

Printer Conversion to KODAK EKTACOLOR Edge 8 and EKTACOLOR ROYAL VIII Papers



KODAK EKTACOLOR Edge 8 and ROYAL VIII Papers incorporate new image-forming components to deliver improved colors. These new papers are designed so that a visually neutral patch will result in approximately balanced red, green, and blue densities when measured with densitometers that conform to ANSI Status A responses. Some densitometers that do not conform to ANSI Status A responses may produce non-matched red, green, and blue densities for a neutral patch on these new papers. Labs that use these non-Status A densitometers must compensate for the differences in densitometer performance when they set up printers for the new papers.

WHY DOES THIS HAPPEN?

Densitometers fall into two classes: (1) for analytical use and (2) for comparative use.

Analytical densitometers conform to an ANSI standard called "Status A." Status A densitometers correlate colors similarly to the human eye through a wide color and density range. These densitometers will give similar readings for KODAK EKTACOLOR Edge 7/ROYAL VII and EKTACOLOR Edge 8/ROYAL VIII Papers if the prints appear visually matched.

Comparative densitometers are designed to match prints to a specific density. They are *not* intended for use over a wide range of densities and colors, and they do not see colors as the human eye does. These densitometers are often used in printing systems as a part of a minilab or a high-speed printer. They produce consistent measurements in the ranges used for printer setup. However, with KODAK EKTACOLOR Edge 8 or ROYAL VIII Paper, they do not measure the neutral aim patches as neutral. For example, an aim print on EKTACOLOR Edge 8/ROYAL VIII Paper measures 0.80 red, 0.80 green, and 0.80 blue with a Status A densitometer. The same print may measure 0.70 red, 0.80 green, and 0.80 blue with a comparative densitometer.

WHAT DOES THIS MEAN FOR LABS?

New EKTACOLOR Edge 8 and ROYAL VIII Papers provide many performance advantages. But when they are used with densitometers that do not conform to Status A specifications, results may vary. Labs that use these non-Status A densitometers must compensate for differences

in densitometer performance when setting up their printers for the new papers.

When you are ready to convert to KODAK EKTACOLOR Edge 8 or ROYAL VIII Paper, follow the procedure below to determine how your densitometer performs. Once you've determined the densitometer performance, choose the appropriate compensation procedure (if one is necessary).

To Determine If Compensation Is Required

1. Print your "Normal" Printer Control Negative on EKTACOLOR Edge 7 or ROYAL VII Paper at the aim density.
2. With EKTACOLOR Edge 8 or ROYAL VIII Paper, balance to match the density readings from Step 1.
3. Compare the two prints. If the prints match visually, follow normal printer paper conversion procedures (see your printer manual). If the print from Step 2 appears cyan, the densitometer is reading EKTACOLOR Edge 8 or ROYAL VIII Paper differently. You will need to follow one of the compensation procedures below.

Note: Compensation procedures have not been prepared for equipment that produces matched prints in Step 3 of the procedure above. If your printer is not included in the list below, follow your equipment manufacturer's paper setup instructions.

COMPENSATION PROCEDURES

If you have one of the printers in the following list, choose the appropriate procedure:

Compensation Procedure for NORITSU 1401/1501 Printers

Compensation Procedure for NORITSU 1801 Micro Printer

Compensation Procedure for NORITSU 1701/1702 Printers (without NOUS Scanner)

Compensation Procedure for NORITSU 901, 1001, 1201, and 1202 Printers

Compensation Procedure for COPAL Minilab, Models 1B, 1C, 5C, 5C II, 5L, 5S

Compensation Procedure for AGFA MSP Printers

Compensation Procedure for AGFA MSC Printers

Compensation Procedure for GRETAG Masterlab

Compensation Procedure for GRETAG Masterflex

For other printers, follow these steps:

1. Print your “Normal” Printer Control Negative on EKTACOLOR Edge 8/ROYAL VIII Paper again at the aim density, and with 1 red, 2 red, 3 red, and 4 red color-correction buttons.
2. Compare these prints to the print from Step 1 under “To Determine If Compensation Is Required” (EKTACOLOR Edge 7 or ROYAL VII Paper printed on aim). Determine which red-corrected print is the closest match. The amount of red correction used to make that print is the amount required to compensate for the difference in densitometer measurement. Add the red correction to your paper channel setup for EKTACOLOR Edge 8 or ROYAL VIII Paper.
3. Print the “Normal” Printer Control Negative on the new paper again (the print should appear neutral), and measure this print. Record these density readings as your aim densities. Write the aim densities on this print, and keep it to use as your aim.
4. Adjust your paper Under and Over slopes to match your aim.
5. Print some customer negatives on this setup and adjust for preferences if necessary.

Compensation Procedure for NORITSU 1401/1501 Printers

Follow this procedure to convert to KODAK EKTACOLOR Edge 8/ROYAL VIII Paper from KODAK EKTACOLOR Edge 7/ROYAL VII Paper. This procedure permits conversion without the use of the printer’s built-in densitometer. It includes a choice of methods: an external densitometer method and a ringaround method.

Densitometer Method

For this method, you must use an X-Rite or similar densitometer that has Status A filters (e.g., an X-Rite 881 or 891 densitometer) to measure the print densities.

1. When your supply of EKTACOLOR Edge 7/ROYAL VII Paper is about to run out, print the Printer Setup Negative “Normal,” “Under,” and “Over” on the channel most commonly used for the paper. Label the three prints “Old-Paper Reference Print—Normal,” “Old-Paper Reference Print—Under,” and “Old-Paper Reference Print—Over.”

Keep the negative and prints in a safe place. Record the paper channel and Morning Setup channel used to print this test.

Also record the channels that will be using the new paper. Only these channels will be corrected.

Note: If this paper size/surface will also be used for Morning Setup, you *must* include channel 00 in the corrections.

2. When you are ready to convert to the new paper, load it into the printer.

3. Print the “Normal” Printer Setup Negative on the new paper, making sure to use the same channel as in Step 1. Label the print “New-Paper Test Print.”
4. Use the external densitometer to measure the Old-Paper Reference Prints and the New-Paper Test Print, and record the readings. See the example.

Example

Densitometer Readings—Normal Reference and Normal Test Prints			
	Cyan	Magenta	Yellow
REFERENCE	75	80	73
TEST	90	87	73
Difference	-15	-7	0

Note: To obtain the difference, subtract the test-print density from the reference-print density.

Add the Cyan + Magenta + Yellow difference values to obtain an overall density reading. Then divide by 50 to obtain the density correction:

$$\begin{array}{|c|c|c|c|} \hline \text{Difference} & -15 & -7 & 0 \\ \hline \end{array} = \begin{array}{|c|} \hline -22 \\ \hline \end{array} \div 50 = \begin{array}{|c|} \hline \text{Density Correction} \\ \hline -0.4 \\ \hline \end{array}$$

Divide the Cyan, Magenta, and Yellow difference values by 10 to obtain the color correction:

Color Correction	-1.5	-0.7	0.0
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The correction for this example is -1.5 Cyan, -0.7 Magenta, 0.0 Yellow, and -0.4 Density.

5. Identify which channels are currently using Edge 7/ROYAL VII Paper. These channels will all require the same correction.

Note: If the Master Balance or Morning Setup channel will use the new paper, you must include CH 00 in the Channel Balance Shift.

6. Apply the balance correction to the paper channels using this paper size:

MODE 33 (CH SHIFT)→YES→CH BALANCE SHIFT→D-IN→YES

7. If you will use the new paper for channels 10, 11, 12, 13, 14, and 15, you would enter the following to input the corrections calculated in the example above:

10-15 (N)	Range of channels
0.0Y -0.7M 1.5C -0.4D Y/N	Input corrections calculated above. Press arrow keys to move cursor.

The Channel Balance correction will be made to channels 10, 11, 12, 13, 14, and 15.

Note: If the Master Balance or Morning Setup channel will use the new paper, you must include CH 00 in the Channel Balance Shift. For example, if channels 01, 02, 03, 04, 05, 06, and 07, and the Master Balance or

Morning Setup channel will use the new paper, you would input the following:

00-07 (N)	Range of channels
0.0Y -0.7M 1.5C -0.4D Y/N	Input corrections calculated above.

This Channel Balance correction will be made to channels 00, 01, 02, 03, 04, 05, 06, and 07.

Note: If the channels that will use the new paper are not in a continuous range, you will have to make multiple corrections to avoid altering channels that use other paper types.

- Repeat Steps 3 through 7 until the Normal test print matches the Normal reference print within one button. When the test print matches the reference print, you can proceed to "Setting the Paper Slope."

Setting the Paper Slope

After matching the Normal test and Normal reference prints, make test prints from the "Under" and "Over" Printer Setup Negative. Make sure to use the same channel that was used to make the Old-Paper Reference Prints. If the Under and Over test prints match the reference prints, the conversion is complete.

If the test and reference prints do not match, proceed as follows:

- Calculate the corrections from the density readings in the same way you did for the normal test and reference prints.
- Apply the slope correction to the paper channels that will use the new paper by using the channel shift command:

To correct the Under slope:

MODE 33 (CH SHIFT)→YES→CH BALANCE
SHIFT→NO→CH UNDER
SHIFT→D-IN→YES→SET UNDER
NEG→YES→input correction

To correct the Over slope:

MODE 33 (CH SHIFT)→YES→CH BALANCE
SHIFT→NO→NO→CH OVER
SHIFT→D-IN→YES→SET OVER
NEG→YES→input correction

You do not include CH 00 in the channel range, because slope is switched off for CH 00.

- Repeat the steps until the Under and Over test prints match the Under and Over reference prints to within one button.

When Channel 00 is set up for EKTACOLOR Edge 8/ROYAL VIII Paper, you must make a new Morning Setup reference print to use in place of the old Edge 7/ROYAL VII Paper reference print. When you have achieved the final balance, make a print on CH 00 and store it to use for Morning Setup.

Ringaround Method

This method does not require a densitometer.

- When your supply of EKTACOLOR Edge 7/ROYAL VII Paper is about to run out, print the Printer Setup Negative "Normal," "Under," and "Over" on the channel most commonly used for the paper. Label the three prints "Old-Paper Reference Print—Normal," "Old-Paper Reference Print—Under," and "Old-Paper Reference Print—Over."

Keep the negative and prints in a safe place. Record the paper channel (00 to 59) and Morning Setup channel (11 to 84) used to print this test.

Also record the channels that will be using the new paper. Only these channels will be corrected.

Note: If this paper size/surface will also be used for Morning Setup, you *must* include channel 00 in the corrections.

- When you are ready to convert to the new paper, load it into the printer.
- Print a one-button ringaround, using the same test negative you used to make the reference prints in Step 1. You must use the same paper channel and Morning Setup channel as before. Print a ringaround from the Normal negative as follows:

To print a one-button ringaround:

MODE 32 (AUTO RINGAROUND)→YES→AUTO RINGAROUND 0(0-2:COLOR 3:DEN)→1→YES

- When the prints are processed, select the print that is the closest match to the reference print. Apply the correction as indicated by the backprint. It will appear in this order:

Key:	Print	Order	Channel	Y	M	C	D	CF
Data:	236	45	0111	N	N	N	N	2

This is a typical example. Some printers may have different CVP settings. If the backprint is switched off or not legible, keep the prints in order and mark the correction on the back. The prints are printed in this order: -Y, +Y, -M, +M, -C, +C, -D, +D, N.

- Identify the channels that are currently using the old paper. These channels will all require the same correction.

Note: If the Master Balance or Morning Setup channel will use the new paper, you must include CH 00 in the Channel Balance Shift.

- Apply the balance correction to the paper channels using this paper size:

MODE 33 (CH SHIFT)→YES→CH BALANCE
SHIFT→D-IN→YES

- Determine which channels use this paper. For example, to input the correction if the -1M print is closest to the

reference print, and if you use the same paper for channels 10, 11, 12, 13, 14, and 15, you would input:

10-15 (N)	Range of channels
0.0Y -1.0M 0.0C 0.0D Y/N	Input corrections calculated above. Press arrow keys to move cursor.

The Channel Balance correction will be made to channels 10, 11, 12, 13, 14, and 15.

Note: If the Master Balance or Morning Setup channel will use the new paper, you must include CH 00 in the Channel Balance Shift. For example, if channels 01, 02, 03, 04, 05, 06, and 07, and the Master Balance or Morning Setup channel will use the new paper, you would input the following:

00-07 (N)	Range of channels
0.0Y -1.0M 0.0C 0.0D Y/N	Input corrections calculated above.

This Channel Balance correction will be made to channels 00, 01, 02, 03, 04, 05, 06, and 07.

Note: If the channels that will use the new paper are not in a continuous range, you will have to make multiple corrections to avoid altering channels that use other paper types.

- Print a half-button ringaround to fine-tune the correction:
MODE 32 (AUTO RINGAROUND)→YES→AUTO RINGAROUND 0(0-2:COLOR 3:DEN)→0→YES
- Repeat the steps above to match the channels to the reference prints on Edge 7/ROYAL VII Paper. When the Normal test print matches the Normal reference print within one button, you can proceed to “Setting the Paper Slope.”

Setting the Paper Slope

After matching the Normal test and Normal reference prints, follow the same procedure you did for balance.

- Print a ringaround from the Under and Over Printer Setup Negatives.
- Apply the slope correction to the paper channels that will use the new paper by using the channel shift command:

To correct the Under slope:

MODE 33 (CH SHIFT)→YES→CH BALANCE SHIFT→NO→CH UNDER SHIFT→D-IN→YES→SET UNDER NEG→YES→input correction

To correct the Over slope:

MODE 33 (CH SHIFT)→YES→CH BALANCE SHIFT→NO→NO→CH OVER SHIFT→D-IN→YES→SET OVER NEG→YES→input correction

You do not include CH 00 in the channel range, because slope is switched off for CH 00.

When Channel 00 is set up for EKTACOLOR Edge 8/ROYAL VIII Paper, you must make a new Morning Setup reference print to use in place of the old Edge 7/ROYAL VII Paper reference print. When you have achieved the final balance, make a print on CH 00 and store it to use for Morning Setup.

Compensation Procedure for NORITSU 1801 Micro Printer

Follow this procedure to convert to KODAK EKTACOLOR Edge 8/ROYAL VIII Paper from KODAK EKTACOLOR Edge 7/ROYAL VII Paper. This procedure permits conversion without the use of the printer’s built-in densitometer.

Before You Begin

- Save or record your current setup information. This procedure will erase any corrections that may have been entered.
- Ensure that the equipment is correctly set up to lab aims. This procedure allows crossover to the new paper without noticeable differences in print quality.

Setup Procedure

Before your supply of EKTACOLOR Edge 7/ROYAL VII Paper runs out, be sure that you have a Morning Setup reference print on Edge 7/ROYAL VII Paper. If none is available, perform a Morning Setup to make a reference print on the old paper. Then do this:

- Install the EKTACOLOR Edge 8/ROYAL VIII Paper magazine.
- Perform a Morning Setup on the new paper, and process the print.
- Calculate a correction to produce a visual match between the test print on Edge 8/ROYAL VIII Paper and the reference print on Edge 7/ROYAL VII Paper as shown in the example. Use an X-Rite or similar densitometer that has Status A filters (e.g., an X-Rite 881 or 891 densitometer) to measure the print densities.

Example

Densitometer Readings— Reference and Test Prints			
	Cyan	Magenta	Yellow
REFERENCE	75	80	73
TEST	90	87	73
Difference	-15	-7	0

Note: To obtain the difference, subtract the test-print densities from the reference-print densities.

Add the Cyan + Magenta + Yellow difference values to obtain an overall density reading. Then divide by 50 to obtain the density correction:

$$\begin{array}{|c|c|c|c|} \hline \text{Difference} & -15 & -7 & 0 \\ \hline \end{array} = \begin{array}{|c|} \hline -22 \\ \hline \end{array} \quad -22 / 50 = \begin{array}{|c|} \hline \text{Density} \\ \text{Correction} \\ -0.4 \\ \hline \end{array}$$

Divide the Cyan, Magenta, and Yellow difference values by 10 to obtain the color correction:

Color Correction	-1.5	-0.7	0.0
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The correction for this example is -1.5 Cyan, -0.7 Magenta, 0.0 Yellow, and -0.4 Density.

4. When the message SET REFERENCE is displayed, press NO. Enter the correction, and then press YES.
5. Press YES to reprint the test.
6. Repeat Steps 2 through 5 until the test print on Edge 8/ROYAL VIII Paper matches the reference print on Edge 7/ROYAL VII Paper.
7. Keep the final test print as your new reference print for Edge 8/ROYAL VII Paper.
8. Print customer negatives to verify print quality.

Compensation Procedure for NORITSU 1701/1702 Printers (without NOUS Scanner)

Follow this procedure to convert to KODAK EKTACOLOR Edge 8/ROYAL VIII Papers from KODAK EKTACOLOR Edge 7/ROYAL VII Papers.

Normal Correction

1. When your supply of EKTACOLOR Edge 7/ROYAL VII Paper is about to run out, print the Printer Setup Negative "Normal," "Under," and "Over" on the channel most commonly used for the paper. Label the three prints "Old-Paper Reference Print—Normal," "Old-Paper Reference Print—Under," and "Old-Paper Reference Print—Over."
2. When you are ready to convert to the new paper, load it into the printer. Then press MODE, AUTO SETUP, and NO. Select "0" to print a test. Press YES and place the "Normal" Printer Setup Negative in the negative mask. Press YES, YES, and NO. When the test prints leave the processor, select "measure," PAP.
3. Enter the readings from the print labeled "Old-Paper Reference Print—Normal" into the Reference Aim. Then press D-IN and YES. Then press NO.
4. Enter the readings from the -D, N, and +D test prints into the P-BAL correction mode. Press D-IN and YES. The correction will be made to the paper balance for the new paper.
5. Select "0" to make another print, and then YES. Select "Normal" and press YES. Place the "Normal" Printer Setup Negative in the negative mask, and press YES and YES again. Then press NO.
6. Repeat Steps 2, 4, and 5 (do *not* repeat Step 3) until no further correction is required.

Perform a Morning Setup, and carefully follow these instructions:

7. Press MODE, AUTO SETUP, and YES. Insert the Setup Filter, press D-IN, and then YES. After the Change of Light has been completed, press YES.

8. Measure the -D, N, and +D test prints, but **DO NOT** enter the correction. Record the correction on a piece of paper; then press NO.
9. Press MODE, then C-DATA. Input the correction from Step 8 into 00 CH BALANCE; then press YES.

Repeat Steps 7 through 9 until no further correction is required. Remove the Setup Filter. The NORMAL balance is complete.

Setting the Paper Slope (Under)

If the Under slope requires adjustment, follow this procedure:

1. Select the channel that will be most commonly used for the new paper. Press MODE, then AUTO SETUP. Then press NO until AUTO SETUP appears. Select "0" for "print," press YES, and enter the number for "U" (Under). Then press YES.
2. Set the "Under" Printer Setup Negative in the negative mask, and press YES and YES. When NEXT SETUP appears, press NO.
3. Measure the -D, N, and +D test prints, but **DO NOT** enter the correction. Record the correction on a piece of paper. Then press NO.
4. Enter the correction determined in Step 3 by pressing MODE, SETUP, and NO until CH UNDER SHIFT Y/N appears.
5. Press YES, place the "Under" Printer Setup Negative in the negative mask, and press YES. (If the Under negative is not in the negative mask, an NG error will occur and the correction will not be made.)
6. Press D-IN and input the range of channels that will be using the new paper (do not include channel 00). Enter the correction, and press YES.

Repeat Steps 1 through 6 until no further correction is required. Setup of the Under slope is complete.

Setting the Paper Slope (Over)

If the Over slope requires adjustment, follow this procedure:

1. Select the channel that will be most commonly used for the new paper. Press MODE, then AUTO SETUP. Then press NO until AUTO SETUP appears. Select "0" for "print," then YES. Enter the number for "O" (Over); then press YES.
2. Set the "Over" Printer Setup Negative in the negative mask, and press YES and YES again. When NEXT SETUP appears, press NO.
3. Measure the -D, N, and +D test prints, but **DO NOT** enter the correction. Record the correction on a piece of paper, and then press NO.
4. Enter the correction determined in Step 3 by pressing MODE, SETUP, and NO until CH OVER SHIFT Y/N appears.
5. Press YES, and place the Over negative in the negative mask. Press YES. (If the Over negative is not in the negative mask, an NG error will occur and the correction will not be made.)

- Press D-IN and input the range of channels that will be using the new paper (do not include channel 00). Enter the correction, and press YES.

Repeat Steps 1 through 6 until no further correction is required. Setup of the Over slope is complete.

Compensation Procedure for NORITSU 901, 1001, 1201, and 1202 Printers

Follow this procedure to test KODAK EKTACOLOR Edge 8/ROYAL VIII Papers when converting from KODAK EKTACOLOR Edge 7/ROYAL VII Papers, and to set up your printer for the new paper.

Testing the New Paper

If the printer uses only one type of paper, follow Method 1. If it uses more than one type, follow Method 2.

Method 1:

- When your supply of EKTACOLOR Edge 7/ROYAL VII Paper is about to run out, print the Printer Setup Negative “Normal,” “Under,” and “Over” on the channel most commonly used for the paper. Label the three prints “Old-Paper Reference Print—Normal,” “Old-Paper Reference Print—Under,” and “Old-Paper Reference Print—Over.”
- When you are ready to convert to the new paper, load it into the printer and perform a Morning Setup procedure.
- Print the Printer Setup Negative, “Under,” “Normal,” and “Over” on the channel that will be most commonly used for the new paper. If the test prints match the reference prints, the paper change is complete. If the test prints do not match the reference prints, proceed to “Setting the Paper Slope.”

Method 2:

- When your supply of EKTACOLOR Edge 7/ROYAL VII Paper is about to run out, print the Printer Setup Negative “Normal,” “Under,” and “Over” on the channel most commonly used for the paper. Label the three prints “Old-Paper Reference Print—Normal,” “Old-Paper Reference Print—Under,” and “Old-Paper Reference Print—Over.”
- When you are ready to convert to the new paper, load it into the printer. Make a print from the “Normal” Printer Setup Negative on the new paper. Make sure to use the same channel as in Step 1. Label the print “New-Paper Test Print—Normal.”
- Measure the Normal reference print and the print labeled “New-Paper Test Print—Normal,” and record the readings. See Example 1.

Example 1

Densitometer Readings—Normal Reference and Normal Test Prints			
	Cyan	Magenta	Yellow
REFERENCE	75	80	73
TEST	90	87	73
Difference	-15	-7	00

Note: To obtain the difference, subtract the test-print density from the reference-print density.

- To calculate the correction, add the cyan, magenta, and yellow difference values to obtain an overall density reading. Divide by 5 to obtain the density correction.

Difference	-15	-7	0	=	-22	-22 / 5 =	Density Correction	-4
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Divide the cyan, magenta, and yellow difference values by 10 to obtain the color correction.

Color Correction	-1.5	-7	.0
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The correction for this example is -1.5 Cyan, -7 Magenta, .0 Yellow, and -4 Density.

- Identify the channels that are using the old paper, and record them; these channels will all require the same correction.

Note: If the Master Balance or Morning Setup channel will use the new paper, you must include CH 00 in the Channel Balance Shift. For example, if the new paper is used in channels 01, 02, 03, 04, 05, 06, 07, and the Master Balance or Morning Setup channel, you would enter the following:

	00-07	(N)	Y/N
	-0.0 Y	-7 M	-1.5 C
			-4 D

This Channel Balance correction will be made to channels 00, 01, 02, 03, 04, 05, 06, and 07.

- Input the correction into the Channel Balance Shift as follows:
 - While pressing MODE, press SETUP, and then press NO until CH BALANCE SHIFT Y/N appears.
 - Press D-IN. Press YES.
 - To input the sample correction above for channels 10, 11, 12, 13, 14, and 15, enter the following:

	10-15	(N)	Y/N
	0.0 Y	-7 M	-1.5 C
			-4 D

Press the arrow keys to move the cursor.

Press the YES key. The Channel Balance correction will be made to channels 10, 11, 12, 13, 14, and 15.

Repeat Steps 2 through 6 until the Normal test print matches the Normal reference print. When the Normal test print matches the Normal reference print, you can proceed to “Setting the Paper Slope.”

Setting the Paper Slope

After matching the Normal test and Normal reference prints, make test prints from the “Under” and “Over” Printer Setup Negatives. Make sure to use the same channel you used to make the reference prints. If the Under and Over test prints match the reference prints, the paper change is complete.

If the Under and Over test prints do not match the reference prints, proceed as follows:

1. Use the method described in Step 4, above, to calculate a correction to make the Under and Over test prints match the Under and Over reference prints.
2. Input the Under correction into the Channel Under Shift in the following way:

While pressing MODE, press SETUP. Then press NO until CH UNDER SHIFT appears. Determine which channels use this paper. *Do not include channel 00 in this correction.* Place the Under negative into the negative mask, press D-IN, and enter the correction required for the Under slope. To input the sample correction from above for channels 10, 11, 12, 13, 14, and 15, enter:

	10-15	(U)	Y/N
0.0 Y	-.7 M	-1.5 C	-.4 D

(If the Under negative is not in the negative mask, an NG error will occur and the correction will not be made.)

3. Press the YES key. The Channel Under Balance correction will be made to channels 10, 11, 12, 13, 14, and 15.
4. Input the Over correction into the Channel Over Shift in the following way:

While pressing MODE, press SETUP. Then press NO until CH OVER SHIFT appears. Determine which channels use this paper. *Do not include channel 00 in this correction.* Place the Over negative into the negative mask, press D-IN, and enter the correction required for the Over slope. To input the sample correction from above for channels 10, 11, 12, 13, 14, and 15, enter:

	10-15	(O)	Y/N
0.0 Y	-.7 M	-1.5 C	-.4 D

(If the Over negative is not in the negative mask, an NG error will occur and the correction will not be made.)

5. Press the YES key. The Channel Over Balance correction will be made to channels 10, 11, 12, 13, 14, and 15.

Compensation Procedure for COPAL Minilab, Models 1B, 1C, 5C, 5C II, 5L, 5S

Follow this procedure to test KODAK EKTACOLOR Edge 8/ROYAL VIII Papers when converting from KODAK EKTACOLOR Edge 7/ROYAL VII Papers, and to set up your printer for the new papers.

Ensure that the Master Balance is on aim before making any changes to printer balance. Back up current channel data (see Step 5 under “Setting the Paper Slope”).

Testing the New Paper

If the printer uses only one type of paper, follow Method 1. If it uses more than one type, follow Method 2.

Method 1:

1. When your supply of EKTACOLOR Edge 7/ROYAL VII Paper is about to run out, print the Printer Setup Negative “Normal,” “Under,” and “Over” on the channel most commonly used for the paper. Label the three prints “Old-Paper Reference Print—Normal,” “Old-Paper Reference Print—Under,” and “Old-Paper Reference Print—Over.”
2. When you are ready to convert to the new paper, load it into the printer and do a Master Balance Test. When the Master Balance Test is on aim, the “Normal” has been set up.
3. The new paper may be different in “Under” and “Over” characteristics (slope). Print the “Under” and “Over” Printer Setup Negatives on the new paper, using the same channel as in Step 1. Identify these prints as “Test Print—Normal,” “Test Print—Under,” and “Test Print—Over.” If the Under and Over test prints match the Under and Over reference prints, no further adjustment is needed. If the test prints do not match the reference prints, proceed to “Setting the Paper Slope.”

Method 2:

1. When your supply of EKTACOLOR Edge 7/ROYAL VII Paper is about to run out, print the Printer Setup Negative “Normal,” “Under,” and “Over” on the channel most commonly used for the paper. Label the three prints “Old-Paper Reference Print—Normal,” “Old-Paper Reference Print—Under,” and “Old-Paper Reference Print—Over.”
2. Take densitometer readings from the Normal reference print; this will be your aim.
3. Load the new paper, and make prints from the “Normal,” “Under,” and “Over” Printer Setup Negative. Be sure to use the same channel as in Step 1. Identify these prints as “Test Print—Normal,” “Test Print—Under,” and “Test Print—Over.”
4. Read and record the test-print densities. Calculate the correction as follows:

Subtract the test densities from the reference (aim) densities.

Example 1

Densitometer Readings—Normal Reference and Normal Test Prints			
	Cyan	Magenta	Yellow
REFERENCE	70	70	70
TEST	75	78	83
Difference	-5	-8	-13

This example includes neutral density equal to the lowest correction figure (-5). Removing the neutral density results in this correction:

Cyan	Magenta	Yellow	Density
0	-3	-8	-5

To change these figures from densitometer units to key corrections, multiply the color corrections by a factor of .7, and multiply the density corrections by a factor of .5. These are the key corrections for this example.

Cyan	Magenta	Yellow	Density
0	-3	-8	-5
0	-2	-6	-3

Multiply by .7 for color and .5 for density

5. To enter the correction, press MODE twice, and select COLOR BAL. Input the appropriate channel number. Write down the existing color balance figures as a reference. Add or subtract the corrections to the existing figures, and press ENTER. The corrections will be entered and the existing balance figures adjusted.

Press the Shift and Centering keys and perform the Dead Heat procedure, using the “Normal” Printer Setup Negative. When the display reads ENTER RINGAROUND LEVEL#=_ , press the Skip key to skip this part. Then return to the print mode by pressing MODE once.

Repeat Steps 3 through 5 until the test prints are within 3 densitometer points of the aim figures, with a spread between the values of less than 5 points.

Setting the Paper Slope

After matching the Normal test and Normal reference prints, make test prints from the “Under” and “Over” Printer Setup Negatives. Make sure to use the same channel you used to make the reference prints. If the Under and Over test prints match the reference prints, the paper change is complete.

If the Under and Over test prints do not match the reference prints, proceed as follows:

1. Compare the readings and work out corrections, using the method described in Step 4, above. (Use the aim figures obtained from the Normal reference print in Step 2, above.)
2. To enter the paper slope correction (under), go into the SETUP mode and select SLOPE ADJ. Write down the current values for SLOPE UNDER. Make the correction

by adding or subtracting from the current values and entering the new values. Then press ENTER.

3. To enter the paper slope correction (over), go into the SETUP mode and select SLOPE ADJ. Write down the current values for SLOPE OVER. Make the correction by adding or subtracting from the current values and entering the new values. Then press ENTER.
4. Press the Shift and Centering keys and perform the Dead Heat procedure, using the “Normal” Printer Setup Negative. Then reprint both “Under” and “Over” negatives, and repeat Steps 1 through 3 until there is a difference of less than 3 densitometer points from the aim, with a spread between the values of less than 5 points.
5. Back up the printer data by going to the SETUP mode. Press MODE twice, and then press the Shift and Transfer keys. The display will read DATA TRANSFER FM_TO_ . Enter “B1” in the first section, and then use the arrow keys to move to the second section and enter “B2.” Press ENTER to back up the new printing data.

Compensation Procedure for AGFA MSP Printers

Follow this procedure to set up your printer when converting to KODAK EKTACOLOR Edge 8/ROYAL VIII Papers from KODAK EKTACOLOR Edge 7/ROYAL VII Papers

1. Enter ITT Schwarzschild Coefficient values for KODAK EKTACOLOR Edge 8/EKTACOLOR ROYAL VIII Paper in an unused table (a total of 10 tables is available).
 - a. Identify an available table; use DFPA (Define Paper). (The list of Schwarzschild tables follows this procedure.)
 - b. Type MOTC. The printer’s password is required.
 - c. Enter a Brand/Paper Type.
 - d. Enter the Schwarzschild Coefficients for EKTACOLOR Edge 8/ROYAL VIII Paper.
 - e. Save the changes. (Enter Y when VALUES OK? appears.)
2. Define the new paper.
 - a. Type DFPA (Define Paper), and choose an unused Paper Number.
 - b. Enter the Code Number from Step 1a.
 - c. Identify the Paper Surface.
 - d. Enter an Emulsion ID.
 - e. Enter the Paper Width.
 - f. Hit ESC twice.
 - g. Save the changes. (Enter Y when VALUES OK? appears.)
3. Create a Paper Channel.
 - a. Copy your current Paper Channel to an unused Paper Channel (use the COPC command). Enter the source channel and destination channel. Save the changes. (Enter Y when VALUES OK? appears.)

- b. Type MOPC (Modify Paper Channel). Enter the Paper Channel that you copied to in Step 3a.
 - c. Change the Paper Type to the Paper Number of the new paper defined in Step 2.
 - d. Save the changes. (Enter Y when VALUES OK? appears.)
4. Create a Film Channel.
- a. Copy your current Film Channel to an unused Film Channel (use the COFC command). Enter the source channel and destination channel. Save the changes. (Enter Y when VALUES OK? appears.)
 - b. Type MOFC (Modify Film Channel). Enter the Film Channel that you copied to in Step 4a.
 - c. Change the Brand/Paper Type to the code number of the new table created in Step 1.
 - d. Adjust the balance 0.000, 0.010, -0.040 to compensate for the Agfa MSP densitometer.
 - e. Save the changes. (Enter Y when VALUES OK? appears.)
5. Balance the paper.
 - a. Load a roll of EKTACOLOR Edge 8/ROYAL VIII Paper into a magazine and install it in the printer.
 - b. Load the Paper Channel from Step 2 and the Film Channel from Step 3, using the LOAD command.
 - c. Expose a test print by using the ETP (Expose Test Print) command. Process the test print. Use the ACC (Automatic Channel Calibration) command and insert the test print when prompted. Allow the recommended Paper Channel changes. Make another test print and continue this step until no changes are needed.
 - d. The balanced test print will appear cyan-green, and will be approximately +0.12 cyan and -0.03 green from neutral Status A. The Film Channel balance change compensates for this bias.
 - e. Run a reel of test negatives to confirm that the new paper has been correctly installed.

AGFA-Recommended Schwarzschild Coefficients for KODAK EKTACOLOR Edge 8/ROYAL VIII Papers

	MSP / MSC			MSCs Without Loqik 4			MSCs With Loqik 4		
	Blue	Green	Red	Blue	Green	Red	Blue	Green	Red
25ms	0.016	0.001	0.008						
50ms	0.006	-0.002	0.002						
100ms	0.000	0.000	0.000	13	-9	-1	13	-9	-1
200ms	-0.008	0.004	0.001	5	-6	0	5	-6	0
400ms	-0.013	0.009	0.001	0	0	0	0	0	0
800ms	-0.016	0.016	0.002	-3	6	1	-3	6	1
1600ms	-0.016	0.022	0.004	-3	13	3	-3	13	3
3200ms	-0.021	0.032	0.005	-7	23	4	-7	23	4

Gamma 1/2/3	1.8	2.4	2.7	1.8	2.4	2.7	1.8	2.4	2.7
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AGFA Recommendations for Printing on KODAK EKTACOLOR Edge 8/ROYAL VIII Papers

Type Measuring Filter for		
MSP	MSC/PSP8	MSC 101
7660/261	8501/147	8506/213

MASK Value—MSP Only			
(Command MOTC)			
	Blue	Green	Red
Mask	0.901	0.720	0.340
Under	1.322	1.060	0.718
Normal	1.778	1.435	1.128
Over	2.623	2.201	1.913

Compensation Procedure for AGFA MSC Printers

Follow this procedure to set up your printer when converting to KODAK EKTACOLOR Edge 8/ROYAL VIII Papers from KODAK EKTACOLOR Edge 7/ROYAL VII Papers.

1. Confirm your setup for EKTACOLOR Edge 7/ROYAL VII Paper.
 - a. Perform "Auto Calibration" of MBL (Master Balance) with EKTACOLOR Edge 7/ROYAL VII Paper.
 - b. Perform "Auto Calibration" of Edge 7/ROYAL VII Paper PBL (Paper Balance).
 - c. Print the "Normal" Printer Setup Negative. Compare the print to the aim. If necessary, adjust FBL (Film Balance) to match the aim. Keep the final print as a reference for setting up the film channel for EKTACOLOR Edge 8/ROYAL VIII Paper.
2. Set up a configuration channel.
 - a. Select an unused configuration, paper, and film channel for use with Edge 8/ROYAL VIII Paper.
 - b. Copy the current Edge 7/ROYAL VII Paper configuration channel into the configuration channel you have selected for Edge 8/ROYAL VIII Paper.
 - c. Enter the Schwarzschild Coefficients for EDGE 8/ROYAL VIII Paper into an unused TFS (Total Film Scanning) location (21, 22, or 23).
 - d. Set the configuration channel to use the paper and film channels selected in Step 1.
 - e. Change the paper channel to use the TFS with the Schwarzschild Coefficients for Edge 8/ROYAL VIII Paper.
3. Balance the channel for EKTACOLOR Edge 8/ROYAL VIII Paper.
 - a. Select the configuration channel for Edge 8/ROYAL VIII Paper.
 - b. Load a paper magazine with the new paper and perform "Auto Calibration" of PBL.

Note: You will need to set the paper magazine pins to the paper channel selected.

- c. Print the setup negative.
- d. Adjust the FBL to make this setup print match the setup aim from Edge 7/ROYAL VII Paper.

Note: The final setup print will appear cyan; this is correct for Edge 8/ROYAL VIII Paper.

Compensation Procedure for GRETAG Masterlab

Follow this procedure to set up your printer when converting to KODAK EKTACOLOR Edge 8 or ROYAL VIII Paper from KODAK EKTACOLOR Edge 7 or ROYAL VII Paper.

Before Converting to the New Paper

Make reference prints from the last roll of EKTACOLOR Edge 7/ROYAL VII Paper.

To confirm that the current setup is correct:

1. Check the daily setup: CHECK/PRINTER/EXPOSE. Repeat the test until it passes.
2. Check the 4-inch paper slope: CHECK/PAPER/EXPOSE. Repeat the test until it passes.

To make reference prints on 4-inch EKTACOLOR Edge 7/ROYAL VII Paper

1. Print a test negative strip on Edge 7/ROYAL VII Paper. Do not read the prints with the densitometer. Use them as a visual reference only.
2. Save all your current data to a memory card for security: COMM/SYSTEM/SAVE/START.
3. If you have customized your production, note the deltas for all negatives, unders, and overs, in case you need to use the same customization again: SET/PRINTER/MASTER/DELTAS.

Converting to the New Paper

To make new reference prints:

1. Load 4-inch Edge 8/ROYAL VIII Paper.
2. Change the aim: SET/MENU/PRINTER/MASTER/DIRECT. In the second screen, change the aim values to these new values:

Y	M	C
0.80	0.80	0.70

Press ENTER.

3. Print the test negative strip on the new paper: SET/PRINTER/MASTER/TEST. Line up negative No. 3, and press START.
4. Read all the prints, pressing the down arrow (∇) between readings.

Note: Read the small grey patch, second from the right, not the large central patch. Press SET/PRINTER/MASTER/SETDEN. For “new ref film,” enter YES. For “save data,” enter YES.

Note: In subsequent printing of the test negative strip, when “new ref film” appears, press NO.

5. Set all deltas to zero: SET/PRINTER/MASTER/DELTAS.

Make some test prints from customer negatives. If you need to customize production, start by entering the delta values you noted previously for Edge 7/ROYAL VII Paper production. Then adjust those values (SET/PRINTER/MASTER/SETMAN) based on visual assessment.

To track other paper widths with the 4-inch reference paper:

Select the paper channel to be adjusted (SET/PRINTER/PAPER/DIRECT), scroll down to “same brand as reference paper,” and enter YES.

If you are not converting all paper widths to EKTACOLOR Edge 8/ROYAL VIII Paper at one time:

1. Select the paper channel that will continue to use Edge 7/ROYAL VII Paper.
2. To turn off “same brand as reference paper,” press SET/PRINTER/PAPER/DIRECT, scroll down to screen 11, and enter NO.
3. Set the paper balance to zero for all colors: SET/PRINTER/PAPER/DIRECT, screen 3. Enter YES to save the data.
4. Set the format balance to zero for all colors: SET/PRINTER/FORMAT/DIRECT, screen 2. Enter YES to save the data.
5. Run a paper balance test: CHECK/PAPER/EXPOSE. Repeat the test until it passes.

Note: These test patches will be appear pink, not neutral. This is correct.

Enter the manual correction values below: SET/PRINTER/MASTER/DELTAS.

Y	M	C	D
-0.5	0	+1.8	-2.0

Make test prints from customer negatives. If you need to customize production, start by entering the delta values you noted previously for Edge 7/ROYAL VII Paper production. Then adjust these values (SET/PRINTER/MASTER/SETMAN) based on visual assessment.

Compensation Procedure for GRETAG Masterflex

Follow this procedure to set up your printer when converting to KODAK EKTACOLOR Edge 8 or ROYAL VIII Paper from KODAK EKTACOLOR Edge 7 or ROYAL VII Paper.

Before Converting to the New Paper

Make reference prints from the last roll of EKTACOLOR Edge 7/ROYAL VII Paper.

To confirm that the current setup is correct:

Check the daily setup: TEST/PRINTER/EXPOSE. MEASURED, UPDATE/∅. Repeat the test until it passes.

To make reference prints on 4-inch EKTACOLOR Edge 7/ROYAL VII Paper:

1. Print a few customer prints on Edge 7/ROYAL VII Paper. Use these prints as a visual reference only.
2. Save all your current data to a memory card for security: OPERATE/ WRITE BACKUP TO CARD/∅.
3. If you have customized your production, note the deltas for all negatives, unders, and overs, in case you need to use the same customization again: SETUP/PRINTER/MASTER/EDIT; scroll down to the third screen.

Printer Conversion to KODAK EKTACOLOR Edge 8 and EKTACOLOR ROYAL VIII Papers

Converting to the New Paper

To make new reference prints:

1. Load 4-inch Edge 8/ROYAL VIII Paper.
2. Change the aim: SETUP/PRINTER/MASTER/EDIT. In the second screen, change the aim values to these new values:

Y	M	C
1.0	1.0	0.9

3. Change deltas to zero, as above: SETUP/PRINTER/MASTER/EDIT. In the third screen, change all delta values to zero.
4. Press TEST/PRINTER/EXPOSE. MEASURE/Ⓓ. UPDATE/Ⓓ. Repeat the test until it passes.
5. Print the full "test film set" of negatives on the new paper: SETUP/PRINTER/PAPER/FULL PAPER TEST/EXPOSE. Make sure the paper channel with "*" is highlighted; this designates the master channel.
6. Read all the prints in the same order in which they were exposed: MEASURE.
7. If the test is "Not OK," repeat Steps 5 and 6.

Make some test prints from customer negatives. If you need to customize production, start by entering the delta values you noted previously for Edge 7/ROYAL VII Paper production. Then adjust those values (SETUP/PRINTER/MASTER/EDIT, screen 3) based on visual assessment.

To track other paper widths with the 4-inch reference paper:

1. Select the paper channel that will convert to Edge 8/ROYAL VIII Paper.
2. To track with the "reference paper," press SETUP/PRINTER/PAPER/EDIT; scroll down to screen 2. "Reference Paper" should show "4" Gloss." If it does not, press the "Reference Paper" button and select "4" paper." Confirm with Ⓓ.

If you are not converting all paper widths to EKTACOLOR Edge 8/ROYAL VIII Paper at one time:

1. Load the paper size that will continue to use Edge 7/ROYAL VII Paper.
2. Run a paper balance test: TEST/PAPER/EMULSION/EXPOSE. Repeat this test until it passes.

Note: These test patches will appear pink, not neutral. This is correct.

3. Enter the manual delta correction values below: SETUP/PRINTER/PAPER/EDIT. Highlight the paper size to be edited.

Y	M	C
-0.02	-0.06	+0.02

Note: When entering deltas, note that 1.0 is equivalent to 10 color buttons, i.e., 0.1 = 1 color button.

Make test prints from customer negatives. If you need to customize production, adjust the delta values (SETUP/PRINTER/PAPER/EDIT) based on visual assessment.

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