

1. ***Exposure Unit.*** There are a variety of ways to successfully expose plates. Printmakers who are lucky enough to work in a studio with a vacuum exposure table (the sort used for phototeching) should definitely use it. Contact printers, used by photographers and available at photographic suppliers, are the next step down. Most artists will want to construct a homegrown contact frame consisting of the following materials: a base made of ¾” piece of plywood, layered with a ½ “ thick piece of foam rubber, topped with a plate of high quality clear glass (about ¼” thick). Do not use Plexiglas, lexan or plastics since they scratch easily, and some have UV light screening. Clamp the frame together on each corner with rubber tipped clamps.
2. ***Preparing your Art.*** Art for solar plates must be in the form of a transparency, which opens up numerous possibilities for the artist. Working directly on a surface of mylar, transparent acetate or glass, artwork can be created by drawing or painting using a opaque black medium – India ink, sharpie, litho crayon, tusche, stabile 8046 pencils, etc.; or one can photocopy photographs, physical objects, existing drawings and paintings onto a mylar sheet. Some artists enjoy surprise elements of collage; by using flat objects in contact with solar plate, a photogram-like image can be created. Digital artists can scan an image and print it on transparency film. Many printmakers who have worked extensively with solar plate have found that digitalizing the image generally renders the best results.

Scan either an original or a photographic image. Large format drawings and paintings can be photographed and scanned. Use your image manipulation software to convert color information to grayscale. Adjust the image to bring out brightness, midtones and deep blacks. Size the image so all edges cover the plate or leave a border if you wish. Print the photo positive image on the transparency film recommended for your printer, using your printer’s highest available output.

The transparency is used as a contact positive (in intaglio printing) or negative (for relief printing). In exposing your artwork, it’s best to place the “emulsion” side of the transparency face down on the plate. Anywhere a line is created; it will appear as a dark line in intaglio printing or a white line in relief printing.

3. ***Exposing the plate.*** For a relief plate, keep in mind wherever a dark line appears on your transparency, a white line will appear on your plate. So think of your drawing tool as if were a carving tool on block or linoleum. This technique works best for images with large, flat areas of dark or light. Remember this technique will yield a print that is the REVERSE of your original image, like a lino cut.

Place the plate on the foam bed of your contact frame. Place your transparency on the platinum plate, cover the entire “sandwich” with your clear glass plate, and clamp it securely together. Expose it to the sun; gently oscillate the apparatus for evenness of exposure.

Exposure times will vary depending upon the density of the image, and the amount of UV light available. Denser images require longer exposure times. Exposing a plate in bright sunlight, through a transparency with “average density” will generally require two minutes of exposure. Even cloudy days can produce enough UV irradiation to expose your plate, but exposure times will be longer. We suggest cutting small test strips to experiment with exposure times. With experience, you will be able to judge the best exposure times for the amount of sunlight available. Looking at cast shadows is a good way to judge available light. If the plate feels tacky, it is underexposed.

For an Intaglio print: double exposing the platinum plate, first with an aquatint screen and then with your transparency, creates predictably good results. The aquatint screen – a transparency covered with a small random dot pattern – helps detail show up in the final image. Exposing your plate to an aquatint screen first will enable your darks to hold ink better. Without the screen, these areas will not hold ink well when the plate is wiped. Note that aquatint screens are not cheap, and quite fragile, so treat them gently.

First, set up your contact frame indoors with the image in contact with the Platinum plate then expose the plate for the amount of time you plan to expose your image, then bring the exposed plate inside, replace the screen with your aquatint screen, and re-expose the platinum plate. For approx. 80 seconds.

4. ***Developing the Plate.*** The Platinum plate is developed by washing it in cool tap water (about 68 degrees F), which causes the unexposed film to wash away.

Using a very soft nylon or natural bristle brush (sold as mushroom brushes in culinary supply stores) the Platinum plate should be gently scrubbed in a stream or bath of water. The longer the plate is in the water, the deeper the bite will be, which will hold more ink. For an intaglio style plate, 1 -2 minutes is recommended, while a relief plate can be washed for 10 minutes to the deepest bite. After the washout process is finished, blot the plate quickly with newsprint and use a blow-dryer to finish the drying process.

5. ***Hardening the Image.*** The Platinum plate should be re-exposed to the sun for 10 – 20 minutes to finish the hardening process. If there is any stickiness, it should be exposed longer. It is then ready to ink.
6. ***Inking the Finished Plate.*** Because the Platinum plate is relatively thin, inking and wiping can be made easier by constructing a support for the plate.
 - a. Cut a piece of ¾” plywood slightly larger than the plate.
 - b. Glue a vinyl coated magnet sheet to the wood
 - c. Place a large page of old phone book on top of the magnet. This helps keep things clean.
 - d. Place the inked plate on top. The magnet will hold it in place.

Now the plate is ready for inking and wiping.

For a Relief Plate: Use a brayer to roll out the ink. Please note: Most water based inks should be avoided to prevent deterioration.

For an Intaglio Plate: Rather than using a brayer or metal ink knife, which can scratch the image, use a flexible piece of mat board as an ink knife to apply a thin layer of ink. Wipe out the plate with a soft tarlatan as usual, gently wipe again with newsprint, and then clean.

Both relief and intaglio plates should run through *après* at high pressure for the best results.

7. ***Clean up.*** To clean the plate, use baby oil, mineral oil, safflower oil. Use a piece of newsprint and a small amount of oil and wipe clean. A small amount of oil left on the plate will help protect it. Store the plate, wrapped in black plastic or a similar light resistant material; inadvertent long-term exposure to light can damage the plate. A platinum plate will yield 100 – 150 intaglio prints before degrading, you may get thousands of relief prints from a single platinum plate.