Technical Bulletin

GO RIO/dMax (RJ-900) Operation Notes

Since Graphics One began offering the GO RIO and GO dMax printers in 2007, we have heard many questions about the operation of these printers. This document's aim is to be a self-help and training reference for both dealers and end users of these products, covering the most commonly asked questions and topics.
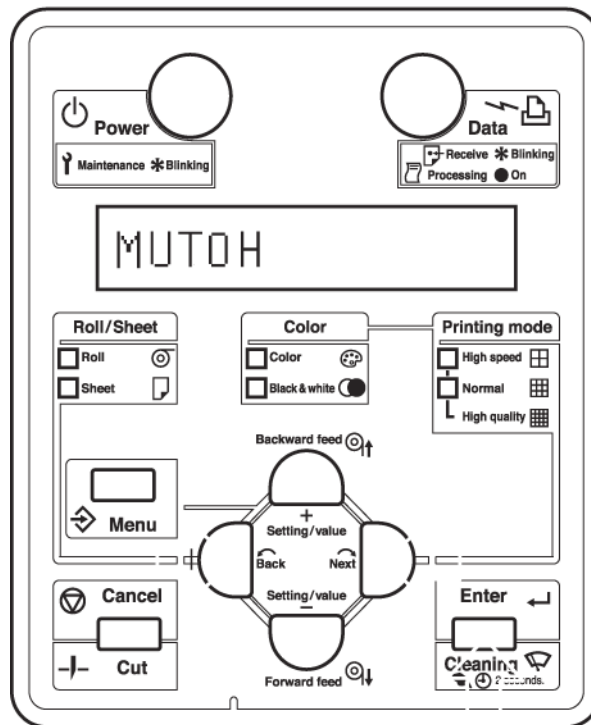

Figure 1. The control panel. This illustration will be referred to for many of the following steps.

Technical Bulletin

GO RIO/dMax (RJ-900) Operation Notes

Table of Contents

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Technical Bulletin

GO RIO/dMax (RJ-900) Operation Notes

Media Questions

Q: What are user types?
A: The RIO printers store up to 8 different user selectable presets for media. Each one of these can be customized to some degree; included in this are 4 completely user configurable types, named *User1* through *User4*. The printers are set to *Coat* from the factory; this setting usually works well for dye sublimation transfer paper.

Q: I have a paper or film that I want to use, but it's 44 inches wide and the printer keeps saying *Undefined Media*. How do I get it to print that wide?
A: Mutoh, the manufacturer of this printer, builds Epson's wide format printers. The RJ-900 is essentially a greatly simplified 4 color 9800, and as Epson did not want it competing with one of their core products, they forced Mutoh to restrict it to printing 42 inches only. However, it is still possible to get the printer to read 44 inch paper.

- With the non-Pro firmware (without i^2 technology) and the PRO 1.00-1.03 firmware, the only way to get the printer to recognize wider material is to cut the front down to 42" for the first foot or so, then allow it to read the material.
- Upgrade the printer's firmware to Pro version 1.05. This firmware allows the printer to read 44 inch material correctly, although it still does not allow printing that wide.

Q: I have a 6 inch roll of paper, but the printer won't read it. Why?
A: The minimum roll paper width of this machine is 9 inches.

Q: After I load my roll of material, the printer spits out about 6 feet. Why?
A: The printer is probably set to Sheet mode. If you look at the diagram on the first page, or at the control panel, you will notice that the [BACK] (right arrow) button is connected to the Roll/Sheet lights above it by a colored line. This means if this button is pressed while the lever is up, it will switch from roll to sheet mode or vice versa. In sheet mode, the printer looks for the rear edge of the paper, and of course there is no rear edge on a roll; so the machine will try to unroll up to about 6 feet before it gives up with an *Undefined Media* error.

Simply press this button again when the lever is up and make sure the Roll/Sheet lights are set to Roll.

tib 0908-001

Technical Bulletin

GO RIO/dMax (RJ-900) Operation Notes

Print Quality Issues

Q: The print head is hitting the paper.
A: Your paper is cockling (wrinkling). Read GOTEK TIB 0905-002 for solutions.

Q: My printer won't print the first 2 inches of the first image.
A: We have only seen this issue with printers running Sawgrass ArTanium ink in dry environments over 80 degrees F / 26 C. Note that Mutoh, the printer's manufacturer, recommends operating printers between 60-80 F (16-26 C) with humidity between 30-70% and no condensation. Graphics One recommends the use of GO Xtreme dye sublimation ink in the RIO printers for ensured reliability.

Q: I'm getting banding in my prints.
A: What does it look like? There are several different types of banding, each one with a different cause and different solution.

Q: The banding looks like thin, horizontal white streaks. They are not evenly spaced.
A: Your print head probably has missing nozzles. To check this, print a Nozzle Check and if you see any missing lines, run a cleaning cycle. See the section on Cleaning for more information.

Q: When I run a long print, it starts off fine and then gets white streaks all over the place after several feet.
A: You have ink starvation banding. This is caused by your ink supply not keeping up with the amount of ink being put on the paper, causing air to enter the print head. Causes include:
- Using a fast print mode when printing solid color floods, such as 360x360 2 pass variable dot with over 200% total ink, or 720x720 variable dot 1 pass over 300% ink. To solve this, increase the pass count to slow the printer down.
- The printer is not level. Place a level on the printer's platen. If it is not level, move the printer to a different location or place shims under the printer's wheels.
- The ink filters in the dampers may be clogged. See GOTEK TIB 0904-002 for possible causes of this. Some dye sublimation inks are very thick or have a short shelf life, and can quickly clog the damper filters. Call your dealer to have the dampers replaced.
- The air holes in the uFill cartridges may be blocked. If they are, leave the rubber plugs halfway open to allow more air to flow.

Technical Bulletin

GO RIO/dMax (RJ-900) Operation Notes

Q: The banding looks like white gaps or dark lines spaced about every 1/8, 1/4, or 1/2 inch. They may be straight or wavy.

A: You have paper feed (PF) banding. This is due to the feed motor over or under-advancing the media. Fortunately, unlike the early inkjet printers where you had to guess the correct value (which involved wasting a lot of material), the GO RIO includes a function that prints out 2 tick marks that you can measure, spaced 100-500mm apart. The printer then uses the measurement value to correct the feed distance. It should go without saying that the more accurate your measurement, the better the end result will be.

The paper feed calibration is affected by material thickness. Switching to a heavier transfer paper may cause this to happen, and so the calibration will need to be updated. If you routinely switch between different materials, save the measurements in different presets (for example, Coat and Plain, or User1 and User2) so you will not have to keep changing the value.

To calibrate your printer, follow these steps:

1. Press [MENU]. The printer will show *Menu* TestPlot>
2. Press [NEXT] (right arrow). The printer will show *Menu* MediaSet>
3. Press [ENTER]. The printer will show your current material setting.
4. Press [ENTER] again to go into that preset.
5. The printer will now display *PF: Initial Print.* Press [ENTER].
6. You will see *Feed Length: 250mm* displayed; this can be changed up to 500mm if desired. Press [ENTER] to print the tick marks at the selected length.
7. With an accurate metric ruler (a steel ruler is recommended at minimum; if you have a large enough caliper, use that instead) measure the distance between the two marks down to the nearest 1/10th of a millimeter. For example, some printers will have an initial measurement value of 249.7mm.
8. Follow steps 1-4 to return to the preset menu. Press [Setting/value +] (up arrow) to go to *PF: Initial Change.*
9. Press [ENTER] and use the up/down arrows to change the value shown to your measurement. Press [ENTER] again to save, then [MENU] to leave the menu.

tib 0908-001

Technical Bulletin

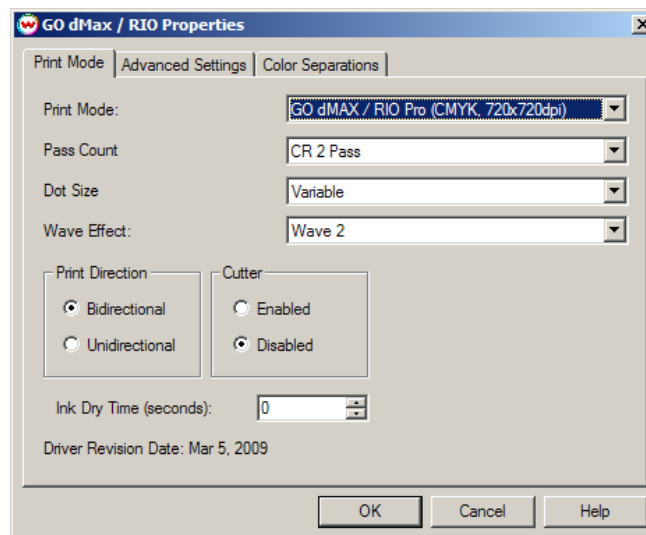## GO RIO/dMax (RJ-900) Operation Notes

Q: I don't have lines in my prints, but when I hold it up to the light I see stripes of different colors alternating every 1/2, 1/4 or 1/8 inch.
A: This is called chromatic banding and is caused by inks being laid down in a different order on each pass of the print head.

If you look at the printhead, you will notice that is is loaded KK CC MM YY.

During printing, the first pass lays ink down in the order KCMY. On the return pass, colors are laid down YMCK. This "stacks" the droplets of ink in different order, and when the paper is held up to the light, the different order shows up as a slight hue shift. Fortunately, with dye sublimation, the dyes are vaporized before being absorbed by the material so in most cases, chromatic banding will disappear when transferred.

However, on high quality, smooth materials such as sheet acrylics and tiles, the banding may still show up slightly after transferring. To solve this, in the printer properties change the print direction from Bi-Directional to Uni-Directional. The below image shows where this option can be found in Wasatch SoftRIP; other RIP software packages may differ.

Technical Bulletin

GO RIO/dMax (RJ-900) Operation Notes

Cleaning

Q: How do I print a Nozzle Check?
A: With the printer ON and showing *Ready to Plot*, do the following steps:
1. Press [MENU]. The printer will show **MENU* TestPlot>*
2. Press [ENTER]. The printer will show *TestPlot: SetupPlot.*
3. Press [Setting/Value+] (UP arrow). The printer will show *TestPlot: NozzleCheck.*
4. Press [ENTER]. A nozzle check will be printed. Gaps in the stepped lines are blocked nozzles.

Q: How do I clean my printer?
A: Hold down the ENTER button for over 2 seconds to start a cleaning cycle.

Q: I've run multiple cleanings and my print head is still dirty. What now?
A: Follow the instructions in GOTEK TIB 0905-003 to run a powerful cleaning.

Q: I've run a powerful cleaning, but I still have missing nozzles.
A: Your machine is probably dirty inside. Follow the instructions in GOTEK TIB 0908-002 to clean the flushing box and wiper. This should be done regularly to ensure proper operation of your machine.

Q: I accidentally let my ink cartridge(s) run low and now I'm missing (color)
A: You have air in the print head. Run one or two LittleCharges as described in GOTEK TIB 0905-003 to purge the air out. Be sure to check the level of your waste tray before running a LittleCharge.

Q: I've been cleaning my flushing box as you described, but the sponge is clogged up. How can I replace it?
A: See GOTEK TIB 0908-004 for the appropriate part numbers. You can order the holder and sponge, or a 5-pack of sponges.

Q: My waste tray is full, or has overflowed. Where can I get a new tray?
A: Fortunately, it's not necessary to buy a new tray. Contact your dealer to order replacement padding, then remove the two screws on the top of the tray, throw away the old padding, rinse the tray out, and install the new padding. When you put the tray back in the machine, it will ask you if you've changed it; press the up arrow to change it to *Yes* and press [ENTER].
　　　See GOTEK TIB 0908-004 (the consumables part list) for the parts required.

tib 0908-001

Technical Bulletin

GO RIO/dMax (RJ-900) Operation Notes

Q: I've done powerful cleanings, cleaned the wiper and box, and it still won't give me a good nozzle check. What now?
A: When was the last time you flushed the machine? If you don't know the answer to this question, don't be embarrassed. Bulk inks save a lot of money, but what most people don't know is that the bulk ink systems also require some maintenance to keep them operating well. Over time, due to the ink being exposed to air, the cartridges will build up sediment along the sides and bottom; if this sediment travels through the ink system, it can cause clogging of the dampers and even the print head.

You should also keep track of your bulk ink stock. GO Xtreme ink has a shelf life of 1 year from date of manufacture. Other inks, such as those made by Sensient, have only a 6 month shelf life. If sublimation ink is used past its recommended shelf life it can cause severe head clogging due to the dispersion agents breaking down.

Read GOTEK TIB 0904-002 for more information on maintenance of bulk ink systems and GOTEK TIB 0904-003 for instructions on how to flush your printer. We recommend you flush your system every 6 months and replace cartridges every year when using GO Xtreme ink.

Q: I've flushed my machine and reloaded, but it's still giving me trouble.
A: Call an authorized technician and have him check the dampers and printhead. They may need to be replaced depending on their condition.

Q: I've been using a Chinese ink and it worked fine for a while, but now I have to clean all the time. Will flushing help me?
A: Unfortunately, many Chinese inks have very poor quality control and are highly susceptible to settling, clogging, and other issues that cause frequent part replacement. For this reason, Graphics One does not warranty ink delivery systems that have been used with non-original inks. Additionally, there are legal / patent issues present with using Chinese inks, as most Chinese manufacturers do not have agreements with Sawgrass; you may be sued for using their ink. Graphics One's GO Xtreme ink is licensed for use with 42 inch and above printers.

Q: I [moved/left/etc] and left my printer sitting for a few months in a warehouse. I didn't realize that I was supposed to flush it, and when I start it up, it's not printing. What can I do?
A: Unfortunately, not much. Even the best dye sublimation ink will dry up if left sitting for too long. Call your dealer or an authorized technician and have the machine evaluated.

tib 0908-001

Technical Bulletin

GO RIO/dMax (RJ-900) Operation Notes

Cutting Issues

Q: My cutter is no longer completely cutting through the paper. What can I do?
A: Cutting blades wear out over time. Read GOTEK TIB 0908-003 for a part number to order and the procedure to replace your cutter blade.

Q: I think I turned my cutter off by accident in the user type. How do I turn it back on?
A: Follow these steps.
1. Press [MENU]. The printer will show *Menu* TestPlot>
2. Press [NEXT] (right arrow). The printer will show *Menu* MediaSet>
3. Press [ENTER]. The printer will show your current material setting.
4. Press [ENTER] again to go into that preset.
5. The printer will now display *PF: Initial Print*.
6. Press [NEXT] and the printer will show *RollCut:* with the current setting. If this is set to ON, your cutter is already turned on and the problem is likely the takeup setting; see the next question. If it is OFF, press [Setting/Value+] to turn it ON, then press [ENTER] to save the change. Press [MENU] once more to exit.

Q: I'm sick of my printer taking the paper back to read the front edge.
Q: I just purchased a takeup system and I don't want my printer to cut or read the front edge.
A: The cutter and front edge detection can easily be disabled with one change on any RIO with the Pro (1.00 or above) firmware.
1. Press [MENU]. The printer will show *Menu* TestPlot>
2. Press [NEXT] (right arrow) until you see *Menu* Utility>.
3. Press [ENTER]. The printer will display *MenuMask: Normal.*
4. Press [NEXT] until you see *Prefeed:*. It should be set to *Manual*.
5. Use [Setting/Value+] to change *Prefeed* from Manual to Take-up.
6. Press [ENTER] to save the change, then [MENU] to exit. The printer will no longer read the front edge or even try to cut.

There is one drawback to this method, as this setting completely disables the backwards feed (holding down [Setting/Value+] now does nothing).

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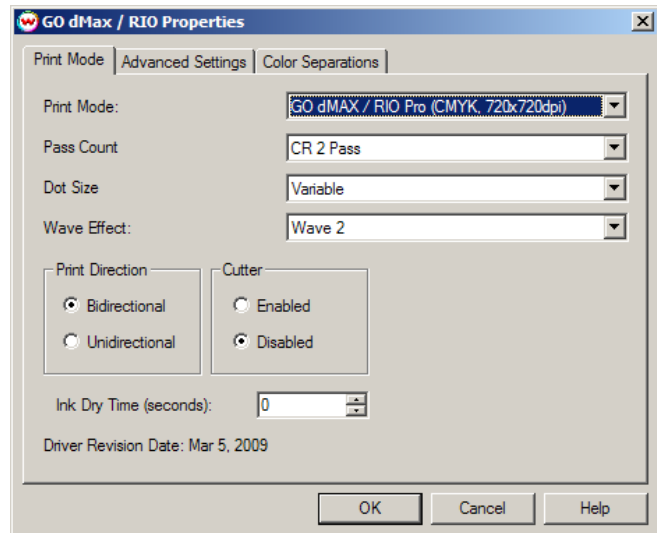
Technical Bulletin

GO RIO/dMax (RJ-900) Operation Notes

Q: How do I make my printer cut after every print?
A: If you are using Wasatch SoftRIP, you can change the setting in your current profile to automatically cut. Other RIP software packages should have similar options. Note that the cutter must be enabled on the printer hardware first for this function to work.

1. Go to Print > Setup in Wasatch.
2. Next to the Imaging Configuration list, click Edit.
3. Click Properties on the new window.
4. Change Cutter to Enabled as shown at right. Click OK until you are back to the main window.

Also note that Wasatch will cut after a print job is completed, so if you gang up a number of prints in a layout, it will not cut until the entire layout has finished. If you need to cut after each file prints, you can print individually directly from the Job tab.

GO dMax / RIO Properties

Print Mode | Advanced Settings | Color Separations

Print Mode: GO dMAX / RIO Pro (CMYK, 720x720dpi)
Pass Count: CR 2 Pass
Dot Size: Variable
Wave Effect: Wave 2

Print Direction
- ○ Bidirectional
- ○ Unidirectional

Cutter
- ○ Enabled
- ● Disabled

Ink Dry Time (seconds): 0

Driver Revision Date: Mar 5, 2009

OK   Cancel   Help

Technical Bulletin

GO RIO/dMax (RJ-900) Operation Notes

Mechanical Issues

Q: When I turn my machine on, I hear something hit and then I get an E074 CR Current error. What does this mean?
A: If the flushing box is not cleaned regularly, ink buildup can spill over onto the head lock mechanism and cause it to jam up sometimes, preventing the head from releasing during printer startup. See GOTEK TIB 0906-004 for a more detailed explanation and how to clean the locking mechanism.

Q: My printer makes loud clicking noises as the head travels over the media.
A: Unless you are using a media that is striking the head carriage (a very bad idea), this is usually caused by dirty bearing races. If nothing is done about this condition, it can cause serious damage to the bearings that will require replacement of the entire print head carriage by an authorized technician. However, there is a procedure recommended by Mutoh for all of their printer models. Please read GOTEK TIB 0904-010 Bearing Raceway Maintenance for details on the procedure and lubricants required.

Q: My printer makes noises kind of like a piano being tuned as it moves the paper.
A: This happens due to wear of the paper feed components. If the noise continues for more than a few months, you may want to call an authorized technician for preventative maintenance as this condition can lead to PF Overcurrent errors during printing.