



Skycut Series V with Corel Draw Plugin

March 16, 2023

Do **NOT** read this entire manual... unless you want to.

- At the start of Chapters 1 - 3 are short sections with references to find what you need plus some important reminders. **PLEASE** read these short sections at the very least and refer back to them, when needed.
- Chapters 1 and 2 are very important in terms of correctly setting up your Skycut to work with Corel Draw and learning the ins and outs of cutting.
- Chapter 3 is for those owners wanting to perform print and cut (contour cut) applications.

It's not practical to print this entire manual because:

- It's a waste of paper and ink if you only ever need certain sections.
- The live links to videos and web sites in the manual will not work.
- This manual will be updated from time to time.
- You cannot search on individual words.

Also:

- Note the green **Video** icons which link to videos related to the section in which they are located. These videos will enhance your learning experience.



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1. Introduction and Setting Up

1.00 Quick Reference for This Chapter

- How to download and set up the Corel Draw plugin: *Section 1.11*
- How to set up communication between a computer and Skycut: *Section 1.13*
- How to use the control panel: *Sections 1.10 and 1.15*
- How to adjust the blade holder: *Section 1.07.5*
- Where to position the pinch wheels: *Section 1.09*
- The cutting mat is too sticky (or not sticky enough): *Section 1.08*
- How to use the USB Flash Drive feature: *Section 1.13.4*

Important Notes:

- Please read *Section 1.02* regarding safe operation of the Skycut.
- Report any damage or missing contents to your dealer promptly.
- Retain the original box and packing materials in case you ever need to ship your Skycut.

1.01 Support

- Thank you for choosing a Skycut digital die cutter. Before using a blade in your new cutter, we urge you to read *Chapters 1 and 2* and watch the videos linked in these chapters.
- If you run into difficulties with the operation of your Skycut, turn off the power and look for a solution in this manual. Note that *Appendix A* is a **Troubleshooting** section. If you continue to have technical questions or issues, please contact your dealer as soon as possible.
- If anything is missing from your order or you have mechanical issues with your Skycut, please contact your dealer as soon as possible. You can also contact Skycut directly using this email address: skycut@skycut.cn.
- For additional information and support with the Skycut, please check out the following:
 - ◇ Skycut web site: <http://www.sky-cut.com/>
 - ◇ Skycut Facebook page: <https://www.facebook.com/skycutcuttingplotter/>
 - ◇ Skycut Facebook group: <https://www.facebook.com/groups/Skycut>
 - ◇ Skycut YouTube channel: <https://www.youtube.com/channel/UCrPn5hFLbiRNDgccY8iXwoA>

1.02 Safety and Warnings

Please be aware of the following safety guidelines when working with the Skycut:

- **Pinch Points:** Keep hands, long hair, loose clothing, jewelry, etc. away from the moving parts.
- **Risk to Children and Pets:** Please supervise children around the cutter when it is in use.
- **Movement and Touching:** Do not move the Skycut or touch any circuitry while it is plugged in.
- DO NOT touch or jam the plotter's track while it is operating. If the cutter is damaged, it is the owner's responsibility.
- DO NOT shake the cutter while it is operating.

- DO NOT cut any materials that have staples or other embellishments attached.
- DO NOT touch the cutter with a magnet. It is safe, however, to cut magnetic materials, such as those used on refrigerators and car exteriors.
- DO NOT allow any liquids to spill into the cutter.
- DO NOT allow small items to fall into the cutter.
- Place the Skycut on a sturdy and stable table, desk, or trolley. The optional Skycut stand can also be used.
- Always turn off the Skycut when not in use. Leaving the cutter turned on for extended periods of time can possibly damage the machine.
- Always turn off the Skycut before unplugging or removing the power cable from the wall outlet or power strip.
- Unplug the Skycut from a wall outlet or power strip during an electrical storm or when the cutter will not be used for an extended period of time.
- Transporting: When transporting the cutter, move the pinch wheel lever into the upward position. Remove the blade from the blade holder and cover the tip with the plastic cap.

1.03 Warranty








- **IMPORTANT!** If your Skycut is damaged during shipment or appears to be defective, your dealer should be notified as soon as possible.
- For additional information regarding your warranty, please refer to your Skycut dealer.
- It is recommended that you **retain the original box with packing materials** in case you ever need to ship your Skycut.

1.04 Unpacking

- Verify that you have received all contents. There is a checklist in *Section 1.05*. Please notify your Skycut supplier immediately if anything is missing.
- Remove all packaging before turning on the Skycut. Currently, the cutter ships with two end cap foam protectors, four plastic zip ties, and tape on either end of the cutting strip. **Be very careful when removing the zip ties - it's best to cut those ties from behind the machine versus in front.** Gently remove the tape at the ends of the cutting strip by rolling the tape away. Do not pull straight up.
- Because the cutting mat must be folded over to fit into the box, it may have become slightly rounded during shipping. Gently and only partially roll the mat in the opposite direction to remove the roundness and place on a flat table to make sure the mat now lies horizontally to the surface. Refer to *Section 1.08* for additional instructions on preparing the mat for use.
- Use the enclosed test pen as you experiment and become familiar with operating the Skycut. Place scrap paper on the mat and simply draw shapes rather than cut them. This will prevent possible damage to the blade, mat, and cutting strip as you learn where shapes will cut and the basic operating procedures.

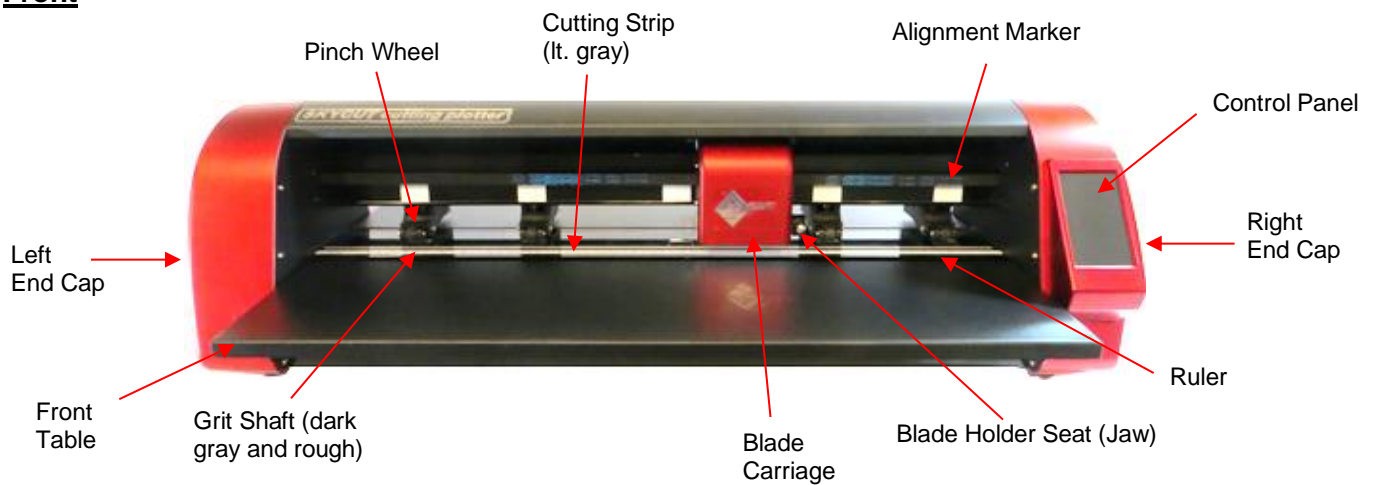
1.05 Contents

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

#	Description	Image	Quantity
1	Power cable		1
2	USB Cable		1
3	60° Blade(blue cap)		1
4	45° Blade(red cap)		2
5	Blade Holder		1
6	Test Pen and 1 Refill		1 set
7	Cutting Mat		1

1.06 Parts of the Skycut

Front



- Alignment Markers: indicate to the user the available positions for the pinch wheels
- Blade Carriage: moves the Blade Holder Seat left and right
- Blade Holder Seat or Jaw: holds the blade holder, test pen, and other accessories
- Control Panel: used to change settings, set up Wi-Fi, calibrate camera, cut PLT files, and more
- Cutting Strip: protects a blade when cutting backed materials without using a cutting mat
- Front Table: keeps cutting mat supported horizontally
- Grit Shafts (5 on 24" model): allow the pinch wheels to grip the mat or material so they can be moved in and out of the cutter during cutting
- Pinch Wheels (4 on 24" model): grip the mat or material so that the grit shafts beneath will feed the mat or material in and out during cutting
- Ruler: for measuring and aligning rolled materials

Right Side



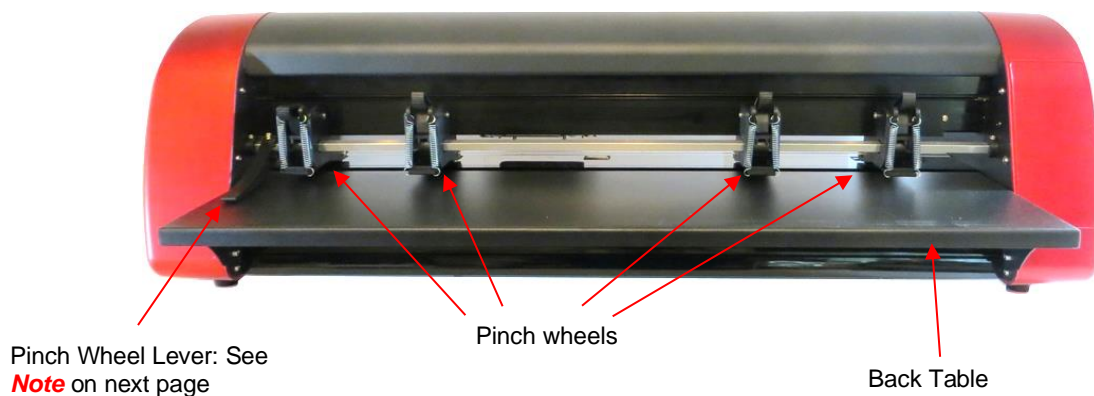
- USB Flash Drive Port: used to load PLT files via control panel for cutting
- USB Port: option to connect computer to Skycut with included USB cable
- Reset Button: used to reset Skycut's cutting buffer (does not reset calibrations)

Left Side



- Power Port: plug power cable into this port
- On/Off Switch: power cutter on or off

Back



- Pinch Wheels (4 on 24" model): grip the mat or material so that the grit shafts beneath will feed the mat or material in and out during cutting
- Pinch Wheel Lever: raises and lowers the pinch wheels
- Back Table: keeps cutting mat supported horizontally

Note: Newer models no longer have a single lever.

Each pinch wheel has its own lever to raise and lower.

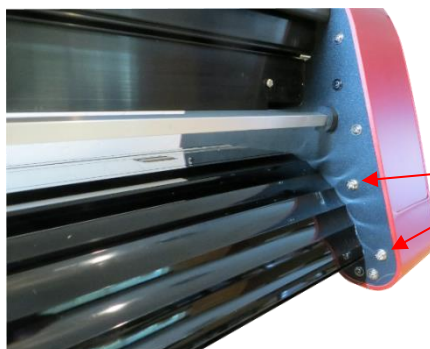
1.07 Accessories

1.07.1 Assembling the Skycut Stand (optional)

- If you purchased the optional stand, please refer to this [Video](#) for detailed instructions on assembling the stand and mounting the cutter onto it.

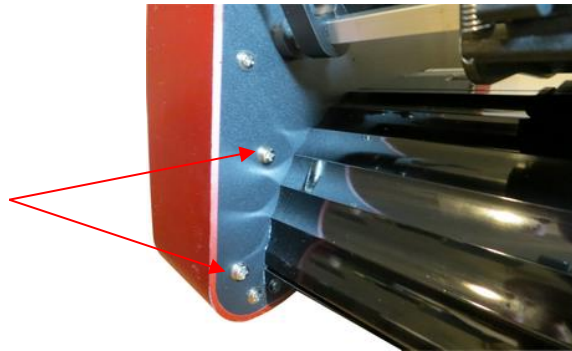
1.07.2 Tables

- The following instructions are for the original table design. If the tables you purchase have brackets that are not part of the table, please watch this video: [Video](#)
- While the two tables attach onto the cutter and do not require any support, you may prefer to not use them, especially if you are only cutting rolled materials. However, if you are using the cutting mat, the support they provide will keep the mat horizontal, thus reducing the chance of the mat drooping and causing materials to separate from the adhesive on the mat.
- The screws required for attaching are already installed in the Skycut. They will be removed and then, after aligning the holes in the table, replaced to securely attach the table.
- It's much easier to install if you have a second person available to hold the tables in place while the screws are being inserted. It is also helpful to have a flashlight shining on the inside of the tables to better see the holes for alignment.
- The two tables are identical. Start with either the front or the back of the cutter.
- There are a number of screws mounted on the inside of the end caps. The ones to be removed are the second and third from the bottom. They are also the only two with washers:

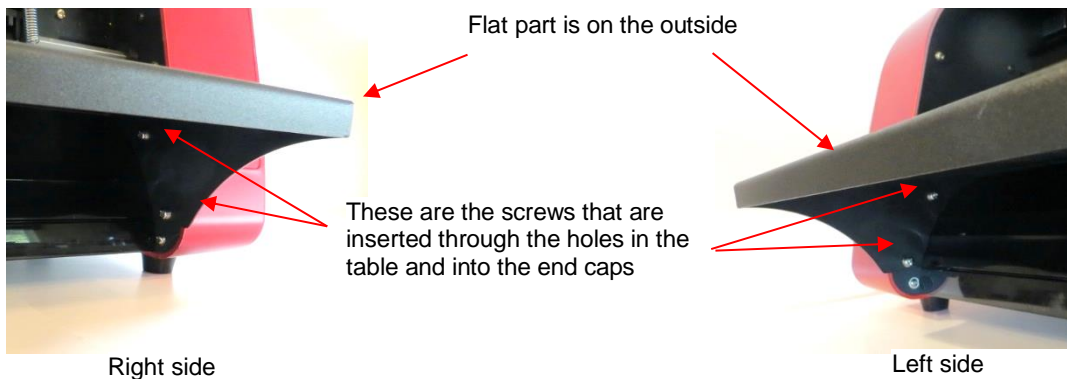


Remove these two screws from right-side end cap

Remove these two screws from left-side end cap



- Align the holes in the sides of the table with the holes in the end caps. Note in the following photos how the flat part of the table is on the outside:



- Insert the screws previously removed through the aligned holes and screw back into place. Then repeat on the other side of the cutter.

1.07.3 Test Pen

- The test pen should be used until you are comfortable with the operation of your Skycut and know, with certainty, where images will cut. The test pen should arrive pre-assembled. However, if you want to change out the insert to the red ink insert, note how the test pen is assembled:



Spring goes over the top of the pen insert and stops at a small ridge on the insert

1.07.4 Skycut Blades

- There are three kinds of blades that fit inside the Skycut blade holder:



Red

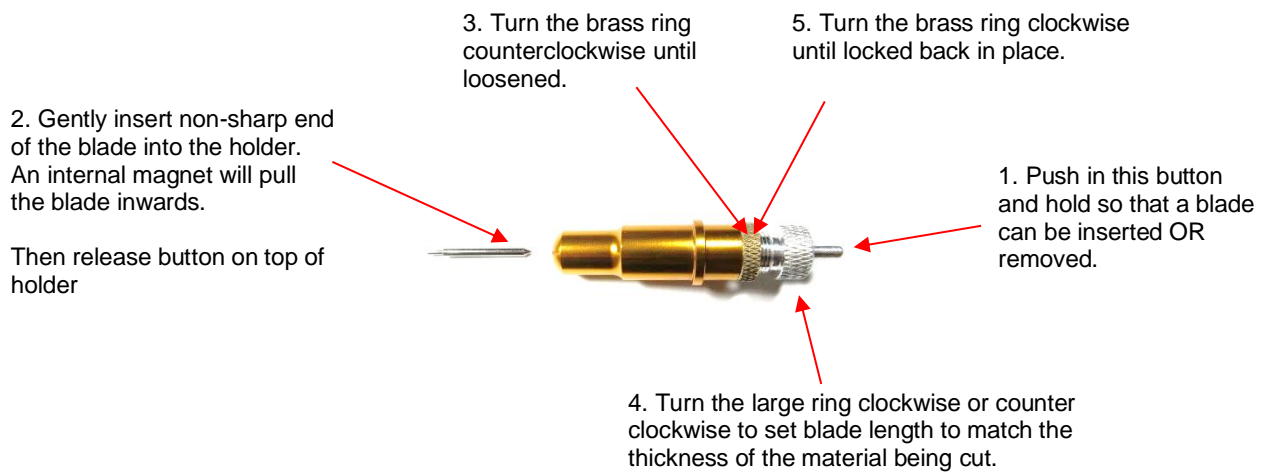
Blue

Yellow

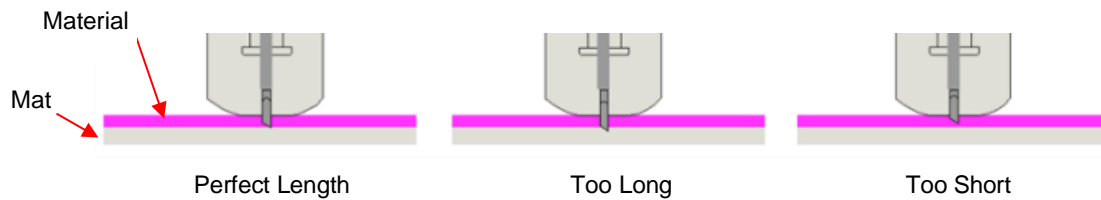
- ◇ The 45° **red** capped blade is suited for cutting thinner materials such as paper, all cardstock types, heat transfer vinyl, and wall/auto/decal vinyl.
- ◇ The 60° **blue** capped blade is a much longer blade and is well-suited for cutting thicker materials, such as gum paste, craft plastic, craft foam, and rhinestone template material.
- ◇ Sold separately is the 30° **yellow** capped blade. It is a wide blade and is well suited for cutting fabric, felt, and tint. It has been reported that it also works well with cardstock that has been exposed to humidity.
- Note that the red capped blade and blue capped blade have a cutback on the opposing side of the blade (right side, in the earlier photo). This reduces the blade offset value and allows for better detailed cutting of small shapes.
- Additionally, there are other tools sold separately, including a stand, an engraving tool and a creasing/scoring tool.

1.07.5 Blade Installation

- The blade must be carefully inserted into the blade holder. Do this over a soft surface (e.g., over a hand towel). It's important to protect the fragile blade! To install, follow the numbered steps as shown:



- The **Blade Length** (also called **Blade Exposure**) is how much blade is exposed at the bottom of the blade holder. For optimal cutting, you want this length to match the thickness of the material or be just a tiny bit longer.
- When setting the blade length (*Step 4* in the prior photo), hold the blade holder up next to the material before pressing the material to the mat, so that you can more accurately set the length to match the thickness of the material. For really thin materials, like vinyl and thin paper, just the very tip of the blade will be protruding from the bottom of the blade holder. In fact, you should just barely be able to feel it with your fingertip and not be able to see it very well, if at all. Having the blade fully extended will never result in better cutting. In fact, it can cause skewing, tearing of the material, damage to the blade, and damage to the mat or cutting strip.
- A good way to test your blade length is to fold a piece of the material onto itself and then cut a line into the material by hand. Press firmly but not too hard as more force will not determine if the blade is set to the right length. If the blade cannot cut through the material, you will need to extend the blade. If the blade cuts through the material and cuts into the next layer, you need to retract the blade. If the blade cuts through the material but does not cut into the layer below, you have the perfect length.



- When conducting a test cut, be sure to check your mat (or the top of a backing sheet) for cut lines after the test. You should be able to set the length to get clean cuts but with only fine lines or no lines in the mat or backing sheet. If you do see deep cut lines, retract the blade length $\sim 1/8$ of a turn counterclockwise. Repeat your test cut.

1.08 Preparing and Caring for the Cutting Mat

1.08.1 Tips on Using the Cutting Mat

- Always use a mat to hold the material to be cut unless the material has its own protective backing. For example, vinyl and iron-on transfer both come with a layer that you do not cut. Thus, this backing layer serves as the carrier for cutting. Paper and cardstock do not have a backing, thus they must be cut on the mat.
- IMPORTANT!** A new mat may be too sticky if you are cutting certain products. This can cause difficulty in removing cut items without tearing. Place an old but clean bath towel over the surface of the mat and press with a brayer or rolling pin. Then pull up. Test the stickiness by pressing the palm of your hand in the middle of the mat and lifting. If the mat remains stuck to your hand, repeat until the mat can still be lifted but will release. It should only take a few pressings to greatly reduce the stickiness as tiny (too small to be visible) fibers from the towel are added to the surface.
- Do not leave the pinch wheels in a down position when the Skycut isn't in use. This warps the plastic sooner, shortening the useful life of the cutting mat.

1.08.2 Cleaning and Replenishing the Cutting Mat

- When mats begin to lose their stickiness, they can be washed:
 - ◇ Use a mild dishwashing detergent, warm water, and a soft brush to thoroughly clean the surface. You're not trying to scrub the adhesive but just wet the invisible fibers that have been deposited from your cutting materials and get them released from the glue.
 - Rinse well, shake off excess water, and place sticky side down onto a bath towel.
 - Thoroughly dry the non-sticky side of the mat with another towel.
 - Pull the mat up and the sticky side should now be dry enough for immediate use. Test by making sure the mat will stick to your hand.
- While washing with soap and water should revive the original adhesive, you can add more adhesive if necessary:
 - ◇ Virtually any repositionable adhesive may be used on the cutting mat. Some of the popular choices include: Krylon Easy Tack, Aleene's Tack It Over and Over, Crafter's Companion Stick and Spray, Zig 2 Way Glue with wide tip, Craft Smart Off 'N On, and Scotch Repositionable Craft Stick. There's another spray adhesive, Scotch Super 77, which does not leave a sticky surface but is excellent for stabilizing paper and cardstock.
 - ◇ If you are cutting thicker materials, such as oil board or styrene, you may want to experiment with a stronger adhesive and use painter's tape to secure the material to the mat. If you are cutting thin paper, then you may want to experiment with a lighter adhesive.

- ◇ With most repositionable adhesives, you can control the tackiness based on the amount applied. Thus, always add a little bit at a time. As mentioned above, if you add too much, just apply a layer or two of cotton fibers by pressing with a bath towel.
- Other reported methods for cleaning mats:
 - ◇ Use a plastic scraper (an old credit card will suffice) to scrape off any random material pieces remaining on the mat after a cut.
 - ◇ For finer particles of paper or lint, you can use a lint roller. Tear off a sheet and then press down and pull up across the surface of the mat to clean in sections. Baby wipes can accomplish the same task.
 - ◇ To completely remove adhesive from the mat, apply Goo Gone, Duck Adhesive Remover, or Avon's Skin So Soft Bath Oil across the surface. Allow a minute to soak in and then scrape off with a sharp metal spatula. Repeat, as necessary until the mat is thoroughly clean and no longer sticky. Wash, dry and then add any repositionable adhesive.
- When necessary, the rubber wheels and the grit shafts may be cleaned with isopropyl alcohol or Un-Du. Apply the cleaner to a clean lint-free rag and rub the entire wheel and/or grit shaft until free of adhesive.

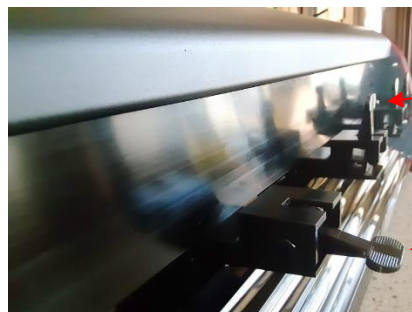
1.09 Pinch Wheels

1.09.1 Raising and Lowering

- The pinch wheels can be raised (for loading the material and/or mat) and lowered (for cutting). Depending on when your Skycut was manufactured, the method for this is different.

Newer Model Pinch Wheels

- If you do NOT have a single pinch lever, press down on an individual lever on a pinch wheel so that it can grip the mat or material. Lift up an individual lever to raise that pinch wheel.



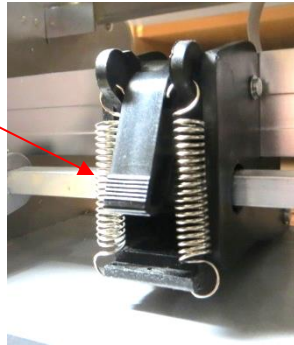
Pinch wheel is in the up position.

Pinch wheel is in the down position.

Older Model Pinch Wheels

- If you have a single pinch lever located at the back-right side of the machine, press down on that lever and the pinch wheels will be raised. Pull the lever up to lower all pinch wheels so that they can grip the mat or the material inserted into the cutter. **IMPORTANT:** Always hold the lever while raising and lowering. Never allow the lever to pop up on its own as this can put a lot of stress on the two couplers gripping the pinch wheel bar in the back.
- On the single pinch wheel lever models only, there is also a small black lever on each individual pinch wheel. When the lever is raised, there is more downward pressure exerted. **IMPORTANT:** Only push these small levers up when an extra tight grip is needed, such as when cutting reflective film or thick chipboard. For normal cutting of most materials, it will not be required.

Lever is in down position. This is recommended for most cutting.



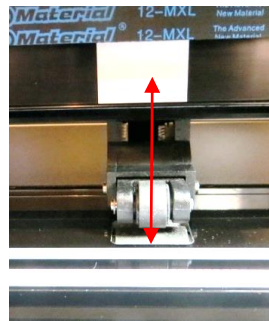
Note: These two photos **ONLY** apply to the single pinch wheel lever model.



Lever is in up position. Do NOT use this position except with certain materials.

1.09.2 Pinch Wheel Locations

- Note that for a pinch wheel to grip properly, it must be positioned over a grit shaft. To facilitate alignment, note the white rectangles positioned along the horizontal bar behind the blade carriage. Slide the pinch wheels along the bar, as needed:



Wheels should be centered over grit shafts which are directly below the white rectangles

- When using the cutting mat, it is recommended that the material be placed in the middle of the mat and the mat placed roughly in the middle of the cutter. Then use the second and fourth pinch wheel locations for two pinch wheels. This keeps the pinch wheels off the material and provides an equal balance while the mat moves in and out during cutting:

Middle two pinch wheels are placed under 2nd and 4th white rectangles



Pinch wheels are approx. the same distance from the outside edges of the cutting mat

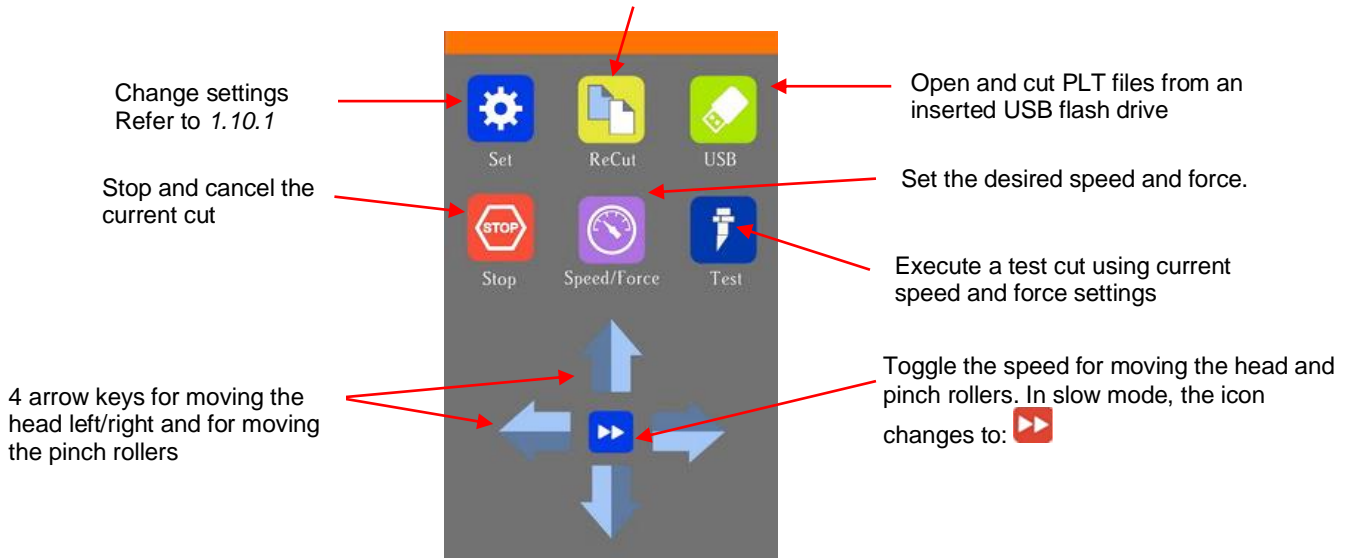
- Note that if your material is very wide, then it is fine to have the pinch wheels over the material. However, you may need to be extra careful when removing any cut shapes or waste material in those locations.

1.10 Control Panel

Video

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

Repeat last cut. While cutting, this icon and function changes to **Pause**.



- Throughout this manual, the functions above will be referenced along with submenus and additional screens. You will also see the following icons at the bottom of many screens. Pressing the one on the left will always return you to the **Main Screen** above. Pressing the one on the right will return you to the prior window/screen.

Go back to **Main Screen/Home Screen**

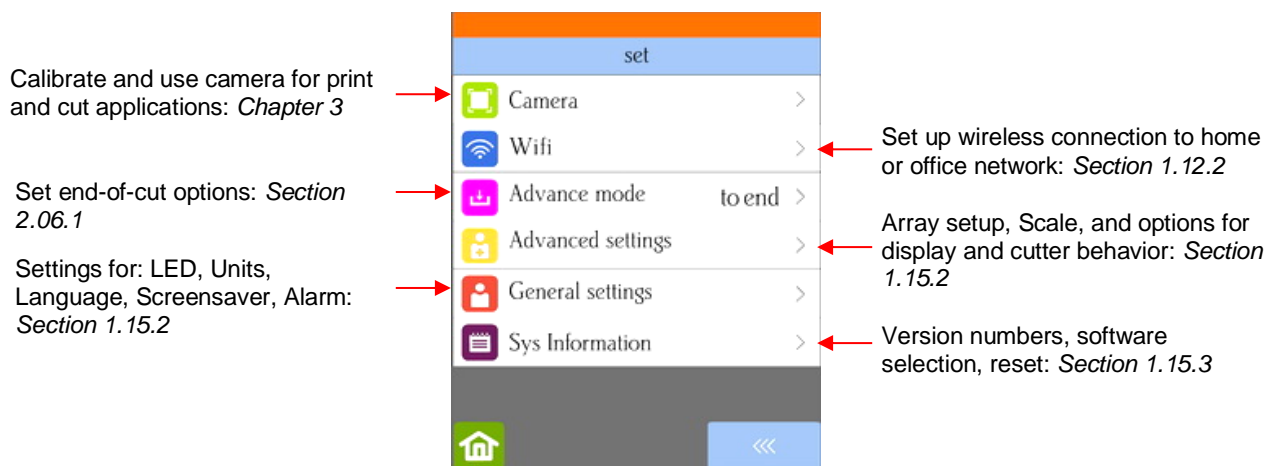


Go back to prior screen

1.10.1 Set Screen

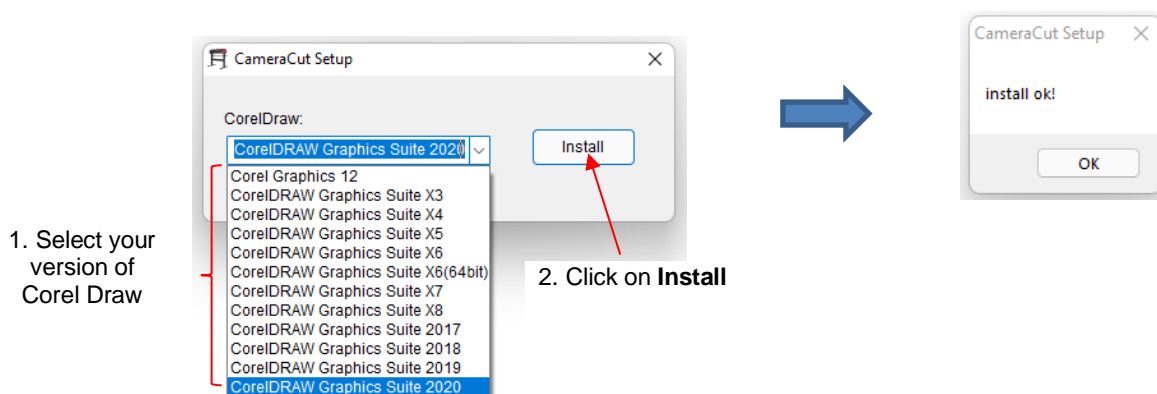


- Pressing the **Set** icon opens the **Set Screen** which contains access to many functions and settings. Note the general description and section number (if you wish to learn more about that function now):

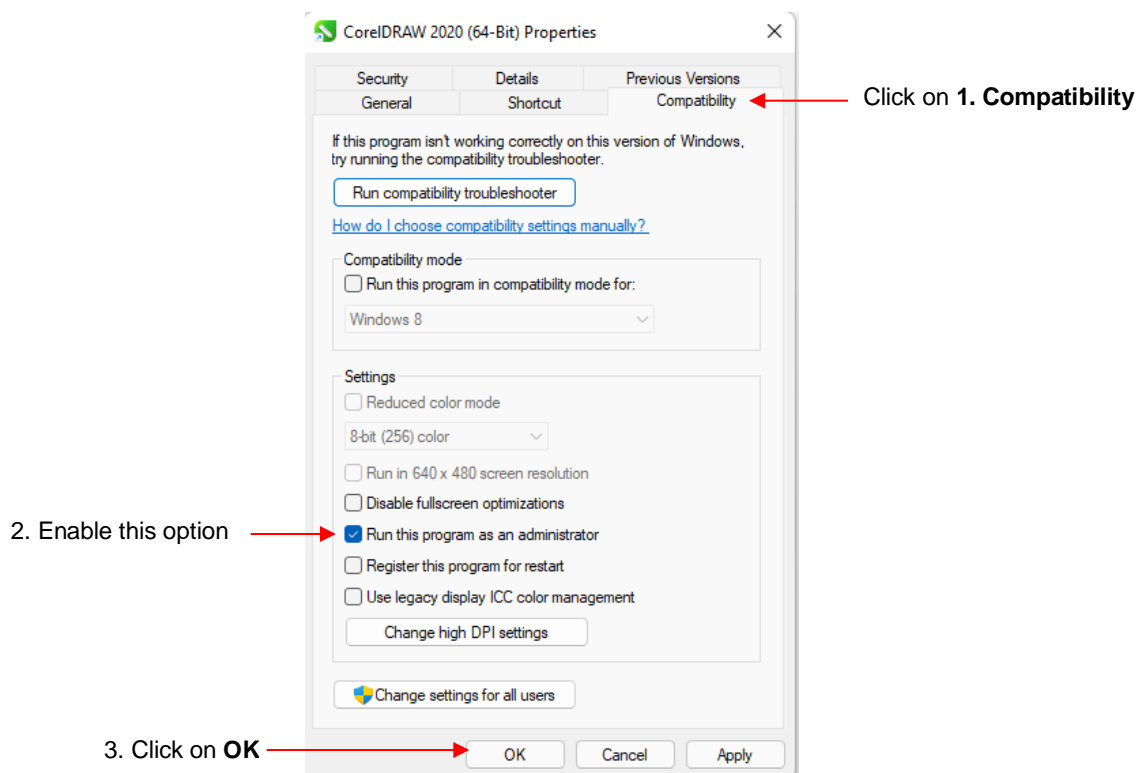


1.11 Installing the Corel Draw Plugin

- Go to the following link to download the Corel Draw Plugin:
2019 or older: https://sky-cut.com/page89?product_id=65
2020: <https://drive.google.com/file/d/1dDgduWd6WU3V-04Jz2cfEhn9rXfSG5/view?usp=sharing>
- After saving to your computer, extract the zip and right click on the exe file and select **Run as administrator**.
- IMPORTANT:** For those with Corel Draw 2021 or 2022, please use the following links for instructions:
[Installing CD Plugin for Corel Draw 2021](#)
[Installing CD Plugin for Corel Draw 2022](#)
- In the window which opens, select the version of Corel Draw you currently own and click on **Install**. After a short time, you should receive an **install ok!** message:



- After installing and **before** opening Corel Draw, you need to change a setting. Right click on your Corel Draw launch icon and select **Properties**. Click on the **Compatibility** tab and mark the option called **Run this program as administrator**:



- Open Corel Draw and you will see the following new icons available above the document area:



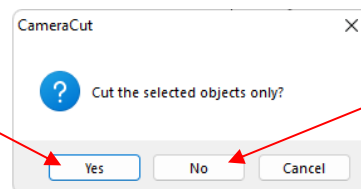
- ◇ The **Cut** and **Set** functions are covered in the following *Section 1.12*. Refer to *Sections 3.04 and 3.06* for **Add mark** instructions.

1.12 Cut and Set Functions

1.12.1 Cut Icon

- When you first click the **Cut** icon , the following window opens. Note how you would answer the question:

Click **Yes** if you have several shapes in the document and you only want to cut certain ones you have pre-selected



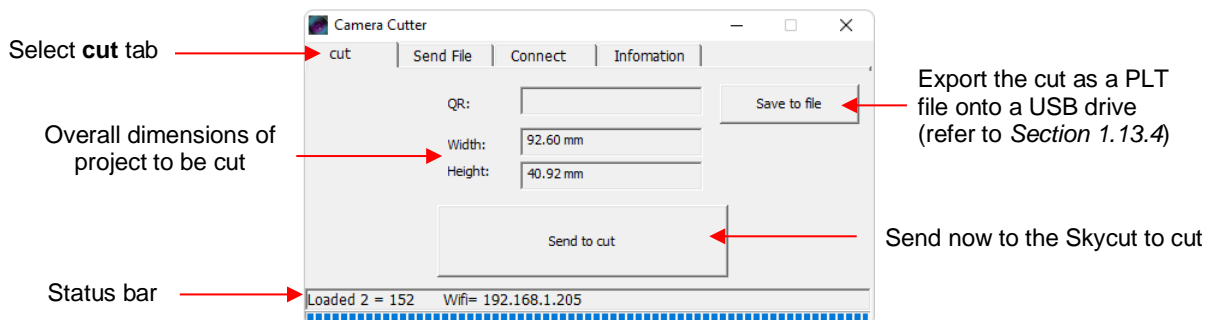
Click **No** if you want all the shapes in the document to cut

- Upon answering the question, the **Camera Cutter** window opens:

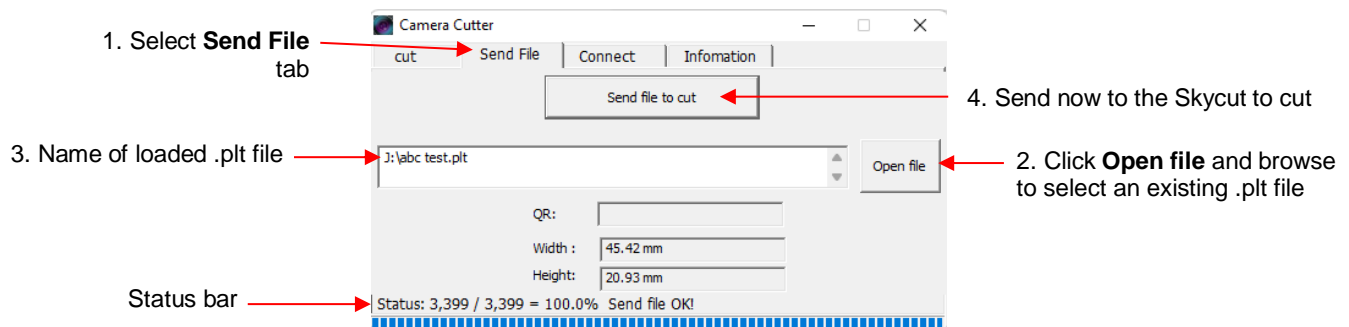


- There are 4 tabs with the following main purposes:
 - ◇ **Cut:** Send a project in Corel Draw to cut
 - ◇ **Send File:** Open a previously saved .PLT file and cut from Corel Draw to the Skycut
 - ◇ **Connect:** Choose a connection method (refer to *Section 1.13*)
 - ◇ **Information:** Test connection and obtain information from Skycut firmware


- **Cut tab:**

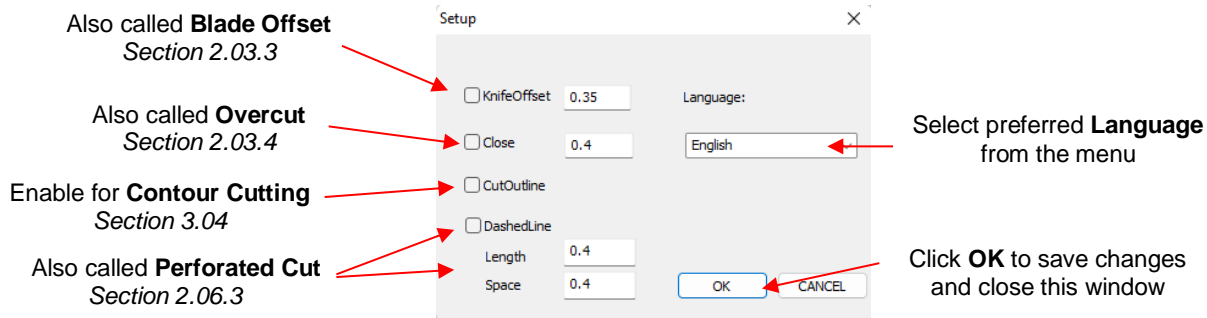


- **Send File tab:**



1.12.2 Set Icon

- When you click the **Set** icon , the following window opens. Note the *Section* numbers where additional information will be presented on each setting.



1.13 Connecting the Skycut to Your Computer

Video

- Place your Skycut on a sturdy horizontal surface or mount onto the Skycut stand. If using the cutting mat, be sure to allow enough free room in both the front and the back for the mat to extend during cutting.
- Powering On:**
 - Plug the power cord into a wall outlet or power strip. Connect the power cord to the Skycut V on the left side end cap.
 - Turn on the power using the power button that is also on the left side end cap. After several seconds, the light inside the Skycut will turn on and the head will do a slight jog.
- You have four options for sending files and information from your computer to the Skycut:
 - Direct USB** using the included USB cable
 - Wi-Fi** – adding the Skycut to a home/office network that is also accessed by your computer
 - Wireless Standalone** – connecting wirelessly to your computer
 - U_Disk** - Exporting PLT files from Corel Draw onto a USB flash drive and then loading those files using the control panel on the Skycut.
- Review the information in the following table to understand the differences between these options. Note that implementing any of these options does not preclude you from changing to another one, as needed.


Connection Options for the Skycut

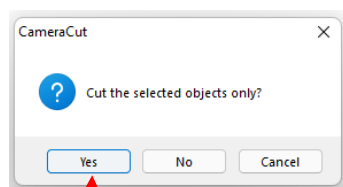
<u>Option</u>	<u>USB</u>	<u>Wireless to Network (Wi-Fi)</u>	<u>Wireless Stand-Alone</u>	<u>UDISK (USB Flash Drive)</u>
<u>Description</u>	The Skycut is connected to the computer via a USB cable	The Skycut is wirelessly connected to a network router	The Skycut is wirelessly connected to the computer.	Files are saved in PLT format from design software to a USB flash drive
<u>Requirements</u>	USB cable (included)	Wireless network router and knowledge of router's name and password	Computer must have wireless capability	USB flash drive
<u>Pros</u>	Easy to install; Reliable and fast form of communication.	Skycut can be located anywhere within range of the router; Other computers can cut to the Skycut	Skycut can be located anywhere within range of the computer; Other computers can cut to the Skycut	Skycut can be located anywhere
<u>Cons</u>	Skycut is physically connected to the computer; Cannot be accessed by other computers at the same time	Requires more steps to set up; Some routers may require setting changes in order to work with the Skycut	Computer is now connected to the Skycut, thus no <u>wireless</u> access to the Internet or to other wireless devices	More steps due to saving and then loading the file; Cannot adjust size and certain cut settings once saved

- The following sections present what steps are required for each type of connection. If you run into connectivity issues, please contact your dealer.

1.13.1 USB Connection

Video

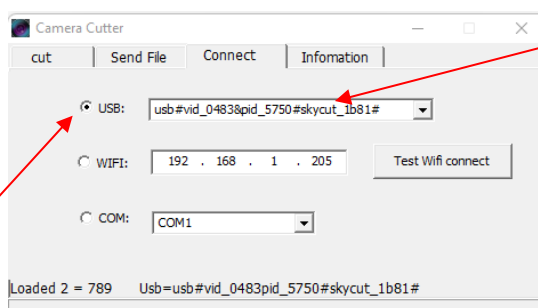
- Plug the small square end of the USB cable into the right end cap of the Skycut. Plug the USB end into an available USB port on your computer.
- Open Corel Draw and start a new document. Add any vector shape(s) you wish to the document area and select them.
- Click on the **Cut** icon  above the document area, answer **Yes**, and then select the **Connect** tab:



Click on **Yes**



Mark the **USB** option



Look for the word "**skycut**"

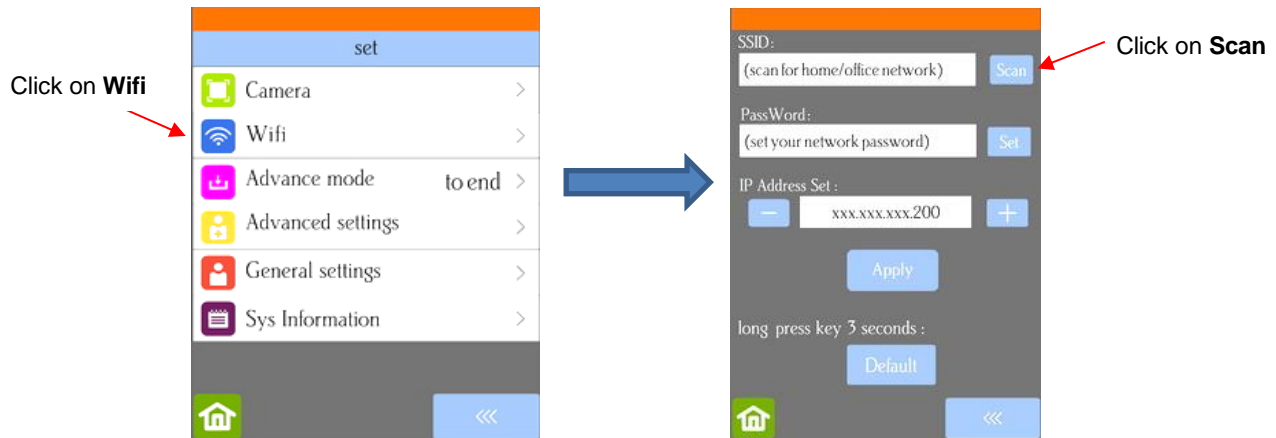
- Mark the **USB** option. The connection should contain the word "**skycut**" within it. If not, open the drop-down menu to find the correct one. If you cannot locate the connection, verify the connection at both the cutter and on the computer. Once connected, proceed to *Section 1.14*.

1.13.2 Wi-Fi Connection

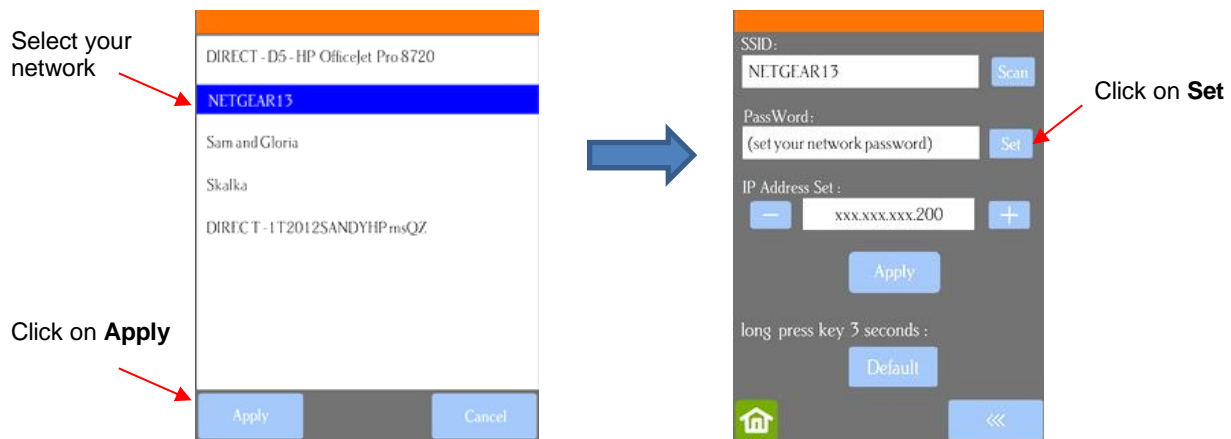
- Note: Not all routers have the same signal strength. It's usually best to connect the Skycut while it is in the same room with the router. Once connectivity is established, you can then experiment to see how far from the router the Skycut can be located.

- What you'll need:
 - ◊ Name of your home/office network
 - ◊ The password for your network
- Carefully complete the following steps:

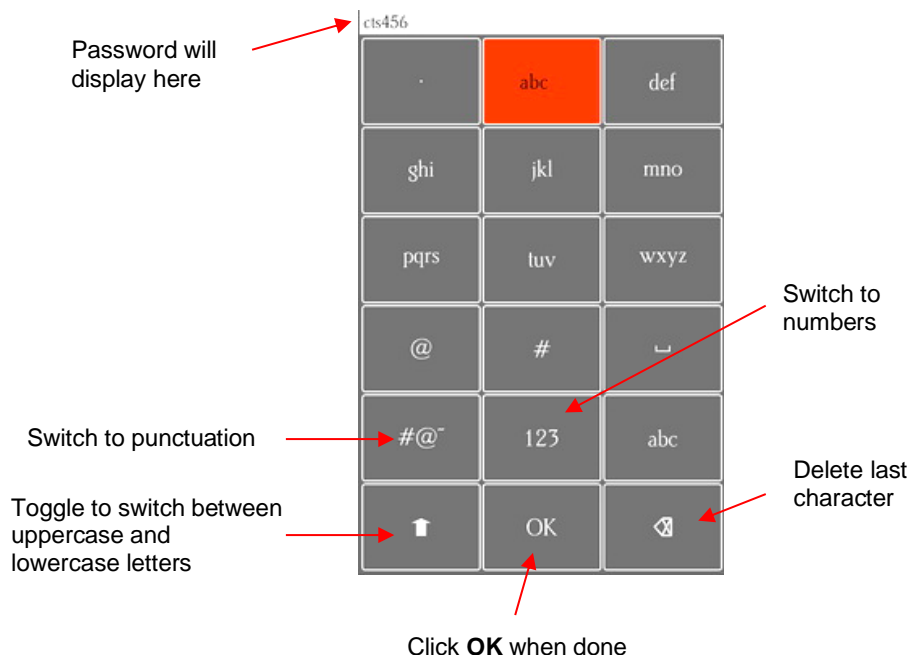
(1) On the Skycut's control panel, select **Set**  and then select **Wifi**. The **Wifi** screen will appear:



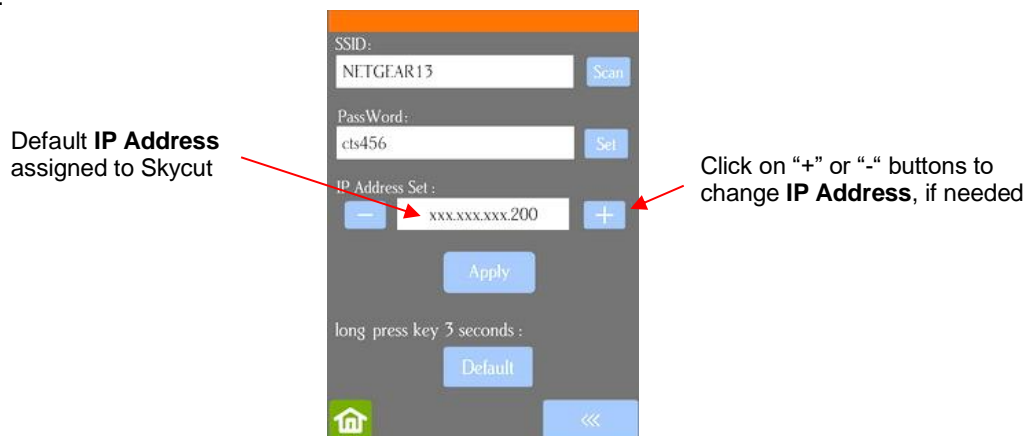
(2) Click on the **Scan** button and a list of the available networks will appear. Select your home/office network and click on **Apply**. You will then be returned to the **Wifi** screen:



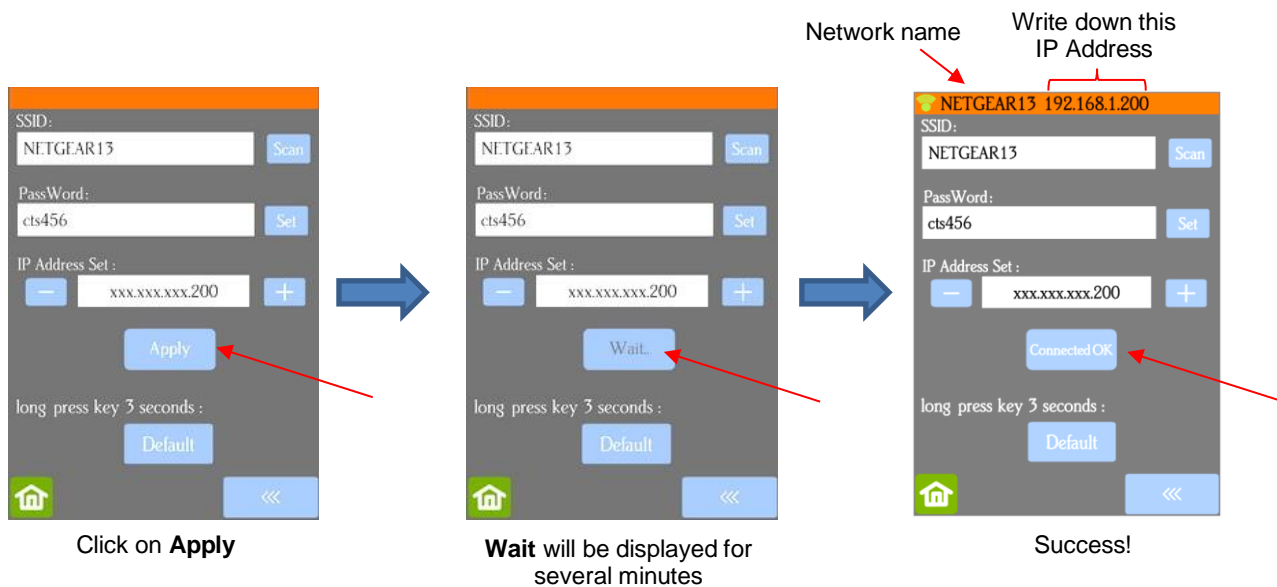
(3) Click on **Set** and the following screen will open:




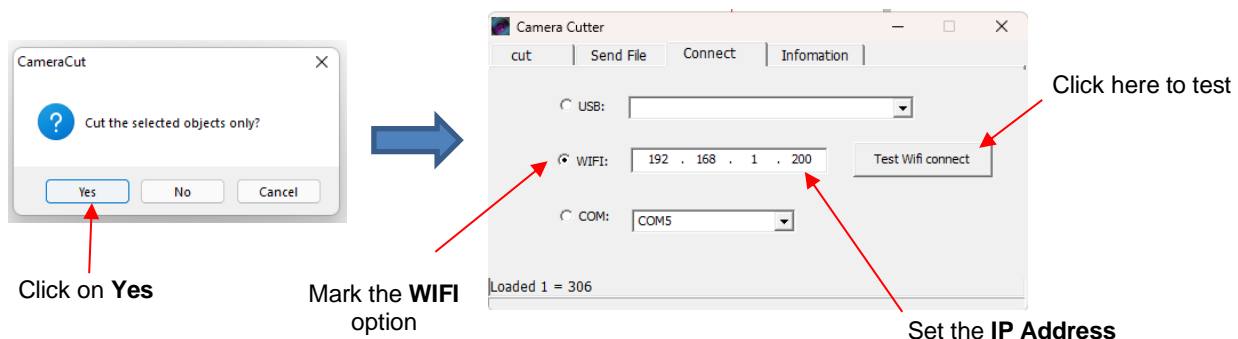
- (4) To enter the password, use the following tips if you are unfamiliar with this type of screen:
- ◇ “Rapid tap” multiple times in succession to select a letter. For example, if your network password is *cts456*, then to enter “c”, you would tap three times on “abc” because “c” is the third letter in “abc”. Next you would proceed to “stu” and tap two times to enter “t”. Then you would only need to tap on “stu” once to enter the letter “s.”
 - ◇ To enter numbers, click on “123” to open the number entry screen.
 - ◇ For punctuation, click on “#@~” to open the extra characters screen.
 - ◇ To enter upper case letters, click on the up arrow in the lower left part of the screen.
- (5) Once you have the password entered in the display box at the top, click on **OK** to return to the **Wifi** screen:



- (6) Next check the **IP Address** that will be assigned to the Skycut. The Skycut will automatically pick up the first three sets of digits from your router but will continue to display them as shown above. You only need to decide if the last set, which should be defaulting to “200”, can be used. Use the “+” or “-” buttons to make any needed changes.
- (7) Click on **Apply** and wait for several minutes while your router assigns this **IP Address** to the Skycut. Eventually, you will see **Connected OK** appear and your full **IP Address** will appear in the orange strip at the top:



- (8) If instead of receiving a **Connected OK** display, you see **Password err**, again verify the network you selected and the password you entered. If it continues to fail to connect, confirm the **IP Address** you entered. Additional troubleshooting for Wi-Fi connections can be found in *Appendix A1*.
- (9) If you wish to reset and start again, press and hold the **Default** button for 3 seconds until the button turns red. Then click on **Scan** and repeat from *Step 3*.
- (10) Open Corel Draw and start a new document. Add any vector shape(s) you wish to the document area and select them.
- (11) Click on the **Cut** icon  above the document area, answer **Yes**, and then select the **Connect** tab:



- ◇ Mark the **WIFI** option and enter the same **IP Address** as the one you set up on the Skycut control panel. Click on **Test Wifi connect**.
 - If you receive a **connect err** message, try again. If it continues to fail to connect, confirm the **IP Address** you entered. Additional troubleshooting for Wi-Fi connections can be found in *Appendix A1*.
 - If you receive a **connect ok** message, the connection has been established. Proceed to *Section 1.14*.

1.13.3 Wireless Stand-Alone

- It's usually best to connect the Skycut while it is next to the wireless computer. Once connectivity is established, you can then experiment to see how far from the computer the Skycut can be located.
- There are two situations to consider before getting started. If you are not sure which applies to your Skycut, then select *B* and go to that section first.

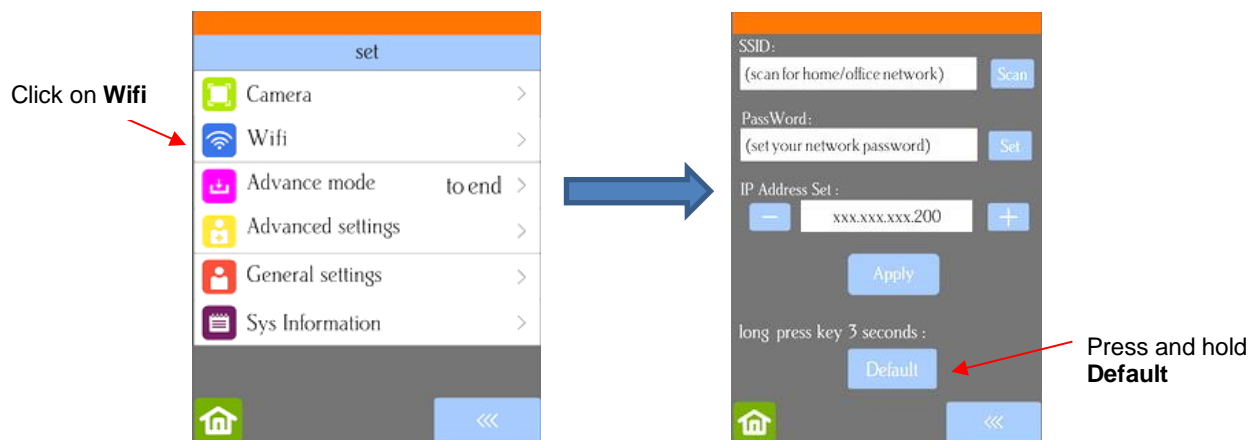
- A. The Skycut has never been set up wirelessly to a network.
- B. The Skycut has previously been connected to a wireless network.

A. The Skycut has never been set up wirelessly to a network

- Power on the Skycut and wait for the light to come on.
- On your computer, open your list of available networks. In the list, you should see an option with this type of name format: *HI_LINK_XXXX* or *Cutter XXXX* where “XXXX” can be any alphanumeric combination, such as “92BF” or “08A5”. If you cannot locate either *HI_Link* or *Cutter*, go to *Section B* below.
- Select that network and enter the following **Network Key** when prompted: 12345678.
- Go to *Section 1.13.2* and continue from *Step 10*. **Note** that the **IP Address** to enter into Corel Draw’s **Connect** tab is the Skycut’s default: 192.168.16.254.
- Remember that your computer will not have access to the Internet or other network devices while in **Wireless Stand-alone** mode.


B. The Skycut has previously been connected to a network

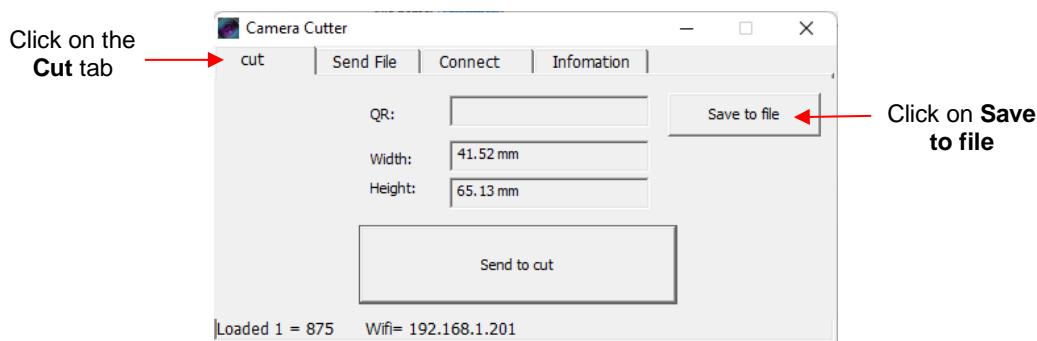
- On the Skycut’s control panel, select **Set**  and then select **Wifi**. The **Wifi** screen will appear:



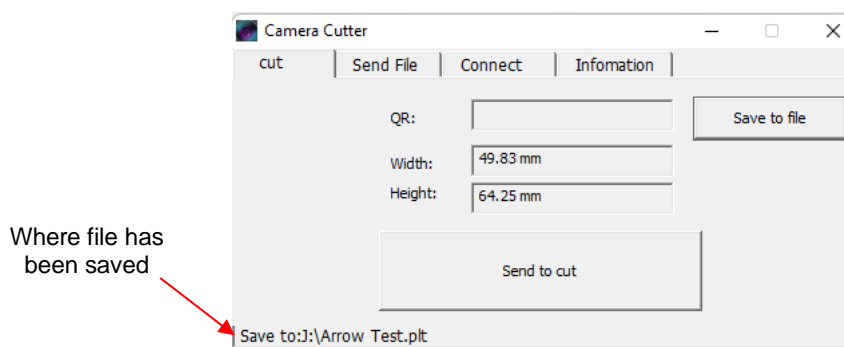
- To reset the Skycut so that it will be found as an available network, press and hold the **Default** button for 3 seconds. Release and you should see the **Apply** button now displays **Wait**. In a minute the **Apply** should return and you can then proceed back to A. The Skycut has never been set up wirelessly to a network and use the same procedure as if the Skycut was never set up on a network.

1.13.4 USB Flash Drive Video

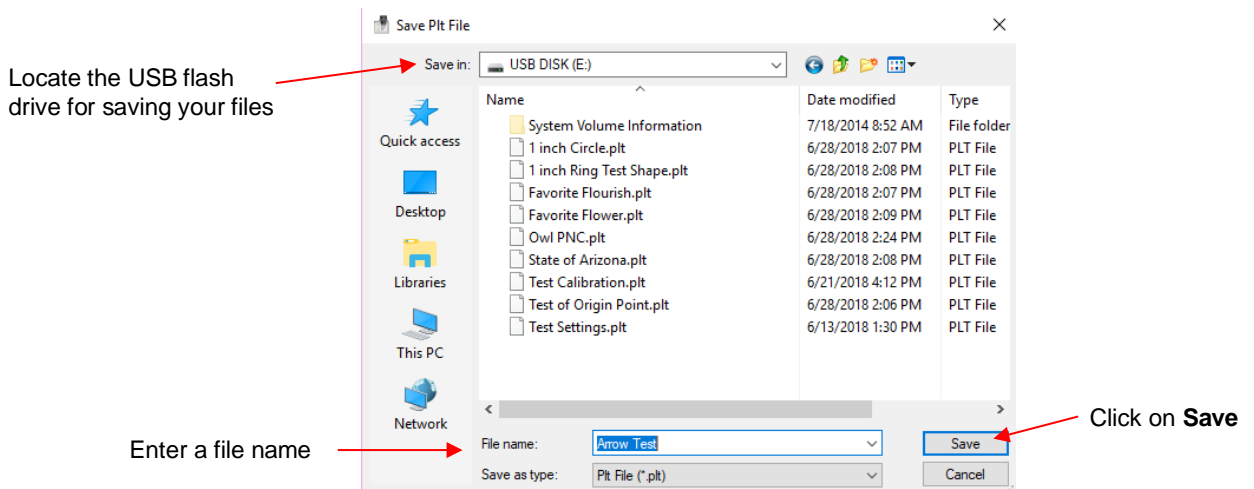
- Open Corel Draw and start a new document. Add any vector shape(s) you wish to the document area and select them.
- Insert a USB flash drive into your computer’s USB port.
- Click on the **Cut** icon  above the document area, answer **Yes**, and then select the **cut** tab. Click on **Save to file**:



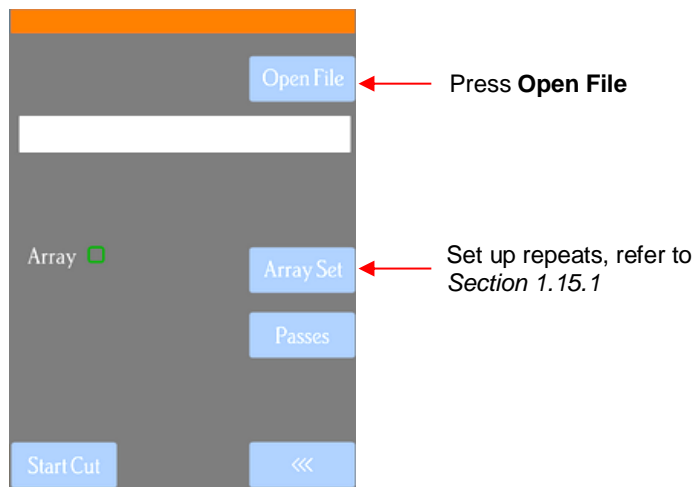
- A save window will open where you can browse to find your flash drive and enter a name for saving the file as a PLT.
- The cut window will update indicating the drive letter and file name for the saved file:



- If you are new to your Skycut, it is recommended that you go to *Section 1.14* now to learn how to insert the mat and test pen, adjust settings on the control panel, and set up a test design. Then, when you are ready to cut, return to this section.
- Insert a USB flash drive into your computer and allow Windows to find it. Note the drive letter assigned by Windows.
- Click on **Cut Now** and a **Save PLT File** window opens because earlier you had changed the connection type to **U_Disk**. Browse to locate the USB flash drive you plan to use and name your PLT file:



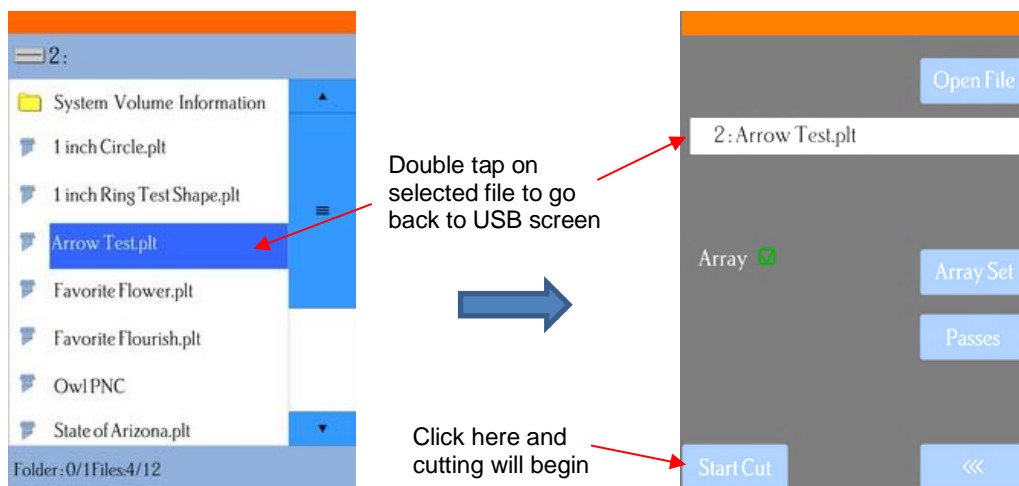
- After saving the file, eject the flash drive and insert it into the right side of the Skycut. On the control panel, select **USB** and then **Open File**:



- (1) Double tap on **USB DISK** and a screen will open showing any folders and PLT files on the flash drive. Double tap a folder to open it, as needed. Drag the scroll bar on the right to see more files:



- (2) Once you have located the PLT file you want to cut, double tap the name. You will be taken back to the USB screen and the selected file name will be displayed:

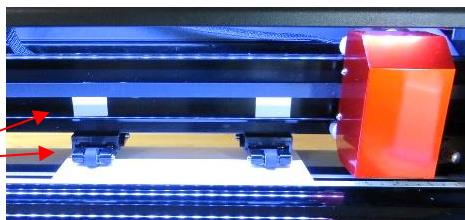


- (3) If you wish to cut repeats of the file, select **Array Set** and a screen will open where you can then select the number of rows and columns of repeats, along with the spacing between the repeats. Refer to *Section 1.15.1*.
- (4) If your project is a print and cut (aka contour cut) application, please refer to *Section 3.04*.
- (5) When you are ready to cut, click on **Start Cut**.

1.14 Test Draw Shapes

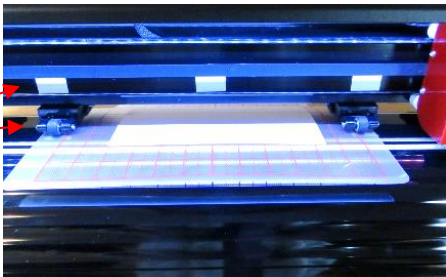
- Besides testing the communication, it is also very important to understand where shapes will cut. This section presents a tutorial on use the test pen and a sheet of paper to draw a shape in order to understand how a design appears in Corel Draw and how it then cuts on the Skycut.
- You have two options when using the test pen:
 - ◇ Insert a sheet of paper directly into the cutter. Make sure the paper is past the ruler so that it doesn't catch when feeding the paper forward:

Observe how pinch wheels are centered with white rectangles



- ◇ Or...Place the paper onto the cutting mat and then insert the cutting mat into the cutter:

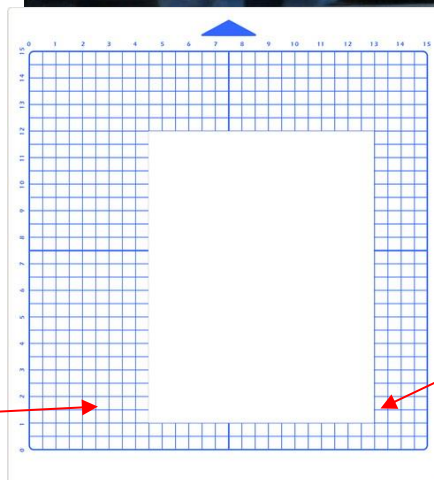
Observe how pinch wheels are centered with white rectangles



Feed the mat this direction into the Skycut



Only the front part of the mat and material will be in the front of the machine.



Align the paper along one of the grid lines on the cutting mat.

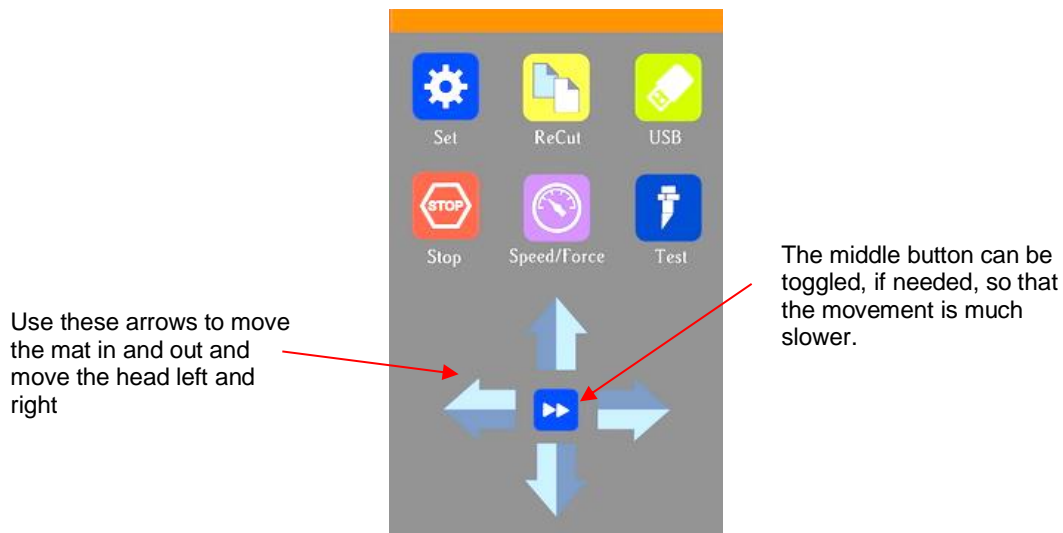


- Use any of the horizontal markings at the front of the Skycut (such as the ruler) to align the mat so that it's straight. Lift the pinch lever to drop the pinch wheels onto the cutting mat. Most of the mat and the paper should now be behind the cutter, not in the front.

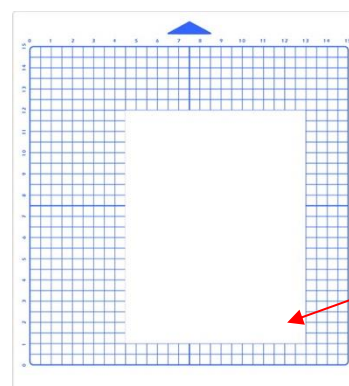
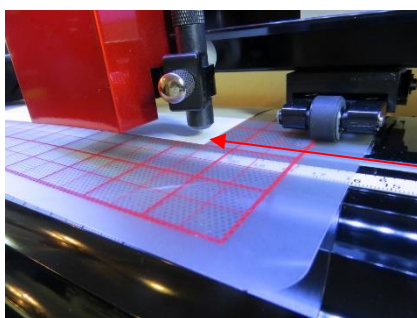
- Before installing the test pen, make sure the pen will write by scribbling on scrap paper. Note that you will probably need to remove a tiny bit of wax on the end of the pen nib. Then follow these steps:
 - ◇ Loosen the screw on the blade holder seat.
 - ◇ Insert the test pen allowing it to freely rest on top of the paper.
 - ◇ Before tightening the front screw, raise the test pen up a little bit (~ 1/8" or several mm). You don't want the pen still touching the paper but you also don't want the pen too high above the paper either.
 - ◇ Tighten the front screw to lock in the test pen. Be careful not to push down on the blade holder seat while tightening.

IMPORTANT! This is NOT the recommended method for loading the blade holder into the cutter. This is presented as a quick way to insert the test pen so that it is in a good position for drawing. The instructions for inserting the blade holder will be covered in *Section 2.01.3*.

- The arrow keys on the Skycut's control panel will always be used to set the origin for cutting:




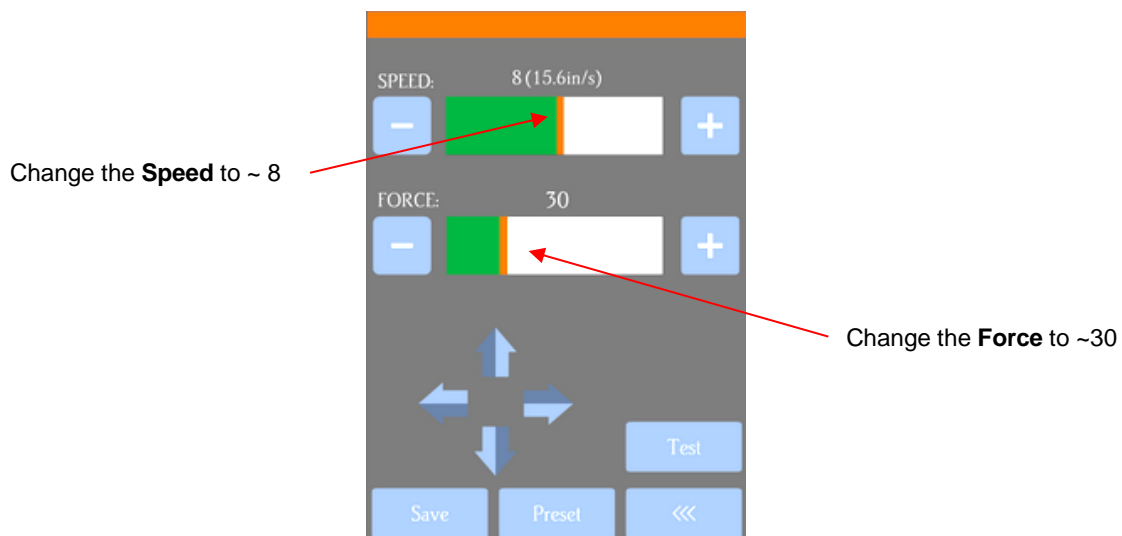
- ◇ Press the arrows on the control panel to move the head left or right and the mat in and out. The goal is to have the tip of the pen close to the lower right corner of the paper:



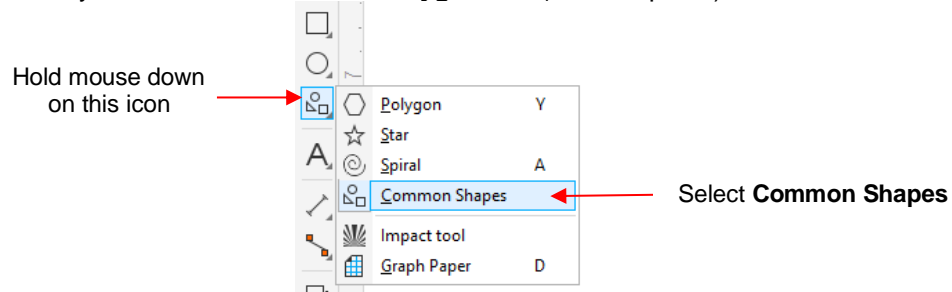
Feed the mat this direction into the Skycut

- ◇ Once the pen tip is near the lower right corner, you are ready to proceed with the test.

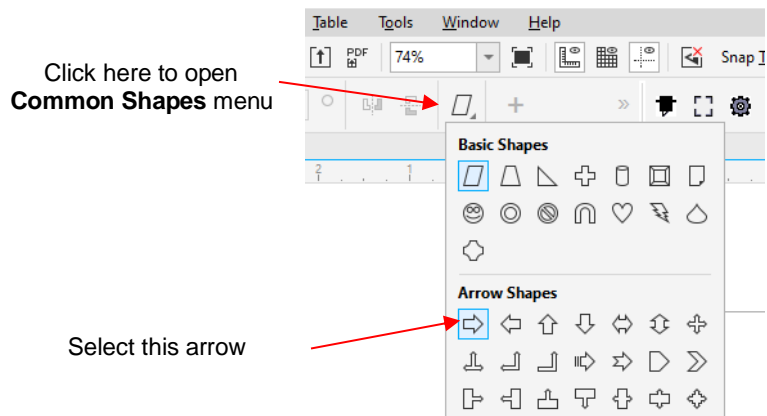
- The **Force** and **Speed** will also be set using the control panel. Press the **Speed/Force** button  and the following window opens where you can set the **Speed** and **Force** to the settings shown. Note that you can either press the + and - buttons or you can slide the orange bar with your finger or stylus:



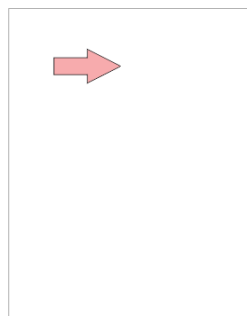
- In Corel Draw, hold your mouse down on the **Polygon** tool (left side panel) and select **Common Shapes**:




- At the top, open the shape menu and select the arrow which points to the right:

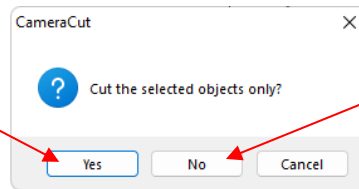


- Drag your mouse to create an arrow which faces towards the right:



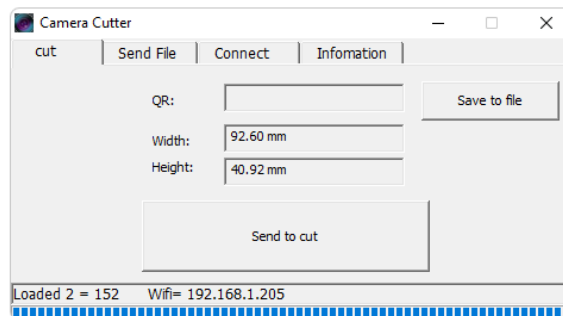
- Click the **Cut** icon  and the following window opens:

Click **Yes** if you have several shapes in the document and you only want to cut certain ones you have pre-selected

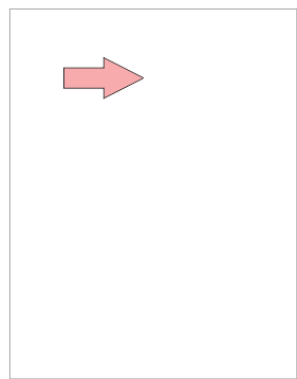


Click **No** if you want all shapes in the document to cut

- ◇ In this tutorial, because you only have the arrow and it's not selected, answer **No** and the **Camera Cutter** window opens:



- Assuming you've selected your preferred connection option (refer to *Section 2.3*), click on **Send to cut**. Note that your shape will be drawn so that it's aligned with the origin you set and will be upside down with respect to how you view it in Corel:



Location in Corel Draw



Where the shape draws on paper

X indicates where pen tip was positioned

- More information on controlling where shapes will cut is covered in *Section 2.02.2*.

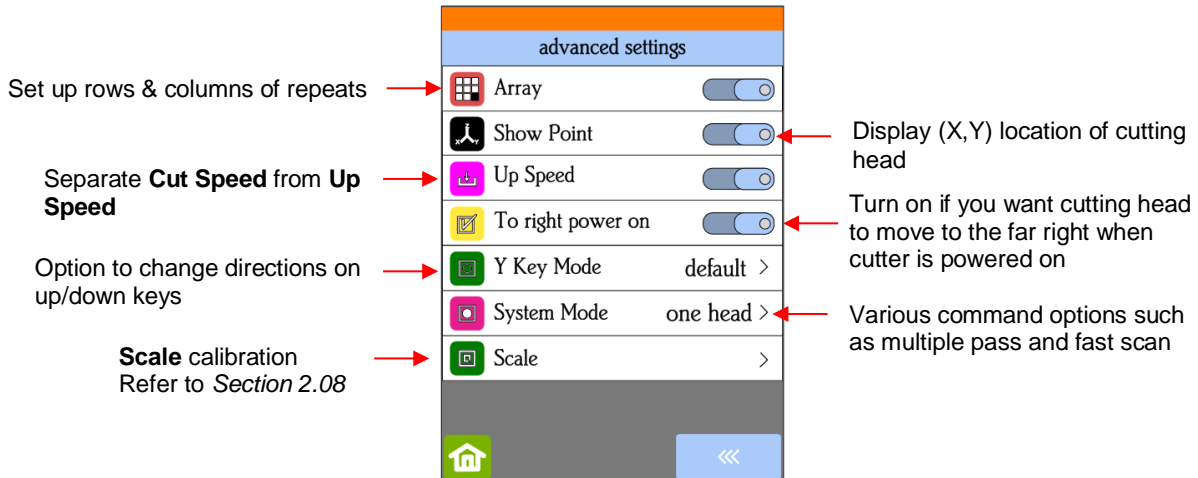
IMPORTANT: Please read *Section 2.01* before cutting!

1.15 Additional Control Panel Settings

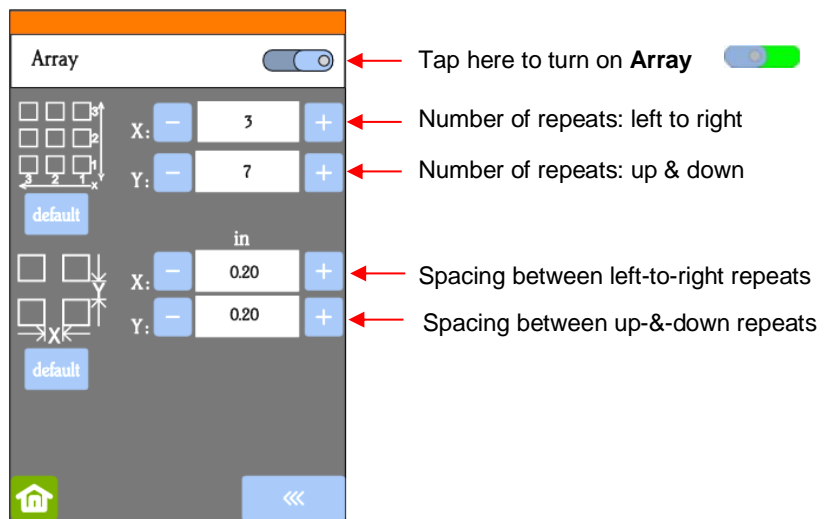
- The Skycut's control panel offers a number of default settings. Some of these may not be important at this point in the learning process. So, you may want to skip this section for now but remember that it's here and could provide you some options to improve your experience with the Skycut.
- Each of the following sections will refer to one of the settings in the **Set** screen.

1.15.1 Advanced Settings

- The optional settings in the **Advanced Settings** screen are:

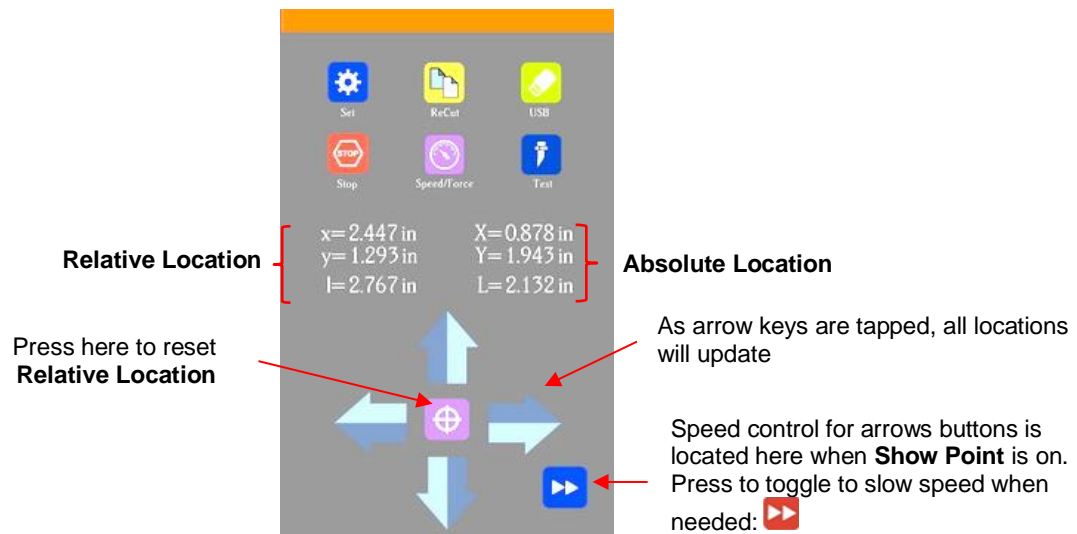


- Array**: Tap the **Array** button to open the **Array** screen:

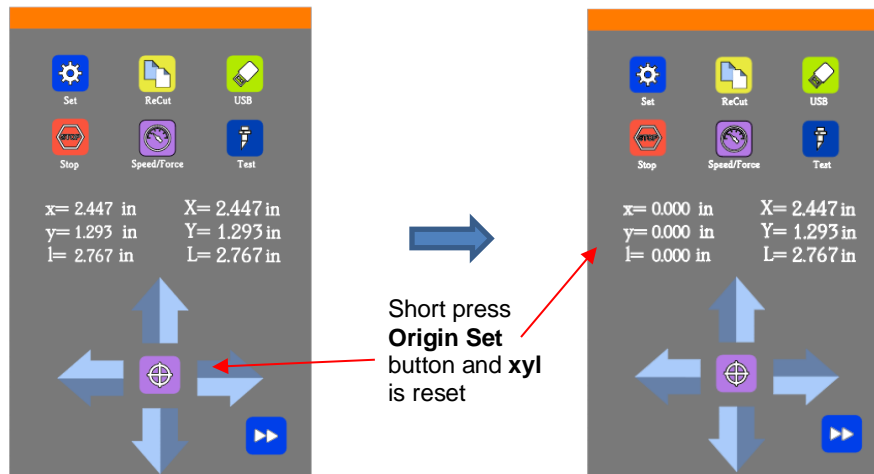


◇ In the above screenshot, the shape sent to the Skycut would cut 3 copies across and 7 up and down, for a total of 21 shapes. The spacing between each shape would be 0.20 inches (Note: to use mm instead of inches, switch the **Units** setting. Refer to *Section 1.15.2*).

- Show Point**: When toggled on, the **Main Screen** displays movement and location output based on the position of the cutting head:

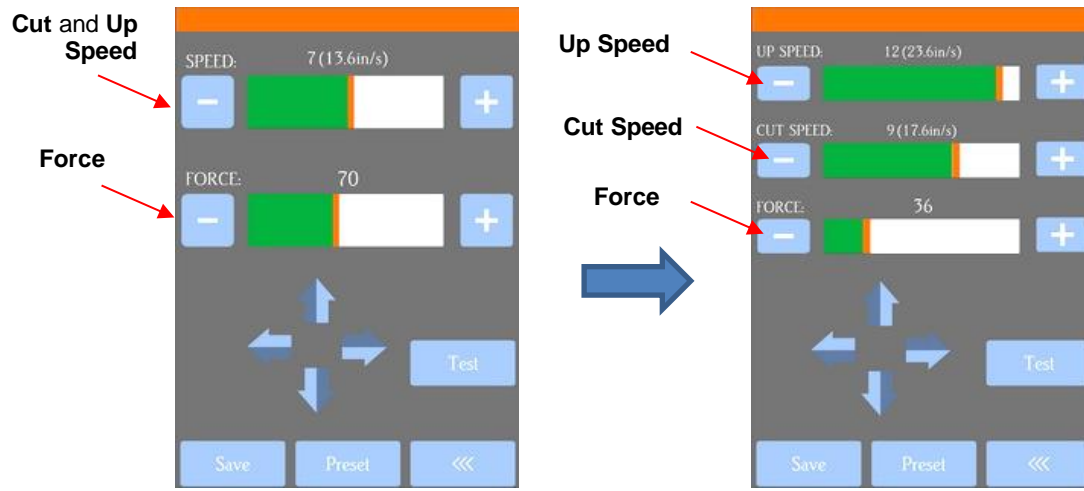


- ◇ **Absolute Location** displays the current location relative to a “power-on” location of (0,0):
 - **X** is the left-to-right location
 - **Y** is the up-&-down location
 - **L** is the straight-line distance from (0,0)
- ◇ **Relative location** displays the change in location currently being made as you press the arrow keys:
 - **x** is the current left-to-right distance moved from **X**
 - **y** is the current up-&-down distance moved from **Y**
 - **l** is the straight-line distance from the (**X,Y**) location
- At any time, if you press on top of the current location of either **XYL** or **xyl**, the blade carriage will return to its last origin.
- To set an origin for cutting that can be returned to after either finishing a cut or stopping a cut, press the **Origin Set** button before sending the cut.



- ◇ After the cut, you can move the mat or material (using the arrows keys on the control panel) to check the quality of the cut. If needed, you can then press on top of the **xyl** displayed location (i.e., the **Secondary Location**) to return the blade carriage to its **Secondary Origin**. Then press **Re-Cut** on the control panel to repeat that same cut.
- ◇ This feature can also be useful for production processes, such as repeating the same **Print+Cut**

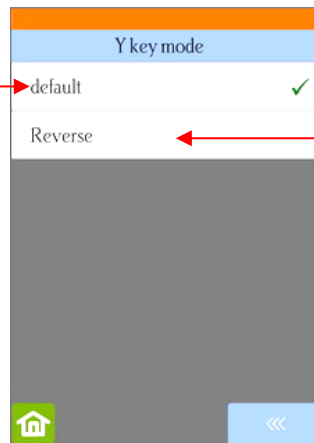
- **Up Speed** is how fast the blade travels while in the “up” position, such as when it is moving from the origin to the location of the first shape to cut or when moving from one cut shape to begin cutting another. When turned off, **Up Speed** will match the **SPEED** set for cutting. Turning on this setting will change the **Speed/Force** screen to display both speeds, allowing them to have different settings:



- **To right power on:** With this setting turned on, the cutting head will move to the far right whenever the Skycut is powered on.
- **Y Key Mode:** This setting controls the movement of the material or cutting mat when using the up and down arrows in the **Main Screen**:

Pressing an **UP** arrow will move the material forward

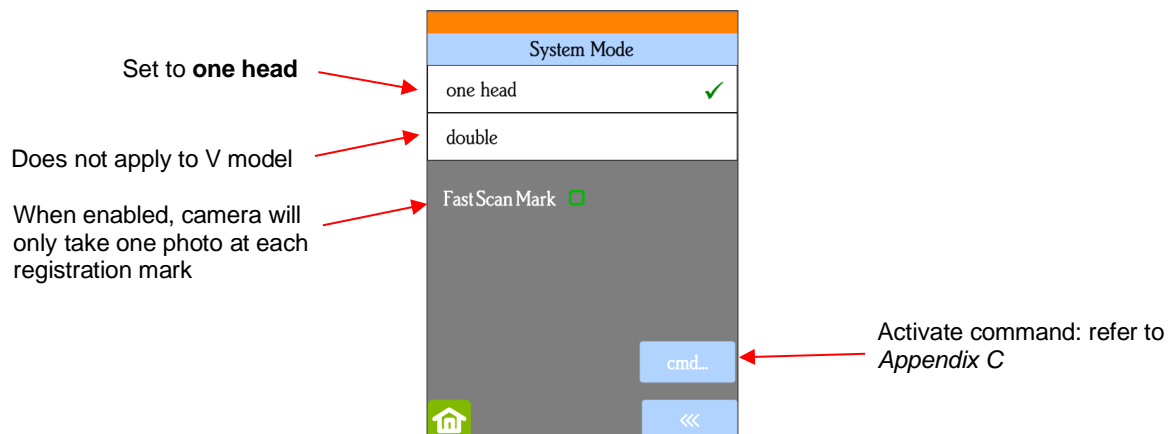
Pressing a **DOWN** arrow will move material towards the back of the cutter



Pressing an **UP** arrow will move the material towards the back of the cutter

Pressing a **DOWN** arrow will move material forward

- **System Mode** is used to select whether or not the dual head options are available on the main screen:



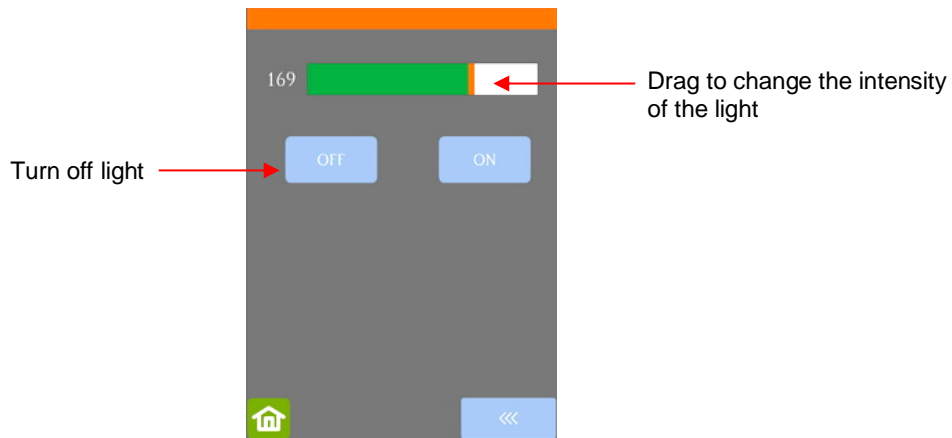
- **Scale** is used is used to input the sizing calibration. Refer to *Section 2.08*.

1.15.2 General Settings

- The optional settings in the **General Settings** screen are:

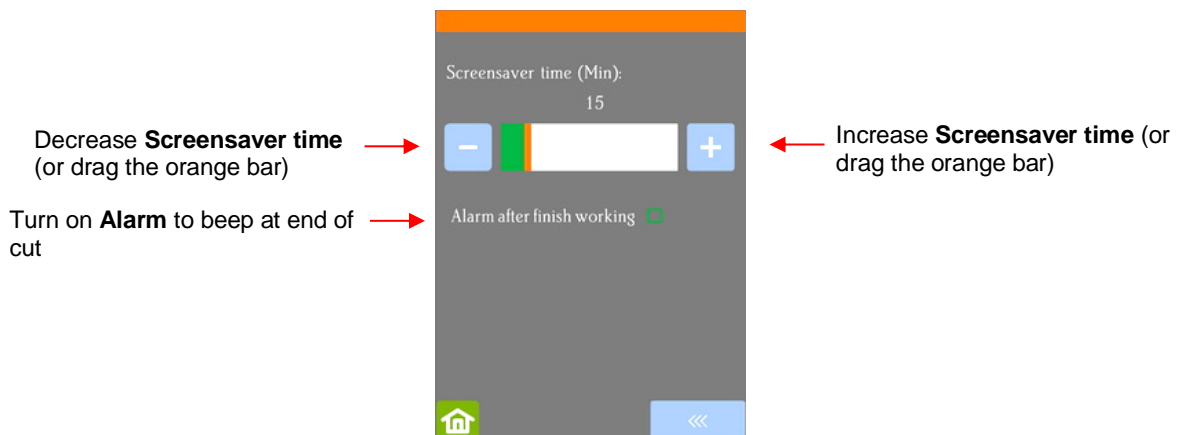


- **LED set** allows you to change the brightness of the light inside the Skycut or even turn it off:



- **Screen and alarm** has two settings:

- ◇ **Screensaver time:** Set a black-out time, in minutes, for the control panel
- ◇ **Alarm after finish working:** When a job is complete, have an alarm sound (five beeps)



- **Unit** allows you to choose either inches or mm for settings such as **Show Point** and the **Spacing** setting under **Array**.

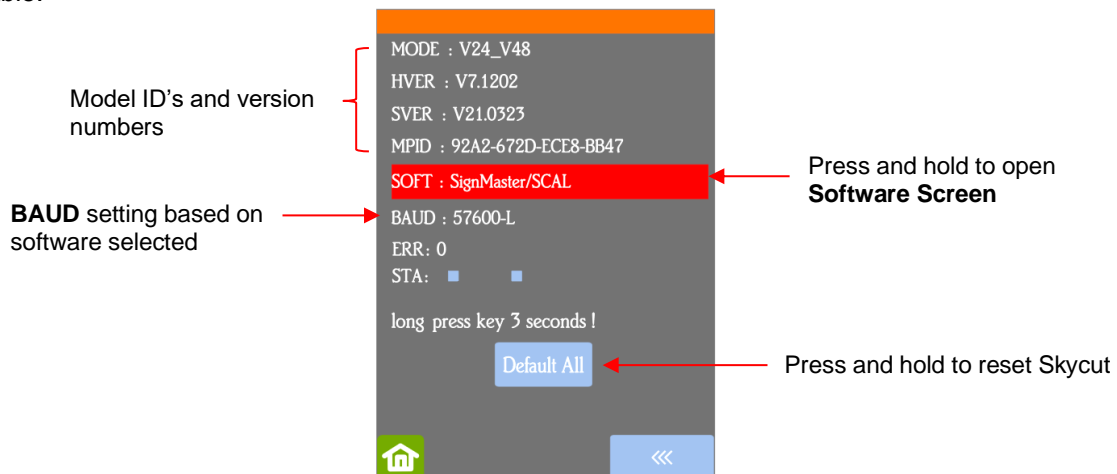


- **Language** allows you to choose from multiple languages to be used throughout the control panel display screens:



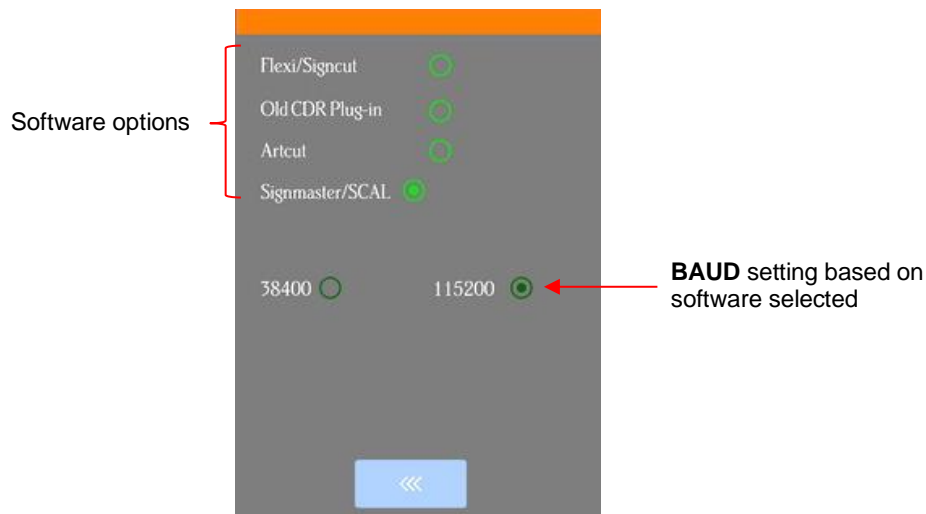
1.15.3 Sys Information

- The **Sys Information** screen displays information about the Skycut and only has three setting changes available:



- ◇ This initial screen displays current version numbers.
- ◇ If you ever need to reset your Skycut, press and hold **Default All** until it turns red. Then wait for the button to update to **Success!**

- ◇ If you ever need to change which software is in use with your Skycut, press and hold **SOFT** for two seconds and release. The following screen will open:



- ◇ To use a different software program to cut to the Skycut, press inside the appropriate circle. The **Baud Rate** indicator will automatically change if needed.

1.16 Maintenance

Skycut machines do not require any kind of lubrication or routine checks. However, here are a few things to keep in mind for successful operation of your cutter:

- Keep the pinch wheels clean. Depending on the adhesive being used on the cutting mat, it's possible for the pinch wheels to become sticky and pick up small pieces of cardstock or other material being cut. This can lead, in some cases, to the mat skewing or ruining materials during subsequent cuts. To clean the pinch wheels, use a lint-free cloth and an adhesive remover such as isopropyl alcohol or Un-Du to clean the pinch wheels thoroughly.
- Keep the grit shafts clean. Equally important as the pinch wheels, the grit shafts beneath the cutting mat should also be free of adhesive and tiny bits of material. They can be cleaned the same way as the pinch wheels. Note: Do not pour cleaner onto a grit shaft. Instead, dab some adhesive remover onto a lint-free cloth and then use the damp cloth to clean the shafts. You can also use tweezers to remove any material or adhesive that is stuck to a shaft.
- Keep the cutting mat clean and sticky. As mentioned in the *Section 1.08.2*, the cutting mat can be washed with soap and water to remove small invisible pieces of material which are reducing the tackiness of the cutting mat. After drying, you can add more repositionable adhesive, if needed.
- Check your blade holder, as needed. If suddenly you cannot get a clean cut, check the blade holder for any tiny slivers of material that may have been caught up by the blade and fed up inside the blade holder.
- If you cut vinyl or other backed materials regularly, you may need to replace the cutting strip at some point. You will be able to tell based on seeing deep cuts in the strip and an inconsistency in the cutting. Contact your dealer for information on obtaining a replacement.

1.17 Other Useful Tools and Supplies

- The following list has items you may or may not need while enjoying your Skycut. These are suggestions based on twelve years of collecting information from other cutter owners:
 - ◇ Brayer or Rolling Pin: (1) to apply lint from a towel onto an overly sticky mat (2) to press materials evenly onto a mat for cutting

- ◇ Post-It Notes: (1) for setting blade/tool tip height above a material (2) for draw and cut applications
- ◇ Old Fluffy Bath Towel: (1) to dry a washed mat (2) to apply an invisible layer of lint onto an overly-sticky mat
- ◇ Dishwashing Soap: (1) to remove visible and invisible fibers from the mat, thus renewing the adhesive (2) to clean the mat well before adding more adhesive
- ◇ Soft Brush: (1) to gently remove waste scraps during the washing of a mat. Refer to *Section 1.08.2*.
- ◇ Artist Palette Knife: (1) to gently remove cut shapes from a mat (2) to scrape off small waste pieces from a mat
- ◇ Blue Painter's Tape: (1) to tape around the edges of thicker materials that might slip during cutting
- ◇ Repositionable Adhesives: (1) to add more adhesive to a cutting mat (most any brand or type can be used, provided it is repositionable). Refer to *Section 1.08.2* for suggestions and instructions.
- ◇ Adhesive Removers: (1) to completely strip a cutting mat of adhesive (2) to disarm adhesive long enough to remove large scraps of material that will not peel off
- ◇ Lint-free Cloth: (1) for dusting off your cutter and cleaning pinch wheels and grit shafts
- ◇ Awl or Paper Piercer (or other sharp pointed tool): (1) to pick or lift out a test cut to verify results
- ◇ Stabilizers: A stabilizer is an adhesive material that is applied to the bottom of the material you are cutting so that cleaner cuts can be achieved. The stabilizer works in one or more of the following ways – (1) provides firmer contact with the cutting mat (2) provides a final layer that does not need to be cut if the stabilizer will be removed after cutting (3) prevent some slightly-elastic materials from being stretched by the blade. Recommended stabilizers include freezer paper, Thermo-web Heat n' Bond, and Steam-a-Seam 2.
- ◇ Double-sided Tape: (1) For securing metal tags or charms to the cutting mat for engraving
- ◇ Non-slip Shelf Liner: (1) To place under cardstock and other material when embossing

2. Cutting

2.00 Quick Reference for this Chapter

- How to *properly* mount the blade holder: *Section 2.01.3*
- Understanding **Knife Offset** and **Close**: *Section 2.03.3* and *Section 2.03.4*
- How to set a very precise origin: *Section 2.05.1*
- Checklist before cutting: *Section 2.07*
- How to get shapes to cut to precise dimensions: *Section 2.08*
- How to know which settings to adjust to solve cutting issues: *Section 2.09*

The Most Common New Owner Mistakes:

- Too much blade is exposed on the blade holder (material is lifting up and/or tearing) - refer back to *Section 1.07.5*
- The blade holder or test pen haven't been properly mounted - refer to *Section 2.01.3*
- The pinch wheels are not properly positioned (material or mat is sliding around or bunching up during the cut) – refer back to *Section 1.09*
- Failing to do a test cut (recommended cut settings are not working) – refer to *Section 2.01.5* and *2.09*
- Not practicing enough with the test pen and paper (shapes are not cutting in the correct locations) – refer to *Section 1.14*

2.01 What You Need to Understand About Cutting

IMPORTANT: Please read all of 2.01!!!

2.01.1 You Have To Make Mistakes

- To be a successful owner of a Skycut, you need to keep in mind a few factors:
 - ◇ The key to becoming successful at cutting is to do a lot of it.
 - ◇ You're going to make mistakes. This is normal and part of the process of mastering a cutter.
 - ◇ Read all of *Sections 2.01 - 2.03*.
 - ◇ Perform test cuts before cutting large projects. It prevents wasted material and preserves your valuable time.

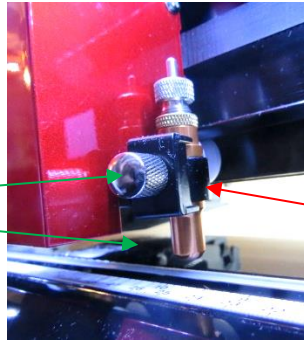
2.01.2 Record Your Successes

- As you have successful cuts, take note of the settings you just used, such as **Force**, **Speed**, blade type, number of passes, brand of material, etc. There is a blank form in *Section 2.10* that you can print and use to record your results. There are also suggested settings for common materials at the end of this chapter. Use these as starting guides but remember that your results may vary based on the many factors which can affect cutting.

2.01.3 Installing the Blade Holder, Test Pen, or Accessory Tools

- The gold blade holder has a rim around the outside that will, when cutting most materials, rest on the blade holder seat. Thus, when inserting the blade holder, loosen the front screw until the blade holder can drop down so that the rim is below the top part of the clamp:

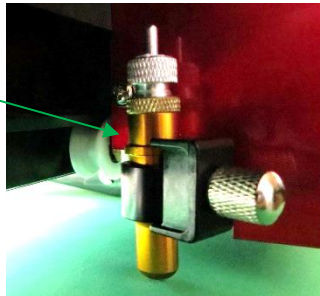
Top and bottom parts are the clamp



Rim of blade holder is resting on the blade holder seat

- The **Blade Height** is the distance from the tip of the blade to the top of the material you are about to cut. Thus, in the photo above, you can see that there are several millimeters of **Blade Height** which is important for two reasons:
 - ◇ You do not want the blade dragging across the material when the blade holder is moving from the origin to the first shape to cut (or between shapes).
 - ◇ More force is applied when there is a drop distance for the blade holder to start cutting. This is also referred to as “punch room” and provides more consistent cutting across the width of the machine.
- When cutting a very thick material, such as 2 mm craft foam, it is recommended that the blade holder be pulled upwards before tightening the front screw so that the rim is touching the underneath of the clamp:

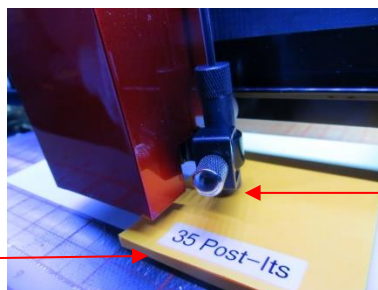
Rim of the blade holder is touching the underside of the clamp



IMPORTANT: Only install this way when cutting very thick materials!

- When using the test pen or an accessory tool without a rim, you'll need to insert the tool using a spacer on top of the material. A stack of 35 Post-It notes or 35 sheets of regular copy paper work well.
 - ◇ The recommended method for loading the test pen or another accessory:
 - Place the spacer on top of the material, with the material loaded into the Skycut.
 - Loosen the screw on the blade holder seat and insert the tool so that the tip of the tool is touching the top of the spacer:

Spacer is on top of material which is on top of mat



Pen tip rests on top of the spacer

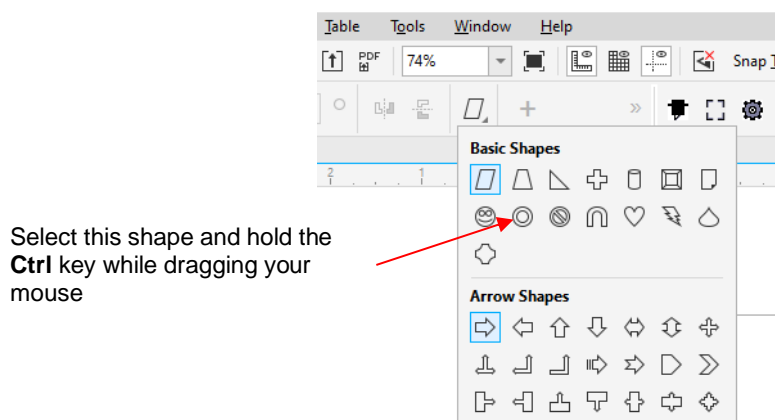
- Now tighten the front screw carefully making sure you are NOT pushing down on the blade holder seat. Once tight, remove the spacer. You should feel the tool gently scratching the top of the spacer.
- This distance will provide the tool some “punch room” to give extra force and more consistent results.

2.01.4 Adjust the Speed, Force, and Number of Passes Based on the Material and Shapes

- Using correct cut settings is equally important as the type of blade, blade length, and blade height. Refer to *Section 2.03* for details about each setting.

2.01.5 Perform Test Cuts!

- You have two options:
 - (1) Perform the built-in test cut on the Skycut itself using the **TEST** button on the control panel.
 - (2) Select any basic shape and size it to be around 0.3" – 0.5" (~ 8 mm – 13 mm):
 - I personally like using a design with an internal shape, such as a ring. You can then easily see if the blade is cutting into the mat (or into the backing sheet on rolled materials) when you lift out the cut shape and observe how the internal shape cut. There is a ring shape in the **Common Shapes** menu:



- There is a flow chart in *Section 2.09* which will help you determine which settings to change when test cutting a material.

2.01.6 Keep the Cutting Mat Clean and Sticky


- Press your materials evenly to the mat. Consider using a brayer both before AND after cutting. Repressing the material after cutting can greatly aid in weeding the cut shapes from the waste.
- When necessary, tape thicker materials to the mat to keep them from slipping during the cut.
- If you cut a range of materials, you might need more than one mat so that you can use stickier mats for certain materials.
- Refer back to *Section 1.08* for information on cleaning the cutting mat and adding more adhesive.

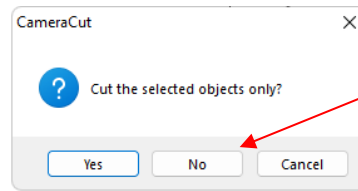
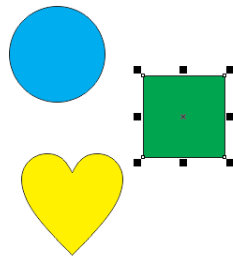
2.01.7 Don't Get Frustrated, Get Help!

- Besides having your own Skycut dealer as your first line of contact, there are other resources where you can ask questions and get answers. Utilize the resources listed in *Section 1.01*.


2.02 Choices Before Cutting

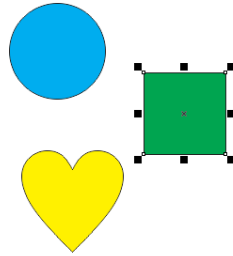
2.02.1 Controlling Which Shapes Will Cut

- There are several ways to control which shapes will be sent to cut:
 - ◇ If you wish to send everything, answer **No** after you click on the **Cut** icon .

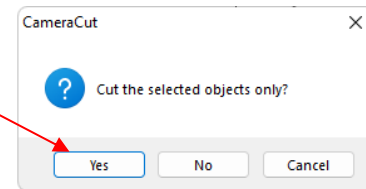


Click **No** and all three shapes will be sent to cut

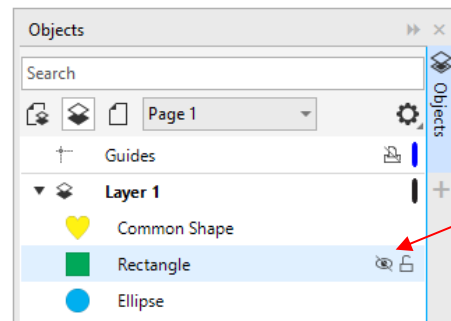
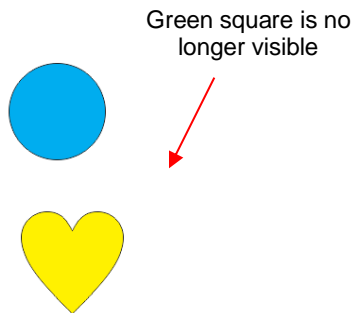
- ◇ Pre-select which shapes you wish to cut and answer **Yes** after you click on the **Cut** icon :



Click **Yes** and only the green square will be sent to cut



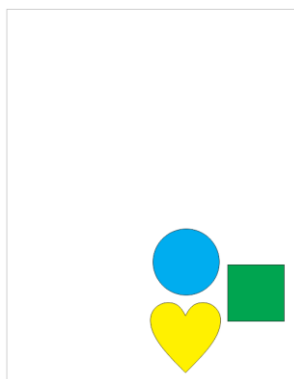
- ◇ **Hide** individual shapes in the **Object** window to prevent them from being sent to cut:



Click the eye icon next to the green square to hide it

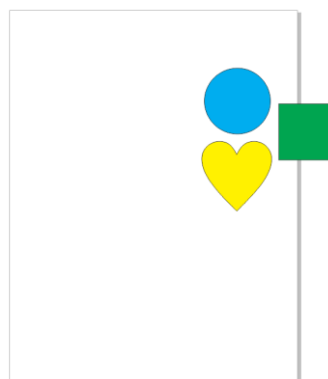
2.02.2 Controlling Where Shapes Will Cut

- In *Section 1.14*, it was first shown that regardless of where a project is located in Corel Draw, its bounding box will be moved to align with the origin you set with the blade tip. Thus, you do not need to feel restricted by the document boundaries on the screen:



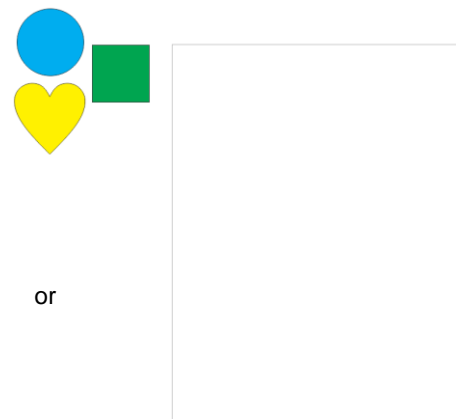
Project can be completely inside the document area

or



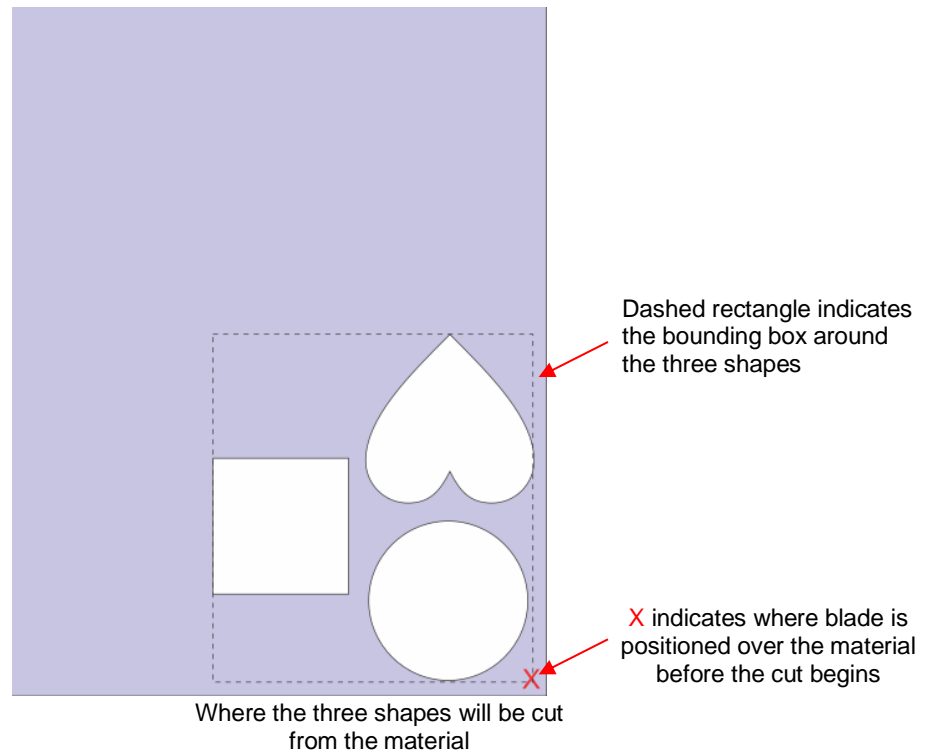
Project can overlap the borders of the document area

or



Project can be completely outside the document area

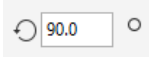
- In all three situations, the project will cut upside down, with respect to the cutter, and aligned with where the blade tip is located over the material before cutting (also referred to as the **Origin**):

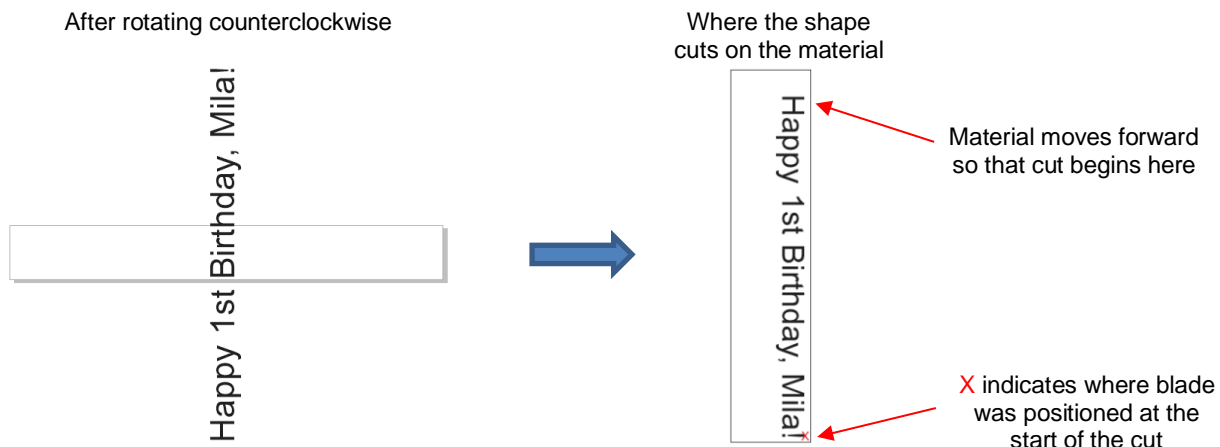


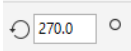
- It's also important to understand how long projects, such as signs, will be cut from the material relative to the setup in Corel Draw. For example, let's assume this is the sign to be cut:

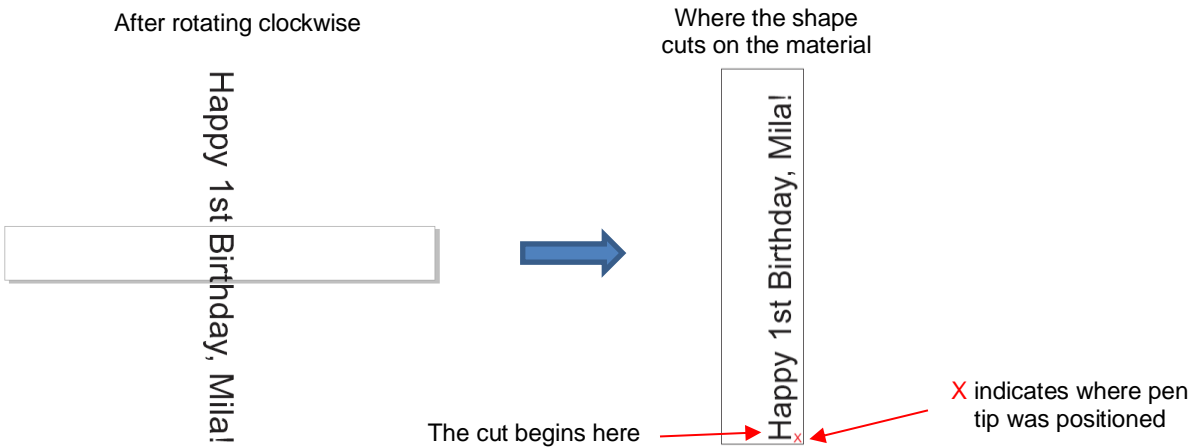
Happy 1st Birthday, Mila!

- Before cutting, the design needs to be rotated by 90° since it is too wide to cut right-to-left. You have two options for rotating: 1. Rotate counterclockwise and 2. Rotate clockwise. Use the following figures to understand what happens in the two situations:

- Rotate by entering 90° (counterclockwise): 



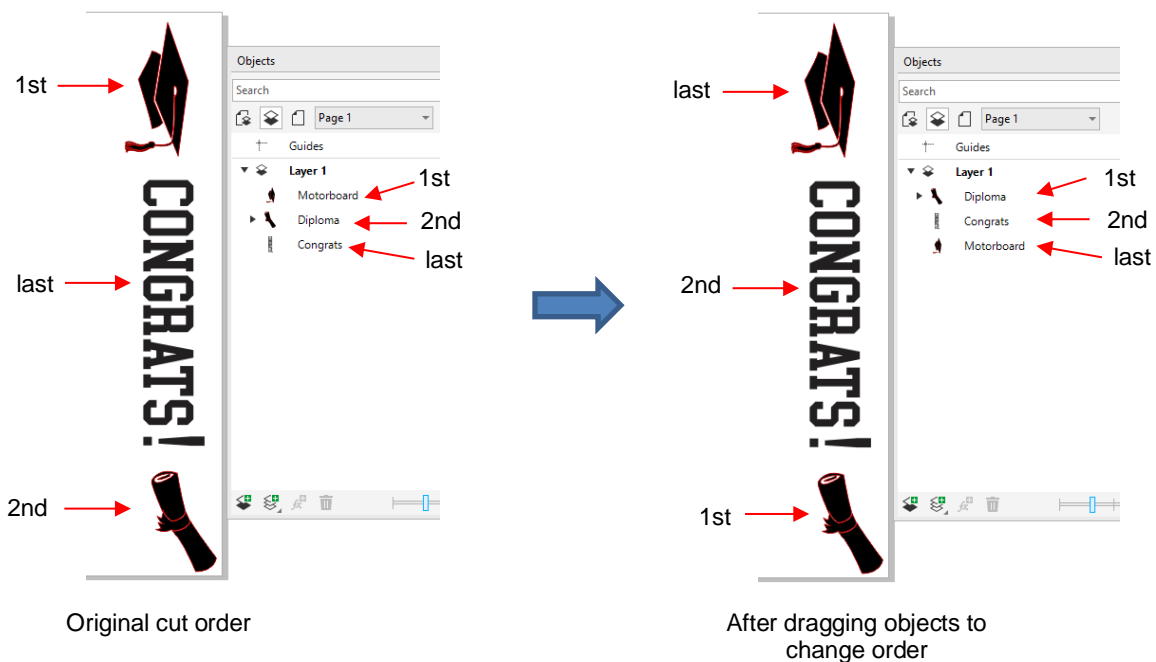
2. Rotate by entering -90° (clockwise):  (Corel Draw will automatically change -90° to 270°)



◇ It's a personal choice which of the two options you choose to use.


2.02.3 Controlling the Cut Order

- In certain situations, being able to change the order in which shapes are cut is important. It can reduce unnecessary movement saving time and improving accuracy.
- The order in which shapes cut is based on their order in the **Objects** window, from top to bottom. Thus, in the following example, the diploma will cut first, followed by the mortarboard, followed by the word *Congrats!* However, this also results in excessive movement in the Y direction, so the shapes will be reordered:




2.03 Cut Settings

2.03.1 Force

- **Force** (also called **Pressure**) ranges from 1 to 160 where the maximum of 160 represents ~2000g of cutting force. If it is set too low, the material cannot be cut. In fact, it is recommended that the minimum setting is always ~15 or higher. However, if it is set too high, you will get bad cutting (even incomplete cutting at times) and tearing of the material. Always perform small test cuts before cutting your actual project and make adjustments in order to get a clean test cut before proceeding with your larger cut.
- Dull blades will need more force than new blades, thus anticipate increasing the force over the life of the blade.
- When cutting materials that can use either blade, the 45° blade (red cap) will need a little more force than the 60° blade (blue cap), because of the extra contact with the material being cut and because the 60° blade is cut much thinner, making it a “sliver blade.”
- To change the Force, press the **Force/Speed** icon  and then set the **FORCE** to the desired level.

2.03.2 Cut Speed and Up Speed

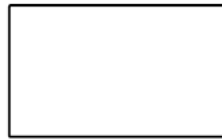
- **Cut Speed** (also called **Down Speed**) is how fast the blade travels while it is in the “down” or cutting position. **Up Speed** (also called **Travel Speed**) is how fast the blade travels while in the “up” position, such as when it is moving from the origin to the location of the first shape to cut or when moving from one cut shape to begin cutting another.
- The Skycut has 13 speed settings ranging from “snail’s pace slow” to “insanely fast.”
 - ◇ The settings from 1 through 4 are the slow speeds and should be used when cutting dense difficult materials, such as chipboard, craft plastic, styrene, and balsa.
 - ◇ 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 12 are the fast speeds and are useful for engraving, embossing, and drawing. You may, however, find that some materials will cut well at the faster speeds.
- **Cut Speed** is usually more important to control since the blade may need more contact time with a particular material. **Up Speed** can usually be left quite high although, for print and cut accuracy, it may need to be lowered if there are many shapes to be cut from a printout.
- On the Skycut control panel, the default setting is to have the **Up Speed** and **Cut Speed** the same and referred to as **SPEED**. This can be adjusted by pressing the **Force/Speed** icon  and then setting the **SPEED** to the desired level. In order to enter a separate **Up Speed** on the control panel, refer to [Section 1.15.1](#).

2.03.3 Knife Offset (aka Blade Offset)

- **Knife Offset** is the horizontal distance from the center of the blade shaft to the tip of the blade. A pen or engraving tool has an offset of 0 because the tip is centered with the center of the pen/engraving tool shaft. But a blade is different:




- If you set the **Knife Offset** to 0 when cutting with a blade, corners will be rounded. On the other hand, if it is set too high, bubbles will be cut on sharp corners:



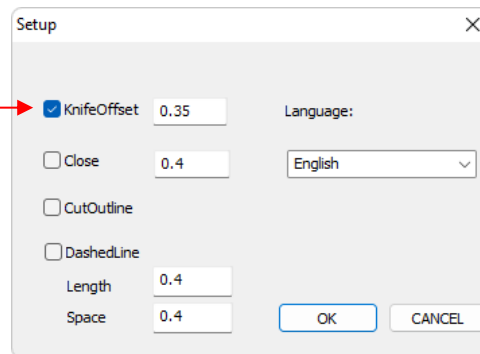
Offset is too low:
corners are rounded



Offset is too high: bubbles
appear at the corners

- Currently it is recommended that a **Knife Offset** of between 0.25 – 0.35 be used for each of the three types of Skycut blades. Any time you order new blades, check for the recommended **Knife Offset** on the packaging. However, it's not unusual for blades to be slightly off-spec. Based on cutting a rectangle or square, increase or decrease the **Knife Offset** in increments of 0.1 or smaller until the shape has perfectly square corners.
- To change the **Knife Offset** setting, press the **Set** icon  in Corel Draw:

Knife Offset should be enabled whenever a blade is being used




2.03.4 Close (aka Overcut)

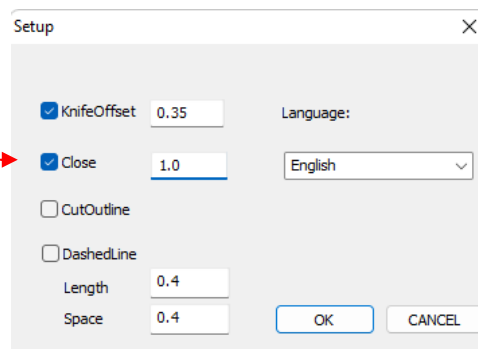
- Close** is related to **Knife Offset** in that it isn't needed when using a pen, embosser, engraver, and so forth, because the tips of those tools are aligned with the center of the tools themselves. However, leaving **Close** at 0 when using the blade holder will result in large shapes not quite closing:



Close is too low:
paths do not close

- In general, the blade type doesn't greatly affect the **Close** required. Try using 1.00 mm. In the event you cut a large closed shape, like an 8" circle, you may find that you'll need to increase **Close** to 2.00 mm.
- To change the **Close** setting, press the **Set** icon  in Corel Draw:

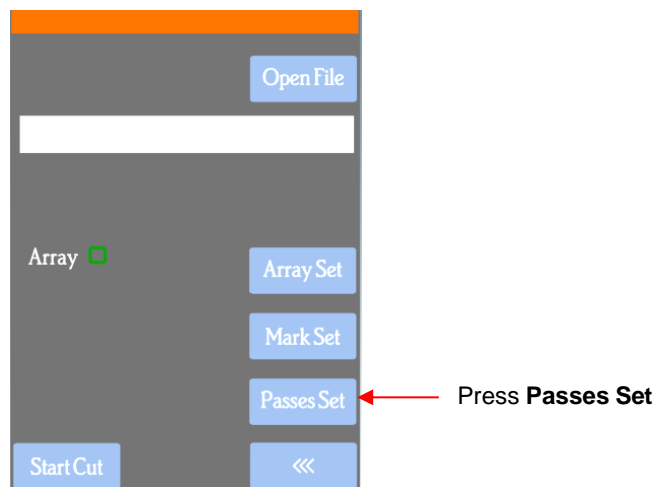
Close should be enabled whenever a blade is being used



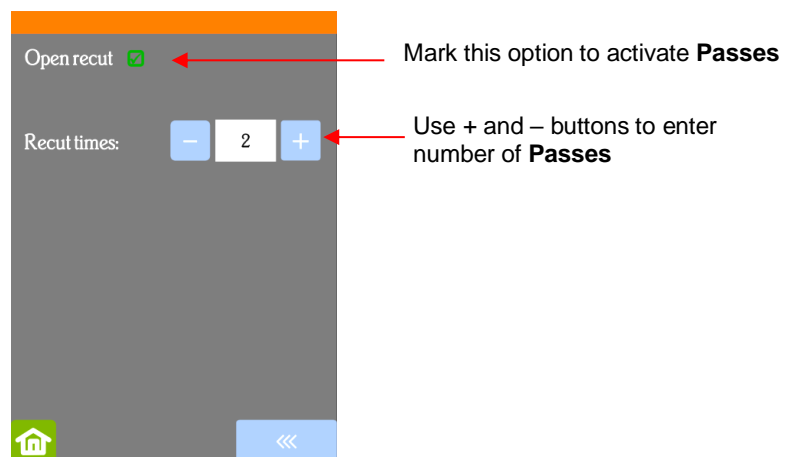
2.03.5 Passes

- The **Passes** setting causes each individual path to be cut the set number of passes before the blade moves to the next path to cut. This is better than just repeating the entire cut as each repeated pass is cut with the blade held down throughout the repeated passes, resulting in cleaner cutting.
- In general, when increasing **Passes**, the **Force** setting can be decreased. For example, you may find a cardstock that requires a **Force** of 55 to cut in a single pass will only need a **Force** of 45 if cutting in two passes.
- **Passes** is recommended in the following situations:
 - ◇ Cutting thicker denser materials, such as chipboard, where multiple passes allow the blade to progressively “carve” through the material
 - ◇ Cutting certain fibrous materials, such as fabric, where a second pass will ensure that all of the fibers have been cleanly cut
 - ◇ Cutting intricate or detailed shapes (such as script titles) from certain materials, such as heavy or textured cardstock, where a single pass may leave certain spots not cleanly cut
 - ◇ Cutting rhinestone template material where a second pass results in much cleaner weeding of the cut circles
- **Passes Set** is a function you activate on the control panel. Click on the **USB** button on the main screen and you will see a **Passes Set** button in the window which opens: Press it to open the **Passes** screen:

NOTE: If your screen does not have **Passes Set** displayed, please go to *Appendix B* for activation instructions.



- Press the **Passes Set** button to open the following screen:

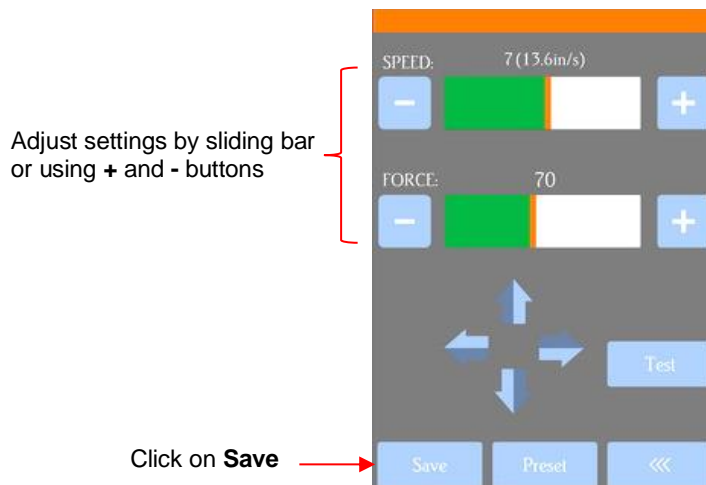


- **IMPORTANT:** The **Open recut** option will be disabled whenever the Skycut is first powered on. Thus, make a mental note (or, even better, put a Post-It note on your cutter) to turn this option on when using multiple passes.

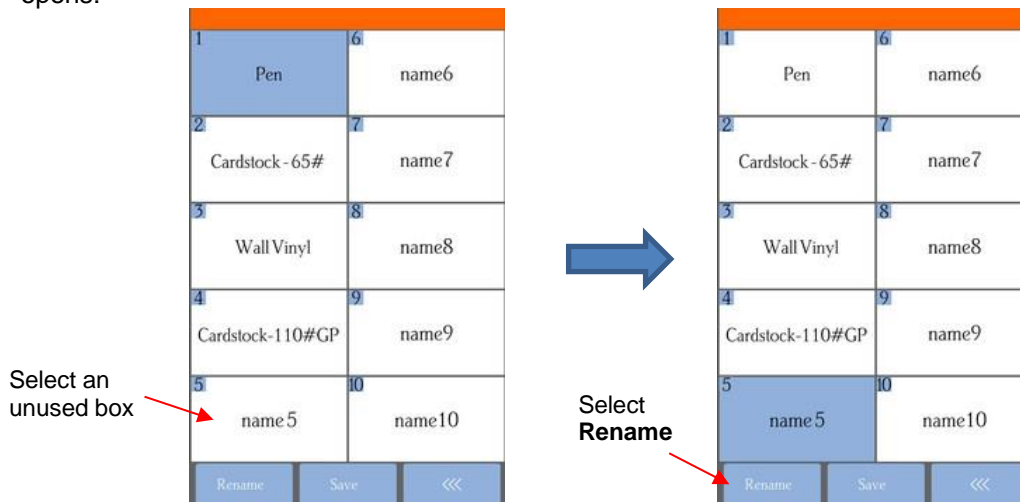
2.04 Presets

- Presets allow you to save your **Force** and **Speed** settings for a particular material. To create a preset:

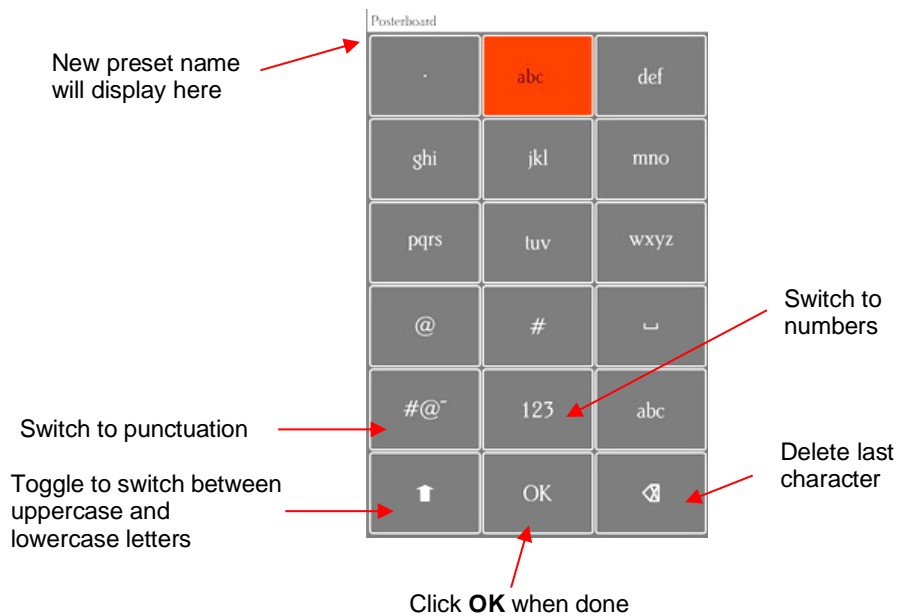
- ◇ Press the **Force/Speed** icon  to open the **Force/Speed** screen:



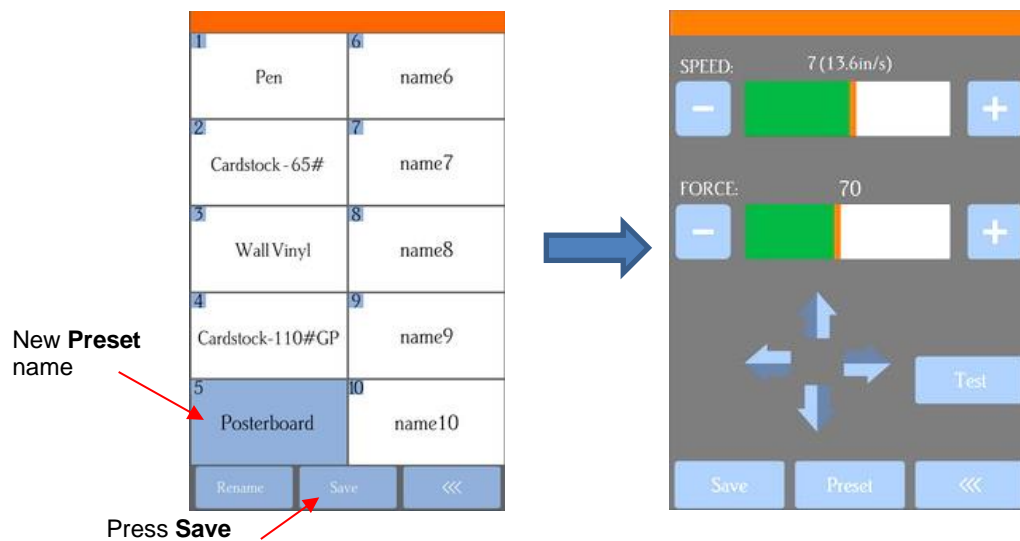
- ◇ Make the necessary changes to the **SPEED** and **FORCE** settings. Select **Save** and the following screen opens:



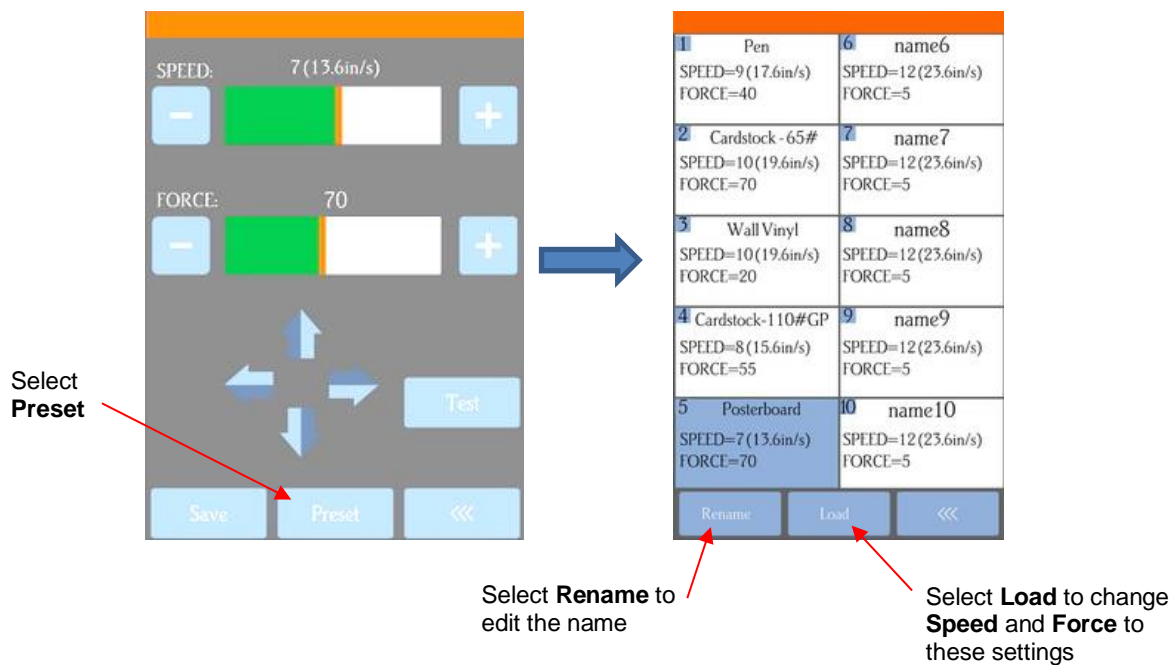
- ◇ Press one of the unused preset boxes, e.g., *name5*, and it will turn blue indicating it is highlighted. Select **Rename**.
- ◇ A window opens where you can enter the name for the new **Preset**. The characters are entered in the same manner as the **Password** entry window in *Section 1.13.2*. Note that there is a 15-character limit. Click on **OK** when done.



- ◇ You will now see the name of your new preset and you can press **Save** to add it to the saved presets with the **FORCE** and **SPEED** you set. You will be returned to the **Force/Speed** screen.

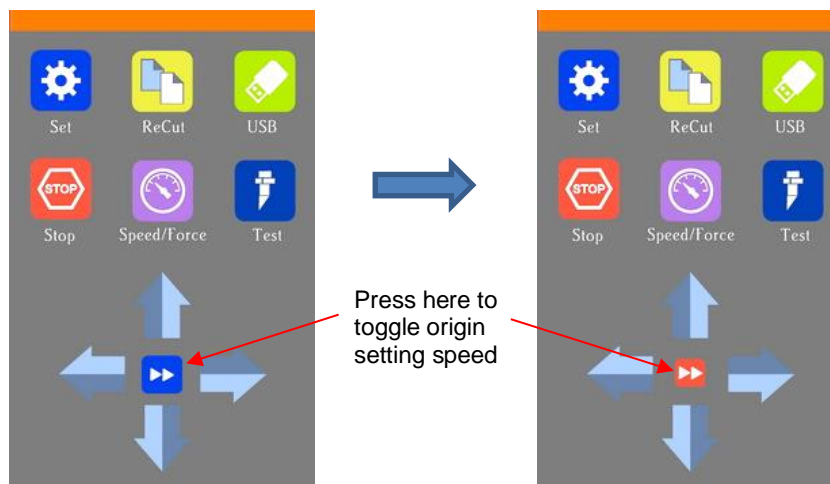


- ◇ To verify the preset or to select a different preset, press **Preset**. The **Preset** window opens where you can see all of the **Presets**, along with the settings for those presets. In that window you can also select a different preset. Then you can select **Rename** to edit its name or select **Load** to select that preset's **Force** and **Speed** into the **Force/Speed** screen:



2.05 Setting the Origin before Cutting

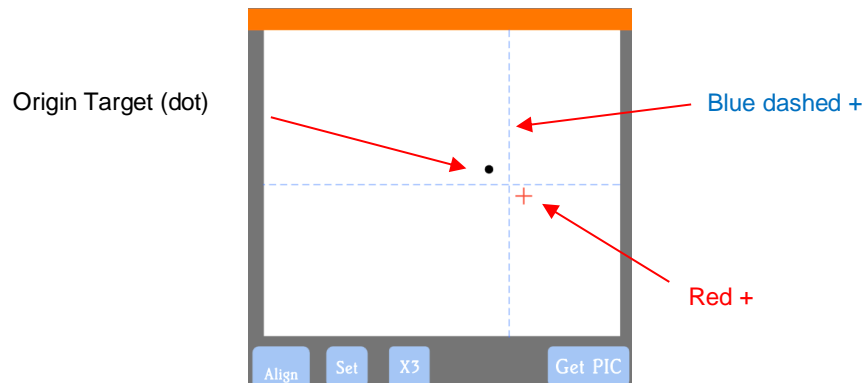
- Before you cut, you should check to see where the blade tip is located in relation to the material so that the shapes will cut in the appropriate location.
- IMPORTANT!** The Skycut V24 has a maximum cutting width of 24 inches. If you move the head too far to the left to begin the cut and your project is wide, you may exceed the left side limit and cutting will stop at that point with no option but to abort.
- To set the origin, press the arrow buttons on the main screen of the control panel. Remember that the middle button can be toggled between regular speed and a slow speed for more control:



- In general, you set the origin near the lower right corner of the material, as you did during your initial test drawing in *Section 1.14*.
- If you want to set a “return-to” origin in order to move the material or mat to check the cut before removing from the Skycut, refer to the instructions in *Section 1.15.1 (Show Point)*.

2.05.1 Setting an Origin Using the Camera

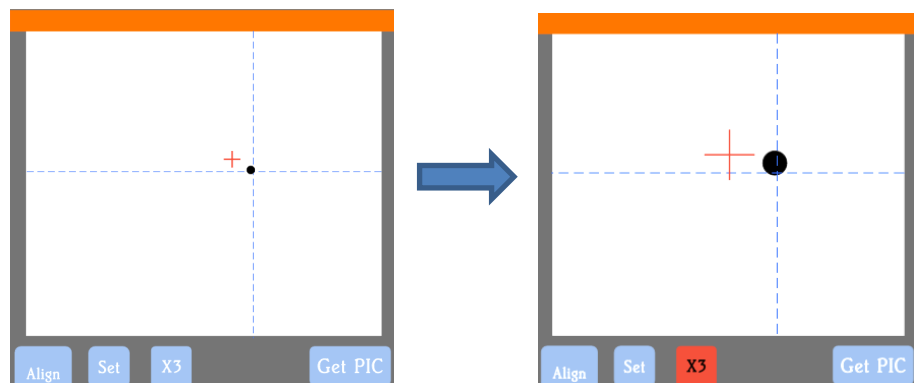
- In the event you need to set an extremely precise origin, the Skycut's built-in camera can be used:
 - (1) Go to *Section 3.03* and perform the camera calibration.
 - (2) Choose where you want the origin to be set. You'll need an "origin target" to use when the camera takes a photo. It can be a dot on your material, the corner of your material, the intersection of grid lines on the mat, etc. If you do choose the latter, make sure there's a way to clearly distinguish which intersection you want to use.
 - (3) On the Skycut's **Main Screen**, use the arrows to move the center of the blade holder roughly over the origin target. In this example, a dot will be used.
 - (4) Select **Set** and **Camera**. In the **Camera Screen**, press **OK**. A photo will be taken and displayed. If needed, press **X3** so that you are zoomed out and able to see the origin target (dot) in the photo:



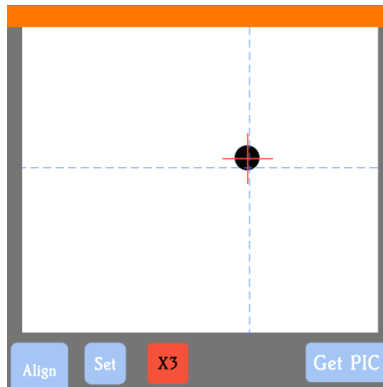
- (5) Press the center of the origin target in the photo so that the red + will be moved approximately over it:



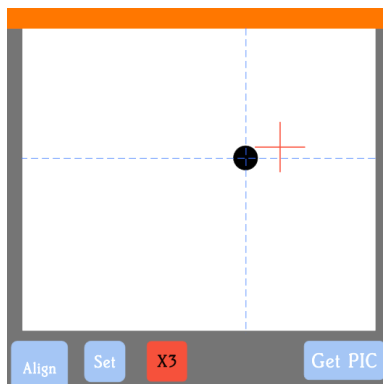
- (6) Press **OK**. In the new photo, the blue dashed + should be close to the origin target. Press **X3** to zoom in:



- (7) Use the arrow buttons to move the **red +** as close as possible to the center of the origin target:



- (8) Press **OK**. At this point the **blue dashed +** should be centered with the origin target:



- (9) Press the **Home** icon to return to the **Main Screen**. The head should move so that the blade holder is now located over the origin target and you can proceed with the cutting process.

2.06 Other Cut Setting Functions


2.06.1 Advance Mode

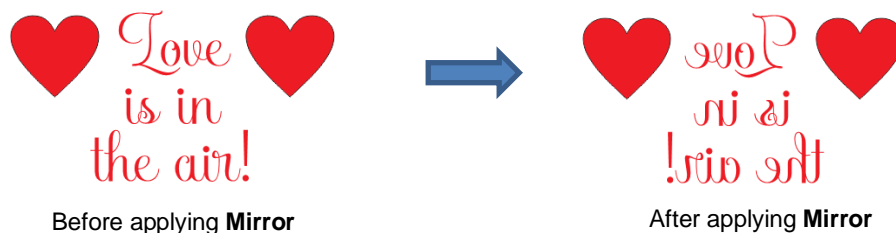
- The **Advance Mode** function allows you to control what happens at the conclusion of the cut. It can be opened by going to **Set>Advance Mode** on the control panel.




- ◇ **to start** will cause the blade holder to return to the origin after cutting.
- ◇ **to end** will cause the blade holder to advance forward to the end of the cut project.
- ◇ **to left** will cause the blade holder to move to the left of the cut project.
- ◇ The settings below the option are activated when choosing either **to end** or **to left**. You can enter a specific distance for the blade holder to advance. This is useful when cutting repeats of the same project because it allows for the origin to be set automatically for the next repeated cut.

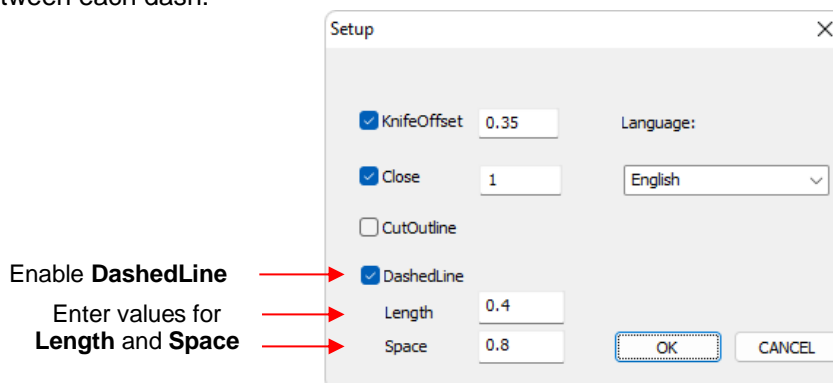
2.06.2 Mirror

- Mirroring an image before cutting is used in applications such as:
 - ◇ Cutting HTV in which the material is placed faced down so that the heat protection layer is not penetrated by the blade
 - ◇ Cutting vinyl to be applied to the inside of a car or home window but primarily viewed from outside of the window
 - ◇ Cutting certain non-homogenous paper materials in which cutting upside down yields cleaner results
- To mirror a design, select it and click the **Mirror Horizontally** icon  at the top or go to **Window>Dockers>Transform**, select the **Scale and Mirror** tab, click the **Mirror Horizontally** icon, and click on **Apply**:



2.06.3 Dashed / Perforated Cutting

- To convert from solid cut to dashed line cutting, click the **Set** icon  to open the **Setup** window and enable the **DashedLine** option. Enter preferred values for the length of a dashed cut and the spacing between each dash:



- ◇ Don't forget to disable this option before returning to normal solid line cutting.

2.07 Important Checklist Before You Cut!

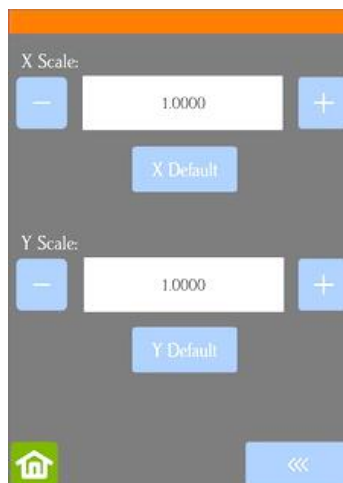
- Do you have your material on the mat and the mat inserted into the Skycut? (Note: materials with a backing sheet, such as vinyl and iron-on transfer do not require a mat for cutting)
- Have you selected pinch wheels positions that are roughly the same distance from the outside edges of the cutting mat (or material, if not using the mat)?
- Are the pinch wheels in use centered over grit shafts (located below the white rectangle labels)?
- Have you set the blade length/exposure based on the thickness of the material you are cutting?
- Do you have the blade holder firmly mounted in the blade holder seat?
- Have you set the **Origin** (location of the blade tip) at the bottom right corner of your material (or wherever you need the origin to be)?
- Have you set the **Force**? And the **Speed**? Do you need to do a test cut?
- Have you enabled both **Knife Offset** and **Close** in the **Set** window?
- Do you need to **Rotate** or **Mirror** the shapes before cutting?

2.08 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 Skycut.
- The calibration process can be conducted in inches, cm, or mm. Both mm and inches will be presented here. In general, it is recommended that mm be used, however, if you do not have a metric ruler, then you can use inches instead.
- Before beginning this calibration, make sure the **Scale** setting on the Skycut itself is still set to 1.0 and 1.0. On your Skycut control panel, go to **Set>Advanced Settings> Scale**. The following window opens where you can check the current **X Scale** and **Y Scale** values:

Verify **X Scale** and **Y Scale**
are both set to 1.0000

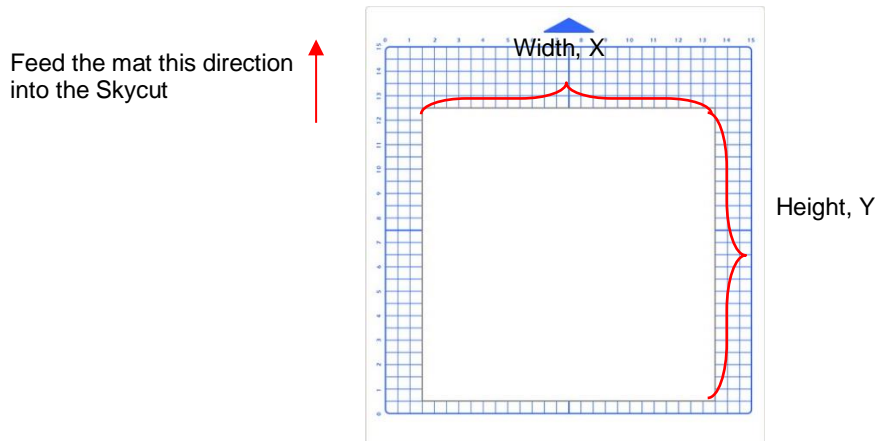
Use the **+** and **-** buttons to adjust
the numbers, if needed



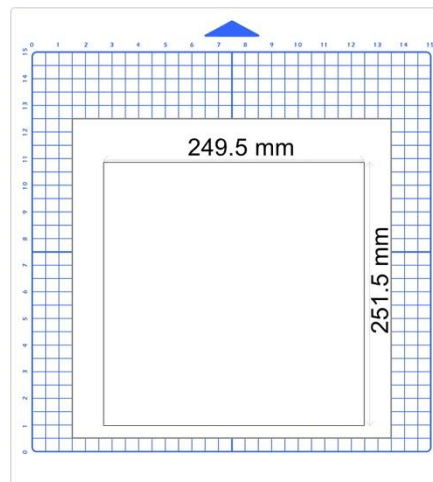
- Return to the main screen.
- For this calibration, you will need the following:
 - ◇ Large sheet of paper (the larger the test, the more accurate the calibration)

- ◇ Test pen
- ◇ Ruler
- ◇ Calculator (or access to the Internet)

- In Corel Draw, add a square using the **Rectangle** tool (left side panel). Resize the shape to dimensions that will be easy to remember, such as 250 mm x 250 mm (or perhaps 10" x 10", if working in inches).
- Draw the square on your paper using the test pen. Then, using your ruler, carefully measure the **Width** (the left-to-right length that drew) and the **Height** (the top-to-bottom length that drew). It's the same as shown below:



- Write those measurements onto your sheet:



- To calculate the **SCALE**, divide the *design dimension* by the *actual drawn dimension* times the current **SCALE**. Thus, if you draw a 250 mm square and it measures ~ 249.5 mm (left-to-right), then:

$$\mathbf{X \text{ SCALE}} = 250 \text{ mm} \div 249.5 \text{ mm} \times 1 = 1.002$$

- Repeat for **Y SCALE**. In this example, assume the Y side measured 251.5 mm so the calculated **Y SCALE** is:

$$\mathbf{Y \text{ SCALE}} = 250 \text{ mm} \div 251.5 \text{ mm} \times 1 = 0.994$$

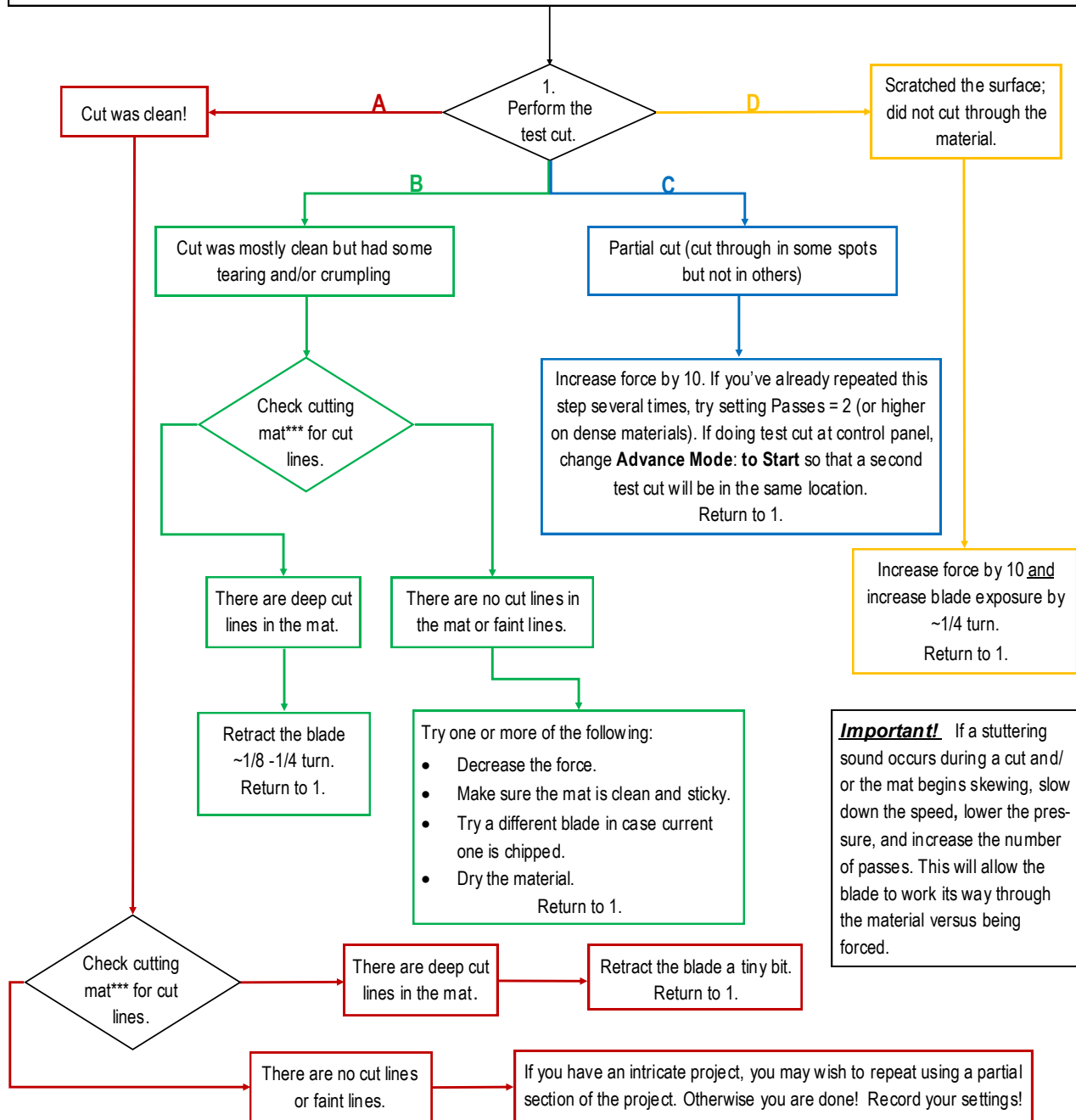
- Return to the **Scale** screen (**Set>Advanced Settings>Scale**) and use the **+** and **-** buttons to enter these calibrations:



- Draw the square again and measure to verify the square is now 250 mm x 250 mm.
- Once you have your calibration set, please record these values in your “little black book” in case you ever need to reset your Skycut to default settings or install a firmware update.

2.09 Test Cutting Flow Chart for the Skycut

- Select a small test shape. You can use the built-in test on the Skycut. However, a shape with an internal path, such as a ring, works better as it allows you to more easily check to see if the blade is cutting into the backing sheet or cutting mat.
- Start with conservative **Force** and **Speed**.
- Insert the blade holder as instructed in *Section 2.01.3*.
- On the control panel: **Set>Advance Mode**, choose **to End** or **to Left** and enter a small distance, such as 0.5" or 10 mm to space each test.
- Set origin in the lower right corner of the material.



*** or backing sheet, such as with vinyl

2.10 Settings Form for Cutting Materials

<u>Material</u>	<u>Material Brand or Source</u>	<u>Blade</u>	<u>Force</u>	<u>Speed</u>	<u>Blade Offset</u>	<u># Passes</u>	<u>Other Comments</u>

2.11 Suggested Settings for Various Materials

IMPORTANT: These settings should be used for the initial test cut only. Adjustments may be necessary based on the condition of the blade, variations in the material, humidity, condition of the cutting mat, blade tip height, etc. Refer to *Section 2.09* for a guide to adjusting settings for optimizing the test cut.

Note: Speed settings are based on the number in parentheses in the **Cutter Control** tab.

Material Type	Material Brand/Source	Blade	Passes	Force	Speed	Other Comments
Cardstock: light	Light 65 lb (~176 gsm) Recollections	R	1	35	8	
Cardstock: medium	Medium: Textured Bazzill	R	1	40	8	Blade tip ht = 40 Post It notes
Cardstock: heavy	Accent Opaque 270 gsm (100 lb cover)	R	1	75	5	
Chipboard: cereal box	0.018" (0.4 mm)	B	1	50	5	Alt 2 passes at 40
Chipboard	0.022" (0.5 mm)	B	2	75	5	
Chipboard	0.03" (0.76mm)	B	2	95	5	
Chipboard	0.06" (1.5mm)	B: left R: right	3: on both	75: on both	1: on both	Duplicated image- right side cut / half-blade exposure; left side cut at required blade exposure; Blade tip ht = 20 Post It notes
Clay	Use a clay press (or pastry machine) to make clay thin	B	1	11	10	Make sure pinch wheels will not cross over the clay. Blade holder mounted on top of black seat.
Copy Paper	Most any brand	R	1	30	8	
Fabric - Cork	embroiderygarden.com	B	2	40	5	Blade tip ht = 25 Post It notes; use an extra sticky mat and taped around edges. Brayered well.
Faux Leather	~ 1.2 mm thick from Art of Fabric Folding (on Etsy)	B	1	50	6	Extra sticky mat w/ material upside down. (mirror imagem, as needed)
Faux Leather	AOUXSEEM 1 mm (available on Amazon)	B	2	50	8	Extra sticky mat w/ material upside down. (mirror imagem, as needed)
Foam - Plain	2 mm	B	2	25	10	
Foam - Glitter	Foamy - 2 mm	R	2	15	10	
Magnet	Marietta Magnetics - 0.02" (0.5mm) (20 mil)	B	2	90	8	
Magnet	0.035" (0.9mm)	B	2	50	3	Alt 1 pass at 85
Magnet	Marietta Magnetics - 0.02" (0.5mm) (20 mil)	B	2	90	8	

Material Type	Material Brand/Source	Blade	Passes	Force	Speed	Other Comments
Tracing Paper	Helix Vellum Paper	R	1	30	8	
Vinyl - Heat Transfer	Siser EasySubli - with the mat	R	1	30	8	Cut on the mat
Vinyl - Heat Transfer	Siser Glitter - Gold - No cutting mat	R	2	35-40	7	2 passes makes it easier to weed, also slight scratch cut in the backing layer
Vinyl - Heat Transfer	Siser Glitter - Gold - with the mat	R	2	45-50	7	2 passes makes it easier to weed, also slight scratch cut in the backing layer
Vinyl - Wall (no mat)	Vinyl - Oracal 631 - yellow	R	1	25	8	
Vinyl - Wall (on mat)	Vinyl - Oracal 631 - yellow	R	1	30	8	
Vinyl - Waterproof	Papilio	R	1	30	8	

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- The latest updates to these settings can be found [at this link](#).

3. Print And Cut (Contour Cut)

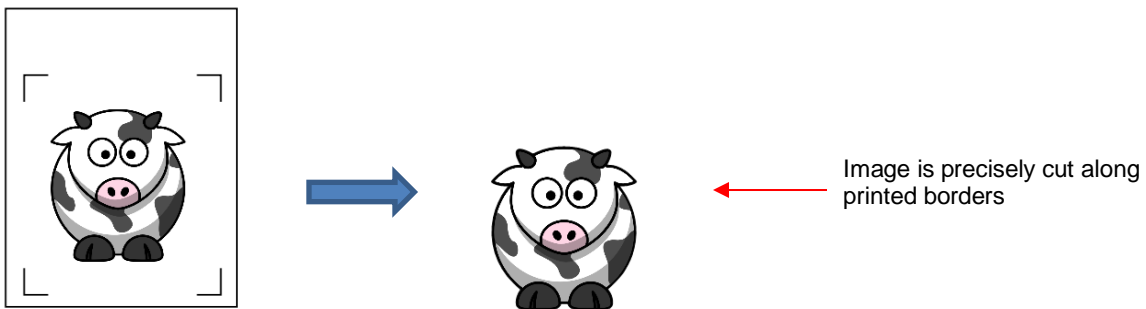
Video

3.00 Quick Reference for Chapter 3

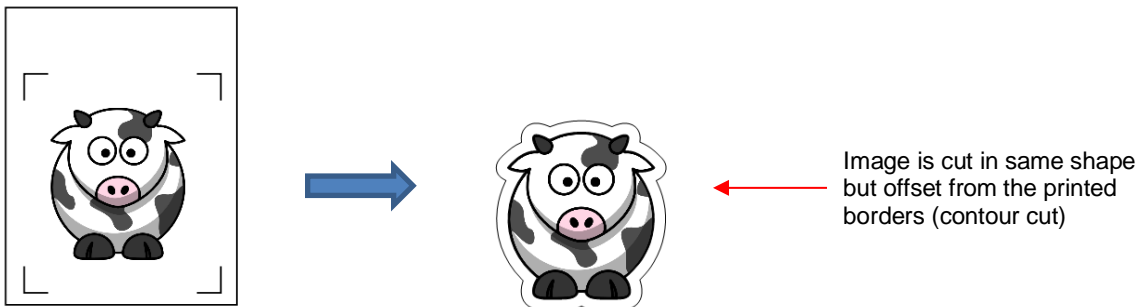
- How to calibrate the camera: *Section 3.03*
- How to set up a contour cut: *Section 3.04*
- How to adjust the camera calibration: *Section 3.05.1*
- How to use other registration mark settings: *Section 3.06*
- Troubleshooting inaccurate print and cut results: *Section 3.05*

3.01 What Is a Print and Cut (PNC)?

- The print and cut process (also called PNC and contour cutting) involves printing an image from Corel Draw to any printer you own and then, with the aid of the Skycut's camera, have the image or images cut out with perfect precision. Below are three typical kinds of print and cut applications but there can be other kinds.
 - ◇ Cuts along the actual borders of the printed image(s):



- ◇ Cuts outside of the borders but follows the shape(s) of the printed image(s):



- ◇ Cuts follow a different shape from that of the printed image(s):



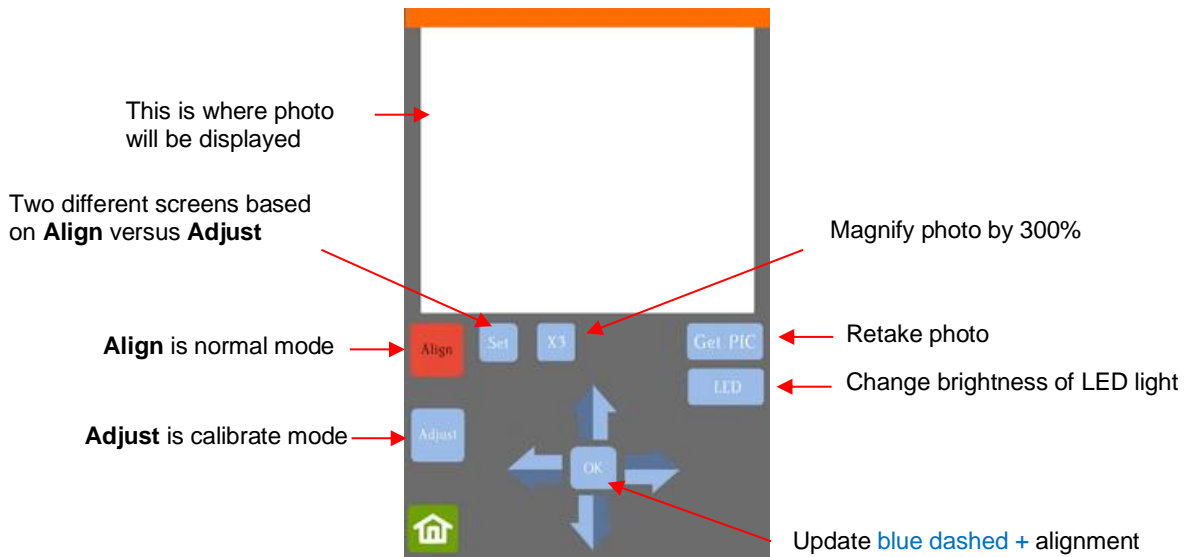
3.02 What is a PNC Calibration?

[Video](#)

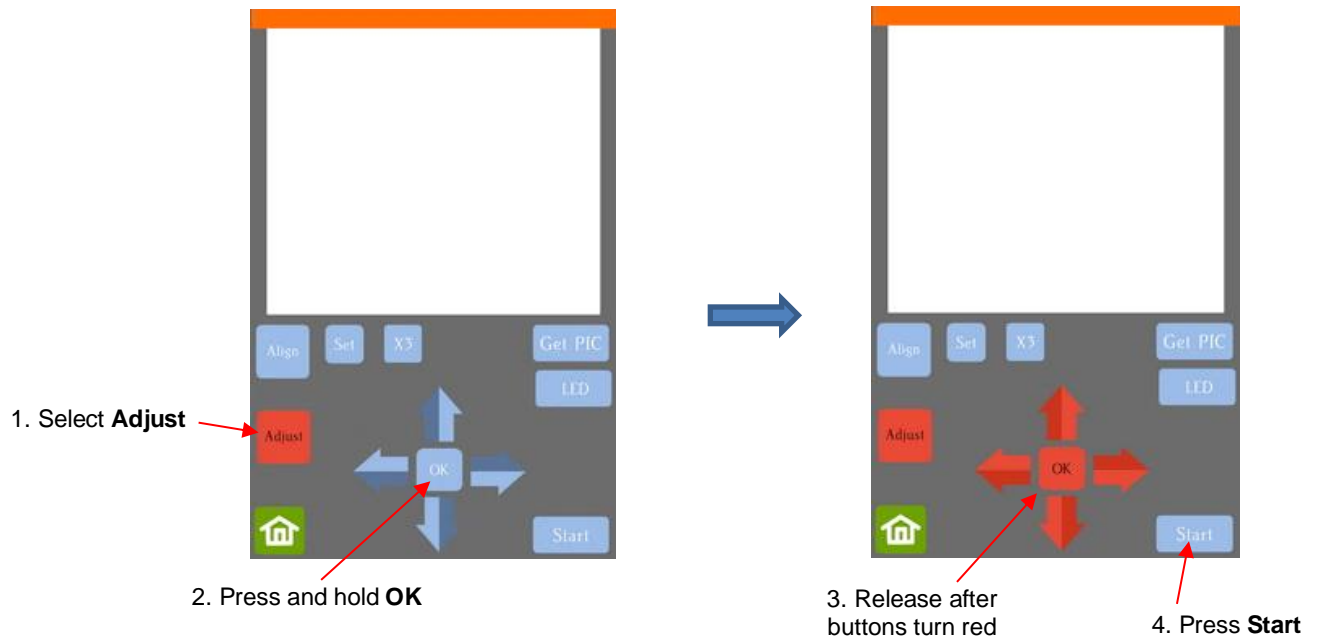
- In order to get precise PNC results, you must calibrate the camera. This is nothing more than letting the Skycut know how far away the camera lens is located relative to the tip of the blade. Because the camera is manually installed inside the blade carriage, the distance from the camera's center to the tip of the blade will vary from one Skycut to the next.
- This calibration only needs to be done one time. If you have travelled with your Skycut or it's been bumped fairly hard, you might want to run a test to make sure your calibration hasn't changed. It's also recommended that you check your calibration after any firmware updates are installed.
- The process, which is conducted through the control panel involves:
 - (1) Having the Skycut draw a test shape. At that point the camera takes a photo and displays it on the control panel, along with a red + and a large blue dashed +.
 - (2) Aligning the red + with the center of the test shape display several times until the blue dashed + is centered with the test shape.

3.03 Camera Calibration Procedure

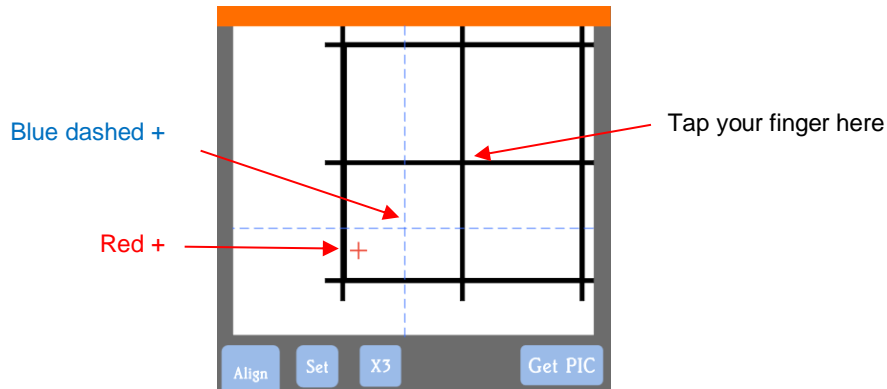
- You need the following items for this calibration:
 - ◇ Sheet of paper
 - ◇ Test pen that came with your Skycut
- (1) Insert the test pen into the Skycut. Place the sheet of paper into the Skycut. You can use the cutting mat to hold the paper or insert the paper directly.
- (2) Move the test pen over the sheet of paper. ***IMPORTANT:*** For all camera applications, make sure the starting origin is at least 3 inches from the right end cap so that the camera has room to move to the right to take a photo.
- (3) Select **Speed/Force** and set **SPEED** to ~ 8 and **FORCE** to ~ 30. Click on **Test** to verify that a square is clearly drawn. If it is too faint, increase **FORCE** as needed and repeat.
- (4) Move the pen an inch or two away from the test so that there is room for the calibration shape to be drawn.
- (5) On the **Main Screen**, press **Set** and then **Camera**:



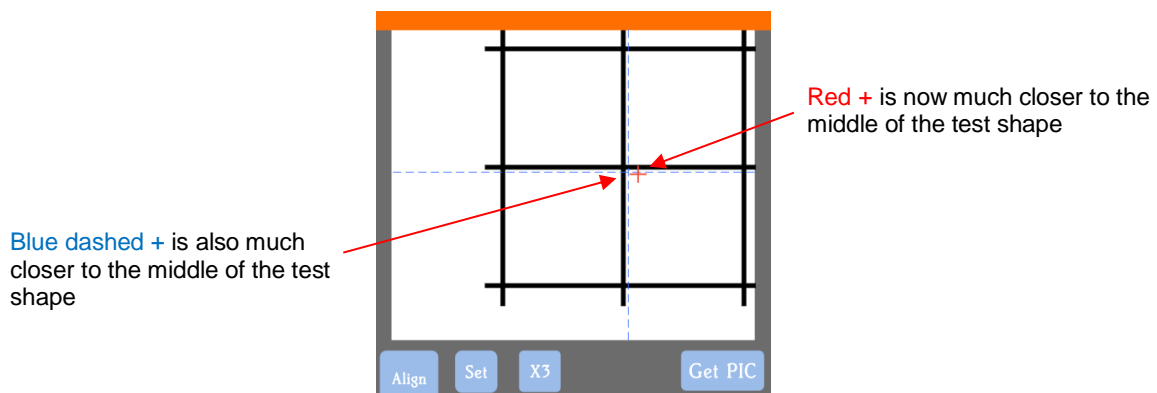
- (6) Press **Adjust** to switch to calibrate mode. Press and hold the **OK** button for several seconds until it and the arrows around it turn red:



- (7) 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. If you cannot see the test shape clearly, press the LED button once so that it reads LED 50% and press the **Get PIC** button. You should see three items in the photo: the test shape that was drawn with the pen, a red +, and the blue dashed +:

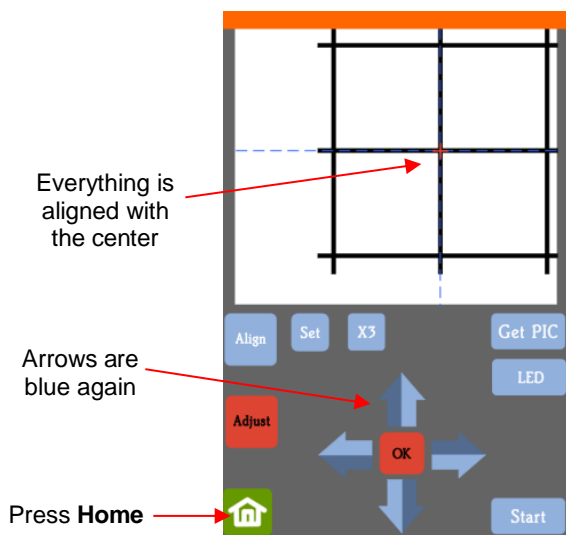


(8) Tap your finger near the middle of the drawn test shape. This will move the red + to that location:



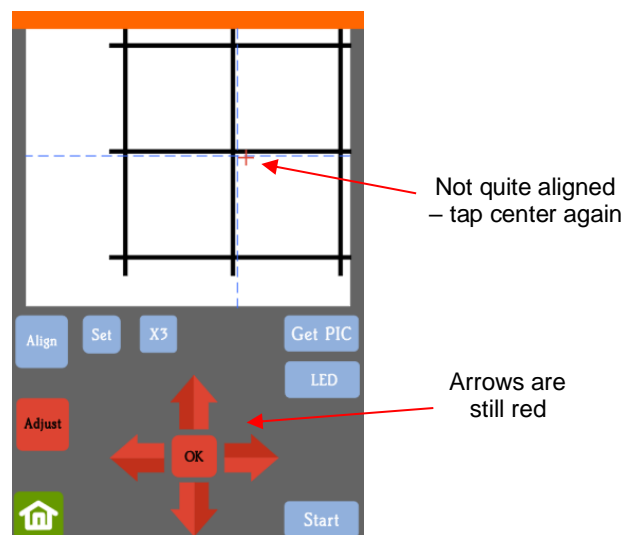
(9) Press **OK**. A new photo will be taken and one of two things will happen:

- ◇ **Situation 1:** The red + is so close to the center that the Skycut 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.
- ◇ **Situation 2:** The red + and the blue dashed + are still not aligned and the arrows around the **OK** button are still red. 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.



Situation 1

versus



Situation 2

- (10) Once the alignment is in place and the arrows have turned back to their original color, press the **Home** button and then press **Stop** on the **Main Screen** to save the calibration and conclude the process:



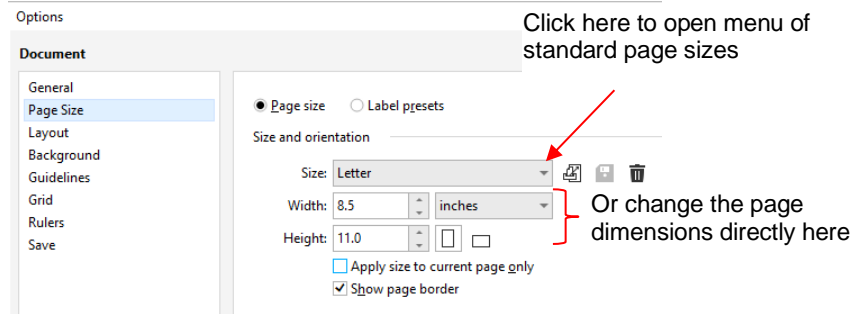
3.04 Performing a PNC from Corel Draw **Video**

3.04.1 Summary of Steps

- Here are the typical steps when performing a PNC application:
 - ◇ Prepare the image(s) that will be printed which can include the following:
 - An imported raster image such as a JPG or PNG or BMP file
 - A vector image (either imported or designed in Corel Draw) that will be printed but not cut
 - Text that will be printed but not cut
 - ◇ Prepare the cut lines which can include:
 - The resulting cut lines from tracing imported raster files.
 - A contour cut around the outside of the traced image.
 - Any other vector shapes, either imported or designed in Corel Draw.
 - ◇ Print the project, after selecting reg mark properties, location of project on the page, and printer options.
 - ◇ Perform a test cut so that you know the best cut settings to use for the printed material. This test cut can often be performed on the printout itself if there is room in the waste area of the project.
 - ◇ Perform the cutting process.

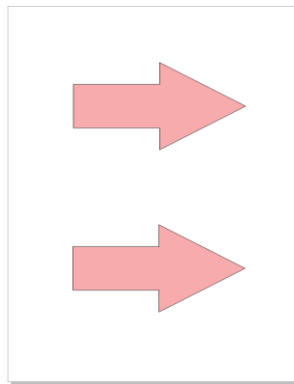
3.04.2 Step-by-Step Simple PNC Project

- (1) While it's not a requirement, it can be helpful in designing if the **Page** dimensions match the printout size you plan to use. For this tutorial, **Letter** size (8.5" x 11") will be used. But you can use much larger sizes, if you have the ability to print in those dimensions.
- (2) To change the **Page** dimensions, go to **Layout>Page Size**:

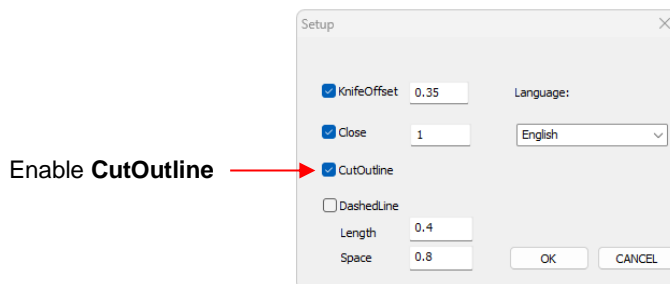


(3) For a sample project, add two arrows to the **Page** using the same method as presented in *Section 1.14*. Arrows are excellent shapes to use because:

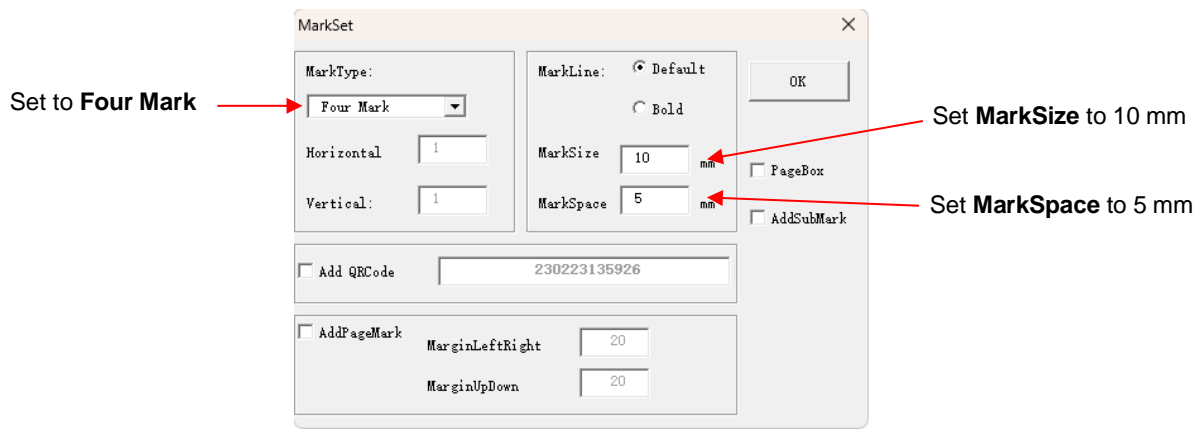
- ◇ They have both horizontal and vertical lines to use in checking for calibration accuracy
- ◇ They have a distinct orientation, thus make sure both arrows point the same direction
- ◇ Having two arrows allow you to verify both will cut with the same accuracy



(4) Click on the **Setup** icon  and enable the **CutOutline** option:

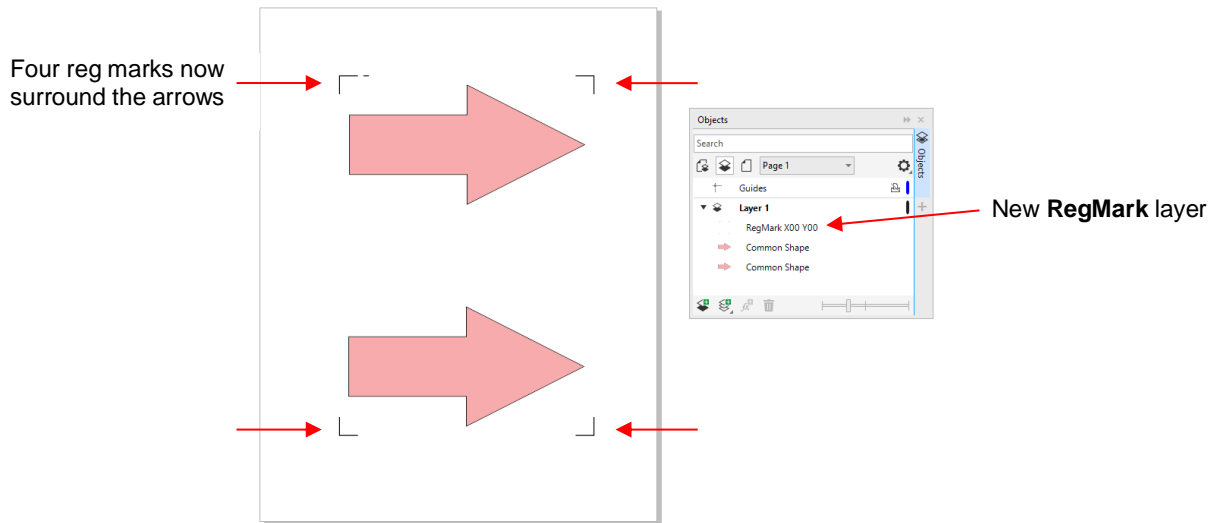


(5) Select all of the cut lines and click on the **AddMark** icon  to open the **MarkSet** window. Note the 3 settings to verify:



◇ In other applications, alternative settings can be used. Please refer to *Section 3.06*.

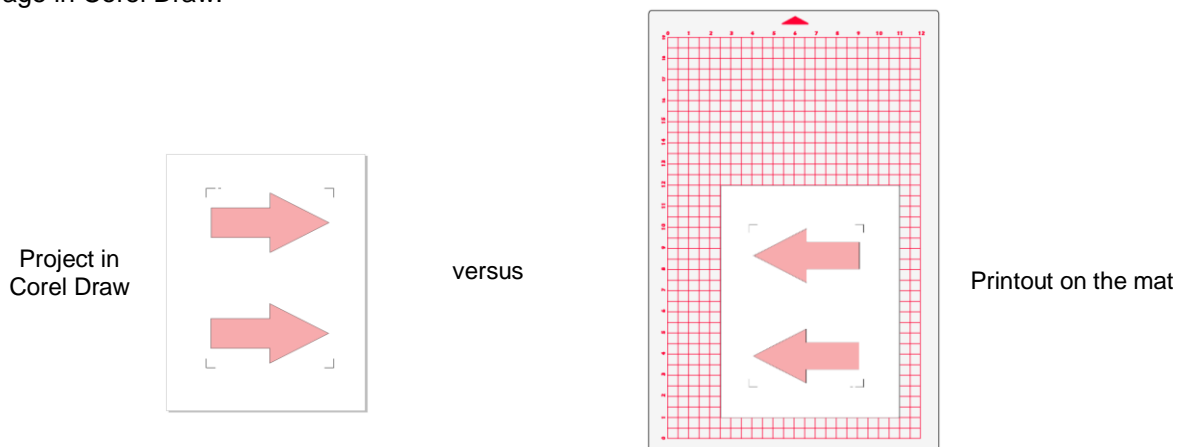
(6) After clicking on **OK**, a new **RegMark** layer is created:



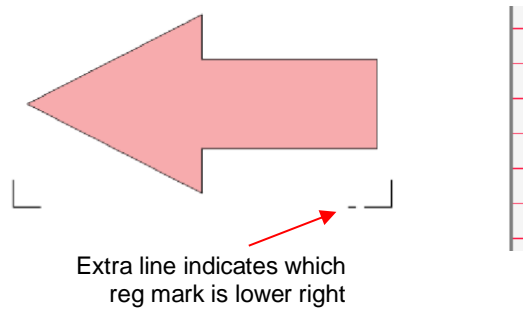
(7) Proceed to print the project. If there are any cut lines you do not want printed, hide those layers on the **Objects** panel before printing.


(8) Prepare for cutting as follows:

- ◇ If the blade will be fully cutting the printout, use the cutting mat to protect the cutting strip on the cutter.
- ◇ As was shown in *Section 1.14*, the printout needs to be upside down relative to how it appears on the page in Corel Draw:



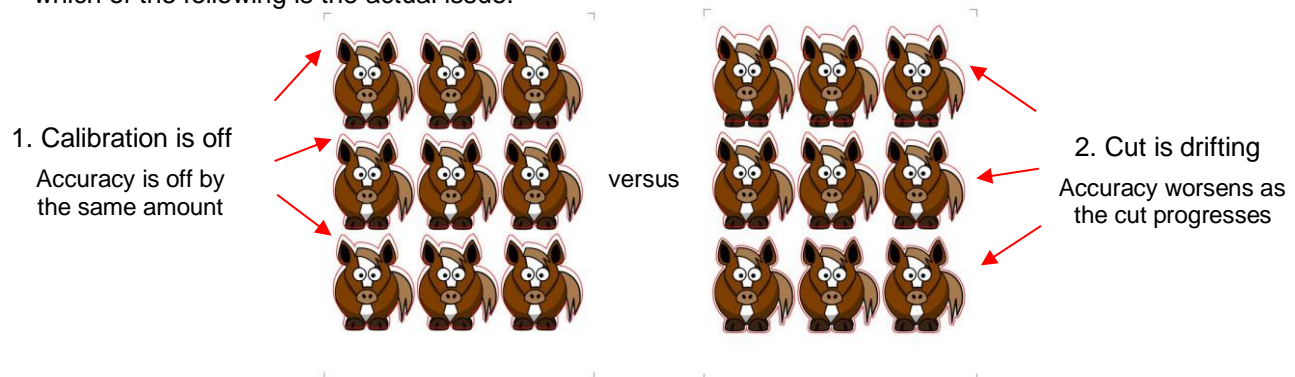
- ◇ Note that there's an extra little line next to the reg mark to indicate which one should be at the bottom right corner, where you will align the blade tip before beginning the cut:



- ◇ The printout should be somewhat straight, relative to the cutter. The alignment doesn't need to be absolutely perfect but close enough that it will allow for a faster and, of course, successful detection by the camera.
 - ◇ Insert the blade holder and perform a test cut, as needed, adjusting the cut settings so that a very cleanly cut test square is obtained.
- (9) Move the blade holder so that the tip of the blade is very close to the corner of the lower right reg mark.
 - (10) In Corel Draw, select the cut lines and the **RegMark** layer, click the **Cut** icon , and click on **Send to Cut**. The scanning process will begin. Once all 4 marks are photographed, the shapes will be cut.
 - (11) To perform a print and cut project from the control panel using a USB flash drive, follow the instructions in *Section 1.13.4*.
 - (12) After testing this process, be sure to check out other sections to understand additional options, such as:
 - ◇ Diagnosing inaccurate results – *Section 3.05*
 - ◇ Adjusting camera calibration settings, if needed – *Section 3.05.1*
 - ◇ Changing registration mark settings – *Section 3.06*

3.05 Inaccurate Cuts

- If you're having issues with alignment of the cut shapes with the printed images, check carefully to see which of the following is the actual issue:

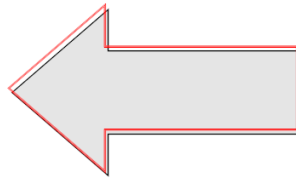


- (1) Are all of the shapes off by the same amount in the same direction? That's probably the calibration but do NOT keep repeating the auto-calibration thinking you'll get different results. Refer to *Sections 3.05.1* and *3.05.2*.

- (2) Are the initial cut shapes accurate but, as the cut progresses, the shapes become more and more off? That's called drifting and is unrelated to the calibration. There are various factors which can cause drifting as covered in *Section 3.05.3*.

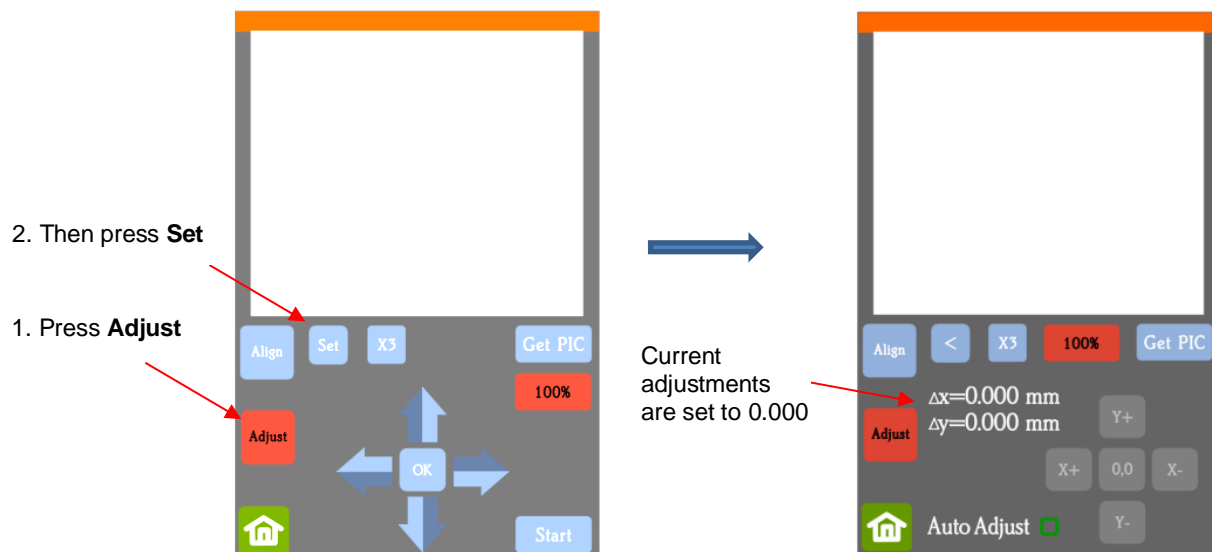
3.05.1 Tweaking the Calibration Values

- If you find your print and cut results are slightly off in the same direction with each cut, you can adjust the values being used versus attempting to recalibrate from scratch.
- To do this, go back to an easy-to-cut material like copy paper and use the two arrow shapes for the test. This makes it easier to know if you need to adjust in the **X** (left-to-right) direction or in the **Y** (up-and-down) direction.
- After performing the print and cut, use a mm ruler to measure how far away the cut lines are from the printed lines. If you used an arrow, focus only on the horizontal and vertical lines, not the diagonal lines:

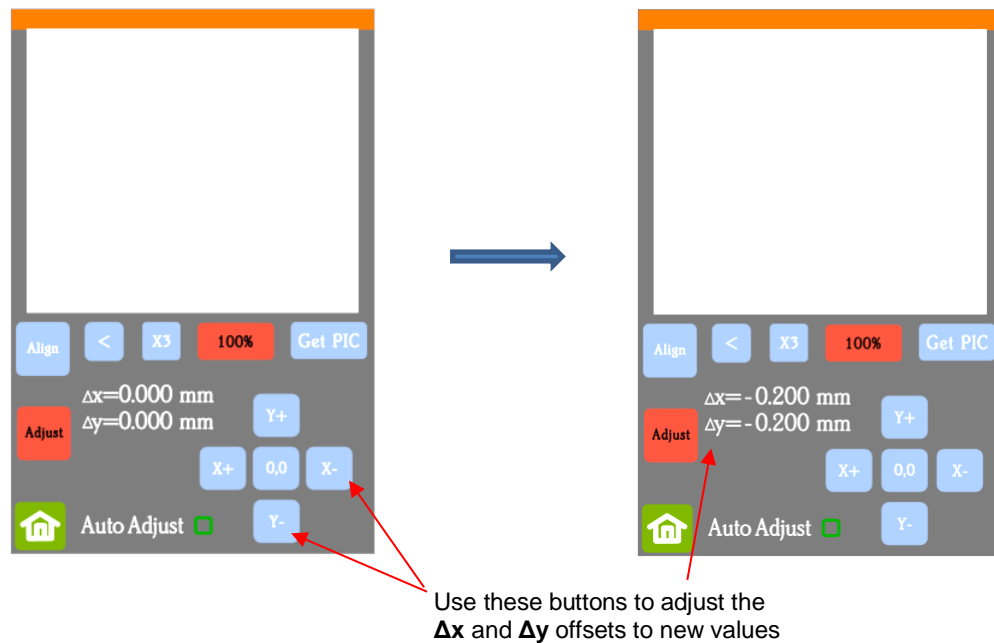


- ◇ In this example, the cut line (shown in red) is too high and too far to the left. Thus, you need the cut line to move down and to the right.

- On the control panel, change the **Units** to millimeters by going to **Set>General Settings** and choosing millimeters, as was shown in *Section 1.15.2*.
- Go to **Set>Camera** and click on **Adjust**. Then click on **Set** to open the **Adjustment** window:



- Press and hold your finger over **Δx** and **Δy** for several seconds until the other **X,Y** buttons light up.
- One at a time adjust **Δx** and **Δy** by pressing the **X+**, **X-**, **Y+**, and/or **Y-** buttons in the direction(s) you need the cut line to move. Try using 0.200 mm for a starting point:



- Once the values are set, press the **Home** button to return to the **Main Screen**. Test again to verify the cut line is better aligned with the printed shape. If the cut line didn't move far enough, try 0.3 mm instead. If the cut line overshot, back off to 0.1 mm instead. In some cases, you might need to adjust by ± 0.05 mm. But assisting many users over the years has indicated that within 0.1 mm is usually sufficient.

3.05.2 Inaccurate Tracings


- When tracing imported images, the resulting cut lines may not necessarily follow the original image, especially in tight spots. This can result in tiny bits of white appearing, suggesting the PNC wasn't accurate. Zoom in on the image so that you can see the trace line following the outline of the image. Compare by looking at the same spots where the cut didn't follow the image perfectly. This could be the cause of the inaccurate PNC. There are several ways of handling this situation:
 - ◇ Use Corel Draw's node editing tools to move the trace lines to more closely fit the original graphic.
 - ◇ Create an inset contour cut line to use for cutting instead of the original trace line.
 - ◇ Create a bleed by choosing **Cutting Contour + Bleed** in the **Create Cut Contour** window.
- IMPORTANT:** Another possibility is that the contour cut line was inadvertently shifted from the graphic to be printed. So, check to see if a misalignment may have occurred when you were moving or simply clicking on the design.

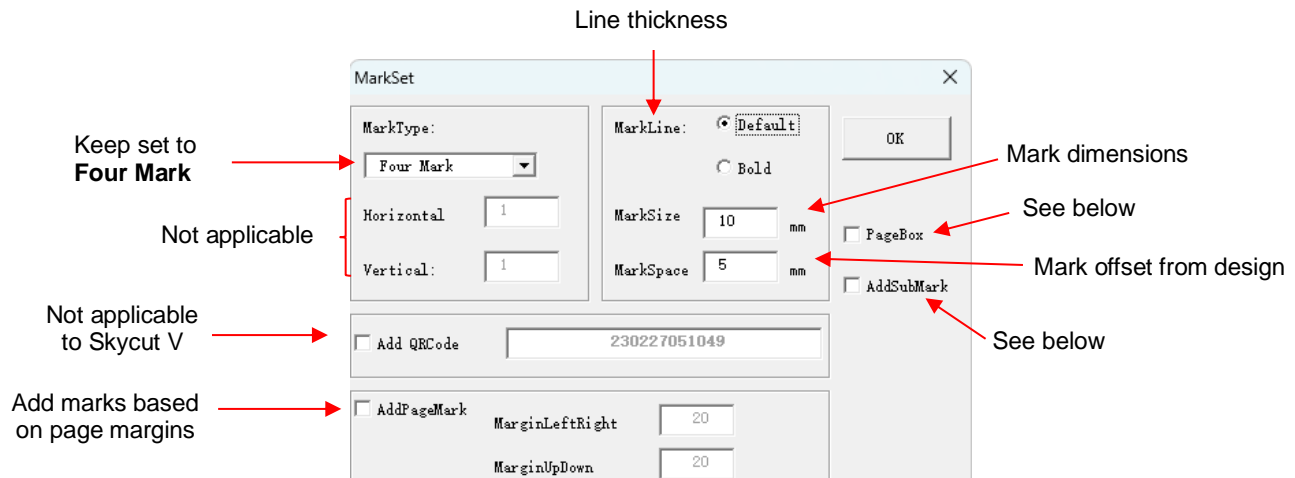
3.05.3 Incorrect Cut Settings

- If a PNC is not precise and the cause is not the calibration nor the alignment of the trace lines, then go through the following check list of other possible causes:
 - ◇ Try slowing down the speed. If the mat is moving numerous times, in and out of the cutter, a slight shifting can occur, especially at high speeds. On the Skycut, try a speed of 7 or lower.
 - ◇ Verify that the pinch wheels are still centered over grit shafts beneath.
 - ◇ If using a cutting mat, make sure you have the mat positioned so that there are two wheels approximately the same distance from the outer edges of the mat.
 - ◇ Make sure the blade isn't over-extended which can cause it to cut too deeply and drag the cutting mat.

- ◇ Make sure the bottom of the mat isn't sticky and the pinch wheels and grit shafts are clean and not sticky. Clean with a lint-free cloth and a small amount of isopropyl alcohol or Un-Du.

3.06 Registration Mark Settings

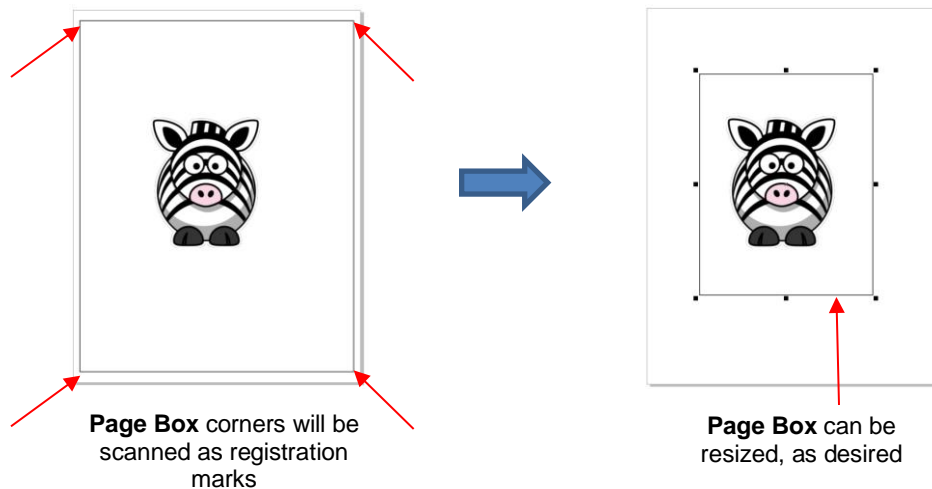
- The example presented in *Section 3.04.2* briefly showed one possible registration mark option. There are other settings in the **MarkSet** window which may prove useful in other situations:
- Select all of the cut lines in your project and click on the **AddMark** icon  to open the **MarkSet** window:



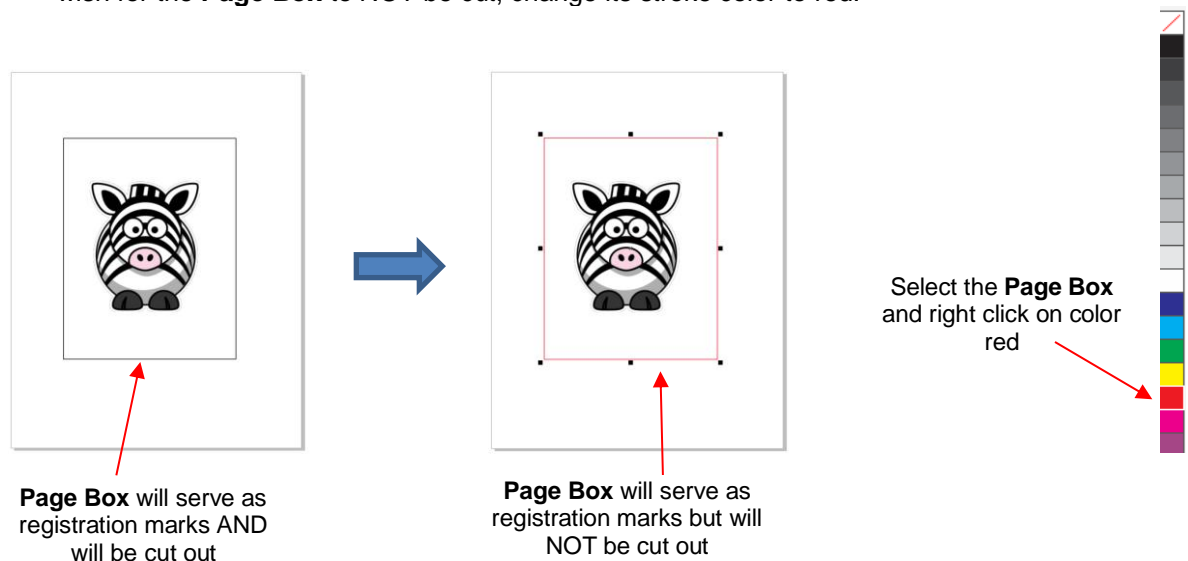
- Mark Type-** Leave set to **Four Mark** which indicates a total of four marks will be printed and scanned by the cutter (unless **PageBox** is enabled).
- AddPageMark-** Option to position page marks based on distance from page edges versus offset from the project. In this case, it is obviously important that the document dimensions in Corel Draw match the dimensions of the printout. See screenshot below **MarkSpace** bullet.
- MarkLine: Default** thickness is ~0.25 mm while **Bold** is ~0.5 mm. It is recommended that the **Bold** option be used so that the camera has a higher success rate in identifying the registration mark during the scanning process.
- MarkSize** is the width and height of each individual reg mark. The range is from 5 mm to 14 mm. You can choose whatever size you prefer but with smaller sizes, you need to be more diligent about loading your material straight and setting the origin near the corner of the reg mark.
- MarkSpace** is the distance from the boundaries of the design to the reg mark boundaries. If, however, **AddPageMarks** is enabled, this setting is ignored.



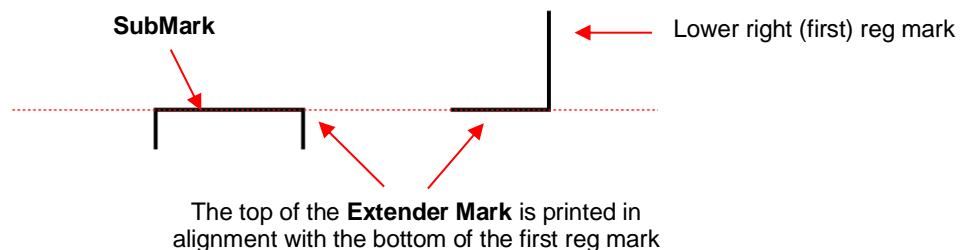
- ◇ **PageBox** can be used in lieu of the "L" shaped marks, if desired. Mark this option and a rectangle will be added to the document, offset from the outer edges. That rectangle can then be resized, as desired, and it's important to make sure it's within your printer's allowable margins:



- NOTE: This **Page Box** WILL both be used for scanning corner marks and will be cut out. If you wish for the **Page Box** to NOT be cut, change its stroke color to red:



- ◇ **Add SubMark (aka Extender Mark)** is a horizontal mark added to a contour cut printout and situated several inches (~ 65 mm) to the left of the lower right registration mark:



- ◇ After the first reg mark is identified the camera moves to the **SubMark** and takes a photo. It then compares the Y (up/down) location to that of the reg mark to determine if the two are in horizontal alignment with one another. The Skycut's firmware can then make a correction to take this into account. This results in fewer camera photo repeats if the printout is somewhat askew when loaded into the cutter.
- ◇ Note that while four **SubMarks** are printed, only the one closest to the first reg mark is used. The others are for other cutter brands/models that support this feature.

Appendix A Troubleshooting FAQ's

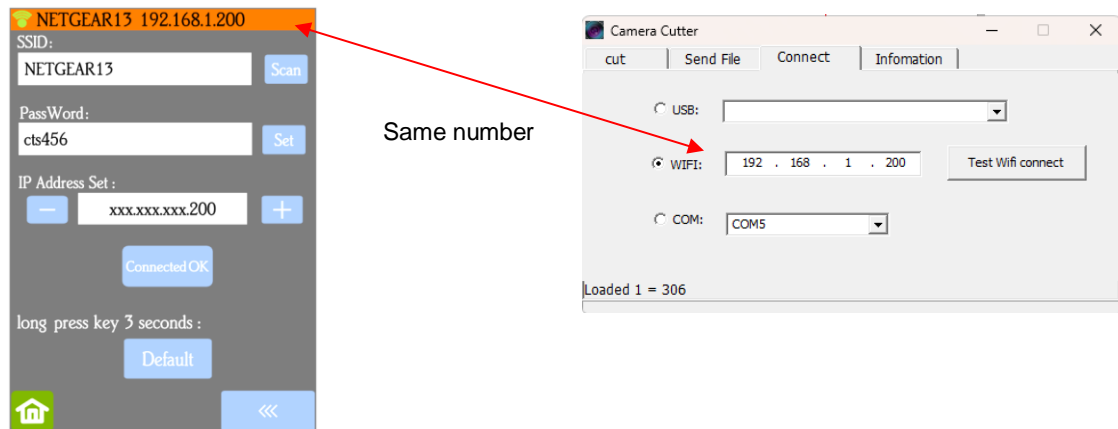
A1 Communication Issues

I cannot get the Skycut to power on.

- Make sure the power cable is securely plugged into the Skycut's port on the left side and securely plugged into a wall socket or a power strip.
 - If it still fails, check the wall socket or power strip with another device, such as a table lamp.
 - If you still cannot get the Skycut powered on, contact your dealer.
-

I cannot get Wi-Fi to work with my Skycut.

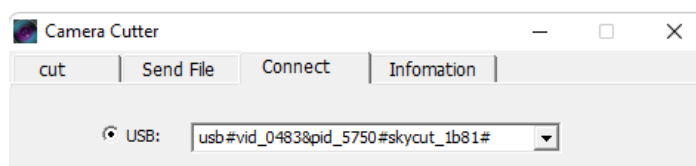
- Set the Skycut close to the router when performing the initial setup presented in *Section 1.13.2*. After establishing communication, you can test how far the Skycut can be located from your router.
- On the **Cut>Connect** tab, make sure you have **WIFI** selected and the **IP address** you've entered matches the IP address shown in the orange display on the Skycut:



- Make sure your computer is connected to the same router as your Skycut.
 - If the number you see on the control panel orange strip reads 192.168.16.254, you have NOT connected to your router. That is the default **IP address** for a stand-alone connection. You need to repeat the scan procedure and make sure you see the correct **IP Address** appear.
 - Some routers will not accept 200 or higher as an **IP Address** assignment. Try 151 instead.
 - Some routers assign the same name to both the 2.4G and 5G networks and because the Skycut's Wi-Fi chip only works on 2.4G, you might need to rename your 2.4G network to a different name.
-

I cannot get USB to work with my Skycut.

- Unplug/replug the USB cable at both the computer and at the Skycut.
- On the **Cut>Connect** tab, make sure you have **USB** selected and the connection contains the word "skycut" in it:



- Try a different USB port on your computer.
 - Try a different USB cable.
-

A2 Operating Issues

The control panel isn't responding very well.

- Press control panel icons with your finger and not your fingernail. You can also use a black rubber stylus.
 - Make sure the control panel is clean.
-

My mat is rotating when the Skycut starts to cut!

- Two pinch wheels need to be gripping the mat. Move the mat either left or right so that it is under two outer pinch wheels and the pinch wheels are aligned under white arrows. Refer to *Section 1.09*.
 - Make sure you are not trying to force the blade to cut too deeply and/or too quickly through a thick/dense material like chipboard or craft plastic. Slow the speed, decrease the **Force**, and add more passes.
-

My vinyl isn't feeding evenly while cutting. It starts bunching up on the inside of the end cap.

- Even if you feel the vinyl is aligned properly at the start of the cut, a slight "out of alignment" error will become more pronounced with a long cut. When you first drop the pinch wheels, use the arrow keys to feed the vinyl for the length of the cut to make sure it is feeding straight. If not, then about half-way through the length of the vinyl needed, lift the pinch wheels and realign the vinyl. Continue testing the alignment until you can verify that the vinyl is sufficiently aligned for the entirety of your project.
-

The pinch rollers are not tight enough to hold the vinyl I'm cutting. The vinyl is slipping and rotating when I start the cut.

- The pinch wheels need to be over grit shafts (the dark gray rough areas along the revolving shaft. The white rectangles will help you align the pinch wheels in correct locations. Also, use outside locations versus having, say, one pinch on the far right of the vinyl and a second pinch wheel only in the middle.
-

I hear a terrible stuttering sound when trying to cut chipboard (or other thick dense material).

- That can be a symptom of forcing the blade to cut too deeply and/or too quickly through the chipboard. Slow the speed, decrease the **Force**, and add more passes.

I'm trying to do a PNC application and the camera can't read the marks.

- Make sure you have calibrated the Skycut's camera. The procedure is covered in *Section 3.03*.
- On the control panel, go to **Set>Camera** and press **Set**. Make sure the **Auto PNC** option is marked.
- If using the cutting mat, make sure the printout is aligned fairly straight on the cutting mat and the mat is fairly straight in the cutter.
- Make sure the blade holder is over the lower right registration mark when starting the cut.
- Are the registration marks printed dark with no streaking or missing ink?

The Skycut stopped during a cut.

- If the Skycut stops with the head over on the left side of the cutter, you have most likely exceeded the cutting range. Several things to consider:
 - ◇ Check the dimensions of your project. It cannot exceed 24" in width on the Skycut V24 (or 48" on the Skycut V48, etc.).
 - ◇ Check how far you are moving the head to the left when setting the origin. If your project is 23" and you moved the head more than 1" to the left, you will send the cut out of range and the cutter will stop.
- If the Skycut stops and the head is not located near the left side:
 - ◇ Make sure it's not a communication issue.
 - ◇ You may have exceeded a buffer limit. Try reducing the number of nodes.

A3 Cutting/Drawing Issues

I'm getting some stray cuts added, as if the cutter is going a bit crazy.

- Extra stray cuts can occur anywhere, including sharp V-shaped cuts jutting outside the borders of the project. These are referred to as random cuts and are difficult to diagnose. But based on experiences reported by owners of professional vinyl cutters, here are some possible causes to check:
 - ◇ Bad or defective USB cable
 - ◇ Cutter is plugged into a power strip that isn't rated highly
 - ◇ Static electricity (many vinyl pros recommend grounding cutters to prevent random cutting due to static)
 - ◇ Unknown cause – sometimes a quirk in the file might cause something strange to happen such as a stray cut or a sudden stoppage. Try altering the file in some way, such as reducing nodes.

My shapes are drawing (cutting) off the material. What am I doing wrong?

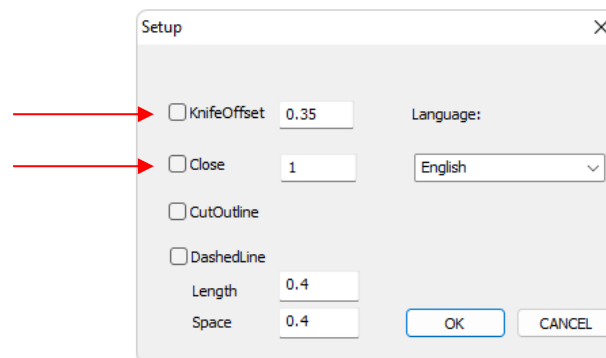
- When setting the origin, make sure you are using the tip of the blade as the reference point and set the tip inside the corner of the material (not too close to an outside edge).

When drawing with the test pen), I have extra lines being drawn.

- Make sure you raise the pen in the blade holder seat on the Skycut before tightening the screw. The blade holder seat needs to be able to drop the tool down when it reaches the spot to start the shape. Otherwise, the tool tip will be dragging across the material from the origin to where the shape will begin and then back to the origin at the end of the “cut”.

I’m drawing with a pen and there are bubbles at the corners.

- For perfect corners when using a pen, click the **Set** icon to open the **Setup** window and disable the **KnifeOffset** option. You can also disable **Close** as it is also not needed when using the test pen (or scratch engraver, scoring/creasing tool, etc.).



My cut started out fine but by the end of the cut, it’s not cutting through the material.

- Make sure the blade holder housing doesn’t have any bits of material inside of it.
- Make sure the screw on the blade holder seat is hand-tight so that the blade holder isn’t slipping upwards during the cut.
- Make sure the cutting mat is clean and sticky and the material is pressed down completely, so that the material remains stabilized during the cut.
- Make sure the blade isn’t cutting too deep into the mat. This can sometimes cause the material to be pulled up and away from the mat as the blade releases from the plastic it is cutting.
- Try increasing the Force by ~ 5 – 10.

My cut is clean in some places but not in others. Why am I not getting consistent cutting?

- Make sure your material is pressed firmly onto a clean and sticky mat (assuming you are cutting a material such as paper or cardstock).
- Your material may require two passes if it’s not homogenous or if it is heavily textured. Sometimes intricate shapes also cut better with two passes.
- Also, if the material has been exposed to humidity, then it will become difficult to cut in one pass. You can dry both paper and cardstock using a blow dryer or in a very low-temperature oven.

- If you are cutting vinyl without a cutting mat, check the cutting strip to make sure it is still in good condition.
-

I have the outside edges of my chipboard completely taped but I'm not getting clean cuts, even after lots of passes.

- Taping the edges prevents shifting of the chipboard but it's not enough for stabilizing. You need to thoroughly press the entire surface of the chipboard onto a clean and sticky mat. Using a brayer is recommended.
-

I am getting a lot of tearing in my cuts.

- A number of things can cause tearing so work through this check list:
 - ◇ Too much blade is exposed. If you see cut lines in your mat or the backing sheet, shorten the blade exposure. You should only be cutting through the material itself.
 - ◇ The blade is chipped. Try a different blade.
 - ◇ The paper is not adhered well to the mat. Make sure the mat is clean, sticky, and the paper is pressed smoothly and evenly on the surface.
 - ◇ You may be using too much **Force**. Try reducing it and doing test cuts.
 - ◇ You may have too many nodes in the shape.
 - ◇ The material itself may be subject to tearing, especially on intricate cuts. Also, if the cardstock has been exposed to humidity, then the moisture in the material can make it difficult to cut cleanly. You can dry paper and cardstock using a blow dryer or in a very low-temperature oven.
-

I'm cutting very small lettering and the letters are a bit distorted.

- Verify that you are using the correct **Blade Offset**.
 - Try slowing down the cut. Small lettering needs slower speed.
-

My cut shapes are not the same dimensions as what they are set to in Corel Draw.

- Perform the calibration procedure shown in *Section 2.08*.
-

My shapes are not completely cutting out. They are still attached to the waste part of the material.

- Make sure you have set an appropriate **Close** setting.
 - Make sure the mat is not skewing during the cut. This can happen if even one of the pinch wheels is no longer centered under a white arrow. It can also happen if the speed and/or pressure is set too high.
-

My cardstock is not cutting all the way through. I have the blade all the way out and using the maximum force.

- Please refer to *Section 1.07.5*. It's important to only have as much blade exposed as is necessary to penetrate the cardstock.

- Do not use more force than is needed. If the cardstock is cutting through about 90% of the cut, then increase **Passes**. Some cardstocks do better with a second pass at a lower force.
-

I calibrated the camera for print and cut but every cut is off by the same amount.

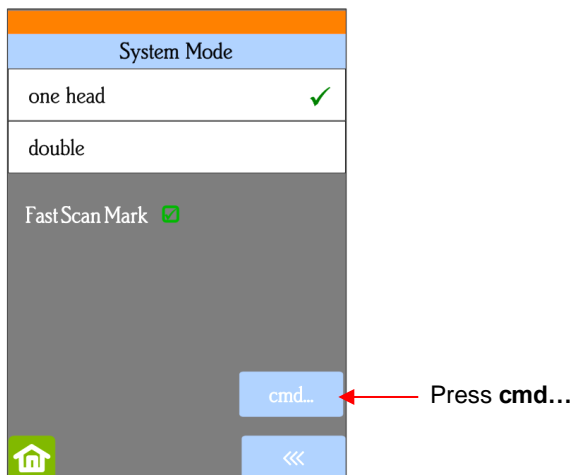
- The calibration can be tweaked using the procedure presented in *Section 3.05.1*
-

I calibrated the camera for print and cut and the cuts start off accurate but, by the end of the cut, there is a lot of error.

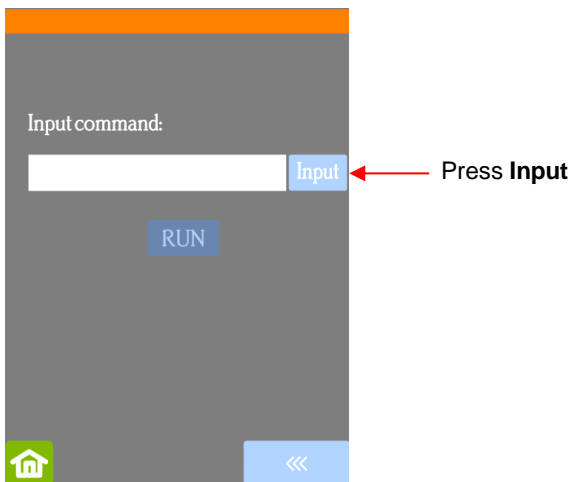
- This is called “drift” and can sometimes be corrected by slowing the speed and making sure the cuts aren’t so deep that the blade is causing some drag to occur.
-

Appendix B Activating Commands

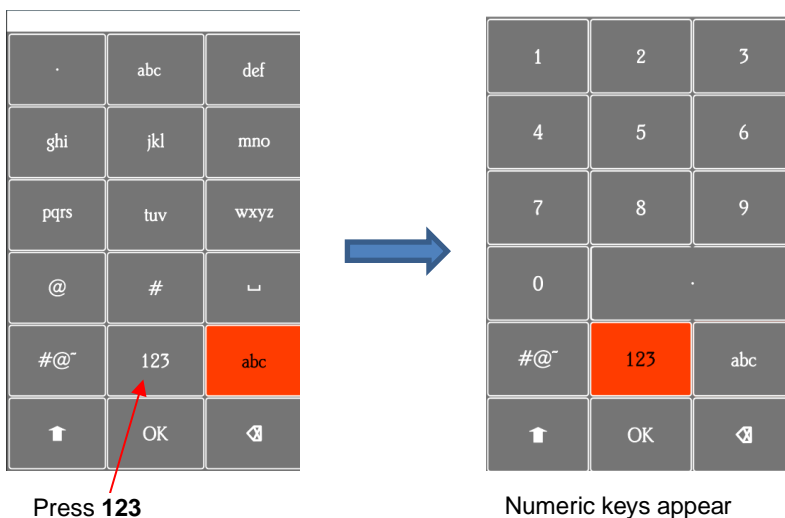
- This section shows you how to activate commands in order to add certain functions to the control panel.
- Go to **Set>Advance settings>System Mode** and press the **cmd...** button:



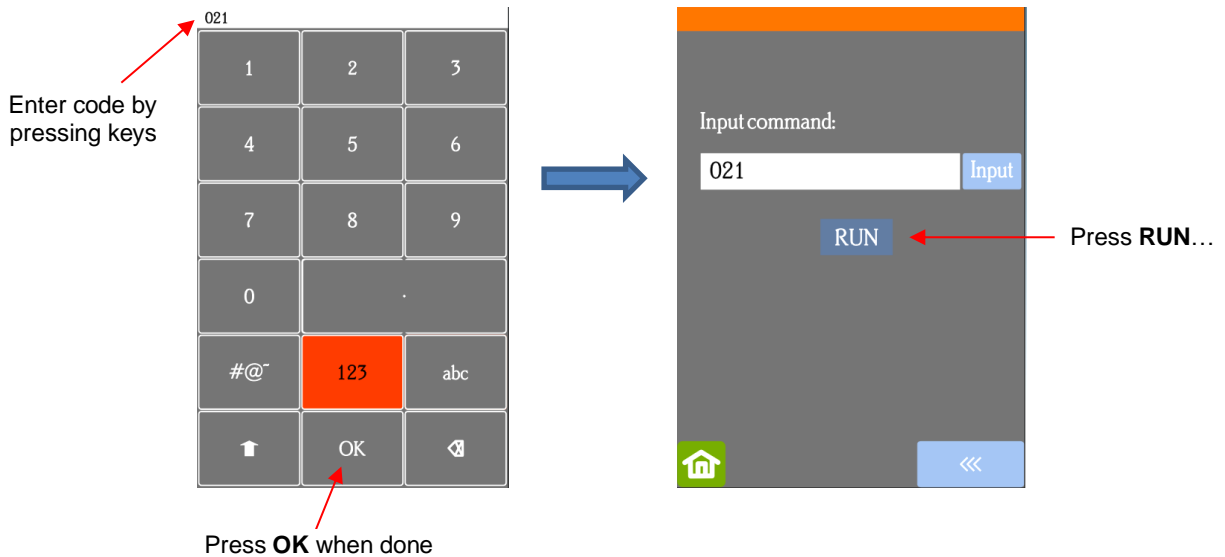
- The following screen opens. Press **Input**:



- The **Input** code is entered in the same way as you entered your **Network** password but since it's a 3-digit code, you'll begin by pressing the **123** button:



- Enter the required **Input** code according to the following:
 - ◇ 021: Activate **Mark Set**
 - ◇ 020: Deactivate **Mark Set**
 - ◇ 031: Activate **Passes Set**
 - ◇ 030: Deactivate **Passes Set**
- After entering the **Input** code you need, click on **OK** and the **Input** screen will return. The word **RUN** will now be highlighted and you can press it. The Skycut will beep once.



- Return to the main screen and press **USB**, the activated button will now appear:

