



Gotta love Kiss-cuts

Production benefits with a nested cutting technique

Assumptions

This technical bulletin assumes that you have a core understanding of Windows®, vector graphics, and Ioline's appliqué system, as well as the ability to perform basic drawing functions in CorelDRAW!® (version 13).

Note

A free demonstration version of Ioline's 301 Software is available for download at:

» www.ioline.com/prod/301_trial.html

For an overview of vector graphics, we suggest you read *Vector vs Raster: Digitizing for the Ioline 300 System* (346K PDF) at:

» www.ioline.com/lit/300/vector_v_raster.pdf

If you sew-down or heat-press tails or other multi-piece graphics, you'll want to familiarize yourself with a technique called *kiss-cutting*.

Consider how time-consuming it can be to line pieces up on a garment:

- 1 Cut all the graphics separately.
- 2 Sew a placement stitch on the garment and heat-press, stick or glue the bottom layer to it.
- 3 Sew the decorative stitch around the edge of the bottom-most layer.
- 4 Sew the placement stitch for the next layer.
- 5 Stick it in place and apply the decorative stitch around the edge of the graphic.
- 6 Repeat until all the layers are sewn.

(With heat-transfer designs the process is identical, save for the stitching.)

In an industry where time and costs can make or break a job, manual placement is expensive.

Ioline's appliqué cutters enable you to combine all the parts of a graphic into a single piece—a "kiss-cut"—to simplify placement.

Kiss-cutting is accomplished by fusing materials together using pressure- or heat-sensitive adhesive backing, so that after each layer is cut, the graphic weeds as a single piece:

(Skip Steps 2 through 4 for heat-transfer designs.)

- 1 Cut each layer on your Ioline cutter (instructions follow on creating kiss-cuts using different types of backings).
- 2 Set decorative stitch preferences for each layer in **301 Software**.
- 3 Save the sew disk and import it into your embroidery program.
- 4 Sew the placement stitch onto the garment.
- 5 Heat-press, stick, or glue the one-piece kiss-cut onto the garment.
- 6 Run the decorative stitches on your embroidery machine.

The embroidery machine follows **301 Software's** stitch instructions imported from the sew disk. There's no need to create multiple placement stitches—nor a need to stop the machine to position each layer.

Kiss-cutting with an Ioline system increases accuracy, saves time and—in the case of embroidery—lowers stitch count.



With the loline appliqué cutter, there's no worry about accurately positioning the pieces in this "bottom-up" tail logo design (above). Heat-sensitive black twill is spread on the tray and cut. Before weeding, pressure-sensitive yellow twill is stuck to the black and cut. The fused pieces are then weeded as a single graphic. (Kiss-cut designs that use materials of varying thicknesses require blade adjustment in between cuts.) The loline 300 and 350HF Systems can produce kiss-cuts up to 9 layers thick—a real time-saver, even when positioning heat-transfer designs for press-down (right).



How to create a kiss-cut

Blade depth

Blade depth is critical and must be done for every type of kiss-cut design. If you cut through both layers it's not a kiss-cut, it's a duplicate appliqué cut.

Fortunately, blade depth is easy to set.



Try this procedure using a 2-layer twill design. You'll need a small test piece of the layered materials. Press your nested test material onto the sticky sheet and smooth out any air bubbles.

- 1 With the blade holder in the machine, turn the cap on the blade holder counter-clockwise (left) until there is almost no blade protruding.
- 2 With the blade holder positioned over the

lower right corner of the twill, press the *Test Cut* button on the machine. It will cut a 1 inch square with a circle dissected in four pieces.

- ③ You should be able to weed the square first, then each quarter of the circle for the top layer only.
- ④ If any part of these shapes does not weed easily, turn the cap on the blade holder clockwise (right) about ½ turn. If more than one layer of twill peeled off during weeding—or if the blade partially cut the layer below—there is too much blade. Turn the cap counter-clockwise (left) ½ turn.
- ⑤ Use the *Test Cut* button to cut another sample.
- ⑥ Repeat **Step 3** until you are able to pull out a single layer of twill and each piece can be removed one at a time. This may take a few tries to get right, but hang in there. With experience, you'll soon find you need fewer samples.

Arranging layers

Cutting order is a key consideration with kiss-cutting. Which layer you cut first varies depending upon the mechanics of the design, the type and thickness of each layer, and your choice of fusing material. Occasionally, it may make sense to “mirror” or cut the graphic upside-down and in reverse.

Pressure-sensitive twill is an ideal choice for upper layers of a kiss-cut graphic, as it has a peel-and-stick back. Double-sided backing is handy for cottons and other textiles.

When layers vary in thickness, blade adjustment is necessary in between cuts. For simplicity sake, let's start with the easiest scenario, where both layers are the same type (and thickness) of fabric.

Here are a few examples of cutting order for a 2-layer kiss-cut:

Example #1 – Bottom Up

(Using heat-sensitive twill on the bottom layer and pressure-sensitive twill on upper layer.)

Tips

With the **Ioline** cutter you only need to set a placement stitch for the bottom layer, since the top layer is attached. Both layers need decorative stitches.

If the bottom layer does not cut through all the way don't press the *repeat* button, as the system will cut all previous layers. Instead, select the last layer again within **301 Software** and cut the layer again.

Never remove the blade holder in the middle of a kiss-cut. After the blade holder is replaced, the system runs a routine that cuts diagonal lines across the tray to help the processor keep track of its position relative to the blade offset.

- ① Place a piece of heat-sensitive twill on the adhesive sheet, backing side down. Smooth any wrinkles out of fabric.
- ② Select the bottom layer in **301 Software** and cut. (DO NOT weed the excess twill after cutting).
- ③ Peel the paper backing off a piece of pressure-sensitive twill and stick it to the top of the first layer.
- ④ Select the top layer of twill in **301 Software** and cut.
- ⑤ Weed both layers as a single graphic.

Example #2 – Top Down

(Using heat-sensitive twill for both layers.)

- ① Heat-press your layers of twill together for about 2 seconds (or long enough that the layers can be pulled apart later.)
- ② Smooth in place on the adhesive sheet,

backing side down, and select the top layer in **301 Software**. Cut the top layer.

- ③ Weed the excess twill.
- ④ Select the bottom layer in **301 Software** and cut. It may be necessary to adjust the cap on the blade holder to get a little more blade exposure for this layer. If so, adjust the blade and repeat the cut (using **301 Software**—not the *Repeat* button).

Example #3 – Sticky Side up

This is a good technique to use when the design mechanics require the pressure-sensitive twill to be the bottom layer of your graphic. Were you to put the pressure-sensitive backing down on the sticky sheet, as in the previous two examples, the graphic wouldn't weed. It'd adhere to the sticky sheet. To avoid this issue, simply mirror the graphic in **301** and cut it in reverse.

- ① Place the top, pressure-sensitive layer of twill upside-down so that the fabric side sticks to the adhesive sheet and the backing faces up.
- ② Remove the paper backing.
- ③ In **301 Software**, click on the *Design Setup* button and select *mirror* to turn the design backwards on the screen. Cut the top layer of twill.
- ④ Place the bottom layer of the second piece of pressure-sensitive twill upside-down so the fabric side adheres to the adhesive on the first layer. For this 2-layer design, leave the paper backing in place. (If the design called for more layers, the paper backing should remain in place on the final layer.)
- ⑤ Cut the bottom layer of twill using **301 Software**.

Example #4 – Other types of Fabric

For fabrics that are not heat- or pressure-sensitive, you need to add an adhesive backing. Ioline carries a double-sided backing just for this purpose. Simply cut the backing material to the size of your fabric and heat press the adhesive (non-paper) side to the material.

Follow the steps in **Example #3** to create the kiss-cut.

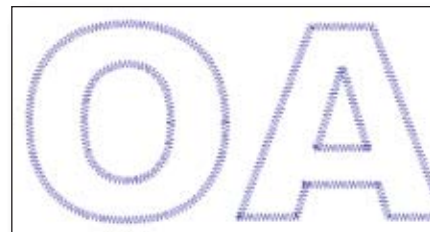
Stitch creation

Creating stitches for a kiss-cut is a little tricky. There is a certain order that must be maintained in order to get the desired results. Follow these steps for a 2-layer kiss-cut with a satin stitch around the bottom layer and a zig-zag stitch around the top layer.

- ① In **301 software** turn the bottom layer on and the top layer off.
- ② Click on *Create Stitches*; Click the check boxes for *Placement* and *Satin* stitches.
- ③ Click *OK*. You'll see the satin stitch on-screen:



- ④ Turn the bottom layer off and the top layer on.
- ⑤ Click on *Create Stitches* again and uncheck the *Placement* and *Satin Stitch*.
- ⑥ Check the *Zigzag Stitch* and press *OK*. You should see a simpler decorative stitch now, like the one below:



- ⑦ Click *Design Setup*, turn both layers on, and press *OK*. You should see both the satin and the zig-zag stitches:



- ⑧ Click *Save File* and select your embroidery machine's file format. Save the file.

Create Stitches

Embroidery Setup

Placement Stitch

Minimum stitch length: mm

Maximum stitch length: mm

Tackdown Stitch

Minimum stitch length: mm

Maximum stitch length: mm

Indent: mm

Bean Stitch

Minimum stitch length: mm

Maximum stitch length: mm

Indent: mm B-3 B-5

Zigzag Column Stitching

Width: mm Density:

Overlap: %

Contour Clip ends

Satin Column Stitching

Width: mm Density:

Overlap: %

Add Corner Buffer Points

Shortstitching in Corners

Extend Corners

Lock Stitch before and after Jump

Double-lock

Convert outline to embroidery resolution

Eliminate Protruding Stitches

Tackdown / Bean: segment reduction

Close Polygons (1.0 mm)

Group Internal Polygons

Simple Overlap logic

Eliminate Duplicate Polygons

Save Setup

Default Setup

Cancel

OK

Recall Setup

Help



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