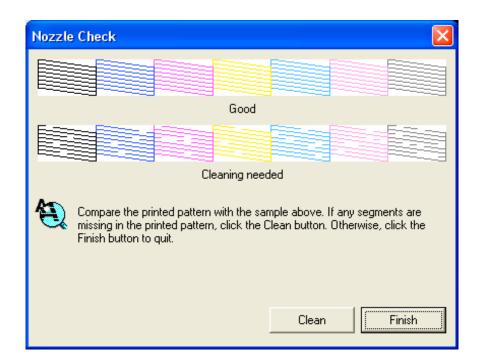# Banding on Epson inkjet printers

What is banding? Banding can be described as consistent, straight, horizontal lines on prints running in the direction of the print head. The banding can be lighter or darker in density depending on the cause. Occasionally you may come across vertical banding which runs in the opposite direction of the print head and looks very different from horizontal banding. Vertical banding tends to be not as definitive and appears wider, softer, and not as straight as horizontal banding.

There are four primary causes for horizontal banding on prints from inkjet printers, (1) nozzle clogs, (2) mis-aligned print heads, (3) low quality print settings (4) incorrect paper thickness settings. Below we will describe each of these causes for horizontal banding as well as ways to try and fix them.

1) Nozzle Clogs
This is the number one cause of banding and can happen somewhat regularly on Epson and other inkjet printers. Banding from nozzle clogging usually shows up as lighter and off color horizontal lines running through the print. Depending on the severity of the clogs and in which colors they occur in, the lines may not run the entire width of the print. Nozzle clogs can not only cause banding but also cause color shifts in your prints. Nozzle clogs can be caused by several things including a dusty environment, non-use of the printer, or a malfunctioning print head.

If you see banding, the first test to run is a nozzle check. You can do this from your driver software or on the front of the printer from the menu system. In the software driver you can access the utility features where you will find a nozzle check button. Click the button and a test pattern will print. Each color will print a series of "stair step" lines which indicates 1 nozzle. If even one single stair step is missing or not fully printed, banding can occur (See figure below). If you see any missing lines, either click the "clean" button in your software, or push & hold the cleaning button on the front of the printer for three seconds. The printer will run a cleaning cycle. After it finishes run another nozzle check and verify that all the steps are printing cleanly.

If several regular cleanings do not fix the problem then you can try a power cleaning on the front of the printer. This is found in the maintenance menu on most Epson printers… please refer to your user manual. If you still cannot get the nozzles cleaned with the power cleaning you will need to contact Epson technical support as the printer may need a head replacement.

2) Mis-Aligned Print Heads
This is the second most common cause of banding and is usually because a head alignment was never done on the printer or the printer was physically moved (in a vehicle) to another location. Also, if you did the head alignment from the software instead of the front of the printer you can still get banding as the alignment from the software is not as comprehensive as the one from the printer itself. Banding from mis-aligned heads usually shows up as darker and off color horizontal lines running through the print. Please refer to your Epson manual to see how to do a proper head alignment. If you've done the head alignment and still are experiencing banding that you feel is caused by the alignment try un-checking the high speed option in the Epson driver or your RIP software. You can also check the "super" box in the Epson driver or select 8 pass in your RIP software.

3) Low Quality Print Settings
Choosing a lower quality print setting in your driver or RIP software can also cause banding. This banding is usually more pronounced and in wider bands (1/8 inch) compared to other types of banding. While printing in lower quality settings speeds things up and uses less ink, it also tends to cause banding. You should print at least 1440 dpi to ensure no banding.

4) Incorrect Paper Thickness Settings
When very thin or very thick media is used, and the printer is not "told" this, banding can occur. This type of banding, like banding from mis-aligned heads, usually shows up as darker and off color horizontal lines running through the print. If you are using the Epson driver, the printer is automatically "told" the

media thickness from the media you select in the driver. As long as you select the correct paper type in the driver you shouldn't have a problem. In RIP software programs like Colorbyte's ImagePrint, you must select the paper type in the options dialog box in the print setup dialog. If you don't see the exact type of paper in the list, then just select something that is similar in thickness.

If you are still getting banding after you have considered all above options and verified everything is in proper working condition there may be other problems with a printer. You will need to contact Epson technical support.

We hope this document describing banding and its causes help you with diagnosing problems on your Epson printer. If you still have questions don't hesitate to call us