Kodak Graphic Communications Canada Company
3700 Gilmore Way
Burnaby, B.C., Canada
V5G 4M1
Tel: 1.604.451.2700
Fax: 1.604.437.9891

Request support: http://graphics.kodak.com
ecentral.creo.com

Internal: 731-00765A-EN Rev B
Release date: 24 July 2006

Procedure

Harmony Auto Curves Best Practices

This document describes how to set up different *Harmony* software curves to be automatically applied to different separations on the same surface. It also provides some tips for creating these curves more quickly. This information applies to both *Kodak Prinergy* software and *Kodak Prinergy Evo* software.

Using 'Auto' Curves in Prinergy

In pre-press production, automating procedures reduces the need for operator intervention, saves time, lowers costs, and prevent errors. Applying different tonal correction curves in *Prinergy* to different separations on the same surface can be automated, provided that operators understand how the process is designed to work.

With the proper setup, different tonal correction curves can be applied to different separations automatically using the **%% Auto %%** setting in the **Calibration Curve** box of the *Prinergy* output process templates.

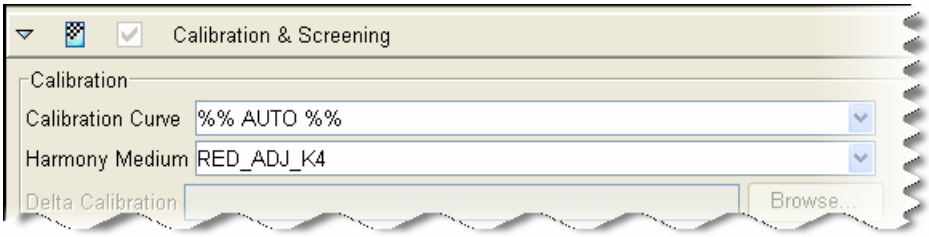


Figure 1: Specifying auto calibration curves in Prinergy output process templates

Setting Up Baseline Current Curves in Harmony

Before tonal calibration curves can be applied, they must be created in *Harmony* software. *Harmony* software is normally run on the primary server (with *Prinergy Evo*, a separate instance of *Harmony* must be installed on each Evo server), and creates a database of curves that must be named **CalCurve.hmy** to be seen and recognized by *Prinergy*. (A new *Harmony* curve database is named **CalCurve.hmy** by default.) Curves can be archived and hidden from *Prinergy* by changing the name to something like **CalCurve.hmy.TestCurves06**.

Harmony software uses a number of different types of curves internally, but *Prinergy* only sees *Harmony calibration* curves. Calibration curves can be created in two ways: by creating a curve directly (known as a *transfer* curve) or by deriving a curve from a *current* curve (measured press performance) and a *target* curve (desired press performance).

An implication of using derived curves is that for each calibration curve, there must be a corresponding current curve and target curve. This means that for a press run of CMYK and two spots, six current curves and six target curves must be specified, in order to derive six calibration curves. (So you will need 18 curves in total.)

Use calibration curves, not transfer curves

In many print environments, operators are not concerned about *absolute* press gain or loss; they are concerned only with *relative* gain or loss. They may just want to make a given ink print lighter or darker at a given tone. So it might seem that the easiest approach would be to simply create transfer curves, because you do not have actual current or target data to work from, and might want to avoid having to create three different curves, to end up with one usable curve.

In practice, it is advisable not to use single transfer curves, even though this seems like less work. There are two issues with using transfer curves:

- Transfer curves use deviation mode to establish curves. This means that once the deviation is applied, the displayed deviation value resets itself to 0 percent at the correction points, and you have no idea how much correction was originally applied. For example, you could set -2 percent at the 50 percent point, and after the correction is applied, you can see visually that the curve dips down at the 50 percent point, but you have no way of determining the exact deviation, because the displayed deviation value has been reset to 0 percent.

- If there is a global change in press conditions, you have no way of automatically updating all your curves. You must open up every transfer curve and manually correct for the changes in current printing conditions.

For these two reasons, we recommend that you use derived calibration curves. You will have both a database that allows you to see instantly what corrections have been previously applied, plus a simple mechanism to make a global change to all of your curves if current printing conditions change.

Reuse the baseline current curve

We recommend that you use a common baseline current curve for creating all final calibration curves. You will need to create unique current curves for spot colors and for CMYK, but once these are created, they can be used by all spot color and CMYK curves. So you only need to create these curves once. If press conditions change, by modifying these *current* curves, you will automatically adjust all calibration curves created using these curves.

Accessing Harmony Through a Remote Desktop Connection

Harmony software is run from the server. With a *Prinergy* system, *Harmony* should be run on the primary server. With *Prinergy Evo*, each Evo server must have its own copy of *Harmony* installed. *Harmony* runs only on *Windows*-based computers. You could potentially run *Harmony* locally on a *Windows*-based computer, and map to the *Harmony* database that is found on the primary server. However, experience has shown that you may run into *Harmony* database corruption if you do this. To have convenient access to *Harmony*, we recommend that you install Remote Desktop Connection (RDC) software on your local workstation, and run *Harmony* on the server, through an RDC remote session. RDC is available both for *Windows*-based and *Macintosh* computers. *Prinergy* servers are configured by default to have Remote Desktop Connection software installed and activated.

Log on to your primary server using RDC, and start *Harmony* (found under **Start/Programs**… on the primary server.)

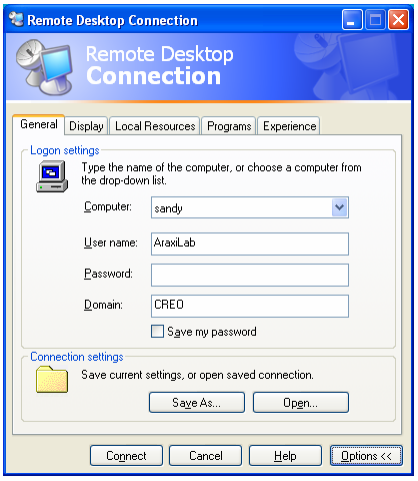


Figure 2: Starting a remote RDC session on a *Prinergy* primary server.

When *Harmony* is started, you can then view all curves.

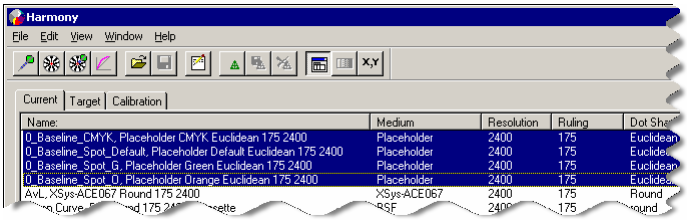


Figure 3: Baseline Harmony current curves

In this example, we can see three baseline current curves that are being used to derive final *calibration* curves. In this case, all the current curves are *linear*, which implies that printing conditions are considered accurate. Note also that the curves are named to differentiate the CMYK baseline curves from different spot color curves. You could potentially use the same baseline curve for all spot colors, but this would give you less flexibility if the press performance of one spot color ink changed over time, in relation to another spot color ink.

These curves have been created as linear curves. Linear means that output values are equal to input values, and no adjustment will be applied.

When creating curves using the current + target = calibration curve system, having a linear current curve means that any values entered into the target curve will be directly transferred to the calibration curve.
(Linear Current: Target = Calibration.)

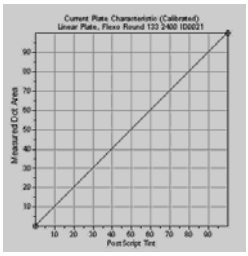
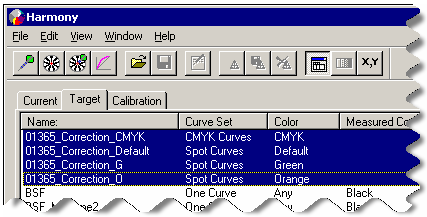


Figure 4: Example of a linear curve

Setting Up Target Curves

Create a target curve and input the desired values. If you would like to remove 5 percent at the 50 percent tone region, you would enter 45 percent at the 50 percent node. Enter as many nodes as you consider necessary.

Naming curves



You should name the curves in a meaningful way. In the example on the right, curves are named so as to identify that they are CMYK, Orange (O), Green (G) and default spot color correction curves. (Default curves have a special significance that will be explained later.) They are also labeled with a number that refers to a specific job docket number, because these are corrections based on specific artwork. To make these names even more meaningful, they could be appended with data that indicates what the actual correction is. For instance, a curve could be called 01365-Correction_O_23-48-73, which indicates that the 25 percent node is set to 23 percent, the 50 percent node is set to 48 percent, and the 75 percent node is set to 73 percent.

Creating Calibration Curves by Deriving from Baseline Current Curves and Target Curves

Prinergy can see only final calibration curves. To make curves that *Prinergy* can use, you need to derive calibration curves by combining current and target curves.

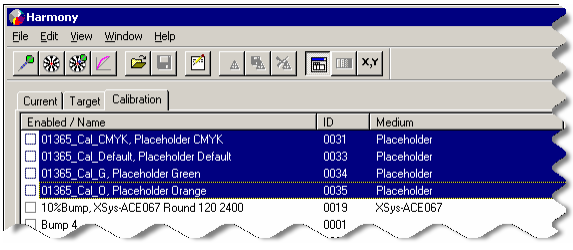


Figure 5: Calibration curves

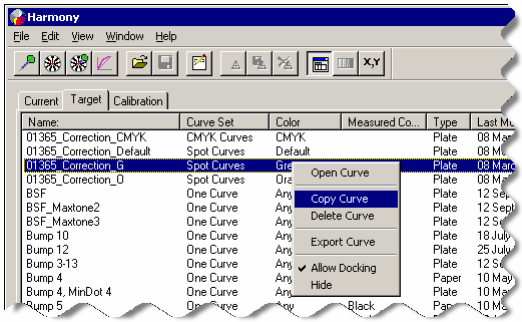
Optimizing the Creation of Calibration Curves

You can minimize the time and effort it takes to create new curves by using the following procedure, which incorporates the following best practices:

- Duplicate an existing *target* curve to reduce setup time.
- Use a common *current* curve that has already been created.
- Derive a new *calibration* curve, and create a new *media type* only when you create this final curve.

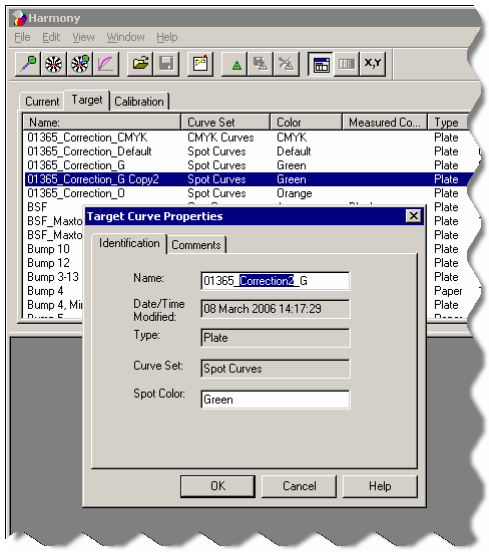
To create calibration curves optimally

1. Select an existing target curve and from the **File** menu, select **Copy Curve**. By copying a curve you do not have to enter **Curve Type**, **Curve Set** or **Spot Color Name** and also the number of **Nodes** will be predefined.



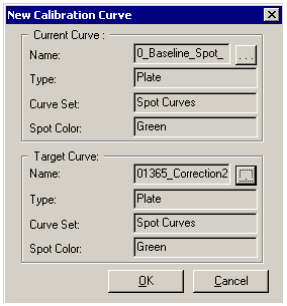
2. All you need to do at this point is rename the curve so that you can identify it as a new correction curve. Open the duplicated curve and from the **Edit** menu, select **Curve Properties**.

Tip: Once you change the name of the target curve, select the entire name and copy to the Clipboard. You will use this copied name in a moment.

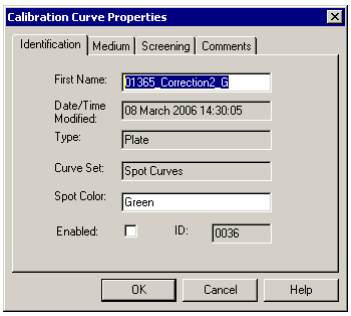


3. Once you change the name of the target curve, proceed to edit the target curve values. Save the curve to preserve the edits.

4. You are now ready to quickly create the final *calibration* curve. Select **New Calibration Curve** and point to the common baseline *current* curve and the new *target* curve you just created.

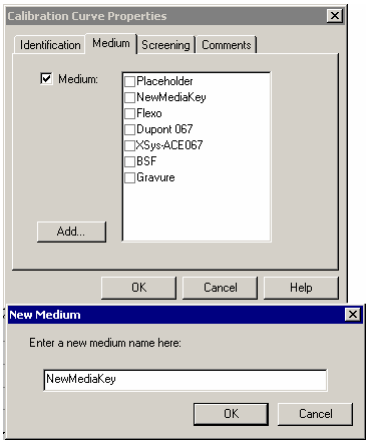


5. Once you click **OK**, the new *calibration* curve appears. Open **Curve Properties** and paste the name of the new *target* curve that you had previously copied to the Clipboard.



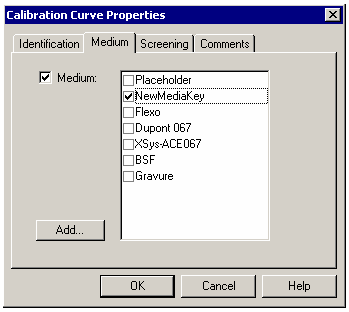
6. Switch to the **Medium** tab, and click **Add** to create a new *medium*. This medium name is used as a database key to link different color curves when the **%% Auto %%** function is used in *Prinergy*.

   The medium name is picked up from the *current* curve by default, but you can deselect this and select the new medium that you created. *There is no need to create a new current curve with the new medium name.*



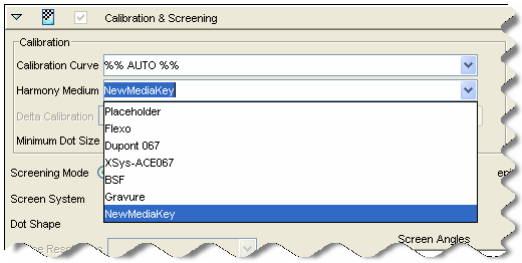
7. Select the new medium you created.

   Once the medium is selected and the new curve saved, *Prinergy* can automatically select the curve. You would continue to add all colors that would be used by the specific artwork or job.



Note about using the default spot color: When using *Harmony* calibration curves, if a spot color is detected that is not defined in *Harmony*, *Prinergy* will automatically use the black curve from the CMYK set. If you want to use a different default curve than black for spot colors, you would create a spot color called “Default”. *Prinergy* will then use the “Default” curve for any undefined spot colors.
Note: Ensure that you use an uppercase ‘D’ when typing “Default”; otherwise, *Prinergy* does not recognize the defined curve as the default.

To have curves selected automatically, you set **Calibration Curve** to **%% Auto %%** in the output process template, and then choose the medium name that will act as a database key to automatically select the curves specifically created for your press correction. (Medium names will not become active until you select %% Auto %%.)



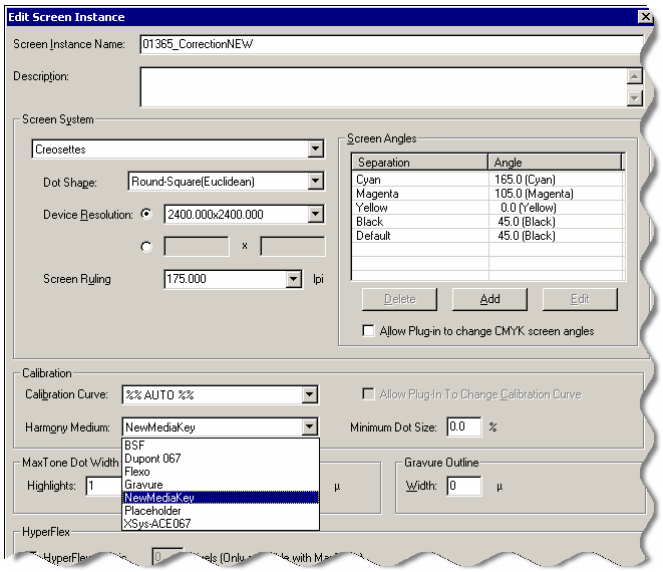
Creating a DotShop Instance for 1-up Automatic Tonal Correction

If you want to correct only one artwork or page on a surface, you can create a *Kodak DotShop* software instance and apply the *DotShop* setting in *Adobe Acrobat* software.

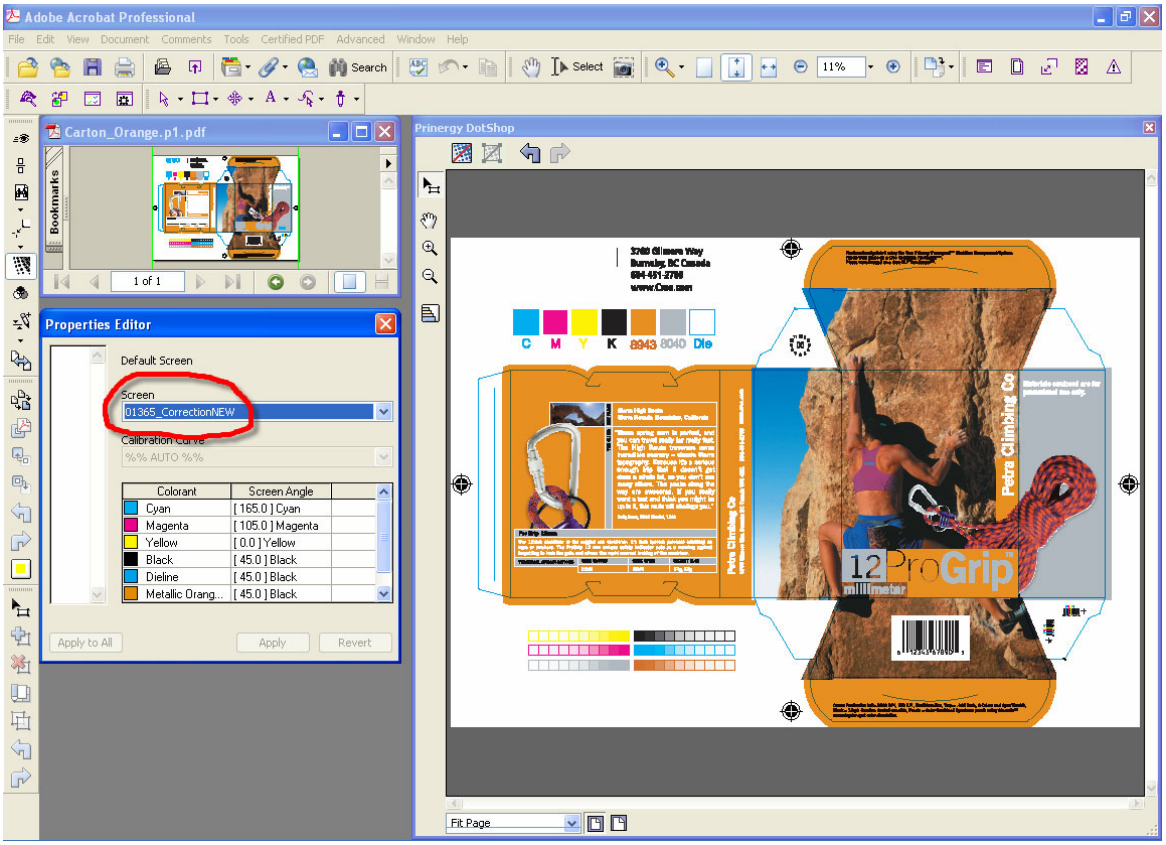
To create a *DotShop* instance, you must run *Kodak DotShop Composer* software on the primary server. To be efficient, you can again start an RDC session from a *Macintosh* or *Windows*-based client, and run *DotShop Composer* software remotely. Launch RDC, and choose *DotShop Composer* from **Start** > **Programs** > **Prinergy**.

Copy an existing instance that is closest to what you want to accomplish (containing the same screen set, angles, frequency, auto curves, and so on). Rename the duplicate instance, make sure that **Calibration Curve** is set to %% Auto %%, and choose the new medium that you created.

After selecting the new *Harmony* medium in *DotShop Composer*, for this instance to become active in *Acrobat* software, you must save it.

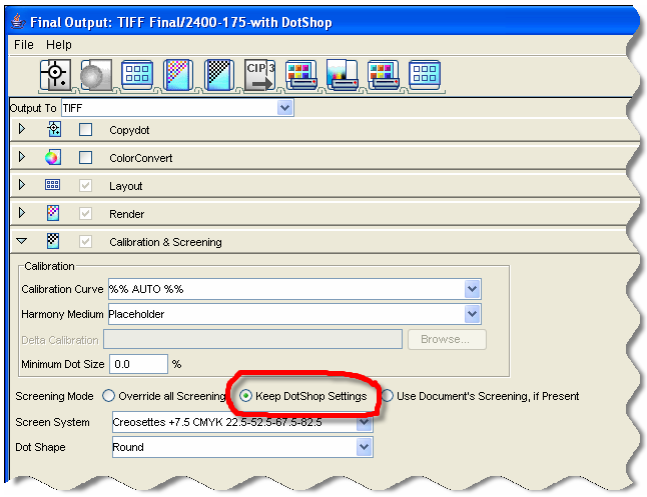


Open the 1-up artwork or page you intend to correct in *Acrobat* and start *DotShop*.



Important: To apply a global correction to the file you do not need to select anything.

To apply a global correction, make sure no objects are selected, and choose the screen instance you just created in *Dotshop Composer* from the **Screen** pop-up menu. Click **Apply** and save the 1-up artwork or page. This applies what is known as the default screen, and will apply to all objects on the page, unless they have been locally corrected.



You are now ready to output new plates. It is not necessary to refine again the 1-up artwork or page you just applied *DotShop* to. Just select the layout and use the final output process template. Of course, you must ensure that **Keep DotShop Settings** is selected in the process template.

About Kodak Graphic Communications Group (GCG)

The leading provider of graphic communications solutions worldwide, Kodak's Graphic Communications Group (GCG) offers image capture systems; professional color, copydot, and high-speed document scanning systems; inkjet printing and proofing systems; workflow and color management software; thermal imaging devices for film, plates, and proofs; high-quality proofing media, printing plates, and recording film; on-demand color and black-and-white printing systems; data storage products; and professional services. Creo joined the GCG in June 2005, when it became a wholly owned subsidiary of Kodak. With corporate headquarters located in Rochester, N.Y., Kodak (NYSE: EK) had sales of $13.5 billion in 2004 and is committed to a digitally oriented growth strategy.

© 2006 Kodak. The Creo product names mentioned in this document are trademarks or service marks of Creo Inc., a subsidiary of Kodak, and may be registered in certain jurisdictions. Other company and brand, product, and service names are for identification purposes only and may be trademarks or registered trademarks of their respective holders. Data subject to change without notice.