Your printer driver provides you with the best quality output for various types of printing needs. However, you may want more control over how your printed document will look.

You can control the screening methods, graphics effects, and fill resolution used during printing. These setting adjustments can easily be made through your printer driver, operator panel, or MarkVision remote operator panel. Adjusting any of these settings affects the output of your documents.

You can return your printer driver to the factory default settings by selecting the Restore Defaults button on the printer driver screen or restoring the default settings at the operator panel.

Driver Settings

Print Quality

Your printer is a four-color process printer that uses the CMYK color model. One of the most important issues for printing using the CMYK model is how the printer combines each of the four colors on the page. The process used to produce this high quality print is known as *screening*.

When printing in color, you use four different color planes or screens. A separate dot pattern is created for each of these color planes. These separate dot patterns are then combined (effectively laid on top of each other) to produce your final full-color image.
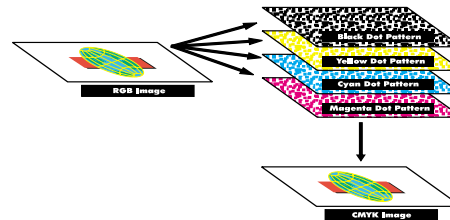
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Your color printer uses different screening methods depending on the material to be printed.

There are two print quality settings you can choose from; 600 dpi (dots per inch) and 2400 IQ (image quality). The 600 dpi setting provides true 600 x 600 dpi resolution. The default setting 2400 IQ, enhances images you send to the printer. The 2400 IQ setting also provides an optimum balance for most printing needs.

You can change these settings through the color tab on your printer driver or the Color Menu on the operator panel.
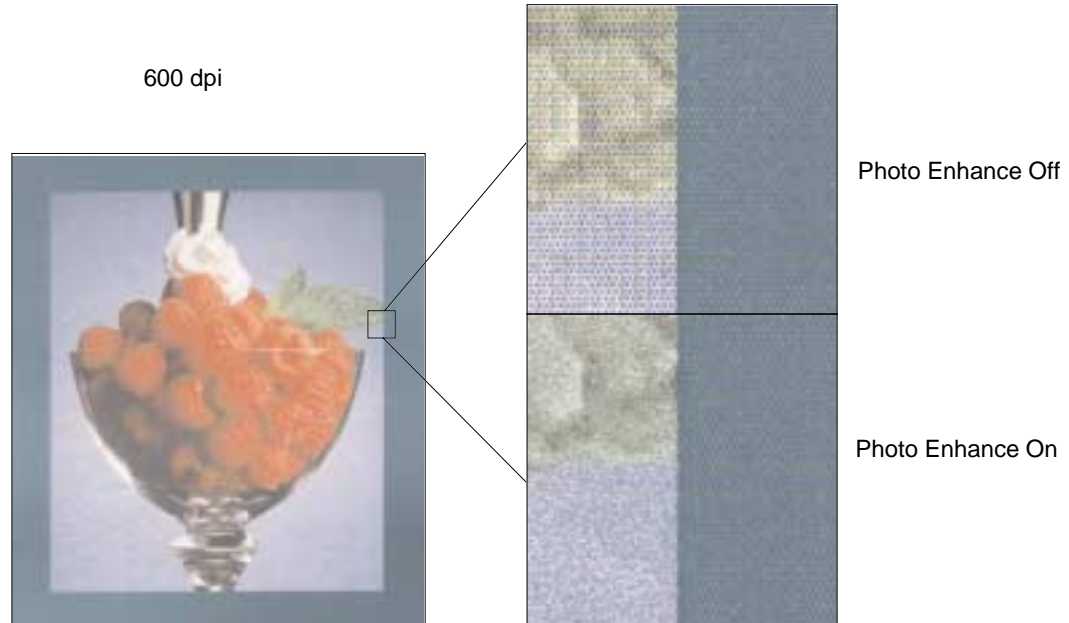
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Photo Enhance

When you place Photo Enhance setting On, your printer changes the method it uses to place pels on your print media. This change enhances the printing of photographic images and is most noticeable in flesh tone areas. The following illustrations demonstrate how Photo Enhance changes the toner pattern that is placed on your print media.

600 dpi

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Photo Enhance On

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2400 IQ

Photo Enhance Off

Photo Enhance On

Halftone screens

The term *halftone screen* refers to the pattern of dots applied to an object on the page (text, graphics, or images). If you look at a black and white photograph in a magazine, it appears to contain many shades of gray. If you place the same picture under a magnifying glass, you see that it is actually composed of a large number of small dots. These dots, also known as pels, may be of varying sizes or varying tones. Without halftoning, it would not be possible to produce quality photographic images on a page printer. This process of representing an image as a series of halftones is known as halftone screening.

Attributes

Halftone screens have three main attributes: screen frequency, screen angle, and spot function. The halftone screen is further divided into halftone cells. These cells contain the individual pel spaces. The screen frequency and angle attributes determine both the number of halftone cells that make up a halftone screen and the orientation of the cell.

The spot function determines which of the individual pels in the halftone cell is turned on to represent a particular gray level or color tone. The following illustration shows a halftone screen and halftone cells rotated 45 degrees.

Frequency (cells per inch)
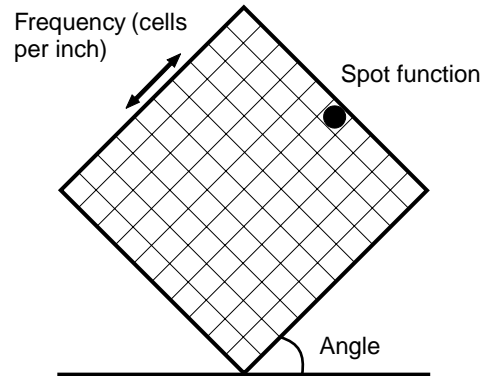
Spot function

Angle

Screen frequency

The screen frequency is the number of halftone cells per inch. A higher screen frequency setting increases the number of halftone cells per inch. Increasing the number of halftone cells per inch does not necessarily give you better quality. The reason for this is the higher settings may make the colors or halftones seem to run together or bleed.

Different printing needs do require different screen frequency settings; for example, offset printing requires a higher setting, whereas newsprint generally requires a lower setting. Your printer default is set to give you the best screen frequency setting for high quality business graphics.

Screen angle

The default angle of the halftone screen and cells place the dots so they are the least noticeable to the eye. It also ensures the alignment of color through all four color planes. By avoiding the placement of halftone cells at an angle of 90 degrees, the viewer's eyes are focused on the image and not on the dots.

Spot function

The spot function determines the shape of the dots by controlling the order in which the pels in the halftone cell are turned on. The printer code defines the order by assigning a priority to each individual pel within the halftone cell. By turning on or printing a portion of the pels within the halftone cell and then combining the different halftone screens, your printer is able to print millions of colors.

Image Smoothing

You can turn Image Smoothing on from the graphics tab of your printer driver or through the PostScript Menu using MarkVision or the operator panel. This increases the contrast and sharpness of bitmapped images and smooths color transitions. This setting is useful for images downloaded from the World Wide Web at 72 dpi. The setting has no effect on images downloaded at 300 dpi resolution or higher.

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Printing text

In both PostScript and PCL emulations, 100% black text prints using black toner (K of CMYK). This results in sharp, crisp text characters. The printer applies a unique screening algorithm to small text (less than 24 points in size). This helps ensure that small point size text has smooth, crisp edges.