

# SCREEN PRINT LIKE DTG

HOW TO SCREEN PRINT

DTG LIKE DETAILS IN

7 SIMPLE STEPS.



by MATTHEW CHEVALIER of MIKEY DESIGNS & SILK SCREEN

# TABLE OF CONTENTS

## STEP 1

CHOOSING THE PROPER MESH . . . . . 3

## STEP 2

LPI AND HALFTONE DOTS . . . . . 6

## STEP 3

USING THE CORRECT EMULSION . . . . . 7

## STEP 4

SEPARATING SIMULATED PROCESS . . . . . 8

## STEP 5

USING A FLATTENING SCREEN . . . . . 12

## STEP 6

SCREEN PRINTING WET ON WET . . . . . 14

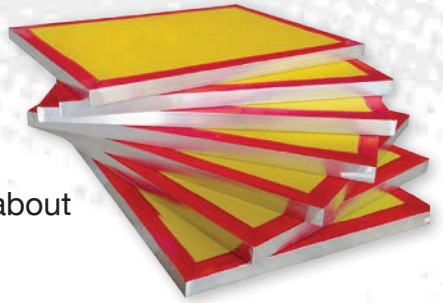
## STEP 7

ADJUSTING YOUR WHITES . . . . . 15

# STEP 1

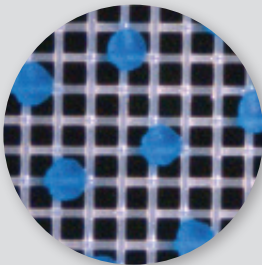
## CHOOSING THE PROPER MESH

Mesh selection plays a very important role when it comes to achieving DTG like quality screen prints. You may be asking yourself. “Where do I start? What mesh count should I use? What about the color, does it make a difference?”



**Ughhh... there are so many choices.**

Not to worry my friend. Let's break down what all those numbers mean and I'll show you what my go-to mesh count and colors are.

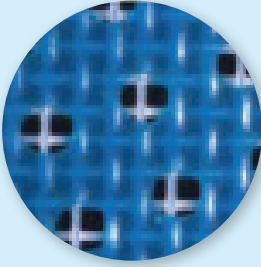


### **LOW MESH: 25-85**

Very open mesh. Due to its larger opening, this mesh is ideal for printing glitter inks (25), and shimmer inks (85). Requires more emulsion to coat, lays down a heavy deposit of ink, and limited to simple designs.

Even with traditional spot color printing, I steer clear of such low mesh counts. They eat up a ton of emulsion, use up a lot of ink, and take longer to flash.

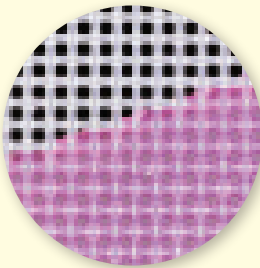
Leave the low mesh counts for grandma's screen door...



### **MEDIUM MESH: 110-195**

The most commonly used screen mesh. Great for spot colors, text, and some sharper detail when using a medium mesh (ex. 156-195). Deposits more ink than a high mesh, but results in greater coverage and brighter prints.

When it comes to screen printing *simulated process*, in an attempt to get DTG like results, 195 or even a 200 mesh screen works great as an underbase. Use it sparingly and only when you need really bright whites or bold vivid colors.



### **HIGH MESH: 230-305+**

Fine mesh! Most commonly used in simulated and CYMK process. Holds fine detail, such as halftones, and lays down a minimal deposit of ink. Great for printing wet on wet. Produces a soft-hand feel.

The bee knees when it comes to screen printing photo quality images that rival DTG printing!

The first mesh count we reach for when it comes to simulated process screen printing is a good ol' 230 mesh. Occasionally we'll use 305 to help pull back a color, or for high lpi halftones. However, you can't go wrong sticking with all 230 mesh screens.

## Soooooo... What about mesh color?

Ah yes... let's not forget about the colors mesh comes in. Generally speaking, mesh will come standard as the necessary color to do the job. For example. Low and medium mesh counts, say 110 -195, are white. *Although*, some 195 mesh will come in yellow. 230 and above almost always will be yellow. **So why are there different colors?**

### **MESH COLOR**

Mesh comes in white and yellow. White mesh reflects UV light and yellow mesh absorbs some UV light aiding halftone exposure.



All that's really just gobble-dee-gook for... yellow mesh does a better job at holding halftones since the light isn't ricocheting like a rogue quarter machine tiny rubber bouncy ball.

As for mesh diameter. It does play a roll, but not something I would get too hung up on just yet until you get the basis down.

### **MESH DIAMETER**

The second number listed after the mesh count. The lower the number, the smaller the diameter of the thread, allowing more ink to pass through.

# STEP 2

## LPI AND HALFTONE DOTS

This is where the *secret sauce* is...

### Halftones!

If you don't get it right here, you might as well be running a 5k in a potato sack.



The very definition of simulated process is **the use of multiple halftone spot color screens to “simulate” process printing**. So what we're trying to do is replicated CMKY process paper printing onto a knitted or ring-spun garment filled with microscopic openings.

Here is a very handy dandy formula for calculating halftones for a given mesh. In layman terms. How small of a dot a given mesh count can hold as seen on the examples in “Step 1”.

### HALFTONE RULE OF THUMB



Take the lpi (lines per inch) and multiply it by 5. For example. Art that is 45 lpi x 5 = 225. A 230 mesh would work well with 45 lpi halftones.

## STEP 3

# USING THE CORRECT EMULSION

Not just any ol' emulsion will do. Sure you could use almost any emulsion, but in order to get DTG like results, we need a way to hold those tinnie little halftones.

I could write a book on the subject, but to keep it simple and to the point...

**Use a dual cure diazo emulsion.**



*Dual cure diazo emulsion* is a two part product that has to be mixed thoroughly and left to rest before use. Dual cure diazo emulsions are popular among new and inexperienced printers because they will expose well even if your exposure unit is not great and they allow for a relatively high margin of error. However, they yield excellent half-tone details.



### WHAT EMULSION WE USE

In our shop, we like to use a dual cure diazo emulsion, such as Ulano TZ, for simulated process printing. It holds great halftone details, even with a multi-bulb exposure unit, has a lower solidity, and is more forgiving when it comes to holding halftones.

# STEP 4

## SEPARATING SIMULATED PROCESS

Probably what can seem like the trickiest part of screen printing DTG like simulated process prints.



### Separating the Art...

What it boils down to is breaking your art up into primary and secondary colors. Here are the list of colors we use for both black and color shirts (which includes white garments).



### BLACK SHIRTS

To print a full color image on black shirts, you'll need the following colors.



White



Red



Blue



Yellow



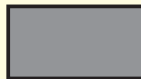
Purple



Green



Turquoise



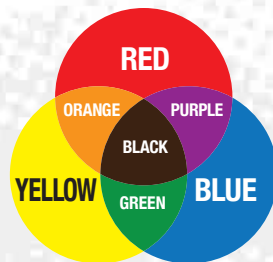
Gray



White

With these colors (white base, red, blue, yellow, purple, green, turquoise, gray, and a highlight white) you can replicate a full-range of colors.

The primary colors red, blue, and yellow will replicate most all colors. The addition of green, turquoise, and purple help the transitions even further and are also utilized for larger print areas instead of relying on primary color halftones to create them.



### What about orange, brown or large solid areas?

There are cases where an additional spot color may need to be added. A good example is when there are large solid areas of a particular color, let's say orange, that will come out cleaner looking when screen printed with a separate orange spot color.



### COLOR SHIRTS

To print a full color image on color shirts, you'll need the following colors.



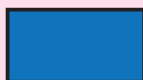
White



Black



Red



Blue



Yellow



Purple



Green



Turquoise



Gray



White

We treat screen printing simulated process, for that DTG effect, on color shirts a lot like black shirts, but with one exception...

### Adding Black...

A lot of times black is necessary on color, and white shirts, to screen print full color images. With black shirts we're relying on the black t-shirt itself to act as the black. With color and white shirts, we need to add a black separation and screen to the mix.



That's all fine and dandy, but how do I actually pull all these colors from the artwork?

**As an artist...you're a visual creature.** Rather than writing up a 300 page book with thousands of pictures. I've developed a video training course that's easy to follow, eliminates the trail and error, and comes with a set of Photoshop® actions that separates full color art with the click of a button. That course and actions are called...



## FEATURES AND BENEFITS

- ✓ Teaches how to master simulated process screen prints.
- ✓ Learn at your own pace.
- ✓ Step-by-step easy to follow professional video tutorials.
- ✓ Includes Photoshop simulated process actions.
- ✓ Produce separations quickly with the click of a button.
- ✓ Taught by an actual screen printer.
- ✓ Teaches how to print on black, color, and light shirts.
- ✓ Create and print halftones without a RIP software.
- ✓ I'll show you what off-the-shelf ink colors to use.
- ✓ What screen mesh and emulsion to use.
- ✓ Works with any version of Photoshop.
- ✓ Works on multiple computers without a single purchase.
- ✓ Will work with both Mac and PC operating systems
- ✓ **One-Time Fee. Life-time access. 24/7/365.**

To learn more about *ActionSeps*™, simply open your web browser and go to [actionseps.com](http://actionseps.com)

## STEP 5

# USING A FLATTENING SCREEN

This technique alone is almost *too good to share*. It will greatly improve the quality of your prints. That technique is using a *flattening screen*. It's easier than you think and you can create a flattening screen using equipment you already have in your shop!

### CREATING A FLATTENING SCREEN

1. Simply coat a screen with any emulsion and expose it with no image.
2. Take a teflon sheet (commonly used when heat pressing HTV) that's at least 2" wider and taller than the maximum print size your press can handle.
3. Use some industrial strength spray adhesive, such as 3M Super 90 (or your can of web spray) and generously coat one side.
4. Center it onto the screen and adhere it to the t-shirt side.
5. Be sure to give the adhesive adequate time to cure.
6. To keep the edges from coming up, you can simply use some screen tape, or better yet, gorilla tape.



## HOW TO USE A FLATTENING SCREEN

1. Install the flattening screen on press.
2. Use a hard durometer squeegee.
3. Use a dab of high temp grease to lubricate the squeegee.
4. On a manual, flash your white base, and then immediately after, hit the image hard with the squeegee just like you're printing an image.
5. For an auto. Set the flattening screen up after your flash station and set a firm fast pressure.



**It's as easy as that!**

What the flattening screen will do is lay down the garments fibers, prevent fibrillation, and will give your overprint colors a nice smooth surface to print on top of. This work with simple spot color jobs too!



## STEP 6

# SCREEN PRINTING WET ON WET

Just as it sounds! Flash your white base, and print the rest of the colors wet on wet. That way the ink can mix on the garment.

To take full advantage of screen printing simulated process and producing DTG like quality. You need to learn to print wet on wet. Here are some simple tips and tricks to fast-track the learning curve.

### WET ON WET TIP AND TRICKS

1. Flash your white base as usual.
2. Use a flattening screen when possible (not absolutely necessary).
3. The key is using higher mesh counts such as a 230 or 305 mesh. This will prevent the ink from bleeding, and will minimize ink build-up on the underside of the screens.
4. Be sure your squeegee stroke of each color goes the entire length of the image. Even if one of the colors is only a small spot in the screen. This will help the ink mix.
5. Run off 4 to 6 test prints prior to a production run. This allows the ink to transfer onto the back of the screens. That way you'll produce vibrant prints.



# STEP 7

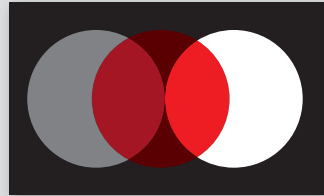
## ADJUSTING YOUR WHITES

Don't under estimate the importance of dialing in your white base and the highlight white...

If you don't get it right here, the previous steps will make little to no difference, whatsoever.

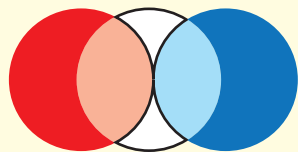
### ADJUSTING THE WHITE BASE

In some cases, the white base needs little to no adjustment. When it comes to creating vibrant colors. You need to make sure your white base is 100% white. For example. You have some really bright red type in your graphic. You need to make sure the white base separation has 100% white under that red.



### THE HIGHLIGHT WHITE

The job of the highlight white is to not only give you 100% bright whites, BUT, it also serves as a way to create pastel and lighter colors. Simply pulling back a color will not yield near as effective results as printing a little white (halftones at say 10%) on top to subdue the color.



## 7 STEP RECAP...

1. Stick to higher mesh counts. 195-305
2. Use the correct lpi vs mesh count.
3. Go with a good *dual cure diazo emulsion*.
4. Good separations are key to quality DTG like prints.
5. Hit that white base with a flattening screen.
6. Print wet on wet. Flash only your underbase.
7. Dial in your white base and highlight white.

For a more in-depth information and training on how to separate and screen print simulated process, visit [actionseps.com](http://actionseps.com)

# ActionSeps™



by Matthew Chevalier of Mikey Designs & Silk Screen © 2022