HP DesignJet 5000 Series

Overview

The DesignJet 5000 PS3 plug-in features may be accessed within Printer Features. The user may access these options by completing the following steps:

1. Select File>Print from your application.
2. Select the Paper/Quality Tab.
3. Click on the Advanced button.

   Or

1. Select Printing Preferences from the File menu.
2. Click on the Advanced button.

Print Color as Gray – On, Off

If this setting is selected the printer will substitute shades of gray for color in your document.

Use Print Color as Gray for:

- Enhancing black and white graphics.
- Printing drafts of your document before printing the final color output.
- Printing a color document in grayscale for use with a non-color photocopier.
- Printing images, as they would print on a monochrome printer. This option overrides the printer's Color/Mono setting.

Scale to – No Change, US Letter,

Scale to allows the user to select from a list of paper sizes that do not appear on the standard paper list, the paper size selected changes the output size to the size specified by the user.

Print Quality

The **Print Quality** setting offers the following three modes:

Maximum Quality	Use this setting when you are printing to high-cost media such as "clear film" or one of the glossy media types, this option gives the highest print quality.
Productivity	Use this setting to produce excellent print quality on plain or special paper, printing with this option is faster than Best Mode.
Maximum Speed	Use this setting for draft copies or when speed is more important than print quality, printing with this option is the fastest.

Maximum detail – On, Off

Use this setting to produce better printing details for photographic images or detailed image renderings, printing with this option is slower.

Automatic Pantone Calibration **– On, Off**

If this setting is selected the printer will extract Pantone color names from the PostScript job and will insert the closest printer CMYK colors matching for these colors.

Rotate – On, Off

Rotates image 90° clockwise.

Color Management

This setting allows the experienced users to change default color management.

Native

This setting is for users that do not wish to interact with color. With this option the printer color path selected on the printer is decided by the application that is doing the printing if this application is generating CMYK. If the application is generating RGB, the printer will approximate the output to the colors of a standard monitor.

Emulation

This option allows to the user to activate the HP Ink emulation on the printer.

Native without Black Replacement

There are some applications that have its own Color Management including support for ICM and ColorSync. In these cases, the user will select this option and the driver will activate automatically “no emulation mode” on the printer (HP color path that keeps unchanged the colors sent by the application). This option allows color values to be passed to the printer unmodified. Use it only if your application knows how to generate CMYK colors specifically for the HP DesignJet printer. If you are able to use this option, your jobs will be processed in the shortest possible time, and you will have access to the full color range of the printer.

However, using color values not created specifically for the HP DesignJet printer may result in unacceptable image quality and possible print head damage due to ink saturation of the print medium (more than 200% print density).

HP CMYK Emulation

No CMYK Emulation, SWOP, Japan Offset, Euro Offset, DIC

CMYK Workflows

Traditional workflow defines the color in the CMYK space. To obtain optimal results, CMYK must be adapted to the target printer who receives the data –different printers will produce different color from the same CMYK data.

In some situations the CMYK data in your document will not be suited to your printer. Two typical situations are:

1. The document was optimized for a certain printer, and now it has to be produced on a different printing device.
2. The document is being optimized for a printing press, but it is necessary to produce a check print using a less-expensive printing device.

To handle CMYK data which is not intended for the printer, the DesignJet printers provide color emulation modes. The emulation must be enabled in the PostScript driver, in the “Printer color management” dialog box:

- Standard Emulations: SWOP (United States), EuroOffset (Europe), DIC (Japan) and Toyo (Japan). CMYK data is frequently designed for these standards. If there is no information as to how the CMYK data was defined, these standards are a good assumption.
- Custom Emulation: this mode can emulate any CMYK printer. You will need need the ICC profile for the printer for which the CMYK data is intended. The ICC profile is a standard which defines which color would come out of that printer. The DesignJet uses this information to produce the same color. ICC profiles are available for the CP series printers and the 1055CM printers.

CMYK for offset presses

For CMYK printing path, you could select a standard ink emulation mode (SWOP, TOYO, DIC, Euroscale). Default value for CMYK is SWOP.

- **SWOP** Use this option if your application generates CMYK colors intended for SWOP printing presses, or an unknown printing device. It will translate the CMYK colors (SWOP or otherwise) to HP DesignJet colors. Your printer will then print the colors emulating the SWOP standard with a high degree of accuracy. Using this option your job processing will take a little longer, printed colors may be less vivid than is possible, because of the smaller color gamut (range of printable colors) of SWOP printing presses when compared to the HP DesignJet prints.

- **EuroScale** Use this option if your application generates CMYK intended for EuroScale printing presses. It will translate EuroScale CMYK to HP DesignJet colors, emulating EuroScale colors as closely as possible. Using this option job processing will take a little longer, printed colors may be less vivid than is possible, because of the smaller color gamut (range of printable colors) of EuroScale printing presses when compared to the HP DesignJet prints.

- **Toyo** Use this option if your application generates CMYK intended for Toyo printing presses. It will translate Toyo CMYK to HP DesignJet colors, emulating Toyo colors as closely as possible. Using this option job processing will take a little longer, printed colors may be less vivid than is possible, because of the smaller color gamut (range of printable colors) of Toyo printing presses when compared to the HP DesignJet prints.

- **DIC** Use this option if your application generates CMYK intended for DIC printing presses. It will translate DIC CMYK to HP DesignJet colors, emulating DIC colors as closely as possible. Using this option job processing will take a little longer, printed colors may be less vivid than is possible, because of the smaller color gamut (range of printable colors) of DIC printing presses when compared to the HP DesignJet prints.

HP RGB Emulation

No RGB Emulation, sRGB, AppleRGB, ColorMatchRGB, AdobeRGB

For RGB path, you could select either sRGB, AppleRGB, ColorMatch RGB or Adobe RGB. Default value for RGB will be sRGB**.**

RGB Workflows

RGB is a device-independent definition of color. Being device-independent implies that RGB has to be converted to the device-dependent CMYK data which drives the printer. And this transformation depends on the target printer..

The transformation from RGB to CMYK requires an ICC profile for the printer. The profile describes which CMYK is a good reproduction of a certain RGB. Because the color which comes out of the printer depends on the printer setup –such as the type of paper and the quality level- you must select the ICC profile for the intended printing conditions. DesignJet printers come with ICC profiles for multiple types of paper.

Even if RGB is device-independent, RGB data does not always produce the same color. There are a few frequently used types of RGB color such as sRGB, Apple RGB, Adobe RGB. An ICC profile describes what an RGB color looks like.

Your printing application should be set up with the right ICC profiles for the RGB and CMYK data. Newer applications such as PhotoShop 5 and Illustrator 8 allow you to do this. Your application will use these ICC profiles to convert RGB to CMYK.

If your design application does not support ICC profiles, you don't have control over the conversion from RGB to CMYK. So, always convert data into CMYK before putting it into the application. Make sure that the CMYK has been optimized for the printer which is going to handle the data –see the recommendations in the previous section.

Some applications send RGB data instead of CMYK. In such case, the printer will carry out the conversion from RGB to CMYK. You must select the type of RGB data in the PostScript driver, in the "Printer color management/RGB emulation" option.

Rendering Intent

This feature provides three methods of handling the slight mismatches that arise between the colors you are trying to print and the colors your printer is capable of printing.

Saturation (Graphics)	Best used for presentation graphics charts or images made up of bright, saturated colors.
Perceptual (Images)	Best used for photographs or images in which colors blend together.
Colorimetric	Best used when you want to match a particular color. This method guarantees that, if a color can be printed accurately, it will be printed accurately. The other methods will probably provide a more pleasing range of colors but do not guarantee that any particular color will be printed accurately.

Cyan Lightness

This setting allows lightness adjustment for the cyan color channel. Increasing the number will make the pint darker. Decreasing the number will make the print lighter. This setting can be used to increase or decrease the light intensity of an image to be printed. If the printed image has lost

some detail because there are areas that are too light or too dark, you should use this setting to adjust the lightness level of the image in order to recover the lost detail.

Magenta Lightness

This setting allows lightness adjustment for the magenta color channel. Increasing the number will make the pint darker. Decreasing the number will make the print lighter. This setting can be used to increase or decrease the light intensity of an image to be printed. If the printed image has lost some detail because there are areas that are too light or too dark, you should use this setting to adjust the lightness level of the image in order to recover the lost detail.

Yellow Lightness

This setting allows lightness adjustment for the yellow color channel. Increasing the number will make the pint darker. Decreasing the number will make the print lighter. This setting can be used to increase or decrease the light intensity of an image to be printed. If the printed image has lost some detail because there are areas that are too light or too dark, you should use this setting to adjust the lightness level of the image in order to recover the lost detail.

Black Lightness

This setting allows lightness adjustment for the black color channel. Increasing the number will make the pint darker. Decreasing the number will make the print lighter. This setting can be used to increase or decrease the light intensity of an image to be printed. If the printed image has lost some detail because there are areas that are too light or too dark, you should use this setting to adjust the lightness level of the image in order to recover the lost detail.