TrueVIS

Image Quality Trouble Shooting – TrueVIS VG2/SG2

The purpose of this document is to help correctly identify perceived image quality issues that may be reported on the TrueVIS series printers and inks. The printers and inks are both next generation Roland technology that require different considerations than all previous generation products. Any comparisons to older generation products should be separate with regards to installation, setup, and operator training. These products were designed with a next level of performance in mind and should be managed as such. With these performance improvements, the need for by the book installation, setup, calibration and proper operator training, is vital to achieving optimal output. The detailed checklist below is designed to help troubleshoot common issues that are often not related to the replacement of parts.

Definitions

- **Mottling –** Solid texture prints that often times looks "grainy".
- **Banding (not Drop Out) –** Drop Out is often times mistaken for **banding**. While Drop Out is an extremely rare occurrence, true Drop Out comes from a mechanical or electrical issue which we are not focused on in this document (other testing available to rule that out)
- **Banding –** Banding is a defect in inkjet printing that will appear as horizontal or vertical lines, streaks or bands in the printed output. Everyone will eventually experience some type of banding with their inkjet printer. To resolve the issue, it is important to quickly identify the type of banding that is occurring.

Banding Due to Media Advancement

Distance Banding (Step banding)

- Appearance: Uniform light or dark horizontal lines
- Cause: Media advancing too fast or too slow
- General solution: Recalculate or adjust the media advance - **Profiles**

Skew Banding

- Appearance: Uniform light or dark horizontal lines on either side of media
- Cause: Non-uniform media advancement
- General solution: Better media loading

Imagine.

Banding Due to Ink Jetting

Blocked Nozzle (Missing nozzles)

- Appearance: Light, horizontal lines
- Cause: Complete printhead nozzle blockage
- General solution: Purge and/or clean printheads

Deflected Nozzle (Deflection)

- Appearance: Light or dark horizontal streaks.
- Cause: Ink that jets at incorrect angle and lands in an incorrect position on the media typically due to a partial nozzle blockage
- General solution: Purge and/or clean printheads

Chromatic Banding (Directional Banding)

- Appearance: Horizontal bands of alternating color
- Cause: Inverting of the ink order being laid down (CMYK to KYMC) from one pass to the next when printing in bidirectional modes using solvent inks
- General solution: Perform a printhead alignment

Examples of Image Quality Issues
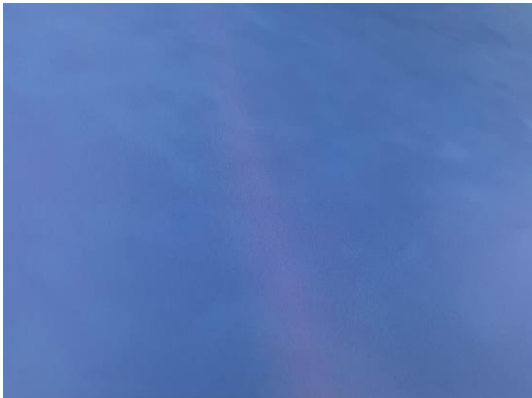
"Mottling"	"Banding (not Drop Out)"
Perceived Drop Out"	"Banding"

The list below is the most common and overlooked and important items when troubleshooting unacceptable image quality. This includes intermittent banding, grainy or mottled prints and perceived "drop out ". Every item below should be carefully checked and verified.

(Video links below are currently internal access only – Please download and share with dealers or customers as needed. We will update once all videos are uploaded to RolandTV)

1. Nozzles Missing from Test Print *(Head cleaning video link)
2. Wrong Head Height (VG2 has 3 positions) *(Head height adjustment video)
3. Feed Calibration is incorrect *(Feed calibration adjustment video)
4. Media Gap Adjustment is not calibrated correctly (Detailed Setting) *(Adjustment video)
5. Media is not loaded and or secured correctly
6. Pinch Rollers not in proper position and in use across platen
7. Incorrect Profile Settings resulting in:
    a. Incorrect Ink Load
    b. Incorrect Heat Setting
    c. Incorrect Head Speed (Scan Direction)
    d. Incorrect Vacuum Setting
8. Excessive ink/dirt/debris built up on printing platen
9. Excessive ink/dirt/debris built up under media clamps
10. Poor operating Environment (Too hot, cold, dry, or humid)
11. Media storage in cold location
12. Static Build Up

Hardware Corrections to Perform - Calibrations

1. Perform Nozzle Check. TrueVIS printers require all or very close to all nozzles to be firing correctly. If nozzle check shows missing nozzles perform normal and or manual cleaning to recover missing or deflected nozzles. If the issue persists, change to medium and or powerful cleaning

2. Perform Media Feed Adjustment and make any necessary adjustments based on result. Double check the setting by reprinting the test print. Use the full media roll of the material in question, not a piece.

3. Perform Media Gap Adjustment using the detail mode. This will allow for both bidirectional and uni-directional calibration to be dialed in.

4. Ensure that media feed adjustment was completed and adjusted correctly. If not calibrated correctly media can shift causing poor registration and dot placement.

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5. Make sure that pinch rollers are engaged and in optimal position across the platen. The VG2 has automated pinch rollers designed to lift after print and prior to cutting operation. Using all pinch rollers improves tracking especially over long runs.

6. Check head height. There are three positions. Custom media profiles will include the optimal head height. Incorrect position can cause several printing issues. Default is low and should only be raised for thick and or rigid media.

7. Ink Expiration – Make sure the ink being used isn't past the expiration date

RIP and User Considerations – Keep in mind the difference between files creation for digital use, vs files for print. Often times files are overlooked and files that are not designed in-house may not be optimized for the print environment.

1. File Type. Set the correct expectations for a small JPG versus a vector file or high-quality TIFF/EPS. Especially when expanding a file. JPG tend to have a maximum of 10-20% ability to expand before image quality is greatly affected.

2. Media, if the issue is showing on unknown or 3rd party media use GCVP and the correct profile to look for any improvements or if the problem persists eliminating media as the cause. GCVP is a common material and we know what to expect during normal operation.

3. Profile www.rolandprofilecenter.us All Roland and 3rd party profiles from participating manufacturers are house in this location and are free of charge.

4. Try printing the same file in a high-quality mode in uni and bidirectional modes. If unidirectional shows vast improvement from bidirectional, this points back to a bidirectional or feed calibration issue.

5. Execute Pre-Feed – Some materials are wound tight or can be on the heavier side. Make sure the weight of the roll is within specification and use "Execute Pre-Feed" option to eliminate strain on the feed motors as a possible issue.

6. Make sure that all printer controls are set to "default media settings" except the feed calibration. For this test, use the machine settings set in bullet #2 under hardware calibrations

7. Make sure media clamps are positioned correctly and are allowing the media to move freely.

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8. In VersaWorks check the "File Format" tab to make sure any spot colors used are being identified and processed correctly.

9. Make sure that the spot colors being used are showing within gamut. Out of gamut will be identified by a yellow caution sign next to the color out of gamut.

*Please note, there are many variables that can cause any of the outlined issues to occur, many with different solutions to very similar looking print issues.

Printing is part science and part physics. Overlooking the smallest items may result in poor print quality while using a perfectly good printer. Roland has an extremely low rate of true product failures. Most reported issues can be resolved by following the recommended steps listed above along with proper installation and training. With several ink options available for the TrueVIS VG2, it is important to review the type of printing customers are doing. Roland's expanded color gamut options using Orange and Green may not be the best option when printing large solid colors.