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## Cyanotype Kit Instructions

Thank you for purchasing this Cyanotype kit by Bostick & Sullivan. It will make approximately 200-250 8"x10" prints in stunning Prussian Blue. Please read and understand these instructions completely before beginning. Observe all safety precautions, and practice basic common sense when handling all chemicals.

### 1. Safety and Handling Information

The Cyanotype solutions in your kit are sensitive to ultraviolet light only, and can be handled under normal room lighting conditions. A safelight is *not necessary* and normal incandescent lighting can be used during the entire Cyanotype process. Fluorescent lights may be used, but it is recommended that you limit the exposure of the chemicals and coated paper to them. This will limit the chances of fogging the image. Work in a windowless room, or shade any windows in your workspace.

Always wear plastic or latex rubber gloves while handling the Cyanotype solutions, coating the paper and processing the exposed images. The solution should be considered poisonous. **Do not store it in a refrigerator used to store food or drinks.** The solution is stable at room temperature and will have a shelf life of approximately 1 year from the date of purchase if stored in their original separate containers.

### 2. Preparing Your Workspace and Negative

You will need a negative the same size as your final image, which is then printed in direct contact with the dried Cyanotype-coated paper under intense an UV light. A 1000 watt metal halide bulb, special ultraviolet fluorescent lights or sunlight can also be used to expose the image.

You will need a split-back contact printing frame, vacuum frame or two sheets of plate glass to maintain proper registration and pressure between the negative and paper. For the purposes of these instructions, it is assumed the artist is using a split-back contact printing frame, which allows for inspection of the image during exposure.

Select a large table with a hard, smooth surface to coat your paper. The Cyanotype solutions can stain wood, metal and many plastic surfaces. Place several sheets of newspaper or blotter paper on top of the table to catch any extra solution.

If you are coating with a brush you should only use it for Cyanotype printing. Avoid using a brush that has been used to coat other alternative process chemistry. A glass coating rod can be used for multiple handcrafted processes if you wash it properly between uses.

You will need 1 or 2 trays for processing the exposed image. Fill the first tray with cool, steadily running water as a wash bath. The second, optional tray is filled with a developer made by mixing 100 ml of 3% Hydrogen Peroxide from the drugstore with 900 ml tap water. This step is not necessary, but it will speed the printing process and allow the artist to see the final image much sooner.

Select a 100% cotton rag, unbuffered paper that will match the archival quality of the final image.

If you are printing on a sheet of 8.5"x11" paper, make sure it has a minimum weight of 32 lb. We recommend using hot pressed papers with a minimum 47lb rating for larger images. Heavier papers will withstand wet processing better, and the hot pressed surface will produce a denser, sharper image with smoother transitions. Begin your printing with a paper that has a proven record and has been recommended for alternative processes, then experiment with other papers as you gain experience.

### 3. Emulsion Coating and Drying

Take a piece of paper and tape the upper corners to your coating table using paper tape or masking tape. Place your negative on the uncoated paper and mark the four corners of the negative on the paper using a pencil. This will mark the area that needs to be coated and help you concentrate the solution inside the image area.

Using a dropper, count out drops of the emulsion into a small glass or plastic cup. A shot glass from a bar or restaurant is suitable, as well as small plastic cups commonly used for condiments in restaurants. **Mix equal parts of Cyanotype solutions A & B to create the coating emulsion.** Make sure the A and B solutions mix thoroughly before coating.

Approximate drops needed for images, some papers will require more, some less:

4"x5" image = 12 total (6A, 6B)

5"x7" image = 18 total (9A, 9B)

6"x9" image = 24 total (12A, 12B)

8"x10" image = 40 total (20A, 20B)

#### 3a. - Using a brush

Wet your brush with distilled water. Then generously blot it on a paper towel to remove any excess water. This prepares the brush for coating and helps prevent the Cyanotype solution from "wicking" up the bristles and keeps it on the surface of the paper.

Take the measured and mixed Cyanotype solution and quickly pour the entire amount onto the center of your image area. Using very light pressure, immediately begin spreading the solution back and forth in a horizontal pattern until you have covered the entire image area. Switch to a vertical stroke and continue spreading the solution. Switch back and forth between vertical and horizontal strokes until the solution has absorbed into the paper. If you are still spreading solution after 30 seconds, reduce the amount of coating solution by 1/4.

Over-brushing can cause abrasions on the surface of the paper, resulting in small pieces of paper fiber clumping together in your image area. Using the pencil marks you made earlier as a guide, make sure you coat an area large enough to completely cover your negative. Your edges are never going to be perfect, so coat a little larger than necessary, then position the negative in the middle.

After you have finished coating the paper, place it in a dark spot to dry for about 1 hour. We *do not* recommend using a hair dryer to dry the emulsion. Our testing has shown that allowing the paper to dry naturally results in a superior image.

### **3b. - Using a coating rod**

Take the measured Cyanotype solution and pour the entire amount along one edge, just outside of the image area. Place the coating rod in the middle of the solution and wiggle it a few degrees clockwise and counter-clockwise. The capillary action will draw the solution evenly along the entire length of the coating rod.

While applying very light pressure, gently pull the coating rod across the image area. When you reach the edge of the image area, lift the rod, skip over the bead of solution, then drag the solution across the paper in the opposite direction. If you are able to make more than 6 passes back and forth, reduce the amount of coating solution by 1/4.

If a line of solution remains on the paper after 10 passes, gently blot the excess solution with the corner of a paper towel to remove it.

Dry the coated paper in a dark spot for about 1 hour.

### **4. Exposing the Image**

The Cyanotype image darkens as it is exposed, producing a "printing out" image, negating the necessity for a separate development stage.

Using a traditional split-back contact printing frame allows the artist to inspect the image during exposure without disturbing the registration between the negative and paper. This is especially useful when using natural sunlight which is variable and unpredictable, which can lead to exposure times that vary greatly.

Place your negative inside the print frame and center it on the glass. Make sure the image is not reversed when viewed through the glass, or your final image will be reversed.

Carefully place your dried Cyanotype coated paper face down in the frame, covering the negative. Install the felt-lined hinged back and lock the springs in place.

Place the frame under your UV light source or in direct sunlight to begin exposing. You will see the emulsion coated area outside of the negative begin to darken almost immediately, changing from a bright yellow to a brilliant blue within a few minutes. It looks impressive, but the image is not finished at this point.

**Cyanotypes must be over-exposed to create a permanent image.**

The blue color initially seen during exposure is non-archival and will wash away in plain water. Instead, watch for the darkest areas of the image to begin reversing and become lighter as you expose the image. It is at this point that a permanent blue color will be created. An exposed image that appears faded and "washed out" will darken to a deep blue color after wet processing.

Judging the proper time to remove the print from the light is the most crucial part of the Cyanotype process.

After 4 minutes of exposure, remove the print from the light and inspect. Carefully open **one** leaf spring on the hinged back. Fold that half of the frame open to expose the backside of the print. Carefully lift the paper by an edge and fold it back to reveal the image. After an initial 4 minutes, the image will have darkened considerably, but it is likely that it will need more exposure. Lock the leaf spring back in place, and continue exposing if necessary. Repeat the inspection process every few minutes until the image has begun to reverse and become lighter.

### **5. Print Washing & Drying**

Take the exposed image from the print frame and place it in the tray of wash water and notice a yellow stain quickly lifting off of the paper. Wash the print for 12-15 minutes, with agitation, changing

the water every two minutes. Continue washing until the yellow emulsion stain is no longer visible in the highlights of the image. It is normal for some blue pigment to wash off the image as well.

After washing, gently lift the print from the tray by a corner and allow the water to drain off of the paper for 15 seconds. Hang the print from a clothes line or place on a plastic window screen to air dry. Alternatively, you can dry the print on several paper towels layed on a table, making sure to keep the print from sticking to the towels as it dries. As the paper dries, the image will oxidize and turn a dark Prussian Blue color. If the image should ever fade, simply place it in a dark place for 2-4 weeks and it will re-oxidize and turn dark blue again.

We recommend flattening your dried prints in a warm dry-mount press, then mounting and matting them on archival, acid-free board.

#### **6. Developing in Hydrogen Peroxide (Optional)**

Make a hydrogen peroxide developing bath by mixing 100 ml (3 oz) of 3% hydrogen peroxide from the drug store with 900 ml (30 oz) water.

Place your washed prints in the hydrogen peroxide bath and agitate for 60 to 90 seconds. The image will immediately oxidize and turn a dark, brilliant blue color. It is normal for small gas bubbles to form on the surface of your print as the hydrogen peroxide develops the image.

Wash prints for an additional 8-10 minutes after hydrogen peroxide development.