Curve Pilot PressSync 18

User Guide

11 - 2018

ESKO

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2. Curve Pilot and PressSync Pilot

If you have a PressSync license, you will get two applications after installing Curve Pilot on your computer:

- Curve Pilot, which contains the IntelliCurve (DGC editor, strategy editor) and the PressSync (PressSync curve set editor) functionality,
- PressSync Pilot, which only contains the PressSync functionality.

This document describes the PressSync functionality. For an explanation of the IntelliCurve functionality, please see the IntelliCurve manual.

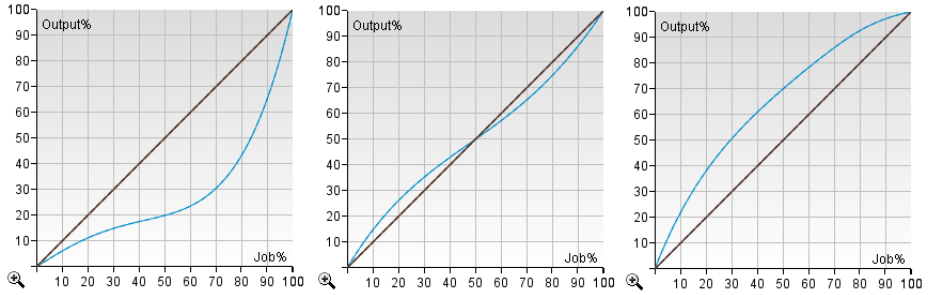
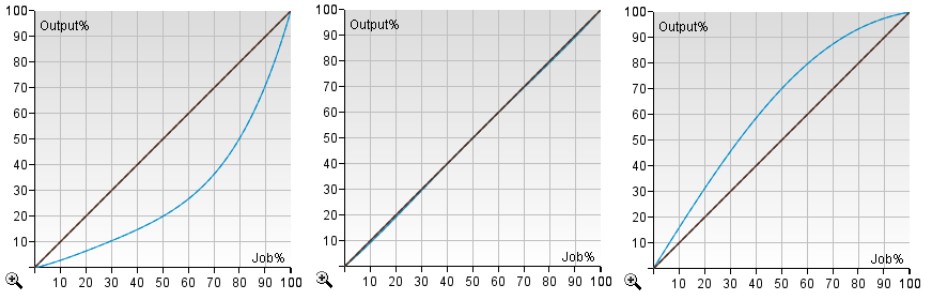
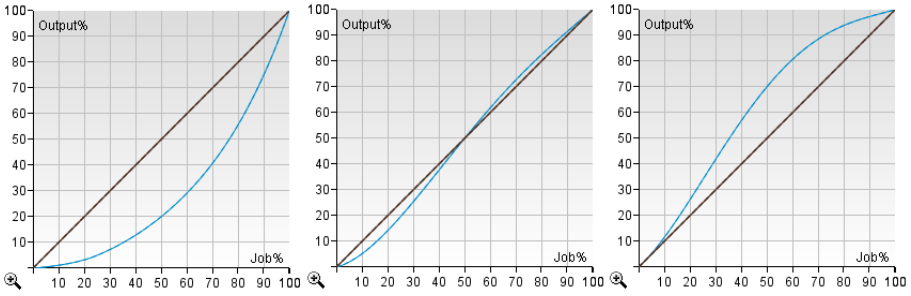
3. What is a PressSync Curve?

Curve Pilot / PressSync Pilot comes bundled with 400 PressSync curves. Those are pre-defined dot gain compensation curves of various forms and shapes that can fit the dot gain compensation needs of most presses.

Using PressSync curves significantly reduces the complexity of dot gain compensation in workflows.

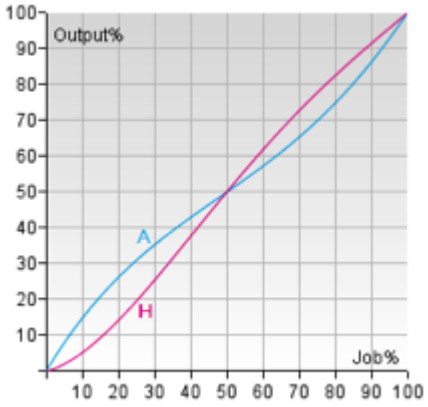
3.1. PressSync Curve Names

PressSync compensation curves are defined by a letter (A to H) and a number (20 to 70): A40, D20, F30, etc. The letter indicates the general shape of the curve in the highlights and in the shadows. The number indicates the compensation value for the 50% dot (midtone).

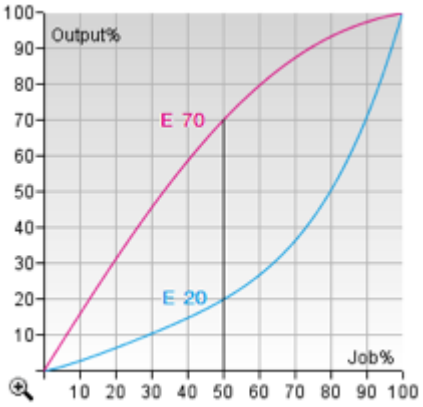
	20	50	70
A			
E			
H			

3.2. PressSync Example Curves

The A50 curve increases dot gain in the highlights (forcing the press to print darker in the highlights), and reduces dot gain in the shadows (thus forcing the press to print lighter in the shadows). The H50 curve exhibits the opposite behavior. Both curves exhibit an inflection point (where their slope changes sign) in the midtone.



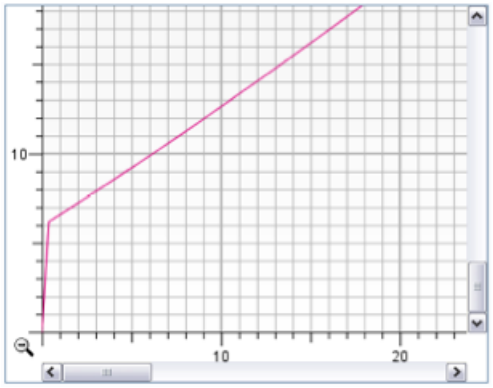
The E70 curve increases dot gain throughout the tonal range, correcting the midtone to 70%. The E20 curve decreases dot gain throughout the tonal range, forcing the midtone to 20%.



3.3. Minimum and Maximum Values

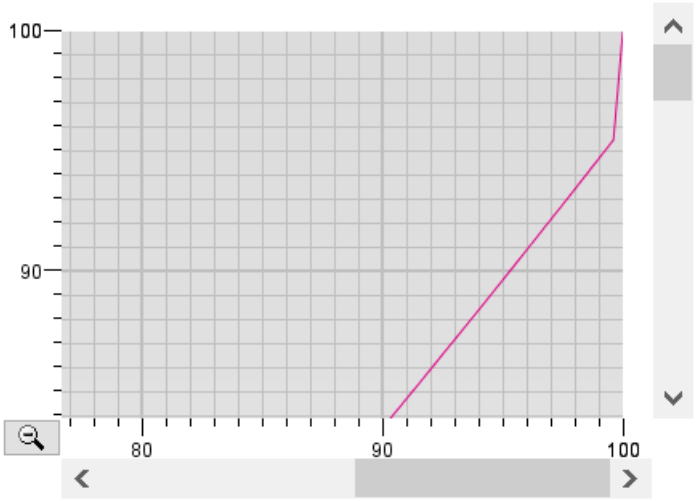
A PressSync curve can also contain information about a minimum and a maximum value.

The minimum value is the correction / compensation for the first non-zero tone. For example, if the minimum is set at 6%, the first tone value after zero will be adjusted to 6% as shown below.



Note: Regardless of the minimum value you choose, the 0% tone remains at 0%. As a result, the 0% tone will not be screened.

The maximum value is the correction / compensation for the tone just below 100%. For example, if the maximum value is 96%, a tone of 99.5% for example will be corrected to 96% and screened as shown below.



Note:

The 100% tone (the solids) will use the 100% level of the screen. This means that:

- for screens that do no use surface screening, solids will be kept as solids (not screened),
- for screens that use surface screening, solids will use the surface screening pattern defined for 100% in the screen.

Tip:

If you want to use your maximum value to screen the solids (so 100% is screened at 96% for example), you should:

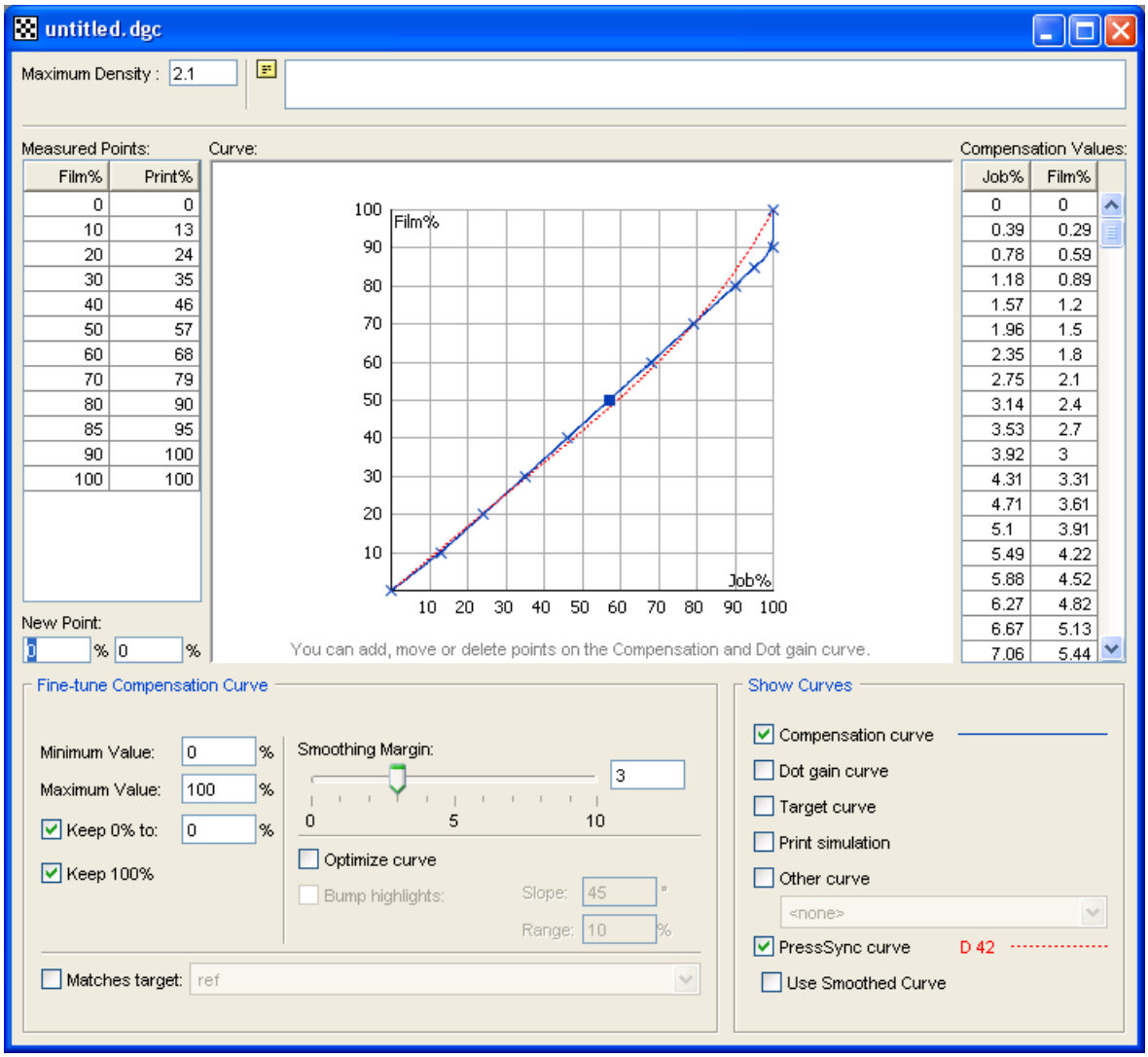
- use a *flexible PressSync Curve*,
- set the *Maximum Value* you want to use for screened your 100% tones,
- deselect the *Keep 100%* option in your curve.

4. Finding a PressSync Curve for a Printing Ink

To find a PressSync curve for an individual ink, you need to print a vignette of this ink, measure it and enter the values into Curve Pilot.

Note: You can only do this in Curve Pilot, not PressSync Pilot.

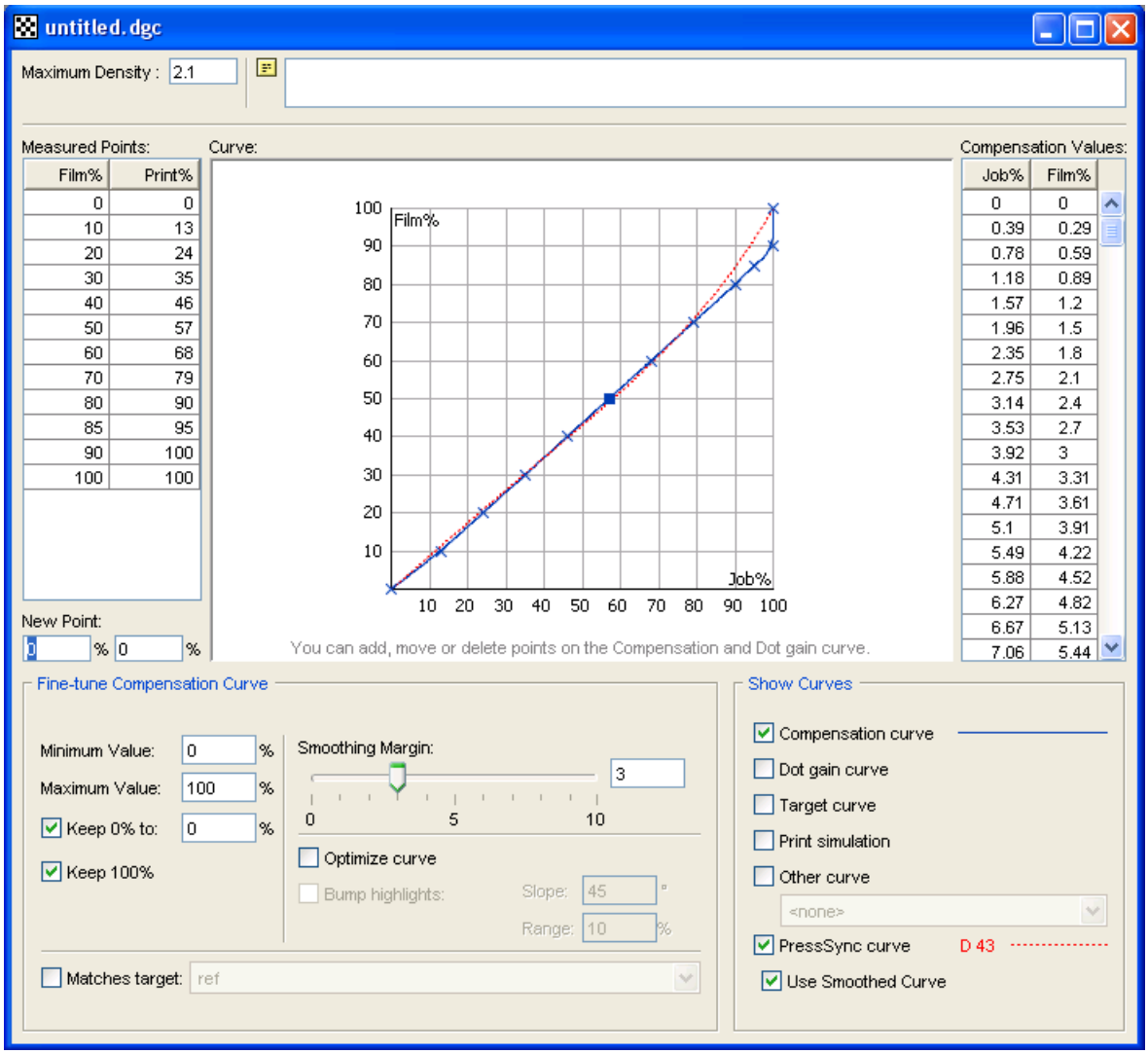
1. Print a vignette of the ink you want to compensate with a PressSync curve (without using any dot gain compensation).
2. In Curve Pilot, go to **File** > **New** > **DGC (.dgc)**.
3. Enter your ink measurements as you would when creating a DGC curve (see the IntelliCurve manual for details).
4. In the **Show Curves** area, make sure **Compensation curve** is selected, then select **PressSync curve**.
   This shows the best PressSync curve to use for your ink and printing conditions (press, substrate...) with a red dotted line on the graph.



You can see the PressSync curve name beside **PressSync curve**.

By default, the PressSync curve shown is the one that fits the compensation points the best. The compensation points are the compensation values for each measurement you have entered (they are shown as blue crosses on the graph).

5. If you want a PressSync curve that fits the smoothed compensation curve (blue curve) better (instead of the compensation points), select **Use Smoothed Curve**.



6. If desired, enter a **Minimum Value** and a **Maximum Value** to use for your PressSync curve (see *Minimum and Maximum Values* for information).
   The minimum and maximum values you entered are shown beside the curve name.
   D 42 (6%,100%)
7. Save your curve:
   a) go to **File** > **Save**,
   b) enter a (meaningful) **File Name** for your PressSync curve,
   c) click **OK**.

5. What is a PressSync Curve Set?

A PressSync curve set is a collection of predefined dot gain compensation curves, each attached to an ink (a process ink or a spot color defined in Esko's CMS database).

Curve Pilot / PressSync Pilot creates and saves PressSync curve sets in the .prsync file format. A .prsync file contains information about the desired printing condition, measurement data, the actual dot gain compensation curves, and history data related to curve set setup and/or measurement actions.

When sending a print job to your RIP application, you typically associate one or more .prsync files with it. This way, every separation in your job is compensated with the appropriate PressSync curve. For the details please refer to your RIP application manual.

6. Creating a PressSync Curve Set for Your Press

You can create either :

- An **empty curve set**: manually pick the PressSync curves for your inks without measuring your press output (for example if a third-party application gave you specific PressSync Curves to use).
- A **curve set with measurements**: measure a few press runs and compare them to target values to get your PressSync curves.

  This way you can match a specification (ISO, GRACol, SWOP...) or another reference (if for example you have a good curve set for one of your presses, and want to make a similar one for a second press).

Note: We recommend you create a **curve set with measurements**, rather than matching the PressSync curves to your inks manually.

6.1. Creating an Empty Curve Set

You can create an **empty curve set** if you are not planning to measure your press runs at all and want to manually pick the PressSync curves for your inks. Do this for example if a third-party application gave you specific PressSync Curves to use.

In Curve Pilot or PressSync Pilot:

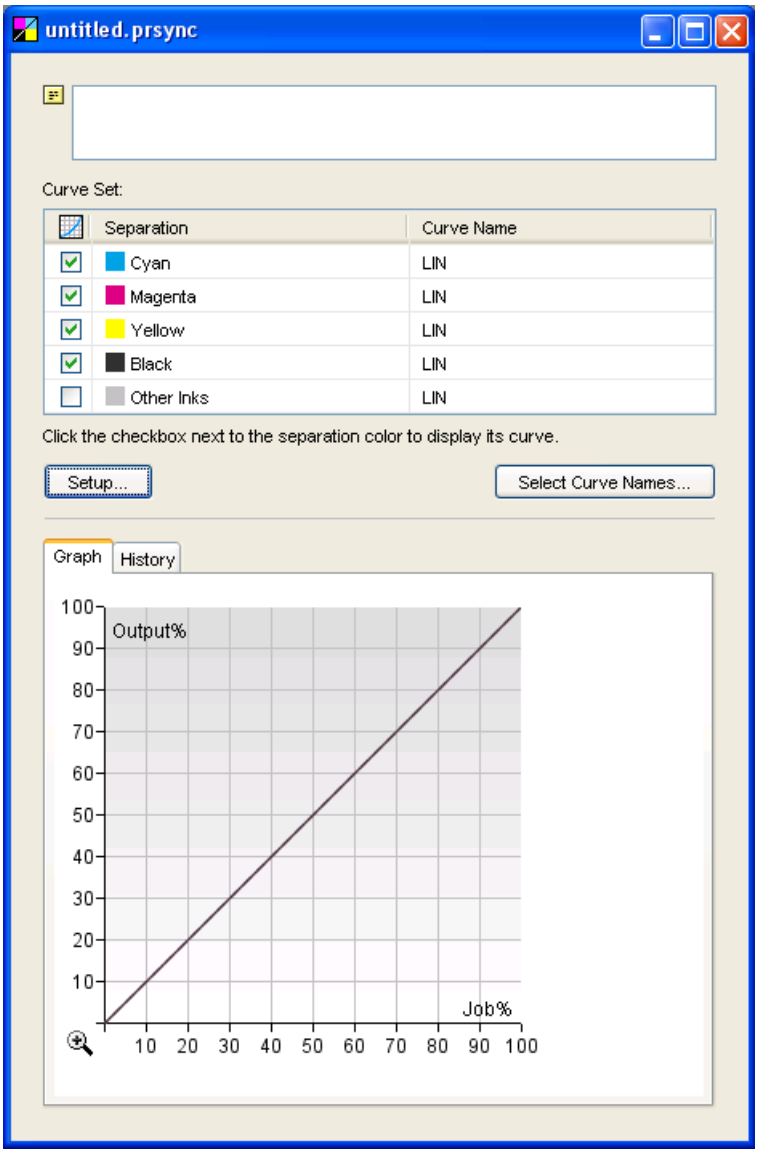
1. Go to **File** > **New** then select **PressSync Curve Set (.prsync)**.

   In PressSync Pilot, you can also click the **New...** button at the bottom of the **PressSync Curve Set Explorer** panel.
2. In the **Create New Curve Set** dialog, choose **An empty curve set**, and click **OK**.

   This opens a dialog with an empty PressSync curve set.

   By default, the curve set contains the four process inks (**Cyan**, **Magenta**, **Yellow** and **Black**), and a channel called **Other Inks** (whose compensation will be used for any job ink not defined in the curve set).

   At the start, the **Curve Name** shows **LIN** (linear), which means that no compensation curve is applied to those inks.



3. Click **Setup...** to open the **Setup** dialog.
4. Enter your name in **Changed by** and a **Reason** for the setup change.
5. If desired, enter a **Curve Set Description**.

   Note: This will be shown in the field of the curve set dialog (you can only edit the contents of this field from the **Setup** dialog).

   You will enter the **Curve Set Name** when saving the curve set.
6. Add extra inks to the curve set if desired:
   a) click **+** at the bottom of the **Spot Colors** list,
   b) in the **Choose Inks** dialog, choose the **Ink Book**,
   c) choose or enter the **Ink Name** and click **OK**.

When entering an ink name manually, you can use the full ink name or the short ink name. Make sure you use either the exact spelling from your CMS database or the official short name.

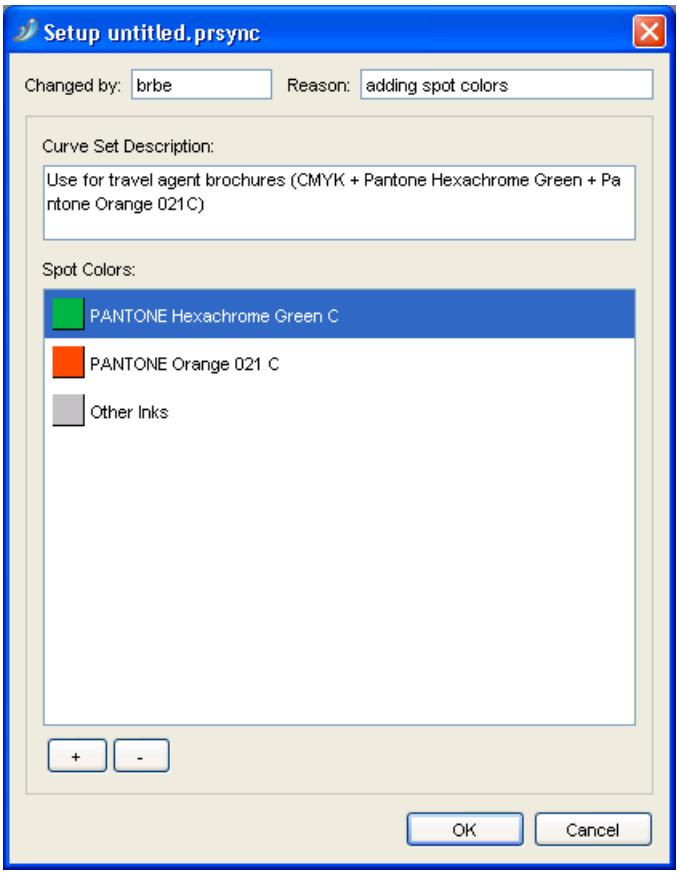
Note: You can add any ink that is defined in Esko's CMS database, but you cannot remove the default channels (**Cyan**, **Magenta**, **Yellow**, **Black** and **Other Inks**).

Tip:

If you are working on a curve set from/for a different system (with a different CMS), you can add inks that are not registered in your CMS database:

1. Select **<unregistered ink book>** in the **Ink Book** field.
2. Type the name of your ink book.
3. The **Ink Name** field will show **<unregistered ink>**. Type the name of your ink.
4. You will see a warning. Click **OK**.

When working with unregistered inks, you will see a "U" icon (U).



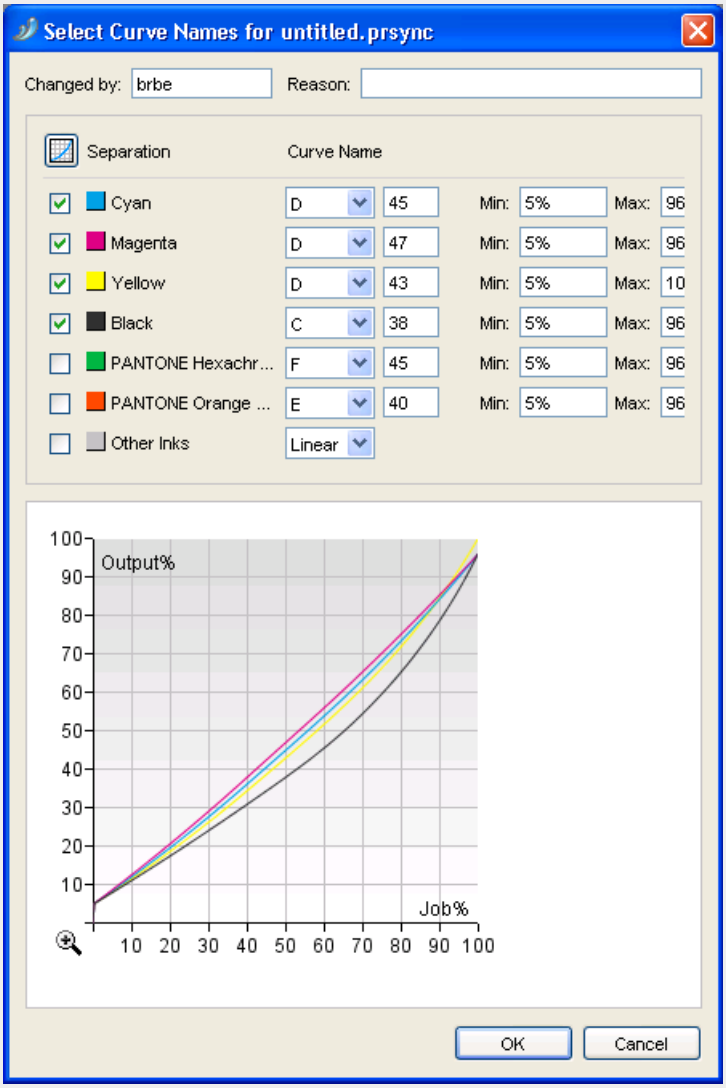
7. Click **OK** when you are done with the setup.
8. To assign curves manually to your inks:
   a) Click **Select Curve Names...** in the curve set dialog.

b) In the **Select Curve Names** dialog that opens, choose a PressSync Curve for each ink: choose the letter, the number and enter a minimum and maximum value if necessary.

Note: **Linear** means that no curve is assigned to the ink (so no dot gain compensation is applied).

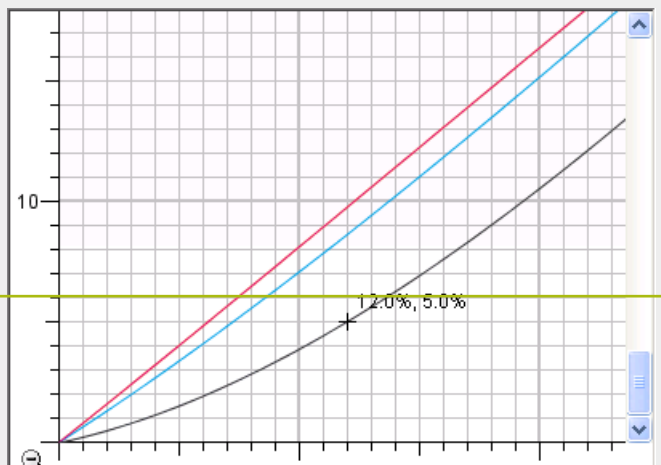
Tip:

To view the curves you picked on the bottom graph, check their boxes under . You can also click to show all process colors curves, or to hide all curves.



You can click to zoom in, then see different areas of the graph using the scroll bars or your mouse, and click to zoom out.

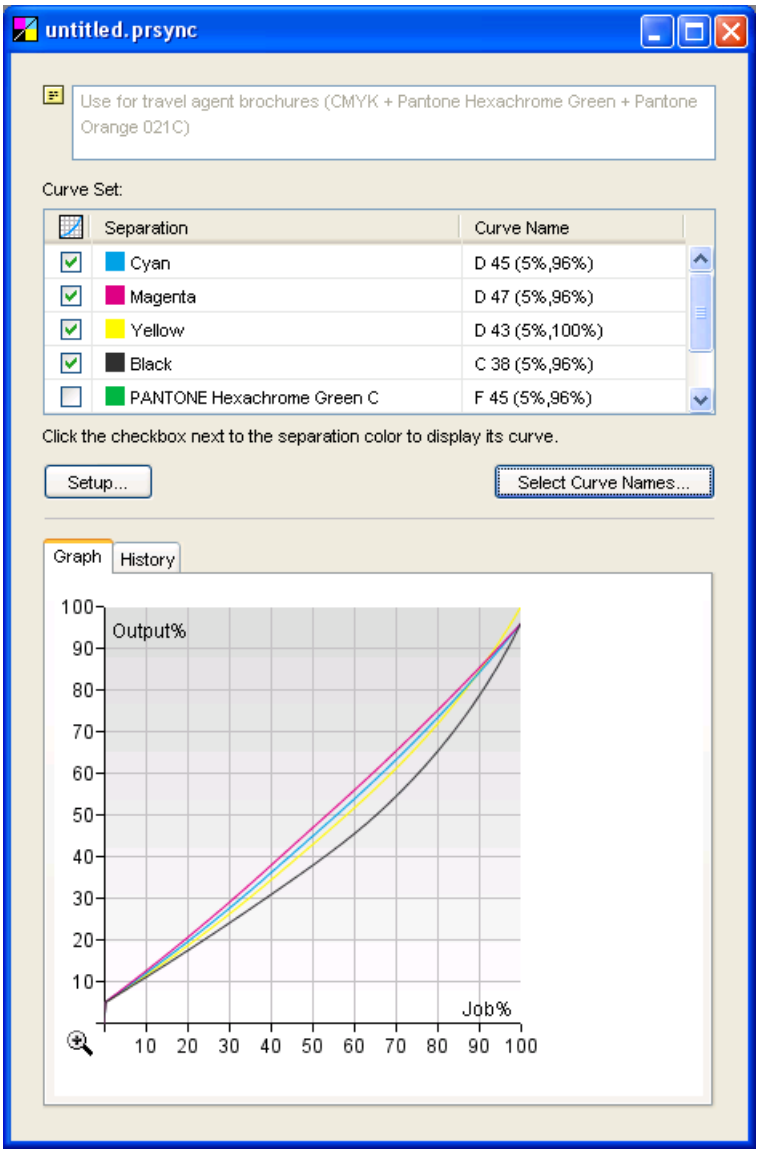
You can click a particular point of a curve to see its coordinates.



c) Click **OK** when you are done.

You can now see the curves you have picked in the curve set dialog.

You can also view them on the graph, and zoom in and out.



9. Save your curve set:

a) Go to **File** > **Save** or use **Ctrl+S**.

b) Give your curve set a name and click **OK**.

6.2. Creating a Curve Set from Measurements

To create a **curve set with measurements**, you need to measure a few press runs and compare them to target values.

You can either:

- Start from a **standard** curve set (delivered with Curve Pilot), if you want to compensate your press output to match a target curve from a specification (ISO, GRACol, SWOP...).
- Start from an **existing curve set**, if you have already created a PressSync curve set that you want to use as a basis for your new curve set. Do this for example if you have a good curve set for one of your presses, and you want to make a similar one for a second press.

In both cases, you can use the predefined/existing setup and only take measurements from a few press runs, or modify the setup to fit your needs before measuring your output.

1. Go to **File** > **New** then select **PressSync Curve Set (.prsync)**.

   In PressSync Pilot, you can also click the **New...** button at the bottom of the **PressSync Curve Set Explorer** panel.
2. In the **Create New Curve Set** dialog:
   a) choose either **A standard** or **An existing curve set**,
   b) select the curve set you want to start from in the list,

   Important:

   Make sure you pick a curve set with the type of target you want, as you won't be able to change it afterwards.

   When starting from a standard, the standard name indicates the type of target you will have to measure:

   - standard names starting with **3ck** (for example "3ck_GRAColG7.prsync") work with a **3 colors + K** target (you will have to measure patches for two colors: a **Cyan-Magenta-Yellow composite** and **Black**),
   - standard names starting with **cmyk** (for example "cmyk_ISO_Newsprint.prsync") work with a **CMYK** target (you will have to measure patches for four colors: **Cyan**, **Magenta**, **Yellow** and **Black**).

   Existing curve sets have the names you have given them. We recommend you include a reference to the target in the curve set names. If you haven't, you can open the existing curve set to check what kind of target it uses (in the *Process Colors Setup* on page 24) before creating a new curve set from it.

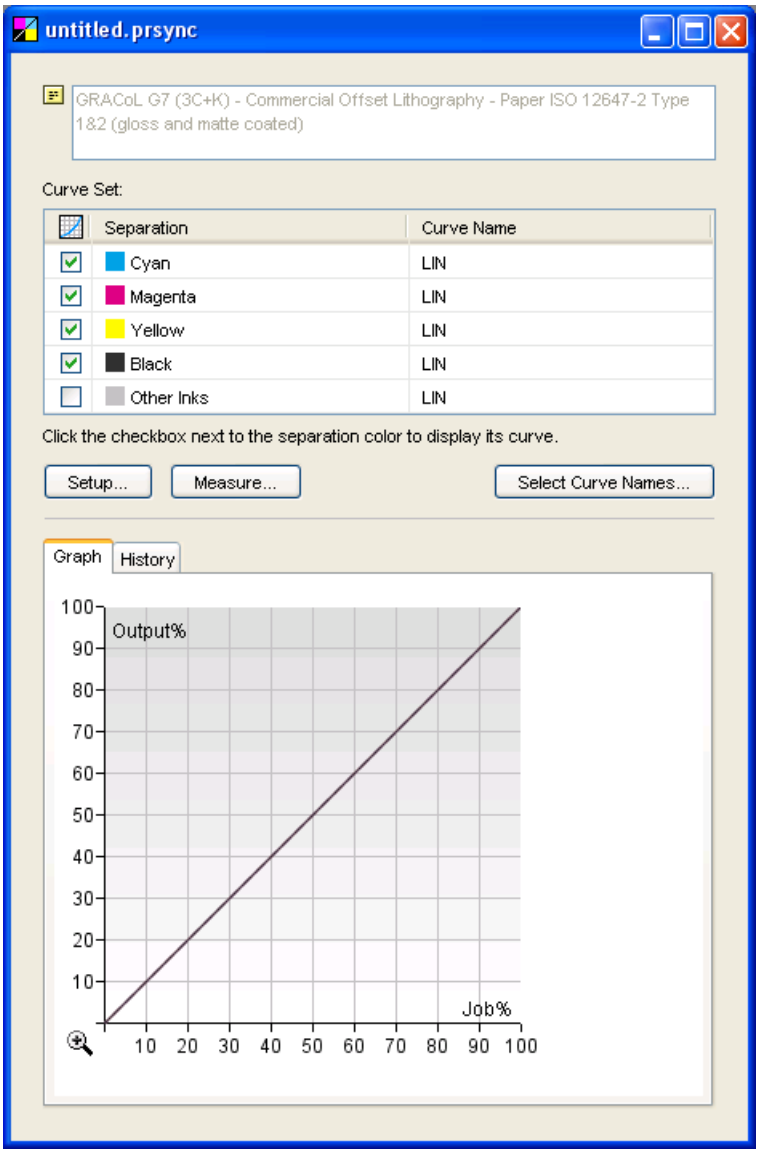
   Do not start from an "empty" existing curve set when creating a curve set with measurements.

   c) click **OK**.

   This opens an untitled.prsync curve set in a dialog, with the inks and setup of the standard/existing curve set you selected.

   If you started from a standard curve set, you will see the four process inks (**Cyan**, **Magenta**, **Yellow** and **Black**), and a channel called **Other Inks** (whose compensation will be used for any job ink that isn't defined in the curve set).

   At the start, each **Curve Name** shows **LIN** (linear), which means that no compensation curve is applied on those inks.



3. *Customize your setup*.
4. Take press run measurements to find the best PressSync Curve to use for each ink (see *Taking Press Runs Measurements* on page 31).

   We recommend print and measure a Universal Target then production jobs with a control strip.
5. Save your curve set:
   a) Go to **File** > **Save** or use **Ctrl+S**.
   b) Give your curve set a name and click **OK**.

6.2.1. Customizing Your Setup

1. Click the **Setup...** button in the curve set dialog to open the **Setup** dialog.
2. Use the **Setup** dialog to:

- define the target values that your measurements will be compared to (for **Process Colors**, **Gray Balance** and **Spot Colors**),
- add or remove spot colors to be compensated by your curve set.

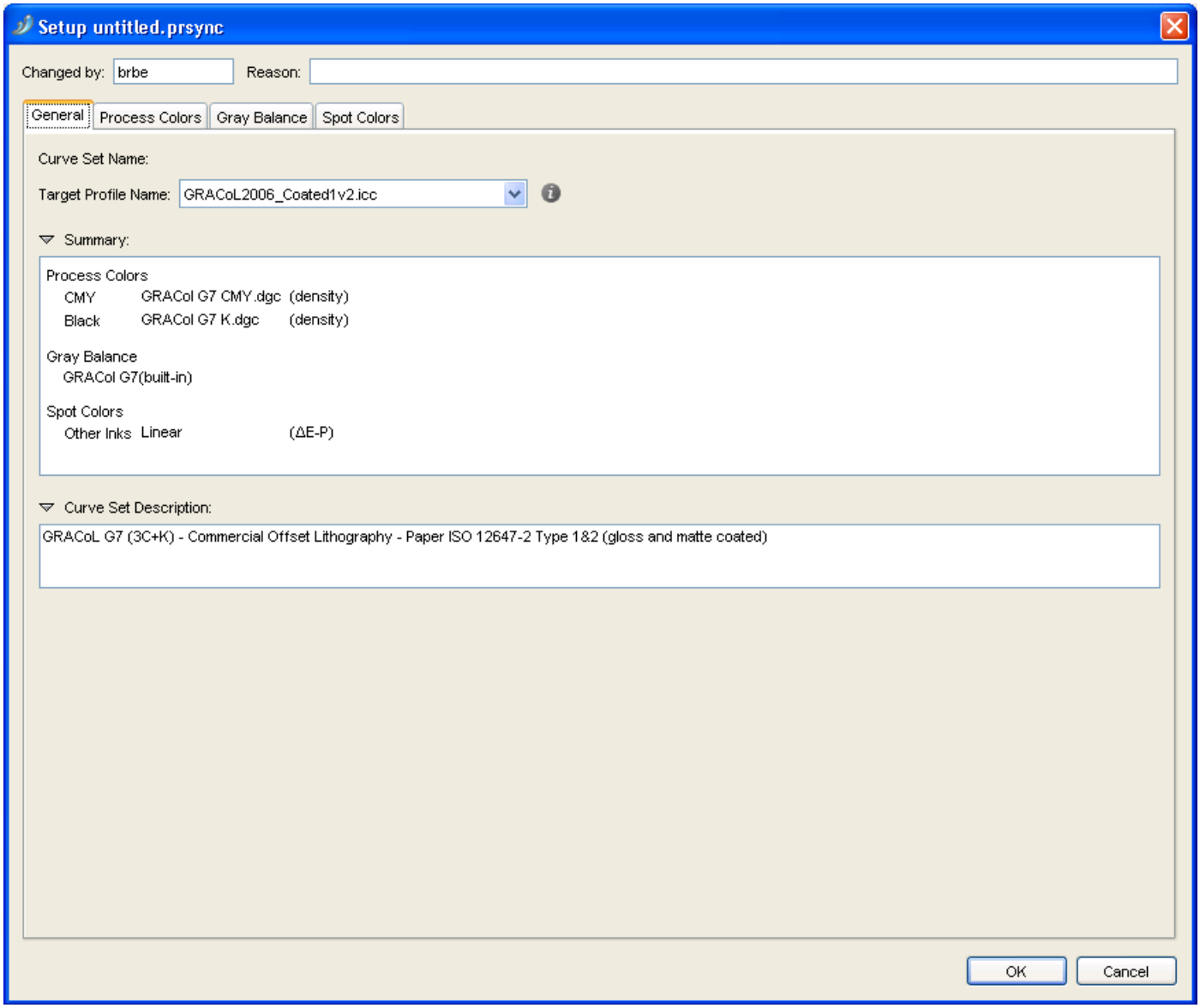
For details, see:

- *General Setup* on page 22,
- *Process Colors Setup* on page 24,
- *Gray Balance Setup* on page 26,
- *Spot Colors Setup* on page 29.

3. Click **OK** when you are done with the setup.

General Setup

In the curve set's **Setup** dialog:



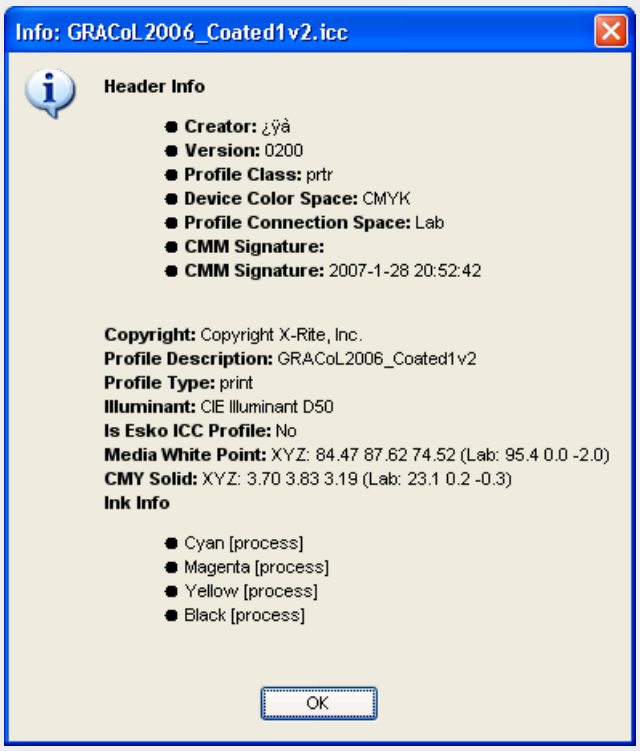
1. Enter your name in **Changed by** and a **Reason** for the setup change.

   You will enter the **Curve Set Name** when saving the curve set.
2. If you want to calculate the reference values (to compare your measurements to) from an icc profile, select it in **Target Profile Name**.

   If you started from a standard curve set, the corresponding icc profile is selected by default (for example, **GRACol2006_Coated1v2.icc** if you started from **3ck_GRAColG7.prsync**).

   You can also select **<none>**, if you want to define the reference values manually.

Note: You can click on to see information about the selected target profile.



You will see a **Summary** of the target curves selected for process colors, gray balance and spot colors.

3. If desired, enter/change the **Curve Set Description**.

Note: This will be shown in the field of the curve set dialog (you can only edit the contents of this field from the **Setup** dialog).

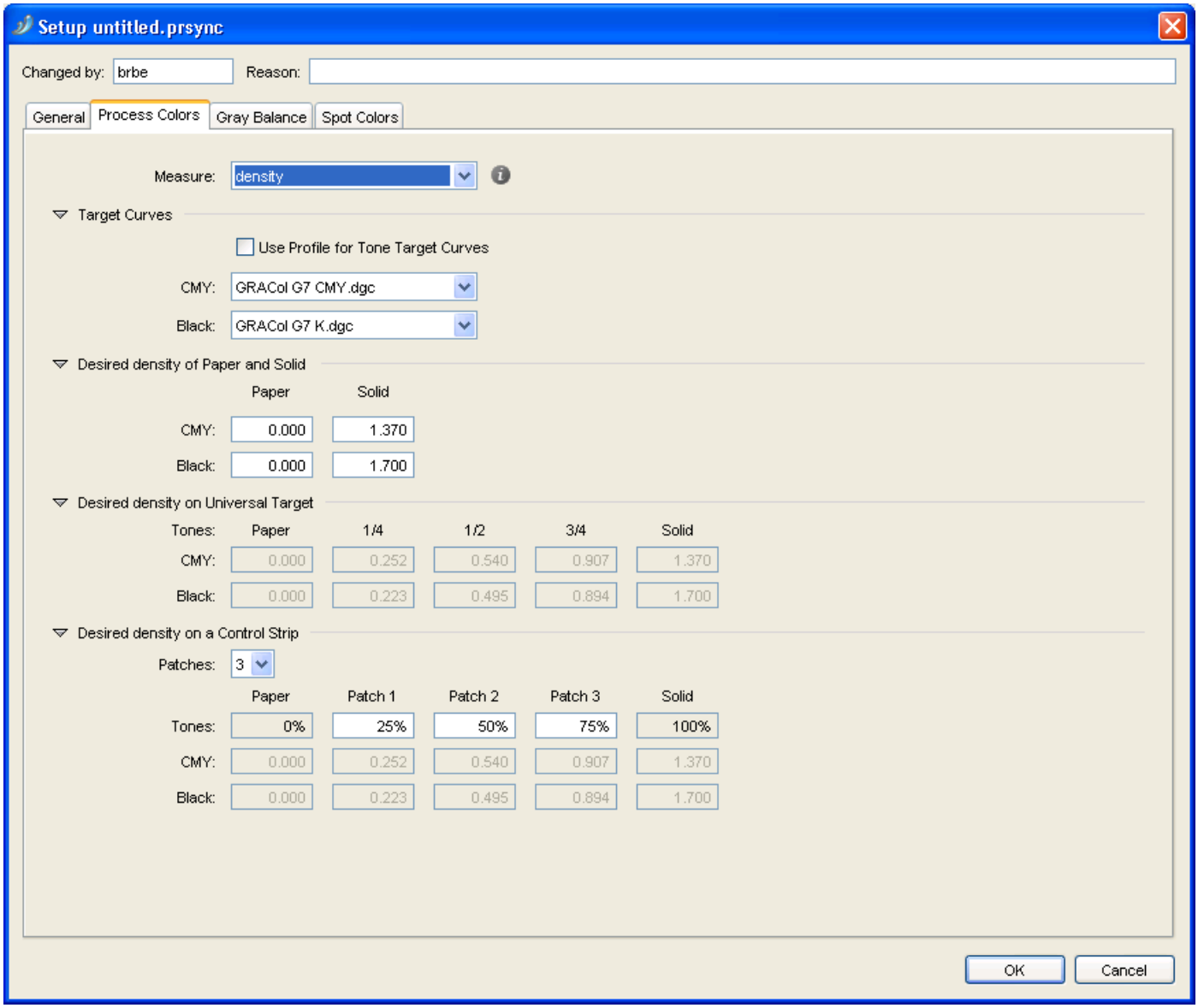
Process Colors Setup

In the **Process Colors** tab, you need to choose how to measure your process colors on print (on a universal target or a control strip on the side of a job), and what target values to compare your measurements to.

Note:

Depending on the curve set you started from (see *Creating a Curve Set from Measurements* on page 19), you will need to choose either:

- target references / values for **CMY** and for **Black**,
- target references / values for **Cyan**, **Magenta**, **Yellow** and **Black**.



1. Choose the unit of **Measure** to use for your press runs measurements. You can choose:
   - **density**, to measure your patches with a "Status E" (for Europe) or "Status T" (for the US) densitometer,
   - **%DotArea**, to measure how much of the area is taken by the dot (in percentage),
   - **DeltaE-P**, to measure the color difference between patch and paper (this is illuminant dependant and based on CIE-1976),
   - **%DeltaE-SP**, to measure the color difference between patch and paper, proportionally to the color difference between solid and paper (this is illuminant dependant and based on CIE-1976).

   Tip: Click ⓘ to see more information about the units.

   You will need a densitometer if you choose **density** or **%DotArea**, and a spectrophotometer if you choose **DeltaE-P** or **%DeltaE-SP**.

This unit will be used to define the desired values for **Paper and Solid**, **Universal Target** and **Control Strip** below.

2. In **Target Curves**, choose how to calculate the target values for process colors. You can either:
   - Select **Use Profile for Tone Target Curves** if you want to use data from the **Target Profile** you selected in the *General tab* to calculate target values.

     When you select this, the **CMY** and **Black** (or **Cyan**, **Magenta**, **Yellow** and **Black**) lists will be greyed out.
   - Select **Linear** (in the lists) if you want linear print values (without dot gain) as target values.
   - Select **User Defined** if you want to enter the target values manually instead of getting them from a curve or a profile.
   - Select any **reference dgc curve** present in the DGC or Curves database to calculate the target values.

   Tip: If you want to start from predefined values but refine them for your needs, select the predefined values first (**Target Profile**, **Linear** or a **reference dgc curve**) then select **User Defined**. This will keep the predefined values but you will be able to edit them.
3. Check the desired values for **Paper and Solid**, and adjust them as necessary.

   For example, if you chose to work with densities, adjust the **density** of paper and solid as necessary.
4. For the **Universal Target**:
   - If you have chosen **User Defined** in your **Target Curves**, enter the desired values for **1/4**, **1/2** and **3/4** tones.

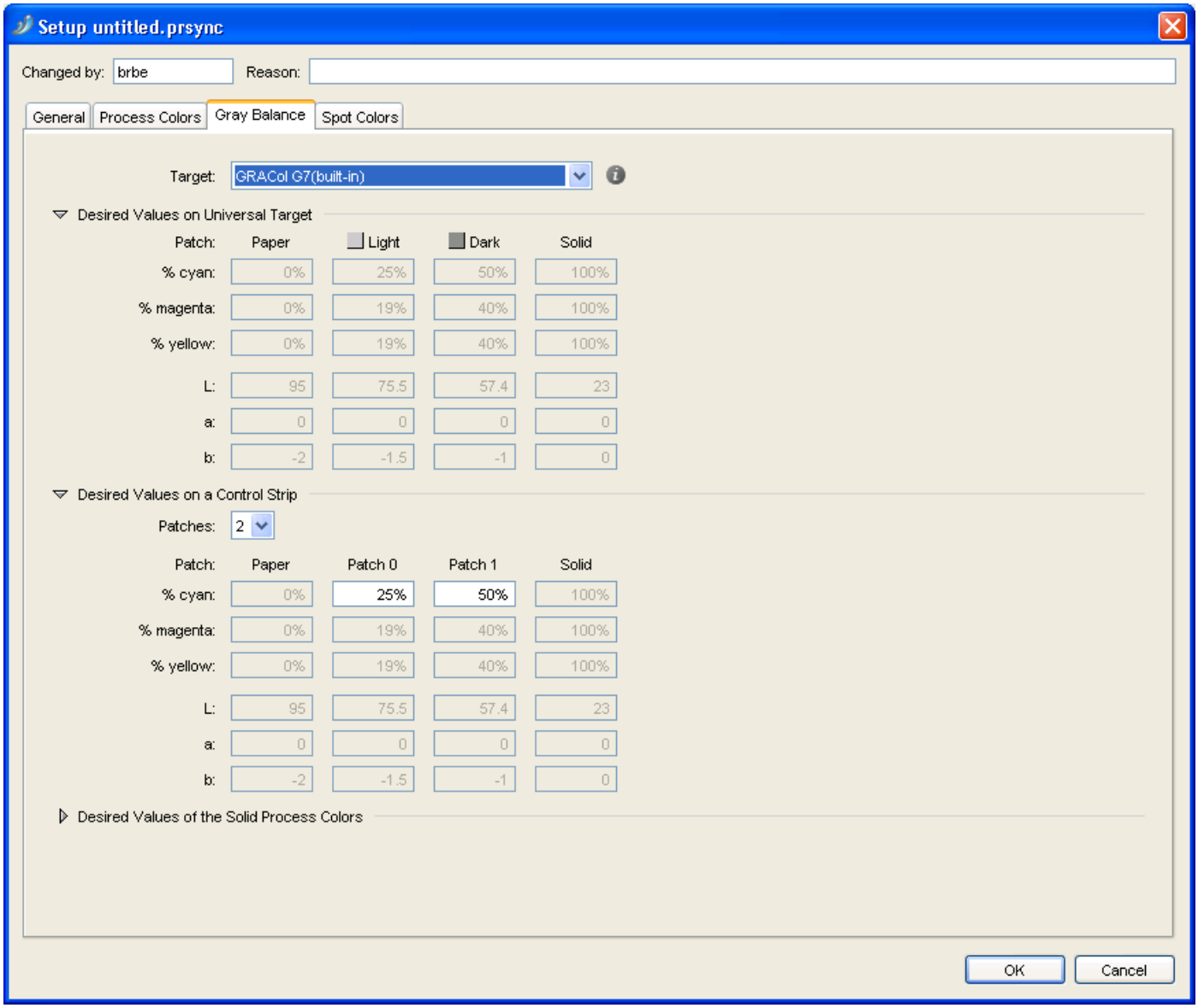
     Note: The **Paper** and **Solid** values are fixed. They are either **0%** and **100%** (if you are using **%DotArea** or **%DeltaE-SP** as unit) or the values you entered for **Paper and Solid** (if you are using **density** or **DeltaE-P** as unit).
   - Otherwise, the values are calculated automatically based on what you chose in **Target Curves**.
5. For the **Control Strip**:
   - If you have chosen **User Defined** in your **Target Curves**, enter the number of **Patches** you want to measure, their percentages and their desired values.

     Note: The values of the **0%** and the **100%** patch are fixed. They are either **0%** and **100%** (if you are using **%DotArea** or **%DeltaE-SP** as unit) or the values you entered for **Paper and Solid** (if you are using **density** or **DeltaE-P** as unit).
   - Otherwise, the values are calculated automatically based on what you chose in **Target Curves**, but you can still select the number of **Patches** and their percentages.

Gray Balance Setup

Checking **Gray Balance** is printing different intensities of gray using Cyan, Magenta and Yellow inks, and measuring Lab values on the print to check how neutral the gray is.

In the **Gray Balance** tab, you need to choose what target values to compare your gray prints measurements to (for prints on a universal target or a control strip on the side of a job).



1. In **Target**, choose how to calculate the target values for gray balance. You can either:
   - Select **From Target Profile** if you want to use data from the **Target Profile** you selected in the *General tab* to calculate target values.
   - Select **User Defined** if you want to enter the target values manually instead of getting them from a curve or a specification.
   - Select **Neutral Paper** if you want to calculate the target values relatively to the paper and solid (using the paper's Lab values as 0% gray, the solid's as 100%, and calculating the values in between).
   - Select the built-in gray target of the specification (for example **GRAColG7 (built-in)** if you started from **3ck_GRAColG7.prsync**) to calculate the target values.

You can click on to see information about the selected target.

Tip: If you want to start from predefined values but refine them for your needs, select the predefined values first (**Target Profile**, **Neutral Paper** or the built-in target of the specification) then select **User Defined**. This will keep the predefined values but you will be able to edit them.

2. The **Universal Target** will contain a **Light** and a **Dark** gray square, composed of **cyan**, **magenta** and **yellow**, with the **cyan** values fixed at respectively **25%** and **50%**.
   - If you have chosen **User Defined** as **Target**:
     - enter the desired **magenta** and **yellow** values for the **Light** and the **Dark** gray squares,
     - enter the desired **Lab** values of the cyan-magenta-yellow combination for the **Light** and the **Dark** gray squares,
     - enter the desired **Lab** values of the **Paper** and the **Solid** patch (100% cyan, 100% magenta and 100% yellow).
   - If you have chosen **Neutral Paper** as **Target**, enter the desired **Lab** values of the **Paper** and the **Solid** patch.

     The target values for the **Light** and **Dark** gray squares are calculated automatically.
   - If you selected either the built-in gray target of the specification or the target profile as **Target**, all the target values are calculated automatically.
3. The **Control Strip** on the side of a production job will contain patches of gray composed of cyan, magenta and yellow.
   - If you have chosen **User Defined** as **Target**:
     - enter the number of **Patches** you want to measure,
     - enter the percentages of **cyan**, **magenta** and **yellow** to print for each of those patches,
     - enter the desired **Lab** values of your patches, the **Paper** and the **Solid** patch (100% cyan, 100% magenta and 100% yellow).
   - If you have chosen **Neutral Paper** as **Target**:
     - enter the number of **Patches** you want to measure,
     - enter the percentage of **cyan** to print for each patch (the percentages of **magenta** and **yellow** are calculated automatically),
     - enter the desired **Lab** values of the **Paper** and the **Solid** patch (100% cyan, 100% magenta and 100% yellow).
   - If you selected either the built-in gray target of the specification or the target profile as **Target**, enter the number of **Patches** you want to measure and the percentage of **cyan** to print for each patch.

     All the other values are calculated automatically.

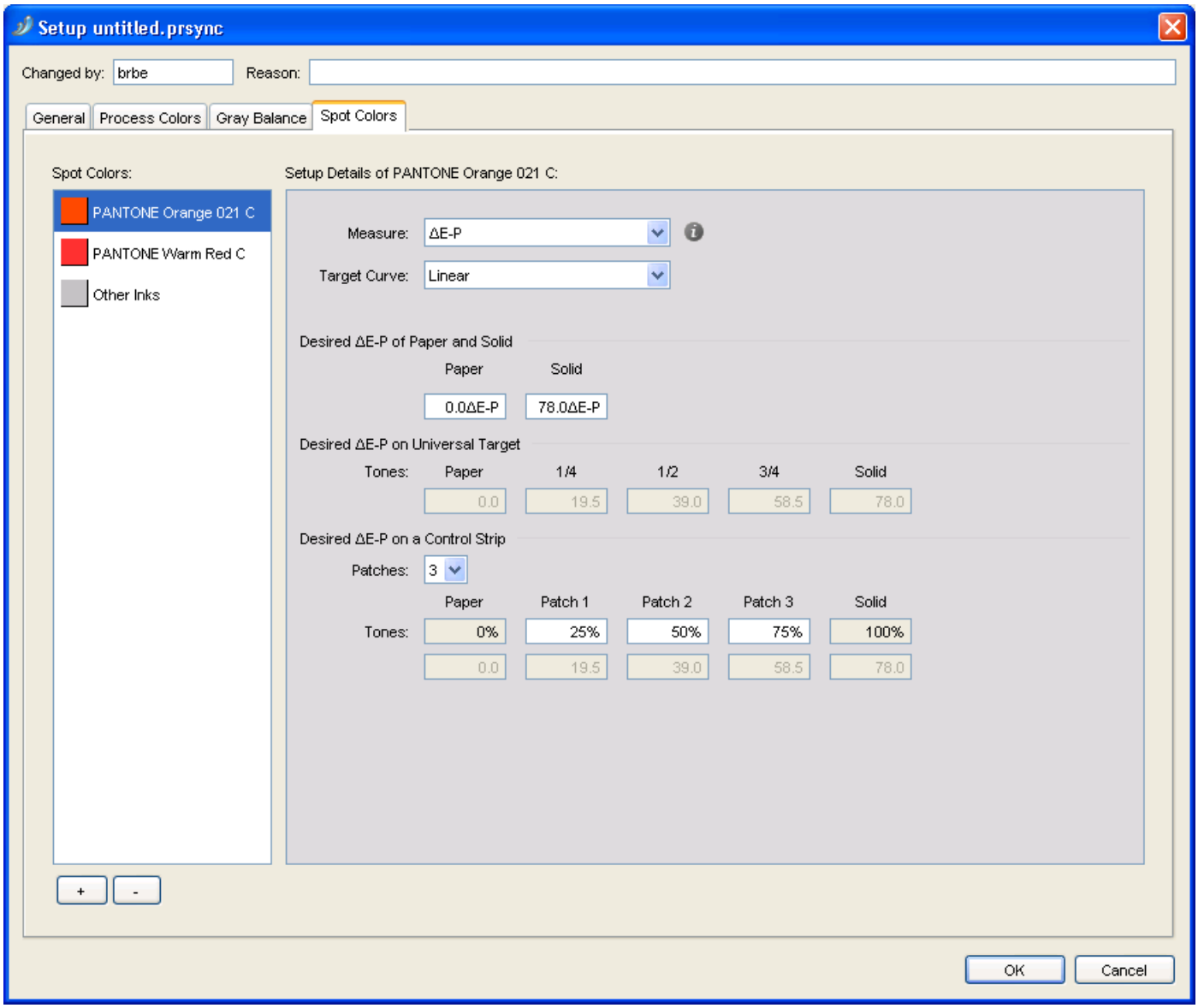
4. If you have chosen **User Defined** or **Neutral Paper**, you can also set desired **Lab** values for the **Solid Process Colors** if desired (you can get those from your ink vendor).

   Otherwise those values are defined automatically.

Spot Colors Setup

In the **Spot Colors** tab, you can add or remove spot colors. For each spot color you add, you can choose how to measure it on print (on a universal target or a control strip on the side of a job), and what target values to compare your measurements to.

You can also define what to do when encountering job spot colors that aren't defined in the setup.



1. To add a spot color:
   a) click **+** at the bottom of the **Spot Colors** list,

b) in the **Choose Inks** dialog, choose the **Ink Book**,

c) choose or enter the **Ink Name** and click **OK**.

When entering an ink name manually, you can use the full ink name or the short ink name. Make sure you use either the exact spelling from your CMS database or the official short name.

Note: You can add any ink that is defined in Esko's CMS database, but you cannot remove the default channels (**Cyan**, **Magenta**, **Yellow**, **Black** and **Other Inks**).

Tip:

If you are working on a curve set from/for a different system (with a different CMS), you can add inks that are not registered in your CMS database:

1. Select **<unregistered ink book>** in the **Ink Book** field.
2. Type the name of your ink book.
3. The **Ink Name** field will show **<unregistered ink>**. Type the name of your ink.
4. You will see a warning. Click **OK**.

When working with unregistered inks, you will see a "U" icon (U).

2. Select the spot color you added to define its setup.
3. Choose the unit of **Measure** to use for your press runs measurements. You can choose:
   - **density**, to measure your patches with a "Status E" (for Europe) or "Status T" (for the US) densitometer,
   - **%DotArea**, to measure how much of the area is taken by the dot (in percentage),
   - **DeltaE-P**, to measure the color difference between patch and paper (this is illuminant dependant and based on CIE-1976),
   - **%DeltaE-SP**, to measure the color difference between patch and paper, proportionally to the color difference between solid and paper (this is illuminant dependant and based on CIE-1976).

   Tip: Click ⓘ to see more information about the units.

   You will need a densitometer if you choose **density** or **%DotArea**, and a spectrophotometer if you choose **DeltaE-P** or **%DeltaE-SP**.

   This unit will be used to define the desired values for **Paper and Solid**, **Universal Target** and **Control Strip** below.
4. Choose how to calculate the target values for this spot color. You can either:
   - Select **Linear** if you want linear print values (without dot gain) as target values.
   - Select **User Defined** if you want to enter the target values manually instead of getting them from a curve.
   - Select any **reference dgc curve** present in the DGC or Curves database to calculate the target values (only when measuring **density** or **%DotArea**).

   Tip: If you want to start from predefined values but refine them for your needs, select the predefined values first (**Linear**, or a **reference dgc curve**) then select **User Defined**. This will keep the predefined values but you will be able to edit them.

5. Check the desired values for **Paper and Solid**, and adjust them as necessary.

   For example, if you chose to work with densities, adjust the **density** of paper and solid as necessary.

6. For the **Universal Target**:

   - If you have chosen **User Defined**, enter the desired values for **1/4**, **1/2** and **3/4** tones.

     Note: The **Paper** and **Solid** values are fixed. They are either **0%** and **100%** (if you are using **%DotArea** or **%DeltaE-SP** as unit) or the values you entered for **Paper and Solid** (if you are using **density** or **DeltaE-P** as unit).

   - Otherwise, the values are calculated automatically based on what you chose (**Linear** printing or a **reference dgc curve**).

7. For the **Control Strip**:

   - If you have chosen **User Defined**, enter the number of **Patches** you want to measure, their percentages and their desired values.

     Note: The values of the **0%** and the **100%** patch are fixed. They are either **0%** and **100%** (if you are using **%DotArea** or **%DeltaE-SP** as unit) or the values you entered for **Paper and Solid** (if you are using **density** or **DeltaE-P** as unit).

   - Otherwise, the values are calculated automatically based on what you chose, but you can still select the number of **Patches** and their percentages.

6.2.2. Taking Press Runs Measurements

We recommend you first print and measure a Universal Target to find the initial curves, then refine those curves by printing production jobs and measuring their control strips.

Measuring a Universal Target

The Universal Target is a test form designed by Esko for setting up dot gain compensation curves for your press. It is typically used when you have no idea about what PressSync curves to use.

When measuring a Universal Target, you will look for **where the target values (defined in the setup) are in the vignettes**. This will be used to calculate PressSync curves for each ink.

For example, if you find the target value for 50% Black at 40%, Curve Pilot will know that the Black curve needs to compensate a 10% dot gain in the midtones.

1. Print a Universal Target without any dot gain compensation.

Note:

If you have a good starting value, you can create a preliminary curve set and use it to RIP and print the universal target.

For example, if you usually need to drop your midtones by 10%, you can use a curve set containing an E40 curve for each ink. Concentric Screening users usually start from C45 curves.

See *Using PressSync Curves in Nexus* on page 47 or *Using a PressSync Curve Set in FlexRip* on page 49 for details.

2. Click the **Measure...** button in the curve set dialog to open the **Measure Curve Set** dialog.
3. Select **Universal Target** and click **OK**.

   This opens the **Measure Universal Target** dialog.
4. Enter your name in **Changed by** and a **Reason** for the setup change.
5. In most cases, you don't need to set anything in the **Universal Target** tab.

   However, if you have printed the Universal Target with a preliminary curve set (see step 1), you should:

   - select **The Universal Target is printed with different PressSync Curves**,
   - define the PressSync Curve used for each ink: choose the letter, the number and enter a minimum and maximum value if necessary.
6. Go to the **Process Colors** tab and *measure the process colors vignettes*.
7. Go to the **Gray Balance** tab and *measure the gray balance*.
8. Go to the **Spot Colors** tab and *measure the spot colors vignettes*.
9. Click **Results...** to see the best PressSync Curves to compensate your measurements (see *Resulting Curves* on page 34).
10. Click **Save...** and choose to:
    - **Save curves** if you want to save the measurements and the curves, and use those curves in your PressSync curve set.
    - **Save measurements only** if you only want to save the measurements but not the curves.

Note: Keep the PressSync curve set dialog open as you will now be *measuring a control strip*.

Measure Process Colors

For process colors, you will be measuring either:

- the Cyan, Magenta, Yellow and Black vignettes if you started from a curve set working with a **CMYK** target,
- the CMY and the Black vignette if you started from a curve set working with a **3 colors + K** target.

See *Creating a Curve Set from Measurements* on page 19 for more information.

Attention:

Make sure your measuring device is configured to measure in the unit defined in the *setup* (**density**, **%DotArea**, **ΔE-P** or **%ΔE-SP**).

You can see the unit to use in the tab itself.

In the **Process Colors** tab:

1. Measure the solid patch of the vignette, and enter the value found in the **Measured Solid ...** field.

   Press **Tab** or **Enter** to enable the fields below.
2. Search for the 1/4 tone target value (that you defined in the *setup*).

   Tip: Start by measuring the 25% patch on the vignette, and move forwards or backwards until you find the value you are looking for.

   Enter that value in the leftmost field (**<unit> of <value> found at:** where **<unit>** is the measuring unit you chose in the setup, and **<value>** is the target value you have set for the 1/4 tone).
3. Search for the 1/2 and 3/4 tones target values in the same way.

   Enter those values in the middle and rightmost fields.
4. Repeat this for each vignette (either Cyan, Magenta, Yellow and Black, or CMY and Black).

Measure Gray Balance

Attention: For gray balance, you will need a spectrophotometer, to measure Lab values.

In the **Gray Balance** tab:

1. Measure the Lab values of the substrate and enter them in the **L**, **a** and **b** fields.

   Press **Tab** or **Enter** to enable the fields below.
2. In the **Dark Square**, find the Lab target value defined in the *setup*.

   Enter the coordinates of the position where you found that value (the X coordinate is a letter, the Y coordinate a number).
3. In the **Light Square**, find the Lab target value defined in the *setup*.

   Enter the coordinates of the position where you found that value.

Measure Spot Colors

Although the Universal Target is designed to be used for process colors, you can also use it to print and measure spot colors.

To do this, make a copy of the Universal Target PDF file, and create a version that also contains vignettes for the required spot colors (copy one of the process colors' vignettes and change its ink settings).

Note: The spot colors you use must be defined in the curve set setup.

Attention:

Make sure your measuring device is configured to measure in the unit defined in the *setup* (**density**, **%DotArea**, **DeltaE-P** or **%DeltaE-SP**).

You can see the unit to use in the tab itself (for spot colors, it is usually a colorimetric unit: **DeltaE-P** or **%DeltaE-SP**).

In the **Spot Colors** tab:

1. Measure the solid patch of the first spot color vignette, and enter the value found in the **Measured Solid ...** field.

   Press **Tab** or **Enter** to enable the fields below.
2. Search for the 1/4 tone target value (that you defined in the *setup*).

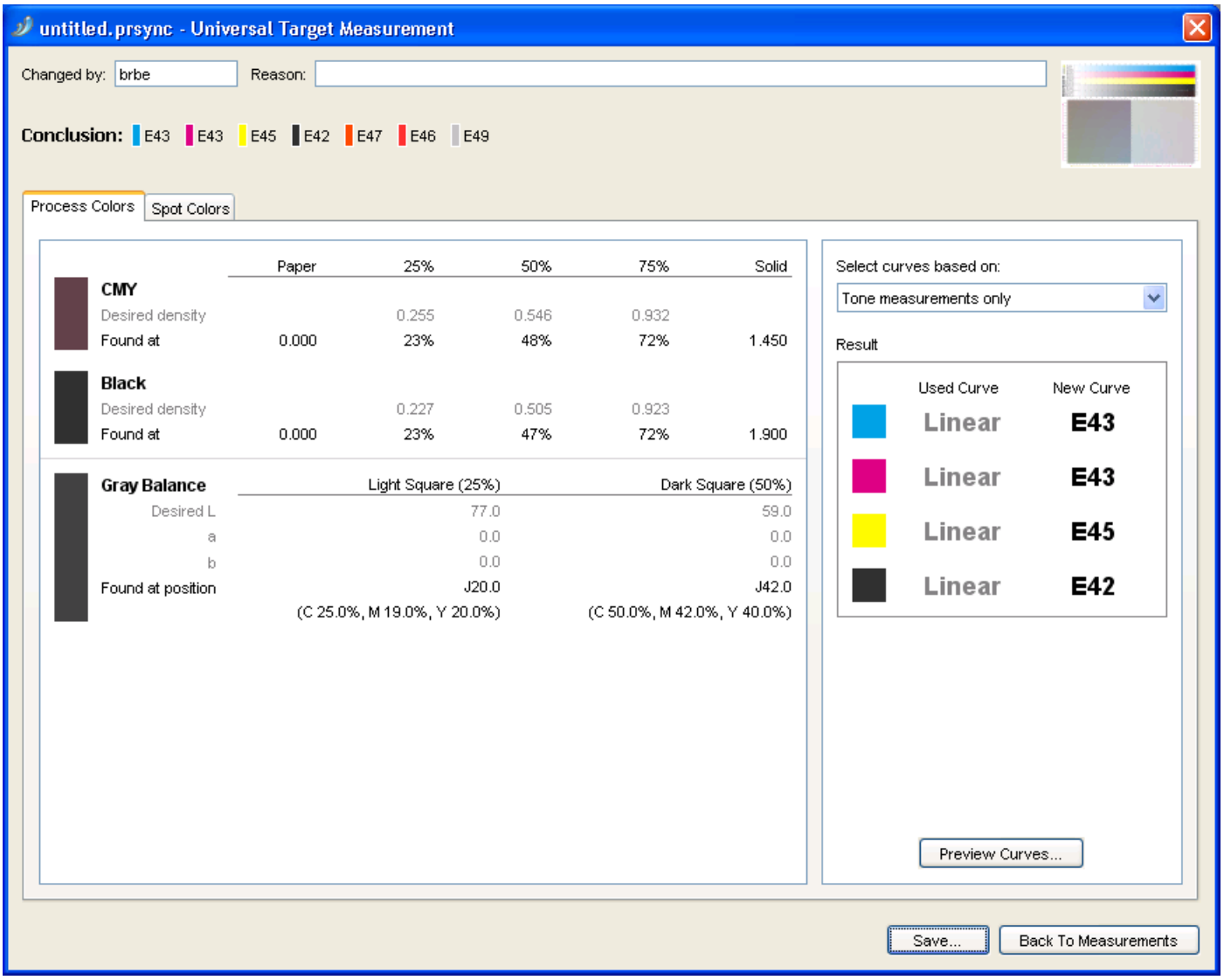
   Tip: Start by measuring the 25% patch on the vignette, and move forwards or backwards until you find the value you are looking for.

   Enter that value in the leftmost field (**<unit> of <value> found at:** where **<unit>** is the measuring unit you chose in the setup, and **<value>** is the target value you have set for the 1/4 tone).
3. Search for the 1/2 and 3/4 tones target values in the same way.

   Enter those values in the middle and rightmost fields.
4. Repeat this for each spot color vignette, including **Other Inks**.

Resulting Curves

1. When you have entered all your measurements, click **Results...** to see the best PressSync curves to use.



Note:

You can also do this after entering the measurements for one or more inks, to see curve(s) for the ink(s). For example, enter the Cyan measurements and click **Results...** to see the Cyan curve.

You can then click **Back To Measurements** to go back and enter the rest of your measurements.

You can see all the curves at the top of the dialog (**Conclusion**).

- The **Process Colors** tab shows the measurements you entered for the process colors and the Gray Balance, and the resulting PressSync curve for each process color (in black in the **Result** area at right).
- The **Spot Colors** tab shows the measurements you entered for the spot colors, and the resulting PressSync curve for each spot color.

Note:

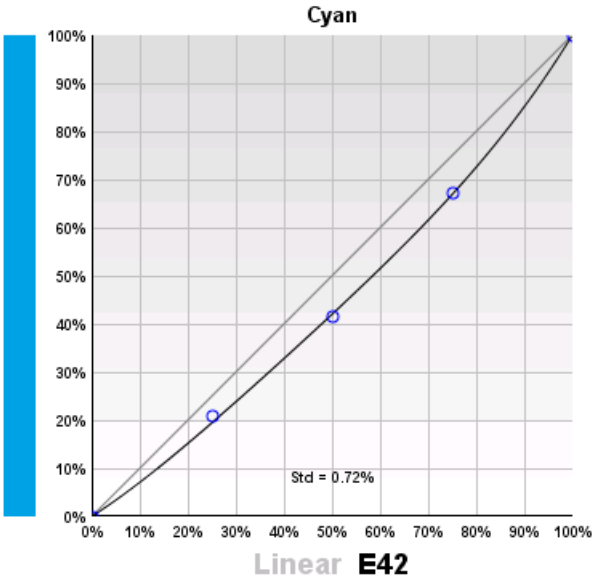
If the PressSync curve found for an ink doesn't fit the compensation points calculated from the measurements properly, it will be shown in red.

If no PressSync curve could be calculated because there are no or invalid measurements, you will see **--** instead of a curve name.

In that case, you can click the **Back To Measurements** button to verify your measurements.

If your measurements are correct (your press just prints that way), you should use Dot Gain Compensation instead of PressSync curves. See the IntelliCurve manual.

2. In the **Process Colors** tab, you can:
   a) Choose if you want to compensate mostly colors or mostly neutrals: in **Select curves based on**, choose either:
      - **Tone measurements only** if you want to pick curves that compensate mostly process colors, and not gray balance,
      - **Both Tone and Gray Balance measurements** if you want to pick average curves that compensate everything (process colors and gray balance),
      - **Mainly Gray Balance measurements** if you want to pick curves that compensate mostly gray balance, and not process colors.
   b) Click **Preview Curves...** to display each curve in a graph.



This shows:

- the original curve in gray,
- the new curve in black,
- the compensation points calculated from process (or spot) color measurements in blue,

- the compensation points calculated from gray balance measurements in gray,
- the standard deviation (**Std**), that shows how far the curve is from the compensation points (this should be under 2% for the curve to fit properly).

Depending on what you chose for gray balance importance, the curve will be closer to the process color compensation points or the gray balance compensation points.

3. In the **Spot Colors** tab, you can click **Preview Curves...** to display each curve in a graph.
4. Click **Save...** and choose to:
   - **Save curves** if you want to save the measurements and the curves, and use those curves in your PressSync curve set.

     Note: If the **Result** area showed **--** instead of a curve name, that ink's previous curve will not be changed.
   - **Save measurements only** if you only want to save the measurements but not the curves.

     This will save the measurement as incomplete, but you can edit it again or save the curves later (see *Continuing an Incomplete Measurement* on page 42).

Measuring a Control Strip of a Production Sheet

We recommend you print a production job using the *PressSync curves you found after measuring the Universal Target*. This job should have a **control strip**, that you will measure to refine your PressSync curves.

Note:

You can use any type of control strip that contains several patches of each ink (for example 25%, 50%, 75% and 100%).

Make sure the patches of your control strip and what you have defined in the setup match. If you do not have a control strip matching your setup, change the setup (see *Process Colors Setup* on page 24, *Gray Balance Setup* on page 26 and *Spot Colors Setup* on page 29).

1. Use FlexRip or Nexus to RIP and print a production job (containing a control strip) using the PressSync curves you found after measuring the Universal Target.

   See *Using PressSync Curves in Nexus* on page 47 or *Using a PressSync Curve Set in FlexRip* on page 49 for details.
2. Back in your Curve Pilot curve set, click the **Measure...** button again.
3. In the **Measure Curve Set** dialog that opens, select **A control strip of a production sheet** and click **OK**.

   This opens the **Measure Production Sheet** dialog.
4. Enter your name in **Changed by** and a **Reason** for the setup change.
5. In most cases, you don't need to set anything in the **Production Sheet** tab.

   However, if for some reason you have printed the Production Sheet with a different curve set than the one you found from the Universal target measurements, you should:
   - select **The production sheet is printed with different PressSync Curves**,

- define the PressSync Curve used for each ink: choose the letter, the number and enter a minimum and maximum value if necessary.

6. Go to the **Process Colors** tab and *measure the process colors vignettes*.
7. Go to the **Gray Balance** tab and *measure the gray balance*.
8. Go to the **Spot Colors** tab and *measure the spot colors vignettes*.
9. Click **Results...** to see the best PressSync Curves to compensate your measurements (see *Resulting Curves* on page 39).
10. Click **Save...** and choose to:

- **Save curves** if you want to save the measurements and the curves, and use those curves in your PressSync curve set.
- **Save measurements only** if you only want to save the measurements but not the curves.

Measure Process Colors

For process colors, you will be measuring either:

- the Cyan, Magenta, Yellow and Black vignettes if you started from a curve set working with a **CMYK** target,
- the CMY and the Black vignette if you started from a curve set working with a **3 colors + K** target.

See *Creating a Curve Set from Measurements* on page 19 for more information.

Attention:

Make sure your measuring device is configured to measure in the unit defined in the *setup* (**density**, **%DotArea**, **ΔE-P** or **%ΔE-SP**).

You can see the unit to use in the tab itself.

In the **Process Colors** tab:

1. Depending on what you have defined in the setup:
   - Measure the 0% and 100% patches, and enter the values found in the corresponding fields.
   - Measure the solid patch, and enter the value found in the **Measured Solid ...** field.

   You can see the desired value(s) defined in the setup between brackets.

   Press **Tab** or **Enter** to enable the other fields.
2. Measure the other patches (defined in the setup) and enter the values found in the corresponding fields.

   You will see the desired values (defined in the setup) below those fields.
3. Repeat this for each vignette (either Cyan, Magenta, Yellow and Black, or CMY and Black).

Measure Gray Balance

Attention: For gray balance, you will need a spectrophotometer, to measure Lab values.

In the **Gray Balance** tab:

1. Measure the Lab values of the substrate and enter them in the **L**, **a** and **b** fields below.

   You can see the desired values (defined in the *setup*) between brackets below.
2. Measure the Lab values of the solid (100%) patch and enter them in the **L**, **a** and **b** fields under the white patch.

   Press **Tab** or **Enter** to enable the other fields.
3. Measure the other patches (defined in the setup) and enter the Lab values found in the corresponding fields.

   You will see the desired values below those fields.

Tip: The numbers in the patches indicate the CMY composition (for example: 25, 19, 19 is 25% Cyan, 19% Magenta and 19% Yellow).

Measure Spot Colors

Note: The spot colors you use must be defined in the curve set setup.

Attention:

Make sure your measuring device is configured to measure in the unit defined in the *setup* (**density**, **%DotArea**, **DeltaE-P** or **%DeltaE-SP**).

You can see the unit to use in the tab itself (for spot colors, it is usually a colorimetric unit: **DeltaE-P** or **%DeltaE-SP**).

In the **Spot Colors** tab:

1. Depending on what you have defined in the setup:
   - Measure the 0% and 100% patches, and enter the values found in the corresponding fields.
   - Measure the solid patch, and enter the value found in the **Measured Solid ...** field.

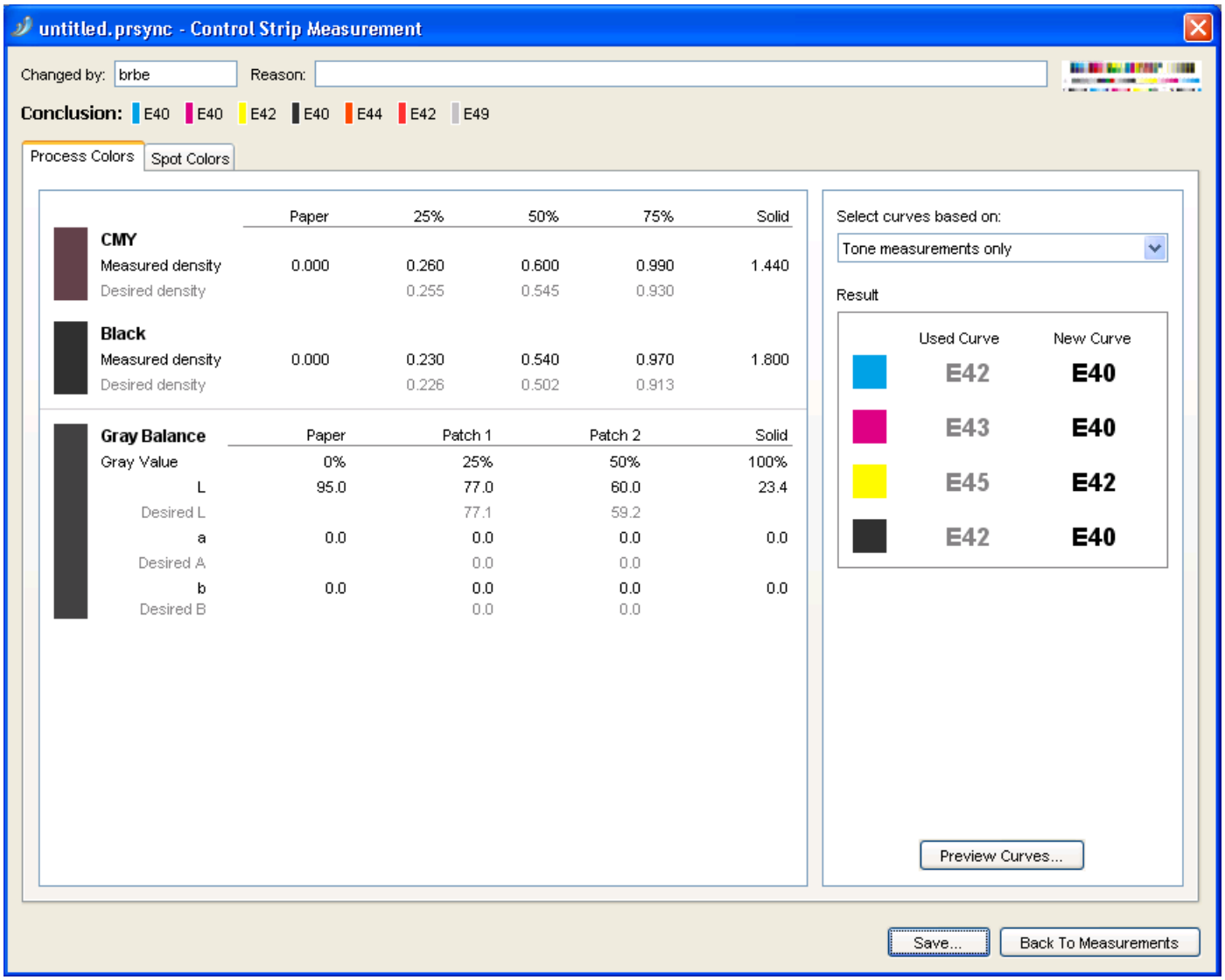
   You can see the desired value(s) defined in the setup between brackets.

   Press **Tab** or **Enter** to enable the other fields.
2. Measure the other patches (defined in the setup) and enter the values found in the corresponding fields.

   You will see the desired values (defined in the setup) below those fields.
3. Repeat this for each spot color vignette, including **Other Inks**.

Resulting Curves

1. When you have entered all your measurements, click **Results...** to see the best PressSync curves to use.



Note:

You can also do this after entering the measurements for one or more inks, to see curve(s) for the ink(s). For example, enter the Cyan measurements and click **Results...** to see the Cyan curve.

You can then click **Back To Measurements** to go back and enter the rest of your measurements.

You can see all the curves at the top of the dialog (**Conclusion**).

- The **Process Colors** tab shows the measurements you entered for the process colors and the Gray Balance, and the resulting PressSync curve for each process color (in black in the **Result** area at right).
- The **Spot Colors** tab shows the measurements you entered for the spot colors, and the resulting PressSync curve for each spot color.

Note:

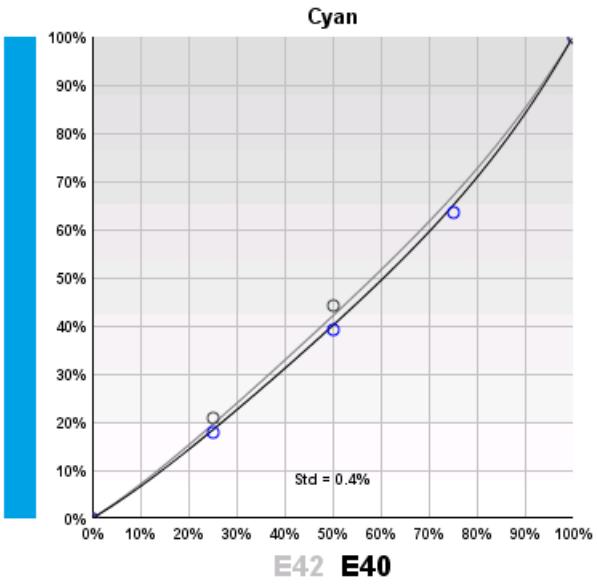
If the PressSync curve found for an ink doesn't fit the compensation points calculated from the measurements properly, it will be shown in red.

If no PressSync curve could be calculated because there are no or invalid measurements, you will see **--** instead of a curve name.

In that case, you can click the **Back To Measurements** button to verify your measurements.

If your measurements are correct (your press just prints that way), you should use Dot Gain Compensation instead of PressSync curves. See the IntelliCurve manual.

2. In the **Process Colors** tab, you can:
   a) Choose if you want to compensate mostly colors or mostly neutrals: in **Select curves based on**, choose either:
      - **Tone measurements only** if you want to pick curves that compensate mostly process colors, and not gray balance,
      - **Both Tone and Gray Balance measurements** if you want to pick average curves that compensate everything (process colors and gray balance),
      - **Mainly Gray Balance measurements** if you want to pick curves that compensate mostly gray balance, and not process colors.
   b) Click **Preview Curves...** to display each curve in a graph.



This shows:

- the original curve in gray,
- the new curve in black,
- the compensation points calculated from process (or spot) color measurements in blue,

- the compensation points calculated from gray balance measurements in gray,
- the standard deviation (**Std**), that shows how far the curve is from the compensation points (this should be under 2% for the curve to fit properly).

Depending on what you chose for gray balance importance, the curve will be closer to the process color compensation points or the gray balance compensation points.

3. In the **Spot Colors** tab, you can click **Preview Curves...** to display each curve in a graph.
4. Click **Save...** and choose to:
   - **Save curves** if you want to save the measurements and the curves, and use those curves in your PressSync curve set.

     Note: If the **Result** area showed **--** instead of a curve name, that ink's previous curve will not be changed.
   - **Save measurements only** if you only want to save the measurements but not the curves.

     This will save the measurement as incomplete, but you can edit it again or save the curves later (see *Continuing an Incomplete Measurement* on page 42).

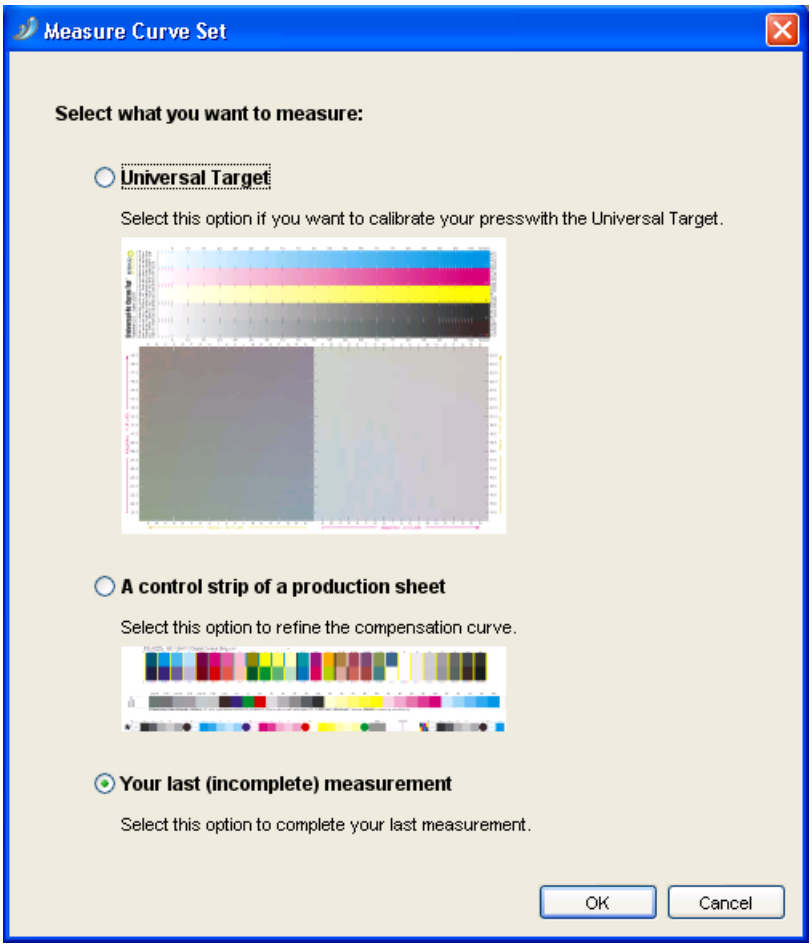
Continuing an Incomplete Measurement

When a measurement was saved with the option **Save measurements only**, the measurement is saved as incomplete (whether you filled in all the measurement fields or not). The PressSync curves resulting from that measurement are not used for the curve set.

To edit it (if needed) and save the curves, do the following:

1. Make sure the incomplete measurement is active in the *History* (you should see , not beside it).

   If it isn't, make it active (see *Reverting to a Previous History Stage* on page 46).
2. Click the **Measure...** button in the curve set dialog.
3. In the **Measure Curve Set** dialog, select **Your last (incomplete) measurement** and click **OK**.



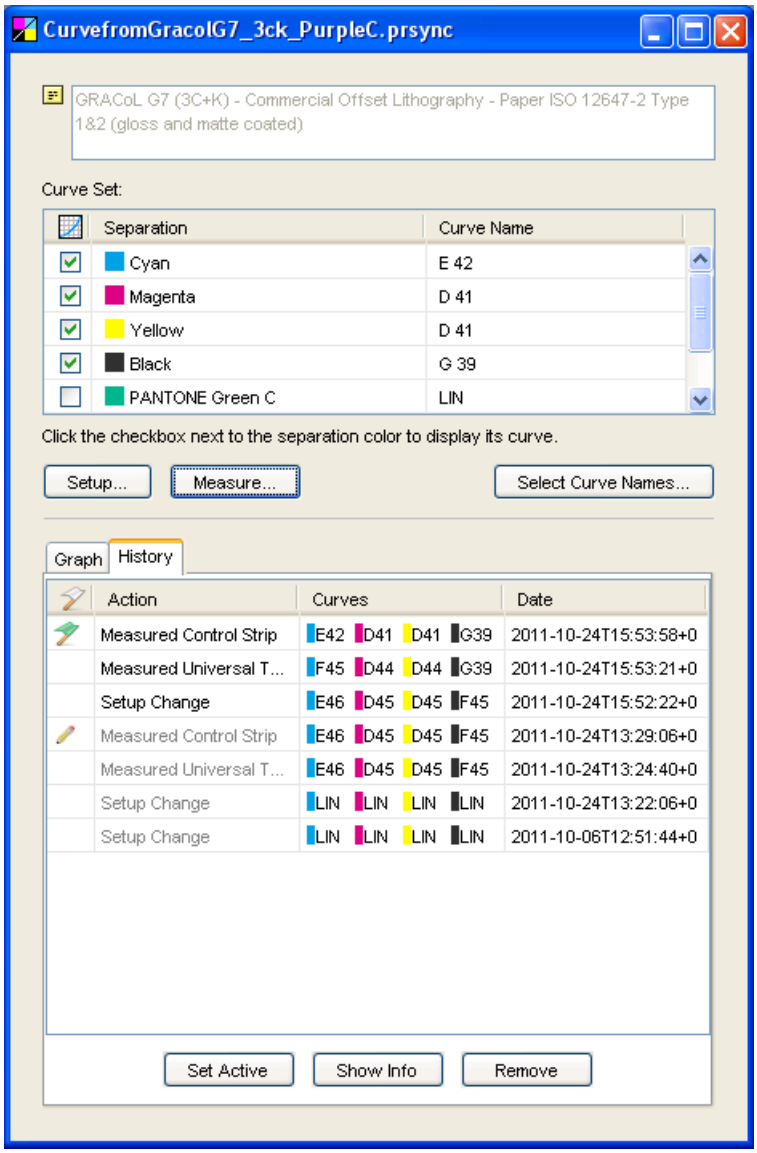
4. Complete your measurement if needed, and save the measurement and the curves.

6.2.3. History

When opening a PressSync curve set, you can see a **History** tab in the curve set dialog. This contains any previously saved setups, measurements and curves, with the most recent stage on top.

You can use it to:

- View the details of previous setups, measurements or curves.
- Revert to a previous setup, measurements or curves.
- Delete previous setups, measurements or curves that you are not using.



For each history stage, you can see:

- its state:
  - currently active ( ),
  - active but incomplete measurement ( ),
  - inactive and incomplete measurement ( ),
  - inactive and not linked to the current setup (greyed out),
- what has changed (for example **Measured Control Strip** or **Setup Change**),
- the **Curves** resulting from that action,
- the **Date** and time of the change.

Note:

Incomplete measurements (or) do not change the curves in the curve set.

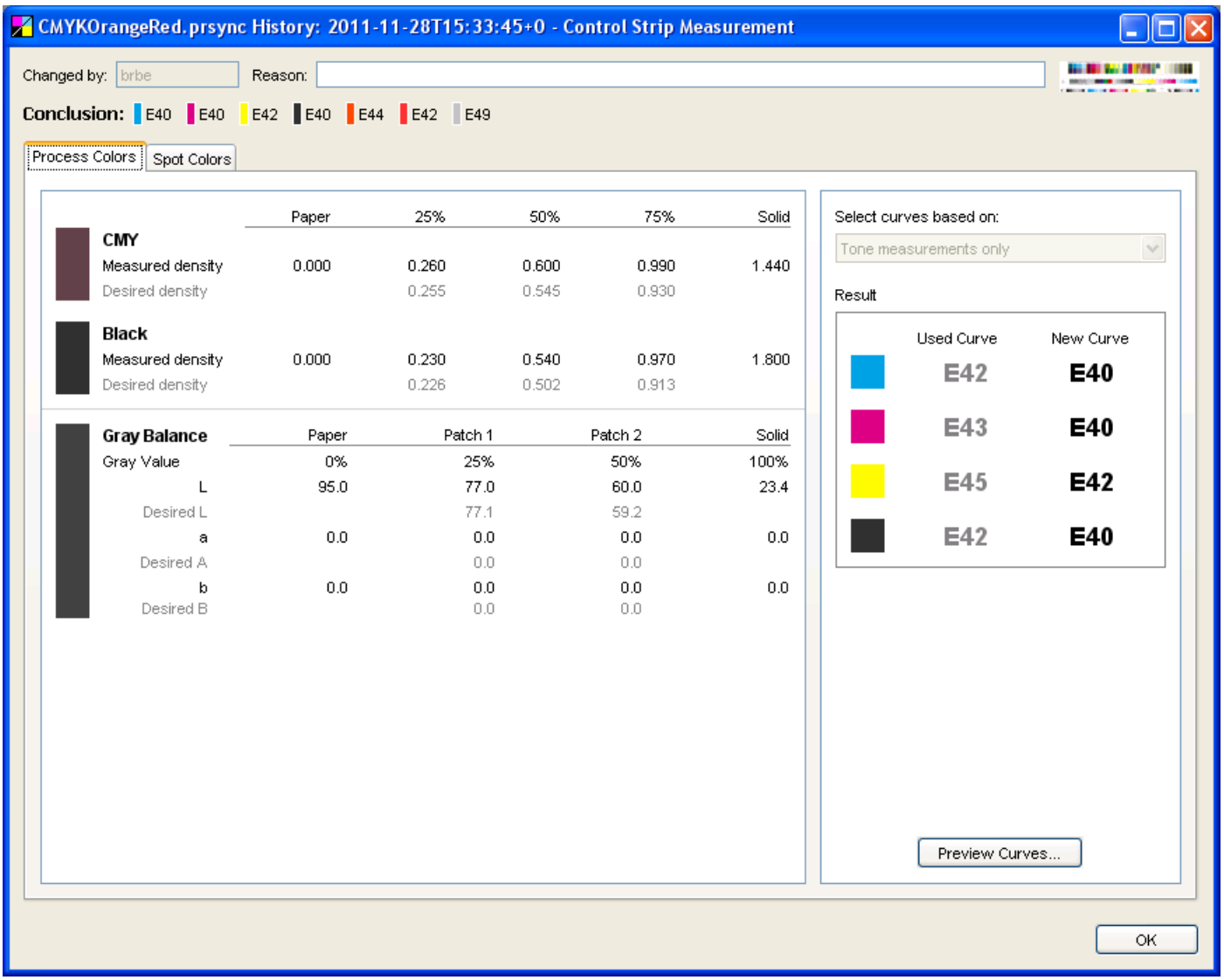
Only complete measurements and **Manual Curve Change** actions do.

So if your last action is an incomplete measurement, the curves in the curve set at that point are those resulting from the last complete measurement or manual curve change.

To finish an incomplete measurement, see *Continuing an Incomplete Measurement* on page 42.

Viewing Previous History Stages

- To view a previous history stage, select it and click the **Show Info** button.
  This shows all the details of the stage you selected (setup, measurement or manual curve change), but in read-only mode.



Reverting to a Previous History Stage

- To revert to a previous history stage, select it and click the **Set Active** button. It will get a green flag .
  - Setting a **completed measurement** active reverts to the **PressSync curves resulting from that measurement**.
  - Setting an **incomplete measurement** active reverts to the **PressSync curves used to print the sheet measured**.
  - Setting a **Manual Curve Change** active reverts to the **PressSync curves set manually** at that time.
  - Setting a **Setup Change** active reverts to the **setup version created by the setup change**.

    This can for example change spot colors or how to measure your prints.

Note: Each measurement made is based on a specific setup version. When changing the setup of the curve set or activating another setup version, the measurements corresponding to other setup versions will be grayed out.

Deleting a Previous History Stage

To delete previous setups, measurements or curves that you are not using:

- To delete a previous history stage, select it and click the **Remove** button.

Attention:

You cannot delete:

- active stages (you need to first activate another stage instead),
- setup stages used by measurements (you need to delete the measurements before you can delete the setup).

7. Using PressSync Curves and Curve Sets

7.1. Using a PressSync Curve in Imaging Engine

To apply a PressSync curve on your separations when ripping a job with Imaging Engine, enter it in the **Image to Screened Separations** task.

1. In the **Image to Screened Separations** ticket, click the **Separations** tab.
2. In the **Default Press Curve** list, select **PressSync**.
3. Select the letter and number of the PressSync curve you want to use.

This applies that PressSync curve to all separations in your file.

Note: If you have chosen to use the curves saved in your input file (see *Use press curves from file* in the Imaging Engine documentation), your PressSync curve will only be applied to the separations that don't have a curve defined in the file.

Tip:

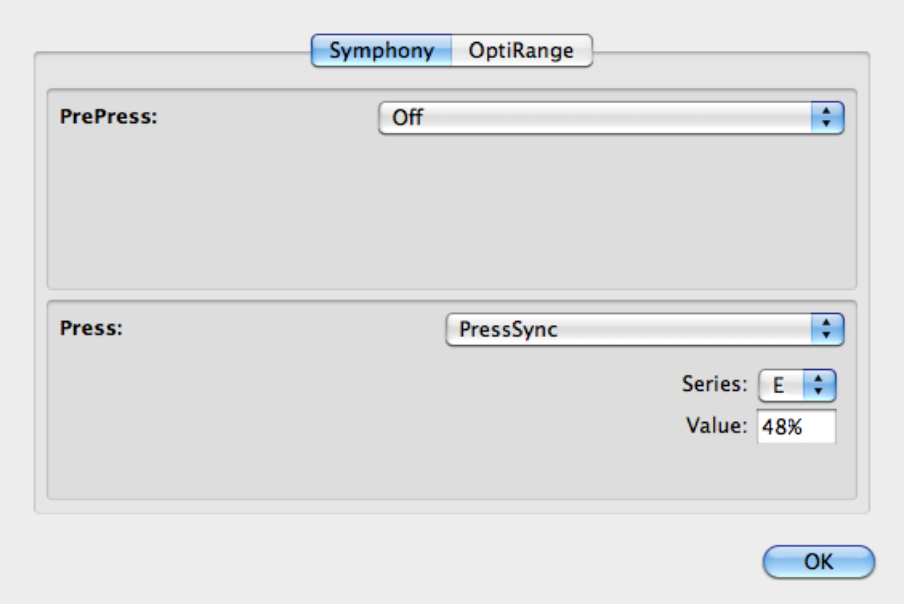
If you want to use different PressSync curves for different separations, you can use a *PressSync curve set* instead.

Select **Curve Strategy** in **Default Press Curve**, then select your PressSync curve set in the list at right.

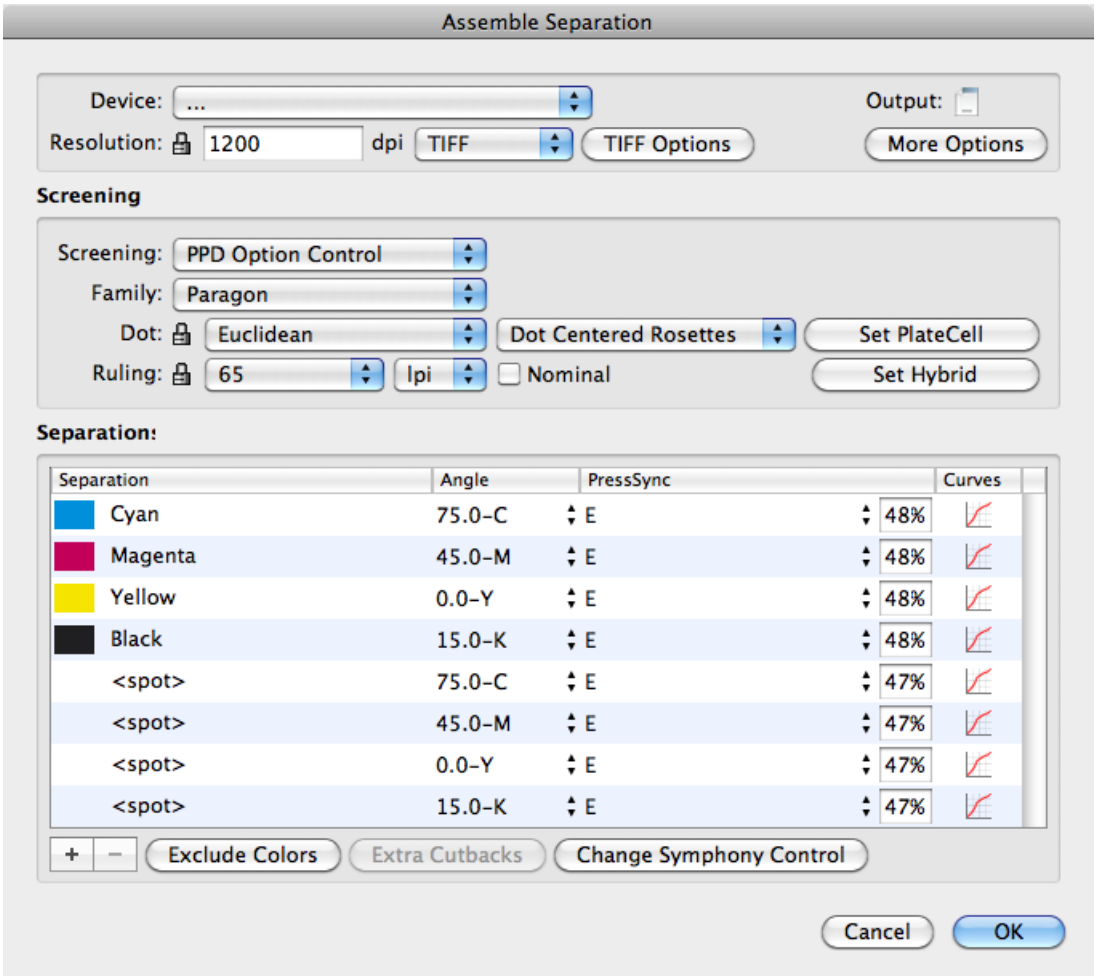
7.2. Using PressSync Curves in Nexus

To use PressSync curves when ripping a job with Nexus, enter them in the **Assemble Separation** activity.

1. Click the **Change Symphony Control** button at the bottom of the dialog.
2. In the **Symphony** tab of the pop-up that opens:
   a) choose **PressSync** in the **Press** list,
   b) select the letter (in **Series**) and number (in **Value**) of the PressSync curve to use for most of your inks,
   c) click **OK**.



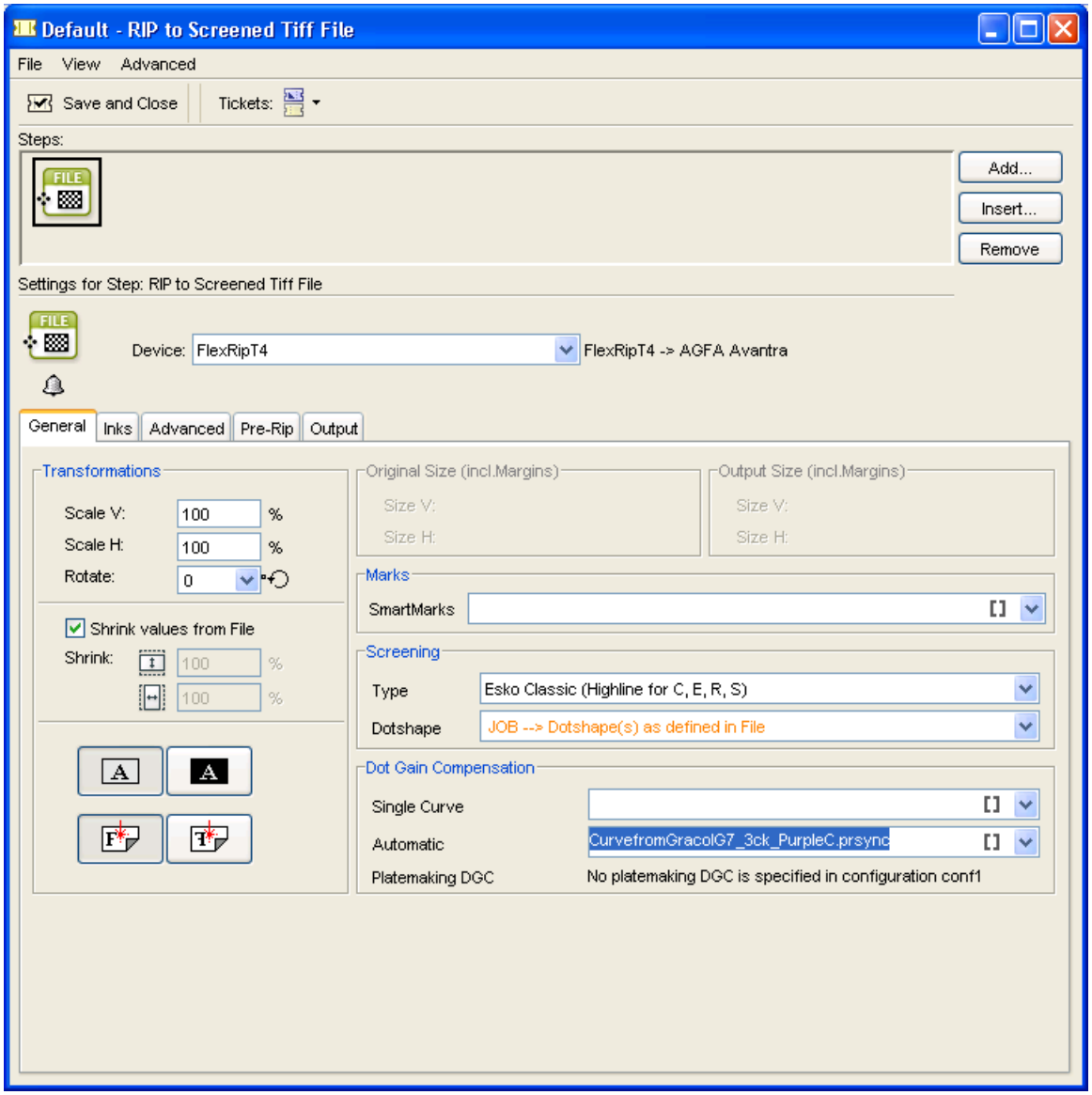
3. You can now see a **PressSync** column in the **Assemble Separation** dialog. Adjust the PressSync curves of the other inks.



7.3. Using a PressSync Curve Set in FlexRip

To use your PressSync curve set when ripping a job with FlexRip, select it in your **RIP ticket** in the Automation Engine Pilot.

- In the **Dot Gain Compensation** area of the RIP ticket, select your PressSync curve set (.prsync) in the **Automatic** list.



7.4. Using PressSync Curve Sets in a Strategy

A **strategy** (.icpro file) is a combination of various curves, which allows you to compensate different cases (different inks, screen rulings, dots, etc.) in a different way.

A strategy can use DGC curves or/and PressSync curve sets. Each curve or curve set is linked to a specific case (for example: round dots + 120 lpi + linework).

For more information about strategies, see the IntelliCurve manual.

Note: You can only create strategies in Curve Pilot, not PressSync Pilot.

To use PressSync curve sets in a strategy:

1. Go to **File** > **New** > **Strategy (.icpro)**.
2. Build your strategy: use the buttons at right to create splits for different cases (per ruling/dot/angle/...).

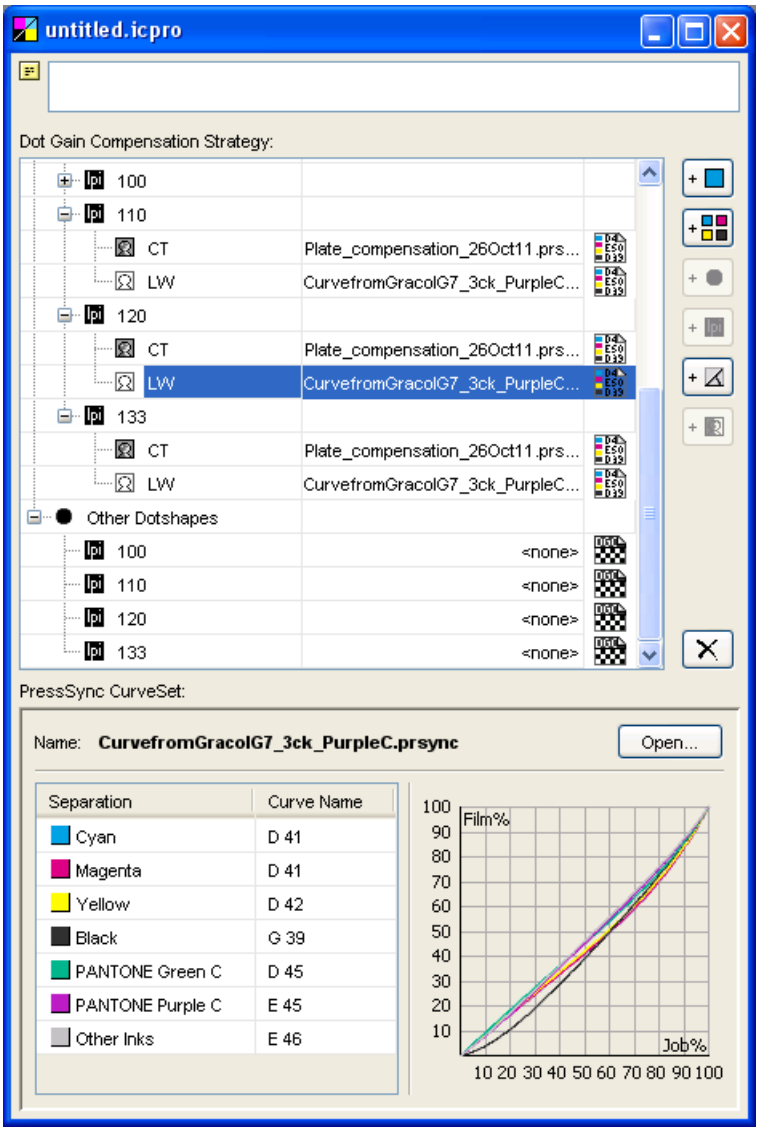
   See the IntelliCurve manual for more information.

   Note: You shouldn't create splits based on inks as PressSync curve sets already perform ink-based compensation.
3. For each case needing a PressSync curve set:

   a) click the DGC button and choose to use a PressSync curve set,

   b) click the **<none>** column in the middle and select the PressSync curve set to use in the list.

   You can see the curves of the selected curve set at the bottom of the strategy editor.



Note: If you want, you can click **Open...** to open the selected curve set (to check or edit it).

4. Save your strategy under a meaningful name.

8. Viewing Curve Sets in the Preview Combined Curves Tool

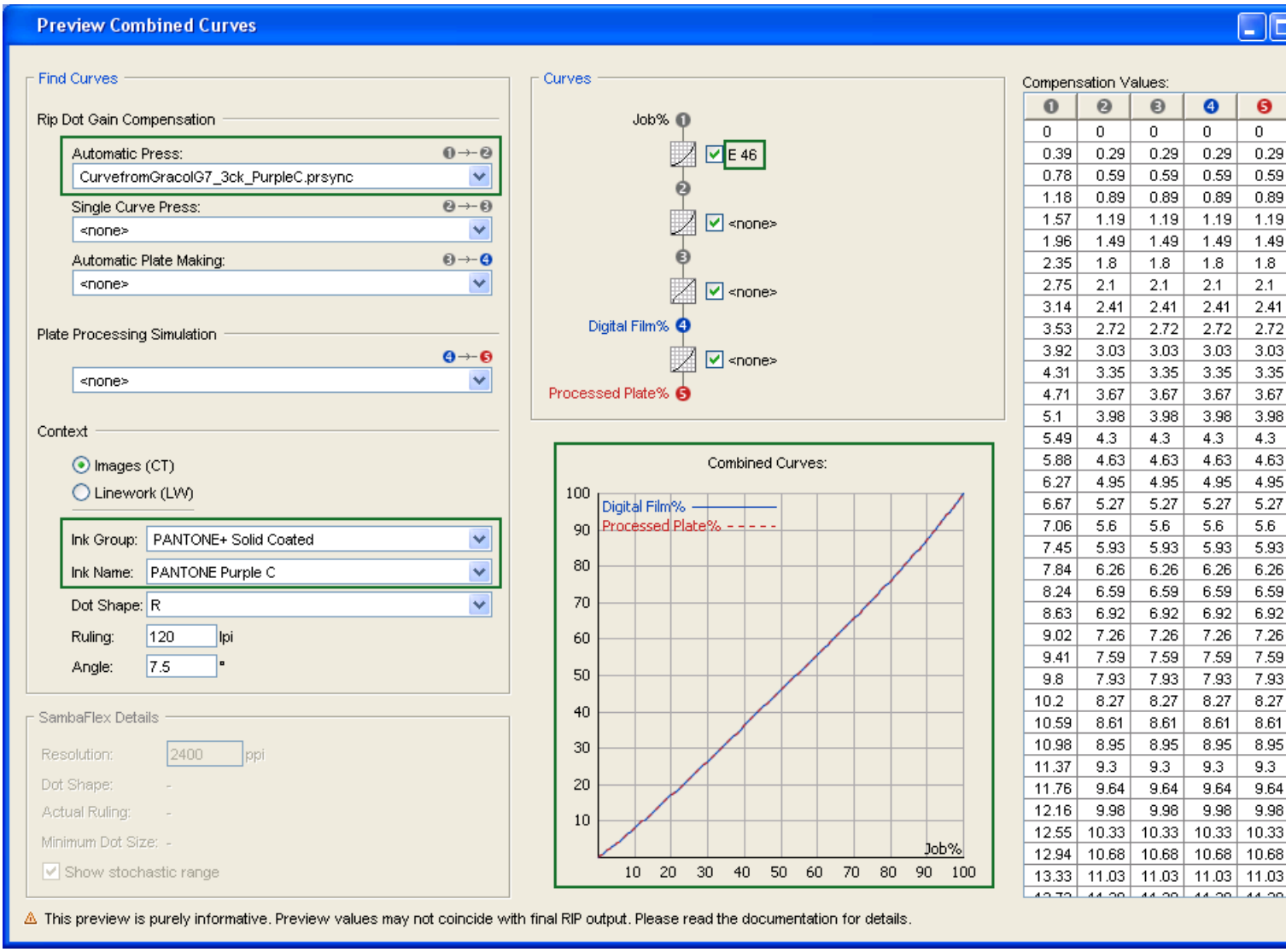
The **Preview Combined Curves** tool is useful when working with curve sets and/or strategies. It lets you check which curve of the curve set/strategy will be used in a specific case (ink, ruling, dot...).

It can also simulate what happens when using a combination of curves, for example plate compensation together with press compensation.

8.1. Previewing a PressSync Curve in a Curve Set

1. Go to **Tools** > **Preview Combined Curves...**
2. Depending on where you will use your PressSync curve set, select it either in the **Automatic Press** or the **Automatic Plate Making** list.
3. In the **Context** area, select the ink whose compensation curve you want to preview:
   a) in **Ink Group**, select the ink book containing your ink,
   b) select your ink in **Ink Name**.
4. In the **Curves** area, you will see the name of the PressSync curve that will be used for your ink.

   You will also see the curve drawn on the graph.

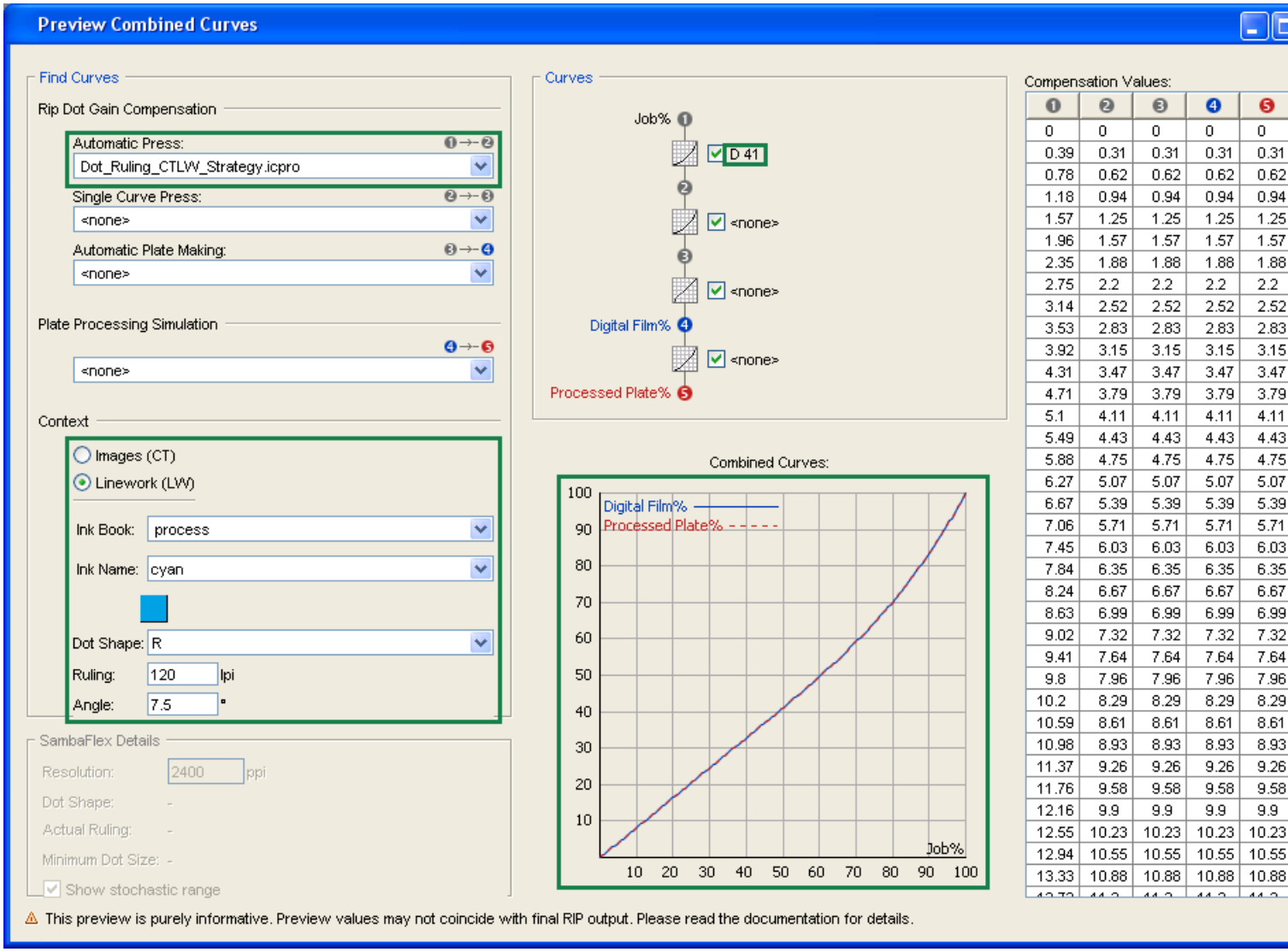


8.2. Previewing a PressSync Curve Set in a Strategy

1. Go to **Tools** > **Preview Combined Curves...**
2. Depending on where you will use your strategy, select it either in the **Automatic Press** or the **Automatic Plate Making** list.
3. In the **Context** area, define the case you are interested in:
   a) Select either **Images (CT)** or **Linework (LW)**.
   b) Select the ink book containing your ink in **Ink Group**, and the ink in **Ink Name**.
   c) Select the **Dot Shape**, **Ruling** and **Angle** you are interested in.

   If some of those criteria are not relevant for your case, your don't need to fill them in.
4. In the **Curves** area, you will see the name of the PressSync curve that will be used in the case you defined.

You will see the curve drawn on the graph.



8.3. Previewing a Combination of Curves

You can also use the **Preview Combined Curves** to see the compensation that will be applied when using both press and plate curves.

1. Go to **Tools** > **Preview Combined Curves...**
2. Select the compensation to use:
   - for your press in the **Automatic Press** list,
   - for your plate in the **Automatic Plate Making** list.

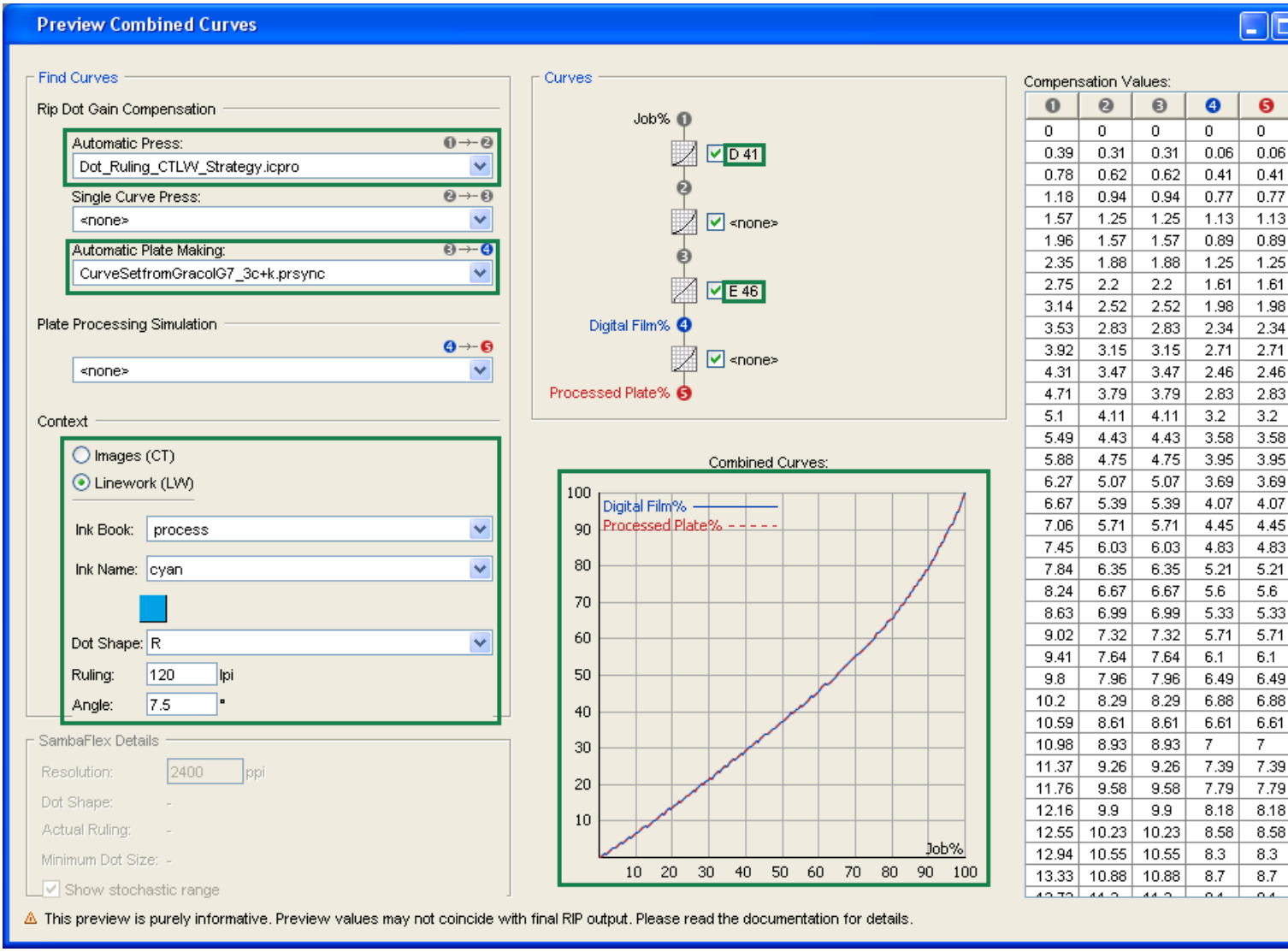
   You can select .icpro strategies, .prsync curve sets or legacy .scrdgc screen-based DGC files.
3. In the **Context** area, define the case you are interested in:

a) Select either **Images (CT)** or **Linework (LW)**.
b) Select the ink book containing your ink in **Ink Group**, and the ink in **Ink Name**.
c) Select the **Dot Shape**, **Ruling** and **Angle** you are interested in.

If some of those criteria are not relevant for your case, your don't need to fill them in.

4. In the **Curves** area, you will see the curves used both on the press and the plate for the case you defined.

   On the graph, you will see a curve that is a combination of those two curves.



1	2	3	4	5
0	0	0	0	0
0.39	0.31	0.31	0.06	0.06
0.78	0.62	0.62	0.41	0.41
1.18	0.94	0.94	0.77	0.77
1.57	1.25	1.25	1.13	1.13
1.96	1.57	1.57	0.89	0.89
2.35	1.88	1.88	1.25	1.25
2.75	2.2	2.2	1.61	1.61
3.14	2.52	2.52	1.98	1.98
3.53	2.83	2.83	2.34	2.34
3.92	3.15	3.15	2.71	2.71
4.31	3.47	3.47	2.46	2.46
4.71	3.79	3.79	2.83	2.83
5.1	4.11	4.11	3.2	3.2
5.49	4.43	4.43	3.58	3.58
5.88	4.75	4.75	3.95	3.95
6.27	5.07	5.07	3.69	3.69
6.67	5.39	5.39	4.07	4.07
7.06	5.71	5.71	4.45	4.45
7.45	6.03	6.03	4.83	4.83
7.84	6.35	6.35	5.21	5.21
8.24	6.67	6.67	5.6	5.6
8.63	6.99	6.99	5.33	5.33
9.02	7.32	7.32	5.71	5.71
9.41	7.64	7.64	6.1	6.1
9.8	7.96	7.96	6.49	6.49
10.2	8.29	8.29	6.88	6.88
10.59	8.61	8.61	6.61	6.61
10.98	8.93	8.93	7	7
11.37	9.26	9.26	7.39	7.39
11.76	9.58	9.58	7.79	7.79
12.16	9.9	9.9	8.18	8.18
12.55	10.23	10.23	8.58	8.58
12.94	10.55	10.55	8.3	8.3
13.33	10.88	10.88	8.7	8.7

9. Predefined Curve Sets for Printing Standards

Curve Pilot comes with a number of predefined curve sets that you can use to help you match ISO or GRACol printing standards.

9.1. ISO Curve Sets

You should choose your ISO predefined curve set according to the ISO paper type you want to print on:

- Type 1: gloss-coated, wood-free 93 (95)
- Type 2: matte-coated, wood-free
- Type 3: gloss-coated, web
- Type 4: uncoated, white
- Type 5: uncoated, slightly yellowish

Each ISO predefined curve set has specific Process Color and Gray Balance settings for one or more ISO paper type(s).

Because ISO specifies tone targets for each individual process ink, the predefined curve sets are designed to be printed on a CMYK target (and not a 3 colors + K target).

ISO PressSync Curve Set	Settings for Process Colors	Settings for Gray Balance
cmyk_ISO_PT1&2 (NP).prsync	• ISO 12647-2 (CMYK) - Offset lithographic processes • Paper Types 1&2, gloss matte coated – using non-periodic screening (Monet, Organic...) • Target curves FOGRA F (CMYK) as defined in ISO 12647-2:2004	The desired Lab values for the different gray patches is calculated for Neutral Gray (Lab linear scaled from paper to solid). The desired Lab values for paper and solid are retrieved from the ISOCoated_v2_300_eci.icc profile.
cmyk_ISO_PT1&2.prsync	• ISO 12647-2 (CMYK) - Offset lithographic processes • Paper Types 1&2, gloss matte coated • Target curves FOGRA A (CMY) and B (K)	The desired Lab values for the different gray patches is calculated for Neutral Gray (Lab linear scaled from paper to solid). The desired Lab values for paper and solid are retrieved from the PSO_Coated_300_NPScreen_ISO12647_eci.icc profile.

ISO PressSync Curve Set	Settings for Process Colors	Settings for Gray Balance
	as defined in ISO 12647-2:2004	
cmyk_ISO_PT3.prsync	• ISO 12647-2 (CMYK) - Offset lithographic processes, web • Paper type 3, standard gloss coated (LWC) • Target curves FOGRA B (CMY) and C (K) as defined in ISO 12647-2:2004	The desired Lab values for the different gray patches is calculated for Neutral Gray (Lab linear scaled from paper to solid). The desired Lab values for paper and solid are retrieved from the PSO_LWC_Standard_eci.icc profile.
cmyk_ISO_PT4.prsync	• ISO 12647-2 (CMYK) - Offset lithographic processes, web • Paper type 4, uncoated white offset • Target curves FOGRA C (CMY) and D (K) as defined in ISO 12647-2:2004ISO	The desired Lab values for the different gray patches is calculated for Neutral Gray (Lab linear scaled from paper to solid). The desired Lab values for paper and solid are retrieved from the PSO_Uncoated_ISO12647_eci profile.
cmyk_ISO_PT5.prsync	• ISO 12647-2 (CMYK) - Offset lithographic processes, web • Paper type 5, uncoated yellowish offset • Target curves FOGRA C (CMY) and D (K) as defined in ISO 12647-2:2004ISO	The desired Lab values for the different gray patches is calculated for Neutral Gray (Lab linear scaled from paper to solid). The desired Lab values for paper and solid are retrieved from the ISOuncoatedyellowish.icc profile.
cmyk_ISO_Newsprint.prsync	• ISO 12647-3 (CMYK) - heatset web offset printing • Paper type SNP, Standard newsprint, heatset web offset printing • Target curves FOGRA C (CMY) and D (K)	The desired Lab values for the different gray patches is calculated for Neutral Gray (Lab linear scaled from paper to solid). The desired Lab values for paper and solid are retrieved from the PSO_SNP_Paper_eci.icc profile.

ISO PressSync Curve Set	Settings for Process Colors	Settings for Gray Balance
	as defined in ISO 12647-2:2004ISO	

9.2. GRACol Curve Sets

The GRACol standard uses gray balance to calibrate the tonal range on press (instead of relying on measurements for each individual process color).

Because of this, the GRACol predefined curve sets are designed to be printed on a 3 colors + K target (and not a CMYK target).

GRACol PressSync Curve Set	Settings for Process Colors	Settings for Gray Balance
3ck_GRAColG7.prsync	• GRACoL G7 (3C+K) - Commercial Offset Lithography • Paper ISO 12647-2 Type 1&2 (gloss and matte coated) • Target curves for K and CMY: GRACol G7 K.dgc and GRACol G7 K.dgc	Curve Pilot has a built-in gray target calculated from the GRACol G7 specs, containing the desired Lab values for the gray patches, paper and solid.
3ck_SNAP.prsync	• SNAP (3C+K) – Newsprint • Paper ISO 12647-3 • Target curves for K and CMY calculated from the SNAP2007.icc profile	The desired Lab values for the different gray patches, paper and solid are retrieved from the SNAP2007.icc profile.
3ck_SWOP.prsync	• GRACoL G7 (3C+K) - Commercial Offset Lithography • Paper ISO 12647-2 Type 1&2 (gloss and matte coated) • Target curves for K and CMY: GRACol G7 K.dgc and GRACol G7 K.dgc	Curve Pilot has a built-in gray target calculated from the GRACol G7 specs, containing the desired Lab values for the gray patches, paper and solid.