Color Management Solution

RICOH Auto Color Adjuster

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The new normal in color matching

Until now, color matching in production printing required time-consuming work by skilled operators.

Through simplified, automated operation, the RICOH Auto Color Adjuster removes the need for specialist skills when performing daily color adjustments and color verification.

By representing color quality in terms of numerical values, it also enables efficient and objective quality control.

What's more, it features proprietary RICOH technology enabling color matching against actual image samples.

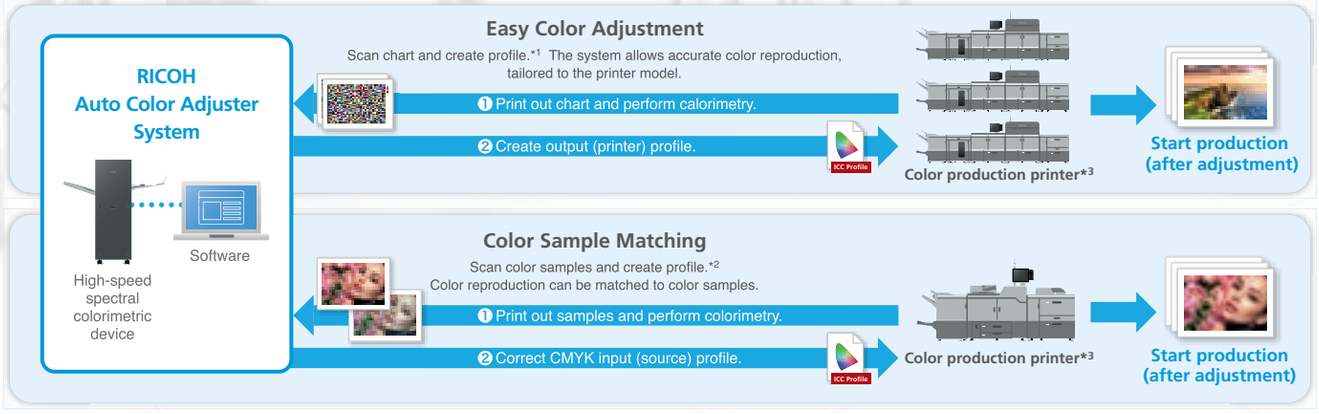
The system simplifies visual color matching and color management, which had been a major burden in the production printing workflow.

The RICOH Auto Color Adjuster is a new color management solution leveraging the power of digital technology to streamline complicated tasks.

Defining a "new normal" for color matching, this solution can revolutionize your printing operations.

The RICOH Auto Color Adjuster is here.

The RICOH Auto Color Adjuster is an easy-to-use color matching system requiring no specialist skills.



With the rapid creation of an ICC profile for use with each model, colors can be matched between different models with high precision.

*1 An output (printer) profile matching the current condition of the aperture can be created, enabling a precise condition to be maintained at all times. If the model supports automatic registration, the existing profile is automatically overwritten with a profile having the same name. For models not supporting automatic registration, registration needs to be carried out by manually overwriting the existing profile with a new profile having the same name. *2 The modified CMYK input (source) profile is manually registered to the printer by the user. *3 This solution uses ICC profiles. It cannot be used with printers not supporting color management using ICC profiles. Note: The PC is not included, and must be provided by the user.

Solution 1: Quick Color Adjustment

Issues

- Even after calibration, colors do not quite match across multiple printer models.
- Daily color adjustment operations are inefficient and difficult to perform with precision.

The RICOH Auto Color Adjuster solves these issues with its Should be Quick Color Adjustment function!

- High-speed profile creation makes daily color adjustment efficient and with precision.
- By using an ICC profile tailored to the condition of each model, color differences between models can be effectively minimized.

The only manual tasks required of the user are printing out charts and loading them into the tray. Other processes are carried out automatically.

❶ Print out the charts

Print out the charts.*1

❷ Scan the charts

75 seconds*2

Colorimetry on a two-sheet chart takes 75 seconds.*2

❸ Printer Condition Check

Check the printer condition. Printer condition check is carried out automatically. If the condition is OK, proceed to profile creation.

❹ Profile creation and registration*3

An ICC profile is automatically created and shared to the digital printer.*4

*1 If multiple printers are to be used, a chart needs to be printed on each printer. *2 To adjust one printer, a two-sheet chart needs to be scanned. When feeding A3 SEF paper, the first sheet takes 40 seconds, and the second and subsequent sheets take 35 seconds. When adjusting multiple printers, the charts output by individual printer models can be loaded together in the tray. The scan times given here are the values applicable when the system is used with a PC having specifications at least as high as the system requirements for this software, and when the PC is not subjected to any processing load other than that of the adjustment function. *3 See the main specifications for models supporting automatic profile registration to digital printers. On models not supporting automatic registration, profile registration must be done manually. *4 Color matching can be done across multiple printers by carrying out this procedure on each printer model.

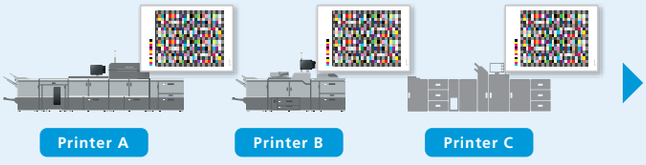
Solution 2: Color Verification and Management functions

Issues

- The color condition of multiple printers is checked visually.
- There is no centralized management or visualization of the color status of different printers.

The RICOH Auto Color Adjuster solves these issues with the Determination and Management functions.

- By simply performing colorimetry with a dedicated chart printed out on each printer, a pass/fail determination can be made regarding the average and maximum color difference relative to the standard values for Fogra Validation Printing System, ensuring that production always starts at a uniform quality level.*
- Verification results from multiple printers can be managed centrally, and changes in color over time can be monitored.



A dedicated chart printed out on each printer is used for color verification.

Results from multiple printers are managed centrally.

* Color verification is carried out using Fogra Media Wedge V2, but the chart layout has been modified for RICOH. This does not mean that Fogra Validtion Printing System(ISO 12647-8) Certification System is guaranteed.
Note: The Color verification function can be used from the Quick operation screen. Verification results over time for each printer and each type of paper can be checked with a web browser.
Note: FOGRA is a registered trademark of FOGRA Forschungsgesellschaft Druck e.V

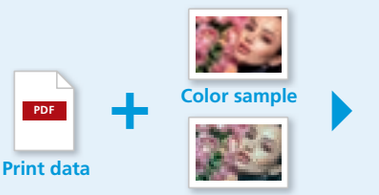
Solution 3: Color Sample Matching

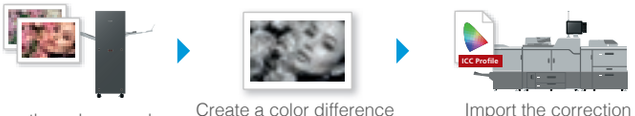
Issues

- Users needing to match colors to color samples struggle with time-consuming processes such as tone curve adjustment.
- Color matching requires skill and is left to proficient operators.

The RICOH Auto Color Adjuster solves these issues with Color Sample Matching.

- With colorimetry performed on color samples and test prints, CMYK input (source) profiles are created to match the color samples.* Efficient color matching can be done quickly by unskilled operators.

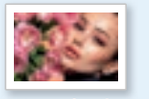




Scan the color sample and test print

Create a color difference map and a correction profile.

Import the correction profile.



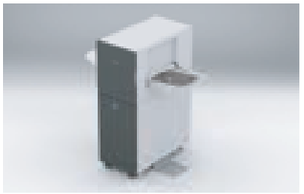
Start production (after adjustment)

* The registration of CMYK input (source) profiles created by Color Sample Matching must be done manually by the user, regardless of the model used.
Note 1: RGB data is not supported. Note 2: High-precision color matching may not be possible for certain images (such as those having very few colorimetric points).

Value Features

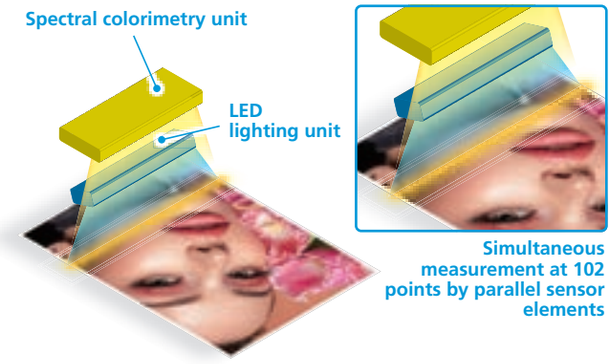
The RICOH Auto Color Adjuster delivers spectral colorimetry with ultra-high speed and precision.

- It can scan 1689 patches*1 at high speed and automatically create output (printer) profiles for them. It also enables daily color adjustments to be made with high precision.
- Because the system performs spectral colorimetry at high speed over the entire paper surface, it is able to perform colorimetry, extract L*a*b* values, and create a CMYK input (source) profile, directly from the actual image.



High-speed colorimetry— just 35 seconds*2 to scan a chart containing approximately 800 patches per sheet

*1 For a single printer, the Quick Color Adjustment function performs colorimetry on a two-sheet dedicated chart (containing a total of 1689 patches on two sheets). The Verification function performs colorimetry on one dedicated chart per printer. *2 This is the time taken to scan the second and subsequent sheets when using A3 SEF paper on continuous feed. The first sheet takes 40 seconds. When performing color adjustment across multiple printers, the charts output by each printer can be loaded together in the tray. These scan times, which do not include warm-up time, are the values applicable when the system is used with a PC having specifications at least as high as the system requirements for this software, and when the PC is not subjected to any processing load other than that of the adjustment function.
Note: There is no automatic sheet reversal function. Only single-sided scanning is supported.



Simultaneous measurement at 102 points by parallel sensor elements

RICOH Auto Color Adjuster Specifications

Dimension (W×D×H)	1,102 mm*1×727 mm×1,098 mm when using the sheet-feed tray and extension. 913 mm*2×727 mm×1,098 mm when storing the sheet-feed tray.
Weight	86 kg or less
Warm-up time	300 seconds or less
Paper type	High-quality paper, coated paper, mat paper, and art paper
Paper weight	73.3~279g/m^2
Paper size	Width: 210-330.2 mm long: 210-487.7 mm
Measurement guarantee area	Entire paper area except the following areas Within 8 mm each from the left and right edges and 30 mm each from leading and trailing edges
Paper capacity	Coated paper: 70 sheets*3 in 104.7 gsm
Output capacity	Coated paper 470 sheets*3 in 104.7 gsm
Scanning Speed*4	A3SEF: 40 seconds/sheet for the first sheet, 35 seconds/sheet for the second and subsequent sheets, SRA3: 40 seconds/sheet for the first sheet, 40 seconds/sheet for the second and subsequent sheets, A4LEF: 30 seconds/sheet for the first sheet, 25 seconds/sheet for the second and subsequent sheets, A4SEF: 35 seconds/sheet for the first sheet, and SRA3: 30 seconds/sheet for the second and subsequent sheets
Colorimetric surface	Simplex only.
Operation panel	Not mounted. ※ The Windows® PC must be prepared separately by the customer. Refer to the PC specifications for software specifications.
Interface	Connect two USB Type A (3.0) cables to the Windows® PC for operation. ※ Two USB cables are bundled.

*1 The paper feed tray has a drawer extension (two steps). when both extensions are stored, 938 mm wide. When only the first stage of extension is used, the width is 1,065 mm. *2 Width dimensions includes foot of pedestal to prevent tipping over (197mm out of the main unit when storing the sheet-feed tray) to prevent overturning. *3 This may vary depending on the paper type, paper thickness, and other operating conditions. Since the actual feeding and output of paper is affected by the toner of the printed paper and the bulk of the ink, the notation is a rough guide. *4 Warm-up time is not included. This reading time is a numerical value in which no load other than the function is applied to the PC when it is used on a PC that exceeds the corresponding PC specification in the software specification of the machine.

PC specifications		Prepare a Windows® PC that meets the specifications below for use with the software and the measurement unit. It is recommended to use the prepared PC exclusively for this machine. OS: Windows® 10 Pro 64 bit ver2004 or later, Web browser: Chromium, CPU: core i7 or later, memory: 16 GB or higher HDD: 256GB or more, I/F: USB3.0 (Type A)×1 port, USB2.0 (Type A)×1 port Or USB 3.0 (Type A)×2 ports are allowed.
Quick Color Adjustment	Number of printers that can be profiled	Base 3 units (after the 4th unit, it will be charged separately)
	Adjustment time	220 seconds (with adjustment of one unit)*1 from the start of reading to the completion of profile creation.
	How to import a profile	Both automatic and manual operation are supported. ※ Refer to the following for the model supporting the automatic profile registration.
	Automatic profile import compatible printer models	● RICOH Pro C9210/C9200+ color controller E-45/E-46 or TotalFlow print server R-62 ● RICOH Pro C7210S/C7200S+ color controller E-45A/E-46A or TotalFlow print server R-62A ● RICOH Pro C5310S/C5300S+ color controller E-27B/E-47B ● RICOH Pro C9110/C9100+ color controller E-43 ● RICOH Pro C7110S/C7110/C7100S+ color controller E-43A ● RICOH Pro C5210S/C5200S+ color controller E-24B/E-44B ※ Please refer to the Ricoh website for the latest supported version ※ To the need to combine the software versions of the above-mentioned compatible models I have. Please refer to the Ricoh website for the latest version.
Color Sample Matching	Data format*2	PDF (CMYK data) ※ PDF1.3(Acrobat 4.x),PDF1.4(Acrobat 5.x),PDF1.5(Acrobat 6.x), PDF1.6(Acrobat 7.x),PDF1.7, Adobe Extension Level 3(Acrobat 9.x), PDF1.7, Adobe Extension Level 8(Acrobat X),PDF/X-1a,PDF/X-3, PDF/X-4 ※ Not supported for PDF with no embedded data or fonts, including RGB and feature specifications
	Adjustment time	150 seconds or less ※ Click the [Scan] button to scan A3SEF Golden sample and test print one sheet*1, and the approximate time to create a profile. It does not include time such as Test printing, manual setting, and importing profile.
	How to import a profile	Automatic import is not supported regardless of model. Manual profile import is required.

*1 The import time of the created profile is not included. This value does not include warm-up time, and does not apply any load to the PC other than the specified function when used on a PC whose PC exceeds the applicable PC specification in the software specification. *2 Images that do not have any structure, such as solid or gradient edges on the entire surface of the image, or images that do not have the position of the image or the vertical and horizontal orientation of the image, such as a line symmetry or a pattern to be rotated, are not supported.
※ This product supports only CMYK 4 color profiles. Special color profiles are not supported.

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