

HP Designjet 8000s, 9000s, and 10000s Series Printers - Nozzles Drop Out While Printing or Ink Starvation

ISSUE:

When the image quality looks good at the start of the print, then as the print progresses, banding starts to occur caused by nozzles failing while printing.

The following settings can resolve this issue:

Typical setting**

- PH TEMP REST: ON/OFF: ON
- PH REST PERIOD: Carriage Cycles before Resting: 100 Cycles
- PH REST TIME: How long to Rest for PH REST PERIOD: 10 Seconds
- COLOR STRIPE: ON/OFF: ON
- PH CLEANING: START & END/DURING: During
- NOTE: ** Typical Setting to reduce or stop nozzle drop out.

SOLUTION:

The problem of nozzles dropping out when printing long prints can be resolved by the following:

PH TEMP REST



- A big difference in temperature between the platen heater and the printhead nozzle plate can be a cause of nozzle-outs. In this cases, adding a delay of ~1.5 sec per scan helps. When PH TEMP REST is enabled, the delay is applied if any of the following conditions is met:
- At least one printhead is $<27^{\circ}\text{C}$ or,
- The temperature difference between the printhead and the platen is $>13^{\circ}\text{C}$
- A lower Temperature setting on the Platens may help as well.

PH REST PERIOD



PH REST TIME



Too much continuous printing creates nozzle-outs. In fact, the longer you print continuously, the more likely it is that nozzle-outs may occur. This is why the printer has the following options:

- PH REST PERIOD: Defines how many passes the printer will perform before the printer stops (111 cycles ~1 meter in bidirectional and normal printmode)
- PH REST TIME: Defines for how long the carriage stops

- To determine if these settings will resolve the issue it is recommended to initially set the PH REST PERIOD to 25 CYCLES and the PH REST TIME to one SECOND. After
- determining that this setting resolve the issue it may be possible to still get good results by setting the Cycles to 50, 75 or 100

PH COLOR STRIPE



- Ensuring that the Color Stripe is ON will help keep nozzles from dropping out. Not printing the color stripe can affect printhead nozzle performance as we cannot ensure that all the nozzles are used for all colors. When a nozzle does not fire for a period of time the ink may dry on the nozzle causing the nozzle to temporarily fail.

PH CLEANING



- Setting PH CLEANING Under MEDIA REG on the front panel to DURING PRINT may help prevent nozzles from dropping out as well. However, there is the risk of a slight band in the print when the printer stops to do this cleaning. Higher pass modes will help minimize this banding defect.

PH RECOVERY

- This should only be used in extreme cases as it will likely cause a band in the print due to the ink drying while the Printhead Recovery is performed.