Printhead nozzle health plot

HP Latex 700 and 800 Printer Series

Overview

This newsletter explains how to read the *printhead nozzle health* plot to diagnose IQ issues. It also describes the *printhead health status plot* itself, which consists of patterns that are designed to highlight printhead reliability problems. It helps to determine whether any printhead is experiencing clogging or other problems.

How to print printhead health status plot

This procedure can be reached in two ways through the front panel menus:

- *Optimize Quality*   > *Printhead Cleaning > Print Status Plot*
- *Optimize Quality*   > *Advance Calibrations > Printheads Hard Cleaning > Print Status Plot*

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> IMPORTANT: Print this plot with Vinyl media, preferably gloss. For maximum visibility, it is recommended to print at least 24 inches wide. Other substrate types may not show enough detail to present the optimizer dashes clearly.

Printhead status plot description

The plot has three different areas: Basic color pattern, Individual nozzles, and area fill.

3. Area fill

2. Individual Nozzles

1. Basic color pattern
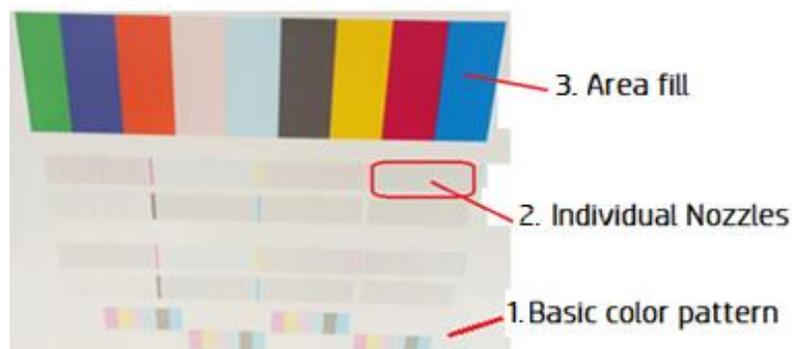
1. The **basic color pattern** sections should not be consulted for IQ troubleshooting: this section is used to warmup and prepare the PHs for the Individual nozzles, firing ink to remove possible dried ink or clogs at the PH nozzle. As a warmup it may have IQ issues, but they should not be taken into account.

2. The **individual nozzle** section consists of dashes printed individually for each nozzle. Each missing dash means that one particular nozzle is not firing ink.

   The pattern was designed to make it easier to find the nozzle that is misdirected or out.
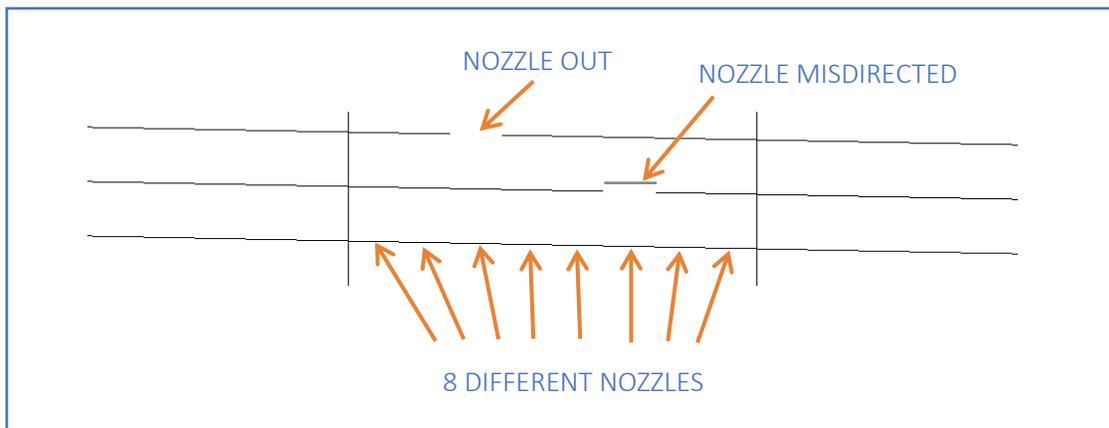
   It is important to check for nozzles out and for misdirected nozzles as well. Misdirected nozzles have a big impact on image quality (banding, grain...).

   > **NOTE:** The printer is able to continue printing at good quality despite missing nozzles. The software compensates for the lack of a nozzle with the surrounding nozzles (adjacent nozzle replacement). For this reason, print quality not only depends on the number of nozzles that are not firing, but also on their location.

   If failing nozzles are randomly deployed, the system is easily able to compensate for them even if the number of nozzles out is high. By contrast, when encountering a smaller number of nozzles out which are concentrated in one area the indicator will be worse.

Spit bars

3. The **Area fill** is a **.tiff** image in which the printer applies error hiding and adjacent nozzle replacement.

    If there are some nozzles out but this area fill is printed correctly, the printhead status is OK.

Summary table:

|	Purpose	Can it be used to diagnose PH status health?
Area fill	Check the current implication of the PH	YES
Individual nozzles	Check the health of the PH	YES
Spit bars	Warmup the PHs	NO
Basic colors	Warmup the PHs	NO

How to recover printheads and improve IQ

If you detect several printheads affected or you are not sure which PH is the affected one, proceed with a **Printhead cleaning** that will do a basic clean of all printheads.

If you detect any PH with several nozzles out, the first step to recover the printhead nozzles is to clean the affected printhead using **Printheads Hard Cleaning**.

The procedure **Printhead cleaning** can be reached through the front panel menu:

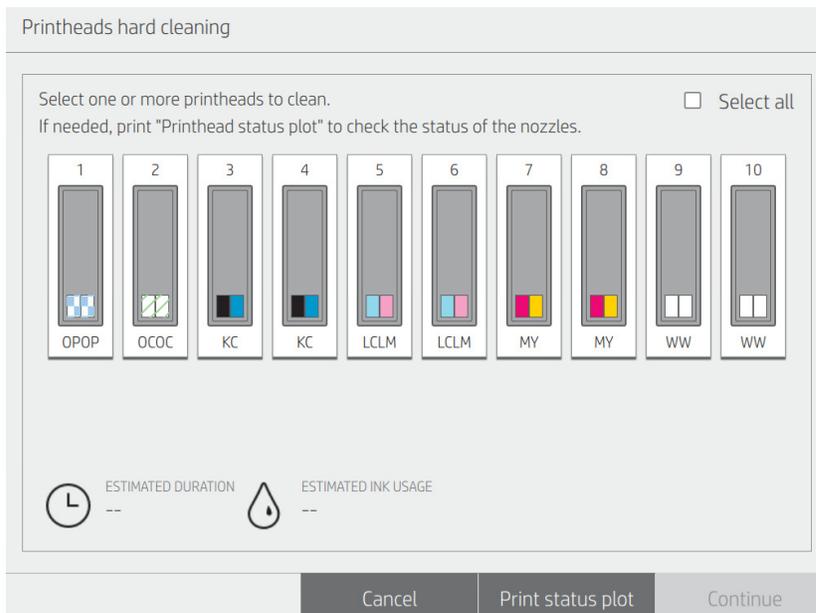- *Optimize printing quality* *> Printhead cleaning > Continue*
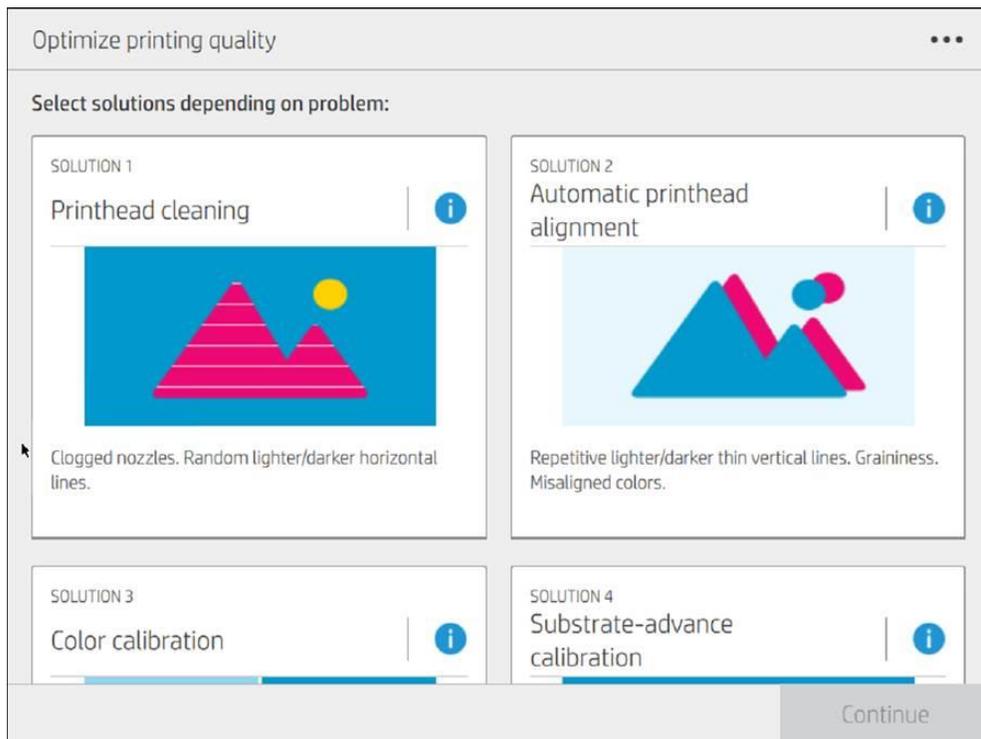
After performing the printhead cleaning, print the **Print Status Plot** again to recheck the printhead nozzles. If the result is not acceptable, proceed to do a **Printheads hard cleaning**.

The **Printheads hard cleaning** can be reached through the front panel menu:

- *Optimize printing quality* *> Advanced Calibrations > Printheads hard cleaning > Continue*
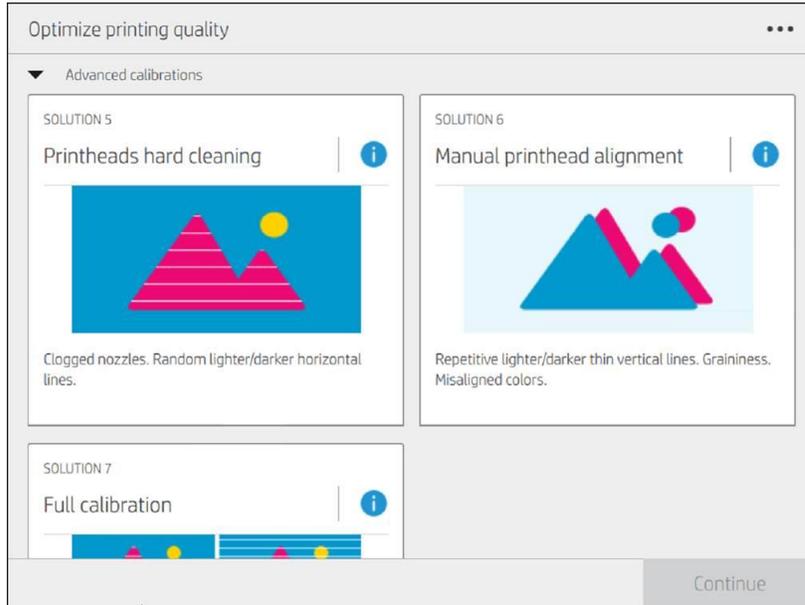
At the following step, select the affected printheads and press **Continue** to perform the hard clean for the selected printheads.

After performing the **printheads hard cleaning**, print the **Print Status Plot** again to recheck the printhead nozzles. If the result is not acceptable, perform a second **printheads hard cleaning**. If after a second **printheads hard cleaning** the results are not acceptable, the printhead or printheads affected need to be replaced.