

Engraving Existing Objects on the KNK Force using SCAL

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February 19, 2019

This document presents two methods for engraving on existing shapes, such as charms, tags, trophy labels, etc., using the KNK Force:

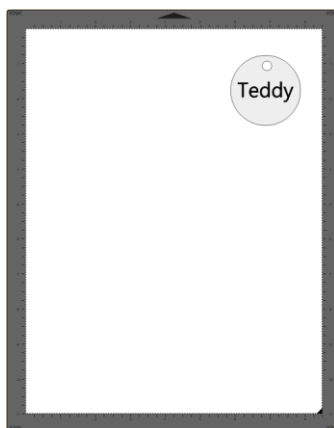
(A) The quicker method

(B) The print and cut method

Note that these are equally accurate but there are advantages to the second method.

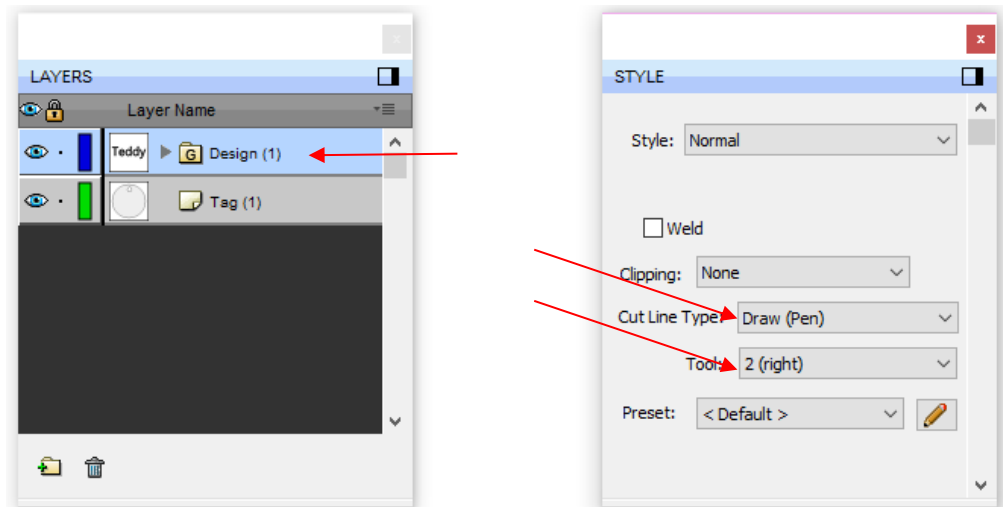
(A) The quicker method

- This method is faster than method (B) but you cannot use it repeatedly unless you keep the Force turned on and you don't remove the mat from the cutter. This is why, as you'll see in the next step, you do the engraving of the object away from the origin, so that you have easier access to the location where you'll be placing the item to be engraved.
 - Items needed: Blade holder, engraving tool, sheet of paper, item to be engraved, and high-tack double-sided tape. Note that if you plan to engrave a number of items, you may wish to use something more substantial than a sheet of paper, such as poster board.
- (1) Design or trace to create a shape that's identical to the item you're engraving. In this tutorial, a circle tag is being used. Create that circle tag in SCAL, size it, and arrange your engraving design inside the circle tag. Move the design and tag away from the origin. Thus, in SCAL, it would look like this, assuming you're in **Portrait** mode:

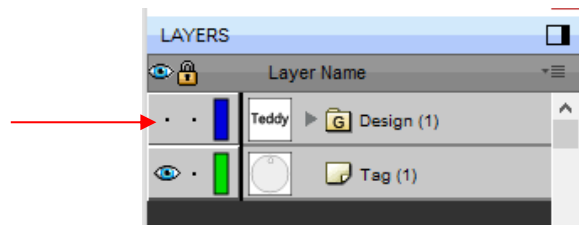


- (2) Calibrate your blade holder (left side) with your engraving tool (right side) using instructions from the Force user manual. If you have previously calibrated these two tools, make sure the calibration settings are still entered under **Cutter>Cutter Settings**. SCAL updates are known to reset these calibrations to default values!

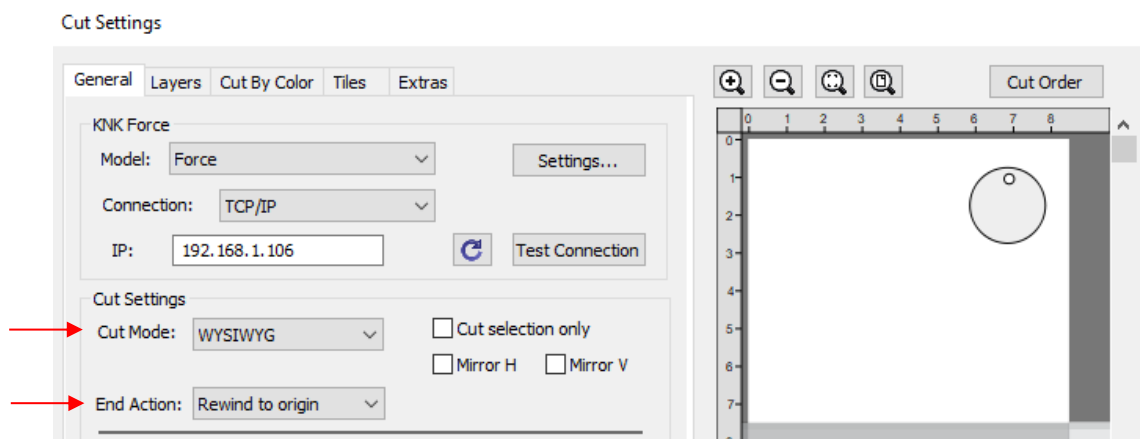
- (3) Place a sheet of paper onto the cutting mat.
- (4) On the **Layers Panel**, select the Design layer to be engraved and then, on the **Style Panel**, assign it to **Draw (Pen)** and to **2 (right)**:



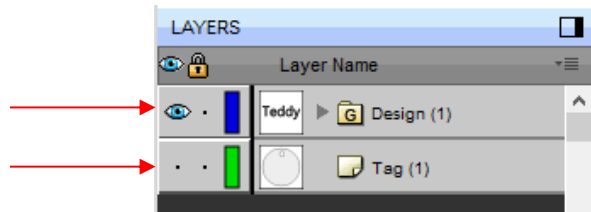
- (5) Now hide that Design layer:



- (6) Go to the cut window. Make sure you have **WYSIWYG** mode selected and, if you own SCAL Pro, you have **Rewind to Origin** selected:



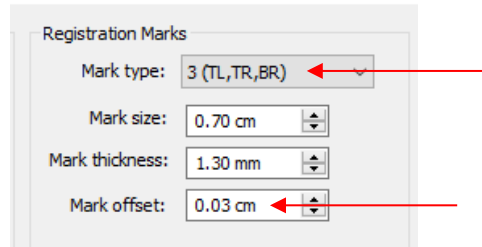
- (7) Cut the shape but do NOT remove the cutting mat. Your cut shape should be behind the Force, on the cutting mat. Remove that shape, leaving the rest of the paper in place.
- (8) Place high-tack, double-sided tape in the hole where the shape was cut out. Then align the actual object you want to engrave on top of the tape.
- (9) Back in the main cut window, hide the Tag layer you just cut and show the Design layer:



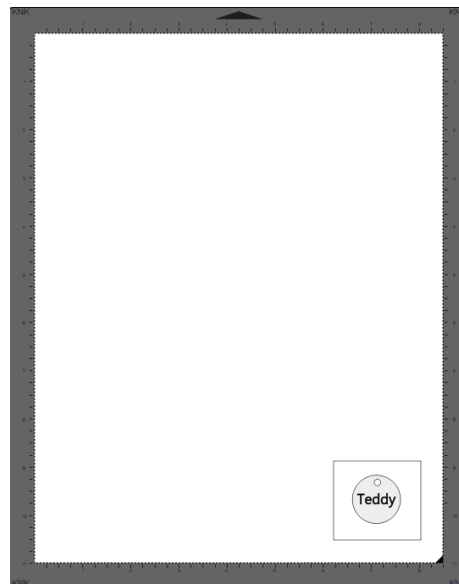
- (10) Go to the cut window and verify you do not see the cut shape any longer in the Preview. Then select the right side and verify the Design layer is displayed. Send to engrave.
- (11) If engraving more shapes, continue with steps (8) – (11), again making sure the cutting mat always remains in the same location.

(B) The print and cut method

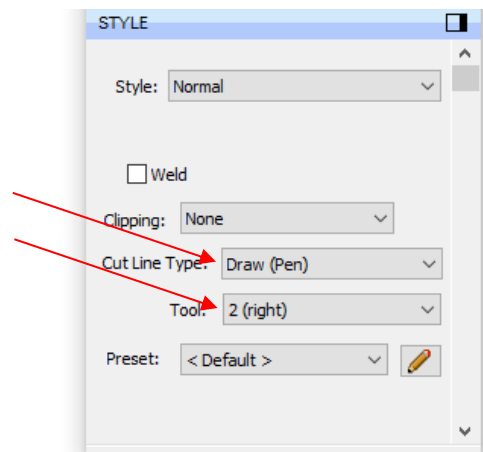
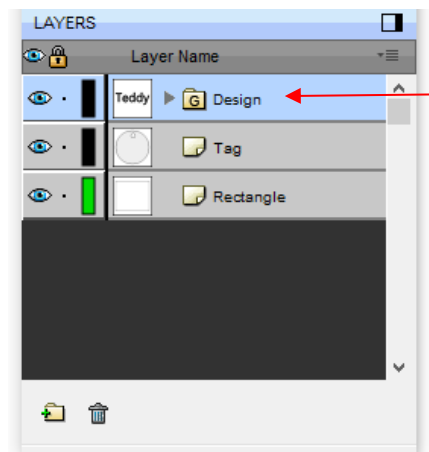
- With this method, you can use the same template over and over. Note that it assumes you have already calibrated your Force's camera for print and cut. Verify that your calibrations are still entered because SCAL updates are known to reset these calibrations to default values!
 - Items needed: Test pen (or other pen), blade holder that was used for your PNC camera calibration, engraving tool, sheet of paper, item to be engraved, and high-tack, double-sided tape. Note that if you plan to engrave a number of items, you may wish to use something more substantial than a sheet of paper, such as poster board.
- (1) Calibrate your blade holder (left side) with your engraving tool (right side). Write down your settings.
 - (2) Calibrate your blade holder (left side) with your test pen (right side). Write down your settings. Keep the test pen mounted in the Force.
 - (3) While in the same window where you enter these left/right tool calibrations (**Cutter>Cutter Settings**), choose the manual print and cut option and change the **Mark Offset** to the minimum value of 0.03 cm:

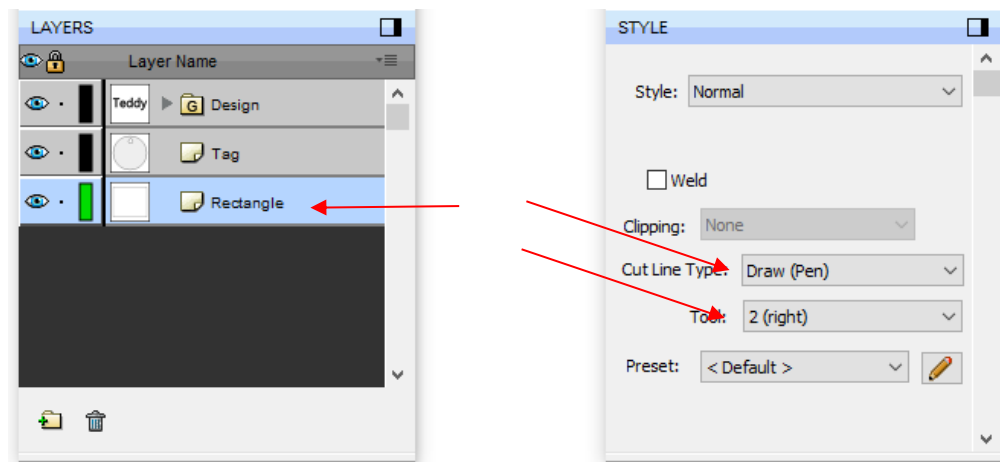


- (4) Design or trace to create a shape that's identical to the item you're engraving. In this tutorial, a circle tag is being used. Create that circle tag in SCAL, size it, and arrange your engraving design inside the circle tag.
- (5) Next, add a rectangle around the design which will later be drawn and the corners will serve as the registration marks. Your project should now look something like this, when in **Portrait** mode:

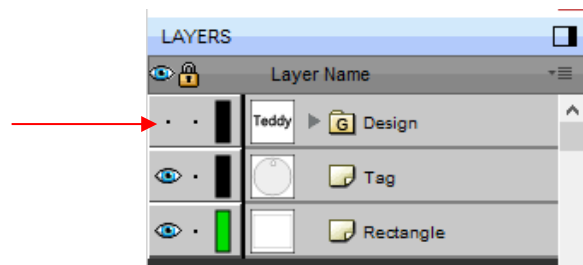


- (6) On the **Layers Panel**, select the Design layer and then, on the **Style Panel**, assign it to **Draw (Pen)** and to **2 (right)**: Do the same for the Rectangle layer:

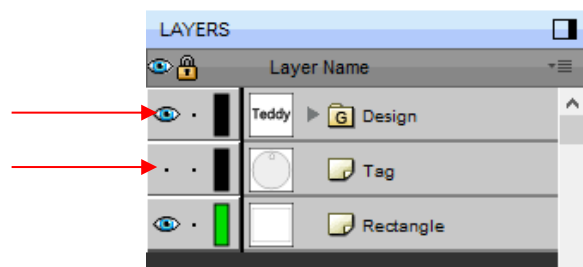




- (7) Because you performed Step (2) after Step (1), you should have the calibration numbers for the blade holder and test pen currently entered under **Cutter>Cutter Settings**. On the Layers panel, hide the Design layer:



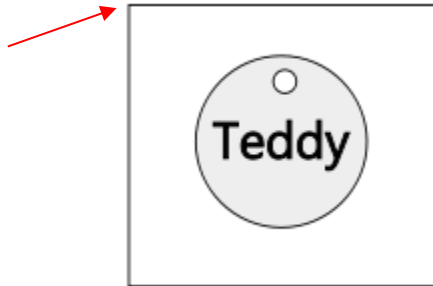
- (8) Go to the **Cut Settings** window. Send the Tag layer to cut and the Rectangle layer to draw.
- (9) Hide the Tag layer and show the Design layer. Continue to show the Rectangle layer because it is needed to keep the registration marks in place:



- (10) Go back to **Cutter>Cutter Settings** and change the **Tool Offset X** and **Y** to those for the blade holder on the left and the engraving tool on the right (which you determined in Step (1)).
- (11) Remove the test pen, and use **Replace Tool** in the **Cut Settings** window to mount the engraving tool onto the right side. Don't forget that you will probably want to place the actual tag onto the mat for setting the Z Origin.

- (12) Remove the cut tag shape from the paper, leaving the rest of the paper in place.
- (13) Place high-tack, double-sided tape in the hole where the shape was cut out. Then align the actual object you want to engrave on top of the tape. Note that you can remove the mat, if needed, to have better access because you'll be using **Print + Cut** to assure the design is engraved in the correct location.
- (14) Proceed with the **Print + Cut** process for a manual print and cut. Note that the initial alignment should have the blade holder tip over the upper left corner of the drawn rectangle. From there, the camera images will be of the corners of the rectangle which you drew.

Align blade tip
over this corner
before having first
camera shot taken



- (15) If engraving more shapes, repeat Steps (13) and (14). As long as you save this file and the printout of the rectangle with the hole cut out, it can be used over and over with the same actual object. You can even substitute the design to be engraved.