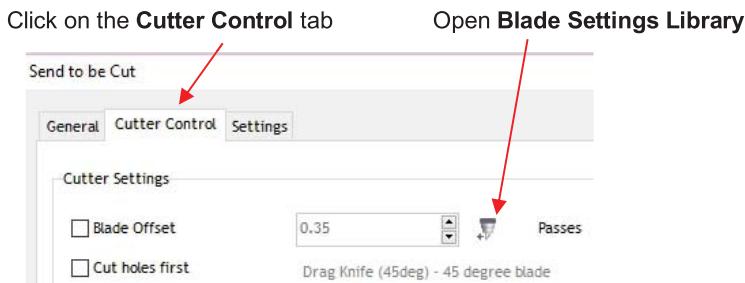


2.04 Presets

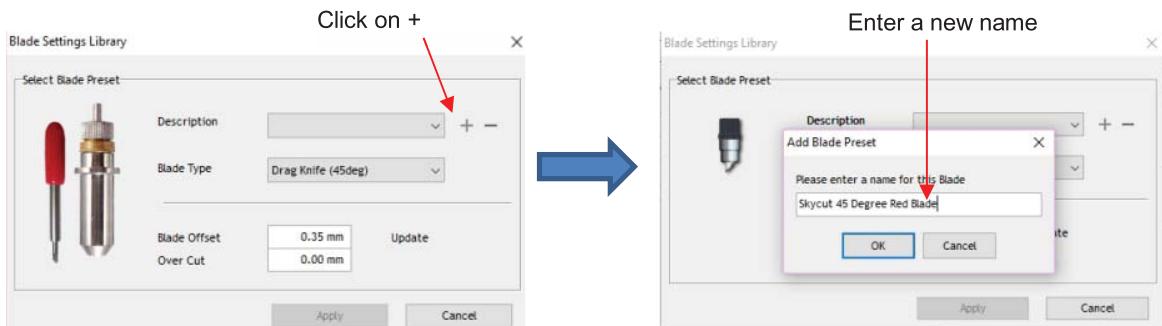
- Presets allow you to save your settings for a particular blade type or material.

2.04.1 Saving a Preset for a Blade Type

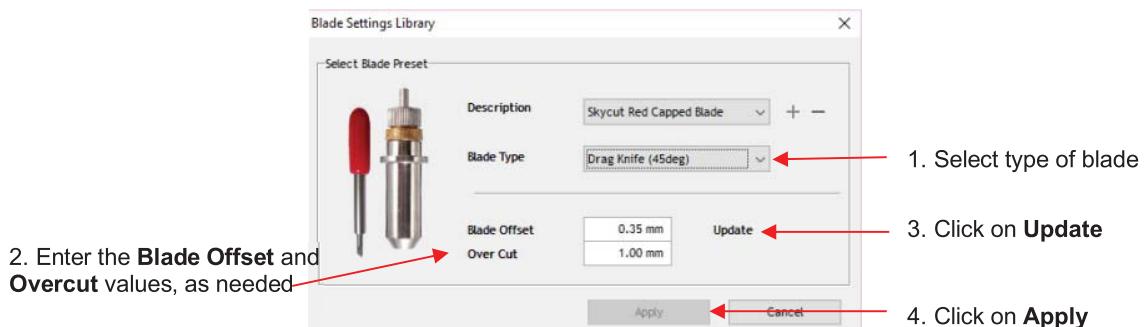
- Let's say you conducted the calibration for **Blade Offset** in Section 2.03.3 and determined it to be 0.35 for your red capped blade. To save this setting as a preset, use the following steps:
 - Go to the **Send to be Cut>Cutter Control** window and click on the icon to the right of **Blade Offset** to open the **Blade Settings Library**:



- In the **Blade Settings Library**, click on the **+** icon to the right of **Description** and a window will open where you can enter the name for your new preset:



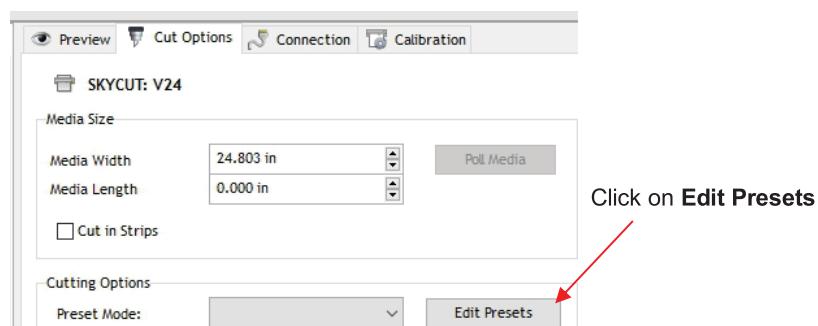
- Click on **OK** and then select which blade type you are using for this new preset. Enter the new **Blade Offset** and **Overcut** values. Then click **Update**:



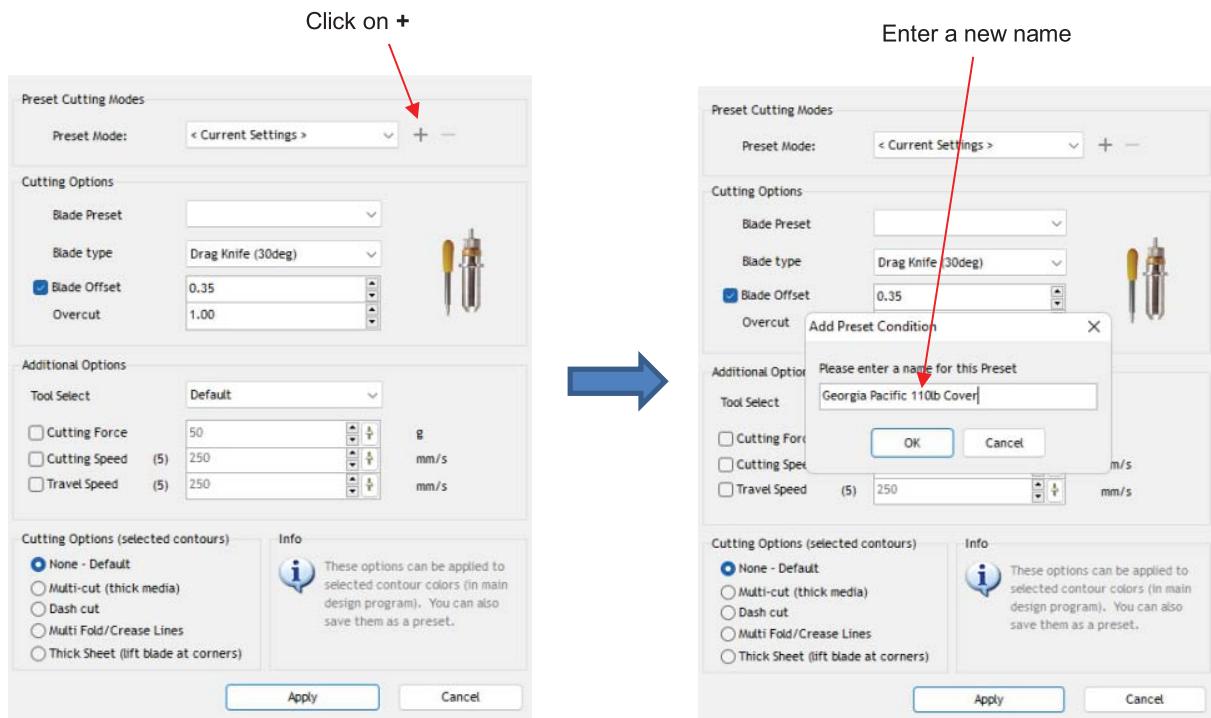
- Click on **Apply** to close the **Blade Settings Library**. The new preset will now be available for selection in the **Description** menu.
- If you need to delete a preset, select it from the **Description** menu and click on the **-** icon to the right.

2.04.2 Saving a Preset for a Material

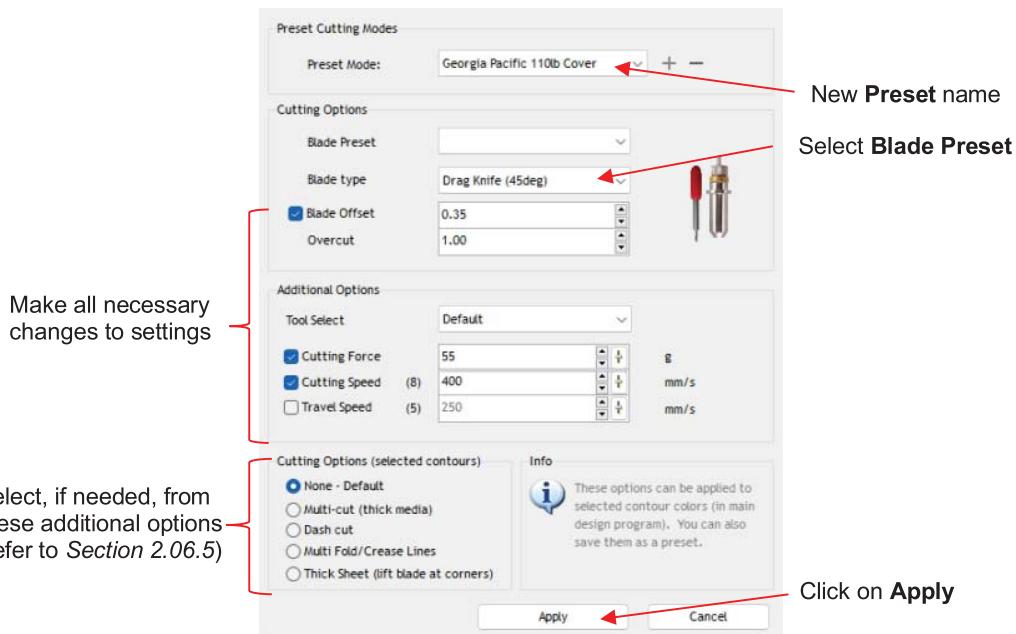
- **IMPORTANT:** As was noted in Section 2.02.4, **Up Speed** (aka **Travel Speed**) is not functional in SignMaster. Thus, if you need a separate **Cut Speed** and **Up Speed** for a particular material's preset, it is recommended that the preset be made on the control panel.
- Similar to the blade holder preset, you can enter settings for a particular material. For example, let's say you cut Georgia Pacific 110 lb cardstock at a **Force** of 55 and a **Speed** of 8. Use the following steps to create a new preset in SignMaster:
- Go to the **Vinyl Spooler>Cut Options** window and click on **Edit Presets**:



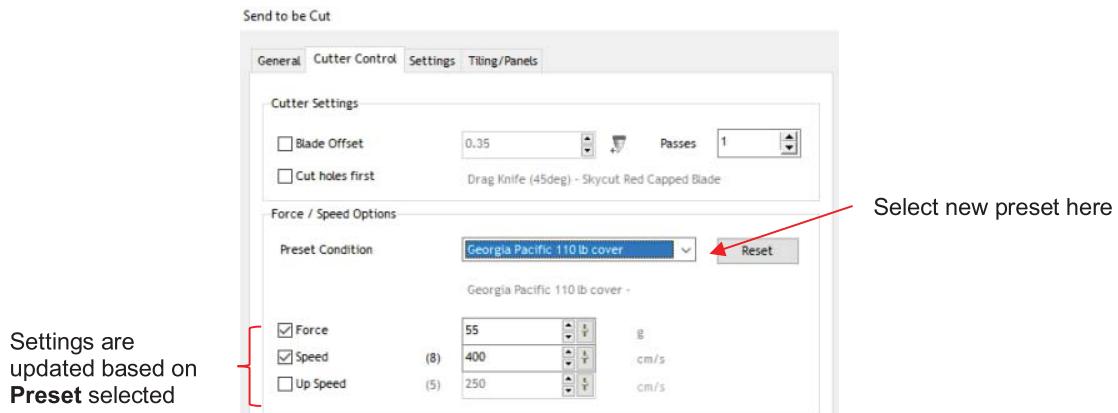
- The **SKYCUT V24** window opens. Click on the **+** icon to the right of the current **Preset Mode** name and a window will open where you can enter the name for your new preset:



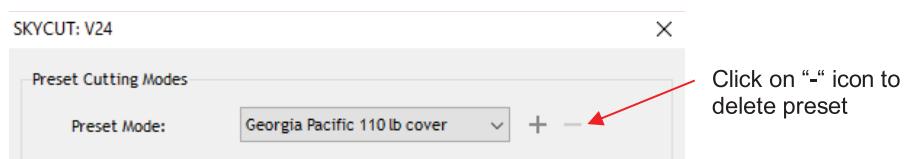
- Click on **OK** and then complete the rest of the window with the settings for that material:



- Click on **Apply** to update the **Preset Mode** menu with this new listing. Click on **Done** to close the **Vinyl Spooler** window. The new preset will also now be available in the **Send to be Cut>Cutter Control** window, in the **Preset Condition** menu:

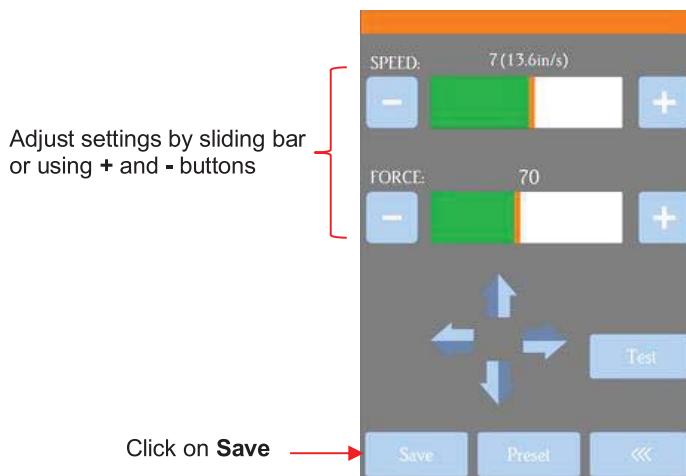


- If you need to delete a preset, return to **Vinyl Spooler>Cut Options>Edit Presets** window, select the preset from the **Preset Mode** window click on the “-“ icon to the right:

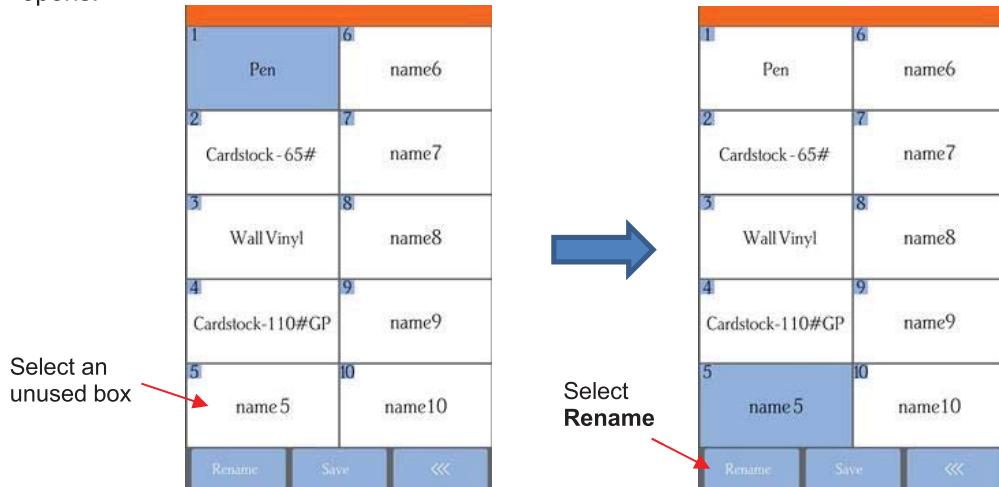


- Presets for **Force** and **Speed** only can also be saved on the Skycut control panel. To create a preset:

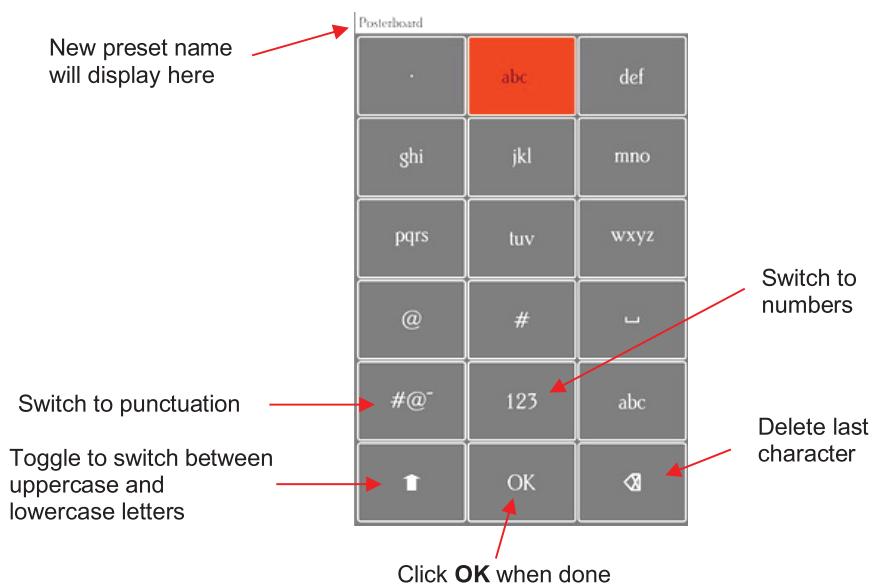
◊ Press the **Force/Speed** icon  to open the **Force/Speed** screen:



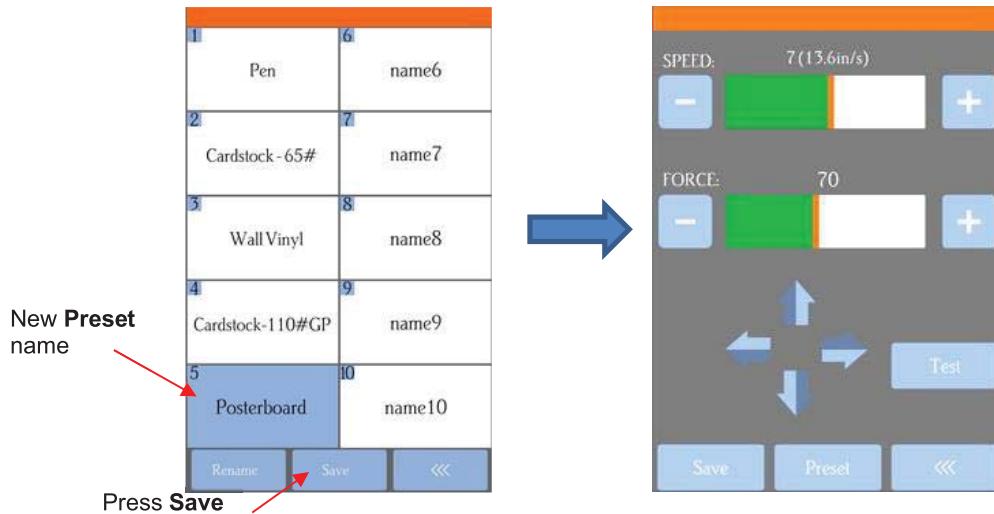
◊ Make the necessary changes to the **SPEED** and **FORCE** settings. Select **Save** and the following screen opens:



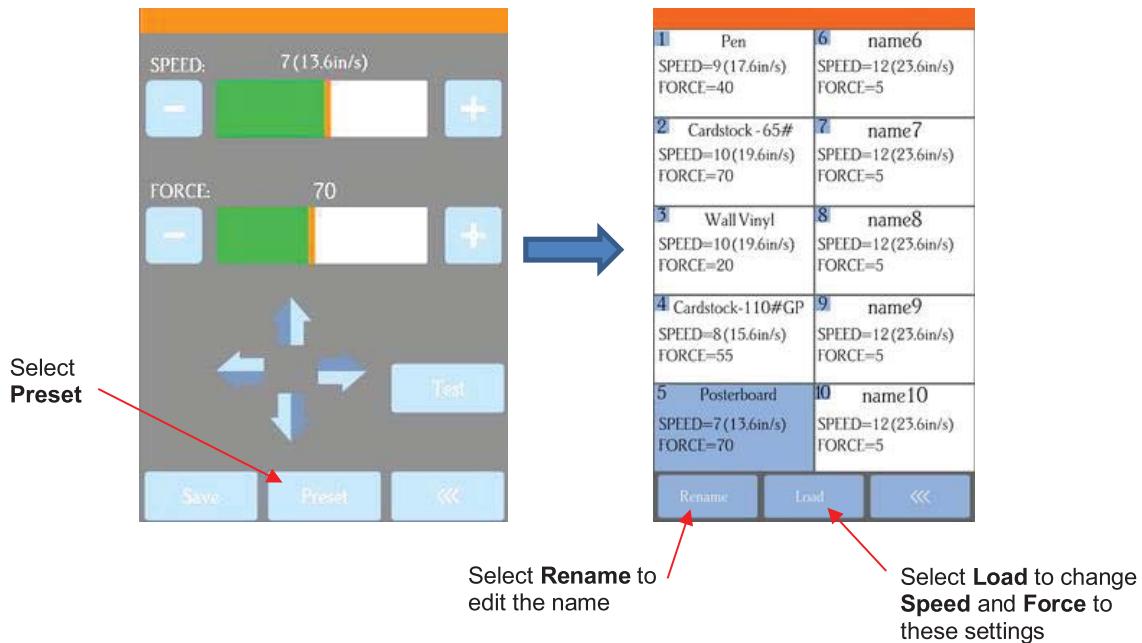
◊ Press one of the unused preset boxes, e.g. *name5*, and it will turn blue indicating it is highlighted. Select **Rename**.
 ◊ A window opens where you can enter the name for the new **Preset**. The characters are entered in the same manner as the **Password** entry window in *Section 1.12.2*. Note 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.



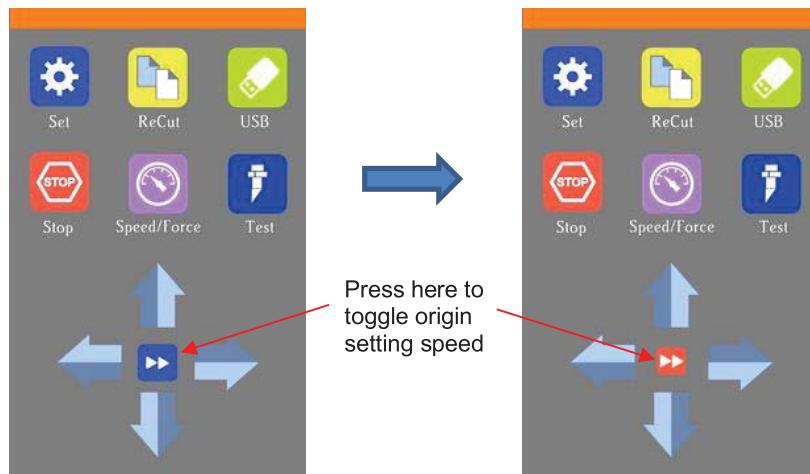
◊ To verify the preset or to select a different preset, press **Preset**. The **Preset** window opens where you can see all of the **Presets**, along with the settings for those presets. In that window you can also select a different preset. Then you can select **Rename** to edit its name or select **Load** 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.

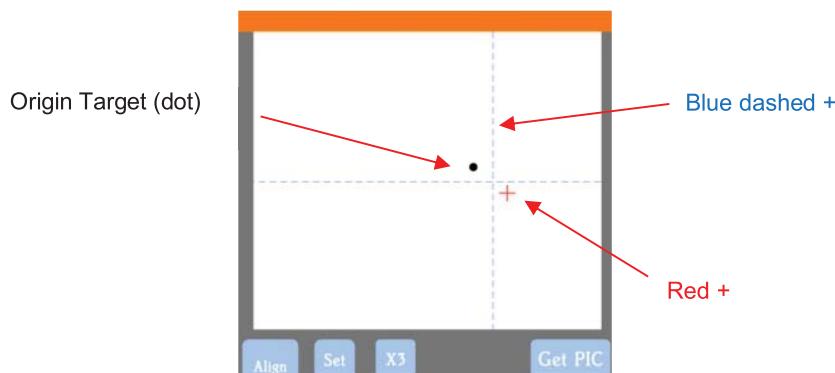
- To set the origin, press the arrow buttons on the main screen of the control panel. Remember that the middle button can be toggled between regular speed and a slow speed for more control:



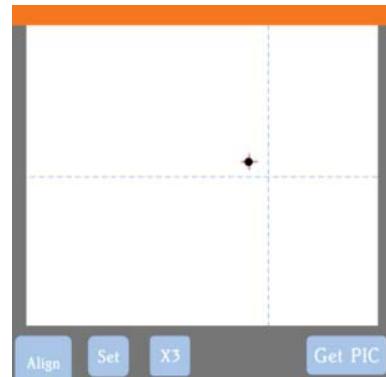
- In general, you set the origin near the lower right corner of the material, as you did during your initial test drawing in *Section 1.13*.
- If you want to set a “return-to” origin in order to move the material or mat to check the cut before removing from the Skycut, refer to the instructions in *Section 1.14.1 (Show Point)*.

2.05.1 Setting an Origin Using the Camera

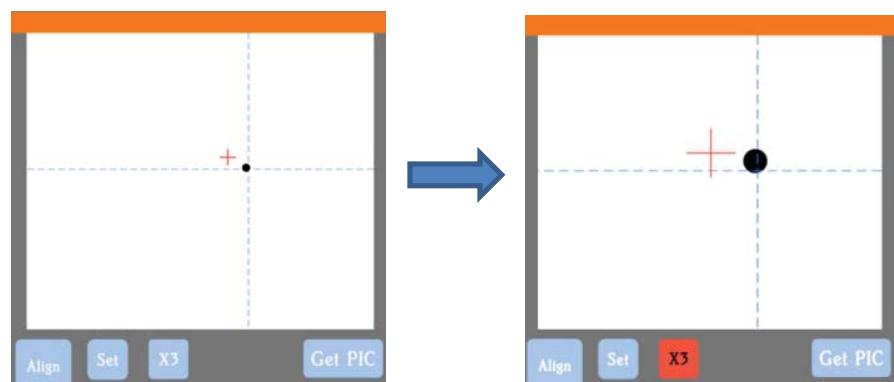
- In the event you need to set an extremely precise origin, the Skycut’s built-in camera can be used:
 - Go to *Section 3.03* and perform the camera calibration.
 - Choose where you want the origin to be set. You’ll need an “origin target” to use when the camera takes a photo. It can be a dot on your 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.
 - 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.
 - 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:



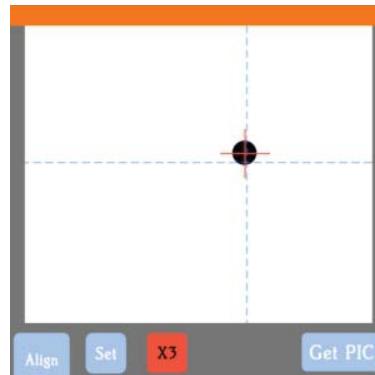
- Press the center of the origin target in the photo so that the **red +** will be moved approximately over it:



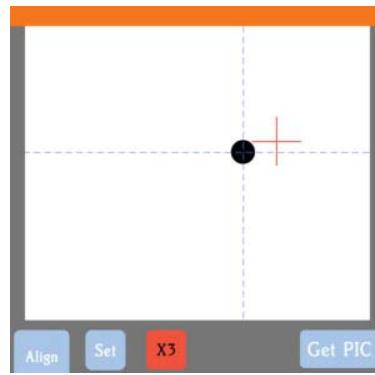
(6) Press **OK**. In the new photo, the blue dashed + should be close to the origin target. Press **X3** to zoom in:



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



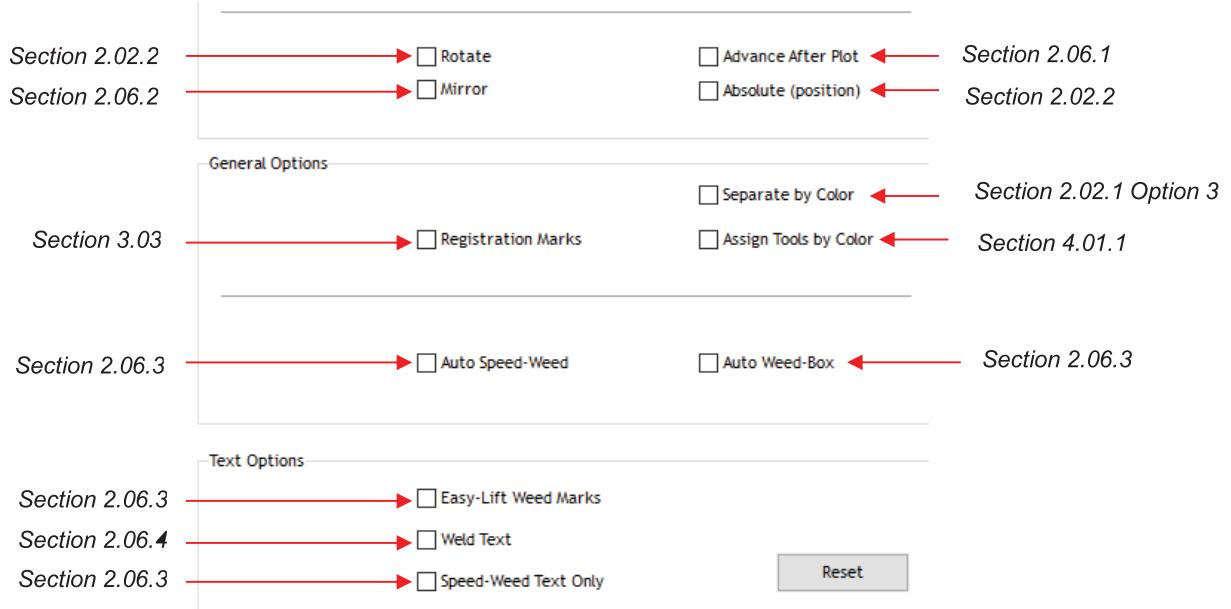
(8) Press **OK**. At this point the blue dashed + should be centered with the origin target:



(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.

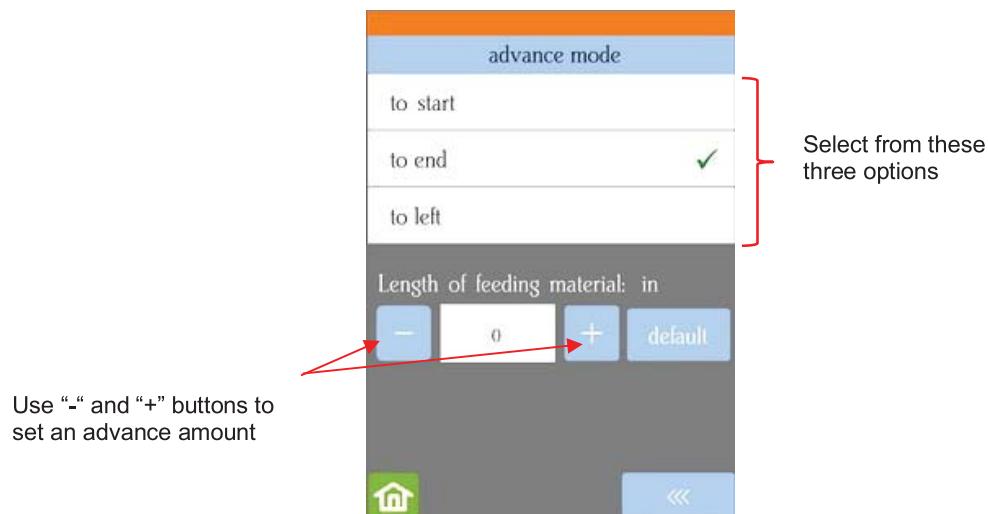
2.06 Other Cut Setting Functions

- There are other functions and features available in the **Send to be Cut** window that may be useful depending on your application. Some have already been covered. Some will be covered in this section. Others will be covered in later parts of this manual. Note the section numbers for reference:



2.06.1 Advance Mode

- The **Advance After Plot** option in SignMaster Pro is actually controlled on the Skycut itself. The function can be opened by going to **Set>Advance Mode** on the control panel.

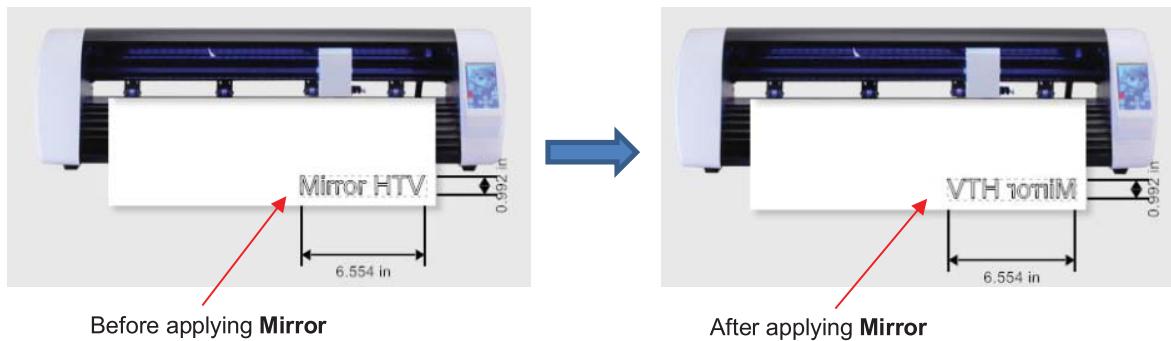


- ◊ **to start** will cause the blade holder to return to the origin after cutting.
- ◊ **to end** will cause the blade holder to advance forward to the end of the cut project.

- ◊ **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.

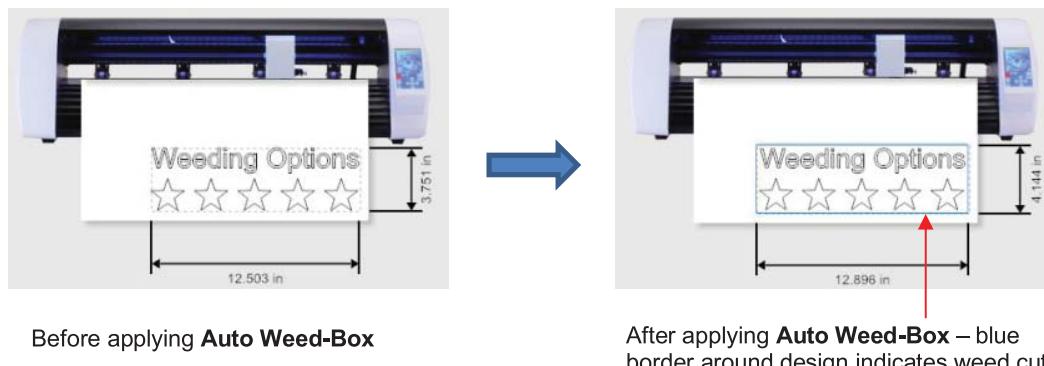
2.06.2 Mirror

- Checking the **Mirror** option will apply a horizontal mirror to the shape (s) before cutting. This is useful 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
 - ◊ When cutting certain non-homogenous paper materials in which cutting upside down yields cleaner results

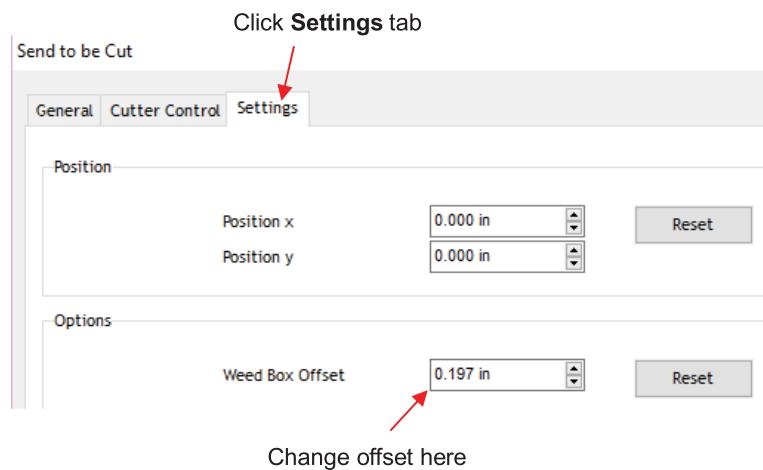


2.06.3 Weeding Options

- For those cutting vinyl and HTV, the weeding options in SignMaster are worth noting.
 - ◊ **Auto Weed-Box:** Marking this option places a single weed box around the entire project:



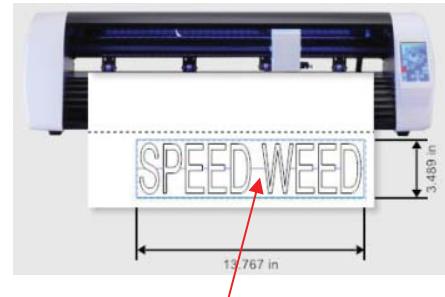
- Note: to change the size/offset of the weed box around the design, click on the **Settings** tab and adjust, as desired:



- ◊ **Auto Speed-Weed:** Marking this option places a single weed box around the entire project with an additional horizontal weed line through the middle:

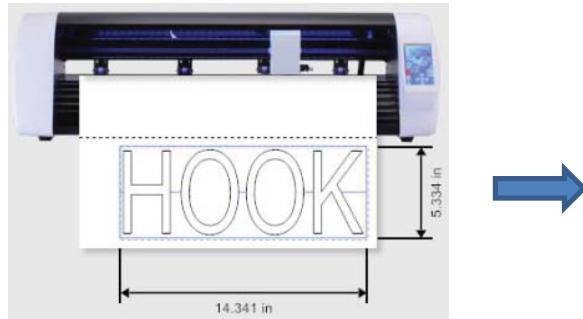


Before applying **Auto Speed-Weed**

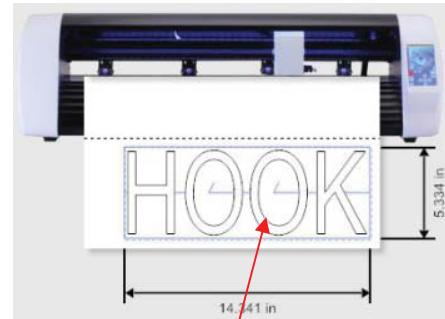


After applying **Auto Speed-Weed** – blue weed box plus horizontal cut in the middle

- ◊ **Easy-Lift Weed Marks:** Marking this option adds hooked lines to shapes with internal paths to make it easier to lift with a weeding tool:

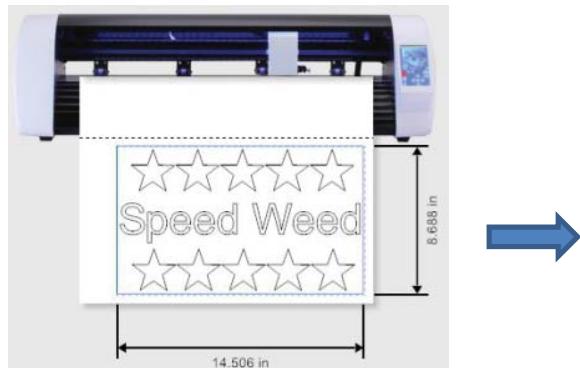


Before applying **Easy-Lift Weed Marks**

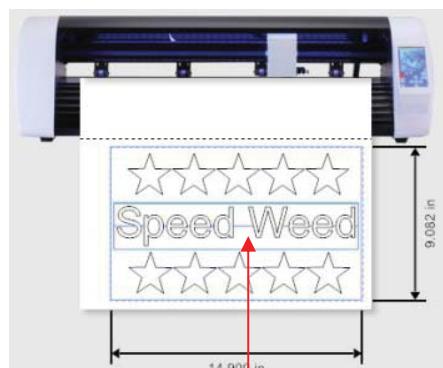


After applying **Easy-Lift Weed Marks** – hooked cuts are added to internal shapes for easy lifting during the weeding process

- ◊ **Speed-Weed Text Only:** Mark this option when your design has a combination of both text and other shapes so that only the text will have **Speed Weed** applied:



Before applying **Speed-Weed Text Only**



After applying **Speed-Weed Text Only** – text object has additional weed box plus horizontal cut through the middle

2.06.4 Weld Text

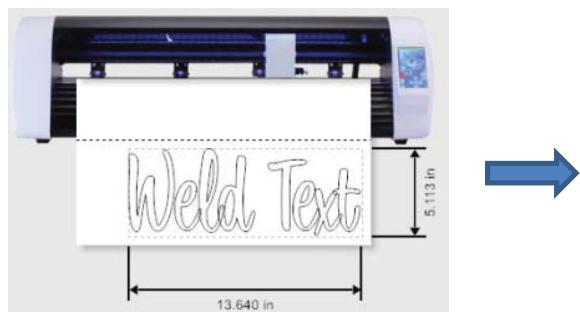
- For script fonts, the **Weld Text** option will remove overlap between letters so that a word will cut as one object. For example, if you go to **View>Wireframe**, you can see the overlap that will be cut when a script font is used:



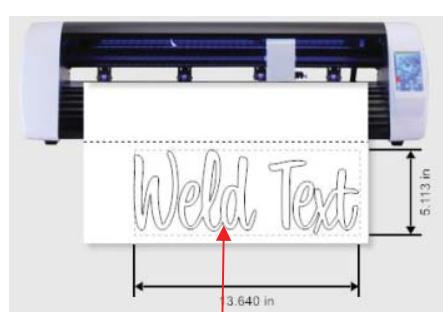
- You have the option to select the letters and apply the **Weld** function under the **Shaping and Welding Tools** , thus removing overlap between letters:



- This, however, means you cannot change the font used or alter the spacing of the letters, etc., without applying **Undo**. Therefore, the **Weld Text** option allows you to cut the text as if the **Weld** function has been applied:



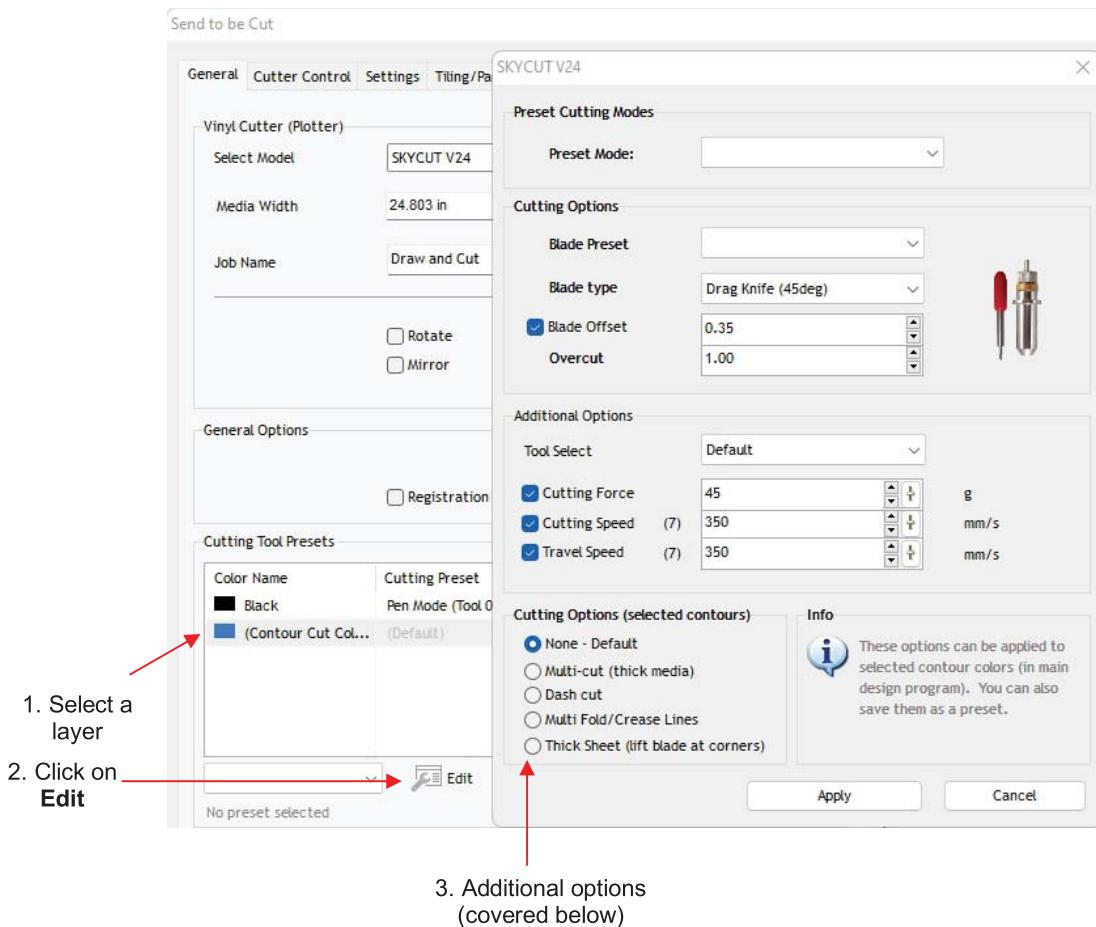
Before applying **Weld Text**



After applying **Weld Text** – overlap between letters is removed

2.06.5 Additional Cut/Score Options

- There are 5 other options which can be applied when cutting or scoring. You can access these when setting up a **Preset** (refer to *Section 2.04.2*) or after you select **Assign Tools by Color** (select a color in your project and click on **Edit**):



- **None-Default** will always be initially selected. The other options, however, can be chosen based on situations such as needing more than one pass, perforated cutting, or even changing how the blade handles sharps corners:
 - ◊ **Multi-cut (thick media)** – select this option and increase **Quantity** to control the number of passes applied. This is the same as using the **Passes** option covered in Section 2.03.5 however in some cases you might want only a single pass applied to part of your material and then more than one pass applied to another part. One example is the cutting of laminated sticker sheets in which an inner contour cut is only kiss cut through the top layer but a full cut is needed for the outside cut.



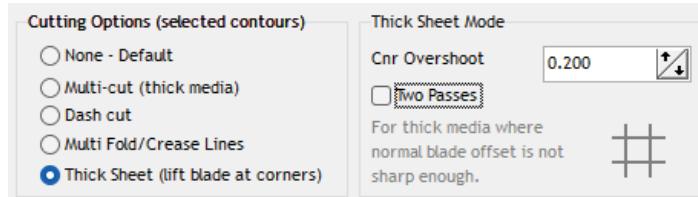
- ◊ **Dash Cut** – select this option to apply a perforated cut to part of your material. This is useful for boxes, pop-up cards, gift bags, etc. when the score lines can be dashed cut instead of creased:



◊ **Multi Fold / Crease Lines** – This option allows you to not only set multiple passes when using a creasing tool but to further space those repeats when cutting thicker materials that will fold more easily when the score lines have a slight gap between them:



◊ **Thick Sheet (lift blade at corners)** – Some thicker materials, such as chipboard, do not cut cleanly when the blade attempts to make a sharp turn at a corner. Crumpling at the corner can result. However, if the blade overshoots the corner slightly before changing directions the corner will be much cleaner. Note that Two Passes can also be enabled for those more difficult materials:

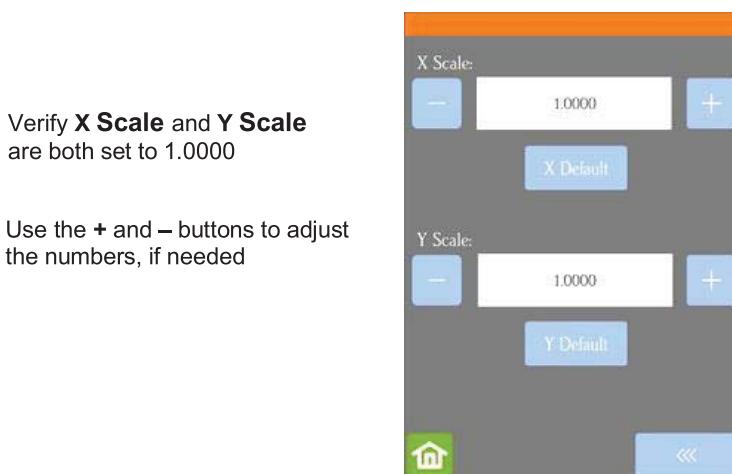


2.07 Important Checklist Before You Cut!

- 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)?
- Do you have the pinch wheel lever raised (so that the pinch wheels are down)?
- 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 and the blade tip at the correct height above the material?
- 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?
- Do you need to turn on **Passes** for this material?
- Have you selected the correct **Blade Offset** for the blade you are using?
- Do you see the correct shapes in the preview window?
- Do you need to select **Rotate**, **Mirror** or **Absolute (Position)** options? Do you know, with confidence, where your shapes are going to cut?
- Do you need to apply any weeding options?

2.08 Scale Calibration

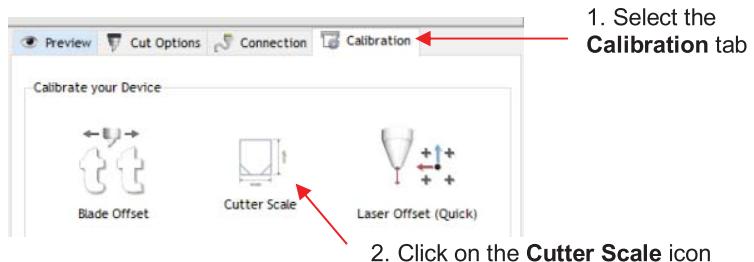
- If you were to cut out any particular shape, for example, a 10" x 10" square, you might find that it actually measures 9-15/16" x 10-1/32". It will be very close to 10" x 10" but perhaps just slightly smaller or larger in either or both dimensions. Now this might be perfectly acceptable for the type 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:



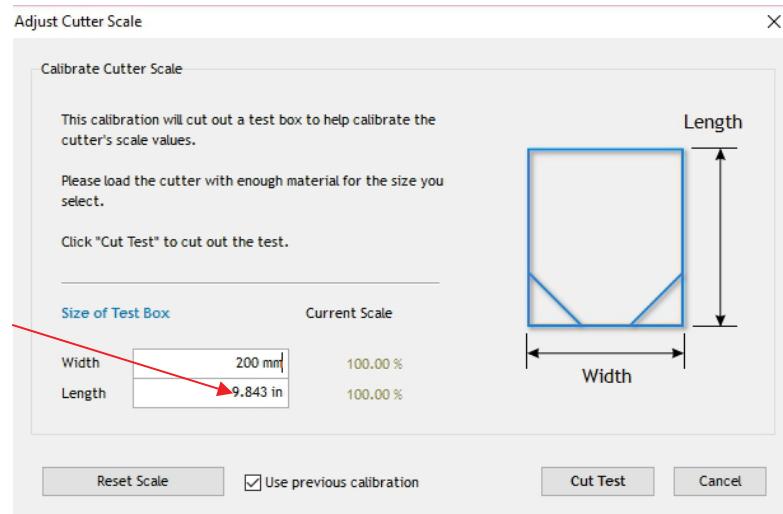
- Return to the main screen. Then pick one of the two following sections and follow the instructions.

2.08.1 Scale Calibration Using Millimeters for Measurement

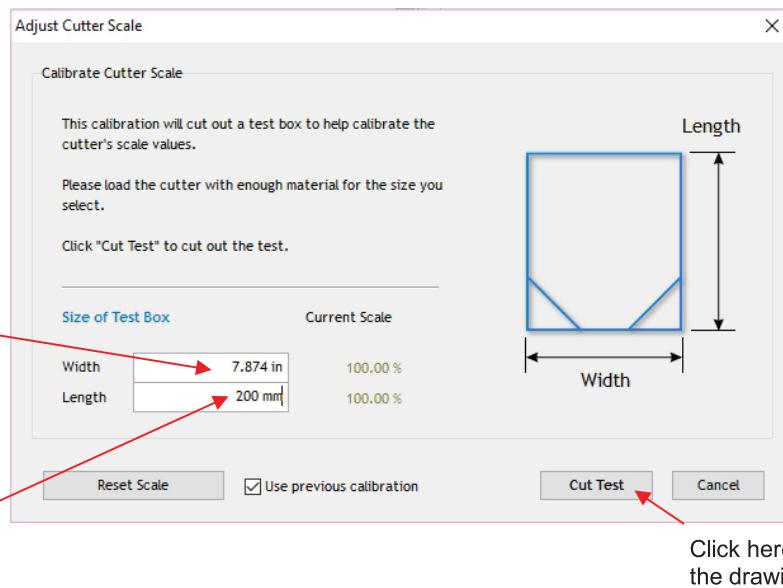
- SignMaster has a built-in resolution routine which can be used to easily perform this calibration:
 - ◊ Go to the **Vinyl Spooler** window and select the **Calibration** tab.
 - ◊ Click on the **Cutter Scale** icon:



- ◊ A new window opens where you can enter the dimensions of a square or rectangle to draw with the test pen. It is highly recommended that the dimensions be at least 200 mm. Note that in the current version of SignMaster, the display in this window is always in inches. However, you can enter values in mm by typing in "mm" after the number as shown:

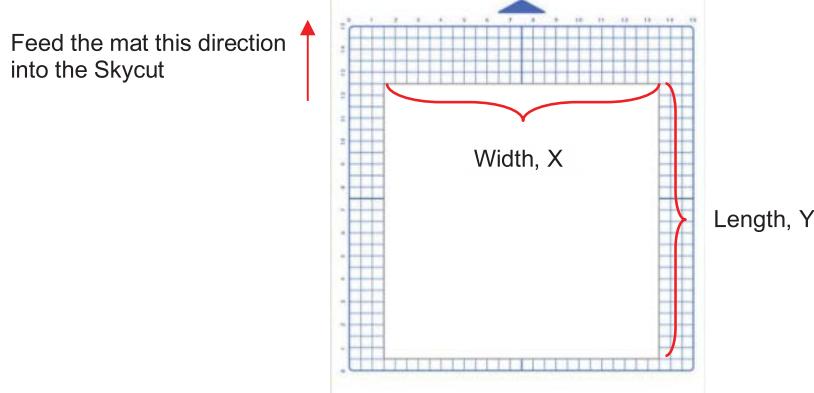


◊ Press the tab key and the 200 mm will be automatically converted into inches. Repeat with **Length**:

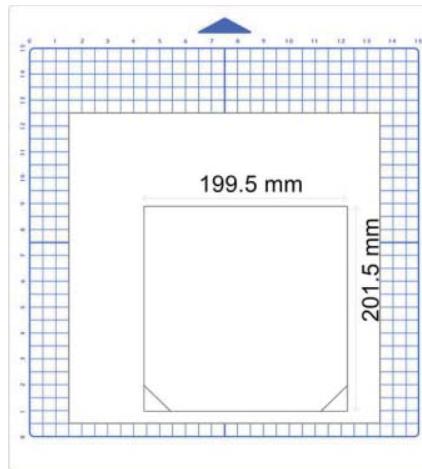


◊ On the Skycut, load a sheet of paper and insert the test pen. Move the test pen to the lower right corner of the paper. Make sure you have proper settings for drawing and click on **Cut Test** to have the shape drawn.

◊ Using a mm ruler, carefully measure the **Width** (left-to-right) and the **Length** (top-to-bottom) that drew:



- ◊ Write these measurements onto your sheet:



- ◊ These values can now be entered into the same **Width** and **Length** fields, again adding “mm” after each number as shown:

Calibrate Cutter Scale

After cutting the test box, you will need to accurately measure the Width and Length and enter these values in the area below.

Once you have entered the measured values, click "Update" to apply the scale calibration.

Size of Test Box	Enter measured values here...	
Width	199.5 mm	100.25 %
Length	7.874 in	100.00 %

Enter actual **Width** and add “mm”

Calibrate Cutter Scale

After cutting the test box, you will need to accurately measure the Width and Length and enter these values in the area below.

Once you have entered the measured values, click "Update" to apply the scale calibration.

Size of Test Box	Enter measured values here...	
Width	7.854 in	100.25 %
Length	201.5 mm	100.00 %

Enter actual **Length** and add “mm”

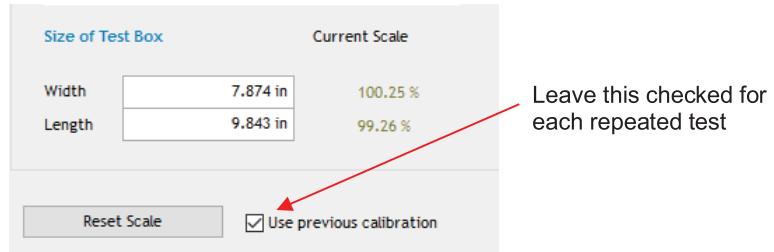
- ◊ After entering each number, the scaling percentage is automatically calculated:

Calculated Scale values

Size of Test Box	Enter measured values here...	
Width	7.854 in	100.25 %
Length	7.933 in	99.26 %

Click on **Update**

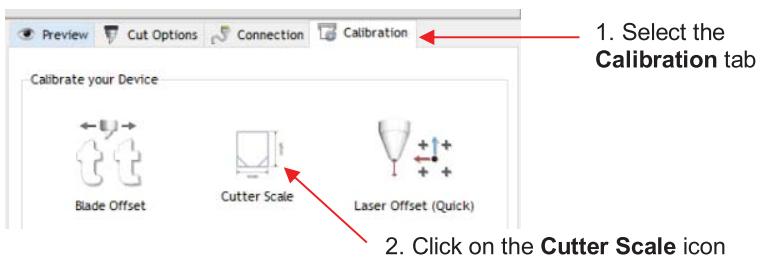
- ◊ Click on **Update** and a prompt window will ask if you want to **Apply Scale Adjustment**. Click on **Yes** and you'll be back in the **Vinyl Spooler** window. To verify the scaling, again click on **Cutter Scale** and repeat the same steps. Make sure you leave your new scale factors in place by having the following option marked:



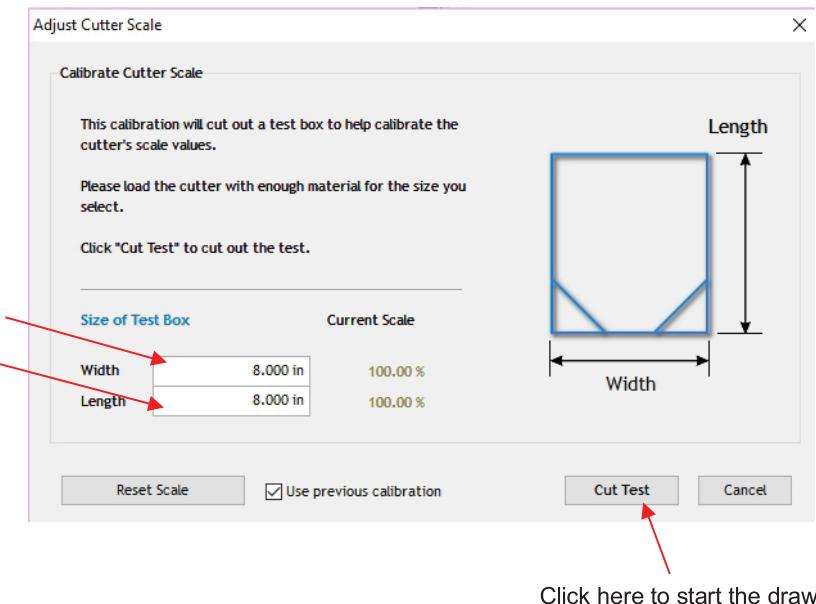
- ◊ Once your test rectangle is drawing at the correct size, the calibration process is complete.

2.08.2 Scale Calibration Using Inches for Measurement

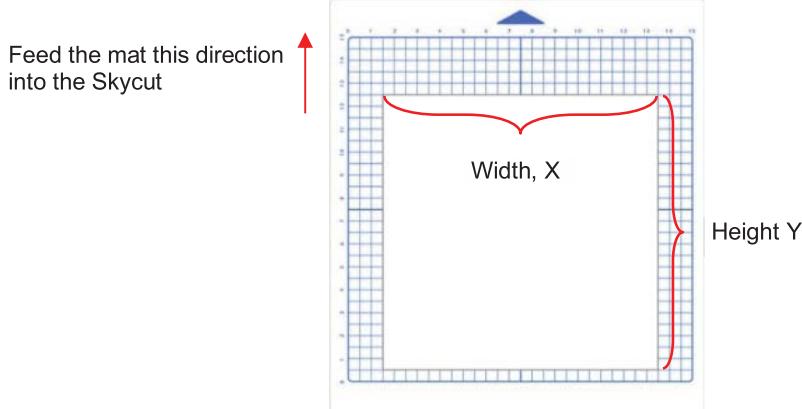
- SignMaster has a built-in resolution routine which can be used to easily perform this calibration:
 - ◊ Go to the **Vinyl Spooler** window and select the **Calibration** tab. Click on the **Cutter Scale** icon:



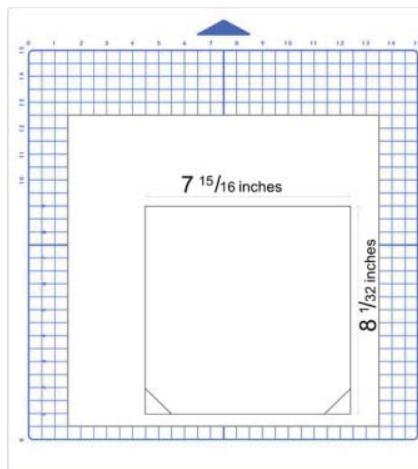
- ◊ A new window opens where you can enter the dimensions of a square or rectangle to draw with the test pen. It is highly recommended that the dimensions be at least 8 inches:



- ◊ Load a sheet of paper and insert the test pen. Move the test pen to the lower right corner of the paper. Make sure you have proper settings for drawing and click on **Cut Test** to have the shape drawn.
- ◊ Using a ruler, carefully measure the **Width** (left-to-right) and the **Height** (top-to-bottom) that drew:



- ◊ Write these measurements onto your sheet:



- ◊ Convert the measurements to decimals and enter these values into the same **Width** and **Length** fields. After entering each number, the scaling percentage is automatically calculated:

Calibrate Cutter Scale

After cutting the test box, you will need to accurately measure the Width and Length and enter these values in the area below.

Once you have entered the measured values, click "Update" to apply the scale calibration.

Size of Test Box Enter measured values here...

Width	7.938 in	100.79 %
Length	8.031 in	99.61 %

Length

Width

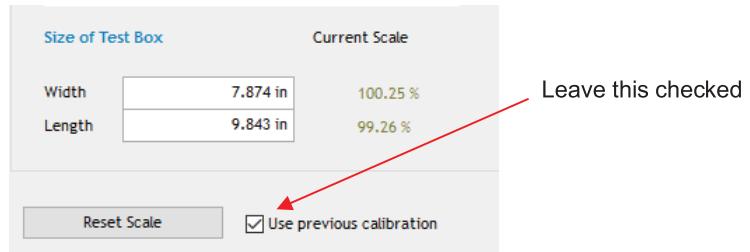
Enter actual **Width** and **Length**

Calculated **Scale** values

Click on **Update**

Reset Scale Update Cancel

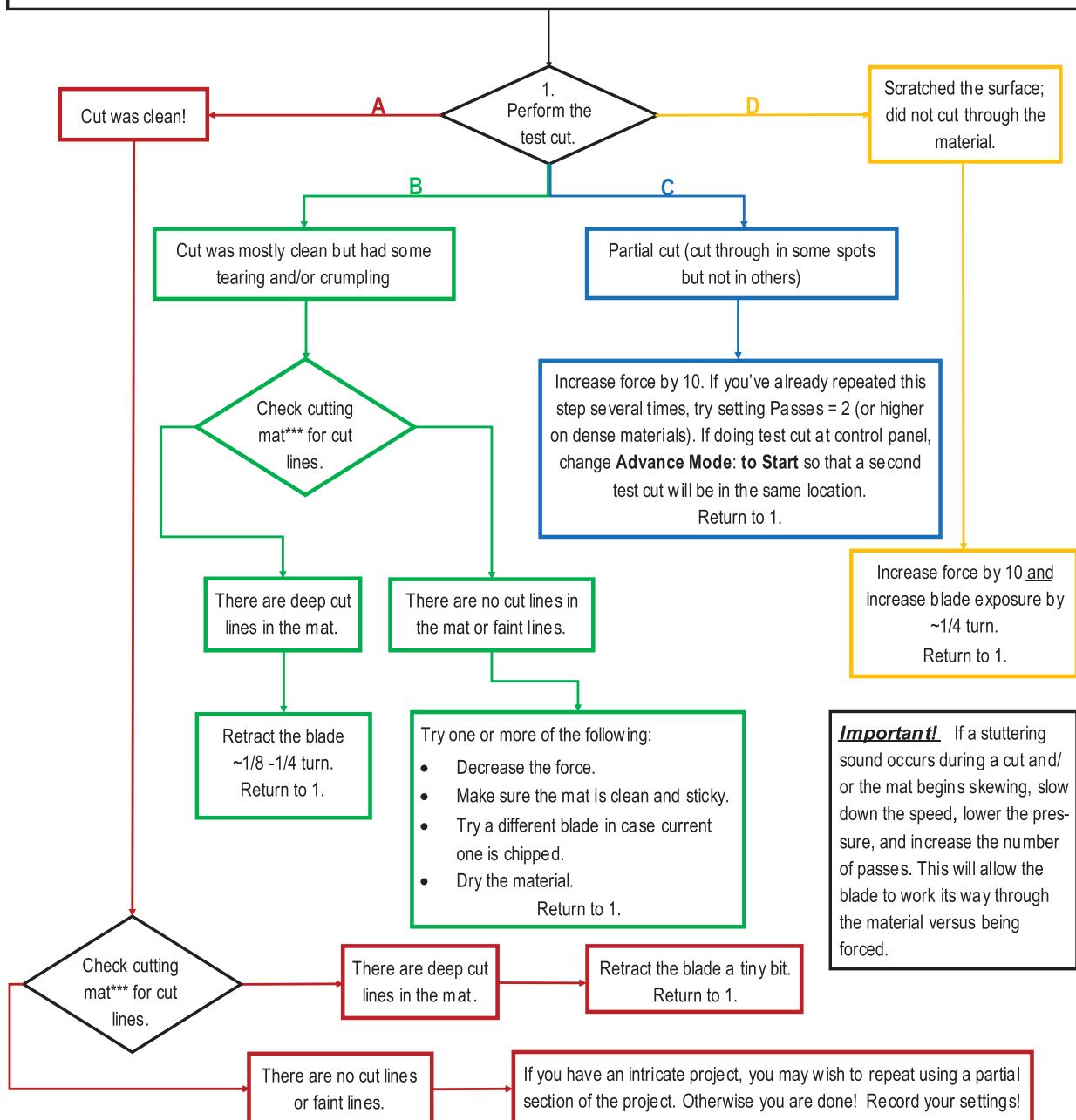
- ◊ Click on **Update** and a prompt window will ask if you want to **Apply Scale Adjustment**. Click on **Yes** and you'll be back in the **Vinyl Spooler** window. To verify the scaling, again click on **Cutter Scale** and repeat the same steps. Make sure you leave your new scale factors in place by having the following option marked:



- ◊ Once your test rectangle is drawing at the correct size, the calibration process is complete.

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

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

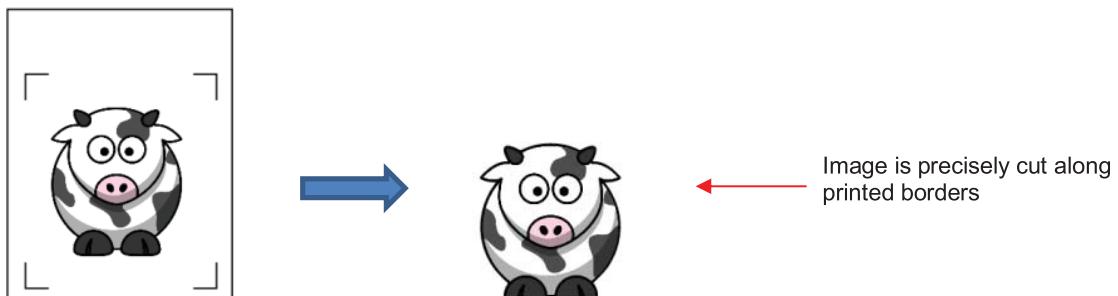
3.00 Quick Reference for Chapter 3

- 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 3.06.1*
- How to add more registration marks: *Section 3.08.1*
- Troubleshooting inaccurate print and cut results: *Section 3.06*
- How to set up repeats: *Section 3.07*
- How to do a PNC from a USB flash drive file: *Section 3.09*

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 SignMaster 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?

- 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**: