

Step-by-Step Guide: MAKING DIGITAL CMYK SEPARATION POSITIVES for Copper-Plate Photogravure using the Epson Stylus Pro 7800

Version 6.0 © 2014 – Marlene MacCallum and David Morrish

NOTE: The following data was developed without using RIP software. Density and curve data would be different for the Canon IPF Series Printers.

1. Create a digital file of the image you wish to print. You can use a scanner, a digital camera or draw/collage/layer directly with imaging software. This is your master version and should be saved as such. At this point, do a sharpening appropriate for the method of importing the image. Do not over-sharpen. All of the rest of the changes are specific to creating a digital copper photogravure positive and you will be saving subsequent versions.
2. We use the following color settings. You may choose to use other settings but keep this element consistent in all your files. Under Edit > Color Settings..., set the working space to Adobe RGB (1998), CMYK to US Web Coated (SWOP) v2, set Gray to Dot Gain 20%, and assign color management policies to working RGB.
3. Opened in Photoshop, flatten any layers and set Image > Mode > RGB Color to 8 or 16 bit and set the resolution at 360 ppi for Epson output at the final size or larger. (Note: files printed on the Canon should be at 300 dpi). Avoid up-scaling your files.
4. Make all the corrections and changes to the image until it looks exactly as you want for the final version (cropped, retouched, contrast correction, color correction, filters, etc.) Use non-destructive adjustment layers for these changes whenever possible. Keep in mind that you are viewing a transmitted light screen image version and your photogravure print will be a reflected light image. The screen image will be more luminous than the printed photogravure.
5. Save this version as “(image name)_360_master”.
6. Open a new copy and flatten the layers. Layer > Flatten Image
7. If you forgot to resize the image to final print dimensions at 360 ppi, do so now. Again, it is preferable not to up-scale.
8. Change the image mode to grayscale. Use the channel mixer method use Image>Adjustments>channel mixer and select monochrome. This will remove colour without loss. You can adjust each of the RGB channels if the tonal balance is not correct. Remember that combination of the three channels must add to 100%. Next step, Image > Mode > Grayscale. Save this version as “grayscale_temp”. This file will be used to make density readings for the highlight/shadow adjustments that will later be applied to the CMYKlayered file (see below)

9. Create a duplicate layer, Under Layer > Duplicate Layer... > Background. Copy and call this shadow/highlight. Working with this Background Copy, Select Image > Adjustments > Shadow/Highlight...: Click on the More Options box and you will get more detailed information. The following data can be used as a starting point:

Shadows – Amount 05 - 20%, Tonal Width 10 - 30%, Radius 30 px
Highlights – Amount 05 - 20%, Tonal Width 10 - 30%, Radius 30 px

This will open up the shadows and add density to the highlights. These values are starting suggestions only and will depend upon your actual image requirements. (*You can use the conversion factor of the image curve to gauge just how much to adjust your shadow detail and highlight detail densities.*)? Open the info panel. Use the eye dropper tool to identify your shadow detail, and then using the shadow highlight adjustment set the shadow detail density to 85-90%. Repeat with the highlight detail and adjust to somewhere between 5 - 10%. [See separate handout on Shadow/Highlight Adjustments for Digital Positives for Photogravure for more detailed description of this process.] Once you have set the values that seem to work, Save... the settings into the folder containing your files before selecting OK. This will give you a file with the suffix .shh and allows you to Load... and readjust if you need to replace the Shadow/Highlight layer later. Avoid over-adjustment, this can distort the colour balance of your image.

10. Once you have set the values that seem to work, Save... the settings into the folder containing your files before selecting OK. This will give you a setting that you can Load... to your CMYK file and also readjust them if you need to replace the Shadow/Highlight layer later. Save this layer to the "grayscale_temp" file. Do not flatten.
11. Re-open the "(image name)_360_RGBmaster" and flatten the layers. Layer > Flatten Image
12. Change the image mode to CMYK. Image > Mode > CMYK
13. Under Layer > Duplicate Layer... > Background Copy and call this shadow/highlight.
14. Working with this Background Copy, Select Image > Adjustments > Shadow/Highlight...: Click on Load... and select the settings you saved from the grayscale file. If it looks right, select OK. If further adjustments are needed, create a new layer and rework. Save these new settings as the color version adjustments, then hit OK.
15. Select Layer > New Adjustment Layer > Curves... In the Curves window in this new layer, under the Preset pull down options, select and apply the printer adjustment curve. This will make the image look very heavy and flat. Don't worry; this is in fact what we want in our positive for gravure. [*See separate handout on Creating and Using Adjustment Curves.*] Note that it is also important to apply the Printer Adjustment Curve and

Shadow/Highlight adjustment to the **CMYK** version, not the RGB. Applying the curve to the RGB file will result in colour and tonal distortions.

16. Save this file as “(image name)_CMYKlayered”. Save this reference file in order to allow you to readjust the Curves or Highlight/Shadow settings later if needed.
17. Open a new copy of this file and flatten the layers. Layer > Flatten Image
18. Flip the image horizontally under Image > Rotate Canvas > Flip Canvas Horizontal. It should print as a mirror image on the Pictorico film.
19. To sharpen the image for printing: Layer > Duplicate Layer and hit OK. Select *overlay* in the layer menu. Filter > Other > Highpass. Adjust amount of highpass until you can see some image definition but do not overdo. I typically use around .5. Hit Ok. You can click the duplicate layer on and off to view the effect. If it is too much or too little, delete the highpass step and repeat. Be sure to keep this subtle as it could result in a grainy final print. Flatten it again once you are sure it is correct.
20. Save this file as “(image name)_cmyk”.
21. Open Channels panel. Open the little tag on the upper right, find and select Split Channels. This creates four separations (C-M-Y-K) as separate grayscale files. For each, go to Edit > Assign profile... and select dot gain 20%. Save each one. Use these to print. If you use the separations function in the printer, you lose your color management options.
22. Making a digital mask: Increase the Canvas Size... by 2 millimeters for both height and width with the image centered. Set canvas extension color to white.
23. Change the canvas size again, this time adding 1 to 1.5 cm to both height and width with the image centered. This time set canvas extension color to black.
24. If you need to add 2 cm width to one side for the stepscale area, do the previous step again with more black added to just one edge. This final size is the size to cut the tissue so it will align with the edge of this black border. We recommend the use of this digital mask if you find that you are getting evidence of contact issues (haloing) in the outer perimeter of your image.
25. Open the 0 – 100% Greyscale step scale file and drag the flattened step scale into this wider space and position it about 5 mm from the 1 mm white border surrounding the image. Then flatten your file one last time. By doing this, you have eliminated the need to strip in a step-scale or create a paper mask for your positive.
26. To Print on Pictorico or Transfilm create correct page set up for your image. You will need to print each of the separations separately. Under File > Print...
27. In Color Management pull-down select Printer Manages Color. Be sure the working profile is Adobe RGB. Rendering intent should be Relative Colorimetric.

28. Click on the Color Management box and select Output. Select Registration marks and Labels. Be sure to do this for each of the four separations.
29. Hit the Print button and a new dialogue box will appear.
30. In the layout menu, select the Print Settings:
31. In Page Set-up, make sure you have selected the correct choice of Sheet or Roll.
32. Media Type: Premium Photo Glossy Paper (manufacturer's suggestion for this film)
33. Select Color.
34. Advanced Settings: 2880 dpi, High Speed is OFF, Micro Weave is ON
35. Printer Color Management: Color Controls ON, Mode: Adobe RGB, Gamma 1.8
36. Print.
37. Let the printed positive dry for at least 15 minutes on a non-absorbent surface and then can be used or stored. To store, keep away from dust and moisture. Before using the positive, we strongly recommend heat setting the positive for 10 minutes. This can be done using a fan with a heat setting, a hair dryer, a polymer plate-maker drying unit. This step is particularly important if you are working in humid conditions. Without this step, the inkjet can transfer on to your gelatin tissue during exposure. If this happens, use alcohol to remove the inkjet traces.
38. This step can be omitted if you have created a digital mask as per Step 25. After printing, include (strip in) the gravure etching stepscale when making the positive mask for exposure.