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POLYMER PHOTOGRAVURE WORKSHEET

DIRECT TO PLATE METHOD

EDITING

Convert the file to Gray Gamma 2.2, if it's in RGB. `Edit > Convert to Profile > Gray Gamma 2.2`

Edit the image in Photoshop using any of the available tools. Once editing is complete and the image looks perfect, adjustments need to be applied to compensate for any contrast differences between the inkjet printer and the polymer plate. Without this step, what you see on your monitor will not be anywhere near what you see in your print.

SET THE BLACK AND WHITE POINTS

Create a new Levels layer. `Image > Adjustments > Levels`

While holding down the Option key, click and drag the black point slider to the right until the minimum of black dots appear and let go. Now, hold down the Option key again and move the white point slider to the left until white dots just start to appear. If the mid-tones change too much, then the middle slider can be moved to make further adjustments.

OUTPUT USING QUADTONE RIP AND PRINT TOOL

Quadtone RIP and Print Tool are used in place of the regular Epson driver. Select the appropriate QuadtoneRIP printer (Quad3880). The image is now ready to be printed using the front-load of the Epson printer. *Remove the protective Mylar sheet from the plate* and insert into the printer.

PAGE SETUP - Layout Settings
Check Flip Horizontally

QUADTONE RIP SETTINGS

Curve 1: Select the appropriate curve
Paper Feed: Manual Front
Black Ink: Matte Ink
Resolution: 1440 super
Speed: Uni-directional
Choose Print-Tool Managed, AdobeRGB and Perceptual Intent.

EXPOSURE

Once printed, the ink needs to dry briefly before use. Next, place the plate under UV light *(carefully on top of the Kreene and without using the vacuum frame)* for the required time. This exposure is the minimum amount of light needed to give a good

black. Too little exposure will have areas of polymer completely washing away (open bite). Too much will result in no true blacks, just dark grey tones.

PLATE WASHOUT

Fill a tray with approximately 2 litres of water at about 70-72° - the exact amount isn't critical, but the temperature is. Water that's very hot will wash away too much polymer while water that's too cold will have little effect.

Place the plate polymer side up into the water and gently brush with a paint pad or sponge for 4 minutes. The aim is to gently wash away the soluble polymer - no great force is needed to achieve this, just gentle, constant contact.

After 4 minutes remove the plate and immediately dry it by placing several sheets of dry newsprint on the surface of the plate and gently wiping a hand over the paper. Be careful not to move the paper which can damage the soft polymer. This step should take about 5 seconds.

Quickly and carefully remove the paper and start drying with a hairdryer set on low heat. A film drying cabinet is perfect too, if available. Dry the plate for a further 5-10 minutes.

POST-EXPOSURE HARDENING

Once the plate is completely dry it is hardened and cured to withstand the pressure of the press. This is done by re-exposing the plate to UV light without the contact frame, film, or screen. This exposure time is not critical but should be the same, or longer, than the original screen and image positive exposures combined. Longer times won't damage the plate. After this hardening exposure it can be cut down further if no border or plate mark is required and the image is to cover the entire plate.

PREPARING THE PLATE FOR PRINTING

At this point the corners can be rounded using a file and the edges made smooth with a sanding block. The aim is to obtain smooth edges that are not only safer to work with but won't hold ink. The edges of polymer plates can be a lot harder to keep clean and wipe free of ink than copper plates and ink can sometimes creep between the polymer and the steel and only become noticeable in the final print. Sharp corners can catch the tarlatan when wiping the plate, bending the plate and can also pierce the damp paper.

MATERIALS & SUPPLIERS

POLYMER PLATES

Jet plates available from Mountain Intaglio – www.mountain-intaglio.com
Toyobo Printight KM73 available from Boxcar Press - www.boxcarpress.com

MISCELLANEOUS

Paint pad — Used to gently washout the polymer plate and available at any hardware stores.
Nitrile gloves — Hardware or drug stores.
Kutrimmer — or a utility knife, a straight edge, and LOTS of care.
Sheet magnets — The plates are steel backed and a lot easier to handle both in the washout and during the inking and wiping of them if they can't move around - www.custom-magnets.com

Paper — Wet Paint or The Art Cellar (at MCAD). Any good quality etching, or printmaking, paper. Hahnemühle Copperplate or Rives BFK are good choices and available in different weights and colours.

BUYING PLATES

There are many brands of polymer plate with different polymer and steel thicknesses and hardness. The plate that gave me consistent results over the past 20+ years was the Toyobo Printight KM73 plate. It has a resolution and hardness that's perfectly suited for intaglio and photographs. Unfortunately supply chain issues have made supplies of this plate very erratic. My preferred plate now is the Jet LSL 94SM from Mountain Intaglio used with the Direct-to-Plate method. Plates should be used within 9-12 months, so try not to order any more than you can use in that time.

PRESS SETUP & PRINTING

PRESS SETUP

The press setup is slightly different than for copperplate, in that more pressure is required with the polymer plates. Rather than using three blankets (pusher, cushion, and sizing catcher), leave out the cushion blanket; this will result in more pressure. You should now have the thinnest blanket (the sizing catcher) next to the press bed and the thicker blanket (the pusher) on top, next to the roller.

Adjust the printing pressure by turning the adjustment screws equally, making sure both micrometer dials read the same for even pressure across the bed. Once you start proofing your plate you may find it necessary to increase or decrease the pressure. Make a note of this final setting for future printing sessions.

INKING & WIPING

Before inking the plate, start soaking a sheet of paper. Hahnemühle Copperplate Etching will need about 5-10 minutes in the water. Mark the back of the paper with an 'X' to distinguish the print side from the back and if there are others using the presses at the same time, initial your paper too.

Start preparing the ink. You may need to add a *small* amount of Clearset. Mix thoroughly and work the ink with a metal ink knife. Add any modifier to the ink in small increments - not much is needed to make a big difference. Using either a plastic spreader or a piece of clean card, take a small amount of ink and with the spreader at a slight angle draw the ink down the plate. Repeat until completely covered. Now use the spreader to carefully remove as much surface ink as possible, keeping the spreader nearly vertical, placing the excess ink back on the ink slab. The more ink you can remove at this stage the less wiping you'll need to do.

Tightly ball up the tarlatan so that it has a smooth face and start wiping. The idea is to gently wipe the surface clean of ink yet leave the pits of the plate still filled. Use a light, circular motion over the entire plate. Start with a dirty tarlatan to remove most of the ink but then change to a cleaner one when you start to see the image. Be careful when using old tarlatans as any dried ink can scratch the polymer.

Clean the plate border and edges with a shop rag and whiting. Wipe the back of the plate of any ink that may squeeze out from the edges and ruin the print.

PRINTING

Place the plate face up on the press bed. With clean hands, remove the paper from the water bath and place it on a blotter face up. Place a clean towel, or a second blotter, on the paper and rub evenly all over. The paper needs to be slightly damp and with no surface water. A paper that's too damp will stick to the plate while one that's too dry will produce a print that is blotchy.

Position the paper face down over the plate and cover gently with the blankets without moving the paper or plate. Roll the bed through the press, slowly pull back both blankets and peel the print away from the plate. If this is a test print it's a good idea to mark any exposure, press settings and ink information on the print in pencil at this point. Place the print on the drying rack. Clean the press bed after each print to ensure the next person doesn't get their print spoiled by your ink!

CLEAN UP

There's no need to clean the polymer plate in between prints, only at the end of the printing session. Use SOYsolv and/or Simple Green on the press bed and SOYsolv or a vegetable oil on the plate. Store the clean plate in a Ziplock bag and preferably flat and in the dark. Over time, despite how well it's stored, the polymer will dry out, harden, and crack.

At the end of the session clean excess ink from the ink slab with an ink knife and place it on a page from the phone directory, or a piece of newsprint, and throw in the garbage. Alternatively, you can keep a large amount of ink by placing it in a small piece of aluminum foil, folding the edges over to make a tightly sealed packet. Make a note of the ink and modifier on the foil with a Sharpie. Clean the slab with SOYsolv followed by Simple Green.

Place all used tarlatans and shop rags in their appropriately marked containers. Unscrew the pressure screws on the press, roll up the blankets and return to their proper storage place.

INKS AND MODIFIERS

Etching inks usually needs to be modified before they can be used with polymer plates. Most often this means creating an ink with less viscosity, or body, as the polymer plates tend to release the ink less easily than copper plates. I like Charbonnel black inks mixed with either a brown or blue ink to create a warm or cool black with a small amount of Clearset. Add any modifier to the ink in small increments - not much is needed to make a big difference. Only through proofing the plate will you be able to tell if it needs a looser or stiffer ink.

When taking ink from the can do not dig into the ink but remove it in a circular motion from the surface using an ink knife, keeping the surface smooth. The ink is less likely to dry out if stored this way.

BLACK INKS

Charbonnel Universal 55981
Ivory Black.
Very viscous, opaque, and completely last-fast. A good average black.

Charbonnel RSR
Carbon Black.
Viscous, but supple, black. Completely lightfast. Usually needs less modifying than other blacks when used with polymer plates.

Charbonnel Soft Black
Ivory Black.
Very soft and supple black but slightly less opaque. Good for plates that have a lot of contrast.

Charbonnel Carbon Black
Carbon Black.
Low viscosity and very easy to wipe.

INK QUALITIES

Body
The stiffness or viscosity of the ink.

Length
Tap the knife in the ink and then draw the knife straight up. The thread of ink will indicate the whether the ink is long or short.

Tack
The stickiness of an ink.

MODIFIERS

Magnesium Carbonate
Adds body, stiffening the ink, and reduces length.

Calcium Carbonate (Whiting)
Removes ink from plate borders.

Easy Wipe, Clearset
Tack reducer used to soften inks and making wiping easier.

Transparent Lake
Adds transparency and lightens colours.

TARLATAN

Soft Tarlatan
Softer than regular tarlatan and requires no breaking in.

Akua Wiping Fabric
A very tight, lint-free polyester fabric. Prints have good contrast without streaking.