.6 Accessories

1.6.1 Test Pen

The test pen is used in calibrating the Muse's camera (Section 3.01), calibrating the Scale (Section 2.07), and is also recommended for test drawing while you are learning where shapes will cut based on various software settings. Note that a small piece of wax needs to be removed from the pen's nib before use. You may also wish to cut off the very top of the pen refill so that it more easily fits into your Muse:

1.6.2 Muse Blades

There are two kinds of blades that came with your Muse (note that which two kinds differ depending on the model you purchased).

1. The 30° yellow capped blade (not shown) is well-suited for window tint and fabric. It is included with the M60.
2. The 45° red capped blade is well-suited for cutting thinner materials such as heat transfer vinyl and wall/auto/decal vinyl. Two of these are included with the Muse.
3. The 60° blue capped blade has a longer cutting edge and is well-suited for cutting thicker materials like sandblast stencil, flock, craft foam, magnet sheets, light chipboard, rhinestone template materials, etc. It is included with the M15 and the M24.

   Installing the blades into the blade holder is covered in Section 2.01. **Blade Offset** is covered in Section 2.02.2.

1.7 Pinch Rollers

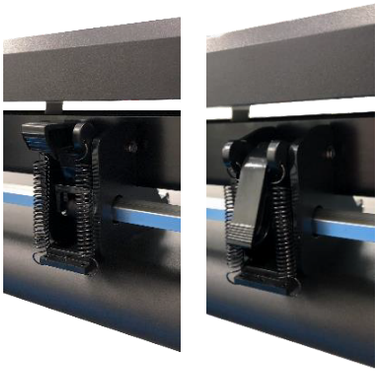
Your Muse is designed for cutting rolls and sheets of adhesive-backed films such as vinyl, stencil mask and sandblast etching films. It can also use the included cutting mat for non-backed materials such as paper, cardstock, magnet sheets and Mylar.

Press down the lever on the back of your M15 or M24 to raise the pinch rollers. On the M60 model, there are individual levers on each pinch wheel which are lifted instead.

Insert the media into the space between the pinch roller and grit roller and pull out the media far enough to ensure that it is loaded straight. The edges of the vinyl should be parallel to the left and the right frame of the cutting platen. (A 'platen' is the lower plate that supports the vinyl as it passes through the cutter.)

Slide the pinch roller assemblies left and right so that the pinch rollers are centered over the grit roller. The positions of the exposed grit rollers in the platen are marked by white arrows above the platen. You may raise the cover above the tool carriage to see the arrows more clearly. **Be sure to close it before cutting.**

Once the pinch rollers are in position, lower them to keep your media in place. When using the cutting mat, you need at least two wheels near the outside edges of the mat, thus center the mat inside the cutter (versus having it all the way to one side).



Each pinch roller on the M15 and M24 has a little lever on the back side. These levers adjust the amount of pressure applied to the media. Increasing the pressure can help with slicker or thinner media such as heat transfer film. It may be advisable to reduce the pressure to accommodate thicker materials like glass etch stencil. For normal use, like heat transfer vinyl and sign vinyl, keep the levers in the higher position:

1.8 Control Panel

When you first power on the Muse, the following **Main Screen** or **Home Screen** will be displayed after several seconds:

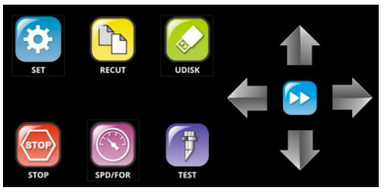


Fig. 1.8.1

The functions of the buttons on this **Main Screen** are:

SET: Opens the **SETTING** menu with access to other functions, such as **CAMERA**, **WI-FI**, **ARRAY**, **ADVANCED SETTINGS**, etc. See *Section 1.8.1.*

RECUT: Recuts the last job which is stored in the Muse's memory. Note that while the Muse is cutting, this button will read **PAUSE**. Pressing it will pause the cutting process in case any changes need to be made. Pressing again will resume the cut.

UDISK: Opens the **UDISK** window allowing access to files on a USB thumb drive plugged into the Muse's USB Flash Drive port. Files must be saved in .PLT format to appear in the menu (See *Sections 1.10.6 – 1.10.8* for details).

STOP: One-touch emergency stop button stops the cutter and cancels the cut.

SPD/FOR: This button opens the **SPEED/FORCE** screen where you can optionally set the cutting speeds and force of the cutter, as well as access the stored presets (See *Sections 2.2-2.5*).

TEST: Press the **TEST** button to cut a small square. This is recommended to ensure a clean cut is achieved with the current settings before proceeding with a cut job.

Arrows: The left-right arrows move the tool carriage while the up-down arrows move the grit rollers. This allows you to start cutting anywhere on the media (i.e. set an origin).

Double Arrow: The double arrow button controls the speed of the tool carriage and grit rollers while setting a new origin. The default setting is the faster mode. Pressing this button once will change the color of the button from blue to red, which indicates the slower mode. This mode can be used for very precise movement.

1.8.1 Setting Menu

The **Setting** menu provides access to seven additional screens on two different pages:

These various functions and settings are:v

CAMERA: Opens the **CAMERA SETTINGS** menu. Refer to Section 3.00.

WIFI: Connect the MUSE to your home or office router for wireless connectivity (refer to *Sections 1.10.4 and 1.10.5*).

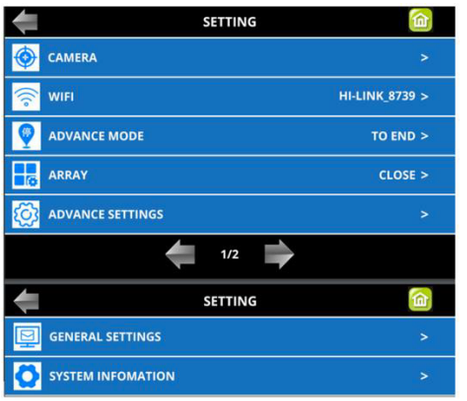


Fig. 1.8.2

ADVANCE MODE: Three options for where the blade holder goes at the end of a cut:

- **TO START:** return the blade holder to the origin (the location immediately before the cut was started
- **TO END:** advance the blade holder to the top of the completed cut with the option to move an additional distance
- **To LEFT:** advance the blade holder to the left of the completed cut with the option to move an additional distance

ARRAY: Set up rows and columns of repeats with desired spacing (refer to *Section 1.8.4*)

ADVANCE SETTINGS: Refer to *Section 1.8.3.*

GENERAL SETTINGS: Refer to *Section 1.8.2.*

SYSTEM INFORMATION: Hardware and firmware versions, Baud rate, and other settings that should need no adjustment unless directed by a SignWarehouse technical representative.

1.8.2 General Settings

Press **SET** on the Muse control panel and select **GENERAL SETTINGS**. The optional settings are:

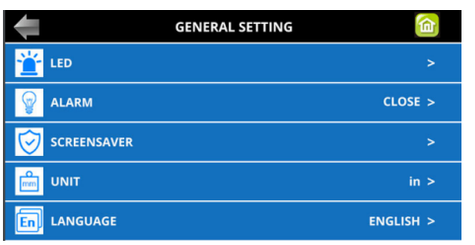


Fig. 1.8.3

LED: This option allows you to customize the platen lighting in your Muse.

On the M15 and M24, the default color is a cool blue. But if blue isn't your cup of tea, you can change on this screen. There are slider bars to help pick a custom color. You can also turn off the LED platen lighting if you wish. Note: In case of an error during cutting, the LED platen lighting will immediately turn red to indicate an alarm condition.

⚠ On the M60, you can change the intensity of the white light according to your personal preference.

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ALARM: Enabling **ALARM AFTER COMPLETED** will produce an audible alarm of 5 beeps once a job completes. Uncheck this box if you wish to turn off this feature. Similarly, enabling **LED AFTER JOB COMPLETED** will change the LED color to blue once a job completes.
This feature is only on the M15 and M24 models.

SCREENSAVER: After a predetermined period of time, the cutter goes into standby mode to save energy and the LCD screen will darken as the cutter goes to sleep. You can change the amount of time before sleep mode begins.

UNIT: This setting allows you to choose the unit of measurement for all functions involving distance, such as the spacing between repeats or position of the cutting head. The default setting is **MILLIMETERS (mm)**. The other option is **INCHES (in)**. Because the **SPEED** and **FORCE** settings on a Muse are based on a scale versus units, they remain the same whether you are in imperial mode or metric.

LANGUAGE: This screen offers a choice of three languages: English, Spanish, and Mandarin. You can choose one of these for the language in which all settings and menu communication are displayed

1.8.3 Advanced Settings

Press **SET** on the **Main Screen** and select **ADVANCE SETTINGS**. The optional settings are:

SHOW POINT: This feature shows the origin point of your cut jobs. When toggled on, the **Main Screen** will display an updated center button used to reset the origin, as well as some location positions:

Absolute Location displays the current location relative to the "power-on" origin point of (0,0):

- **X** is the position relative to the movement of the cutter's tool carriage from left to right across the platen.
- **Y** is the position relative to the forward and backward motion of the media as it is fed by the grit rollers.
- **L** is the straight-line distance from **X** to **Y**.

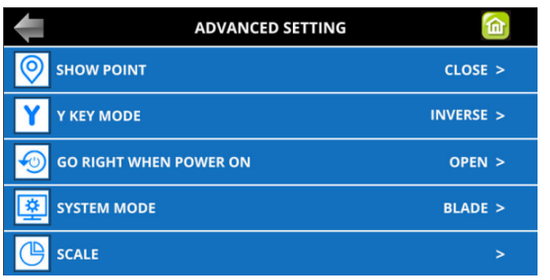


Fig. 1.8.4

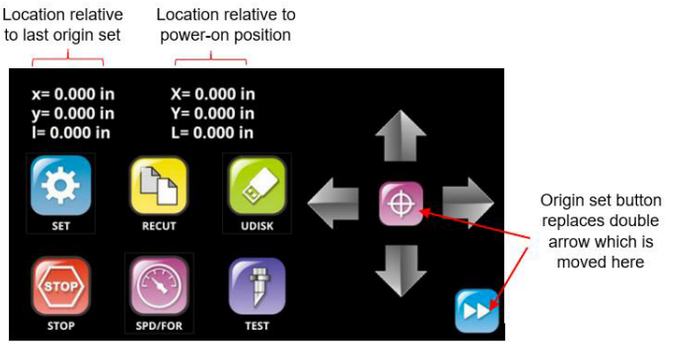


Fig. 1.8.5

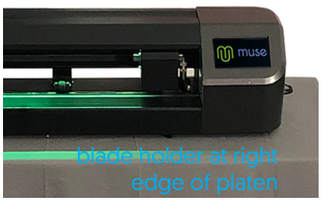
Relative location displays a new location relative to the last origin you set. This will match the Absolute Location until you press the origin set button:

- **x** is the current left-to-right distance moved from the last origin (how far you have moved the tool carriage across the platen).
- **y** is the current up-&-down distance moved from the last origin (how far you have moved the media forward or backward in the Muse).
- **l** is the straight-line distance relative to the last origin.

Y KEY MODE: This setting controls how the Muse cutter moves your media forward or backward (along the Y axis), as you press the up/down arrow keys on the control panel.

- In the **DEFAULT** setting, pressing the up arrow moves the media forward and pressing the down arrow moves it backwards.
- Setting the **Y KEY MODE** to **INVERSE** will flip this so that pressing the up arrow will move the media backwards.

GO RIGHT WHEN POWER ON: When this setting is enabled, the tool carriage will move to the right side of the cutter when the cutter is powered on. Otherwise, the tool carriage remains in its current position.



SYSTEM MODE: This screen is only needed for the M60 model in which you can activate both heads to be used. Once the DOUBLE option is selected, the Main Screen will update so that you can elect to use the left side, right side, or both:

SCALE: This setting is used to input the sizing calibration. Refer to *Section 2.7*.

1.8.4 Array Setup

This feature allows you to convert one cut job into multiple copies and arrange them in rows and columns.

Tap the **ARRAY** button to open the **ARRAY SETTINGS** screen:

In *FIG 1.8.6*, the file sent to the Muse would be cut in a pattern or array of eighteen copies, arranged in six rows and three columns. The spacing between each row is set to 1" and the spacing between each column is set to 0.5". Note that the units can be changed to metric, if desired (refer to *Section 1.8.2*).

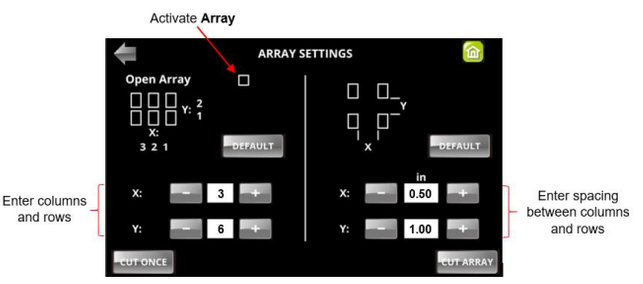


Fig. 1.8.6

Fig. 1.8.7

Use the **ARRAY** feature to set up repeats of a design sent to the Muse

1.9 Registering and Installing the Design Software

Depending on which software you purchased with your Muse vinyl cutter, there are two ways to set it up:

1. You'll find complete step-by-step instructions on our Product Support Blog for LXi. Please click here to access the setup tutorial or go to https://techsupport.signwarehouse.com/

2. To install Create Space, download the software from the following link (note there are separate links for Mac and Windows users). You will also find a video to assist you with installation and activation of your registration number:
https://techsupport.signwarehouse.com/create-space-software-support-resources/

Create Space

1.10 Connecting the Muse to Your Computer

Place your Muse on a sturdy horizontal surface. Keep the area around the Muse free of clutter and unnecessary items. This will prevent other objects from obstructing normal feeding of media through the cutter. Impacts with items around the cutter can cause a material to lift off the platen or feed incorrectly. Either of these can negatively impact cut quality and/or tracking.

To turn on the power for the M15 or M24, press the power button on the right end cap. For the M60, flip the switch up on the left end cap.

The Muse will take a few seconds to power up. The LED light will come on and the tool carriage will engage. **REMEMBER:** Once the cutter is on, do not move the tool carriage manually. This can damage the tool carriage and/or main board. Use only the arrows on the control panel to move the tool carriage.

To power off your M15 or M24 cutter, press and hold the power button until the cutter powers down. On the M60, flip the power switch down.

There are 3 ways that you can connect your Muse to the computer:

1. USB Cable

2. Wi-Fi

3. USB Flash Drive

You may choose any one of these three connectivity options. You can also change from one to the other at will, but for best results use one at a time. Here are the benefits of each connectivity option:

1. The USB cable is the simplest and most reliable connection. Setup is quick and easy. See *Sections 1.10.1* or *1.10.2* for instructions.

2. Wi-Fi takes a little more time and care to set up but offers a wireless environment in which the cutter can be used without being connected to the computer on which the software is installed. See *Section 1.10.3* and *Section 1.10.4* or *1.10.5* for detailed instructions.

3. The USB flash drive option allows you to use the cutter without being connected to the PC. Files can be saved from the design station computer in .PLT format and transferred to the cutter using a USB thumb drive. See *Sections 1.10.6 - 1.10.8.*

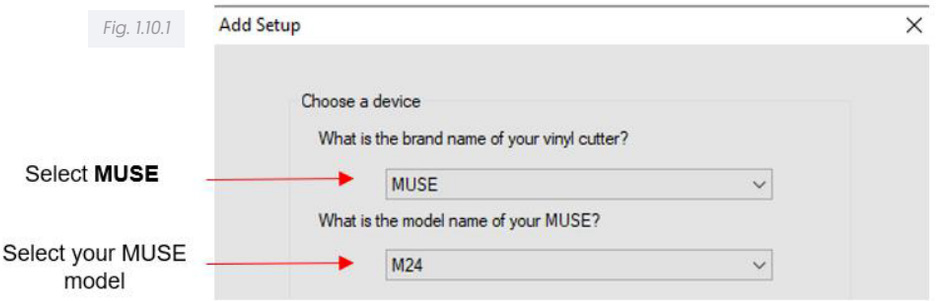
1.10.1 USB Connection in LXi

Turn on the Muse before connecting to your computer. Using the USB cable that came with the cutter, plug the wider end into your computer's USB port and the squarish end into the cutter's USB port which is on the right end cap (see *FIG. 1.5.4*).

Open LXi Production Manager. If this is your first time opening LXi, a popup screen will request a **Brand** and **Model** selection. Otherwise, select **Setup** and from the drop-down menu, click **Add Setup**.

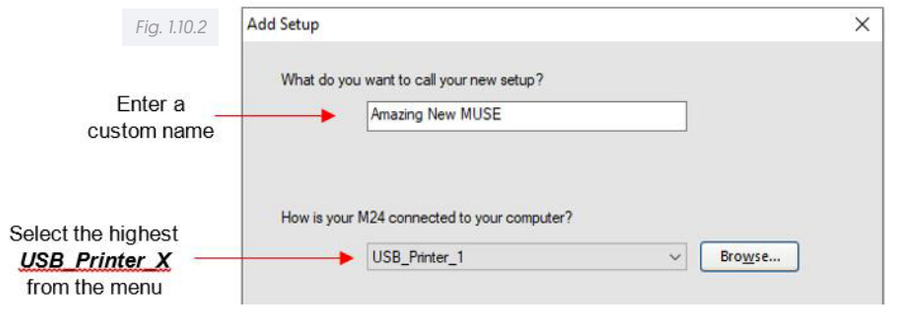
From the pop-up window, choose *MUSE* as the **Brand**. Find and select *M15, M24* or *M60* in the **Model** window:

Fig. 1.10.1



Click **Next**. The setup window will ask how your Muse is connected to the computer. Open the drop-down menu and select the largest available option for **USB_Printer_X** where **X** will be 0, 1, 2, etc. For example, if you see both **USB_Printer_0** and **USB_Printer_1** then you would select USB_Printer_1 because it is the higher of the two. It is not recommended that you select USB001 or USB002 (or other) from that menu. They may work for basic functions but may not adequately support contour cutting.

Fig. 1.10.2



Click on **Finish** at the bottom of the **Add Setup** window.

1.10.2 USB Connection in Create Space

Turn on the Muse before connecting to your computer. Using the USB cable that came with the cutter, plug the wider end into your computer's USB port, and the squarish end into the cutter's USB port which is on the right end cap [see *FIG. 1.5.4*].

Open Create Space and select **New Project.**

Go to **Cutter**>**My Cutter**>**Manage Cutters** and a new window will open *[FIG. 1.10.3].*

A new window will open. On the right side, under **Company/Brand** select *MUSE* and under **Model** select *M*. Click **Add to list**. Click **Done** to apply and close the window.

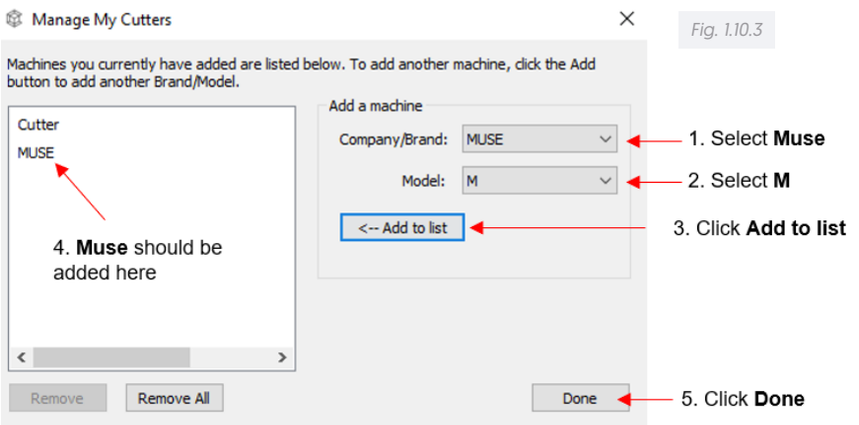
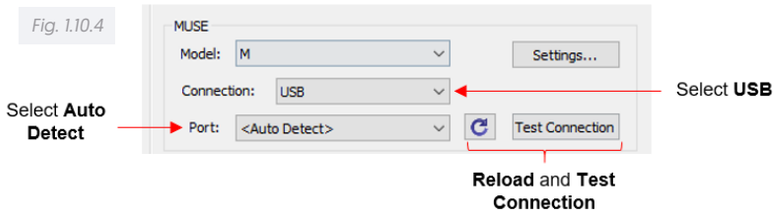


Fig. 1.10.3

Once you are ready to cut, click the **Cutter** icon on the **Toolbar** at the top of the screen. The **Cut Settings** window will open and, in the **Connection** drop-down menu, select **USB**. You can change the port or leave it on **Auto Detect**. If you click on **Test Connection**, it should move the blade carriage back and forth one time. This does not send a cut, just a signal to the cutter.

Fig. 1.10.4



1.10.3 Connecting the Muse to a Wi-Fi Network

For initial setup using the Wi-Fi option, you may need to place the Muse in the same room or in close proximity to the Wi-Fi router. This will create a stronger connection and faster Wi-fi network configuration. Once the connection is set, you can move the cutter around within the limits of your router's coverage area.

You will need the name of the network and the password.

Carefully complete the following steps:

1. On the **Control Panel**, press the **SET** button to access the **SETTING** menu:

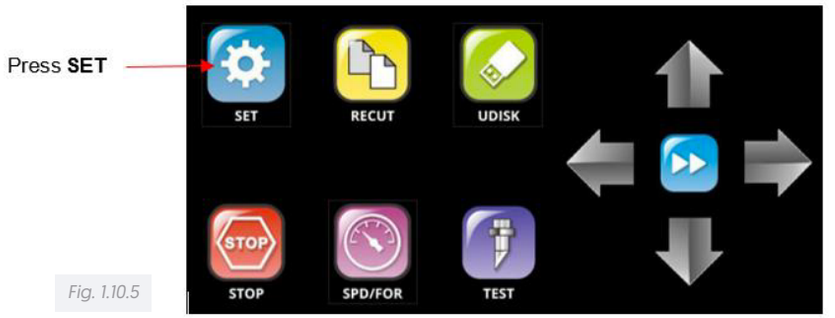


Fig. 1.10.5

2. Press the **WIFI** icon:

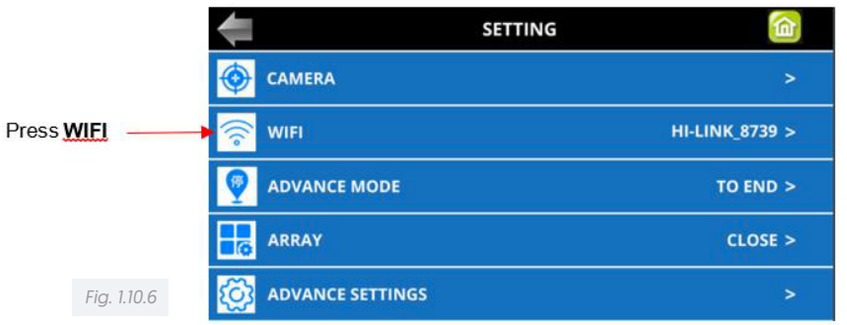


Fig. 1.10.6

3. In the next screen, press the **SCAN** button and a list of wireless networks will appear. Select your network and press **APPLY**.

4. Press the **SET** button and enter your network password. Press **OK**.

5. An IP address (**IP ADDR**) will appear. The first three sets of values will be obtained from your network. Use the + or – buttons to set the last digits of the **IP ADDR** that you wish to use:

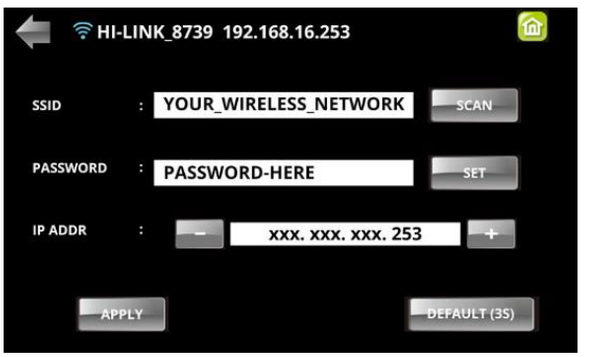


Fig. 1.10.7

6. Press **APPLY** to set the changes and add the Muse to your wireless network. This can take up to a minute or longer.

   - If the **APPLY** button on the Muse WiFi screen changes to **CONNECTED OK**, you have successfully connected!

   - If the **APPLY** button changes to **PASSWORD ERR**, check your settings, and enter the correct values.

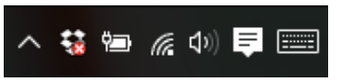
7. Note the complete **IP address** at the top of the window *(FIG. 1.10.7)*. You will be entering this same **IP address** in the software you use for cutting.

8. If you need to reset or change networks, press and hold the **DEFAULT** button for 3 seconds. This will reset the settings and enable you to change the network.

9. Before connecting the Muse to your computer using a Wi-Fi connection, you must verify that your computer is also connected to the same network. To do this, locate and launch the network icon for your computer:

<u>On a PC:</u>

Click on the **Network** icon.
(usually in lower right corner)



<u>On a Mac:</u>

Click on the **Network** icon.
(usually in upper right corner)

If you are connected via Ethernet, your network icon may look like this.

10. A menu of available networks will appear. Select the network used for the Muse setup and, if needed, enter the network password. Wait a bit for the connection to be made and the menu should indicate you are now connected to that network.

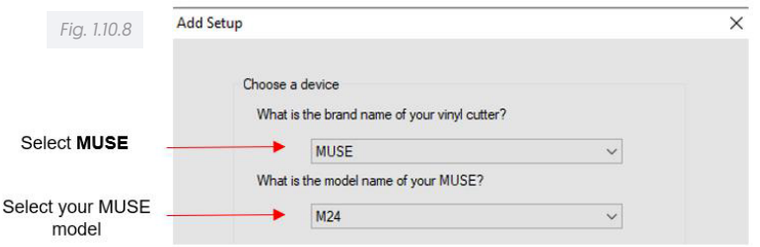
11. Proceed to either the next section (if using LXi Production Manager) or *Section 1.10.5* (if using Create Space).

1.10.4 Wi-Fi Connection in LXi

Open LXi Production Manager. If this is your first time opening LXi, a pop-up screen will request a **Brand** and **Model** selection. Otherwise, select **Setup** and from the drop-down menu, click **Add Setup**.

From the pop-up window, choose *MUSE* as the Brand. Find and select *M15, M24* or *M60* in the **Model** window:

Fig. 1.10.8



Click **Next**. The setup window shown in *FIG. 1.10.9* will ask how your Muse is connected to the computer. Select **TCP/IP**. A small window will appear in which you can type in the cutter's **IP Address** from *Step 7* in Section *1.10.3 (FIG. 1.10.7)*

Below **TCP/ IP address**, you will need to enter the correct **Port number** which is **8080**. Enter this value and click **Test**. If you have a successful connection, LXi will indicate success. Click on **OK** to close the **Communication** window. Click on **Finish** at the bottom of the **Add Setup window**.

If **Test** fails, check the Muse again to verify the network name and the **IP address**. If you change settings, it may be necessary to wait a minute and start from the beginning of the process in order to allow the computer time to reset and recognize the Wi-Fi connection.

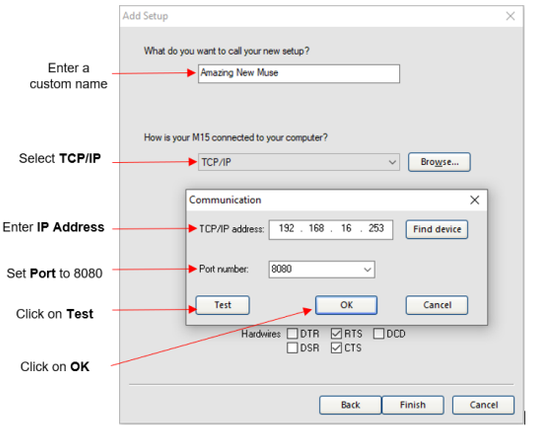


Fig. 1.10.9

1.10.5 Wi-Fi Connection in Create Space

Open Create Space and select **New Project**.

Go to **Cutter**>**My Cutter**>**Manage Cutters**.

A new window will open. On the right side, under **Company/Brand** select *MUSE* and under **Model** select *M*. Click **Add to list**. Click **Done** to apply and close the window:

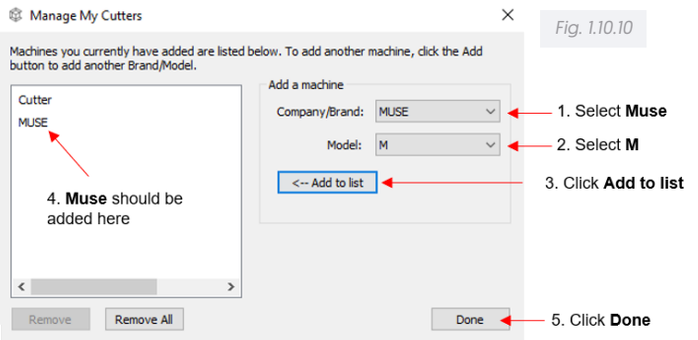


Fig. 1.10.10

Once you are ready to cut, click the **Cutter** icon on the **Toolbar** at the top of the screen. The **Cut Settings** window will open and, in the **Connection** drop-down menu, select **TCP/IP** *(FIG. 1.10.11)*

In the **IP** field, type in the **IP Address from Step 7** in *Section 1.10.3.*

Once you type in the **IP address**, click on **Test Connection**, it will move the blade carriage back and forth. This does not send a cut, just a signal to the cutter. If not connected, you may need to change the **IP address** to a free number on your system.

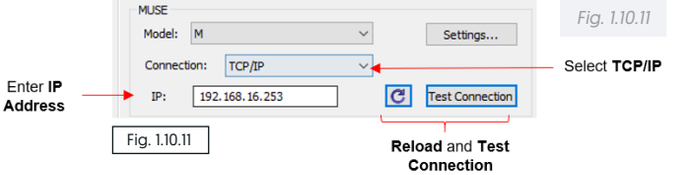


Fig. 1.10.11

1.10.6 USB Flash Drive Setup in LXi

If you are new to LXi, follow the first few steps in *Section 1.10.1* to add the Muse to LXi Production Manager.

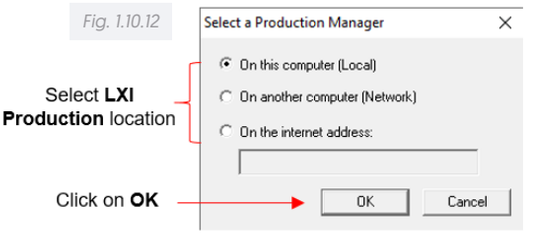
Using the **UDISK** (USB thumb drive) option involves saving a .PLT file containing the cut design and some or all of the cut settings. This file can then be opened directly onto the Muse and cut. Remember that with this option, once the file is saved to the thumb drive, the design is locked in and cannot be edited, other than setting up an array of repeats.

Once your file is ready to cut in LXi, insert a USB flash drive into the design station computer.

Go to **File**>**Cut/Plot** or click the **Cut/Plot** icon . A window will open and you will need to select the location of the LXi Production Manager in relation to your design station computer:

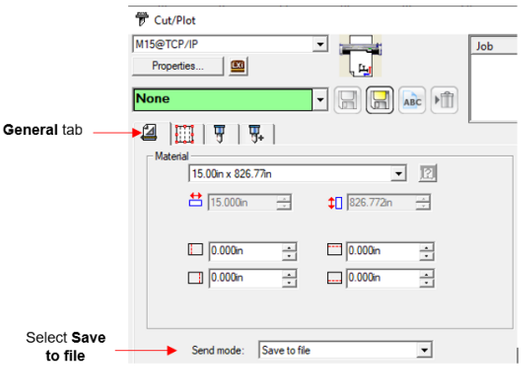
Click on **OK** and LXi Production Manager will open.

Fig. 1.10.12



The **Cut/Plot** window will also have opened. On the **General** tab, select **SAVE to FILE** from the **Send mode** drop-down menu:

Fig. 1.10.13



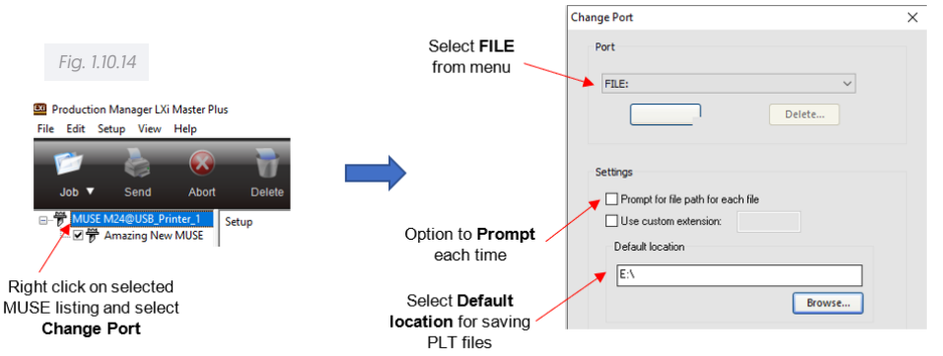
When you have made any necessary changes to the file size, copies, rotation, etc., click the **Send** button at the bottom right of the **Cut/Plot** window.

A window will open prompting you to select the desired location to save the .PLT file. Browse to the installed flash drive and save the file after entering a new name. Go to *Section 1.10.8*.

NOTE: if you will continually be using the USB Flash Drive as your method of sending files to the Muse:

- Change the **Port** connection by right clicking on the Muse in the Production Manager list, and selected **Change Port** (as shown in *FIG. 1.10.14*)
- In the Change Port window, select **FILE** and then complete other options, as preferred:

Fig. 1.10.14



1.10.7 USB Flash Drive Setup in Create Space

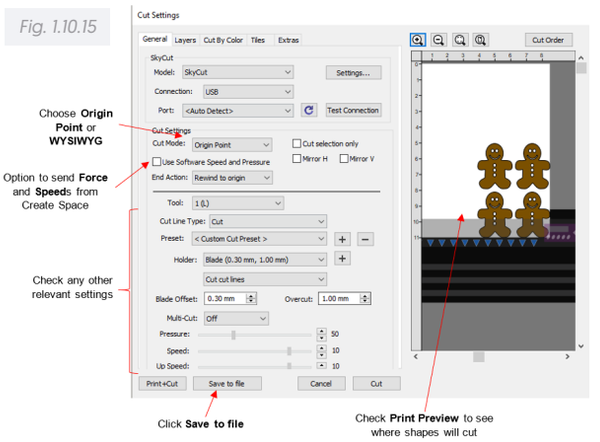
If you are new to Create Space, follow the first few steps in *Section 1.10.2* to add the Muse to Create Space.

Using the **UDISK** (USB thumb drive) option involves saving a .PLT file containing the cut design and some or all of the cut settings. This file can then be opened directly onto the Muse and cut. Remember that with this option, once the file is saved to the thumb drive, the design is locked in and cannot be edited, other than setting up an array of repeats.

In the **Cut Settings** window, verify you see the design in the **Preview** as shown in *FIG. 1.10.15*, and choose either **Origin Point** (move shapes to cut at the origin) or **WYSIWYG** mode (leave shapes in location on virtual mat in main window) depending on which you prefer.

Mark the box for Use **Software Speed and Pressure**, if you want those included in the file. Otherwise, leave the box unchecked and you can set those values on the Muse's control panel. The other cut settings including **Blade Offset**, **Overcut**, and **Multi-cut (Passes)** will always be included in the .PLT file:

Fig. 1.10.15



Once your file is ready to cut, insert a USB flash drive into the computer. Click on **Save to File** at the bottom of the **Cut Settings** window. A new window opens where you can browse to find the USB flash drive, name the file, and mark the box for **Add registration marks**, if this is a contour cutting application.

1.10.8 Loading and Cutting a .PLT File from the USB Drive

Insert the USB flash drive into your Muse cutter's USB Flash Drive Port *(see FIG. 1.5.4)*.

On the **Main Screen**, press the **SPD/FOR** button and change the **FORCE** and **SPEED** settings if you did not elect to send them within the .PLT file (refer to *Section 2.02.1*). Perform a test cut, if needed.

Press the **UDISK** icon on the **Main Screen**. Press **OPEN** to access the files on the USB flash drive. The Muse will browse the contents of the installed USB thumb drive and display all readable .PLT files (Note: If there are folders on the drive, you may have to use the touch screen to open the correct folder to find the saved .PLT file).

Locate the file you wish to cut and double tap it. The file will then be loaded into the **U DISK PORT FILES** screen:

Fig. 1.10.16

Press **START CUT** to cut the .PLT file. Note that if you want to cut repeats refer to the Array function covered in *Section 10.8.4*.

1.11 Maintenance

All Muse cutters are made with high-quality internal lubrication to protect all mechanical components. Therefore, there is no need to oil or lubricate any of the components, ever! Daily care consists of cleaning the platen and blade holder to prevent buildup of dust and material debris. Dusting the platen with a soft brush will get the job done perfectly. Debris inside the blade holder can be removed using a can of compressed air and a nozzle. Also, make sure the pinch rollers and grit rollers are kept clean and free of any stickiness.

2

Cutting

2.0 Cutting Overview

To be a successful owner of a vinyl cutter, you need to keep in mind a few factors:

- You're going to make mistakes. This is normal and part of the process of mastering a cutter.
- Read this chapter. It contains valuable information to help you understand how to load the blade, set the exposure, understand the effects of various cut settings, create presets, and set a new origin.
- Perform test cuts before cutting large projects. It prevents wasted material and preserves your valuable time.

2.1 Proper Blade Installation

Before using the Muse advanced control panel to set the cutting speed and force, it is important to make sure the blade is installed properly in the blade holder. Remove the protective cap on the blade and follow these instructions:

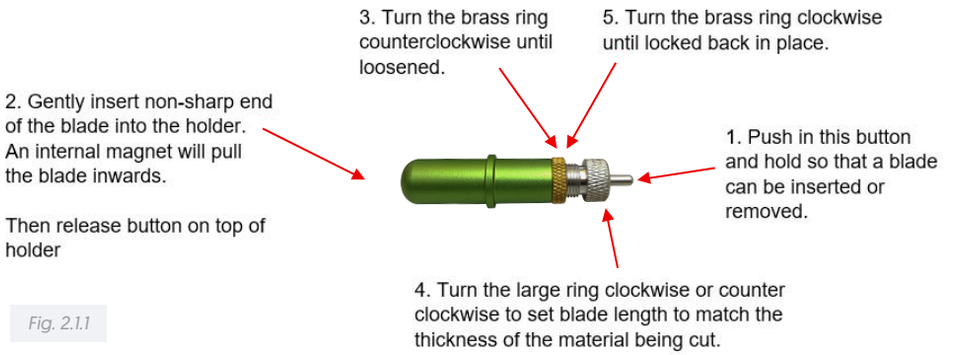
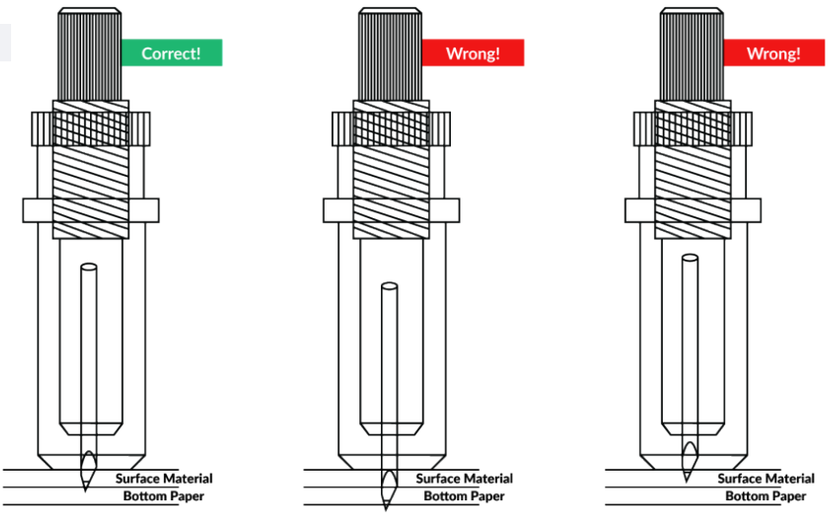


Fig. 2.1.1

The blade tip only needs to protrude far enough to cut through the face film and adhesive of adhesive-backed vinyl. This is a combined thickness of approximately 0.005" or less. The blade should not extend farther than ~ half the thickness of a credit card.

When properly installed, the tip of the blade is barely visible (See *FIG. 2.01.2* below). Adjust the blade inside the holder by turning the knob clockwise to extend more of the blade and counterclockwise to retract it.

Fig. 2.1.2



Perfect. The blade cuts through the vinyl, but not the release liner.

The blade is too far out. It's cutting all the way through the release liner.

The blade isn't out far enough to cut through the vinyl.

Box Test: To make sure the blade is inserted properly, use the images in FIG. *2.1.1* as a guide. Once the blade is installed in the blade-holder, place a sheet of vinyl on a flat surface, and place the blade-holder against the vinyl. Try to hold it perfectly perpendicular to the surface *(FIG. 2.1.3)*. Next, move the blade-holder across the vinyl and draw a square. Set aside the blade-holder and try to weed the box.

- If you cannot remove the box from the rest of the vinyl, you may not have cut deeply enough. The blade may need to be adjusted so that the tip extends farther.
- If the vinyl lifts easily, but the release liner below is deeply scored or cut all the way through, the blade is cutting too deeply. Adjust it so that less of the tip is showing.
- If you can easily weed the box, but the release liner paper below is barely scored (or not scored at all), the blade is installed correctly in the blade-holder. You are now ready to install the blade-holder in the tool carriage and use the speed and force settings to optimize cut quality and efficiency.

Fig. 2.1.3

2.2 Cut Settings

Now that you have inserted the blade properly in the blade-holder, you can use the Muse's control panel and menu options to expertly manage the speed and force of the cutter. Cutting vinyl successfully requires managing the amount of force you apply to the material and the speed at which the tool carriage moves across the platen.

2.2.1 Force and Speed

Force Guidelines: There are different levels of force required for various kinds of self-adhesive vinyl and heat transfer vinyl. Generally speaking, thicker or coarser materials such as reflective vinyl or glitter-flake HTV require more force than standard 3 mil sign vinyl.

The Muse makes managing these settings easier. It allows you to store, edit, and recall saved settings for different kinds of materials, so you can quickly change from one type of film to another.

The recommended or optimal force varies for different materials. The ideal force setting may even change for different colors. White vinyl sometimes requires more cutting force than other colors, due to the density of the pigment. It's always a good idea to perform a test cut before proceeding. This can be done using the **TEST** button on the **SPEED/FORCE** screen.

Speed Guidelines: In commercial signs and graphics, the faster you get a job done, the better. Time is money and speed saves time. So, it's tempting to run your cutter at top speed all the time, but this is not always the best approach.

Think of the cutter making vinyl graphics as if you were drawing, holding a fountain pen, or cutting with a hand-held X-Acto knife. If you were cutting or drawing a large square, you could go very quickly. If, however, you were cutting an intricate image, you might want to slow down and make sure you got all the curves and corners right.

The same holds true for vinyl cutters. You can cut large simple graphics at maximum speed. Cutting small, intricately detailed graphics requires more care and should be done at lower cutting speeds.

Just as you would do manually, if you're cutting something thick or tough, you would slow down to make sure you're cutting with enough force. Likewise, when using your Muse, cut thicker or tougher films on a lower speed setting to ensure good cut quality.

US and VS Speed Settings: To make your cutter even more efficient, there are two available speed settings in the Muse control panel:

US is the 'up speed', the speed of the tool carriage when the blade is lifted off of the media, moving from the origin to the start of the first shape to cut, or when moving from one shape to the next.

VS is the 'down speed' or the speed of the tool carriage when the blade is in the down position, cutting the shapes from the media.

For instance, you may need to use a lower **VS** to cut a detailed graphic, but you can leave the **US** at a much higher setting. Overall, there will be a time savings compared to use a lower **VS** for the entire project.

Changing Speed and Force: To change the speed and force settings on your Muse:

From the **Main Screen**, press the **SPD/FOR** button and the following screen appears:

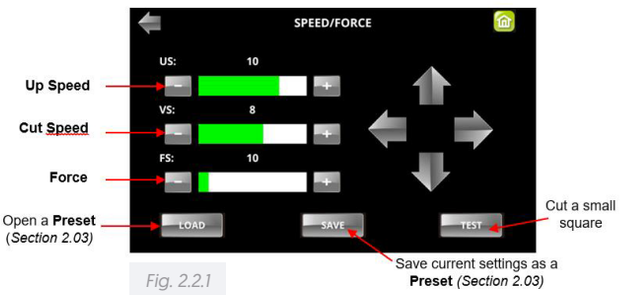


Fig. 2.2.1

You can change settings by either sliding your finger across a bar or by pressing the + or – buttons to increase or decrease the parameter. The green slider will change to show the **Speed** or **Force** selected, relative to the minimum and maximum values possible.

Both the Up Speed and **Cut Speed** are displayed on a scale from 1 to 13:

- The settings from 1 through 4 are the slow speeds and should be used when cutting dense difficult materials.
- The settings from 5 through 8 are medium speeds and should be used for easy-to-cut materials, such as cardstock, vinyl, iron-on transfer, and rhinestone template material.
- The settings from 9 through 13 are the fast speeds and are useful for engraving and drawing. You may, however, find that some materials will cut well at the faster speeds. You can normally use this higher range for the **Up Speed**.

Force is displayed on a scale from 1 to 160 where 160 represents the maximum of 800g (on the M15 and M24 models) and 2000g (on the M60 model).

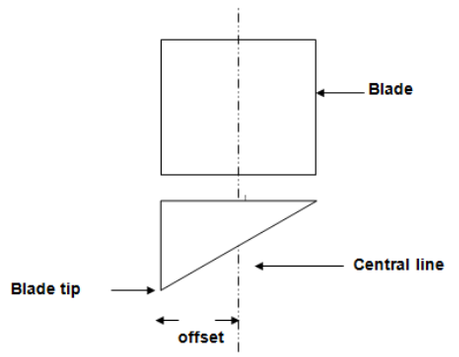
Once you have set the desired speed and force, load some vinyl and press the **TEST** button. Weed the pattern to determine whether the applied force is sufficient to cut through the top layer and adhesive, but not so much that it cuts through or deeply scores the release liner.

The Muse has the ability to store up to eight combinations of **Speed** and **Force**. Refer to *Section 2.03*.

2.2.2 Blade Offset

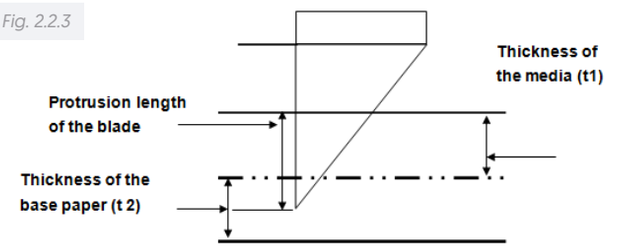
OFFSET is the distance that the blade tip is displaced from the centerline of the blade.

Fig. 2.2.2



Protrusion Length of the Blade

Fig. 2.2.3



Length of protrusion = t1 + t 2/ 2, but for your convenience you may just make it about 0.3mm ~ 0.5mm beyond the blade holder tip.

Offset Adjustment: If you are cutting rectangular paths and find that paths which should have 90° angles are instead rounded, the **Blade Offset** is too low. If the angles are sharp but distorted, the offset value is too high:

Fig. 2.2.4

Correct Offset | Too Low | Too High

In either case, you will need to adjust the **Blade Offset** value in LXi Production Manager (*see Section 2.5*) or in Create Space (*see FIG. 2.6.1*). These are the base settings for each type of Muse blade:

- 30° yellow capped: 0.75 mm (0.03 in)
- 45° red capped: 0.3 mm (0.01 in)
- 60° blue capped: 0.4 mm (0.02 in)

2.2.3 Overcut

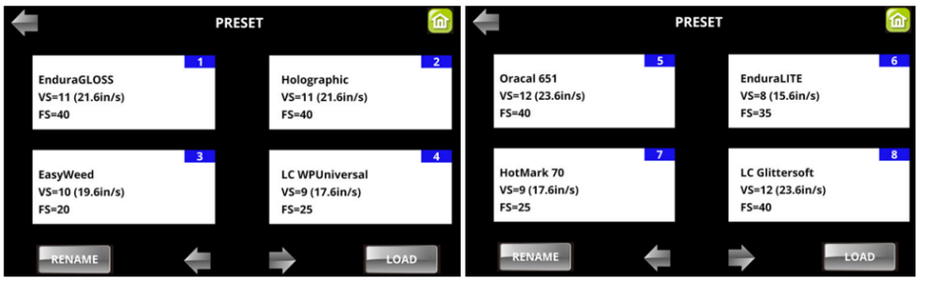
If your test cut has gaps in the paths or if the corners were not cut precisely, you may need to adjust the **Overcut** setting. This can be done on the **Default Job Properties** tab in the LXi Production Manager (see *Section 2.5*) or in the **Cut Settings** window in Create Space (*FIG. 2.6.1*).

2.3 Presets

Presets allow you to save your settings for a material. The Muse can save up to 8 presets. The pre-loaded presets are for EnduraGloss, Holographic and Oracal 651 vinyl, EnduraLITE reflective sheeting, and EasyWeed, Logical Color Warm Peel Universal, HotMark 70, and Logical Color GlitterSoft heat transfer film (HTV). Remember, these are just pre-loaded for your convenience and are intended to help you get started cutting our most popular self-adhesive films quickly and correctly. You can change these settings and/or replace them with your own presets.

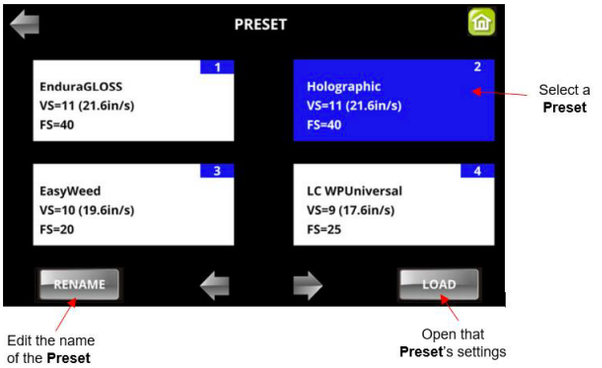
Open an existing **PRESET** by pressing the **LOAD** button on the **SPD/FOR** screen (refer to *FIG. 2.2.1*). The eight presets are split between two screens:

Fig. 2.3.1



Press one of the **Preset** boxes and it will turn blue. You then have the option to **RENAME** it or **LOAD** it:

Fig. 2.3.2



2.3.1 Saving a Cutting Parameters Preset

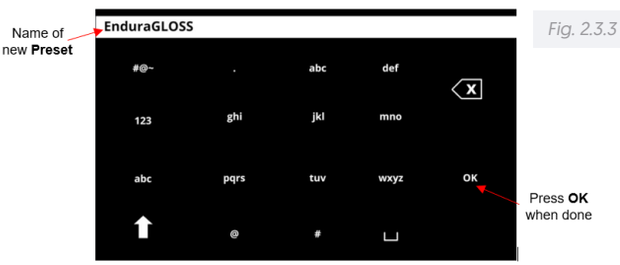
The following steps show you how to create your own preset of cut settings:

1. From the **Main Screen**, press the **SPD/FOR** button.

2. Enter the desired **US, VS**, and **FS** settings and press **SAVE** (refer to *FIG. 2.2.1*). The **Preset** screen will open.

3. Press one of the custom preset boxes, as shown in *FIG.2.3.2*. Instead of turning blue, it will turn red. You can either click on **SAVE** and that preset will be updated with the new settings or you can press **RENAME** and the following keypad will appear. Enter the name of the new preset you would like to save and press **OK** (Note: there is a 15-character limit).

Fig. 2.3.3



Press keys to add new name of **Preset**

4. Now your new **PRESET** will appear with the rest of the presets in the menu.

2.4 Setting the Origin before Cutting

Setting an origin point is an important part of managing your material cost and using the Muse contour cutting capabilities. Setting the origin point consists of using the arrow keys to move the tool carriage to a specific point on the cutter's X axis (left-to-right on the platen) and advance the media forwards or backwards.

Once you have positioned the blade in a specific point over the media (typically close to the bottom right corner of the material), your origin is defined and you do not need to press anything before cutting.

NOTE: If you have activated the **SHOW POINT** option, you can press the middle button after setting a new origin point and the x and y values at that position will update to 0,0. As you move the tool carriage away from this origin point, the x and y values will show exactly how far away from this new origin point the tool carriage has moved. More details on the SHOW POINT option are covered in *Section 1.8.3*.

You can also use the Muse's camera to set a very precise origin for applications such as when engraving metal charms or for the placement of the blade holder over the first registration mark in contour cutting:

- Calibrate the camera for contour cutting (*refer to Section 3.1*).
- When you are ready to set an origin, press **SET**>**CAMERA**>**SCAN**>**OK**.
- A photo will be taken. In that photo, press the corner of the reg mark or whatever other indicator you are using for an origin. This will move the red "+" to that position.
- Again, press **OK**. For a contour cut, that should be close enough for the camera to find the first registration mark. However, if you need a very precise origin, such as for engraving a charm, continue the steps until the dashed lines are dead center with your indicator.

2.5 Cutting from Vinyl Express LXi 19 to the Muse

When you are ready to cut, click the **Cut/Plot** icon to launch the Production Manager and open the following **Cut/Plot** window:

For a simple cut you only need to address the following on the **General** tab:

- Make sure the correct cutter is selected at the top of the Cut/Plot window.
- Verify the Material sizing is correct. If not, you can click on Properties, enter new dimensions and they will appear in the drop-down menu for Material.
- Check the Preview to make sure it seems correct.

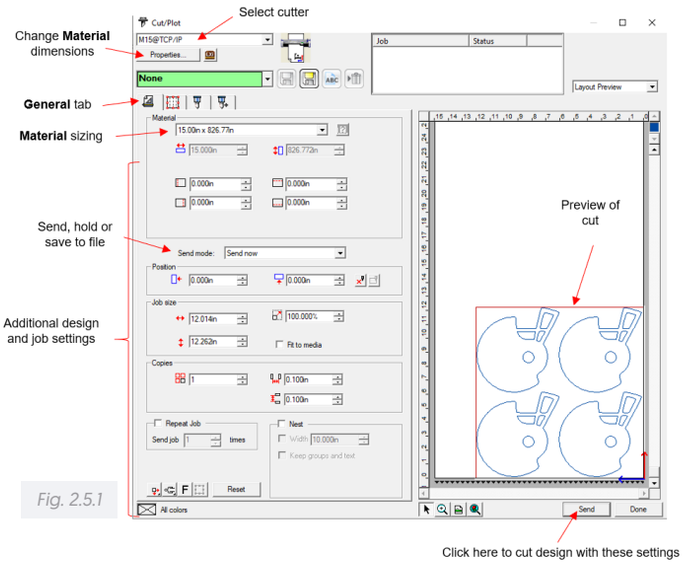


Fig. 2.5.1

- Make sure Send mode is set to Send now if you are cutting directly to the Muse immediately.

While there are quite a number of other cutting features you may need for your applications, take note of several common ones:

- To change the **Blade Offset** covered in *Section 2.2.2*, click on **Properties** and select the **Cut** tab . Enable the setting called **Knife Offset** and enter a new setting, using inches as the units.

- To the right of the **General** tab is the **Options** tab , where you can set **Passes** if your material cuts better with more than pass.

- Also to the right of the **General** tab is the **Advanced** tab , where you can modify the **Overcut** setting covered in *Section 2.2.3*.

When you are ready to send the project to the **Muse**, click on **Send**.

2.6 Cutting from Create Space to the Muse

When you are ready to cut, click on the **Cutter** icon to open the **Cut Settings** window:

Cut Mode controls where shapes will cut on the material. Typically, you will choose **Origin Point** to be more efficient with material. Shapes will be aligned and cut next to the origin you set on the material. If the **Cut Mode** is set to **WYSIWYG**, shapes will cut based on their placement in the document (mat) area as shown in *FIG. 2.6.2* and *2.6.3*.

Use **Software Speed** and **Pressure**: Enabling this option will use the **Pressure** and **Speed** settings in SCAL, thus overriding those set on the Muse's control panel.

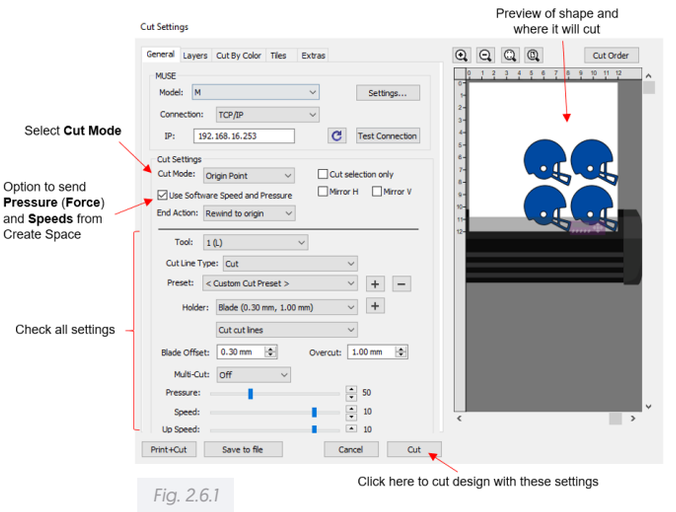


Fig. 2.6.1

Note that when designing in Create Space, you can use either **Portrait** mode (typically used with the included cutting mat) or **Landscape** mode (typically used for longer projects). These are set on the **Document Panel** to the right, along with setting up your document area under **Mat Size**. Keep in mind that the triangle (arrow) on the edge of the on screen can be used to indicate where your shapes will cut relative to the direction the material is fed into the Muse. You can also then verify, based on the preview in the Cut Settings window where the shapes will cut relative to the Muse itself:

Fig. 2.6.2

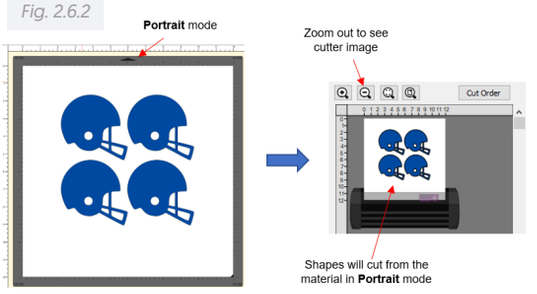


Fig. 2.6.3

As you can see in *FIG. 2.6.1*, there are other cutting functions available in this window, such as **Cut Order**, **Cut by Color**, **Layers (Cut by Layer)**, **Mirroring**, and more.

When you are ready to send the project to the **Muse**, click on **Cut**.

2.7 Resolution/Scale Calibration

If you were to cut out any particular shape, for example, a 10” x 10” square, you might find that it actually measures 9-15/16” x 10-1/32”. It will be very close to 10” x 10” but perhaps just slightly smaller or larger in either or both dimensions. Now this might be perfectly acceptable for the type of cutting you do. Therefore, it may not even be necessary to do this particular calibration. However, if you do want to make sure your shapes are cut precisely to scale, the following procedure will allow you to calibrate your Muse cutter.

In your design software, add a square and size it to 10” x 10” or, if using metric units, 250 mm x 250 mm.

On the Muse control panel, go to **SET**>**ADVANCED SETTINGS**>**SCALE**. The following window opens where you can verify that the current **X** and **Y SCALE** values are both set to 1.0000:

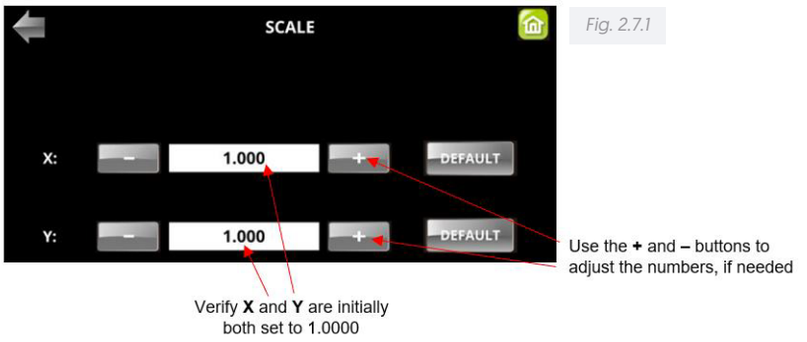


Fig. 2.7.1

Using the test pen and a large sheet of paper, draw the square, noting which side was drawn left-to-right (which is the X side) and which side was drawing front to back (which is the Y side), as you face the Muse head on.

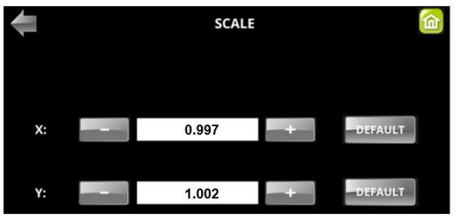
To calculate the **SCALE**, divide the design dimension by the *actual drawn dimension* times the current **SCALE**. Thus, if you draw a 10” square and it measures ~10 1/32” (left-to-right) or if you draw a 250 mm square and it measures ~ 250.8 mm (left-to-right), then:

- **X SCALE** = 10” ÷ 10 1/32” x 1= 10” ÷ 10.03” x 1 = 0.997
- Or, in metric, **X SCALE** = 250 mm ÷ 250.8 mm x 1 = 0.997

Fig. 2.7.2

Repeat for **Y SCALE**. In this example, assume the Y side drew smaller than 10” and the calculated **Y SCALE** is 1.002.

Return to the **SCALE** screen and enter the values using the + and – buttons:



Repeat the test to verify the dimensions are correct. If you still need to adjust, repeat the calculation with the newly measured dimensions but remember to also multiply by the **SCALE** numbers you entered into the **SCALE** screen. Then enter those new **SCALE** values and test again.

3

Print and Cut (Contour Cut)

3.0 Contour Cutting with your Muse

The Muse uses a combination of hardware, firmware, and software to enable easy contour cutting of digitally printed images.

Contour cutting is a process where an image is sent to a printer with registration marks added around the image. The printout is then placed in the vinyl cutter and the vinyl cutter's camera scans the registration marks. It then knows where to cut the contour path around the printed image, based on where the registration marks are located relative to the project in the software you're using.

This chapter covers the calibration of the camera and an overview of the process. For more detailed instructions, including video tutorials, go to the SIGNWarehouse Tech Support blog at:
http://techsupport.signwarehouse.com/

3.1 Camera Calibration

Your Muse is unlike other cutters. Most contour-cutting vinyl cutters use a laser scanner to scan printed registration marks. The Muse has an advanced camera that provides fast and consistent scanning and supports very precise calibration.

If you find that alignment of the cut path and the intended contour is not ideal, you can bring them into alignment by calibrating the camera. Under normal circumstances, the camera alignment should only be done once, but if your cutter is jostled or damaged in transit, you may need to recalibrate the camera.

NOTE: If you own a Muse 60 model and plan to use both cutting heads, the calibration for both can be done at the same time. Refer to *Section 4.1*.

The camera calibration process is quite simple. Here's a brief summary. Step-by-step instructions will follow.

- What you need for calibrating:
  1. A sheet of white copy paper
  2. Muse test pen (see item #9 in *Section 1.4*)
- Use the test pen and a function on the control panel to draw a pattern of vertical and horizontal lines on a sheet of paper.

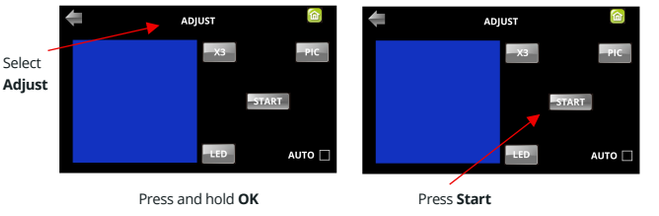
- The camera will then take a photo of this pattern and the display will show the plotted image with a small red cross and long dotted blue lines superimposed.
- Tap the middle of the pattern with your finger to move the small red cross close to the center. You can use the arrow keys, if you like, to place it more precisely in the middle. The x3 button on the control panel enables magnifying the camera view for extremely precise alignment.
- The Muse will take over and locate the center precisely. You will then conclude the calibration by pressing **STOP** on the **MAIN SCREEN**.

3.1.1 Step-by-Step Calibration Process

The following steps show you how to create your own preset of cut settings:

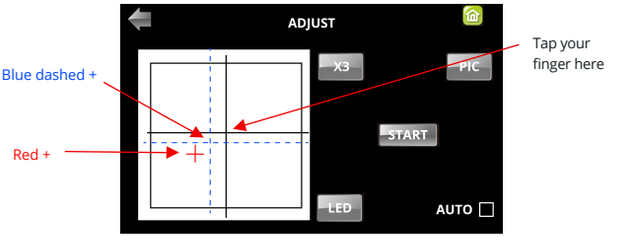
1. Load the sheet of paper into the cutter, taking care to adjust the position of the pinch rollers so that the paper is securely placed on the platen.
2. The recommended **SPEED** and **FORCE** settings for the camera calibration are 8 and 30, respectively. This will help the pen draw a clear and clean test pattern for the calibration.
3. Place the test pen into the tool carriage. You can open the lid to gain more room to insert the test pen. Make sure you position the pen in the blade holder seat so that it's low enough to mark the paper when lowered, but high enough to clear the paper when the blade holder seat is raised. Use the **TEST** button to draw a test square to make sure the pen is positioned correctly.
4. Once your small test square is cleanly drawn, move the pen over so that the calibration pattern will not be drawn on top of your last test.
5. From the main screen, press **SET**>**CAMERA**.
6. Select **ADJUST** to open the screen for calibrating. Press **START**:
7. Press and hold the **OK** button for several seconds

Fig. 3.1.1



8. Press **START**. The test shape, which is a grid of 6 lines, will be drawn on the paper and the camera will move over the test shape, take a photo, and display the photo on the control panel.
9. If you cannot see the test shape clearly, press the **LED** button once so that it reads **LED 50%**. You can also use the **X3** button to zoom in, if needed. Press the **PIC** button to take another photo. You should see three items in the photo: the test shape that was drawn with the pen, a red +, and the blue dashed +:

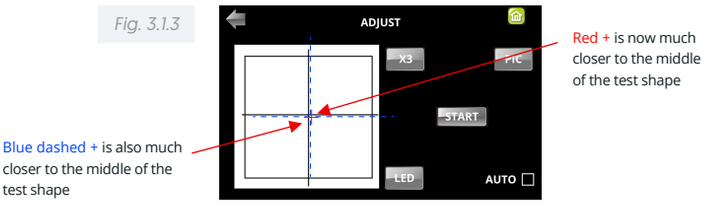
Fig. 3.1.2



10. Tap your finger near the middle of the drawn test shape on the screen. This will move the red + close to that location.

11. Press **OK**. A new photo will be taken and one of two things will happen:

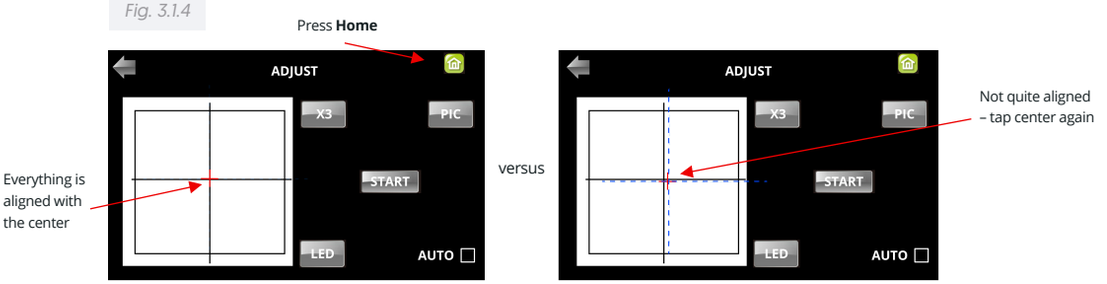
Fig. 3.1.3



- The red + is so close to the center that the Muse's camera will now take over and find the true center on its own. You will see the red + and the blue dashed + aligned in the center and the arrows (only) will return to their blue color. Refer to the left side of the next screenshot.

- The red + and the blue dashed + are still not aligned. Refer to the right side of the next screenshot. You will need to tap the center again and press **OK**. Continue, if needed, until the center is identified automatically.

Fig. 3.1.4



12. Once the alignment is in place, press the **HOME** button and then press **STOP** on the **MAIN SCREEN** to save the calibration and conclude the process:

3.2 Contour Cutting with Vinyl Express LXi 19

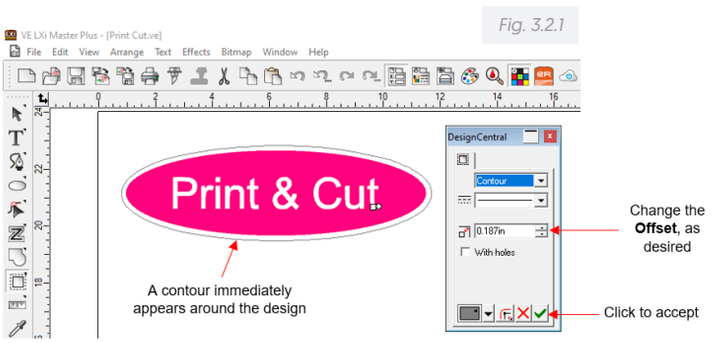
This section presents the desktop print-and-cut workflow which requires LXi Master or Master Plus. If you use LXi RIP, please refer to *Section 3.3.*

3.2.1 Adding a Contour Cut to a Design

Design or import the image which will be printed.

To add a contour path for cutting, select the design and go to **Effects**>**Contour Cut**. This will open the **Contour Cut** dialog in the **Design Central** toolbox and a contour cut should appear:

Fig. 3.2.1



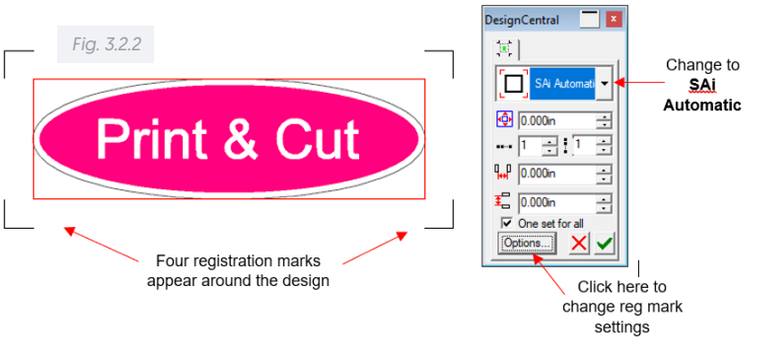
Adjust the **Offset** based on how large a border you want to create between the edge of the printed image and the cut path.

To place the cut path inside the printed area for a 'full bleed' decal, select a negative value in the **Offset** instead (e.g. -0.0125). Once you have the setting you want and the preview looks acceptable, press the enter key on your keyboard or click the green check mark icon in the **Design Central** window to apply the settings.

3.2.2 Adding Registration Marks and Printing

1. With the design and its contour selected, go to **Effects**>**Contour Cut Marks**. In this **Design Central** window, the type and sizing of registration marks can be modified. First, select **SAi Automatic** from the drop-down menu and the marks will appear like this:

Fig. 3.2.2

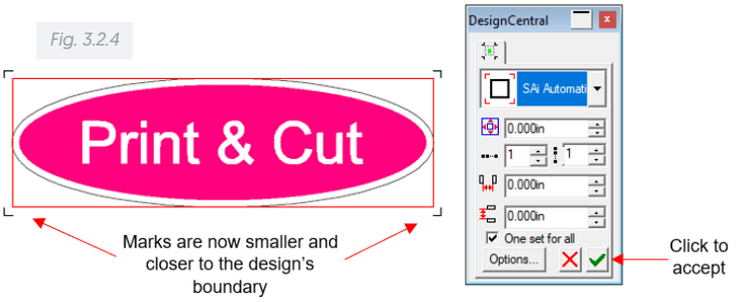


2. By default, the registration mark settings are far more conservative than needed when using the Muse's camera. In order to make them smaller and move them closer to the design, select **Options** (as shown in the prior screenshot). In this next window, you can change to these smaller settings for the **Mark Length** and the **Margin**:

Fig. 3.2.3

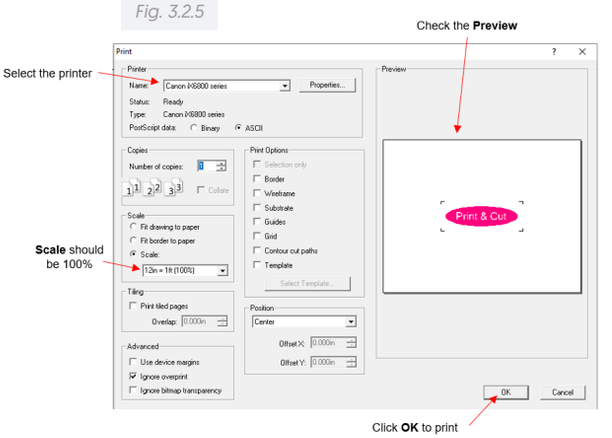
3. Click on **OK** to update the registration marks and then click the green check mark icon to accept:

Fig. 3.2.4



4. Go to **File**>**Print** and verify that all settings and the **Preview** appear correct. You may need to go to **File**>**Document Setup** and/or **File**>**Print Setup** to make changes. Otherwise, the **Print** window should show your project with the registration marks. Also, verify that the **Scale** is set to 100% before clicking **OK** to print:

Fig. 3.2.5



3.2.3 Contour Cutting to the Muse

1. Load the printout into the Muse using the same orientation as on the screen in LXi. In the example being used, *FIG. 3.2.5* shows a **Landscape** orientation and the printout should also appear the same. This is then how the printout would also be loaded. Note that if the material is not backed (e.g. paper or cardstock), the Muse's cutting mat should be used as the carrier.

2. Try to load the material straight so that the front registration marks are parallel to each other on your Muse 's platen. Move the tool carriage so that the blade is over the lower right registration mark. The blade needs to be close to the bottom corner as shown in *FIG. 3.2.7*

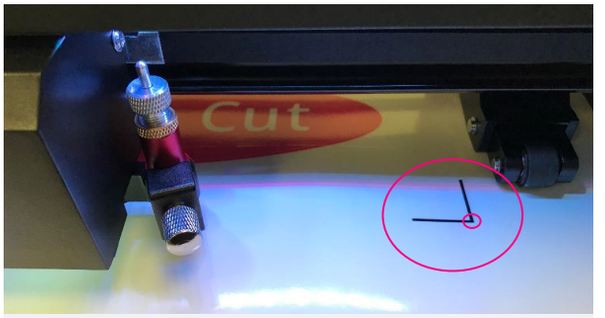
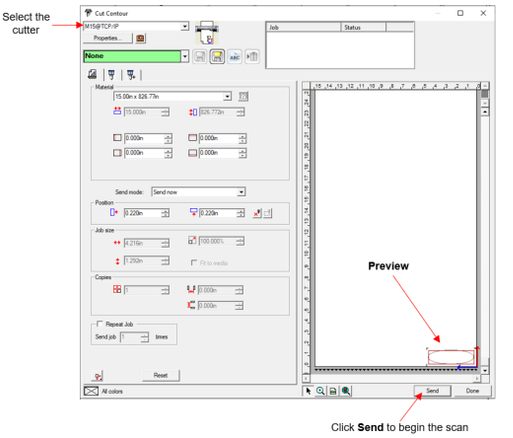


Fig. 3.2.6 Position the blade over the lower right corner of the lower right registration mark.

Fig. 3.2.7

3. In LXi 12, go to **File**>**Cut Contour**. LXi Production Manager will open, as well as the following **Cut Contour** window, where you can verify the correct cutter is selected (in case you have more than one set up):

Fig. 3.2.8



4. Click on **Send** and the Muse will start to scan the marks and automatically perform contour cut.

5. As the camera scans each registration mark, the LCD display will show the mark being scanned. If, for any reason, the cutter fails to scan a particular mark, the camera display will show how far off-center the alignment is. At that point, you can use the arrow keys to adjust the camera to align over the corner of the mark and complete the scan (*FIG. 3.2.9*).

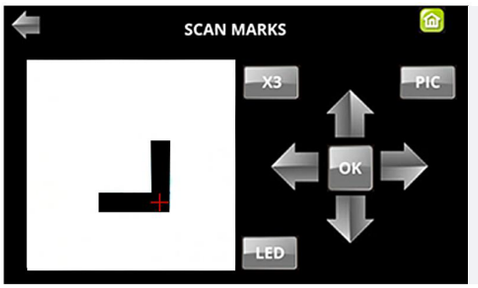


Fig. 3.2.9

When the cut job is sent, the Muse activates its camera and begins scanning the marks. Each mark is displayed on the LCD control panel in real time as it's scanned.

3.3 Contour Cutting with Vinyl Express LXi RIP Design

The RIP Design license allows use of large format printing (with the drivers for the large format printers included) as well as color management tools. The following steps present a typical workflow:

1. Import or design the project. To create a contour cut line use the same procedure from *Section 3.2.1*. In this example the following design has a negative contour **Offset** added:

Fig. 3.3.1

2. Click on the **RIP** and **Print** icon to open the **RIP** and **Print** window, as well as Production Manager. You'll observe the design aligned in the lower right corner of the preview. Select the design and move it away from the corner. Otherwise, when the camera moves to photograph the first registration mark, it could send the cutting head out of range on the right side of the MUSE:

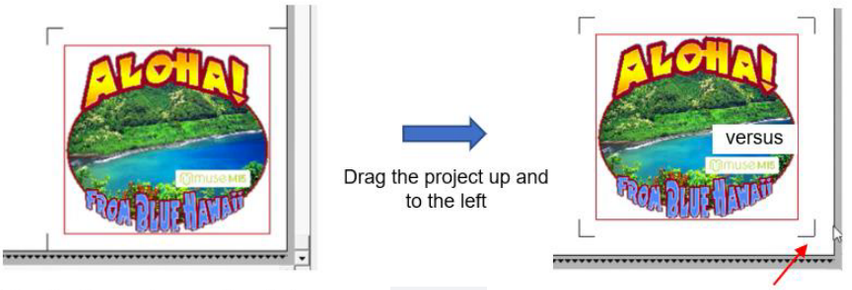


Fig. 3.3.2

3. Note the following in the **RIP** and **Print** window:

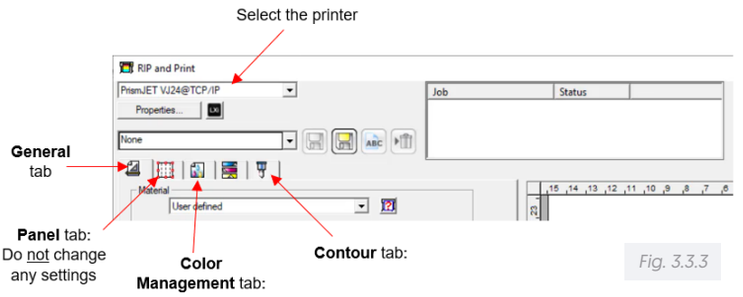


Fig. 3.3.3

4. Click on the **Color Management** tab and select the appropriate Output Profile:

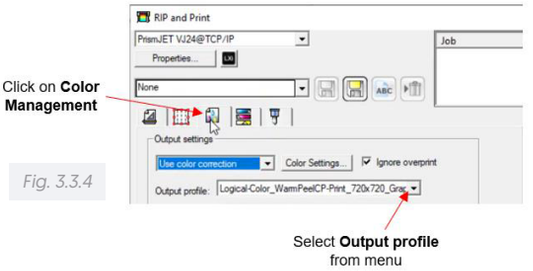


Fig. 3.3.4

5. Return to the **General** tab and select **Material** size, **Job size**, and **Copies** as desired:

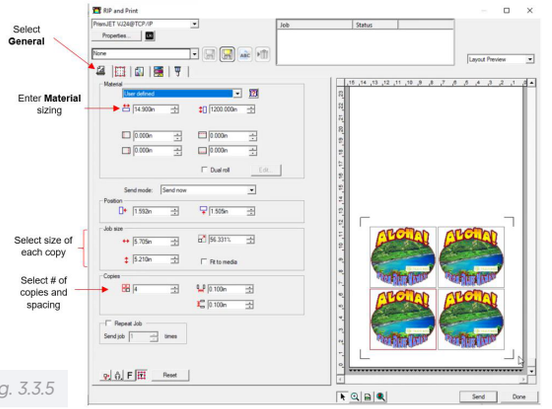


Fig. 3.3.5

6. Click on the **Contour** tab and confirm all of the following settings before clicking on **Send**:

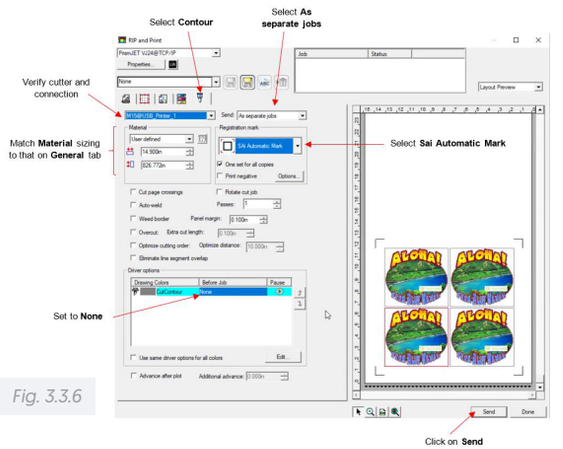


Fig. 3.3.6

7. Click on **Send** and the job will be sent to the printer. In the Job Production window, the **Printer** queue can be accessed to monitor the progress of the printing:

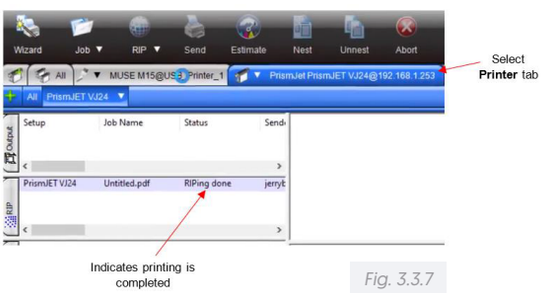


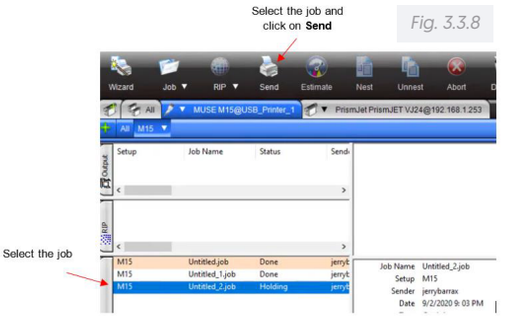
Fig. 3.3.7

8. When removing the printout from the larger format printer, be sure to allow several extra inches above the printed registration marks for clearance of the pinch rollers.

9. Load the printout into the MUSE in the same orientation as printed and set the blade tip over the lower right registration mark as was shown in *FIG. 3.2.6* and *3.2.7* in *Section 3.2.3*.

10. In the Job Production window, select the MUSE tab and the job status should indicate **Holding**. Select the job and click on **Send** at the top:

Fig. 3.3.8



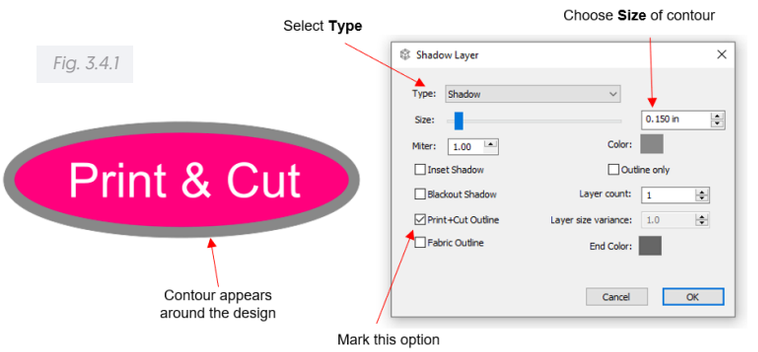
3.4 Contour Cutting with Create Space

3.4.1 Adding a Contour Cut to a Design and Printing

1. Import or design your project in Create Space.

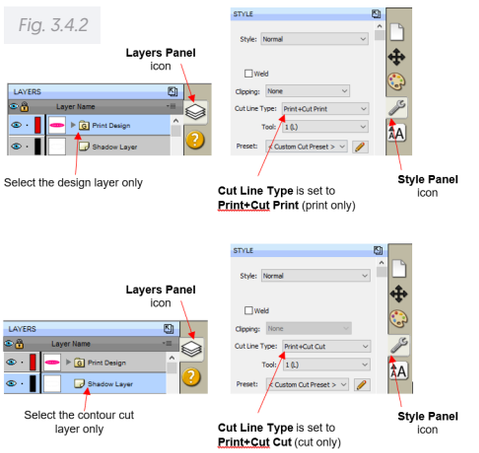
2. To add a contour cut, select the design and go to **Effects**>**Shadow Layer (Contour Cut)**. In the window which opens, you will set the shape and size of your contour cut. Mark the box for **Print+Cut Outline**. Click **OK**.

Fig. 3.4.1



3. **NOTE:** The **Print & Cut Outline** option automatically sets the **Cut Line Type** for the design to **Print+Cut Print**. This means it will only print and will not cut. It also automatically sets the **Cut Line Type** for the contour to **Print+Cut Cut** which means it will not print and will only cut. Note that these assignments can be verified or changed by selecting a layer and going to the **Style Panel**:

Fig. 3.4.2



4. If you wish to see the print border for the currently-selected printer and the registration marks, enable **Show Print Margins** and **Show Registration Marks**, respectively on the **Document Panel**:

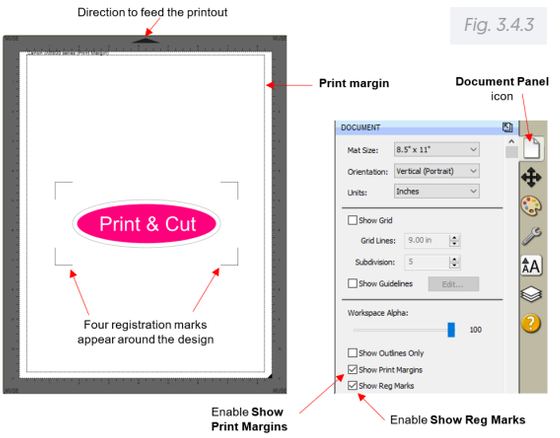


Fig. 3.4.3

5. By default, the registration mark settings are far more conservative than needed when using the Muse's camera. In order to make them smaller and move them closer to the design (or to the borders of the printout), go to **Cutter**>**Cutter Settings**. In the upper right corner of this window, you can make changes, as appropriate for your needs. For example:

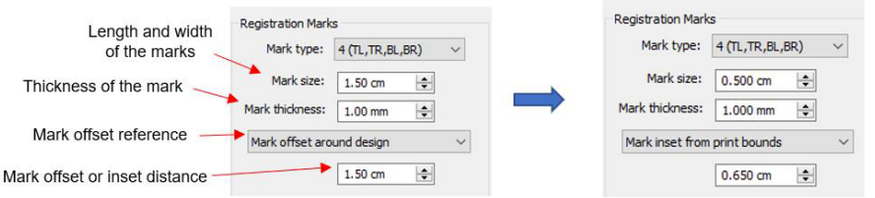


Fig. 3.4.4

6. Click the **Cutter** icon at the top to open the **Cut Settings** window. Click the **Print+Cut** button.

7. The **Print and Cut** window will open. Adjust the cut settings, as needed.

8. Click **Print** to open the **Print** window. By default, the **Print Registration Marks** should be marked. Click **OK** to print the project.

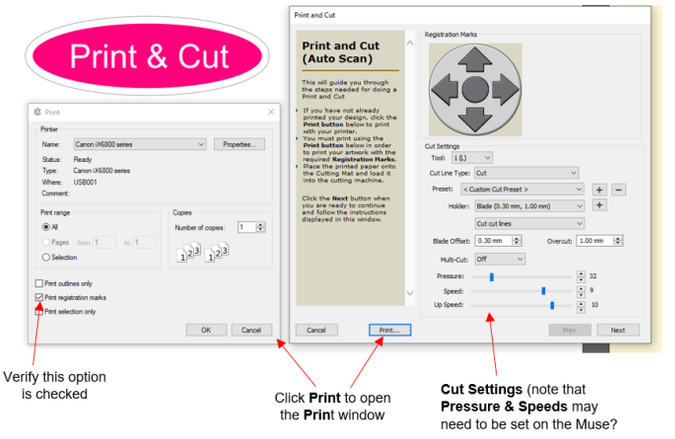


Fig. 3.4.5

3.4.2 Contour Cutting from Create Space to the Muse

1. Load the printout into the Muse based on the arrow direction (triangle) shown in the main window of **Create Space**. In the example being used, *FIG. 3.4.3* shows a **Portrait** orientation (also indicated on the **Document Panel**) and the printout should be loaded the same way. Note that if the material is not backed (e.g. paper or cardstock), the Muse cutting mat should be used as the carrier.

2. Try to load the material straight so that the front registration marks are parallel to each other on your Muse's platen. Move the tool carriage so that the blade is over the lower right registration mark. The blade needs to be close to the bottom corner as shown in F*IG. 3.4.6.*

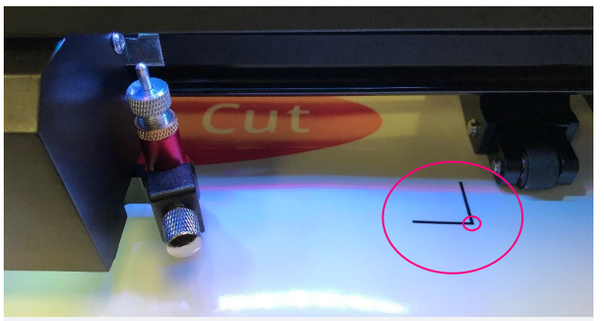


Fig. 3.4.6 Position the blade over the lower right corner of the lower right registration mark.

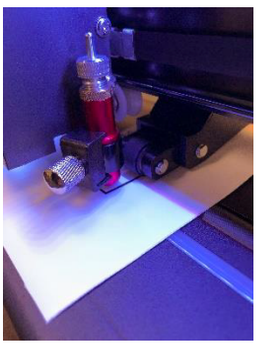


Fig. 3.4.7

3. Select **Next** to move to the reading of the registration marks. You can use the arrows on the box to move the carriage or use the arrows on the cutter to move the tool carriage into the right spot. You want the blade in the bottom corner of the lower right registration mark.

4. Once in the correct spot, click **Start Scan** and your Muse will begin scanning the marks:

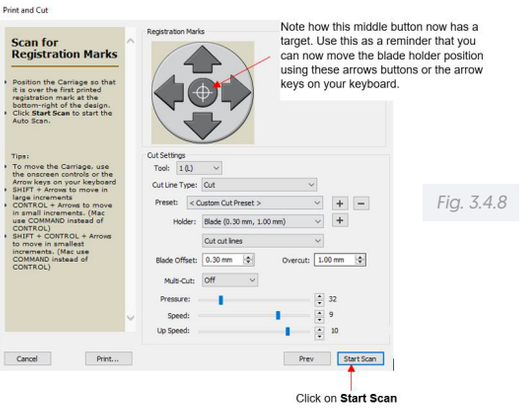
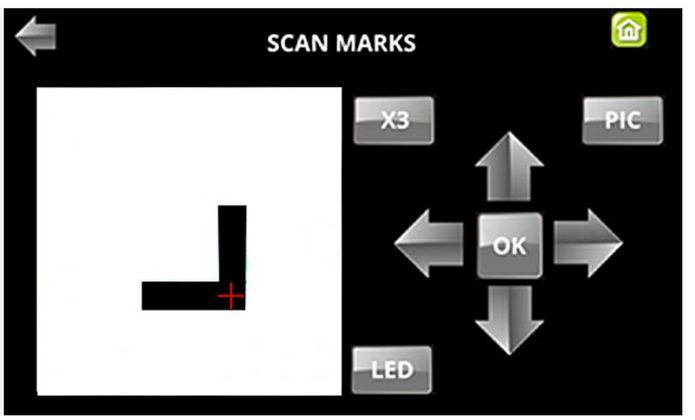


Fig. 3.4.8

5. As the camera scans each registration mark, the LCD display will show the mark being scanned. If, for any reason, the cutter fails to scan a particular mark, the camera display will show how far off-center the alignment is. At that point, you can use the arrow keys to adjust the camera to align over the corner of the mark and complete the scan (*FIG. 3.2.9*).

Fig. 3.4.9

When the cut job is sent, the Muse activates its camera and begins scanning the marks. Each mark is displayed on the LCD control panel in real time as it's scanned.



4

Special Applications

4.0 What's So Special about the M60?

Besides having the ability to cut up to 60" wide, the M60 offers the following additional capabilities:

- A maximum of 2000g of cutting force which enables some denser materials to cut more easily (such as magnetic sheets, stencil and PET-G craft plastics, basswood, wood veneer, chipboard, matte board, denim, wool and felt. Note that with any of these types of materials, more than one pass is typically needed.
- A second cutting head which can be used for applications like:
    1. Score and cut projects
    2. Foil and cut projects
    3. Cutting at different depths (such as kiss cutting with one blade holder and full cutting with the other)
- These additional applications are the reason the M60 also ships with an embossing/scoring tool and a second blade holder.
- The M60 model further ships with a 30° blade which is well suited for cutting window tint (refer to *Section 4.2*).

4.1 M60 Dual Head Calibration

In *Section 3.01*, the camera calibration was presented showing how to make sure the blade holder is calibrated with the camera. A similar calibration is also needed to make sure the right and left blade holder seats are perfectly aligned with one another.

1. On the control panel's **Main Screen**, make sure the **Use Double Head** option is selected. If you do not see any of these options, click on **SET**>**ADVANCED SETTINGS**>**SYSTEM MODE** and select Use **Double Head**. Then, back on the **Main Screen**, the options should now be available:

Fig. 4.1.1

Select **LEFT+RIGHT HEAD**

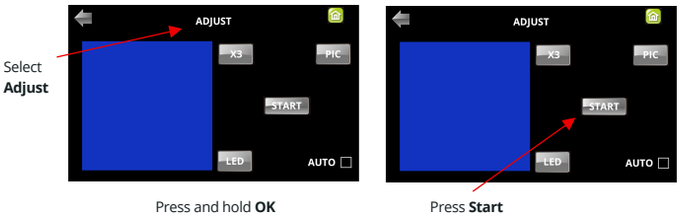
2. Insert a sheet of paper into the M60, either on the cutting mat or directly inserted. Load a test pen into both the left and right-side blade holder seats, making sure the pen nib is slightly above the paper.

3. Select the **SPD/FOR** function and make sure both sides are set to a suitable FORCE for drawing: ~ 30 – 40.

4. Make sure both pens are over the paper. On the **Main Screen**, select **SET**>**CAMERA** to open the camera menu.

5. Press **ADJUST** to open the screen for calibrating. Press **START**.

Fig. 4.1.2

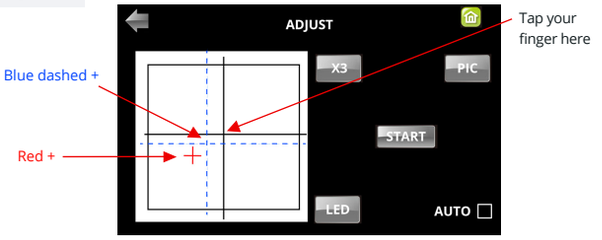


6. Press and hold the **OK** button for several seconds:

7. Press **START**. The test shape, which is a grid of 6 lines, will be drawn first on the right side of the paper by the right-side pen. Then the same test shape will be drawn by the left-side pen about 4 inches to the left of the first test shape.

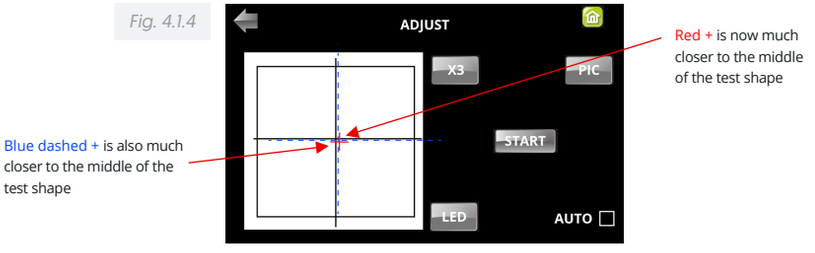
8. The camera will move over the right-side test shape, take a photo, and display the photo on the control panel. If you cannot see the test shape clearly, press the **LED** button once so that it reads **LED 50%**. You can also use the **X3** button to zoom in, if needed. Press the **PIC** button. You should see three items in the photo: the test shape that was drawn with the right-side pen, a red +, and the blue dashed +:

Fig. 4.1.3



9. Tap your finger near the middle of the drawn test shape on the screen. This will move the red + close to that location:

Fig. 4.1.4



10. Press **OK**. A new photo will be taken and one of two things will happen:

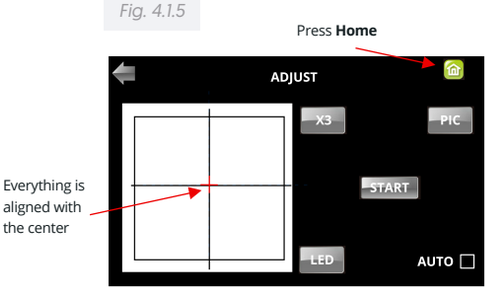
- The red + is so close to the center that the Muse will now take over and find the true center on its own. You will see the red + and the blue dashed + aligned in the center. Additionally, the camera will now move over to the left side test shape and take a photo.

- The red + and the blue dashed + are still not aligned. You will need to tap the center again and press **OK**. Continue, as needed, until the center is identified and the camera moves to the left side test shape and takes a photo.

11. Once the camera has taken a photo on the left side, tap the center of the test shape on the screen and press **OK**. The camera will take over and locate the center on its own.

12. Once the arrows appear, press the **HOME** button and then press **STOP** on the **Main Screen** to save the calibration and conclude the process.

Fig. 4.1.5



4.2 Setting Up Dual Head Applications on the M60

The M60 comes with a creasing tool (refer to *Section 1.4*) which can be used to score fold lines. Having the second blade holder seat enables you to score and cut all in one process.

In general, the creasing tool works better if multiple passes are used at a moderate pressure versus using a single pass at a very high pressure.

The following section shows how to set up a score and cut project in Create Space. Note that a similar setup is used when utilizing both blade holders at once versus the creaser and a blade holder.

1.6.2 Score and Cut Project in Create Space

When a project involves both scoring and contour cutting, the layers need to be assigned appropriately on the **Layers Panel**. There should be at least 2 layers: one for the fold lines, and a second for the cut lines.

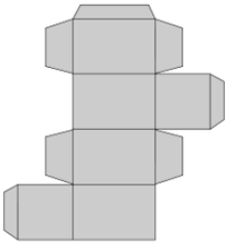
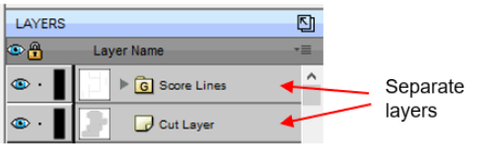


Fig. 4.2.1



Decide which head will have which tool mounted. In this example, the left will have the blade holder and the right will have the creasing tool (but the opposite is fine, if you prefer).

Select one layer at a time and, on the **Style Panel**, change settings in the following way:

- *Score Lines*: Set **Cut Line Type** to **Draw** and set Tool to **2(R)**
- *Cut Layer*: Set **Cut Line Type** to **Cut** and set Tool to **1(L)**

Fig. 4.2.2

Style Panel setup for *Score Lines* **Style Panel** setup for *Cut Layer*

With the layers properly assigned, the project can now be sent to the **Cut Settings** window. Make sure **Cut Mode** is set to **WYSIWYG**. (If left at **Origin Point**, the score lines will not align properly with the cut lines.)

Under **Tool**, select **1(L)** and enter the settings for cutting the cut lines. Verify the cut lines appear in the **Preview:**

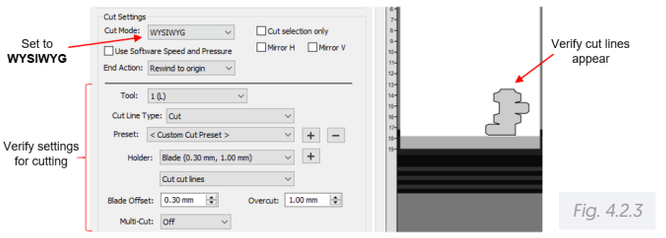


Fig. 4.2.3

Change Tool to **2(R)** and enter the settings for scoring the fold lines. Disable the option for **Prompt for pen color change**:

Before cutting, verify the M60 is set up for Dual head use. Mount the tools, load the material, set the origin based on the left side tool. Perform any necessary test cuts.

Click on **Cut** in the **Cut Settings** window and the scoring and cutting will occur in one process.

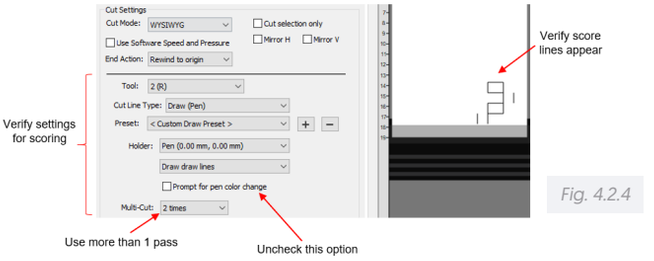


Fig. 4.2.4

4.3 Window Tint with MUSE M60

NOTE: *All suggested settings are a starting point, depending on the media adjustments that may be required based on the media itself.*

Normal Window Tint Film using a MUSE 30-degree blade and the Muse Blade Holder

The Force should be low; ideal would be between 16-18 on the sliding scale. The blade should be adjusted only as deep as the film to be cut. Aim for the lower number when using a new and serviceable blade and make adjustments as the blade dulls.

For the Speed, on the sliding scale, 2-4 is ideal. Aim for the lower speed as recommended by the manufacturer.

Because tint is thin and the end-user will be cutting larger shapes. The slower speed and lower force will help the tint avoid getting caught in the cutter and getting wrinkled.

4.4 Paint Protection Film with MUSE M60

NOTE: All suggested settings are a starting point, depending on the media adjustments that may be required based on the media itself.

Normal Paint Protection Film using a MUSE 60-degree blade and the Muse Blade Holder

Paint Protection Film is a PVC film with a thickness of 6 mil, although some kinds are 9 or 12 mil thick, depending on the brand.

This material is meant for medium-term paint protection of automotive fenders, rear bumpers, and deck or side skirts. Because of the thickness of this film, a 60-degree blade is recommended.

The blade exposure should be adjusted so that it will only cut as deep as the film. Please use the box test presented in *Section 2.1.*

The Force will be about 25-30 on the sliding scale. Aim for the lower number when using a new and serviceable blade and make adjustments as the blade dulls. The pressure could vary depending on the blade holder as well.

For the **Speed** on the sliding scale, use the normal speed of 6-7. Since the vinyl is thicker, the Overcut should be turned on as well. The ideal **Overcut** is about .3-in to .5-in (0.75-cm to 1.25-cm).

4.5 Scribe Engraving with MUSE M24

NOTE: *All suggested settings are a starting point, depending on the media adjustments that may be required based on the media itself.z*

Scribe Engraving using a MUSE Scribe Engraver

When you place the scribe tool into the tool carriage, line up the second line of the tool with the top of the arm.

You will need to increase Force and slow down the tool carriage, as well as use the ability to send multi passes. That will help with a smooth engraving. Force can be around 20-40 and **Speed** for **US** and **VS** can be around 5 - 8.

The material for scribing is a little thicker than sign vinyl. This will be great for using the pressure levers for the pinch rollers.

5

Troubleshooting FAQ

Having trouble? Check out these common questions & answers!

Question: What's the smallest character I can cut?

Answer: The Muse cutters use micro-stepper motors which have mechanical gears to move the grit roller and cutting head. The mechanical drive limits the precision with which extremely small characters can be cut. Letters smaller than .05" will be distorted. A 60° blade may be required for accurately cutting small text. When cutting graphics this small, the speed setting on your cutter should be reduced.

Question: Why is the cut quality inconsistent?

Answer: Inconsistent cut quality is often a function of the speed setting. You can adjust the speed across a wide range up to 24 inches per second. High speed is appropriate for large simple shapes and letters. But for small fonts and complex shapes, a slower cutting speed will produce better quality.

Question: Why doesn't the vinyl track correctly on long cut jobs?

Answer: Poor tracking is typically caused by the vinyl being incorrectly loaded into your cutter. Whenever possible, position the pinch rollers as close as possible to the edges of the vinyl. Allow some margin for error so that the vinyl doesn't 'walk' out from under one of the pinch rollers as the roll is fed through the cutter.

After loading the vinyl and setting the pinch rollers, use the arrow keys to feed the vinyl forward and backward a few feet to ensure the media is loaded properly and tracking straight. Feeding it forward and back will also place small grooves in the face film that aid in consistent tracking. If the vinyl alignment skews consistently to one side during cutting or media feed, there may be uneven pressure from the pinch rollers. Check to make sure both, or all pinch roller wheels are in the down position. If all wheels are down and the vinyl still consistently skews to one side, you may need to replace one of the pinch rollers.

Question: Why are there rough edges on cut graphics?

Answer: 1. The knife blade may be protruding too far from the blade holder. Refer to Section 2.01 and adjust the blade so that you're not cutting too deeply into or through the release liner.

2. Your blade is damaged or worn out and needs to be replaced.

Question: My LCD display doesn't seem to turn on - or I see a black row of blocks in my LCD screen

Answer: 1. If the LCD is blank, check to make sure your cutter is plugged into a working outlet and turned on.

2. If you're seeing black blocks on the LCD screen, make sure you're getting adequate voltage to your cutter (your outlet may be lower voltage). If you're plugged into a 110v outlet, and the problem persists, contact SIGNWarehouse Product support.

Question: Why are some of the letters cut incompletely?

Answer: 1. Make sure the blade holder is correctly installed in the tool carriage.

2. Check the blade tip to make sure it isn't damaged.

3. The blade holder may be worn out. As blade holders age, their control of the blade's movement is degraded. The first sign of this is often incompletely cut shapes, such as rectangles with uncut corners.

4. Reinstall the software and check with your IT support staff to ensure there is no interference between your computer and your cutter. Anti-virus software can sometimes cause interference in the communication to your vinyl cutter, for instance.

5. If the problem persists, contact SIGNWarehouse Product support.

Question: Why does my cutter cut more deeply in one part of the vinyl than another?

Answer: There is a Teflon strip that covers the width of your cutter under the path of the cutting head along the X axis (left to right). When your vinyl cutter is properly set up and cutting vinyl at the proper depth, the blade doesn't touch this strip. If the blade is incorrectly installed, or if your cutter is allowed to cut beyond the vinyl, the Teflon strip may become scratched. If this happens frequently, the strip will become damaged causing that area of the strip to push upward against the bottom of the vinyl resulting in inconsistent depth across the platen. Contact SIGNWarehouse and purchase a replacement for the Teflon strip.

Question: Why isn't my Muse responding to jobs sent from the software?

Answer: 1. This is almost always caused by selecting the wrong port in the setup process. Refer to Section 1.10 and make sure your cutter is in the correct mode for plotting by USB or Wi-Fi. If you're using the USB port, make sure the Port Setting in the LXi Production Manager is USB_Printer_0.

2. If the settings are correct, but your cutter isn't responding, open the LXi Production Manager, change the USB port or connection method, and send a test cut. Repeat until you find the correct USB port for the computer. For more detailed instructions, please refer to this article from the SIGNWarehouse Tech Support Blog.

3. Check the settings in your LXi Production Manager and make sure the send mode window is set to Send Now (Fig 5.8). If the setting is File or Hold in List, the data won't be sent from your computer to the vinyl cutter. If it is set to Hold in List, you will find the jobs holding in the cutter queue. Click on the job in the queue and use the File/Cut Plot command or click the Send icon.

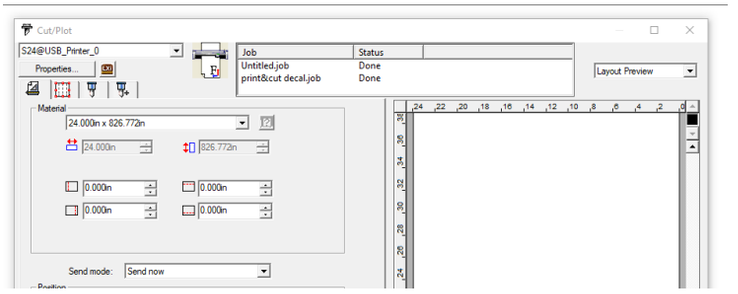


Fig. 5.8

Question: Why can't I weed the graphics after cutting?

Answer: Most likely, you haven't cut the vinyl deeply enough to cut through the face film and adhesive. To fix this, adjust the pressure setting and perform a test cut. This can be done from the control panel or from the LXi Production Manager. Weed the test pattern to make sure the vinyl's face film and adhesive have been cut, but that the release liner isn't scored too deeply. Adjust the pressure setting as needed. Then proceed with your vinyl graphics.

Question: What kind of maintenance does my Muse cutter need?

Answer: All Muse plotters are made with high-quality internal lubrication to protect all mechanical components. Therefore, there is no need to oil or lubricate any of the components, ever! Daily care consists of cleaning the platen and blade holder to prevent buildup of dust and vinyl debris. Dusting the platen with a soft brush will get the job done perfectly. Vinyl debris in the blade holder can be removed using a can of compressed air and a nozzle.