

*Screen Printing Instructions*

*Instrucciones de serigrafía*

*Instructions de sérigraphie*



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# SCREEN PRINTING INSTRUCTIONS

for Jacquard Screen Ink Printing Kit and Versatex Screen Printing Kit

Silk screen printing is a form of stenciling. It has a long history and has been traditionally used by the textile industry and commercially for poster reproduction. The process involves a piece of fabric mesh tightly stretched over a wood or metal frame. The fabric originally was silk, but more durable polyester is commonly used today. A stencil is applied to the screen by various methods. One of the easiest and most versatile methods to create the image in the screen is with photo emulsion. After making the screen, the inks are pulled over the stencil image with the squeegee, leaving your image deposited on fabric or other surface. This kit provides what you need to create your own screened prints with this traditional technique.

## KIT CONTENTS:

10" x 14" screen  
9" squeegee  
3 colors of screen inks  
3 sheets of acetate/imaging film  
photo emulsion  
diaz sensitization  
instruction booklet  
stir stick

## ADDITIONAL SUPPLIES NEEDED AND/OR HELPFUL: ®

inkjet or laser printer or copier (for printing on acetate)  
glass or plexiglas (to lay over image while exposing screen)  
incandescent, photoflood, or fluorescent light bulb set in a reflector shop light (or sunlight to expose screen)  
rags or towels (for clean up)  
water hose with spray nozzle (to spray out screen)  
water resistant masking or duct tape (to mask edges of screen)

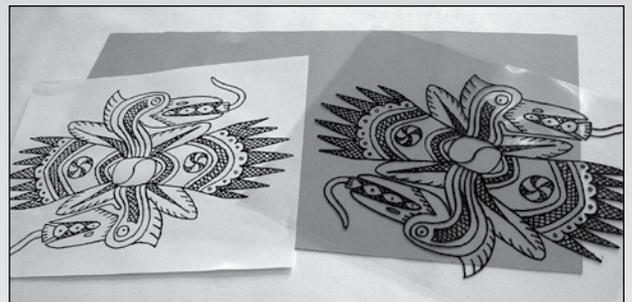
## 1. Prepare your image.

There are many ways of preparing an image for making a screen. We have provided the easiest and fastest way in this kit along with other options. Printing on the acetate is as easy as printing on paper.

### **A. Print a positive of your image.**

a. A positive is an opaque image on a transparent acetate or film. The positive is the image that prints. It is usually prepared as a black and white image on paper. When printed on the acetate, the black image is printed and the white areas remain transparent. Your image can be a line drawing, photograph, or block design. Any gray areas in your image will not be exposed properly in the screen. Adjust the contrast so that there is only black against white. The black areas of your design will be the open areas in your screen and will result in what is printed on your surface. The size of the image must fit on an 8 ½" x 11" sheet.

b. Print a test copy of your image out on a piece of paper first. Set printer or copier for best quality print. If your printer has a setting for transparencies, you might get better results with that. Make a positive of your image by copying or printing it onto the provided acetate. Be sure to use the appropriate side for inkjet or laser printers or copiers. Check to make sure that your image is completely opaque. You should not be able to see any light through the black areas of the image. Cut the white strip off of the acetate after printing.



### **B. Draw or paint directly onto the acetate.**

a. Use a marker, ink or paint to directly apply your design to the acetate. Experiment in a corner to see which side of the acetate works best.  
b. Make sure that the medium you use is opaque on the acetate. Let dry completely before exposing screen.

### **C. Paper stencil.**

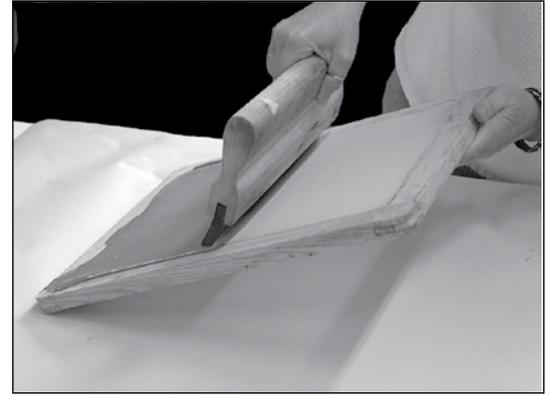
a. With scissors or exacto knife, cut out a design in the paper. Use a heavier opaque paper like construction paper or cardstock.  
b. You will not need the provided acetate for this method.

#### D. Collage.

- a. With this method, you will lay objects directly onto the sensitized screen to create a design.
- b. The objects you use should be opaque and you will not need the provided acetate for this method.

### 2. Mix emulsion and apply to screen.

- a. Fill the diazo bottle with water and shake until the powder is mixed. Pour all of the diazo sensitizer into the emulsion and stir to mix thoroughly. Let the emulsion mixture stand for 1 to 2 hours before coating the screen. Once the sensitizer is mixed into the emulsion it will have a limited shelf life of up to 6 months dependent on conditions. Keep it in the black container and store in a dark cool place. Refrigeration will help to extend the shelf life.
- b. With a screen that is clean and dry, pour a line of the sensitized emulsion along the bottom outside of the screen. Squeegee the emulsion on evenly. You may have to work on both sides of the screen. You want to have a thin, even coat of emulsion. Do not leave any drips and return any excess emulsion to the bottle. Lay the screen flat to dry in a dark place away from any light and heat. A fan in the drying area will greatly speed up the drying time. Screen should remain away from light and heat until it is ready to be exposed. Coated screen should be exposed within 48 hours.



### 3. Expose the screen.

- a. Set up everything you need to expose your screen before you take your screen out of the dark. You'll need your image on the acetate, a light source, and a piece of glass or plexiglas. For a light source you can use an incandescent, fluorescent or photoflood bulb set in a reflector shop light or bright sunlight. Using sunlight can be a bit more unpredictable depending on location, time of year and weather. If you do choose to try exposing the screen with sunlight, it is best to do so at mid-day when the sun is most directly overhead.
- b. Take the coated screen out of the dark. Lay the acetate image onto the screen. Center the image on the screen. Be sure that if you have text or an image that is directional it will read correctly from the *inside* of the screen. A piece of clear and clean plexiglas or glass laid on top of the acetate will help keep the image flat and in close contact with the screen. Place screen directly under light source on top of a non-reflective surface. Exact exposure time will depend on how thickly coated the screen is (a thinner emulsion will expose faster than a thicker one), the distance of the light source from the screen, and the strength of the light source. When the screen is properly exposed the areas where your image is will appear lighter in the screen than the other areas.

Here are some general guidelines for various light sources. These bulbs and the reflector shop light are readily available at any hardware store.

Light source	Distance from screen	Exposure time
200 watt incandescent	24 inches	22-25 minutes
150 watt incandescent	24 inches	30-33 minutes
100 watt indoor flood	18 inches	50-55 minutes
60 watt indoor fluorescent	18 inches	45-48 minutes
sunlight		10-15 seconds



- c. After exposing the screen, remove glass and acetate. Quickly spray the screen using cool water, gently at first, then becoming more forceful. After a little while, the light areas where your positive image was should wash out leaving your image in the screen.
- d. After screen has dried, hold it up to the light to see if there are any areas that need be filled in. If there are areas that need

to be filled in, paint a little of the sensitized emulsion onto the screen, let dry in the dark as before, and then expose to light. Let the screen cure for a bit in the sun or under a light until it dries.

#### 4. Masking sides of screen.



- a. Taping will help prevent ink from leaking through the areas where the screen fabric and the wood frame meet while printing. This will help to keep the edges of your print clean. On the inside of the screen, fold the tape in half lengthwise and place half of the tape on the screen and half on the wood frame. Continue all along the inside of the frame.
- b. On the outside of the frame, match up the tape edges from the inside and lay tape half over the screen and half over the frame. Burnish the tape with spoon for the best adhesion.
- c. If you are only doing a few prints, instead of taping the screen, you may want to lay strips of paper under the edges of your screen.

#### 5. Screen print.

- a. The Versatex Screen kit is primarily formulated for use on fabric or paper. Jacquard Screen Inks work on paper, fabric, vinyl, leather and other non-porous materials. For paper, you will want the paper to be on a hard work surface. For fabric, a slightly cushioned surface works better.
- b. Place screen on top of the paper or fabric. Pour or spoon the ink in a line across the top of your screen. Do not put ink onto the open area of your screen where your image is.



- c. Holding the squeegee at a 45 degree angle, pull the line of ink across the image. It may take a little experimenting to find the correct amount of pressure when screening the ink. You may want to have someone else hold the screen down while you are squeegeeing so that the screen does not slip or move. You can also make another pass, now going in the other direction.



#### 6. Clean up.

- a. After you are done screen-printing, remove any ink that is left over in the screen. This ink can be saved.
- b. Don't let the screen dry with any ink left in it. Immediately wash out with water using a spray nozzle.
- c. Wash squeegee and all other utensils with water.

#### 7. Heat set.

- a. For screen prints on fabric, inks must be heat set. After the print has dried thoroughly, iron on reverse side for 1 minute at appropriate fabric setting. Keep the iron moving.
- b. For screen prints on other surfaces that are not to be washed, no heat setting is required. Let dry completely. Inks will continually get harder over the next couple of days.

## 8. Reclaiming the screen.

To reuse your screen, you can remove the photo emulsion from the screen after it has been exposed.

- a. With the screen lying horizontally in a sink, lay paper towels on both sides.
- b. Pour a mixture of half bleach and half water solution over the paper towels. Let soak for a while to let the photo emulsion soften. Scrub the screen gently with a brush or scrubber sponge to remove all emulsion. Rinse and dry thoroughly before reapplying emulsion.

## 9. Tips and Troubleshooting.

- a. Pre-wash any fabrics that you will be printing on to remove any sizings.
- b. For t-shirts, put foam board or papers inside the shirt so that the ink does not bleed to the other side of the shirt.
- c. If the photo emulsion won't adhere to the screen, wash the screen with warm water and a little dishwasher powder. Let dry completely and try again.
- d. If too much emulsion washes out, possible causes:
  - the screen was not exposed long enough.
  - the water pressure was too forceful or too hot in the wash out.
  - the screen was not completely dry before exposing.
- e. If the emulsion won't wash out of the image areas:
  - artwork was not opaque on the acetate.
  - the screen was exposed too long.
  - image was not completely flat against the screen.
  - the screen was placed on a reflective surface while exposing.
  - the screen was exposed to too much light and/or heat before exposure with artwork.
  - wash out was incomplete.

**Jacquard Screen Inks and Versatex Screen Inks are available in a 4 oz. and 16 oz. size and in the following colors:**

### **Jacquard Screen Inks**

JSI 100	Clear Extender	JSI 117	Black
JSI 101	Yellow	JSI 118	White
JSI 102	Golden Yellow	JSI 119	Sup. Op. White
JSI 103	Orange	JSI 120	Gold
JSI 104	Red	JSI 121	Solar Gold
JSI 105	Bright Red	JSI 122	Silver
JSI 106	Scarlet	JSI 123	Copper
JSI 107	Magenta		
JSI 108	Violet		
JSI 109	Sky Blue		
JSI 110	Royal Blue		
JSI 111	Blue		
JSI 112	Navy		
JSI 113	Turquoise		
JSI 114	Yellow Green		
JSI 115	Green		
JSI 116	Brown		

### **Versatex Screen Inks**

VPI 300	Clear Extender	VPI 324	Ultra Blue
VPI 301	Yellow	VPI 326	Navy Blue
VPI 302	Gold Yellow	VPI 327	Violet
VPI 303	Orange	VPI 328	Black
VPI 304	Scarlet	VPI 330	Silver Lace
VPI 305	Red	VPI 331	Gold
VPI 306	Bright Red	VPI 332	Bronze
VPI 308	Rubine	VPI 333	Copper
VPI 309	Magenta	VPI 338	Flourescent Yellow
VPI 311	Ochre	VPI 339	Flourescent Blue
VPI 313	Umber	VPI 343	Hot Pink
VPI 314	Brown	VPI 345	Opaque White
VPI 315	Yellow Green	VPI 346	Super Opaque White
VPI 316	Green	VPI 347	Pearl
VPI 319	Turquoise		
VPI 320	Sky Blue		
VPI 321	Blue		
VPI 322	Royal Blue		