

## Chapter 8 - Exposure

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## Chapter 8 - Exposure

### Loading The Contact Frame

updated 3/2005

Notice: It has been discovered that with the Printing Out Process (POP) at high relative humidity (RH), after several exposures in succession, the printing frame warms enough to affect the relative humidity of the coating resulting in blotchy patches of warm color. In order to avoid this problem it is suggested that the printing frame be close to the ambient temperature. This may require allowing the frame to cool after each four or five prints depending on the length of exposures (warming). Or several frames could be rotated in use.

#### IN GENERAL:

- ✓ Set and stabilize ambient conditions and wait until the paper has stabilized at these conditions.

#### FOR PAPER:

- ✓ First, write on the paper (outside of the coated area) a unique code to identify the print.  
Note: This code could consist of the unique negative number and notebook reference.

#### For DOP only:

- ✓ Dry coating and paper to "bone dry" immediately prior to exposure.  
Blow dry with warm heat front, then back, then front again until "bone dry".  
Note: The surface will dry before the inside of the paper giving a false sense of dryness.

#### For POP only:

- ✓ Check ambient conditions.  
Note: POP coatings should be at ambient relative humidity (RH). The RH of the paper is controlled by controlling the ambient RH.
- ✓ Place the emulsion side of the negative toward the coating; align negative with coating; and hold together.

#### For POP only:

- Note: If the coating is at very high humidity, a thin mylar sheet can be placed between the coating and the negative so as to protect the negative. Negatives can be permanently damaged by a wet coating.
- ✓ Place the negative and coated paper onto the glass inside the contact printing frame with the negative toward the glass.
- ✓ Place the vinyl and then the foam backing on top of the paper.
- ✓ Insert the back of the printing frame.

- ✓ Engage the spring clips and press the back firmly in place.  
Notes: Good contact of film and coating is important.  
With thinner papers, make sure that the paper does not crease or fold. If necessary the paper can be held tight and taped in place. Turn over the frame and check to see that alignment of negative and coating is good.

**Coating is ready to expose.**

Note: Either side (but only one) of the printing frame may be opened for inspection without losing registration.

**FOR FABRIC:**

- ✓ First, write on the fabric (outside of the coating area) a unique code to identify the print.  
Notes: This code should consist of the unique negative number and notebook reference.  
To write on fabric: place some tape on the reverse side, write using a pencil, then remove tape.

**For DOP only:**

- ✓ Dry coating to "bone dry" immediately prior to exposure.  
Blow dry with warm heat front, then back, then front again until "bone dry".

**For POP only:**

- ✓ Check ambient conditions.  
Note: POP coatings should be at ambient relative humidity (RH). The RH of the paper is controlled by controlling the ambient RH.
- ✓ Place the negative onto the glass inside the contact printing frame with the emulsion side away from the glass.
- ✓ Place the Fabric over the negative with the coating toward the negative and align properly.  
Note: Position the weave of the fabric with the negative.
- ✓ Place the vinyl and then foam backing on top of the fabric.  
Note: Make sure that the fabric does not crease or fold or stretch.
- ✓ Insert the back of the printing frame.
- ✓ Engage the spring clips and press the back firmly in place.
- ✓ Turn over the frame and check to see that alignment of negative and coating is good.  
Note: Good contact of film and coating is important.

**Coating is ready to expose.**

Note: Back of printing frame may not be opened to check printout since registration will not be maintained.

## Exposing

updated December 2000

Direct sunlight Indirect sunlight Artificial UV light
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Exposure may be accomplished by illumination with sunlight or an artificial Ultra Violet light source. Different illuminations can produce a variety of results. The sharpest prints will be made by direct sun illumination. The softest prints will be made by shaded or diffuse illumination. Both shade and most artificial illumination may not cast a hard shadow. This gives a soft transition when burning or dodging without even shaking the tools (The wire handles of dodging tools may not even shadow the print). It is also thought that various spectrums of light may produce differing results.

Notes: Any humidity in a DOP coating during exposure could add graininess or diminish the blacks in the print.

The printout should only be checked with safelight illumination.

Exposure has some other effects on the print. As exposure occurs, development takes place and the coating "prints out" (forms an image). The darker areas will become quite dark and in turn block light from further exposing the coating ("self-masking"). This can allow much exposure to be given to the coating with out a loss of shadow detail (of course, the negative should be properly made, with plenty of detail in the shadow areas). This also causes the contrast of the print to change. More exposure will produce less contrast, and less exposure will produce more contrast. These effects can be useful when fine tuning a print.

The importance of a negative of sufficient contrast should be understood from these effects. If a negative has insufficient contrast, more contrast agent is used; the printing time becomes longer; the contrast is thus lessened; so more contrast agent is required. Eventually the printing time becomes very lengthy, and print quality may diminish.

### Exposure by Direct Sunlight:

- ✓ Cover printing frame and take outside.
- ✓ Set on the printing stand.

Note: Stand should be aimed directly at the sun. A pencil or stick perpendicular to the frame face will have no shadow when the frame is aimed properly. Uncover and start timer simultaneously.

- ✓ Do any burning or dodging that may be needed.
- ✓ At end of exposure cover and take back to darkroom.
- ✓ Record printing information in the notebook.
- ✓ Check printout and add exposure (optional).

### Exposure by Sunlight, but in Shade:

- ✓ Cover printing frame and take outside.
- ✓ Set in the shade (no shadows). Make sure illumination is even (spatially and temporally).
- ✓ Uncover and start timer simultaneously.
- ✓ Do any burning or dodging that may be needed.
- ✓ At end of exposure cover and take back to darkroom.
- ✓ Record printing information in the notebook.
- ✓ Check printout and add exposure (optional).

### Exposure by an Artificial UV Source:

- ✓ Place printing frame under the UV source (OFF).
- ✓ Set then start timer, which switches on and off the UV source.
- ✓ Do any burning or dodging that may be needed.

Notes: It is important to wear eye and skin protection when using an UV source (see section on safety). Record printing information in the notebook.

- ✓ Check printout and add exposure (optional).

## Printout Evaluation

updated December 2000

DOP printout POP printout
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The action of light in the platinum palladium process actually develops the material, resulting in metals becoming deposited into the fibers of paper or fabric. The material is said to "print out". The printout is an actual image directly related to the materials used, the photographed image, the exposure, and the ambient conditions. Once one learns to interpret the printout, exposures and the need to burn areas may be evaluated and corrected, but only by the addition of more exposure.

Notes: The printout should only be checked with safelight illumination.

Although a short view with a 100W incandescent lamp at 5 feet should be fine.

The printout on fabric may be studied, but no additional exposure should be given because registration with the negative cannot be maintained.

The Pt/Pd process can be divided into two sub processes. A Developing Out Process (DOP) which uses the sensitizer Ferric Oxalate produces a partial printout with the full image emerging after development. A Printing Out Process (POP) which uses the sensitizer Ammonium Ferric Oxalate produces a full printout which looks close to the final print.

### DOP Printout:

In evaluating the printout, it must be remembered that the printout will differ for various papers and chemicals. It is helpful to have part of the coating completely masked from exposure so that it may be used as a reference. In general, not much can be seen of Zones VIII and above in the printout. The surplus coating around the negative receiving maximum exposure can be useful in judging the darkest areas in the print.

Learning to evaluate the printout is like learning to read the densities in the negative and in the print (see Sensitometry section). Much experience is the only way to master this evaluation technique. With experience comes a feeling for what the print will look like and what will happen and if more exposure is applied.

### POP Printout:

This printout is very useful in that it is very close to what the final print will look like. However, one must take into account that a layer of chemistry is also seen which will subsequently be cleared from the print.

Another factor is that since the printout is much more full, more self masking is achieved making the effects more pronounced than those of the DOP. This could result in a lower contrast or in longer exposure times.