



## Falcon Outdoor Operational Tips

Following is an explanation of what goes into getting the highest quality output from your Mutoh Falcon Outdoor Printer. Many factors go into getting good quality prints, including: Heater Settings (Fixer and Drier), Step Adjustment (Distance the media feed forward each time it feeds) and Output Profile (ICC profile for the media being printed). Other factors come into play such as Input Profiles (what RGB color space was used in file creation) and Rendering Intent (how out of gamut colors are handled); however, they are Settings in the RIP, therefore we will focus mainly on settings having to do with the printer itself. See your RIP Documentation for information about Rendering Intent and Input Profiles.

### Heater Settings

When printing with Eco-Solvent ink on uncoated material, the heater settings have three main purposes; prepare the vinyl for pigment absorption, control dot gain (how large the dot gets before it stops expanding), and drying the ink once applied. There are two heaters on the Falcon Outdoor line of printers; the fixer which is located directly under the print heads and the drier which is located toward the front of the platen and as the name indicates, its main purpose is to dry the material once the ink is applied.

Having the heaters set too low can cause ink not to “bite” into the material properly or allow the colors bleed into each other; in some cases, this causes banding due to the lack of drying prior to the next print pass being laid down. Having your heaters set too high will cause the material to cockle, which is when the material is physically “wavy” on the platen. A slight amount of cockling can be acceptable as long as the print heads do not make contact with the material. If the print heads make contact with the material (known as head strikes), the heat limit of the media has been achieved. Usually backing down the Fixer temperature by one or two degrees Celsius will alleviate the heads contacting the media. In some cases, depending on the material thickness, using the High Head Height Setting is required to avoid head strikes. If you have reached the material’s heat limits and are still getting heavy banding (especially in heavy or dark colors) then the Output Profile (ICC Profile) may be putting down more ink than the media can handle. You might wonder why a profile you get might put down too much ink - environmental factors have to be considered. The temperature and humidity at which the profile was made may vary greatly from your printing environment, which can sometimes cause these problems.

### Step Adjustment

The step adjustment is a physical adjustment that corrects for thickness and “slickness” of each specific media. Basically, each time the printer advances the media between print passes; it needs to go a very specific distance... the exact width of one print pass. The next pass is placed in the exact spot necessary to not have any overlap or gap between passes. Each media is slightly different; therefore a setting needs to be adjusted for each media. The step adjustment settings in the Setting Matrix were what were used to get great results when making the media profiles, but you may need to adjust them up or down by a couple of percentage points to get perfect results on your printer in your environment. This will also take into account for very slight differences in each printer. You should first try the suggested setting, then if you have slight dark line banding, you would increase the number by one or two (+0.28 to +0.30 for example) and try printing again. If you see gaps or white lines, then you would reduce the number slightly (+0.28 to +0.26 for example) and try printing again. Sending a pre-ripped RTL file to the printer using the Inter-Con Net Tool is the official method to calibrate the Step Adjustment. This file can be downloaded from the Mutoh FTP Site:

<ftp://ftp.mutoh.com/DistanceAdjust/RTLFilesToTestPrinters-050317>

Depending on weather you have at Falcon Outdoor Jr. or a Falcon Outdoor 48/62, you will need a different file. For the Falcon Outdoor Jr. you will download **RJ60-4-360-1-U-62x3.RTL** and if you have a Falcon Outdoor 48/62, you

will download **RJ60-6-360-1-U-62x3.RTL**. To send these test files, you will need to open the Inter-Con Net Tool for controlling the SEH Print Server. Once the application is open, you will right click on the printer you will be sending the file to and select, Download – Print File. The File Download dialogue box will appear and by clicking – Choose in the file area, you can browse to the downloaded RTL file. Once selected, push the Start Download button, which will send the file. While the file is printing, you can lift the front cover and the print head will stop. You will also get a good look at how the passes match up and which lines are the ones to look for. Once you get it to where you think is perfect, print a file and see if you see any gaps or overlap.

There is alternate method to set the Step Adjustment, and some people achieve good results using this method. Instead of sending the pre-ripped file with the SEH Utility, they create a purple box made up of C: 45% M: 45% Y: 0% K: 10% (30” wide by 3” tall for example) and send that using the material’s correct Output Profile. This combination of colors will tend to show the “overlaps” or gaps” that make up banding due to the Step Adjustment being incorrectly set.

### ICC Profiles

When you create an ICC Profile, you are making a “snapshot” so to speak, of a Printer, with a specific ink set, on one specific material, printed using a single specific set of settings, such as DPI, number of passes and Dither Pattern. If any of these factors are changed when you are sending your print, the results may vary from what was achieved when making the profile. To achieve the same quality results as when the ICC Profile was made, you need to exactly match the settings at the time of profiling. In some cases the number of passes and whether the profile was created in uni or bi directional mode will be included. If you are using Scanvec/Amiable RIPs, these parameters will be specified in the Preset file, and if changed, may cause questionable results in many cases. In Onyx, these settings will be found in media manager. When you have a specific media selected, be sure to look down the list of dither patterns and resolutions until you see profile files on the right side when a specific Dither and Resolution is highlighted. This will be the resolution and dither pattern you need to use when printing. In many cases Mutoh uses FDRP diffusion in Onyx which tends to work well with our printers. If you do not see FDRP on the list of dither patterns, you will need to select it in the Dither Pattern under the Media menu. Also under Media – Options, you can see the number of passes and uni-directional or bi-directional options. If these are changed, you may get questionable results.

For the absolute best printing results, a custom ICC Profile can be made at your location with your specific printer. This will take into account for you specific environment and how the media is acting when acclimated to your work area, as well as slight variations from printer to printer. Many dealers will offer custom profiling services, as well as certain training companies. You can also get specific training on how to make your own color profiles, which will require the purchase of a Color Reading device, and training. Many customers have begun making their own output profiles to increase the quality of their products, as well as a means to work around changing environmental conditions that can sometimes cause image quality issues. If you have questions about purchasing a Color Device, contact you local Mutoh dealer for more information.