



# HP Control Print

User Guide for HP Latex 600, 700 and 800 Printer Series





# Introduction

Select the chapter you want to go to, or just tap *next* to start the training



Introduction



HP Control Print



Defect List



Support



Click to get further  
information

# Introduction



ONE PLOT to diagnose Image Quality defects.



Printhead



Printer



Ink-Media



Substrate





# Chapter 1. Basic checks

## Introduction

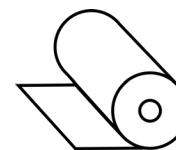
### When to use it?



Introduction



- ✓ Installation
- ✓ After repairs



- ✓ Test New substrates



- ✓ Daily/weekly IQ checks



- ✓ Image Quality Troubleshooting



# Chapter 1. Basic checks

## The plot

Review all patterns following numerical order starting at 0 and fix them one by one



### Patterns

0. Media Advance
1. Printhead Alignment
2. Coalescence and Grain
3. Bleed
4. Text quality
5. Printhead Health
6. Horizontal banding
7. Uniformity & Ink dry
8. Scan axis uniformity lines & Color



\*Click on the numbers to go to the corresponding sections





# Chapter 1. Basic checks

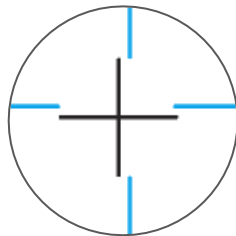
## Defects List



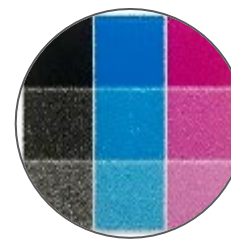
Defects List



[0 - Media Advance](#)



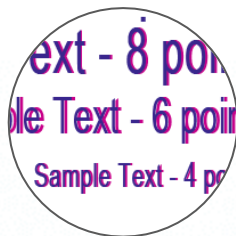
[1 - PH Alignment](#)



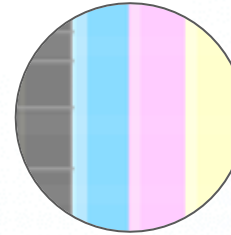
[2 - Coalescence and Grain](#)



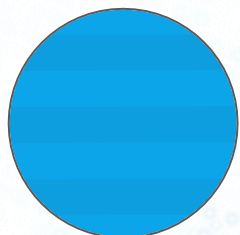
[3 - Bleed](#)



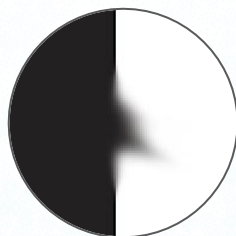
[4 - Text Quality](#)



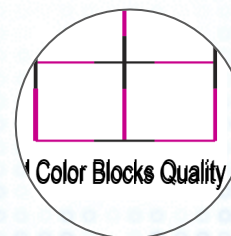
[5 - PH Health](#)



[6 - Horizontal Banding](#)



[7 - Uniformity & Ink dry](#)



[8 - Scan Axis uniformity lines and color](#)

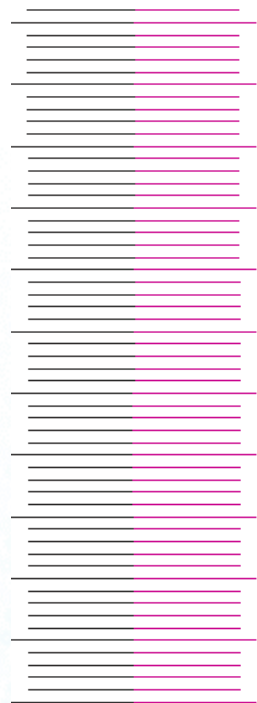


# Chapter 1. Basic checks

## 0. Media Advance

### What to check:

- Thin and uniform lines along the media advance,
- Both sides of the plot have the same result,



Defects List

### DEFECTS & CORRECTIVE ACTIONS

Not uniform, thicker or blurry lines



- ☐ Check that the **OMAS+** (if applies) is clean.
- ☐ Check that the **substrate-advance sensor** is working properly with this media.
  - Run the **substrate-advance calibration**. Follow the instructions written in the plot or in the User Guide.
- ☐ Check that input and output tensions are set properly
- ☐ Check that vacuum is set properly.
- ☐ Check that the **HW** components (pinchwheels, MIMO motors, spindle...) are working properly using the diagnostics.



WORKAROUND







# Chapter 1. Basic checks

## 0. Media Advance

### What to check

- Thin and uniform
- Both sides of the media



### Workaround

- Test a different substrate
- Look in [HP Media Locator](#) for compatible substrates.



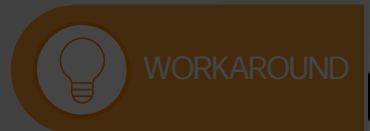
Defects List

ing properly

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- ❑ Check that the **HW** components (pinchwheels, MIMO motors, spindle...) are working properly using the diagnostics





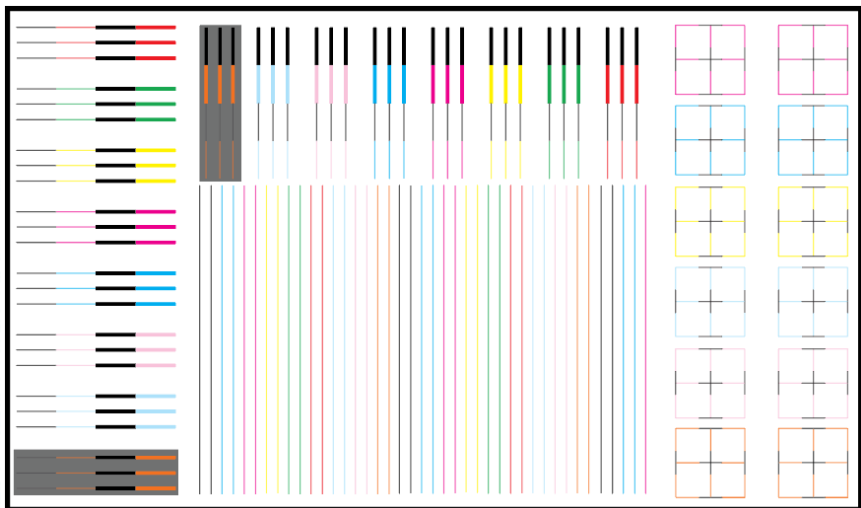


# Chapter 1. Basic checks

## 1. Printhead Alignment (Vertical/Horizontal)

### Things to Check:

- Thin and aligned lines vertically and horizontally.



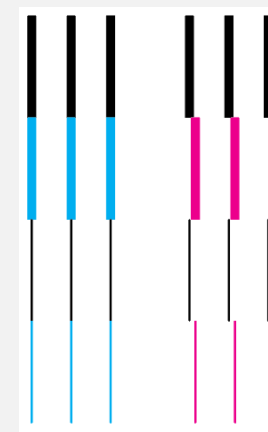
Defects List

### DEFECTS & CORRECTIVE ACTIONS

Printhead Misaligned

All horizontal lines are thick and blurry

All vertical lines are thick and blurry



☐ Perform a PH Alignment.



**NOTE:** For optimal printhead alignment results, use a glossy self-adhesive

vinyl.



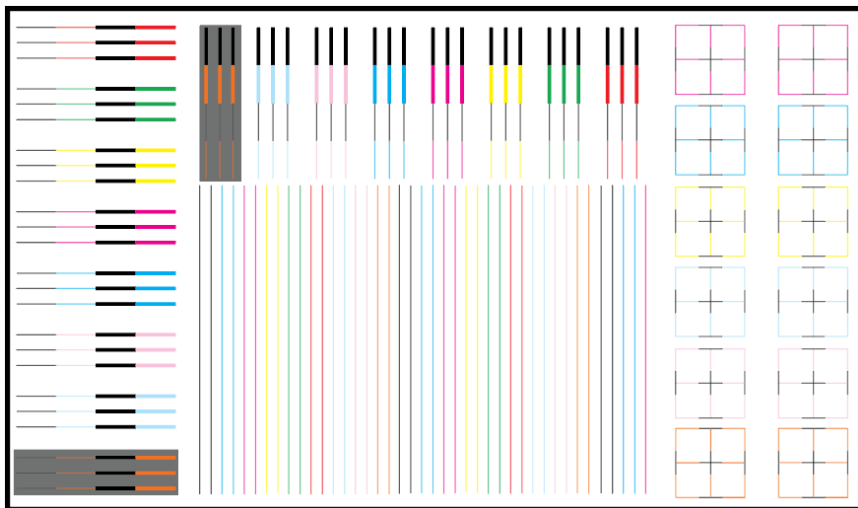


# Chapter 1. Basic checks

## 1. Printhead Alignment (Vertical/Horizontal)

### Things to Check:

- Thin and aligned lines vertically and horizontally



**NOTE:** Make sure that you are using an appropriate substrate. Check the recommended substrates in HP Media locator.



Defects List

### DEFECTS & CORRECTIVE ACTIONS

Printhead Misaligned

All horizontal lines are thick and blurry

All vertical lines are thick and blurry



- ☐ Check the pattern 0 **Substrate Advance** again.



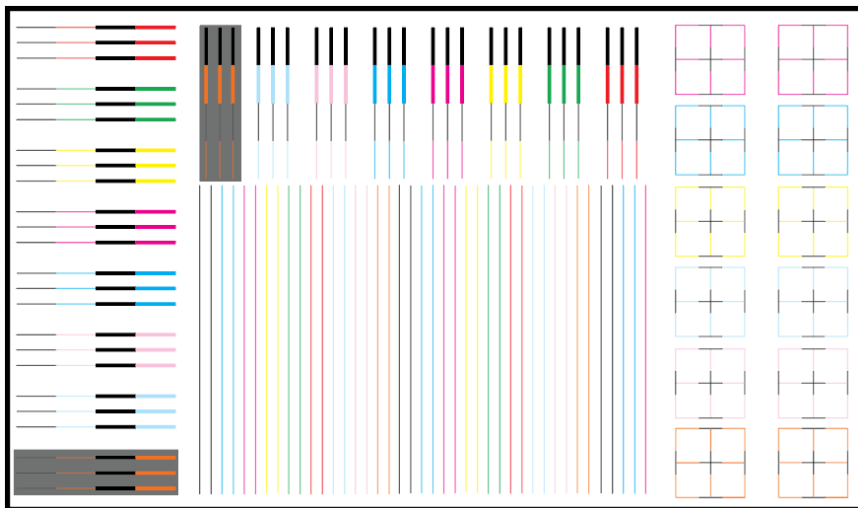


# Chapter 1. Basic checks

## 1. Printhead Alignment (Vertical/Horizontal)

### Things to Check:

- Thin and aligned lines vertically and horizontally



**NOTE:** Make sure that you are using an appropriate substrate. Check the recommended substrates in HP Media locator.



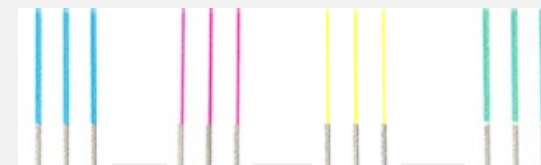
Defects List

### DEFECTS & CORRECTIVE ACTIONS

Printhead Misaligned

All horizontal lines are thick and blurry

All vertical lines are thick and blurry



- ☐ Check **Optimizer PH alignment**
- ☐ Perform a **Printhead Alignment**







# Chapter 1. Basic checks

## 2. Grain and Coalescence

### Things to Check:

- Smooth and uniform area fills.



Defects List

### DEFECTS & CORRECTIVE ACTIONS



- ☐ Check pattern 0 **Substrate advance**
- ☐ Check pattern1 **PHAlignment**
- ☐ Check substrate compatibility: some materials have Plasticizer or coating issues
- ☐ Check that the media is flat on the printzone without wrinkles or smears
- ☐ Check and adjust **Optimizer level**
- ☐ Check and adjust drying settings (airflow, temperature)
- ☐ Increase the number of passes



WORKAROUND





# Chapter 1. Basic checks

## 2. Grain and Coalescence

### Things to Check:

- Smooth and



Defects List



### Workaround

- Each media has a different level of grain and coalescence depending on the coating and surface. Check the Media Locator for recommended substrates.

- ☐ Check and adjust **Optimizer level**
- ☐ Check and adjust drying settings (airflow, temperature)
- ☐ Increase the number of passes



WORKAROUND



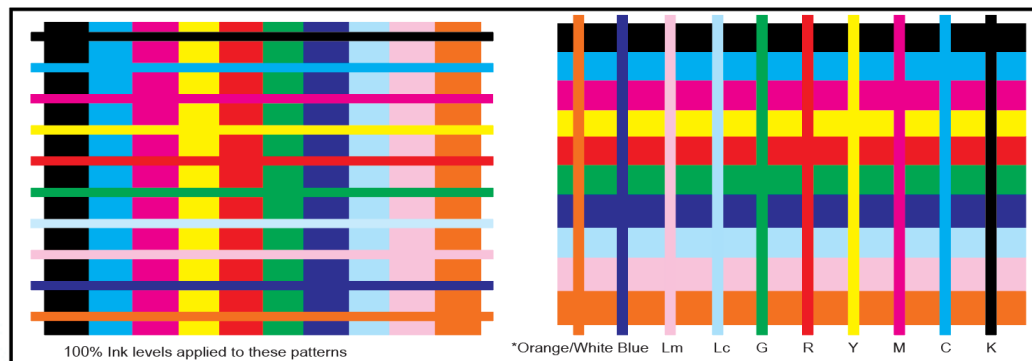


# Chapter 1. Basic checks

## 3. Bleed

### Things to Check:

- Boundaries between colors are sharp and well defined.



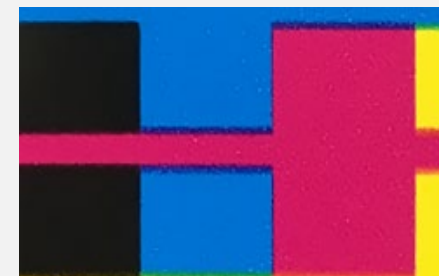
**NOTE:** Small boundary overlaps may also relate to Printhead Bidirectional alignment.

### DEFECTS & CORRECTIVE ACTIONS



Defects List

Bleed between colors



- ☐ Check **Optimizer level**.
- ☐ Increase **drying settings** (temperature, airflow).
- ☐ Check ambient **temperature** and relative **humidity**.  $T > 15^{\circ}\text{C}$  and  $\text{RH} < 60\%$ .
- ☐ Check media status because: some medias can Plasticizer or coating issues.
- ☐ Lower **ink density**.



WORKAROUND





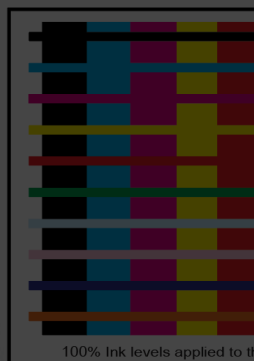


# Chapter 1. Basic checks

## 3. Bleed

### Things to Check:

- Boundaries



Printhead Bidirectional  
alignment.

- ☐ Increase **drying settings** (temperature, airflow)
- ☐ Check ambient **temperature** and relative **humidity**.  $T > 15^{\circ}\text{C}$  and  $\text{RH} < 60\%$ .
- ☐ Check media status: some medias can Plasticizer or coating issues
- ☐ Lower **ink density**



### Workaround

- Check the Media Locator for recommended substrates.



Defects List



WORKAROUND



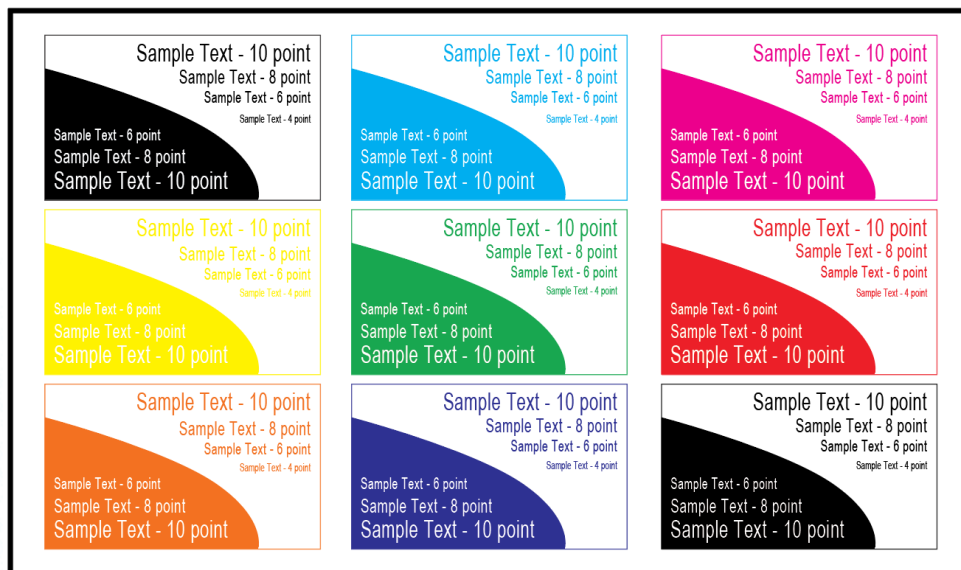


# Chapter 1. Basic checks

## 4. Text Quality

### Things to Check:

- Check your pattern looking for text definition, sharpness, and quality for all colors.



Defects List

### DEFECTS & CORRECTIVE ACTIONS

Blurriness in all colors

Blurriness in one/some colors



- ☐ Check pattern 0 **Substrate advance**.
- ☐ Check pattern 1 **PH Alignment** (special focus on Optimizer).
- ☐ Check and adjust **Optimizer level**.
- ☐ Increase **Blooming Level**.



WORKAROUND



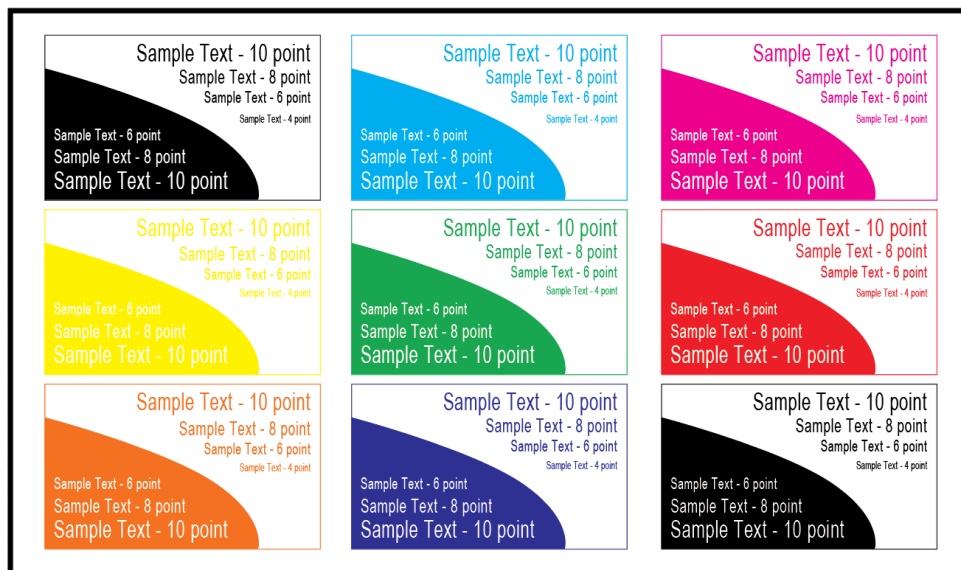


# Chapter 1. Basic checks

## 4. Text Quality

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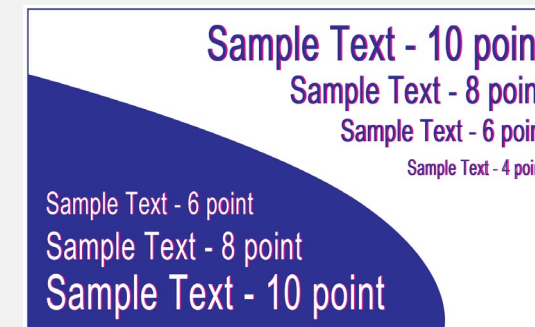
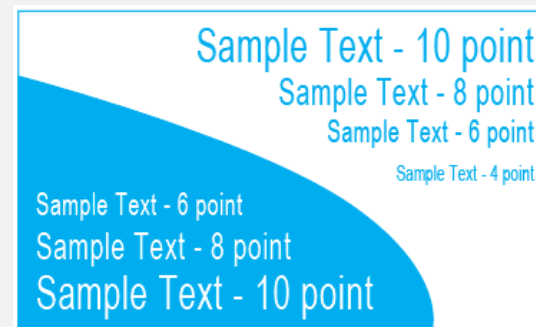


Defects List

### DEFECTS & CORRECTIVE ACTIONS

Blurriness in all colors

Blurriness in one/some colors



- ❑ Check pattern 1 **PH Alignment** on the color with blurriness
- ❑ Check that media is flat on the area where the blurry part has been printed
- ❑ Check pattern 5 or **Nozzle health** of the affected color



WORKAROUND







# Chapter 1. Basic checks

## 4. Text Quality

### Things to Check:

- Check your sharpness

- Adding spit bars next to the text helps to optimize its sharpness

- ☐ Check pattern 1 **PH Alignment** on the color with blurriness
- ☐ Check that media is flat on the area where the blurry part has been printed
- ☐ Check pattern 5 or **Nozzle health** of the affected color



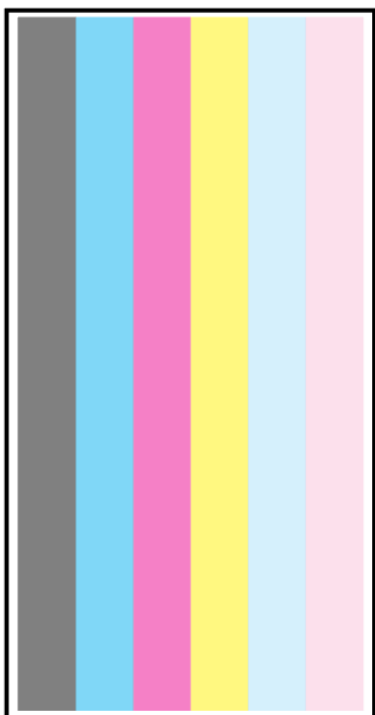


# Chapter 1. Basic checks

## 5. Printhead health

### Things to Check:

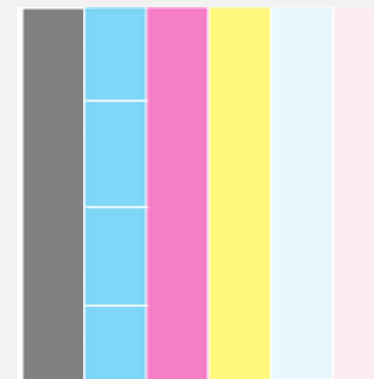
- Uniform area without white lines or white tones.
- It may be necessary to also print the Nozzle Health plot.



Defects List

### DEFECTS & CORRECTIVE ACTIONS

#### Visible white lines



- ☐ Print a **Printhead Nozzle plot** to identify missing and misdirected nozzles.
- ☐ Run cleaning routines like **Hard Clean** on the identified PHs.
- ☐ Replace the PHs if it cannot be recovered.



WORKAROUND





# Chapter 1. Basic checks

## 5. Printhead health

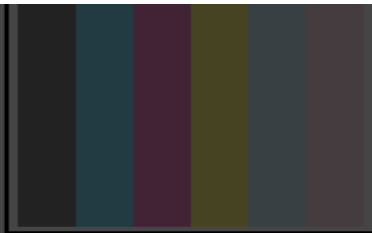
### Things to Check:

- Uniform are
- It may be ne



### Workaround

- Printing with more passes helps hiding missing nozzles



### Misdirected nozzles

- ☐ Run cleaning routines like **Hard Clean** on the identified PHs
- ☐ Replace the PHs if it cannot be recovered



Defects List



WORKAROUND







# Chapter 1. Basic checks

## 6. Horizontal Banding

### Things to Check:

- Uniform area fills. No bands or white lines.



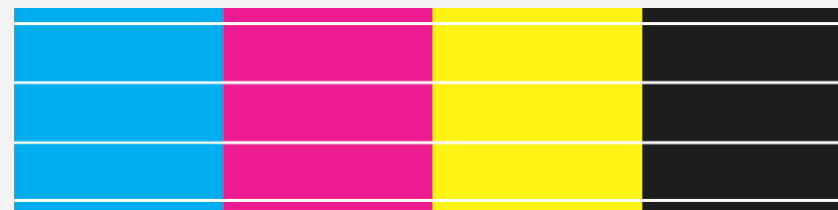
Defects List

### DEFECTS & CORRECTIVE ACTIONS

Banding in all colors

Banding in some colors

Gloss banding (mostly visible on K)



- ☐ Check pattern 0 Substrate Advance again.
- ☐ Check pattern 1 printhead alignment and pattern 5 nozzle health.
- ☐ Check if the same behavior is happening with another media. Some media's coating can provoke this effect.



WORKAROUND





# Chapter 1. Basic checks

## 6. Horizontal Banding

### Things to Check:

- Uniform are



### Workaround

- Increase number of passes



Defects List

mostly

- ❑ Check again pattern 1 substrate / reverse
- ❑ Check pattern 1 printhead alignment and pattern 5 nozzle health
- ❑ Check if the same behavior is happening with another media. Some media's coating can provoke this effect.



WORKAROUND





# Chapter 1. Basic checks

## 6. Horizontal Banding

### Things to Check:

- Uniform area fills. No bands or white lines.



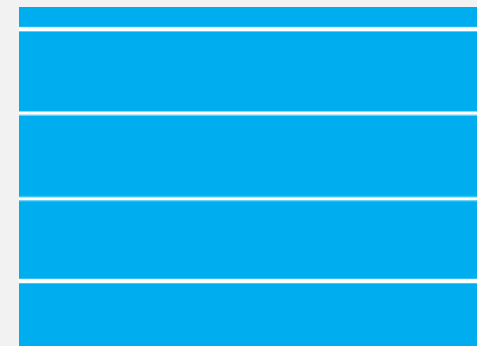
Defects List

### DEFECTS & CORRECTIVE ACTIONS

Banding in all colors

Banding in some colors

Gloss banding (mostly visible on K)



- ☐ Check nozzle health pattern 5.
- ☐ Check **Optimizer level** and adjust it.
- ☐ Check if the same behavior is happening with another media. Some media's coating can provoke this effect.



WORKAROUND





# Chapter 1. Basic checks

## 6. Horizontal Banding

### Things to Check:

- Uniform are



### Workaround

- Increase number of passes.

- ☐ Check **Optimizer level** and adjust it
- ☐ Check if the same behavior is happening with another media. Some media's coating can provoke this effect



WORKAROUND







# Chapter 1. Basic checks

## 6. Horizontal Banding

### Things to Check:

- Uniform area fills. No bands or white lines.



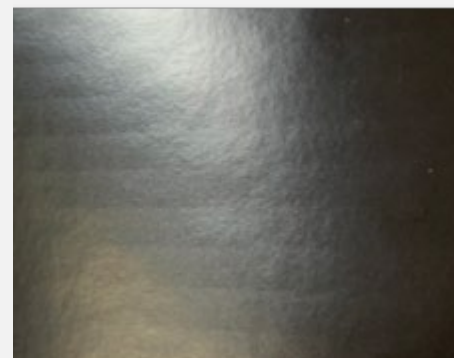
Defects List

### DEFECTS & CORRECTIVE ACTIONS

Banding in all colors

Banding in some colors

Gloss banding (mostly visible on K)



- ☐ Check nozzle health plot for OC PH.
- ☐ Check OC PH Alignment - print the PH alignment verification plot.
- ☐ Check that cleaning system is working as expected.
- ☐ Increase curing temperature.



WORKAROUND





# Chapter 1. Basic checks

## 6. Horizontal Banding

### Things to Check:

- Uniform are



### Workaround

- Set the OC level to 0 on the Printmode and laminate the job.

- ☐ Check nozzle health plot for OC PH
- ☐ Check OC PH Alignment - print the PH alignment verification plot
- ☐ Check that cleaning system is working as expected
- ☐ Increase curing temperature



WORKAROUND



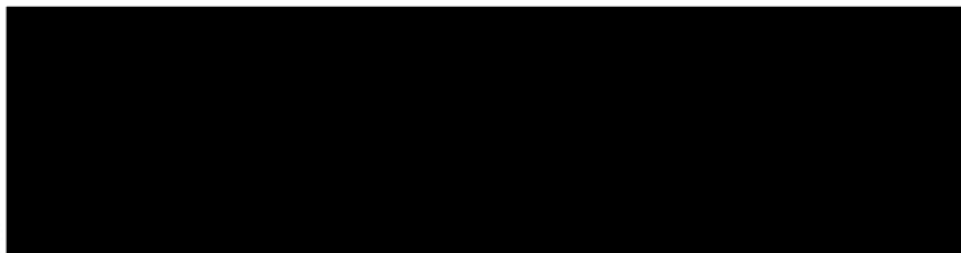


# Chapter 1. Basic checks

## 7. Uniformity & Ink dry

### Things to Check:

- Area fills have uniform color.



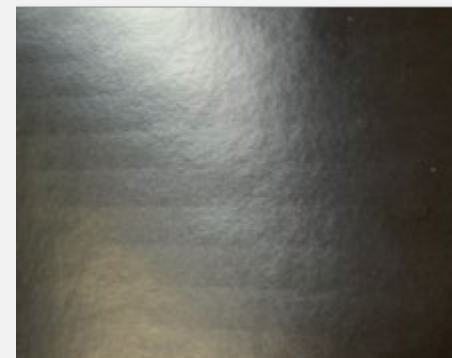
Defects List

### DEFECTS & CORRECTIVE ACTIONS

Horizontal banding

Vertical marks

Wet ink



- ☐ Check pattern 6 Horizontal Banding.
- ☐ Check pattern 0 Substrate Advance.



WORKAROUND





# Chapter 1. Basic checks

## 7. Uniformity & Ink dry

### Things to Check:

- Area fills have uniform color.



### DEFECTS & CORRECTIVE ACTIONS

Defects List

Horizontal banding

Vertical marks

Wet ink



- ☐ Increase print-zone temperature.
- ☐ Add or increase interswath delay,



WORKAROUND





# Chapter 1. Basic checks

## 7. Uniformity & Ink dry

### Things to Check:

- Area fills ha



### Workaround

- Increase number of passes.

- ☐ Add or increase interswath delay



WORKAROUND



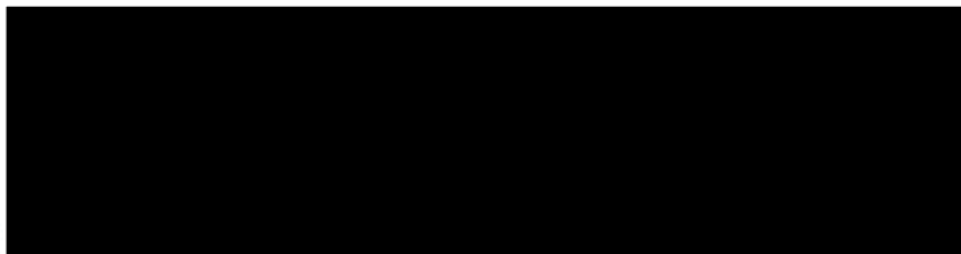


# Chapter 1. Basic checks

## 7. Uniformity & Ink dry

### Things to Check:

- Black area fill is uniform.



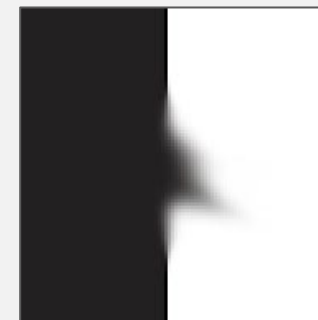
Defects List

### DEFECTS & CORRECTIVE ACTIONS

Horizontal banding

Vertical marks

Wet ink



- ☐ If ink is wet only in certain area, check curing hardware.
- ☐ Increase curing temperature.
- ☐ If media cannot handle higher curing settings, reduce ink density.
- ☐ Add or increase interswath delay.



WORKAROUND



**NOTE** If ink is wet, increasing OC level will make it worse as it is additional ink that needs to be cured





# Chapter 1. Basic checks

## 7. Uniformity & Ink dry

### Things to Check:

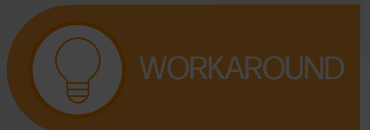
- Black area f



### Workaround

- Increase number of passes

- ☐ Increase curing temperature
- ☐ If media cannot handle higher curing settings, reduce ink density
- ☐ Add or increase interswath delay



**NOTE:** If ink is wet, increasing OC level will make it worse as it is additional ink that needs to be cured



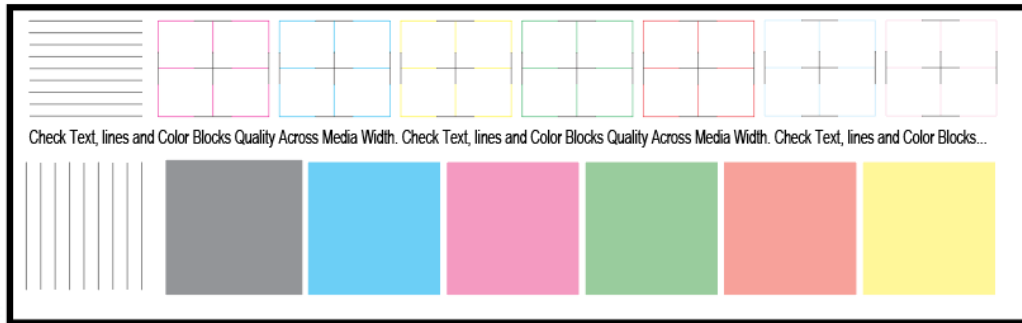


# Chapter 1. Basic checks

## 8. Scan Axis Uniformity lines & color

### Things to Check:

- Check text, lines and color blocks quality across media width.

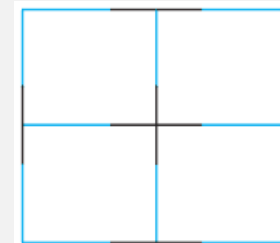


Defects List

### DEFECTS & CORRECTIVE ACTIONS

Difference on vertical lines and text

Left



Across Media Width.

Difference on horizontal lines and text

Right



Across Media Width.

- ❑ Check that the media is flat on the printzone with no wrinkles or smears.
- ❑ Check PPS HW (Certified Service engineer).



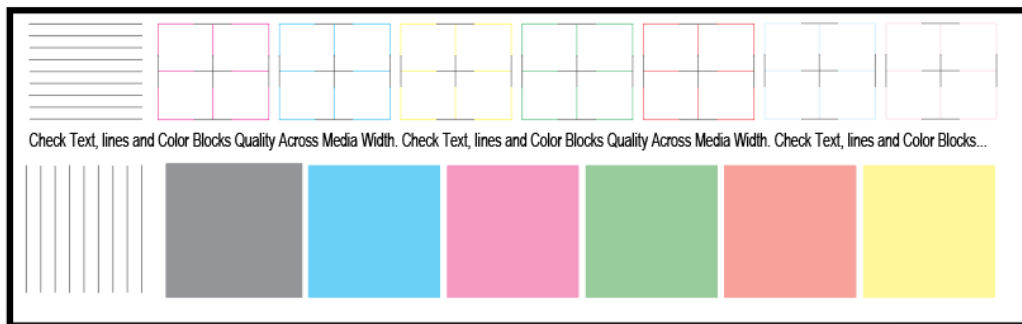


# Chapter 1. Basic checks

## 8. Scan Axis Uniformity lines & color

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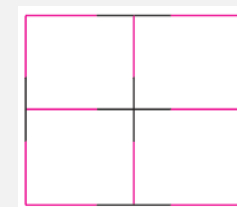


Defects List

### DEFECTS & CORRECTIVE ACTIONS

Difference on vertical  
lines and text

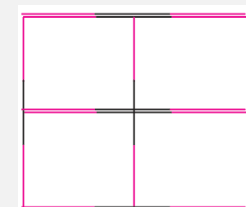
Left



Color Blocks Quality

Difference on  
horizontal lines and text

Right



Color Blocks Quality

- ☐ Check that the media is flat on the printzone with no or smears
- ☐ Check pattern 0 **Substrate advance** - make sure the pattern on both sides is the same.





# Thank You



## Congratulations!

You have now completed this module.  
Click the button to close and continue.

Close module

