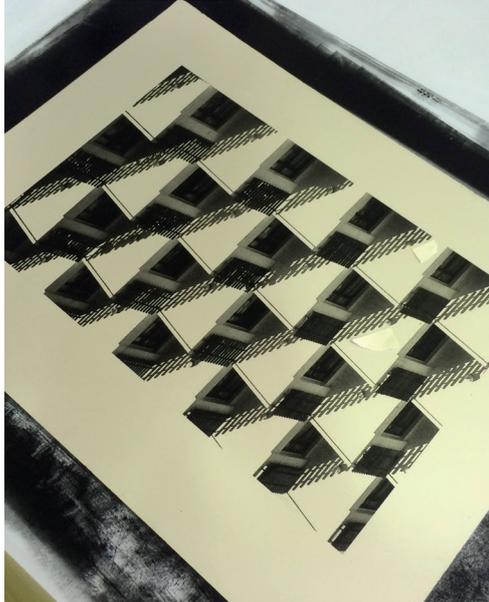
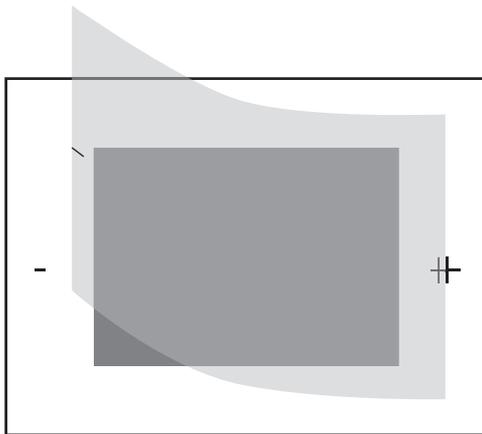


Lithography

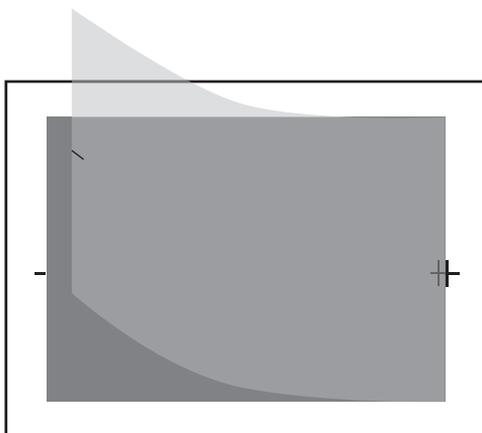
Direct Printing Photolithography Plates



Litho plate with a photographic image.



Window format print.



Bleed format print.

Introduction

Photolithography plates can be printed using the direct method on the Hunter Penrose Littlejohn etching press. For this method the plate is inked in the usual lithography manner and the paper placed directly on top of the plate. This is then run through the press with a rubber blanket, the image is transferred directly from the plate onto the paper reproducing the image in reverse.

This method is suitable for printing plates up to 770 x 515mm in size and for printing single colour images or where registration is not critical.

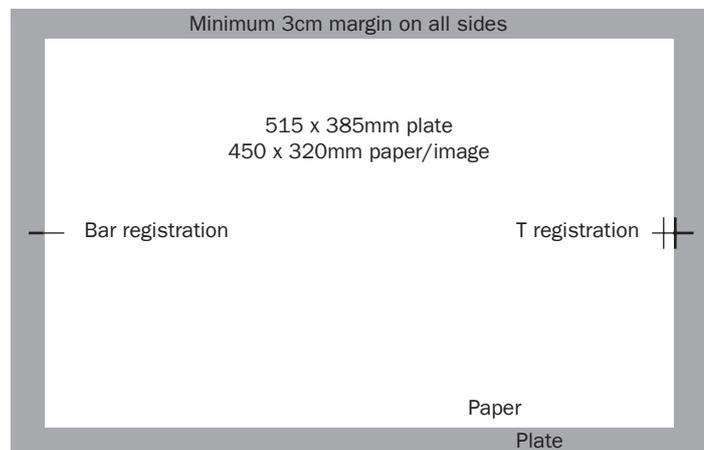
For direct printing, your films should be prepared so that they are right reading - when looking at the film the imageable area should be in the same orientation as it will be in the final print.

Paper Preparation

Prior to printing you should prepare all your paper to enable accurate registration. You should prepare as many sheets of newsprint as your printing paper plus 4-5 extra sheets. The newsprint sheets should be slightly larger than your printing paper.

Lambeth cartridge 370gsm (damp) 170gsm (dry) is a good proofing paper. Madrid litho, Somerset satin and Southbank smooth are good editioning papers.

T and Bar registration is a very accurate method for aligning multiple plates. The illustrations show some common measurements for margins and setting up registration for a bleed-format print, and a window-format print.



T and Bar Registration



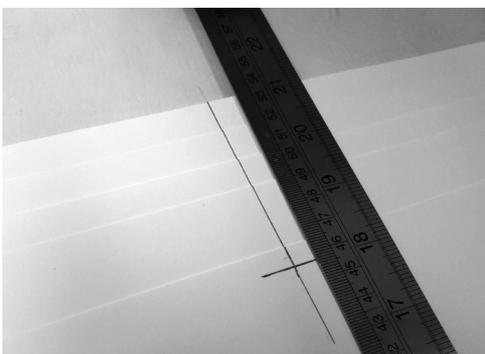
Score the (bar) on the plate.



Draw the (bar) and (T) on the paper.



Feather out the paper and transfer the (bar) to all sheets.



Repeat on the other short edge of the paper.

01. Tear down your paper to your desired size (Note: The paper should NOT be larger than the plate.)
02. Mark the mid point of the shortest side on both edges of your plate with a 3H pencil.
03. Lay a sheet of your paper down on the plate positioned accordingly, with the back of the paper facing up.
04. Align a ruler to the mid point marks on your plate, gently score a line (bar) with a scalpel from the edge of the paper towards the edge of the plate. Do this on both sides!
05. Use a 3H pencil to draw a line (bar) 3cm in from the two short edges of the paper. On one of the edges, draw another line to create a cross (T)
06. Gently score a line in the plate of about 3cm along the edge of the paper on the plate forming a corresponding (T) to the one on your paper.
07. Feather out your paper so the sheets overlap with 1 inch of the shortest edge of each sheet showing. Place your registered sheet on top.
08. Use a ruler lined up with the registration marks on the top sheet and transfer the mark to each sheet of paper in turn
09. Repeat for the other short edge and cross the Bar to form the T
10. Gather as many sheets of newsprint as sheets of paper you will be printing plus 5 extras. The newsprint should be larger than your printing paper.

Setup the Press for Printing

These instructions are for 'direct' printing on the Hunter Penrose etching press.

01. Ensure the press bed is clean and free from dirt and debris.
02. Ask the technician to set up the press and insert rubber blanket.
03. On both ends of the press bed, mark the stopping points so the rubber blanket does not become disengaged while rolling through.
04. Get two bowls, one with about 1 litre of water + 1/2 cap of fountain solution. The other bowl should be empty and is used to discard dirty water. Lay your paper and newsprint in two separate piles on a clean table within easy reach.

Ink Properties: Heavy, stiff body, moderate length. The pile of ink should hold its shape, or relax very slowly on slab.

Black: Intaglio Non-skin Black

Colour: Intaglio Litho/Relief + Magnesium Carbonate

You will need

- 2 clean sponges
- Litho Ink + Modifiers (as above)
- Turpentine
- Soft clean rag
- Litho Roller
- Printing paper
- Newsprint

Tip

You should be able to achieve and maintain a good print from 3-4 passes of your plate between each print.

Try to keep your just enough ink on your slab to achieve this so that you are adding a little more ink for each print.

Health and Safety

Improper use of the press can cause serious injury and damage the equipment.

Always ask the technician to set the press for you.

Mixing Ink

If you are just printing black, Intaglio Non-skin Black will work well for most images without the need for any modifiers. For colour inks, be sure to modify it with magnesium carbonate so the ink holds its shape rather than relaxing into a puddle.

Transparent White can be used to make colour inks more transparent however, this can also cause ink bleed problems on photo litho plates. Adding 10% opaque white will tighten the ink and can prevent roller and sponge marks while making it print cleaner. Too much white will deaden your colour.

Printing

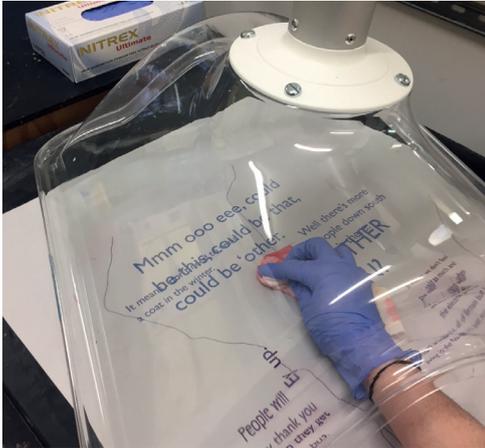
01. On a clean slab, roll-out a small bead of your ink. Start with a 'lean slab' (very little ink), the surface of the ink on the slab should be satin in appearance and make a soft sizzle noise.
02. Next to your ink, on a clean slab, place your plate. Use a few drops of water, underneath, to help adhere the plate to the slab.
03. Use a clean wet sponge to gently remove the gum from the plate.
04. Apply a small amount of turps to a clean rag and rub it in the printing ink you will use and gently rub it into your image areas on the plate.
05. Use the former gum removal sponge to clean the plate and then use a clean damp sponge, keep the plate damp, **NOT WET!**
06. Immediately begin inking your image by alternating roll-up, charging your roller, and sponging. After 2 or 3 passes of your plate you are ready to pull a proof on newsprint.

The two most important things to control are the amount of water on the plate and how much ink you apply. Keep a very thin, streak free film of water on the plate when inking. Carefully count the number of passes you make when charging your roller and rolling-up your plate to eliminate inconsistencies in your prints and to avoid over-inking.

07. Place your plate on the bed of the etching press and place a sheet of newsprint on top. Lower the rubber blanket and run through the press.
08. Repeat this step until you get a satisfactory image, then start printing on good paper.

Health and Safety

When using the extraction arm, ensure it is positioned directly over where you are working close to the work surface so it effectively extracts the solvent fumes.



Position the extractor arms appropriately over your work area.

Preserving The Plate

Once you are finished printing you may save the plate to work with later by cleaning it down with Turpentine. If you don't want to save your plate, place it with the other plates to be recycled at the bottom of the screenprint drying rack.

01. Take your plate over to the extractor arms and lay it on some scrap newspaper.
02. Put on gloves and turn on the extractor arms.
03. Apply turps to a clean, soft rag and remove any remaining ink from the plate
04. Remove any turps residue with a wet sponge and dry the plate with a hairdryer.
05. Apply a thin layer of gum that has been diluted with a little water and polish down with cheesecloth ensuring there are no streaks or blobs of gum left on the plate.
06. Dry with a hairdryer thoroughly and protect the plate with paper during storage.

Clean Up

01. Put on a pair of (Black) Cleaning Gloves.
02. Scrape the excess ink off the slab with your ink knife and wipe it onto phone book pages.
03. Pour a small amount of vegetable oil onto the slab. With the ink knife work the oil into the ink until the it begins to dissolve.
04. With a dirty rag, wipe down the ink knives. Use the same rag to wipe up the oil and ink on the slab and then put it in the appropriate bin.
05. Use Mr Muscle and a blue J cloth to clean up the remaining greasy residue on the ink slab. Also clean down the press bed and tympan with Mr Muscle.
06. Clean the brayer in the fume cupboard using white spirits and a clean rag, ensuring you remove all the ink, especially from the edge of the rollers.
07. Rinse out your sponges with clean water and leave to drain by the sink along with the bowls.
08. Put everything back in its place. Newsprint, inks, bottles, rollers etc!

Thank you for leaving the studio clean and tidy for the next person!