

Print Quality Evaluation, Maintenance & Recovery

For Compress UV

When you start experiencing print quality problems, evaluating the nozzle check is the first step in identifying a problem.

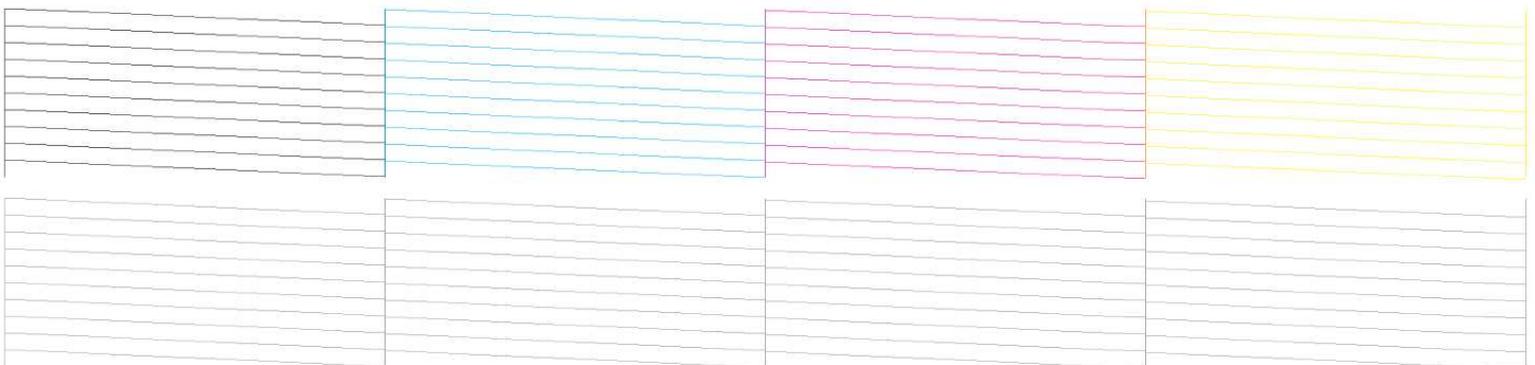
Routine maintenance will minimize the chance of print quality problems. A video on routine maintenance is on our web page.

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Before performing any print head evaluations, verify all ink containers are full, and that the WIMS system is operating. The WIMS stirrer should be rotating and pump turning in Clockwise direction.

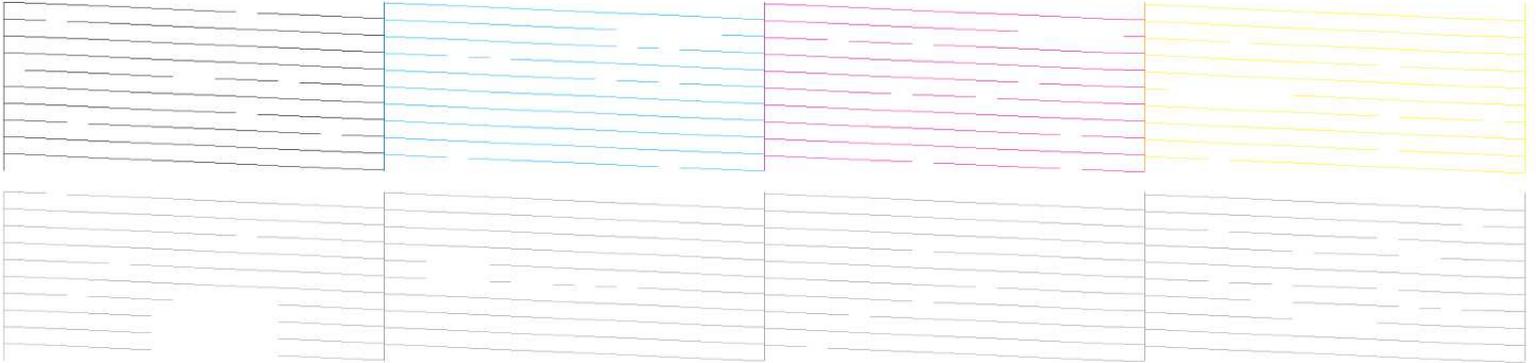
Perfect Nozzle Check

A perfect nozzle check should look as follows:



Dropped Nozzles

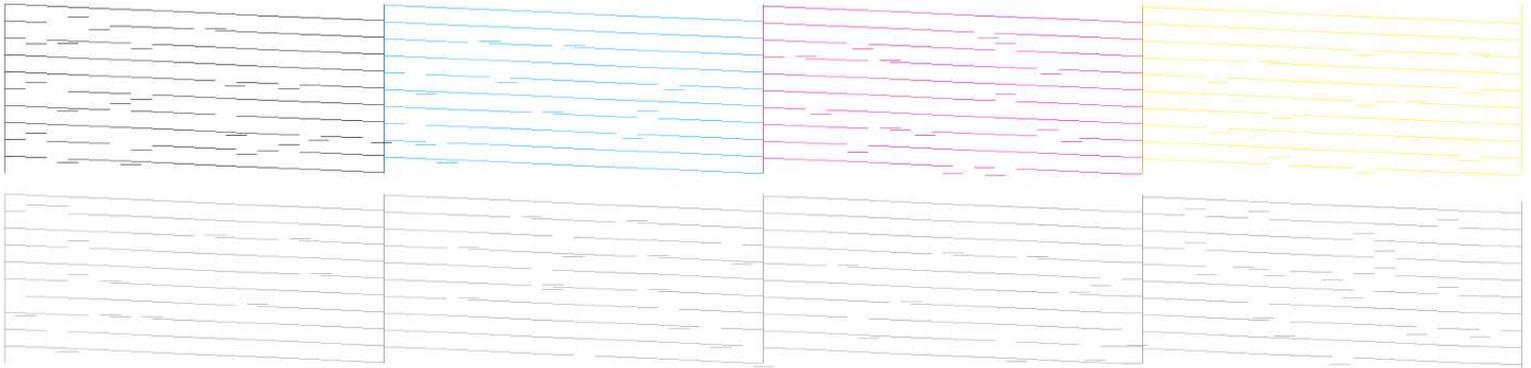
A nozzle check with dropped nozzles will appear similar to this:



Dropped nozzles can be a result of bubbles in the print head, blocked or clogged nozzles, or nozzles that have failed mechanically or electrically. If the dropped nozzles appear in varying locations, it is most likely “bubbles” in the system. This is most evident after a series of head cleanings. If they are persistent in the same place, they are most likely blocked or failed nozzles. If blocked nozzles are addressed in a timely fashion, they can usually be cleared through a cleaning cycle or the more aggressive cleaning. Failed nozzles cannot be recovered. Continue to use the print head until the failed nozzles cause print quality to be unacceptable at which time the print head will need to be replaced.

Deflections

A nozzle check with deflections will appear similar to this:

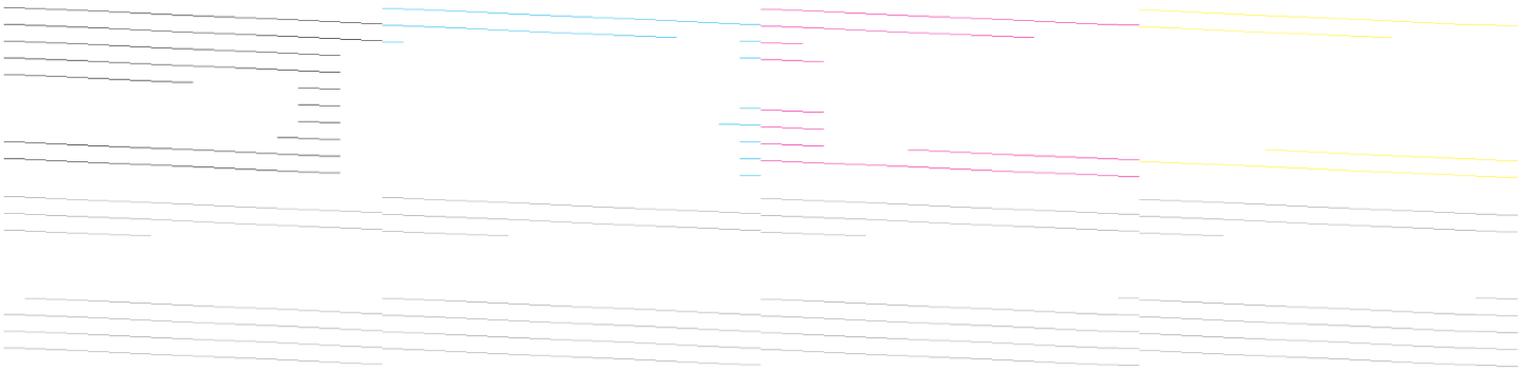


This is where the lines aren't evenly spaced and aligned correctly. This is usually a result of ink remaining on/inside the nozzle plate or physical damage to the print head. Physical damage of the print head could be a result of a head strike.

A manual cleaning of the nozzle plate with a lint free cloth, saturated in flushing solution, followed by a cleaning cycle of the printer will usually correct the deflections. If this problem persists, you can proceed to more aggressive cleaning.

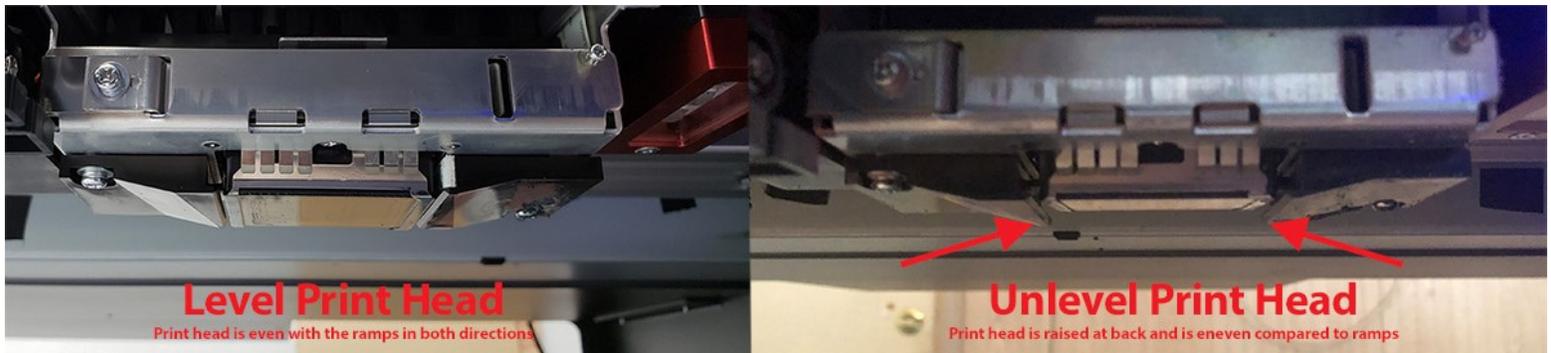
Dropped Blocks or Channels

A nozzle check with lots of dropped nozzles will appear similar to this:



This type of nozzle check is usually a result of a capping station failure or malfunction. Visually inspect the cap top to make certain there are no ink flakes or debris on the seal. Make sure the cap top seal is clean and is not cracked or broken.

If the capping station appears to be in good order, inspect the print head. Make certain that the print head is level, and that it is parallel to the ramps both side-to-side and front-to-back.



Inspect the ramps, particularly the one on the capping station side. Remove any ink build-up paying attention to the perimeter including the ends. Ink buildup on the end of the ramp can alter the print head/cap top alignment.

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The ramps are removable with a single Phillips-head screw. The challenge will be getting the slot in the screw clear to receive the screwdriver. A fine "pick" tool works well for this, but be careful of the print head. While you are cleaning the head, you can remove the ramps and literally chip off the ink build-up. Buildup here will prevent the capping station from operating as required, and will eventually build to the point that it will cause drags in the print.

To evaluate the functionality of the capping station, perform a syringe draw on the capping station. Push the syringe plunger all the way in, and attach it to the waste tube coming from the capping station pump. Draw the plunger outward to create a suction. The plunger should have considerable resistance and should want to return to the original position if released. Ink should slowly flow into the syringe with minimal air. If the syringe does not yield resistance, or if there is considerable air being drawn into the syringe, there is an air leak inhibiting the capping station from performing as needed.



If the syringe test indicates the capping station is functioning normally, proceed with more aggressive cleaning procedures.

More Aggressive Cleaning Procedure:

Effective daily maintenance is a critical step to help prevent the need for more aggressive cleaning methods. Any ink residue not removed in the daily maintenance procedure only compounds to make future cleaning more difficult.

Depending on items being printed and the printing environment, multiple cleaning operations may be required throughout each production shift. A periodic head soak as described below may be beneficial as a maintenance step.

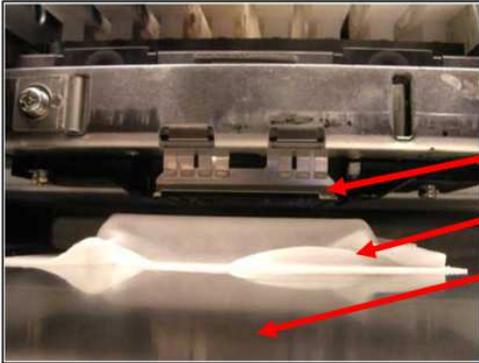
Cleaning Recovery Steps:

- 1) Print a nozzle check and retain this to check progress (use transparent material to observe the white ink. 3" clear packing tape works very well).
- 2) Use a lint free cloth saturated in flushing solution to remove any ink or debris from the print head face and perimeter and ramps. If ramps have a large amount of ink buildup, it may be easier to remove them for cleaning. Clean the cap top seal (capping station) using flushing solution and either a lint free cloth or a polyester swab. Thoroughly clean the wiper blade.
- 3) Obtain a "Magic Eraser". Use a piece of this slightly larger than the print head face.

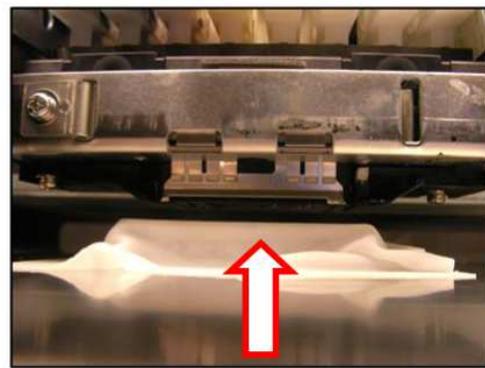
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- 4) Place the sponge onto a flush resistant material and place it on the print bed.
- 5) Place a clean, lint-free cloth over the sponge.
- 6) Pour enough flush onto the cloth/sponge so that it becomes saturated.
- 7) Unlock the print head carriage and slide it towards the left.
- 8) Align the print head face with the cloth covered sponge.
- 9) Carefully raise the print bed by pressing the *Bed Up* button until the print head face is pressed lightly against the saturated sponge. The sponge should be compressed to no less than two thirds of its original height.
- 10) Let this soak like this for several hours. Overnight works.
- 11) After the soaking period, you can use a clean "Magic Eraser" soaked in flushing solution and gently scrub the print head face in a front to back motion to remove any ink remaining on the nozzle plate.

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| No. | Part name |
|-----|---------------------|
| 1 | Print head face |
| 2 | Cloth coveredSponge |
| 3 | Flush safe material |



Perform a head cleaning via the control panel and print a nozzle check. If the nozzle check has not improved, you can repeat the scrubbing with a little more force and repeat the cleaning, nozzle check process until satisfactory results are obtained.

If after performing these procedures you still do not have a satisfactory nozzle check, please contact the support department for additional instructions:

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