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# Preparing color proofs for Fogra certification

Technical Note Hqn083

September 2011

This document describes how to prepare color proofs for Fogra certification using the Harlequin Server RIP v9.0.

## 1 What you need

To prepare color proofs the following items are required:

- A licensed copy of the Ugra/Fogra CMYK media wedge available for purchase from various suppliers including the Ugra and Fogra web sites:
  - <http://www.ugra.ch/>
  - <http://www.fogra.org/>
- A password for the each of the following features of the Harlequin Server RIP, available from your Harlequin RIP supplier:
  - Simple Imposition\*
  - Harlequin ColorPro
  - A suitable proofer plugin together with password(s) to enable the relevant device or devices. If you plan to apply to inherit the Global Graphics' certification you must use the EpsonvDot4 plugin and the 7890 Color vDot device therein.

**Note:** Most of the examples given in this document are based upon the EpsonvDot4 plugin and the 7890 Color vDot device-type as used by Global Graphics for Fogra certification.

**Note:** For details on using the Harlequin RIP v9.0, Simple imposition, ColorPro and the vDot4 plugin you should refer to the documentation supplied with those products.

## 2 Before you begin

Before starting select the **Configure RIP > Extras** dialog in the Harlequin RIP and enter passwords for the following RIP options:

- Harlequin ColorPro
- Simple Imposition

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\*. Simple Imposition is required to add the Ugra/Fogra media wedge and margin text annotations to the proofs.

- Your printer or proofer device

Once the passwords are entered click **OK** on both the Extras and Configure RIP dialog.

It is recommended that you re-select **Configure RIP > Extras** to check that **Yes** appears alongside each of the selected options. If **Yes** does not appear, you must resolve this before proceeding.

You should check that your RIP contains the annotation file:

```
SW/Usr/HqnLayout/Annots/MarginText_ISO12647-7
```

**Note:** Do not confuse `MarginText_ISO12647-7` with `PlateBar_ISO12647-2_1`.

If the file `MarginText_ISO12647-7` is not present in the folder shown above, you must follow the instructions given in Appendix C before proceeding.

It is especially important that you install the revised profiles pack, if necessary, before you install the Ugra/Fogra media wedge.

## 2.1 Page setup, color management and profile name hints

When creating the proofing page setup, it is recommended that you include in the setup name an indication of the ink set in use. For example, `K3_PhotoK` or `HDR`, so that this information appears in the margin text strip.

Similarly, when creating a color setup, you should include an indication of the printing condition. For example, `Fogra 39L` or `GRACo1 TR006`.

In your output color profile name you should include an indication of the intended media/substrate. For example, `SPP` or `Epson_SPP` for Epson standard proofing paper.

For calibration set names, you should include in the name the date on which the calibration was performed. If required, you can abbreviate other elements of the name. This is so that the date of the calibration appears in the margin text.

For color rendering intent names, it is recommended that you use an abbreviation of the rendering-intent style, an indication of the black generation setting, and the maximum ink and the black threshold value. For example, `AbsCo1 PRF 400 15` for an absolute colorimetric style taking its black generation from the profile, limiting total ink to 400% and setting the black threshold at 15%.

## 3 Creating proofs for certification

The following seven steps are required to create a contract proof:

1. [“Install the Ugra/Fogra media wedge” on page 4.](#) This step only needs to be done once.
2. Determine the combinations of media, print condition and output color profiles to be used. If you plan to apply to inherit Global Graphics’ certification refer to Appendix A to ensure each combination you use has been certified.
3. [“Create a proofing page setup” on page 5.](#)
4. [“Calibrate the printer to match the output profile” on page 9.](#) You should calibrate your printer to match the output color profile unless you have made your own output profile on this printer and nothing has changed since.
5. [“Create a color management setup” on page 11.](#)
6. [“Create an imposition setup” on page 16.](#) This adds the media wedge and margin text and only needs to be done once.

**Note:** The calibration step should be repeated for each different output profile.

7. [“Print and check the proofs” on page 21.](#)

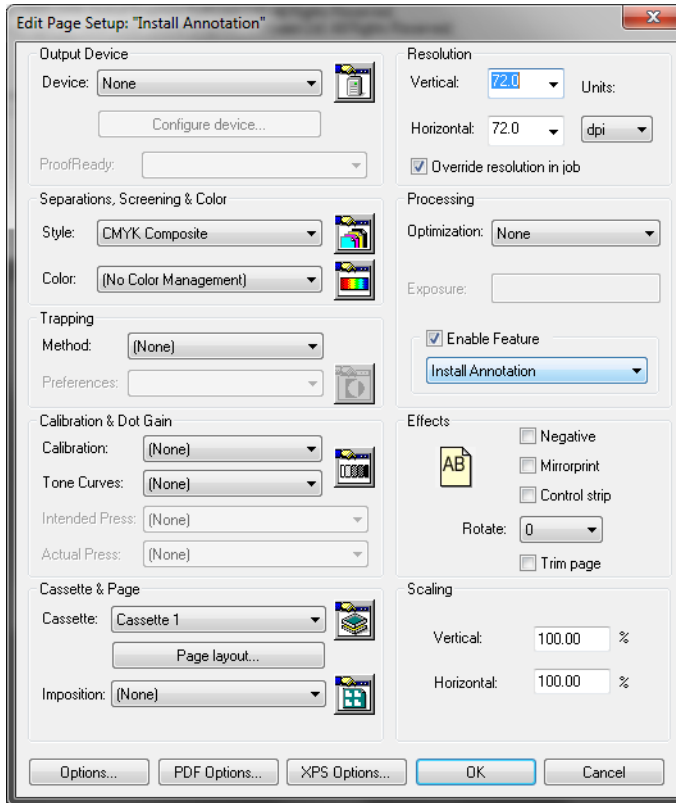
**Note:** Steps 3 and 5 must be repeated for every combination of media, print condition and output profile.

### 3.1 Install the Ugra/Fogra media wedge

This section describes how to install the Ugra/Fogra media wedge into the Harlequin RIP.

1. Create a page setup for the `None` device, using any resolution and separation style.

2. Check **Enable Feature** and select `Install Annotation` from the drop-down menu:



**Figure 1** Page Setup dialog

3. Print the Ugra/Fogra media wedge .EPS file using this page setup.
4. When completed, the RIP monitor displays the name of the annotation, for example:

Annotation will be installed as "Fogra CMYK Media Wedge 2008"

Make a note of the annotation name as you will need it later.

## 3.2 Create a proofing page setup

This section describes how to create a page setup for proofing.

1. Select **Harlequin RIP > Page Setup Manager...**

2. In the Page Setup Manager dialog click **New**.
3. In the New Page Setup dialog select the device type name in the **Device** drop-down menu. For example, 7890 Color vDot.
4. Choose a RIP resolution appropriate for your desired output resolution. For the 7890 Color vDot select a RIP resolution of 720 x 720.
5. Select **Configure device**.
6. In the Configure Device dialog select:
  - The **Output media** which must match the output profile that you intend to choose when creating the color management setup.

**Note:** When using one of the Global Graphics' certified combinations see Appendix A for the allowed list. When making your own proofs for certification you can use any combination of printing condition, media and output profile.

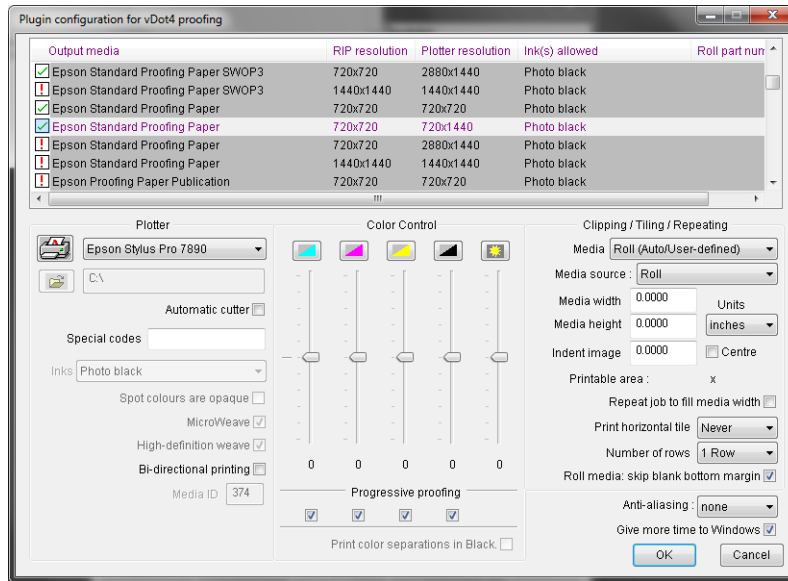
— The **Plotter resolution** (depending on your plugin).

**Note:** If you are using the 7890 Color vDot device and you want to use one of Global Graphics' supplied output profiles, you must select the output media appropriate to that profile and you must use a plotter resolution of 720 x 1440.

Profile name	Output media
7890 PPP 1440 FC	Epson Proofing Paper Publication
7890 SPP 1440 FC	Epson Standard Proofing Paper
7890 SWOP3 1440 FC	Epson Standard Proofing Paper SWOP3

**Table 1** Profile and media combinations

This example shows the 7890 Color vDot Configure device dialog with Epson Standard Proofing Paper selected.



**Figure 2** Plugin configuration for vDot4 proofing dialog

—Disabling **Bi-directional printing** is a recommended for all inkjet devices because bi-directional printing is likely to cause color changes.

—Any color or brightness controls on the Configure Device dialog must be set to the zero or neutral position.

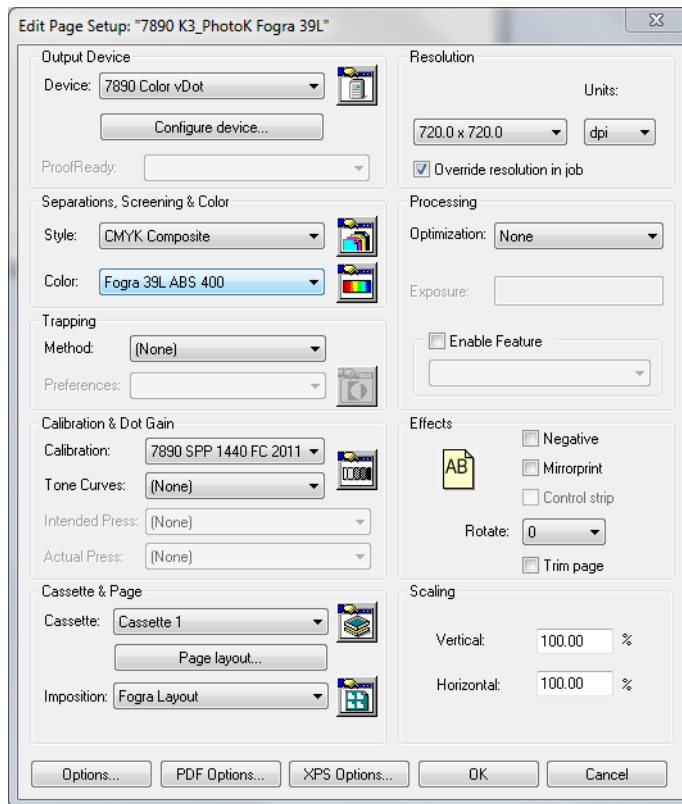
7. Click **OK** to close the Configure device dialog and return to the Page Setup dialog.
8. The selection required in the **Calibration** drop-down menu depends upon whether or not you are calibrating your printer to match the reference printer used to create the output color profile:

—If you are using a Global Graphics supplied output color profile, or if print room conditions or printer behavior may have changed since you made your profile, you should follow the instructions in “[Calibrate the printer to match the output profile](#)” on page 9 and select the name of the calibration set you create when doing so.

—If you do not intend to calibrate your printer to match the one upon which the profile was made select (None). This is only likely to be appropriate if you made the profile on this printer, and nothing has changed since.

9. Make sure that the **Tone Curves** drop-down menu displays (None). Create and select your color management and imposition setups. For more information see [“Create a color management setup”](#) on page 11 and [“Create an imposition setup”](#) on page 16.

Your completed page setup should resemble the following:



**Figure 3** Edit Page Setup dialog

10. Click **OK** then **Save As**.
11. Enter a setup name, for example, 7890 K3\_PhotoK Fogra 39L.

For more information on how to choose a suitable name see [“Page setup, color management and profile name hints”](#) on page 3.



### 3.3 Calibrate the printer to match the output profile

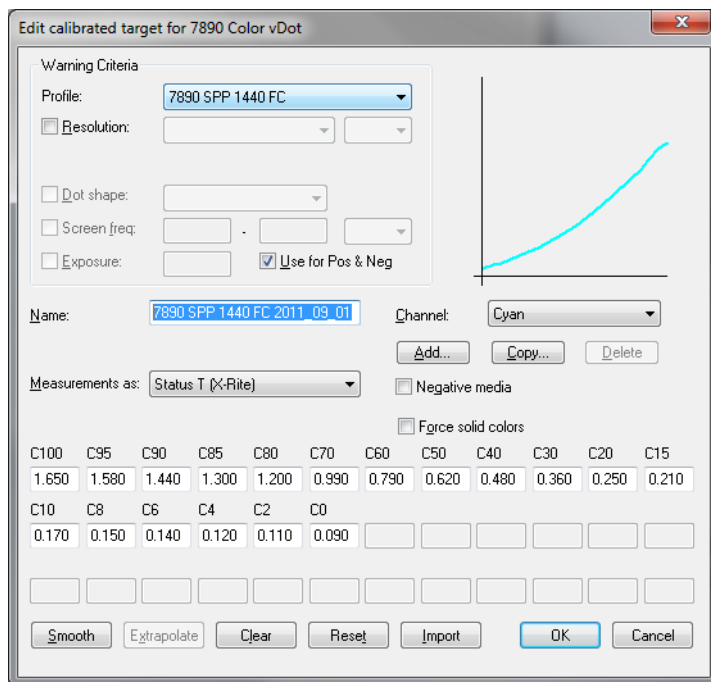
This section describes how to calibrate the printer to match the reference printer that was used to make the output color profile. Use the following process:

1. Before starting the calibration process, you should print any nozzle-check test print available on your printer to ensure there are no blocked nozzles. See your printer documentation for more information.

#### 3.3.1 Create a new calibration set

1. From your previously created Page Setup dialog click the icon to the right of the **Calibration** drop-down menu. This displays the Calibration Manager dialog.
2. Ensure that the **Device** drop-down menu displays your device name. For example 7890 Color vDot.
3. Click **New**.
4. In the **Profile** drop-down select the output profile you want to use, for example, 7890 SPP 1440 FC.
5. In the **Name** box enter a name for this calibration set. It is a good idea to include an indication of the profile name along with the date. For example, you could use: 7890 SPP 1440 FC 2011\_09\_01. This date and name appears in the margin text.

6. Ensure **Force solid colors** is not checked.



**Figure 4** Edit Calibrated Target dialog

7. Click **OK** to save and close the Calibration dialog.
8. In the Calibration Manager dialog select the calibration set you have just created. In our example that would be 7890 SPP 1440 FC 2011\_09\_01.
9. Click **Select** and then save your page setup.

### 3.3.2 The calibration process

1. Select **Output > Print Calibration**.
2. Select your page setup in the list labelled **From Page Setup(s)** at the right side of the Print Calibration dialog.
3. Ensure that the **Print for** drop-down menu is set to **Process Colors only**.
4. Click **Print calibrated target**.

**Note:** You must print a *calibrated* target and not an *uncalibrated* target.

The calibration target will be printed. Wait until you are sure the ink has properly dried before touching the target.

**Note:** If you used the page setup that uses your proofing imposition, you may need to cut off the wedge and margin text before using with some strip readers.

5. When the ink has dried, measure the patches.
6. Select **Output > Calibration Manager** and ensure the **Device** drop-down menu displays your device name. For example, 7890 Color vDot.
7. In the Calibration Manager dialog again select the calibration set you have just created. In our example that would be 7890 SPP 1440 FC 2011\_09\_01.
8. Select **Edit from calibrated target**.

**Note:** Because you always print a calibrated target for these purposes, you must always enter the data using **Edit from calibrated target**. For these proofing workflows you should never use **Edit from uncalibrated target**.

9. Either manually enter the measured data or select **Import** if you used the Genlin utility to measure your target.
10. When all channels are entered into the dialog, click **OK**.

Your printer should now more closely match the reference printer that was used to make the profile. If you wish to iterate the process to double-check, or to improve the match, repeat from step 4 onwards.

On different days, or if print room conditions or printer behavior are liable to have changed, you are always recommended to begin again by clicking on **New** in the Calibration manager dialog and following the steps in 3.3.2 afresh. (The change in conditions is likely to make re-iterating from an earlier calibration counter-productive.)

For more information on calibration, see the OEM manual supplied with the Harlequin Server RIP v9.0.

### 3.4 Create a color management setup

This section describes how to create a color management setup. For more information on color setups see the ColorPro manual.

1. Open the page setup you have previously created and click the icon to the right of the **Color** drop-down menu under **Separations, Screening & Color**.
2. In the Color Setup Manager dialog select **New 'ColorPro' Setup**.
3. Under **Input Profiles** select, from the **CMYK** drop-down menu, the required input profile for the printing condition. For example, *Fogra 39L* or *GRACo1 (CGATS TR006)*. Only certain printing conditions were certified with the Global Graphics output profiles, so if you are using a Global Graphics profile, see Appendix A for more information.
4. Under **Input Document Controls** make sure **Override color management in job** is unchecked.

Jobs with RGB or color managed CMYK are outside the scope of this document. See the ColorPro manual for more information.
5. Select **Simulate paper color of job**.

This ensures an accurate paper simulation when the color of the press stock and proof stock are different.
6. Uncheck **Preserve 100% process black**.

This option is important to ensure that the color of the pure black patch matches the printing condition.
7. Select **Use late color management**.

This option is particularly important for simulating the effect of overprinted spot colors, and is essential when printing the Fogra PDF/X compliance test.
8. In the **Output Profile** drop-down list select the name of the device profile to be certified, or the name of one of the Fogra certification profiles supplied by Global Graphics, as appropriate. For example, *7890 SPP 1440 FC*.
9. Set the **Output Emulation** drop-down menu to *(None)*.\*
10. Click the icon to the right of the **Main intent** drop-down menu.

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\*. RGB input data, and the consequent need for an emulation profile, is not covered by Fogra requirements so are beyond the scope of this document. See the Harlequin ColorPro User's Guide for more information.

11. On the Color Rendering Intent Manager dialog select **New**.
12. On the Color Rendering Intent Details dialog enter values shown below.

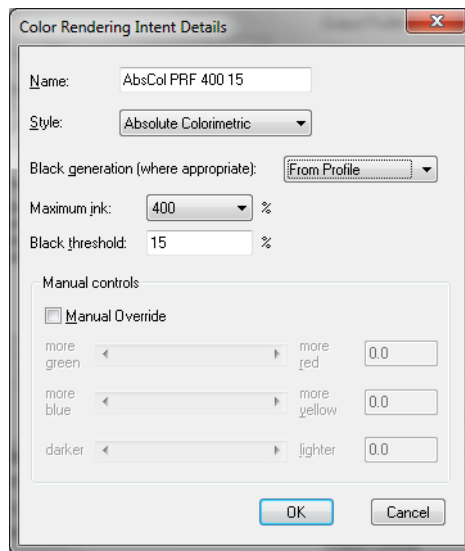
**Note:** The values suggested in this document assume use of the EpsonvDot4 plugin. Initial ink limiting is done when building the output profile. Further ink limiting is not required, thus the reason for using 400 Total Ink is because additional ink mixing and optimization is performed by the screening in the plugin. If you use a different plugin you may need to experiment to determine the most appropriate overall ink limit that is, Total Area Coverage, (or TAC) and level of black generation for your purposes.

13. In the **Style** drop-down menu select `Absolute Colorimetric`. You will almost always want an absolute colorimetric style for proofing.
14. If you are using an output color profile supplied by Global Graphics, select `From profile` in the **Black generation (where appropriate)** drop-down menu. If you are using your own profile, select the level of black generation you would like the RIP to use (higher levels of black generation usually help reduce metamerism).
15. In the **Maximum ink** drop-down menu select 400.
16. In the **Black threshold** box enter 15.

**Note:** The black threshold value is appropriate for use with Epson printers with three black inks.

17. In the **Manual controls** group you must uncheck/clear the **Manual Override** check-box to ensure no manual hue or lightness changes are being applied.

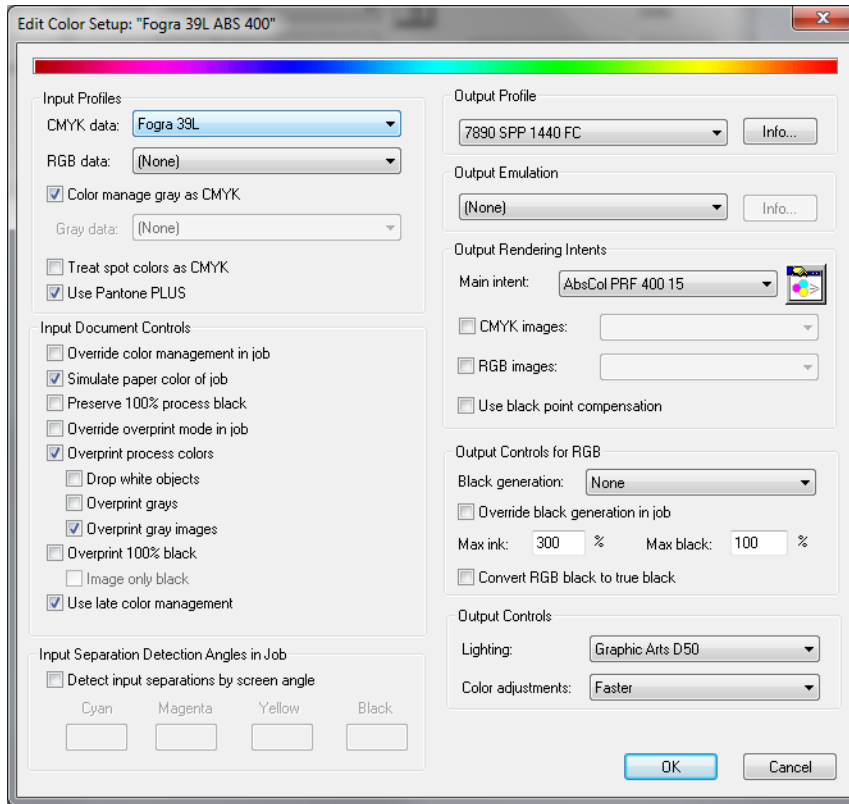
18. Lastly, enter a name that sums up the style, black generation, ink-limit and black threshold for ease of selection in drop-down menu For example: AbsCol PRF 400 15.



**Figure 5** Color rendering Intent Details dialog

19. Click **OK** to close the Color Rendering Intent Details dialog and again to close the Color rendering Intent Manager.
20. Select the new intent from the **Main intent** drop-down menu.

21. Your Color Setup dialog should be similar to:



**Figure 6** Edit Color Setup dialog

22. On the New Color Setup dialog select **Save As** and enter a name that includes an indication of the printing conditions, for example, *Fogra 39L ABS 400*.
23. Click **Save**.
24. In the Color Setup Manager highlight your color setup name. For example, *Fogra 39L ABS 400*.
25. Click **Select**.

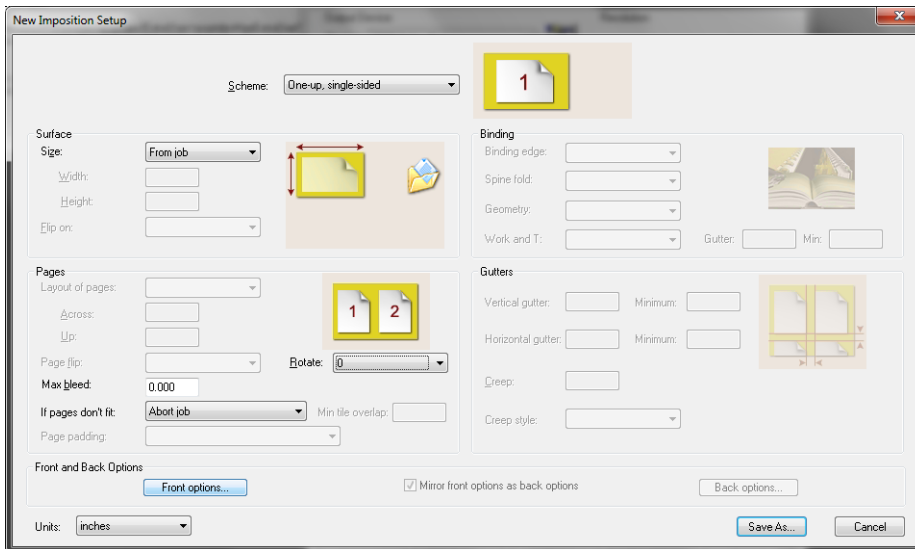
Your page setup will display the selected name in the **Color** drop-down menu.

### 3.5 Create an imposition setup

Use the following procedure to create a simple imposition configuration.

1. Open the page setup you previously configured (see [“Create a proofing page setup” on page 5](#)) click the icon to the right of the **Imposition** drop-down menu.
2. In the Imposition Manager dialog click **New** and make the following selections:
  - **Scheme:** One-up, single-sided
  - **Surface:** From job
  - **Rotate:** 0
  - **Max bleed:** 0.0
  - **If pages don't fit:** Abort job

**Note:** The controls in the Binding and Gutters groups are unavailable.



**Figure 7** New Imposition Setup dialog

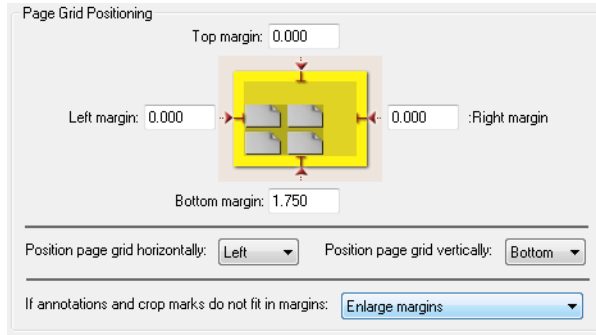
3. Click **Front options...**

In this example both the media wedge and margin text are going to be placed at the bottom of the page. However, you can opt to arrange the annotations to suit your



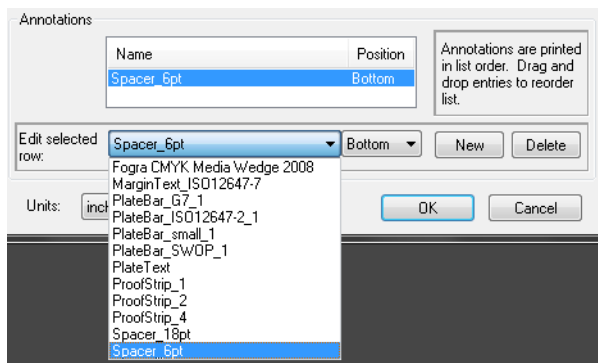
preferences, or as best suits your device or media size. For example, margin text on the left or right and the media wedge at the top and so on.

4. In the Edit Imposition Setup Front Options dialog set these values:
  - **Bottom margin:** 1.75 inches
  - **If annotations and crop marks do not fit in margins:** Enlarge margins



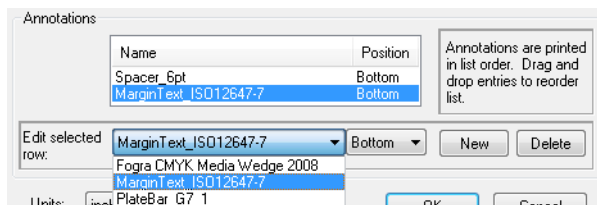
**Figure 8** Page Grid Positioning options

5. In the **Annotations** area at the bottom of the dialog click **New**.
6. In the **Edit selected row** drop-down menu select `Spacer_6pt`, and **Bottom** in the **Position** drop-down menu.



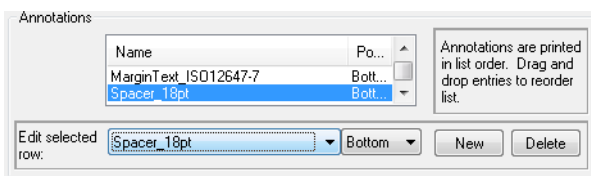
**Figure 9** Annotations: `Spacer_8pt`

7. Click **New** again, and this time in the **Edit selected row** drop-down menu select `MarginText_ISO12647-7` followed by `Bottom` in the **Position** drop-down menu.



**Figure 10** Annotations: MarginText ISO12647-7

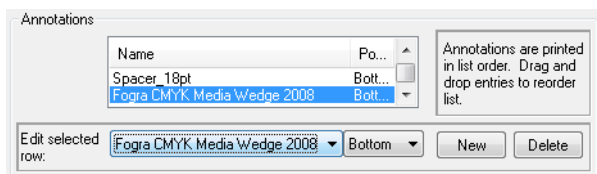
8. Click **New** again, and choose another spacer in the **Edit selected row** drop-down menu. For example, `Spacer_18pt` or `Spacer_6pt`, according to how much space you want to leave between the media wedge and margin text.



**Figure 11** Annotations: Spacer\_18pt

**Note:** Ensure the **Position** drop-down menu is set to `Bottom`.

9. Click **New** one more time and in the **Edit selected row** drop-down menu choose the annotation name of the Ugra/Fogra media wedge that you made a note of earlier (see [“Install the Ugra/Fogra media wedge” on page 4](#)). For example, `Fogra CMYK Media Wedge 2008`.



**Figure 12** Annotations: Fogra CMYK Media Wedge 2008

**Note:** Again, ensure the **Position** drop-down menu is set to `Bottom`.

You should now have a total of four annotations, in this order, from top to bottom in the list box:

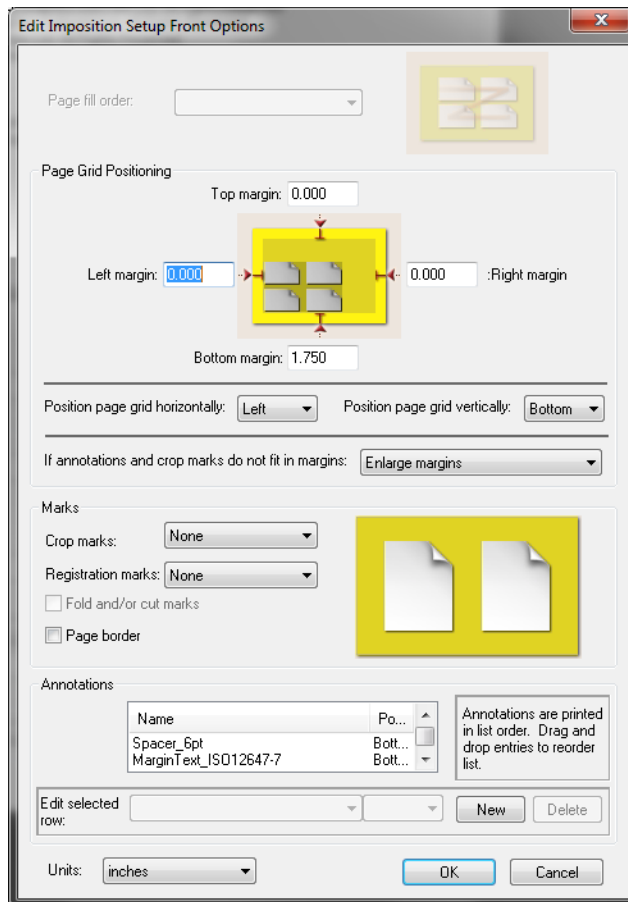
Name	Position
Spacer_6pt	Bottom
MarginText ISO12647-7	Bottom
Spacer_6pt or Spacer_18pt	Bottom
Fogra CMYK Media Wedge 2008	Bottom

**Table 2** Annotations

This determines the order the annotations will appear on the sheet, starting from the bottom edge and working upwards, so the first spacer will be at the bottom, then the margin text above that, another spacer and finally, above it all, the media wedge.

If the order is incorrect, you can drag and drop them to change the order.

The overall front options dialog should look similar to the following:



**Figure 13** Simple Imposition Front Options

**Note:** You can use the scroll bar in the Annotations list to see all the annotations.

10. Click **OK** on the Front Options dialog followed by **Save As** on the New Imposition Setup dialog.
11. Choose a name for your imposition setup. For example, Fogra Layout and click **Save**.
12. On the Imposition Manager dialog highlight your imposition setup name, for example, Fogra Layout, and click **Select**.

Your page setup should now show your chosen name in the **Imposition** drop-down menu.

If you have other page setups to create, they can also use the same layout. All you need to do is select your imposition name from the drop-down list labeled **Imposition** in the Page Setup dialog.

If you have trouble with your printer or proofer cropping your annotations, you can add more spacers to the appropriate edges, or you can edit the annotation files to fine tune their placement. See Appendix B.

For further information on the meaning of the icons contained within the margin text strip see Technical Note Hqn 054 “Using a control strip when proofing”.

### 3.6 Print and check the proofs

You can now print your proofs as usual and the Ugra/Fogra media wedge and ISO 12647-7 text strip will appear in the margin.

When you have completed all your pre-production checks, then printed and verified your proofs, you should verify them using the Ugra/Fogra media wedge. When completed, and as a requirement from Fogra, you can affix a sticker bearing the words:

“Contract Proof according to ISO 12647-7”

## Appendix A Global Graphics certified printing conditions

Only certain combinations of proofing paper and printing condition were submitted for Fogra certification using a Global Graphics branded Harlequin Server RIP version 9.0r0.

The certified combinations solely apply to the EpsonvDot4 plugin driving the 7890 Color vDot device-type, at printer output resolution 720 x 1440 dots per inch.

Only these certified combinations can be inherited by OEMs without applying for a full and separate certification.

In each case, you should choose the input profile with the name that matches the printing condition you wish to simulate. For example, if you wish to simulate the IFRA26L printing condition you should choose Epson Proofing Paper Publication paper, the IFRA 26L input profile, and the 7890 PPP 1440 FC output profile.

The certified combinations are:

## **Epson Standard Proofing Paper (GRACoL certified)**

(Example Epson part number S045111.)

Use output color profile 7890 SPP 1440 FC with this paper to simulate:

- Fogra39L (European commercial print, paper type 1 or 2)
- Fogra43L (European commercial print, paper type 1 or 2, non-periodic screening)
- CGATS TR006 GRACoL (North American commercial print)

## **Epson Standard Proofing Paper SWOP3 (SWOP TR003 certified)**

(Example Epson part number S045154.)

Use output color profile 7890 SWOP3 1440 FC with this paper to simulate:

- CGATS SWOP TR003 (North American publication print, grade 3 coated paper)

## **Epson Proofing Paper Publication (SWOP TR005 certified)**

(Example Epson part number S041997.)

Use output color profile 7890 PPP 1440 FC with this paper to simulate:

- CGATS SWOP TR005 (North American publication print, grade 5 coated paper)
- IFRA26L (Newsprint, 26% TVI)
- IFRA30L (North American newsprint, 30% TVI)

# **Appendix B How to fine-tune the placement of annotations**

You can fine-tune how the RIP places the Ugra/Fogra media wedge or the margin text strip on the sheet with a few straight-forward edits.

## **The Ugra/Fogra media wedge**

When you use the 'Install Annotation' page feature to install the Ugra/Fogra media wedge (see ["Install the Ugra/Fogra media wedge" on page 4](#)), the annotation control file that is created causes the wedge to be repeated as many times as will fit within the media, and does not insert any white space to the left or below the wedge.

If you want to change these settings, navigate to the folder:

SW/Usr/HqnLayout/Annots

Look for the file with the same name as the annotation name of the Ugra/Fogra media wedge that you made a note of earlier. For example, *Fogra CMYK Media Wedge 2008*.

Carefully edit that file and change the following entries as appropriate:

/BaseX 0

Replace the 0 with the number of points of blank space you would like inserted before the left-hand edge of the wedge.

/BaseY 0

Replace the 0 with the number of points of blank space you would like inserted below the bottom edge of the wedge.

/Repeat true

Replace `true` with `false` to prevent the wedge being repeated across the media.

**Note:** Never edit any of the files in SW/Usr/HqnLayout/AnnotEPS.

## The margin text strip

The issued margin text strip has 22 points of white space inserted before the left-hand edge of the strip, and 4 points of white space inserted below the bottom edge of the strip.

If you want to adjust these amounts, navigate to the folder:

SW/Usr/HqnLayout/Annots

Look for the file with the name `MarginText_IS012647-7`.

Carefully edit that file and change the following entries as appropriate:

/BaseX 22

Replace 22 with the number of points of blank space you would like inserted before the left-hand edge of the strip.

/BaseY 4

Replace 4 with the number of points of blank space you would like inserted below the bottom edge of the strip.

## Appendix C Obtaining and installing the revised profiles pack

The Harlequin Server RIP v9.0r0 should already include the file:

```
SW/Usr/HqnLayout/Annots/MarginText_ISO12647-7
```

**Note:** Do not confuse `MarginText_ISO12647-7` with `PlateBar_ISO12647-2_1`.

If you cannot find the `MarginText_ISO12647-7` file you need to install some revised profiles and feature files before you do anything else.

Contact Harlequin Support via your usual channels to obtain a ZIP file called `Install_Revised_Profiles_9.0r0.zip`.

The ZIP archive contains a PostScript language file called: `Install_Revised_Profiles_9.0r0.PS` which when printed using the RIP installs the necessary alterations in the SW folder.

Print `Install_Revised_Profiles_9.0r0.PS` to a simple, low resolution page setup, for example using a `None` or `Preview` device. The details of the page setup to which you print the file are not particularly important, but you should avoid page setups that use page features.

**Note:** You must not use the Install Annotation page setup described earlier in this document.

**Note:** The file can safely be run more than once.

**Note:** The file will only run in a v9.0r0 RIP, and will refuse to run in any earlier version or later revision.

When running, the job will display a list of the files being installed in the RIP monitor and shortly after that the following message should appear, confirming successful installation:

```
=====
Revised profiles for 9.0r0 installed
=====
```



## 4 Document history

Change history		
v1.0	06.09.2011	Document created



## Copyright and Trademarks

Preparing color proofs for Fogra certification

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