

Introducing SuperPrint Addendum

12 August 1996

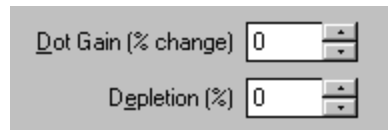
There are several features that have been added to SuperPrint since the "Introducing SuperPrint" booklet for new users went to press. This addendum explains these features. You can also refer to the on-line help for information on how to use them.

Ink Control

There are three new features that primarily apply to ink-jet printers: **Depletion** on the **Halftoning** tab, and **Gray Component Replacement** and **Black Generation** on the **Image** tab. (If you are using a laser printer, you probably won't need these features.)

Depletion

The **Depletion** setting provides a way to reduce the amount of ink that is put on the page. If you find that your printer is laying down too much ink (for example, if the paper is getting excessively wrinkled or the ink is soaking through to the back), you should try increasing the **Depletion** value.

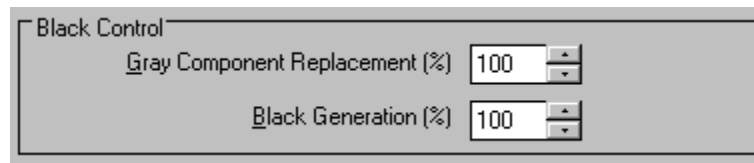


Depletion works by looking for printer pixels that are surrounded by other pixels of the same color ink, then removing some of those pixels according to your setting. So, for example, in an area of solid yellow with a setting of 20% **Depletion**, roughly every fifth pixel in the solid yellow area would be removed. With uncoated papers such a difference would be almost imperceptible since the dot gain on these papers is rather high – the remaining pixels would blend together anyway. However, a fifth less ink would be placed onto the page, so the paper should not become as saturated.

Depending on the document content and media type, you might notice your graphics becoming "washed out" when you use higher **Depletion** settings. You will have to find a balance between the look you want to achieve and the amount of ink your paper can absorb.

Gray Component Replacement (GCR)

Windows' internal color model is RGB (Red, Green, Blue). Color printers use CMY or CMYK (Cyan, Magenta, Yellow, Black) inks. There is a direct mathematical relationship between RGB and CMY; theoretically, all colors that can be expressed as RGB can be printed using only CMY inks. However, in practice, rendering dark colors using only CMY requires too much ink to be applied to the page (for example, black would require a solid area of all three inks – 300% coverage). To avoid this, black ink is substituted for areas in which all three inks are present.



When all three CMY values are equal, replacement is easy; equal values represent gray, so C=M=Y=50% would become K=50%. When the values are not equal, darker colors are

created by extracting a gray component from the combined CMY inks. In the simplest method, the value of the ink with the lightest coverage is subtracted from all three inks and is then replaced with a corresponding amount of black. For example, a dark orange might be comprised of C=25%, M=75%, and Y=100%. The smallest value (25%) is subtracted from all the values and is then assigned to K, so the result with the gray component extracted is C=0%, M=50%, Y=75%, and K=25%. This method is the SuperDriver default (**Gray Component Replacement** = 100%).

One drawback to this approach is that dark colors can lose saturation; that is, as a blue gets darker, it becomes more gray and less blue. This is where the SuperDriver **Gray Component Replacement** control can help. With **GCR** set to 80%, for example, 20% less black replacement takes place, and 20% more CMY inks are used instead to make colors darker. This can enhance saturation.

Reducing **GCR** also affects pure grays; mid-tone grays can appear “polychromatic” depending on the current halftone option.

All three of the following conditions must be met for **GCR** to be in effect:

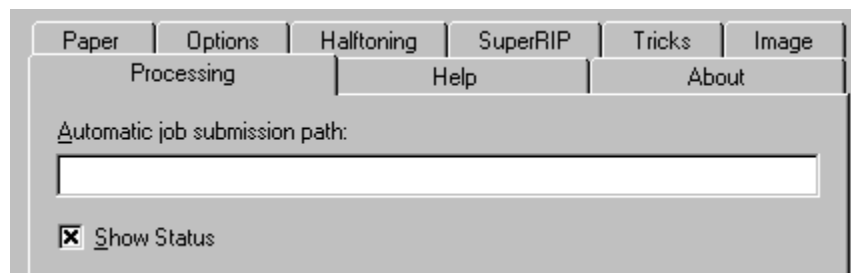
1. The SuperDriver must be translating RGB to CMYK *before* sending the information to the printer. (Note that some CMYK printers accept only RGB data from the driver and do their own RGB-to-CMYK conversion; the **GCR** setting does not apply to these printers.)
2. A CMYK halftoning threshold array must be chosen.
3. The document must consist of a 24-bit color bitmap.

Black Generation

Black Generation affects the amount of black ink that's actually applied to the page after **Gray Component Replacement** takes place. Reducing the **Black Generation** value reduces the amount of black ink used in darker colors without affecting the CMY values. The overall effect is to lighten the darker parts of an image. You may also notice a reduction in the apparent contrast – black ink is very important in establishing contrast in scanned images, so use this control carefully!

The Properties Tab

When you access SuperDriver options through SuperQueue or SuperDriver Status, you'll see an extra tab called **Processing**. (The processing tab is also accessible from Windows 95 Printers folder and Windows NT Print Manager.) This tab contains two controls: **Automatic job submission path** and **Show Status**.



The SuperQueue print processor automatically attempts to print any file that arrives in the directory specified in **Automatic job submission path**. Only SuperMetafiles or other file types supported by one of the SuperQueue filters should be placed here. Files are automatically erased from this directory after printing, so if you want to preserve a file, you

should put only a copy in this directory. If you have more than one Windows printer that uses a SuperDriver on your system, you can specify a different directory for each printer.

When you've shared a printer on a network, this box shows the "ZSpool" directory being used by SuperQueue's new network printing architecture; spool jobs coming across the network are automatically placed in the specified directory. This directory cannot be changed from the **Processing** tab.

When checked, **Show Status** causes the Status application to launch whenever you print using this SuperDriver. If you want to keep track of a print job's progress, the Status application is the place to look.