HP Control Print

Introduction

HP Control Print

Defect List

Support

Click to get further information

Save time
Save media

ONE PLOT to diagnose
Image Quality defects

Printheads

Printer

Ink-Media

Substrate

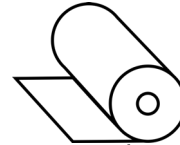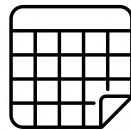## WHEN TO USE IT?

✓ Installation
✓ After repairs

✓ Test New substrates

Click to add text

✓ Daily/weekly
IQ checks

✓ Image Quality
Troubleshooting

HP Control print

The plot

Review all topics in numerical order starting at 0 and complete them one by one

Topic

0. Substrate 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

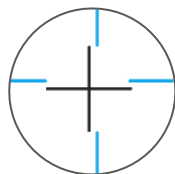Introduction   HP Control Print   Defect List   Support
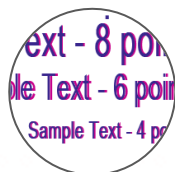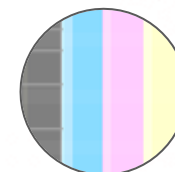
Defects list

0 – Media Advance

1 – Printhead Alignment

2 – Coalescence and Grain

3 – Bleed
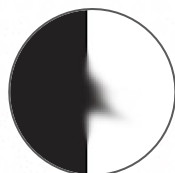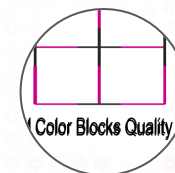
4 – Text Quality

5 – Printhead Health

6 – Horizontal Banding

7 – Uniformity & Ink dry

8 – Scan Axis uniformity lines and color

0. Substrate Advance

What to check for:

- Thin and uniform lines along the media advance.

- Both sides of the plot must have the same result.

DEFECTS & CORRECTIVE ACTIONS

Not uniform, thicker or blurry lines

- ☐ Check that the **OMAS** (if applicable) is clean.
- ☐ Check that the **OMAS** is working properly with this media.

  > If disabling the OMAS you get better results - the OMAS might be not working properly, or the substrate is not properly read.

- ☐ Check that both input and output tensions are set properly.
- ☐ Check that the vacuum is set properly.
- ☐ Check that the **HW** components (pinch-wheels, MIMO motors, spindle...) are working properly using the diagnostics.

WORKAROUND

0. Substrate Advance

What to che

- Thin and uni
- Both sides o

Workaround

- Test a different substrate.

- Check [HP Media Locator](#) for compatible substrates.

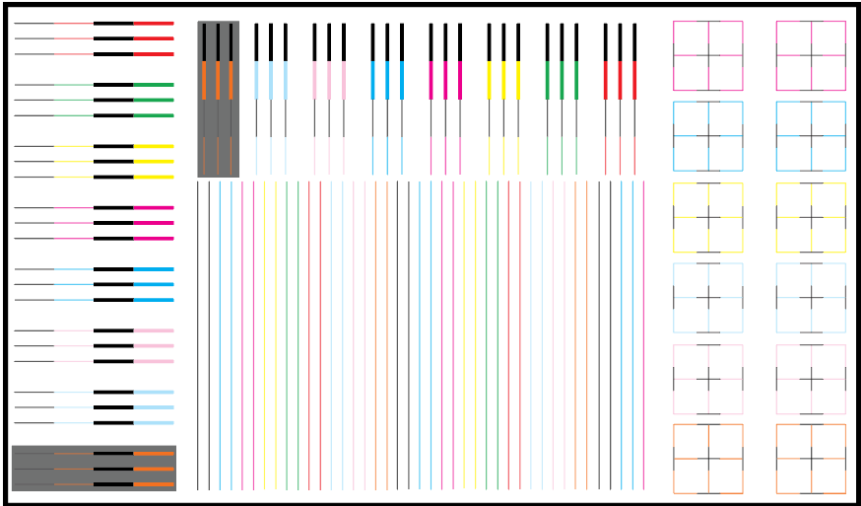WORKAROUND

Introduction

HP Control Print

Defect List

Support

1. Printhead Alignment (Vertical/Horizontal)

What to check for:

Thin and aligned lines both vertically and horizontally

> **NOTE**
>
> Make sure that you are using a proper substrate. Check the recommended substrates in <u>HP Media locator.</u>

DEFECTS & CORRECTIVE ACTIONS

| Printhead Misaligned | All horizontal lines are thick and blurry | All vertical lines are thick and blurry |

☐ Perform a **Printhead Alignment**

> **NOTE**
>
> Remember that it is recommended to use a glossy self-adhesive vinyl

1. Printhead Alignment (Vertical/Horizontal)

What to check for:

Thin and aligned lines vertically and horizontally

> 📝 **NOTE**
>
> Make sure that you are using a proper substrate. Check the recommended substrates in [HP Media locator.](#)

DEFECTS & CORRECTIVE ACTIONS

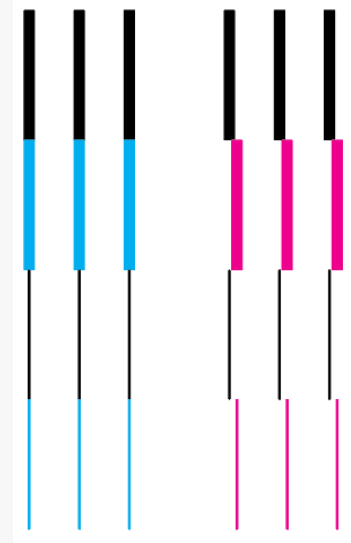| Printhead Misaligned | All horizontal lines are thick and blurry | All vertical lines are thick and blurry |

☐ Check again pattern 0 <u>Substrate Advance</u>

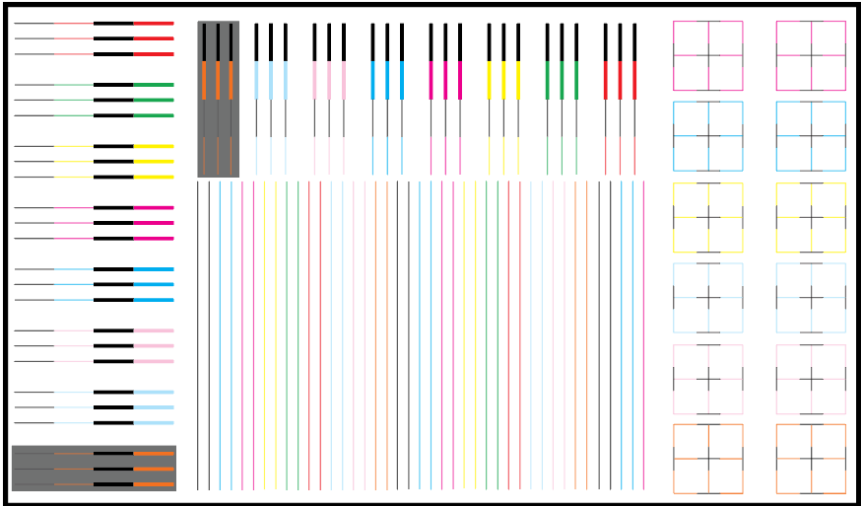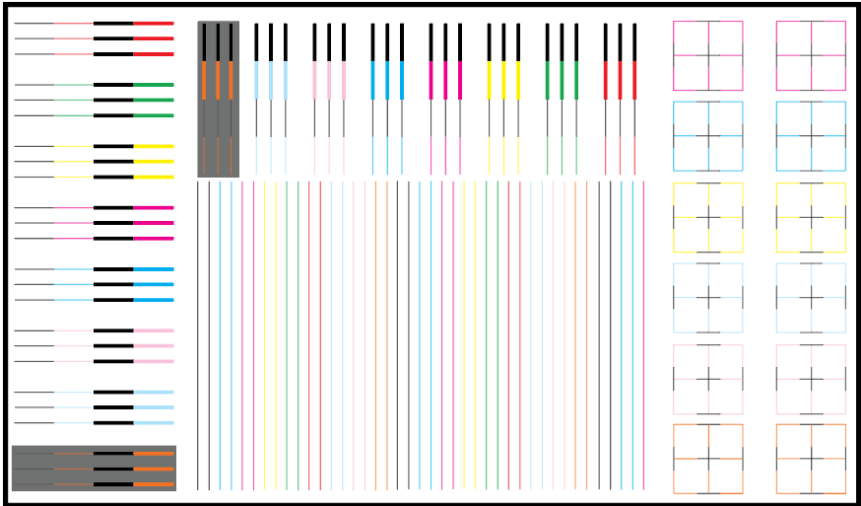Introduction | HP Control Print | Defect List | Support

1. Printhead Alignment (Vertical/Horizontal)

Things to Check:

Thin and aligned lines vertically and horizontally

> **NOTE**
>
> Make sure that you are using a proper substrate. Check the recommended substrates in [HP Media locator.](#)
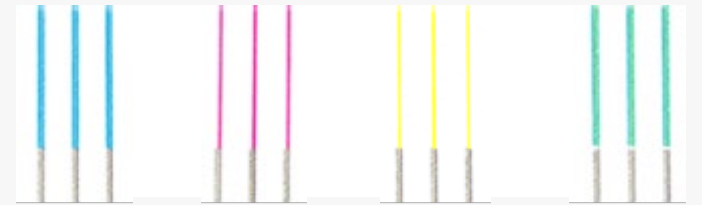
DEFECTS & CORRECTIVE ACTIONS

Printhead Misaligned	All horizontal lines are thick and blurry	**All vertical lines are thick and blurry**

- ☐ Check **Optimizer Printhead alignment**
- ☐ Check that **Substrate thickness** is correctly set
- ☐ Check that **Carriage height** position is correct
- ☐ Perform **Printhead Alignment**

2. Grain and Coalescence

What to check for:

Smooth and uniform area fills

DEFECTS & CORRECTIVE ACTIONS

Grain in area fills (especially light colors)	Coalescence in area fills

- ☐ Check pattern 0 <u>Substrate advance</u>.
- ☐ Check pattern 1 <u>Printhead Alignment</u>.
- ☐ Check substrate compatibility. Some materials have Plasticizer or coating issues.
- ☐ Check that the substrate is flat on the printzone with no wrinkles or smears

WORKAROUND

2. Grain and Coalescence

What to check for:

Smooth and uniform area fills

DEFECTS & CORRECTIVE ACTIONS

Grain in area fills (especially light colors)	Coalescence in area fills

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

WORKAROUND

2. Grain and Coalescence

What to check for:

Smooth and uniform area fills

DEFECTS & CORRECTIVE ACTIONS

💡 Workaround

- Each substrate has a different level of grain and coalescence depending on the coating and surface. Check the <u>HP Media Locator</u> for recommended substrates.

WORKAROUND

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Defect List

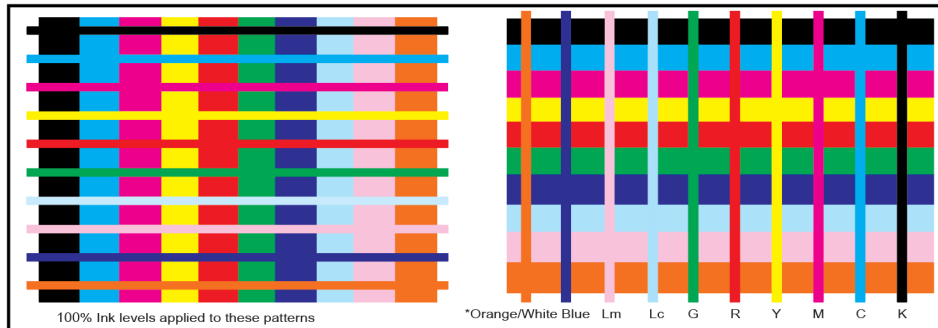Support

3. Ink Bleed

Things to Check:

Boundaries between colors are sharp and well defined.

100% Ink levels applied to these patterns

*Orange/White Blue Lm Lc G R Y M C K
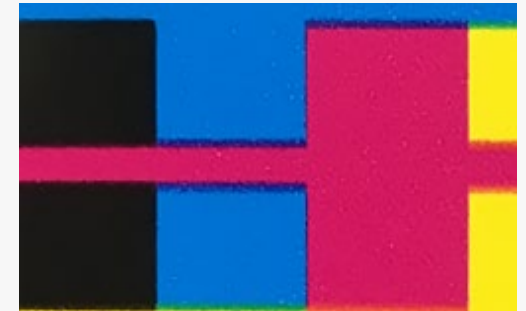
> 📝 **NOTE**
>
> Small boundary overlaps could also be related to Printhead Bidirectional misalignment.

DEFECTS & CORRECTIVE ACTIONS

Bleed between colors

- ☐ Check **Optimizer level**
- ☐ Increase **drying settings** (temperature, airflow)
- ☐ Check ambient **temperature** and relative **humidity:** T>15C and RH<60%.
- ☐ Check Media status: some can Plasticizer or coating issues
- ☐ Lower **ink density**

💡 **WORKAROUND**

3. Ink Bleed

Things to Check:

Boundaries between colors are sharp and well defined

DEFECTS & CORRECTIVE ACTIONS

100% Ink levels applied to the

NOT
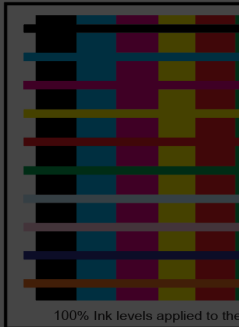
Small bou
Printhead

Workaround

- Check the HP Media Locator for recommended substrates.

WORKAROUND

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Support

4. Text Quality

Things to Check:

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

DEFECTS & CORRECTIVE ACTIONS

Blurriness in all colors	Blurriness in one/some colors

- [ ] Check pattern 0 Substrate advance.
- [ ] Check pattern 1 Printhead Alignment (special focus on Optimizer).
- [ ] Check and adjust **Optimizer level.**
- [ ] Check that **Substrate thickness** is correctly set.
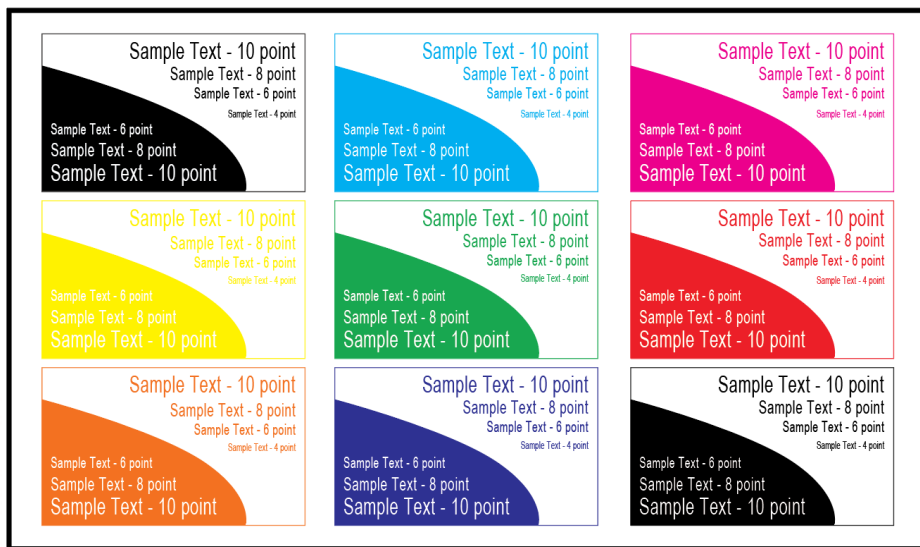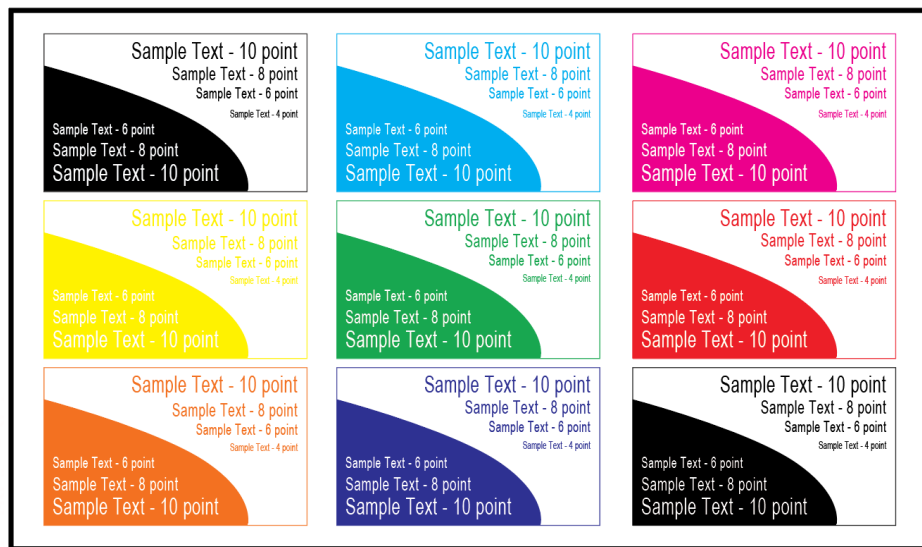- [ ] Check that **Carriage height** position is correct.

WORKAROUND

4. Text Quality

Things to Check:

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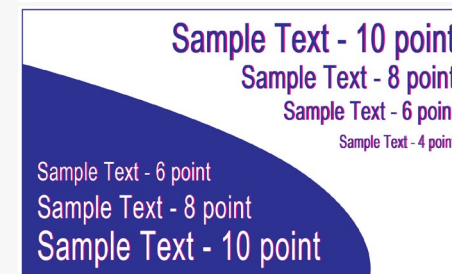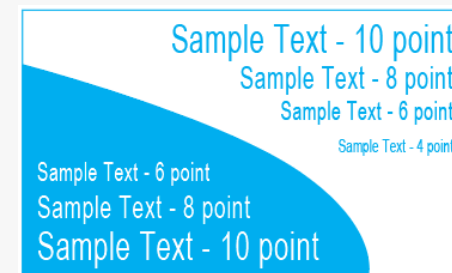

DEFECTS & CORRECTIVE ACTIONS

Blurriness in all colors	Blurriness in one/some colors

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

WORKAROUND

4. Text Quality

Things to Check:

Check your pattern looking for text definition, sharpness and quality for

DEFECTS & CORRECTIVE ACTIONS

💡 **Workaround**

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

WORKAROUND

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5. Printhead health

Things to Check:

Uniform area without white lines or white tones. It may also be necessary to print the Nozzle Health plot.
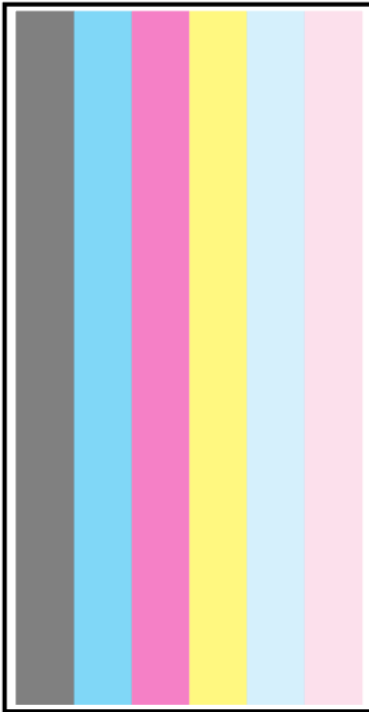
DEFECTS & CORRECTIVE ACTIONS

Visible white lines

- ❑ Print a **Printhead Nozzle plot** to identify missing and misdirected nozzles.
- ❑ Run the cleaning routine **Hard Clean** on the identified Printheads.
- ❑ Replace the Printheads if it cannot be recovered.

WORKAROUND

5. Printhead health

Things to Check:

Uniform area without white lines or white tones. It may
also be necess

DEFECTS & CORRECTIVE ACTIONS

💡 Workaround

- Printing with more passes helps hide missing nozzles
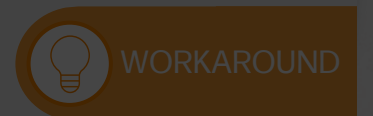
WORKAROUND

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Support

6. Horizontal Banding

Things to Check:

Uniform area fills. No bands or white lines

| *Orange/White | C | M | Y | K | Lc | Lm | M+Y | C+Y | C+M |

DEFECTS & CORRECTIVE ACTIONS

| **Banding in all colors** | Banding in some colors | Gloss banding (mostly visible on K) |

- ☐ Check again pattern 0 [Substrate Advance](#)
- ☐ Check **Optimizer Printhead alignment** and **nozzle health**
- ☐ Check if the same behavior is happening with another substrate. Some substrate's coating can provoke this effect.

WORKAROUND

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6. Horizontal Banding

Things to Check:

Uniform area fills. No bands or white lines.

DEFECTS & CORRECTIVE ACTIONS

Workaround

- Increase number of passes

WORKAROUND

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6. Horizontal Banding

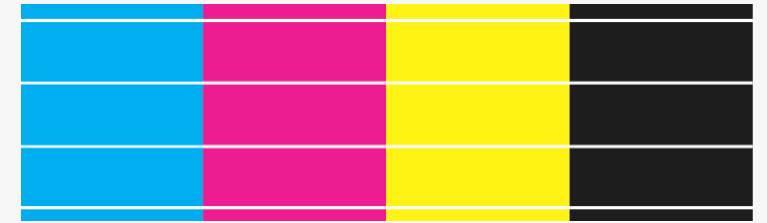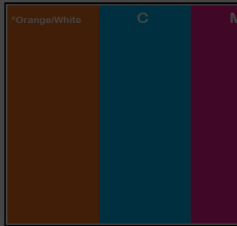### Things to Check:

Uniform area fills. No bands or white lines

*Orange/White	C	M	Y	K	Lc	Lm	M+Y	C+Y	C+M

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 substrate. Some substrate's coating can provoke this effect

WORKAROUND

6. Horizontal Banding

Things to Check:

Uniform area fills. No bands or white lines.

DEFECTS & CORRECTIVE ACTIONS

Workaround

- Increase number of passes.

WORKAROUND

6. Horizontal Banding

Things to Check:

Uniform area fills. No bands or white lines

*Orange/White	C	M	Y	K	Lc	Lm	M+Y	C+Y	C+M

DEFECTS & CORRECTIVE ACTIONS

Banding in all colors	Banding in some colors	Gloss banding (mosty visible on K)

- ☐ Check **nozzle health** plot for OC Print head
- ☐ Check **OC Printhead Alignment** - print the **Printhead alignment** verification plot
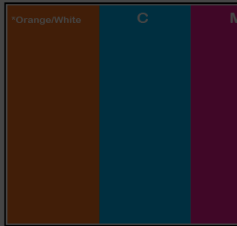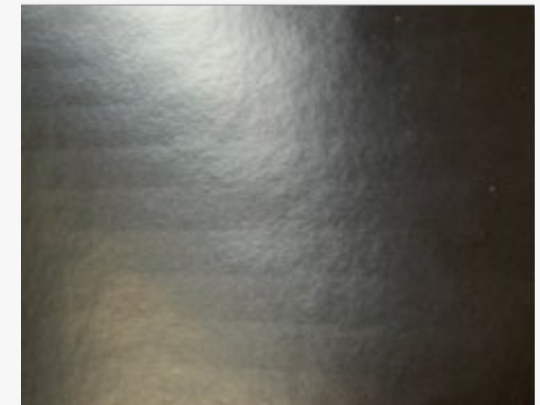- ☐ Check that cleaning system is working as expected

WORKAROUND

6. Horizontal Banding

Things to Check:

Uniform area fills. No bands or white lines.

DEFECTS & CORRECTIVE ACTIONS

Workaround

- Set the OC level to 0 on the Printmode

7. Uniformity & Ink dry

Things to Check:

Black area fill is uniform

DEFECTS & CORRECTIVE ACTIONS

Horizontal banding	Vertical marks	Wet ink

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

WORKAROUND

7. Uniformity & Ink dry

Things to Check:

Black area fill is uniform

DEFECTS & CORRECTIVE ACTIONS

Horizontal banding	Vertical marks	Wet ink

- ☐ Reduce Curing airflow.
- ☐ Increase Drying settings (temperature, airflow).
- ☐ Reduce Optimizer level.
- ☐ Add or increase interswath delay.

WORKAROUND

7. Uniformity & Ink dry

Things to Check:

Black area fill is uniform

DEFECTS & CORRECTIVE ACTIONS

Workaround

- Increase number of passes

WORKAROUND

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7. Uniformity & Ink dry

Things to Check:

Black area fill is uniform

DEFECTS & CORRECTIVE ACTIONS
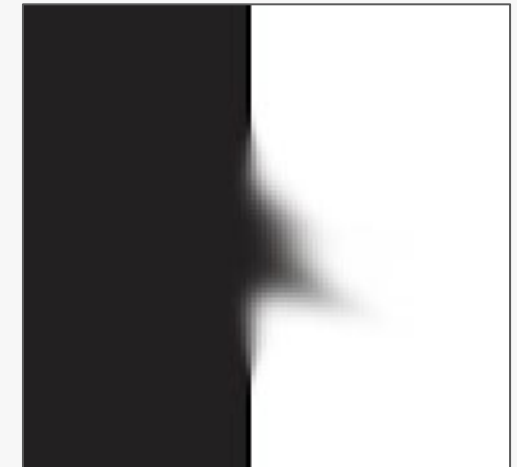
Horizontal banding	Vertical marks	Wet ink

- ☐ If ink is wet only in certain area, check curing hardware
- ☐ Increase curing settings (temperature, airflow)
- ☐ 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

WORKAROUND

7. Uniformity & Ink dry

Things to Check:

Black area fill is uniform

DEFECTS & CORRECTIVE ACTIONS

Workaround

- Increase number of passes

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

WORKAROUND

Introduction

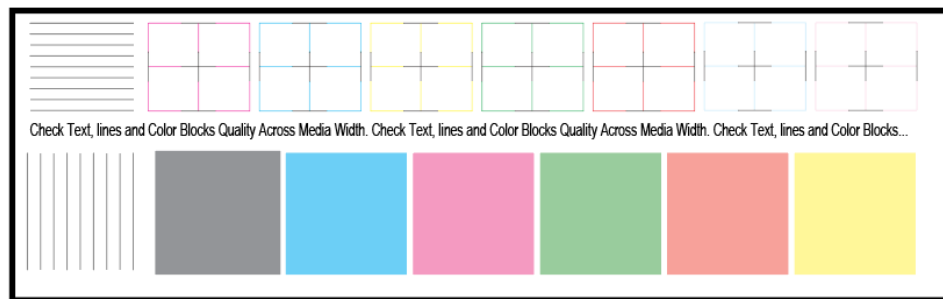HP Control Print

Defect List

Support

8. Scan Axis Uniformity lines & color

Things to Check:

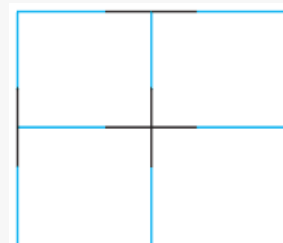Check text, lines and color block quality across Media width.

Check Text, lines and Color Blocks Quality Across Media Width. Check Text, lines and Color Blocks Quality Across Media Width. Check Text, lines and Color Blocks...

DEFECTS & CORRECTIVE ACTIONS

Difference on vertical lines and text	Difference on horizontal lines and text

- ☐ Check that the Media is flat on the printzone and has no wrinkles or smears
- ☐ Check HW related to the PPS (Certified Service engineer)

Across Media Width.
Left

Across Media Width.
Right

WORKAROUND

8. Scan Axis Uniformity lines & color

Things to Check:

Check text, lines and color block quality across media width

Check Text, lines and Color Blocks Quality Across Media Width. Check Text, lines and Color Blocks Quality Across Media Width. Check Text, lines and Color Blocks...
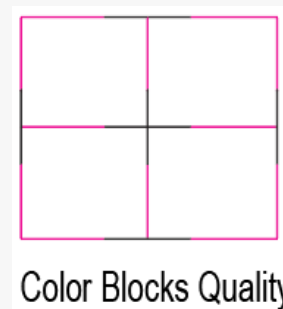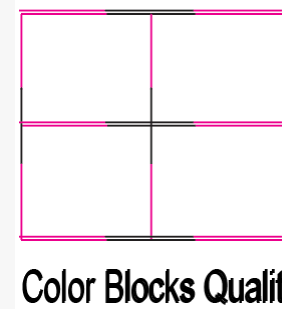
DEFECTS & CORRECTIVE ACTIONS

Difference on vertical lines and text	Difference on horizontal lines and text

☐ Check that the Media is flat on the printzone and it has no wrinkles or smears.

☐ Check pattern 0 Substrate advance - make sure the pattern on both sides is the same.

Color Blocks Quality

Left

Color Blocks Quality

Right

WORKAROUND

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How to get more help

If IQ issues are not resolved with the proposed solutions, contact your support contact and provide them with the following information:
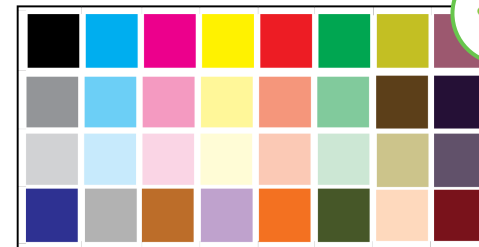
- Description of the issue (including print mode, settings and media)

- Tests performed

- Picture / Scan pattern with defects

    o Take a photo of each image

    o Pictures should be in high resolution

    o Include the surrounding to capture the full pattern

No direct light
No reflections

Short distance <20 cm
90º perpendicular to plot

Thank You

Congratulations!

You have now completed this module.

Click the button to close and continue.

Close module