Quick Start Guide for Cricuts using Cutter Controller

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1. Document Details

1.1 Summary

This is the release for the Cutter Controller application using Cricuts release V1.0.01.

1.2 Supersedes

None.

1.3 Version History

Version	Date	Details
1.0	1st October 2014	Authors & Contributors at this version Ian Wadsworth. First issue.

1.4 Copyright

This document, test files, executables and related files are copyright of Ian Wadsworth (except where indicated), and must not be distributed to any un-authorised testers without the consent of Ian Wadsworth.

1.5 Abbreviations

FTDI Future Technology Devices International Ltd
MTC Make the Cut
OS Operating System(s)
SCAL Sure Cuts a Lot

USB Universal Serial Bus

1.6 Guide Usage

This guide should be used in conjunction with the “Cutter Controller Beta Release User Guide 1.0.00”.

1.7 Disclaimer

There is no associating with the author of Cutter Controller and Provo Craft and Novelty Inc (Provo Craft). The use of the Cricut and related trademarks belonging to Provo Craft are not used to promote the Cutter Controller application, but to document how to set up a Cricut machine to use with the Cutter Controller application.

2. FTDI USB Drivers

2.1 Installing the FTDI USB Drivers

If the FTDI drivers are already installed, then when the Cricut is connected to the computer and turned on, Windows will notify the user that it has found a USB device. If not, then the "Found New Hardware Wizard" will appear.

Download the Windows combined driver model (CDM) Virtual Com Port (VCP) and D2XX drivers for Windows XP, Windows Server 2003, Windows Vista, Windows Server 2008, Windows 7, Windows Server 2008 R2, Windows 8 and Windows 8.1, from http://www.ftdichip.com/Drivers/VCP.htm

There are older versions, but FTDI no longer supports them.

2.1.1 Installing on Windows XP

1. Connect the computer to the cutting machine with a USB cable.
2. Power on the cutting machine
3. The "Found New Hardware Wizard" will appear if no FTDI drivers have been found
4. Select "No, not this time" and click Next
5. Select "Install from a list or specific location (Advanced)", and click Next
6. Select "Search for the best driver in these locations", then click the Browse button and navigate to the folder where the CDM driver file was downloaded. Select the file and click Next.
7. There may be a warning about the driver being non-WHQL certified. This is usually with the latest CDM drivers that are waiting for Microsoft to certify it. Click the Continue Anyway button.
8. The drivers will now be installed, and the progress will be shown.
9. A confirmation of a successful install should be displayed, click Finish

For more information and troubleshooting see
http://www.ftdichip.com/Support/Documents/AppNotes/AN_104_FTDI_Drivers_Installation_Guide_for_WindowsXP(FT_000093).pdf

Note: The document for Windows XP may be out of date.

2.1.2 Installing on Windows Vista, 7, 8.x and 10

1. Connect the computer to the cutting machine with a USB cable.
2. Power on the cutting machine

If there is an available Internet connection, Windows Vista, 7, 8.x and 10 will (should) silently connect to the Windows Update website and install any suitable driver it finds for the device. A number of messages will appear indicating the driver is being installed.

If the automatic installation fails and no suitable driver is found, then see 2.1.3 How to Manually Install the FTDI Drivers below.

For more information and troubleshooting see
http://www.ftdichip.com/Support/Documents/AppNotes/AN_103_FTDI_Drivers_Installation_Guide_for_VISTA(FT_000080).pdf
http://www.ftdichip.com/Support/Documents/AppNotes/AN_119_FTDI_Drivers_Installation_Guide_for_Windows7.pdf
http://www.ftdichip.com/Support/Documents/AppNotes/AN_234_FTDI_Drivers_Installation_Guide_for_Windows_8.pdf

2.1.3 How to Manually Install the FTDI Drivers

If the driver for the machine cannot be found, then manually install the drivers after they have been downloaded.

Run the downloaded CDM v2.10.00 exe WHQL Certified for Windows driver. In Vista, 7, 8.x and 10, the exe file will have to run as Administrator. This will extract the files, and then run the installer.

Just follow the simply instructions, and the drivers will be installed.

For more information and troubleshooting see http://www.ftdichip.com/Support/Documents/InstallGuides.htm

3. Machines and Firmware

3.1 Supported Machines and Firmware Versions

If the Cricut Cutting Machine has worked with Cricit Design Studio (CDS), Make the Cut (MTC) or Sure Cuts a Lot (SCAL), then it should work with Cutter Controller.

The firmware version is displayed for a few seconds when the machine is switched on.

Table 1 Supported Machines and Firmware

Machine	Firmware Version	Notes
Personal	1.34	
Create	1.54	
Expression	2.34, 2.43	Not the Expression 2
Cake Mini	1.54	Firmware same as the Create
Cake	2.34, 2.43	Firmware same as the Expression

3.1.1 Updating to a Later Version or Rolling Back to an Earlier Version

You only need to update or rollback the firmware if the machine does not work.

WARNING: Updating the firmware can cause the machine to malfunction on some occasions; especially if the power or USB cable is unplugged before the firmware has finished updating. It still may be possible to update the firmware to get the machine working again.

A machine that's had a firmware update via the Cricut Craft Room, may not work with Cutter Controller (or any other applications such as Cricut Design Space). Older firmware versions may not work with the Cricut Craft Room.

Table 2 Cricut Firmware Versions Installed with the Current Versions of Cricut Design Studio or Cricut Craft Room

Machine	Cricut Design Studio	Cricut Craft Room
Personal	1.34	1.45
Create	1.54	1.61, 1.65
*Expression	2.34	2.43
Cake Mini	1.54	1.61, 1.65
Cake	2.34	2.43

*Not the Expression 2

If the firmware version needs to be updated or rolled back then: -

1. Download and install the latest version Cricut Design Studio from http://mirror.cricut.com/cds/fontpack/CDS_10404220.exe
2. Run Cricut Design Studio, and follow these instructions very carefully (read them first) for updating or rolling back the Cricut firmware http://web.archive.org/web/20150622001238/http://us.cricut.com/forum/cricut-community_postsm1671147_Create-won-t-operate-after-attempting-to-download-CCR-and-updating-firmware.aspx#post1671147 <Accessed> 15 Nov 2015

See also http://thenon-craftycrafter.blogspot.co.uk/2013/06/cricut-latest-versions-numbers-machines.html
<Accessed> 11 Aug 2014

Download links to Cricut Design Studio updates
http://web.archive.org/web/20141121125459/http://us.cricut.com/forum/cricut-community_poststt137407_Design-Studio-Updates.aspx
<Accessed> 15 Nov 2015

3.1.1.1 Internet Wayback Machine Archives

Cricut Design Studio
http://web.archive.org/web/20150622001238/http://mirror.cricut.com/cds/fontpack/CDS_10404220.exe
<Accessed> 22 Jun 2015

4. Using a Cricut

4.1 Instructions Specific to Cricuts for Cutter Controller

Although instructions for setting up Cutter Controller for all machines can be found in the User Guide "3.4 Quick Start Guide", there are some things specific to the Cricut machines that may not be obvious.

Even if the Cricut machine is not connected, you can still load and manipulate a drawing. Just connect it before you cut/plot the drawing.

4.1.1 The Drawing Canvas/Virtual Mat

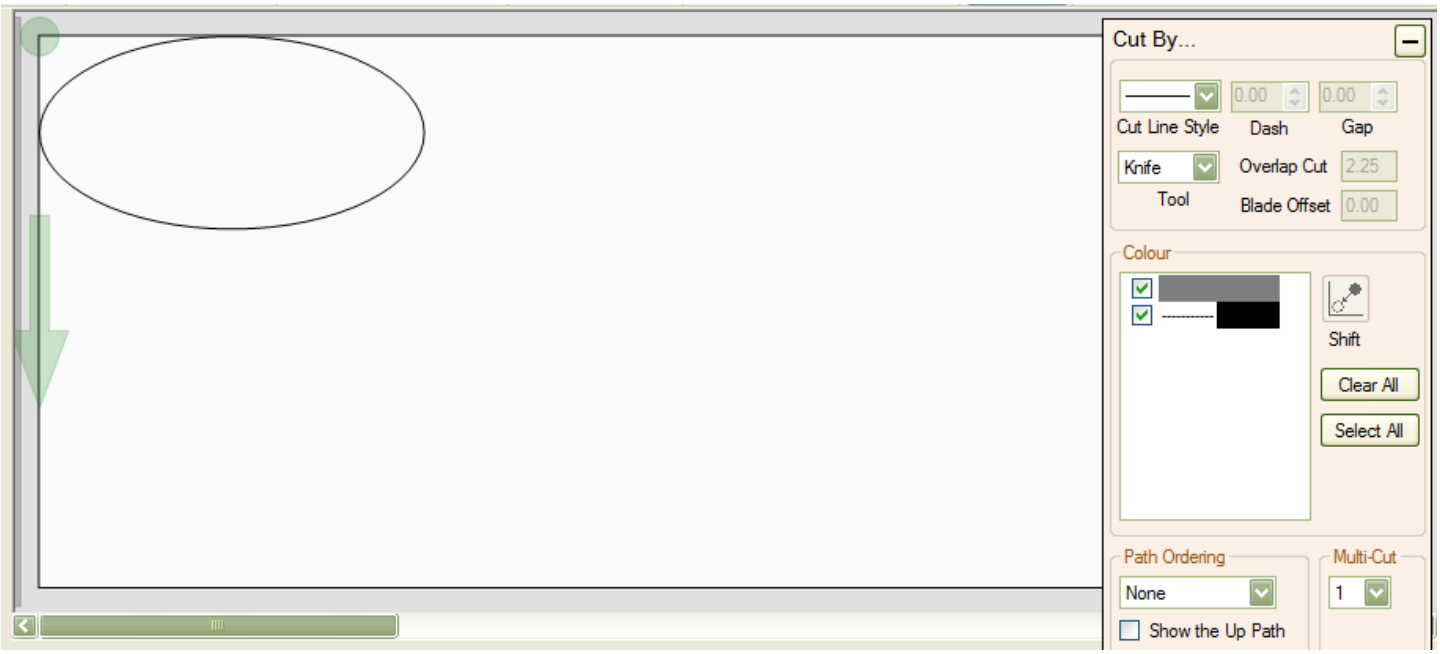
See also "8. The Drawing Canvas" in the Cutter Controller User Guide.

The green circle is the carriage/cutter head, and the grey bar is the carriage.

The drawing will have its origin at the top left of the virtual mat.

All drawings loaded will be automatically be scaled to fit the selected virtual mat.

Picture 1 A 12" x 6" Virtual Mat



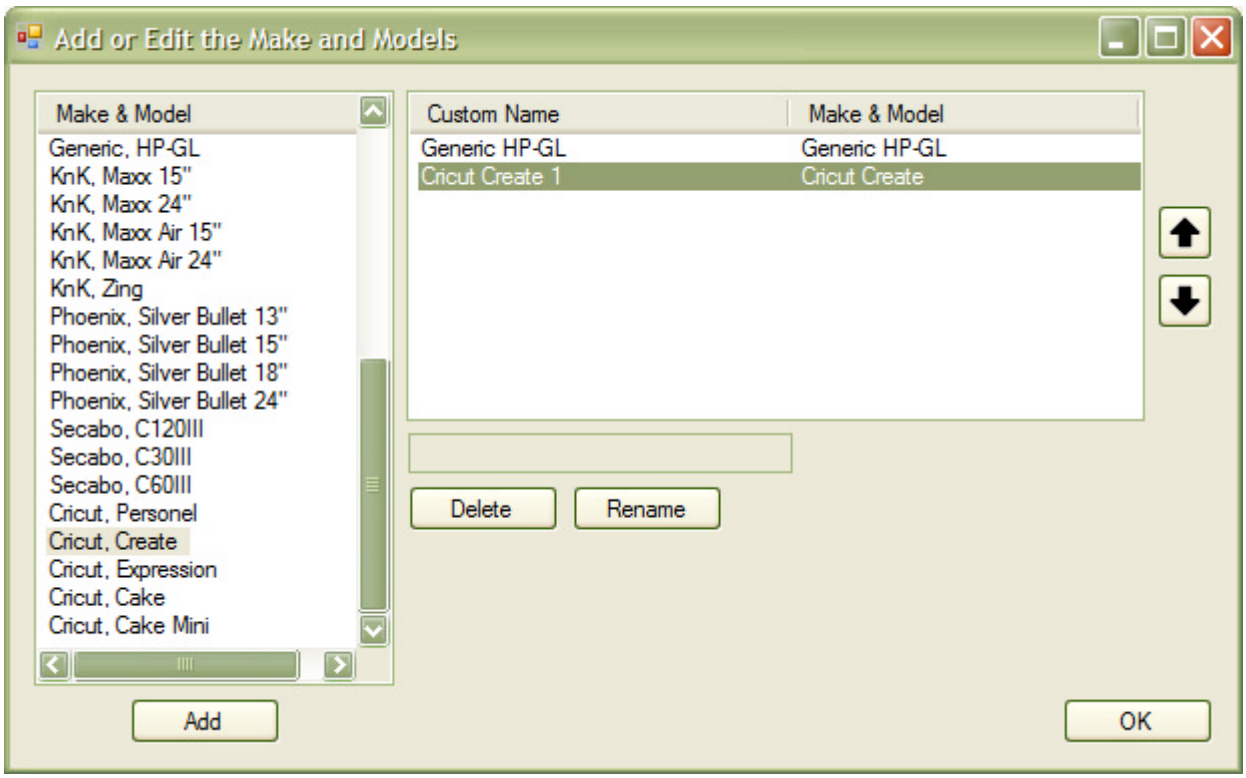
4.1.2 Add a Model

Menu -> Settings -> Add/Edit Make and Models

See also "5.3.5 Add/Edit Make and Models" in the Cutter Controller User Guide.

1. Click Menu -> Settings – Add/Edit Make and Models
2. From the Make and Model list, select the machine, and click the 'Add' button
3. You can rename the Custom Name by clicking the 'Rename' button
4. The 'Generic HP-GL' can be deleted

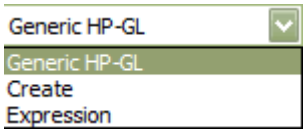
Picture 2 Add a Make and Model Form



4.1.3 Select a Make and Model

See also “6.7 Model Selector” in the Cutter Controller User Guide.

Picture 3 List of User Owned Models



Even if the machine is connected to a USB port, you still have to select which machine you are going to be using. If you have both a Create and Expression, selecting the Create when connected to an Expression will still work.

Although selecting the COM port will be disabled, the correct USB port will be selected automatically when a switched on machine is connected to any USB port, it just won’t show in the COM port number box.

Picture 4 Disabled COM Ports when Selected

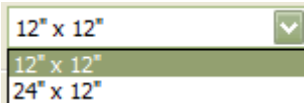
4.1.4 Mat Sizes

See also “6.8 Mat Sizes” in the Cutter Controller User Guide.

The number of virtual mat sizes available is fixed. For a 6” wide machine there is only one (12” x 6”), and for a 12” wide machine there are two (12” x 12” and 24” x 12”).

Picture 5 Virtual Mat Sizes for 6" Wide Machines

Picture 6 Virtual Mat Sizes for 12" Wide Machines



Although the virtual mat sizes are shown as 12” x 6”, 12” x 12”, and 24” x 12”, they are actually 3/8” (9.525mm) (length) and 1/4" (6.35mm) (width) smaller.

If the selected virtual mat size is bigger than the loaded mat on the machine, the error message “The selected mat size on the Cricut is too small” will be displayed. The selected virtual mat size needs to be changed.

If a drawing will not fit on the selected virtual mat, then it will be re-scaled to fit the virtual mat.

Warning: 12 x 12 or 12 x 24 mats are not correctly detected, make sure that the correct mat is loaded.

4.1.5 Calibrate the XY Scaling

Menu -> Settings -> Calibrate XY Scaling

See also “5.3.3 Calibrate XY Scaling” in the Cutter Controller User Guide.

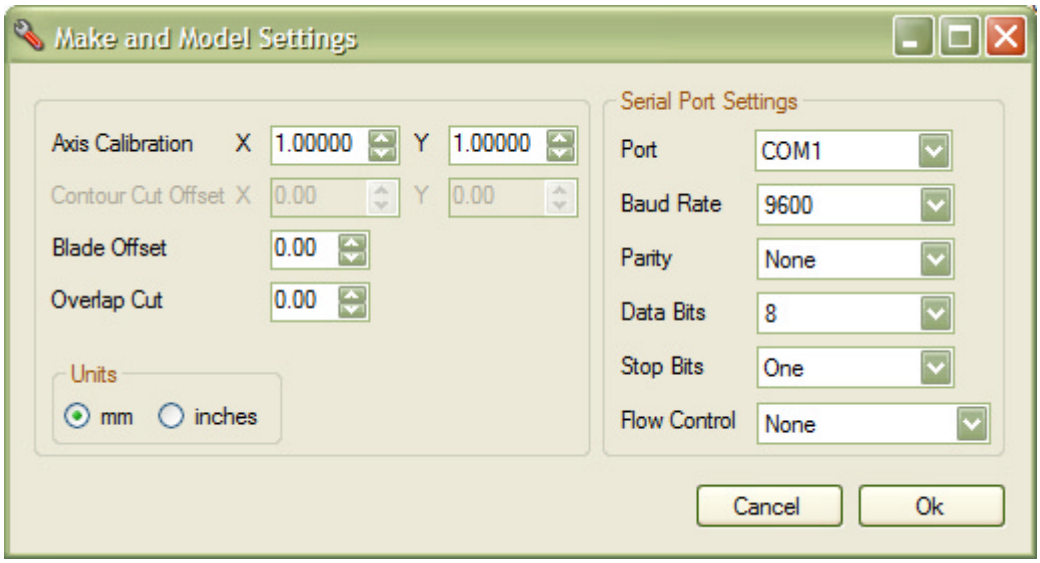
It is possible to calibrate the cutter, so that the cuts will be more accurate.

4.1.6 Make and Model Settings

Menu -> Settings -> Make and Model Settings

See also “5.3.1 Make and Model Settings” in the Cutter Controller User Guide.

Picture 7 Change the Make and Model Settings Form



4.1.6.1 Axis Calibration

These are the values that have been automatically calculated when the machine has been calibrated using the Calibrate XY Scaling function. These values can be manually changed. See 4.1.5 Calibrate the XY Scaling above.

4.1.6.2 Contour Cut Offset

Used for Contour Cutting (also known as Print and Cut or PnC).

Since there is no laser pointer or any pointer, it is not that easy to Contour Cut, but it can be done.

If a ‘tool’ with a point on it can be clamped into the tool holder, then this can be done.

4.1.6.3 Blade Offset

This is used when the Cut Line Style selected is Knife (for cutting) or Other. See 4.1.8.2 Select the Cut Line Style below. The drawings will take longer to cut when the Blade Offset is set.

With a value greater than 0.00mm (0.000inch), the corners of squares won’t be rounded.

Try a value of 0.5mm (0.020inch), but a value of 0.3mm (0.012inch) may also work. This depends on the blade being used.

4.1.6.4 Overlap Cut

This will only work if the shape path is closed. The Cut Line Style has to be Knife or Other.

This will need to be set to say 3.00mm (0.118”) if there is a problem with the cut lines not joining.

If the value is too small, then a closed shape may not be cut out form the media correctly.

4.1.7 Simplify and Smooth Lines

See also “6.17 Simplify and Smooth” in the Cutter Controller User Guide.

This option will only be enabled if there are lines that could be Simplified or Smoothed.

This tries to Simplify lines (remove excess nodes) and Smooth lines (remove excess nodes by converting to curves) of the drawing.

This will work on both open and closed paths.

These machines support the use of a curve command, which will cut a lot quicker than if the curve was represented by a series of short line segments (depress the Nodes toolbar button). But with some firmware versions, it can produce distorted curves.

Figure 1 No Simplify Value, 1417 Nodes

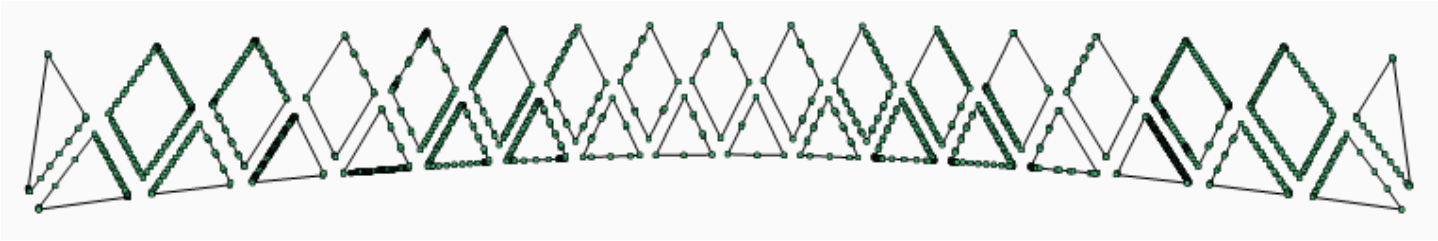
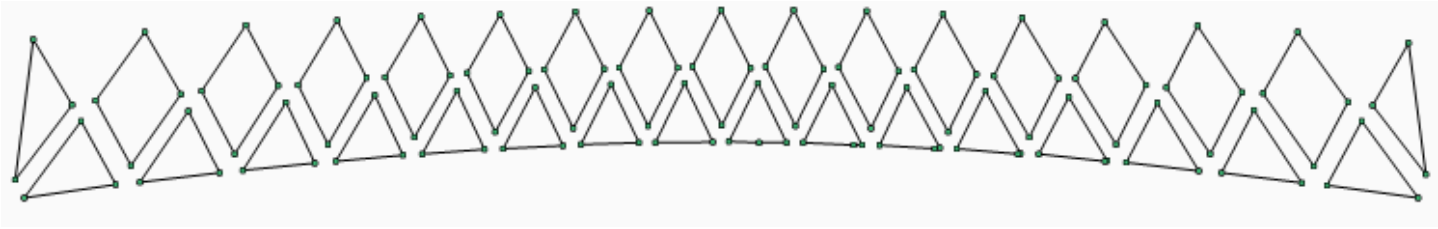


Figure 2 Simplify Value of 0.20mm, Reduces to 119 Nodes

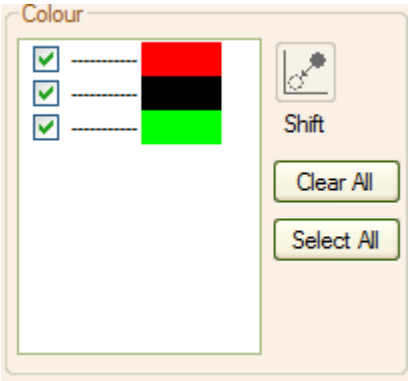


4.1.8 Ready to Cut or Plot

4.1.8.1 Select the Shapes

See also “7.3.1 Colour” in the Cutter Controller User Guide.

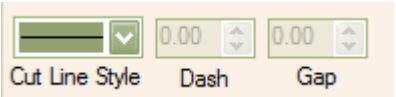
Selects of the shape or shapes is to be cut or plotted.



4.1.8.2 Select the Cut Line Style

See also “7.3.4 Line Style” in the Cutter Controller User Guide.

The cut or plotted line style, which can be continuous, dashed or dotted.

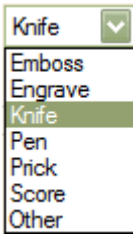


4.1.8.3 Select the Tool

See also “7.3.5 Tool Types, Overlap Cut and Blade Offset” in the Cutter Controller User Guide.

Select the Knife or Pen tool, or any other.

The Overlap Cut or Blade Offset will only be used if the Knife or Other tool is selected.



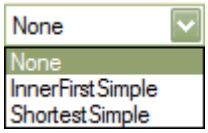
4.1.8.4 Select the Path Ordering

See also “7.3.7 Path Ordering” in the Cutter Controller User Guide.

This is the order in which the shapes (or paths) are cut/plotted. The order can be viewed by checking the ‘Show Up Path’ in the ‘Path Ordering’ section in the Cut By panel.

This can speed up the cutting/plotting times of the drawing sent to the machine.

Select the Shortest Simple if there are many shapes.



4.1.9 Test the Connection

See also “6.6 Test Connection” in the Cutter Controller User Guide.

Tests the connection by moving the carriage head back and forth once.

A mat must be loaded.

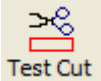
4.1.10 Check Drawing Fit

See also “6.10 Check Fit on Media” in the Cutter Controller User Guide.

Checks that the drawing will fit on the media, by moving the carriage to the four points of a bounding or boundary box of the drawing.

A mat must be loaded.

4.1.11 Test Cut



See also “6.14 Test Cut” in the Cutter Controller User Guide.

Cuts/plots a small rectangle to make sure the media cuts correctly, or the plot line thickness is correct. The pressure on the machine can be increased or decreased if required.

A mat must be loaded.

4.1.12 Cut

See also “6.11 Cut Button” in the Cutter Controller User Guide.

This starts cutting or plotting the drawing.

Note: The blade/carriage/mat will always return to the origin point.

4.1.13 Delay in the Carriage Head Moving

There maybe some delay (up to 30 seconds) before the carriage head moves or an error message appears. This is due to a communications error between the Cricut machine and the computer.

This is not just with Cutter Controller, but MTC and Cricut Craft Room show this problem.

It can happen when the operations Test, Test Cut, Check Fit, Cut, or Contour Cut are performed.

This depends on the speed of the computer’s CPU (Central Processing Unit). Newer and faster computers are more likely to show this error.

If the error message ‘Error checking for mat being loaded’ is displayed, then try again. If this becomes too tedious or annoying, then report the issue via the forum http://www.ideas-r-us.co.uk/forum/.

This has been found with a Create, using firmware V1.54, and a new computer. On an older computer the error hasn’t been noticed.

4.1.14 Machine Related Error Messages

Table 3 Error Messages

Error Message	Notes
Cannot connect to the Cricut.	The machine is not connected or turned on
Error sending the 'Start' command.	
Error sending the 'Stop' command.	

Error moving cutter up.	
Error moving cutter down.	
Error cutting the curve.	
Error homing cutter head.	
The mat is not loaded.	Load a mat
Error checking for mat being loaded.	See 4.1.13 Delay in the Carriage Head Moving above
Cartridge not inserted.	Needs a cartridge to cut
Error checking for the cartridge inserted.	See 4.1.13 Delay in the Carriage Head Moving above
Cannot get the firmware version.	
Cannot read the selected mat size from the machine.	
The selected mat size on the Cricut is too small.	Also could be the wrong machine is selected

5. Appendix

5.1 Resetting the Machine

If you are experiencing problems with your machine, then it may require to be reset to the factory default.

The two links below give the same information on how to do this, but I have not tried this. I believe it refers to resetting the “Baby Bug” which is the Personal machine. Resetting other Cricut machines may be very similar.

Craft Edge (SCAL) https://www.craftedge.com/support/cricut/cricut_reset.html and Narelle http://myfaqcricutds.blogspot.co.uk/2009/01/resetting-cricut.html

This is copied from Narelle blog, but it appears to come from Provo Craft technical support.

If your machine freezes, experiences power problems, cutting issues, or anything out of the realm of normal Cricut behaviour, this reset procedure is a good place to start the troubleshooting process. Nine times out of ten, this will resolve the issue.

- First, turn your machine on with no cartridge loaded. Then you are going to roll all your gray dials (the two on the left and the one on the right) down to their lowest setting.
- Then you will want to grasp the green/gold cylinder blade assembly and use it to pull the entire gray carriage car unit (the one with the Cricut bug on it) along its track to the other side of the machine. Back in the cave where the gray carriage car usually sits there is a red button. Press that button and hold it down for about three seconds. Let go and then move the gray carriage car back into place.
- This next step will sound a bit odd, but many times it can fix your little "bug". You're going to roll all your dials all the way up and all the way down three times--three times for each dial.
- Then you are going to hit the "Cut" button and turn the machine off. Let the machine sit for a few minutes (15-20), load a cartridge, turn it on, and try a practice cut.

If this does not solve your problem, give us a call toll free at 1-877-727-4288 7am to 6pm MST Mon-Fri (make sure you are by your machine) and someone here will walk you through some troubleshooting tips and determine if a replacement machine is needed.