There are YouTube videos, user guides, and a lot of guesswork on how to make a screen. Some of the information out there is very informative, while others, not so much. When it comes down to it though, it’s not just about making a screen, but making a better screen, and possibly even a great screen.

INITIAL CONSIDERATIONS
To make a better screen, start with the photopositive. The higher quality the positive, the easier it is to reproduce it. The thing you must look at is the sharpness of the image. Is the black optically opaque, and is the clear area of the positive clear?

Inkjet film is the most widely used material today. It isn’t as good as silver halide film or imagesetter films, but it is much better than vellum. If a high resolution is required, you will need a film produced by an imagesetter. These films are expensive, but they will help create the highest-quality stencil.

If using wooden screen frames, stop. Screen mesh cannot be stretched tight enough, nor hold tension during or after printing in wooden frames. They might be cheap to buy, but printing is all about reproducing an image consistently, and wood isn’t rigid enough to hold high-tension mesh. Instead, use aluminum frames. They can handle high-tension loads and retain much of the initial tension throughout the process.

Let’s say you are using an aluminum frame and have the recommended mesh count and tension. What about the color of the mesh? Are you using white or dyed mesh? Mesh color is a huge factor on the resolution. White mesh causes light scatter, while dyed mesh absorbs a great deal of light reducing scatter. Usually, mesh counts less than 110 are white, while 230 and higher are colored. As you know, the finer the image, the finer the mesh must be. Also, because dyed mesh doesn’t scatter light as much as white mesh, it makes sense to use dyed mesh in higher mesh counts. But, why not use dyed mesh in all mesh counts? Dyed mesh creates a better image quality, and it has better durability than its white counterpart. The only drawback is dyed mesh must be exposed longer to get a complete cure of the emulsion.

COATING AND EMULSION
Let’s move on to the stencil. Have you checked to make sure you are using the correct emulsion or capillary film for your application? There are lots of emulsions and films to choose from, and it can be confusing. The first thing to consider is
what is to be printed. Now, check to make sure the emulsion will work with the inks and press wash. The same holds true for capillary film.

Before coating the screen, make sure that it is clean and properly tensioned. I am frequently asked, “How many coats are needed?” The answer is it doesn’t matter. What is important is emulsion-over-mesh (EOM). If there isn’t enough emulsion over the mesh, sawtoothing or ragged edges take over the print. If there is too much EOM, the print can look choppy, wavy, and have uneven ink deposits. There are guidelines of ink deposit, but in reality, print tests must be performed to determine precisely how much EOM is needed. Unfortunately, on-the-job training is many times incomplete, or the screen maker was taught short cuts, both culprits that lead to inferior stencils. Obtaining a thickness gauge is a very good idea. Once you know your goal EOM, you can save time and money on future prints.

Finally, check the emulsion. If the emulsion says it’s for use with plastisol inks, don’t use it with solvent-based inks. If the emulsion says “dual cure,” it simply means it has two sensitizers in it. The emulsion may work with both, but check the user’s guide. There are emulsions made for your application and environment. Get in contact with the distributor or manufacturer to get the correct emulsion or cap film.

**EXPOSURE**

Now that you have the right emulsion for your print job, the next task is to determine the correct exposure. Getting the correct ex-
In this chart, if you are using any or all of the pluses, you probably already make excellent stencils; that doesn’t mean there isn’t room for improvement. Refining the details even more will result in a better stencil.
Exposure is the biggest factor in obtaining high-quality stencils. Every mesh, stencil thickness, emulsion type, and brand will have an influence on the image you are trying to produce as well as changes in the screen-making room such as a new exposure bulb or bulbs, the distance between the bulb and screen, and the humidity in the room. Changing UV lamps will mean that an exposure test must be performed to zero-in on the correct exposure. Humidity will affect the exposure, because it will cause the emulsion to swell and have higher moisture content than on a cool, dry day.

Get used to performing an exposure test regularly. It doesn’t take long to do, and it will only help you to achieve the best stencil possible for your environment.

It is impossible just to mention emulsion without covering all the variables involved in stencil making. All of these recommendations will improve the quality of your stencils and in turn, your prints. But, if you don’t implement procedures to make these things happen, the print quality will not be consistent, and printing is all about repetition. If you can’t repeat an image, you might as well pick up a paintbrush and paint it.

<table>
<thead>
<tr>
<th>Mesh Count (inch)</th>
<th>Mesh Count (cm)</th>
<th>Color</th>
<th>Plain Weave</th>
<th>Thread Diameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>110</td>
<td>43</td>
<td>White</td>
<td>PW</td>
<td>80</td>
</tr>
<tr>
<td>110</td>
<td>43</td>
<td>Yellow</td>
<td>PW</td>
<td>80</td>
</tr>
<tr>
<td>230</td>
<td>90</td>
<td>Yellow</td>
<td>PW</td>
<td>40</td>
</tr>
<tr>
<td>230</td>
<td>90</td>
<td>Yellow</td>
<td>PW</td>
<td>40</td>
</tr>
</tbody>
</table>

Note the differences in thread diameter. This will have a big impact on the quality of your stencil depending on the level of detail in the design.

With the Mimaki TX300P-1800 direct-to-textile printer, you can see your designs and custom prints rapidly come to life on a variety of textiles including woven patterns.

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