GMG ColorProof
User Manual

Imprint

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1. First Use

1.1 System Requirements

Our recommendations and minimum system requirements are meant to provide general guidelines for running GMG ColorProof. We recommend systems that meet or exceed the following requirements.

Especially the ripping time and printing speed depend on the computer performance. Please note that the ideal computer configuration depends on the printer **types**, **number** of printers, and **proof mode** used. As a rule of thumb, the **larger** the printer is (job size) and the **higher** the number of printers connected to the computer, the higher are the demands on the computer performance.

Operating system:

GMG ColorProof supports all versions of Windows Pro / Enterprise / Server officially supported and distributed by Microsoft. Windows Home is not supported.

Processor: Intel® Core ™ i7

Memory: 8 GB RAM, 512 GB SSD hard disk drive

Hardware components:

- Required for the GMG GamutViewer feature: Video card with enabled Direct 3D acceleration and OpenGL 3.2 or higher, updated driver (**not** Windows default driver)
- Minimum resolution 1280 x 1024 pixels
- USB port: 1 for dongle, 1 per measuring device

Measuring devices: GMG ColorProof does not support any measuring device taken out of production by the device manufacturer.

1.2 Program Installation

1.2.1 Before You Install

To ensure a safe installation, please check the following list before starting the process.

- Check the **system requirements** for the software you want to install.
- Make sure a valid **license** required for the software version you want to install is available on the target computer.
- Unplug all **measuring devices** connected to the computer (if any). Otherwise, device drivers will not be properly installed.
- Make sure you are logged on as a user with **full administrator rights**.
- Make sure **no** Microsoft system updates are running in the background. This could lead to an installation failure.

1.2.2 First Time Installation

The following information refers to the installation of GMG ColorProof for the first time on a new computer. If you have already installed the application and you want to make an update to a newer version, please refer to the following information:

- Update GMG ColorProof to a New Version
- Installing the Software

You can choose between three methods to install the application, depending on whether the computer on which you install the application will have an active **internet** connection or not.

Available options	*Description*
Web-based setup	This method is recommended if the computer on which you install the application has an active **internet** connection. You need to download only a very compact setup file. All required resources will be downloaded automatically via the internet. The setup file can be found in the download area of the GMG support website.
From DVD	All resources are on the DVD you received from GMG.
Downloaded ZIP archive (**Full Setup**)	If the computer has no active internet connection and you have no DVD, you can download the setup and all resources as a ZIP archive (from a different computer) and then transfer the ZIP archive to the computer on which you want to install the application. The ZIP archive can be found in the download area of the GMG support website.

How to install GMG ColorProof from DVD or ZIP archive

Note Graphics card configuration: Please ensure that the **hardware acceleration** for your card is set to the **maximum** value. You will find this configuration option in the display settings in your system settings.

GMG ColorProof supports the ICC profile versions **ICCv2** and **ICCv4**. Standard ICC profiles are installed into the Windows default folder for ICC profiles (usually *C:\Windows\System32\spool\drivers\color*) together with GMG ColorProof. Already existing ICC profiles with the same name in this folder are **not** overwritten.

1. If you downloaded the ZIP archive from the GMG website, copy it to a local directory and extract all compressed files.
2. Double-click the **Setup_5.x.x.x.x.exe** file to start the installation.
3. Select the additional program features such as GMG ProfileEditor, GMG GamutViewer, or GMG Remote CaliWizard you want to install.
4. If the computer will **not** have an active internet connection (or a slow one), select the option **ColorProof AppData Package**. If it is selected, printer calibration files and profiles will be installed on the computer. If it is not selected, those files will be automatically downloaded on demand from the GMG cloud.
5. When the installation is complete, click the **Finish** button to close the wizard.

1.3 Starting GMG ColorProof

How to start GMG ColorProof

1. Connect the license dongle to a USB port.
2. Double-click the GMG ColorProof program icon on the Windows desktop or start the program from the Windows Start Menu (**All Programs** > **GMG** > **ColorProof 5**).
   After verifying the license information on the dongle, GMG ColorProof initializes and loads the application data. The GMG ColorProof icon is displayed in the Windows taskbar and the program is ready to use.

2. Getting Started

2.1 About the Help and User Manual

The help integrated into the software and the user manual contain all important information about GMG ColorProof to help you learn about and use its basic features.

It is assumed that you already have a basic understanding of computer and software terms, but no special skills are required to read this document.

The GMG ColorProof Help provides a fast and convenient way to look for information. Compared to the printed manual, it gives you the advantage of scrolling through the text in a non-linear fashion, picking up all the information you need.

Tip When you press the **F1** key in GMG ColorProof, a Help topic corresponding to the currently active dialog box will be displayed, so that you quickly find the information you need.

The GMG ColorProof software is part of an ongoing developmental process. Please understand that the provided documentation is not always up to date. The latest information can usually be found in the Help.

2.2 Welcome to GMG ColorProof

- **Best quality proofing out-of-the-box**: GMG ColorProof is a versatile solution for contract proofing and mockup production that comes with preinstalled, tested color profiles for all relevant printing standards.
- **Highly scalable**: Customized software packages support different levels of complexity, thus offering an ideal solution for your specific requirements.
  - GMG DotProof excels in a realistic simulation of discrete ink dots (raster proofs).
  - With GMG DotProof XG you can take advantage of the extended color space of multi-ink printers such as Epson Stylus Pro x900 to produce an outstanding dot simulation.
  - GMG FlexoProof extends the use further to flexographic and packaging applications, including a paper structure simulation.
  - The GMG WT module allows to print white ink in a variety of useful and creative ways.
- **User-friendly calibration concept** for highest stability and consistency across printers, measuring devices and locations - create identical proofs with different printers, at different locations.
- **Fail-proof color management**: Colors are automatically converted to the printer color space based on DeviceLink proof profiles. Database assisted validation of all important parameters and profiles.
- **Integrated Raster Image Processor (RIP)**: The integrated RIP is based on the PDF Print Engine technology from Adobe Systems Incorporated. RIP settings are optimized specifically for the used proofer.
- **Quality control**: To guarantee quality, a control strip and a proof label can be printed together with the proof. The proof verification can be fully automated for printers with an integrated measuring device.

Tip Please see the following section for more in-depth information on basic concepts.

Best quality proofing

The close integration of high-performance proof printers from several providers, high-quality GMG ProofMedia, and GMG ColorProof software provides an excellent proof output that matches the expected print result on the press as closely as possible.

In compliance with world-wide accepted (or locally used) standards, GMG offers a complete proofing solution meeting even the highest quality demands. Supported print standards are, for example: ISO Offset, ISO Newspaper, PSR, GRACoL, SWOP, 3DAP, JMPA, JPC, PPA, and more. The GMG proof system (or parts thereof) has also been certified by official organizations such as Fogra, ECI, IDEAlliance Inc, 3DAP, PPA. Please see the GMG website for more information.

GMG DotProof excels in a realistic simulation of discrete ink dots as occurring in the later printing process. With this unique feature, it is, for example, possible to reliably predict imagesetter problems such as Moiré effects already at an early stage (before plate making). To simulate the behavior of the separate inks, 1-bit TIFFs (either generated by an external RIP or by GMG 1-Bit Creator) are converted and sent to the printer by GMG DotProof.

PDF, **PS**, **EPS**, and **DCS** formats as well as various **contone** and **1-bit** file formats are supported input files. Vector graphics and text (lineworks), and raster image information are converted to the desired output format and resolution by the integrated RIP.

Integrated Raster Image Processor (RIP)

In GMG ColorProof, the RIP is integrated into the main application. Basically, images can be ripped either by the integrated or by an external RIP. The integrated RIP converts **vector graphics** and **text** into **contone** images (for ContoneProof) or **1-Bit** images (for DotProof). It is based on the **PDF Print Engine technology** from **Adobe** Systems Incorporated, and as such based on the same PDF technology as Adobe Acrobat® and Adobe Creative Suite software.

Color management

GMG ColorProof applies DeviceLink profiles that achieve a very good colorimetric representation of the target print. Together with the printer calibration and additional features such as paper tint simulation, noise and sharpness, the same colors can be reproduced across different locations and devices, always showing the same colorimetric and visual match to the target reference.

GMG ColorProof additionally provides a basic color conversion functionality to first convert your image data to the desired target color space, for example from RGB to CMYK. This basic conversion is, however, based on ICC technology and does not include the conversion settings you have in a full color conversion software such as GMG ColorServer.

Tip Checkout GMG ColorServer to **automatically convert** image files into a target color space, with or without resampling into a target resolution and file format. All conversions can be done in a batch based on a hotfolder technology. Hotfolders can be easily integrated into custom workflows. GMG ColorServer supports both MX and ICC based color management.

Quality control

GMG ColorProof offers the possibility to print important information such as the target printing standard, the checksum of the used color profile, and the last date of printer calibration as a proof label. The GMG Standard Proof Logo documents that a proof has been printed on a high-quality proof medium with highly standardized color management profiles developed by our color experts.

For enhanced quality control, control strips such as the Ugra/Fogra Media Wedge CMYK or IDEAlliance Digital Control Strip 2007 can be printed together with the proof. GMG ProofControl automatically verifies that a proof is within the tolerances of the print standard. Quality control is especially important for legally binding contract proofs, but also guarantees a stable quality to you and your customers.

2.3 Program Overview

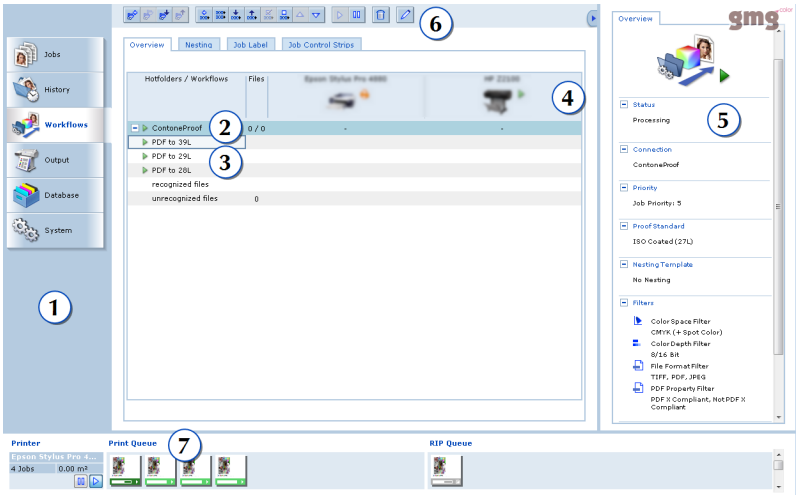


Fig. 1 Main program window.

The main GMG ColorProof window is divided into the six main views **Jobs**, **History**, **Workflows**, **Output**, **Database**, and **System**. The screenshot shows the **Workflows** view.

You can switch from one view to another by clicking the appropriate button on the navigation panel (1) on the left side of the main program window.

The **Jobs** view displays all jobs in **progress** until they are finished. The **History** view displays all jobs that are **finished**. You can print a job again from the **History** view.

If you are using the GMG ProofControl Inline module, the proof verification status of each job will also be shown in the **History** view.

The **Workflows** view displays all **hotfolders** (2) and **linked workflows** (3). Multiple workflows can be linked to the same hotfolder.

Each workflow defines all parameters for a specific image processing workflow, from the input images, over color management, load balancing and nesting rules, to the output printer. In the example screenshot, several workflows dedicated to different input formats (PDF and TIFF) and different proof standards (ISO Coated (27L), ISO Uncoated Yellowish (30L), and ISO Newspaper (26 v4) are defined.

All **printers** (4) that are available for load balancing and their status are also shown in the **Workflow** view. This way, you can see all important information at a glance.

The **info** pane (5) provides more information on the item that is currently selected in the list, for example, all images in the selected hotfolder or the parameters of the selected workflow.

The **Print Queue** (7) gives you a quick overview on the status of all jobs assigned to a printer from the printer pool. You can easily identify a job in the print queue by clicking it with the mouse. The corresponding job will be automatically selected in the **Jobs** view. A tooltip shows you the job status.

The menus in the menu bar refer to the view with the same name, for example, the **Jobs** menu lists all commands related to the processing of manual jobs or to the **Jobs** view itself.

The toolbar (6) provides quick access to often-needed software features such as restarting and deleting a job.

2.4 Proofing with GMG ColorProof–How Does It Work?

Let's suppose you want to proof a one page PDF according to **ISO Coated v2 (39L)**. How do you tackle this task?

Your basic equipment in GMG ColorProof consists of four things, which are bundled into a **Proofing Condition**:

- Printer
- Media
- Calibration Set
- Proof Standard

Let's find out where and how to use this equipment. Open GMG ColorProof and try to follow the steps in the software. If you get lost in one of the steps or just want more information, click on the corresponding **See also** link.

Step	*What to do*	*How to do it*	*See also*
1	Set up **Proofing Condition**	First, your basic equipment has to be made available in the **Database** view. Click on the **Add** link in the **Printer** column to open the **Add Item** dialog box. Select your printer from the drop-down list and define the required printer properties. Select the **Media** you are using with the printer, and the ISO Coated v2 (39L) **Proof Standard**. Decide for a **Calibration Set**. Keep an eye on the **validation system** of the software, this will help you to find which information needs to be filled in.	"Database—Managing Color Managements Items" on page 154 "Media" on page 157 "Interplay of Color Management Items" on page 156
2	Calibrate printer	In this step, the color space of your printer-medium combination is checked by printing and measuring a small calibration test chart. Directly after adding the printer and color management items you selected in step 1, you will be asked to calibrate the new printer. Click **OK** to start the calibration wizard which will guide you through the calibration process.	"Output—Printers" on page 97 "Printer Calibration" on page 106
3	Print proof	Now that the printer is set up and ready to use, you can load the file you want to proof. Click on the **Jobs** button on the navigation panel on the left side. You can either use the **New Job** button on the toolbar or just **drag and drop** your file onto the **Jobs** view. In the New Job dialog, select **ISO Coated v2 (39L)** as **Proof standard**. Click **Print** to print the file.	"Creating New Jobs" on page 52 "Proof Standards" on page 166

Special equipment: When is a proof a proof?

A tricky question you might think, but quite easy to answer: as soon as you can verify it. To ensure the proof simulates the printing condition it was printed for, you simply add a **Proof Control Strip** (**Job** > **Label/Strips** > **Job Control Strips**) to your job. A **Proof Control Strip** such as the **Ugra/Fogra Media Wedge CMYK v3.0** is a standardized and internationally recognized control tool. If your printer features an integrated measuring device, the proof verification can be conveniently automated. If you are using an external measuring device, you can use the add-on tool GMG ProofControl to measure the control strip and print the verification label.

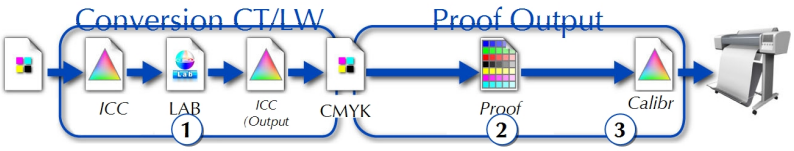
See also:

- "Proof Verification" on page 187

3. Color Management

3.1 How Does the Color Management Work?

The following illustration shows the different color management steps which may be involved when printing a proof in GMG ColorProof.



If an input file contains lineworks or vector graphics, it needs to be **rasterized** first to translate the vector information into discrete pixels for printing.
The next step is only required for files which have not been **converted** to the target color space yet, for example a PDF containing multiple elements in different color spaces which need to be normalized to one color space first. This color conversion uses ICC profiles for the color transformation from one working space to another (**Conversion CT/LW**, 1).
The main color management starts in step 2, **optimizing** the color data for the printer color space by means of a **proof standard**. Each MX DeviceLink profile linked within a GMG proof standard has been calculated to perfectly simulate a target printing condition on a specific proof printer equipped with a certain print medium and ink set.

Step 3 brings in the **printer calibration** that separates the color data into the inks used by the printer and hands the data to the printer driver. The printer driver processes the color data and generates a Yes/No pattern for the printer, defining at which places each nozzle releases ink onto the print medium.

Tip The quality optimization achieved by DeviceLink profiles only makes sense if the used printer-medium combination is **regularly calibrated**. Our key concepts—standardization and repeatability—can only be achieved if the printer is kept in tight tolerances by the calibration and recalibration capabilities of the software.

Simulation features

All advanced color management settings such as noise or missing dots used in proof standards are applied both to the image and the control strip (except printer calibration control strip). This ensures a high quality, because the control strip is printed under the same conditions as the image. Thus, you can make sure that the target Lab values are still inside the tolerances and not significantly affected by noise or missing dots simulation.

3.2 Printing Halftone Proofs with DotProof

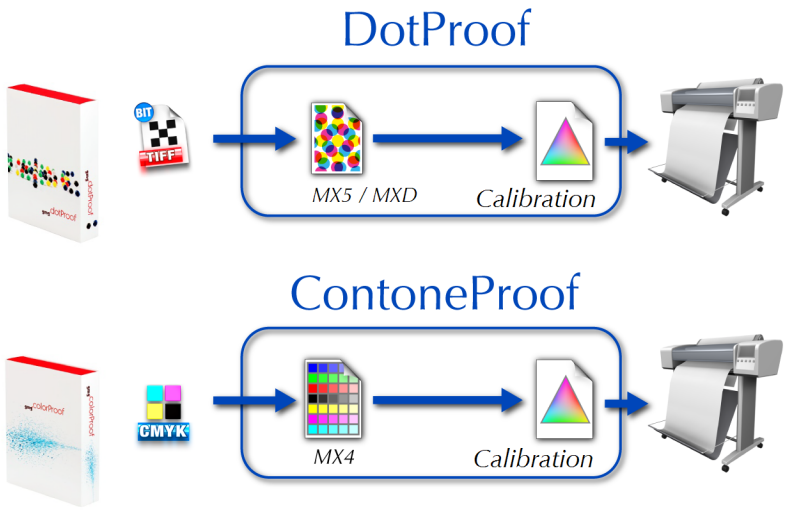


Fig. 2 Image processing of halftone and contone proofs.

GMG DotProof allows direct processing of 1-bit imagesetter data, so that they can be inexpensively proofed on inkjet printers, and errors detected before platesetting or the start of a press run.

For DotProof color management, an **MX5** or **MXD** DotProof profile is used instead of an MX4. As each screening parameter affects the visual appearance of the proof, we recommend to create a specific profile for **each** type of dot shape, screen ruling, screen angles, and compensation curve.

Dot meets spot—DotProof XG

GMG DotProof XG is a module which enables the user to simulate additional spot colors in a halftone proof, as nowadays often required in the packaging business. Available through an additional license, **DotProof XG** has been developed to reflect the extended color gamut of multi-ink printers. Up to now, this was only possible using expensive and slow thermal halftone proofing systems.

Profiling

Use the integrated profiling module GMG ProfileEditor to create an **MX5** proof profile specifically for your imagesetter RIP and target printing condition. For more information on how to create and apply an MX5 profile, please see our MX5 profiling tutorial available on our website.

NEW With our separate profiler GMG OpenColor, you can create multichannel **MXD** DotProof profiles that perfectly simulate the interplay of colors, especially spot color overprints. For more information on OpenColor profiling, please see the separate documentation of GMG OpenColor.

Proof verification

Control strips ripped under exactly the same conditions as the image can be used to verify the color accuracy of the halftone output in GMG ProofControl.

You can create DotProof control strips from scratch with eight 1-bit files (**Database** view > **Control Strips** > **New**), or screen and import an existing contone control strip such as Ugra/Fogra Media Wedge CMYK (**Tools** menu > **New 1-Bit Control Strip**).

Note Since the resolution of the proofing device is generally lower than the resolution of imagesetters and CTP devices, DotProof is subject to certain technical limitations. For example, halftone information exceeding 175 lpi can hardly be reproduced in high-end quality on most proofing devices currently available.

Descreening and proofing 1-bit files in ContoneProof mode

If desired, however, it is also possible to print **1-bit** files in **ContoneProof** mode by **descreening** those files.

See also:

- "Adding a Custom Control Strip" on page 177
- "1-Bit Creator for PDF/PS Files" on page 41

3.3 Printing Photographic and Fine Art Prints with PhotoProof

For photo printing applications, you can use **PhotoProof** proof standards to get the maximum out of your printer when printing **RGB** data. PhotoProof proof standards are **not** intended for proofing, but are optimized for printing RGB data in excellent quality (using **gamut mapping** algorithms to achieve the highest possible saturation and best visual impression).

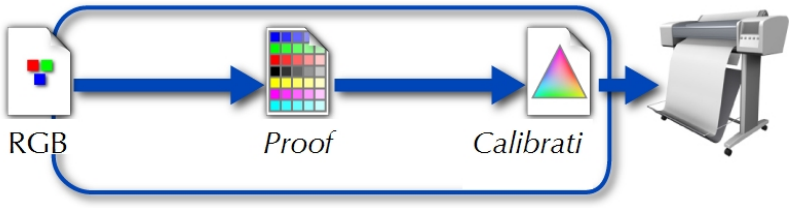


Fig. 3 Printing RGB images with PhotoProof proof standards.

PhotoProof proof standards are available for all printers supported in GMG ColorProof and for all widely used RGB color spaces. A PhotoProof proof standard is named after the input color space it supports.

Supported PhotoProof proof standards:

- AdobeRGB
- sRGB
- ECIRGBv2

Note By using a PhotoProof proof standard, the RGB data is automatically converted to the printer color space, without an intermediate **Conversion CT/LW** step into a simulation color space.

See also:

- "Proof Standards" on page 166

3.4 Printing Imposition Proofs

Note Requires an additional license.

Any printer can be connected to GMG ColorProof through a windows print spooler in order to print imposition proofs. Imposition proofs are a great way to quickly check the layout and content.

As the focus is on layout and content, imposition proofs have no claim on color accuracy, as the data is sent directly to the printer ICC and skips GMG color management via MX profiles. The color management is configured in the Windows Print Spooler only.

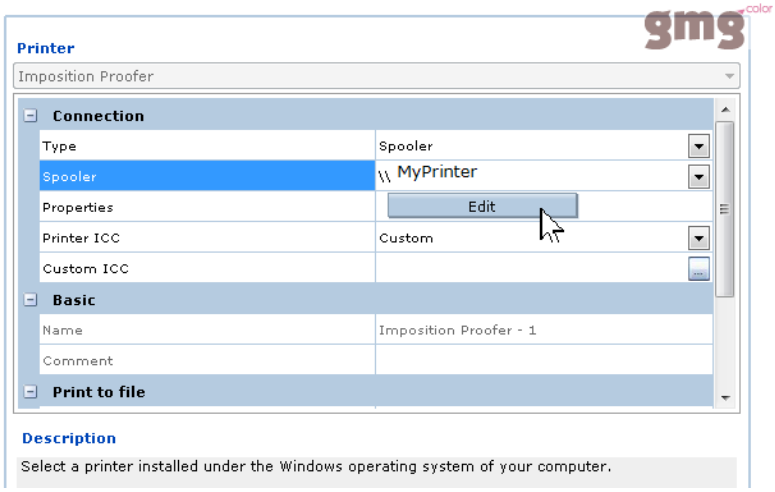


Fig. 4 Configuring the color management of an imposition proofer.

See also:

- "Setting up a New Printer" on page 99

3.5 Conversion CT/LW

3.5.1 Conversion CT/LW–Converting Your Files to the Target Color Space

Note **Conversion CT/LW** is **not** supported for **preseparated** PS/PDF files.

If your input files do not match the target color space of the proof standard, you first have to **convert** them before they are processed according to the settings on the **Proof Output** page.

- A color conversion is applied to images that are not already in the target color space. A conversion can be a separation from RGB to CMYK, or a CMYK to CMYK conversion from the current CMYK color space to the target color space.
- Conversion settings can be defined separately for contone (CT) and lineworks (LW) elements.

To convert all contone and lineworks elements to a target color space, you need to specify an ICC input profile, converting the input color data to the LAB color space. The color conversion settings can be defined individually for each input color space (**CMYK**, **RGB**, or **Gray**). The ICC profile you select as **Output Intent ICC Profile** then converts the color data from the LAB color space to the target color space.

Tip You can define **default** conversion settings for manual jobs in the **System** view > **Color Conversion** which are automatically used when input files do not match the color space of the selected proof standard.

How to convert your files to the target color space

1. Create a new **job** or set up a new **workflow** (or edit the **Properties** of an existing job or workflow).
2. Click the **Color Management** button on the navigation panel on the left of the **Manual Job Manager** / **Workflow Properties** dialog box.
3. Click either the **Conversion CT** or the **Conversion LW** tab. Generally, you will use the same settings for both CT and LW, that is, setting up **Conversion CT** is sufficient for most applications.
4. Select the **color spaces** of the input files for which you want to use the color management. Deselect the color spaces that you want to keep unchanged.
5. Select conversion rules/profiles for each selected input color space.
6. If you select either option **Use the following profile** or **Use embedded profile if available, otherwise use the following profile**, click the browse button and load the desired color profile.
7. Select the **Rendering Intent** for each profile. Default is **Perceptual**.
8. Select an **ICC Output Intent** profile for defining the target color space.
9. If you want to use different settings for the conversion of **LW Elements**, click the **Conversion LW** tab and deselect the option **Same Settings as Conversion CT**. Repeat steps 4–8.

Can I choose which ICC engine is used for the color conversions?

The ICC engine converts the input colors to the output colors by computing the color profiles selected on the **Conversion CT/LW** page.

- For color conversion of files that are not ripped before processing (TIFF, JPEG, etc.), you can select the ICC Engine under **System** > **ICC Defaults**.
- For color conversion of files that are ripped (PDF, PS, etc.), the integrated RipServer automatically uses the **Adobe® Color Management Module**.

Color conversion settings

Group	*Short description*	*See also*
PDF X Processing	With the option **PDF X Processing**, colors are automatically converted according to the **output intent** of the PDF/X file or in case of a PDF 2.0, to the output intent of the document page. Make sure that the output intent of the PDF matches the output intent of the **Proof Standard**. For example, if the output intent of the PDF is "ISOcoated_v2_300_eci.icc", you should use an "ISO Coated v2" proof standard. If you are not sure which output intent ICC profile is linked within a proof standard, just double-click the proof-standard in the **Database** view and click on the **Color Management** button on the left side of the configuration dialog. **Manual Conversion**: If **PDF X Processing** is deselected, colors can be converted according either to **embedded** ICC profiles or to **custom** ICC profiles.	"PDF X Processing" on page 19
Color Space Input Profiles for **CMYK**, **RGB**, **Gray**	**Manual Conversion** requires an input profile for at least one color space (CMYK, RGB, or Gray). Color management is only applied to the color spaces that are selected here. You can use an embedded ICC profile or load a custom ICC profile.	
Output Intent ICC Profile	The **Output Intent ICC Profile** specifies the transformation from the Lab color space to the color space that is required for the **Proof Output**. You can use an embedded ICC profile or load a custom ICC profile.	

Input profile options

The input profile can be defined by the following rules. The output color space is defined by the **Output Intent ICC Profile**.

Available options	*Description*
Use Embedded ICC Profile	The embedded ICC profile is used to define the input color space. **Manual Job Manager**: This option is only available if the image has an embedded profile.
Use the Following Profile	A selected ICC profile defines the input color space.

Available options	*Description*
Use Embedded Profile if Available, Else Use the Following Profile	Only available in the **Workflow** dialog box. The embedded ICC profile is used to define the input color space. If the image does not have an embedded ICC profile, the selected profile is used.

3.5.2 Separation of RGB Images

Note RGB images need to be separated to CMYK before the color management for proofing can be applied. A separation of RGB images to CMYK is not required if **PhotoProof** standards/profiles are used.

The following illustration shows the complete color transformation for RGB images from the **input** color space to the **printer** color space.

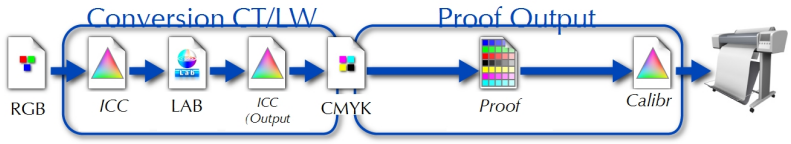


Fig. 5 Separation of RGB images and following color management.

The separation from RGB to CMYK is performed in the **Conversion CT/LW** step and is always ICC based. Please make sure that the used **Output Intent** profile matches the simulation color space of the proof standard (for example, ISO Coated v2 (39L)).

For elements inside a PDF/PS that are already in the correct color space, the **Conversion CT/LW** step is not required and is automatically skipped. For example, the embedded ICC profile information can be used as a tag for checking the color space and for an automated **Conversion CT/LW** if required.

How to separate an RGB image

1. Create a new **job** or set up a new **workflow** (or edit the **Properties** of an existing job or workflow).
2. Click the **Color Management** button on the navigation panel on the left of the **Manual Job Manager** / **Workflow Properties** dialog box.
3. Click either the **Conversion CT** or the **Conversion LW** tab. Generally, you will use the same settings for both CT and LW, that is, setting up **Conversion CT** is sufficient for most applications.
4. Select the **RGB** color space.
5. Select a conversion rule for the **RGB** input color space.
6. If you selected either option **Use the Following Profile** or **Use Embedded Profile if Available, Else Use the Following Profile**, click the browse button and load the desired color profile.
7. Select the **Rendering Intent** for each profile. Default is **Perceptual**.
8. Select an **ICC Output Intent** profile for defining the target color space.
9. If you want to use different settings for the conversion of **LW Elements**, click the **Conversion LW** tab and deselect the option **Same Settings as Conversion CT**. Repeat steps 4–8.

3.5.3 PDF X Processing

Note GMG ColorProof supports PDF X-1, PDF X-3, and PDF 2.0 files. Before processing a PDF, the software validates whether the input file is a **PDF** compliant to PDF X or not. Other requirements according to the PDF X standard are **not** verified.

The option **PDF X Processing** (**Color Management** > **Conversion CT/LW**) is automatically preselected for PDFs that contain embedded ICC profiles. In workflows, you can additionally define color conversion rules with embedded or custom ICC profiles, as GMG ColorProof supports an automated processing of PDF X files together with other file types in the same workflow. These color conversion rules apply to all PDF input files without embedded ICC profiles and to all non-PDF files. In manual jobs, you need to deselect **PDF X Processing** to define color conversion rules.

How does PDF X Processing work?

With the option **PDF X Processing**, colors are automatically converted according to the **output intent** of the PDF/X file or in case of a PDF 2.0, to the output intent of the document page. Make sure that the output intent of the PDF matches the output intent of the **Proof Standard**. For example, if the output intent of the PDF is "ISOcoated_v2_300_eci.icc", you should use an "ISO Coated v2" proof standard. If you are not sure which output intent ICC profile is linked within a proof standard, just double-click the proof-standard in the **Database** view and click on the **Color Management** button on the left side of the configuration dialog.

Tip If the output intent of a PDF page (or document) does not match the **Output Intent ICC Profile** selected on the **Conversion CT/LW** page (which is per default linked to the selected proof standard), you will be notified by an **information message** specifying the page number and the used output intent in the **Manual Job Manager**. You can then check the document page and select a **Proof Standard** matching the output intent of this particular page.

What happens if the PDF output intent and the selected proof standard do not match?

If the output intent and the proof standard did not match, you would simulate how the given separations would look like if they were printed under the printing condition defined in the proof standard.

Example: If the output intent is "ISOcoated_v2_300_eci.icc" and you select an "ISO Uncoated Yellowish" proof standard, the proof will show the color appearance of ISO Coated V2 separations printed on uncoated yellowish stock and the appropriate ink standard on the press.

See also:

- "Conversion CT/LW—Converting Your Files to the Target Color Space" on page 17

3.6 Color Channels

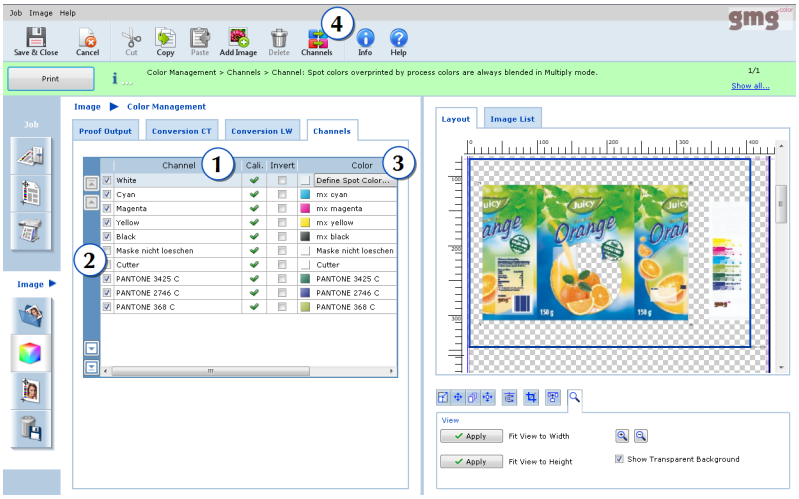


Fig. 6 Image with spot color channels in the **Manual Job Manager**.

The color channels from the **input** image are listed in the **Channel** column (1) in the order of printing from top to bottom.

You can change the order by selecting a color channel and clicking the arrow buttons on the left side to move the channel up or down in the list (2). Note that **CMYK** is always printed as one set sequence, which means that you cannot move or swap these channels. On the screenshot you can see a print sequence, where a white spot color will be **overprinted** by process channels.

The mapping of channels to spot colors from a spot color database is shown in the **Color** column (3). You can manually **remap** channels by picking a spot color from the selected spot color set or by defining a custom spot color. You can also define rules for an **automatic** mapping of image channels (**Channels** button on toolbar, 4).

For multicolor proofing with GMG OpenColor, the channel and print order can be defined either by the selected OpenColor Proof Standard, or dynamically, according to the current requirements (**Channels** > **Print Order**). Supporting the **MatchMyColor** color plugin system for Adobe Illustrator, GMG ColorProof is able to read the XMP metadata of the input file, automatically assign the correct measurements, and create a matching profile on-the-fly.

Channels table

Column	*Description*	*See also*
Channel	Channel name from the **input** image. An **RGB** image contains the channels Red, Green, Blue. A **CMYK** image contains the channels Cyan, Magenta, Yellow, Black. A **multicolor** image file has at least one **spot** color channel (any channel name). It can have any number of spot color channels, plus Cyan, Magenta, Yellow, Black. Multicolor RGB + spot color images are **not** supported. **CMYK** and **multicolor** images only: You can deselect any input channel by removing the check mark in the first column of a channel row. Deselected channels are not shown in the preview and are not printed.	
Cali.	Indicates whether a spot color uses an MX3 printer calibration or not (defined in the spot color set). Standard process colors (CMYK, RGB) always use the printer calibration. (The check mark icon shows only that an MX3 is used for processing the channel, but the printer calibration is not validated. For example, you could use a linear MX3 if you do not want to use an MX3 for a process color.)	
Invert	If activated, the color of the channel is inverted. The brightness value of each pixel in the channels is converted to the inverse value. For example, a pixel in a positive image with a value of 255 is changed to 0, and a pixel with a value of 5 is changed to 250.	
Color	The color currently mapped to the original channel of the input image. You can change color mappings by clicking in the **Color** cell and choosing a desired color from the drop-down list. **Custom**: Instead of using any predefined colors, you can also define a custom color value (**Tonal Value** in percent). If a PDF/PS file contains **cut paths**, these can also be defined by selecting **Define Cutting** from the drop-down list.	"Spot Colors" on page 21 "Cutting Contours" on page 45
Gradation	You can assign a **gradation correction** (sfg) file created in GMG SpotColor Editor to a spot color channel.	"Printing Spot Colors with a Gradation Correction" on page 173

3.6.1 Spot Colors

- CMYK and RGB channels are regarded as **process colors**. All other channels are regarded as **spot colors**.
- Process colors are color managed via **MX** or standard **ICC** proof profiles. Spot colors are color managed via **spot color sets** or **multicolor** ICC profiles.
- In case of **Roland VersaUV LEC2 series**, it is recommended to define the color management of both process and spot colors, including White (a white spot color or the coating channel), in GMG OpenColor. To do so, you will need a project describing all color channels in the image you want to print in GMG OpenColor. GMG OpenColor will then calculate a proof profile specifically for the proof job, containing a color channel for each color channel in the image. For more information, please refer to the GMG OpenColor helpcenter: https://gmgcolor.com/support/help/opencolor/

Tip With an OpenColor license, you can proof spot colors with **MXN** DeviceLink profiles, enhancing the spot color simulation with printing process and overprint characteristics.

Channel mapping with spot color sets

GMG ColorProof tries to map a channel name in a document to a spot color name in a spot color set. The **Spot Color Priority** defines the order of sequence in which the spot color libraries are searched.

The first exact match is used. If no exact match exists, GMG ColorProof tries to map the channel name to a similar spot color name and uses the "best match". For example, a PANTONE **CVC** color will be mapped to a PANTONE **C** color. If the suffix specifying the media type (U = Uncoated, C = Coated, M = Matte) is missing, the spot color will be mapped to the **best match** color for coated media type (C). For example, a PANTONE **CV** color will be mapped to a PANTONE **C** color.

If no "best match" exists either, the job will not be printed. You will need to manually define the mapping in the **Manual Job Manager** > **Image** > **Color Management** > **Channels** page.

Tip You have full flexibility to remap channels in the **Manual Job Manager**. You can **manually** map a spot color channel to a specific color, or you can apply self-defined rules for an **automatic** channels mapping (see "Alias-Mapping of Color Channels" on page 25).

Overprinting behavior of spot color channels

The color channels list in the **Manual Job Manager** (**Image** > **Color Management** > **Channels**) visualizes the printing sequence: The **top** color is printed **first**, the next is second, and so on.

The default order is as follows:

- Coating channel (customizable extra channel for printers with special inks)
- White spot colors
- Process colors
- Spot colors

GMG ColorProof offers you full flexibility in defining the print sequence and overprinting behavior for spot color channels. The overprinting behavior of spot colors from a **db3** spot color database can be edited in GMG SpotColor Editor.
The overprinting behavior of **custom** spot colors (= spot colors you define by tonal values instead of selecting them from a spot color set) can be defined in the **Manual Job Manager** (**Color** column > **Define Spot Color**). For both spot color types, you can define overprint settings.

Overprint settings

Note Spot colors overprinted by process colors (spots above process colors in the **Channels** list) are **always** calculated in **Multiply Channels** mode.

Option	*Description*
Multiply Channels	Automatic algorithm developed by GMG for an optimal overprinting behavior. The **Multiply Channels** mode is used for calculating GMG spot color sets, resulting in translucent spot colors (solidity = 0). This way, the print sequence does not need to be considered. When deactivating this option, you can enter a custom **Opacity** value for the spot color.
Opacity	When customizing the **Opacity**, the print sequence of spot and process color channels is very important for the resulting color impression. In most cases, the spot color with the highest opacity should be printed last to achieve the desired opacity level. **Opacity** defines the blending of overprinting spot color channels with all **underlying** channels. For example, if spot A is printed with an opacity of 50% over spot B, spot B shows through spot A with an intensity of 50%. If spot C has an **Opacity** of 100%, it will knock out all underlying channels. An opacity of 100% can be useful, for example, for simulating very opaque spot colors. If a spot color is printed **directly** onto the print medium (top channel in the list), the spot color channel is always printed with **100%** opacity, regardless of the **Opacity** value. This is also the case when printing a **Coating Channel**.

Spot color descriptions in the form of CxF/X-4 spectral data

If you are using a GMG OpenColor proof standard, GMG ColorProof automatically detects CxF/X-4 definitions in the document and converts them into temporary spot color sets (db3 profiles with tints). Color management is processed in the same way as for regular db3 spot color sets. As for other spot colors, you can add a spot color control strip to verify the spot colors. Color channels with CxF definition are marked as such in the **Channels** list (**Manual Job Manager** > **Image** > **Color Management** > **Channels**).

You can check the spot color profiles generated from the CxF data under **Job** > **Printer Settings** > **Spot Color Priority** list. Here, you will see the temporary spot color sets. By clicking a set with the right mouse button, you can open the spot color set in GMG SpotColor Editor.

Note To use this feature, you will need an **active connection** to GMG OpenColor and a GMG OpenColor project with **published** dynamic profiling data. Please read the GMG OpenColor documentation for more information.

Note This feature requires GMG OpenColor version **2.2** or higher.

See also:

- "Color Channels" on page 20
- "Alias-Mapping of Color Channels" on page 25
- "Printing an Undercoat" on page 44
- "Spot Color Sets" on page 173
- "Verifying Spot Colors" on page 190
- "Spot Colors and Multicolor ICC Profiles" on page 23

3.6.2 Spot Colors and Multicolor ICC Profiles

Generally, spot colors do not follow the restrictions (limited gamut) of the printing process simulated in the proof. Thus, the full gamut of the proof printer can be used when printing spots. The color management process undergone by process colors is generally not applicable to spot colors.

Spot color channels are generally defined in **spot color sets** in the GMG ColorProof database. If spot color sets are used, a further color management of spot colors is not required. If an image is opened in the **Manual Job Manager**, missing spot color channels (that cannot be found in any of the spot color sets) are listed in the info pane on the bottom of the dialog box. You can then manually assign a spot color from a spot color set to a channel or enter a CMYK value.

However, it is possible to use a **multicolor ICC** profile as a **proof profile** for color managing spot color channels instead of using the spot color sets. If a multicolor ICC profile is loaded as a proof profile, the channels defined in the ICC profile will be matched to the image channel names. Found matches will show up in the **Color** column on the **Channels** tabbed page. **Channels** are matched by the **ink set name** in the profile.

Spot colors from spot color sets can still be assigned (automatically from the spot color set or manually in the **Channels** page) to channels that are **not** defined in the multicolor ICC profile. It is also possible to overwrite an existing channel definition by using a spot color set. (This is not possible if **Conversion CT/LW** is used.)

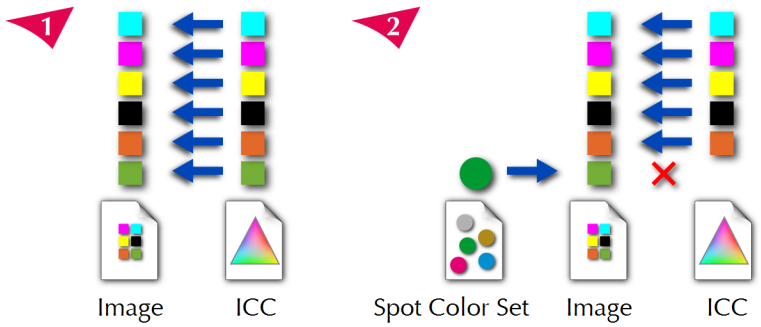


Fig. 7 Multicolor ICC processing.

When creating a job with a multicolor image and loading a **Custom** multicolor ICC proof profile, GMG ColorProof automatically matches all existing channels in the image (6 c in this example) to existing channels in the multicolor ICC profile with an identical channel (ink) name (1). If a channel is missing in the profile, a spot color from a spot color set can be assigned manually (2) or you can directly define a CMYK value. If a job is generated by a **workflow**, the program automatically searches for a matching color in the spot color sets assigned to the workflow.

How to apply a multicolor ICC color management

1. Create a new **job** or set up a new **workflow** (or edit the **Properties** of an existing job or workflow).
2. Click the **Color Management** button on the navigation panel on the left of the **Manual Job Manager** / **Workflow Properties** dialog box.
3. Click the **Proof Output** tab.
4. Select either a **Proof Standard** with multicolor ICC characterization profile or select **Custom** from the **Proof Standard** list.
5. Select **Use the following profile**, click the browse button and load the desired multicolor ICC profile. (This is the input profile, describing the image color space. The output profile (**Printer ICC Profile**) is defined in the **Calibration Set**.)
6. Select the **Rendering Intent**.
7. Click the **Channels** tab.
8. Check that all input channels could be matched with a profile channel. Reassign channels if necessary by choosing the appropriate color from the **Color** drop-down list.

Channel Mismatch options

If channels are missing in the ICC profile for processing a selected CMYK+spot color file, the file cannot be processed (job in error status).

On the **Channels** tabbed page in the **Manual Job Manager**, you can manually correct the channel assignment. It is possible to reassign any input channels to channels in the ICC file. It is also possible to assign the same ICC channel to multiple input channels.

If a channelexists in the **image**, but **not** in the **profile**, you can do one of the following:

a. Assign a channel existing in the profile. Duplicate channels are possible. Color values of **duplicate** channels will be **multiplied**.
b. Assign a spot color definition from a **spot color set**.
c. Manually **enter** a CMYK or Lab value (free spot color).

If a channelexists in the **profile**, but **not** in the **image**, you can do one of the following:

a. Assign a channel existing in the profile to any channel in the image, thus **overwriting** the current color definition of this channel.
b. (Do nothing.) Additional (not used) channels in the profile are ignored.

Label Information

Label information needs CMYK channels for printing. If CMYK channels are not available in the printed image (either because no CMYK channels were present as input channels in the first place, or because they were reassigned to spot color channels), the top color channel in the **Channels** list is used for printing the label.

Control Strips

The channels present in an image control strip must also be available in the printed image. If not, the control strip cannot be printed together with the image. For spot colors, you can print the **GMG Spot Color Control Strip**, or load custom spot color control strips into the database (**Database** view > **Control Strips**).

3.6.3 Alias-Mapping of Color Channels

With the **Channel Mapping** options in manual jobs and workflows, you can apply self-defined **rules** for an automatic mapping of image channels. You can, for example, replace the channel of an image with a different color, or remove diecuts or varnish layers that have been defined as spot colors.

Tip Map to db3: If you are using GMG OpenColor, you can map channels that do not hold color-critical information to db3 spot colors to save time in dynamic profiling.

All channel mapping rules are bundled into **Rule Sets** which can be used both for workflows and manual jobs.

Rule Set Settings

- Choose whether you want to **replace** or **deactivate** a channel.
- You can add multiple rules.
- Use the asterisk sign (*) to map multiple input channel names with a single rule. The asterisk can represent one or more characters of the channel name.

Example Rule Set

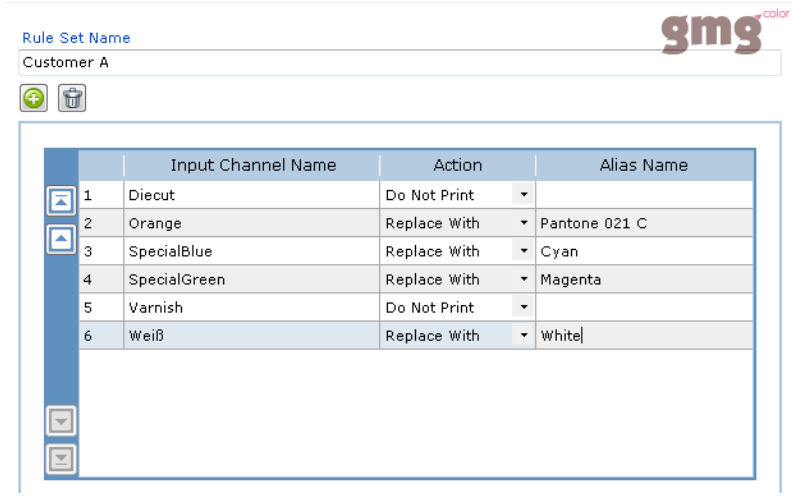


Fig. 8 Alias-mapping of color channels via rule sets.

In our example rule set, all objects with the spot color "Diecut" and "Varnish" will not be printed. The spot color name "Weiß" will be replaced with the spot color name "White". The rather unspecific spot color name "Orange" will be replaced with the more specific Pantone color. The two spot colors SpecialBlue and SpecialGreen will be mapped to the Cyan and Magenta channels of the MX4 profile linked in the selected proof standard. For flexo printing, these CMYK channels are often modified into spot channels to simulate the specific overprinting behavior of spot colors.

See also:

- "Channel Mapping in Workflows" on page 89

3.7 Paper Tint Simulation

A paper tint simulation offers full accuracy by simulating the color appearance of the printing stock that will be used in production. In some cases, however, you might want to **remove** the paper tint simulation, for example when printing on transparent or metallic media or when you are more focusing on a proof that looks good than a proof that is color accurate.

If the profile white point is rather close to the proof media white point, you can easily subtract the paper tint without distorting the overall impression of the proof. The bigger the difference between these white points, the more changes are calculated into the proof output, possibly resulting in a failed proof verification, because the measured values of the control strips are not within the defined tolerances.

The paper tint simulation can be turned off per job or per workflow, not for single images (**Printer Settings** > **Printer** > **Use Paper Tint Simulation**). When deactivated, the color value of the paper tint in the selected calibration file (MX3/MX4/MXC) is set to 0/0/0/0. A new proof profile without paper tint simulation is calculated changing the colors in a way similar to a **relative colorimetric** ICC processing. If you are using control strips with the job, the modified profile and calibration file are also applied to the strips.

Subtracting the paper tint from the color profile results in a larger color space, as you can see on the following illustration showing two Swop Groundwood (#5) gamuts in GMG GamutViewer.

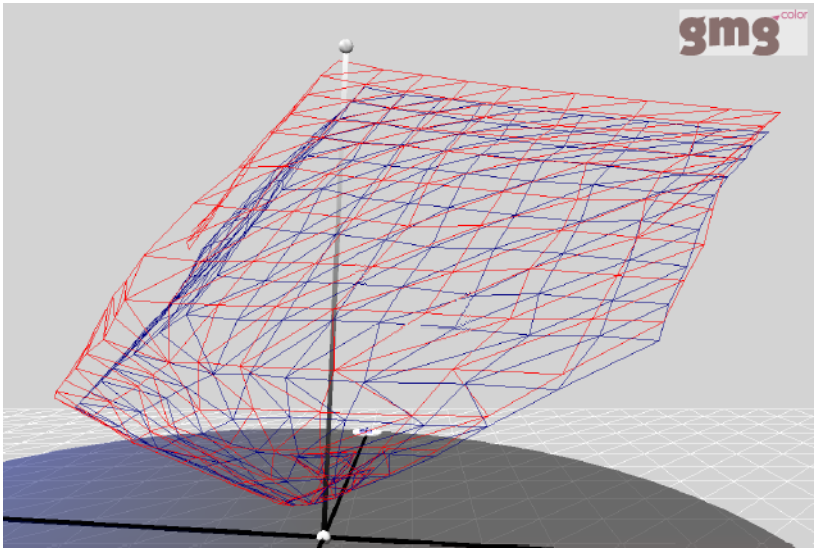
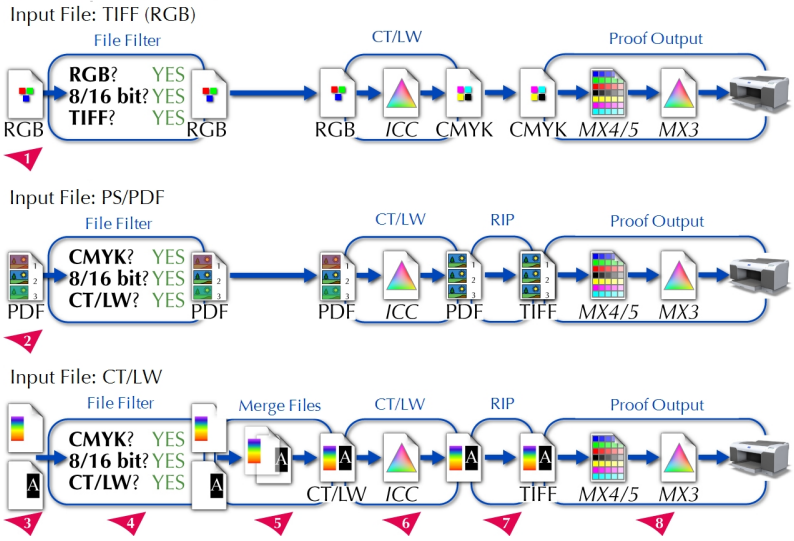


Fig. 9 Swop #5 gamuts of an Epson Stylus Pro 7900 printer with paper tint (blue) and without paper tint (red).

4. Image Processing

GMG ColorProof automatically processes images according to the input (file format, color space) and according to the desired output (proof mode, simulated printing condition).

The following provides you an overview on how input files are processed and which processing steps are performed by the program. This knowledge is not required in detail for operating GMG ColorProof, but it might be helpful to know which parameters must be defined for which file type and application.



Input File		*Color Space*	*Application*	*Workflow*	*License*
contone image (e. g. TIFF)		CMYK	ContoneProof	Proof Output: PhotoProof profile or preceding separation to CMYK (Conversion CT/LW)	ColorProof
contone image (e. g. TIFF)	1	RGB	ContoneProof	RGB: PhotoProof profile or separation to CMYK (Conversion CT/LW)	ColorProof
contone image (e. g. TIFF)		CMYK,RGB	DotProof	conversion to **1-Bit** image (1-Bit Creator) in **RipServer**	DotProof
halftone image (1-Bit TIFF), multi-file		CMYK	DotProof, FormProof	Merge Files > Screen Detection	DotProof
lineworks page (e. g. PDF, PS)	2	CMYK, RGB	ContoneProof	**rasterizing**/separating to CMYK in **RipServer**	ColorProof
lineworks page (e. g. PDF, PS)		CMYK, RGB	DotProof	**rasterizing**/separating to 1-Bit image (1-Bit Creator) in **RipServer**	DotProof
multi-file contone/lineworks page (e. g. CT/LW)	3	CMYK, RGB	ContoneProof, (DotProof)	**Merge Files** > **rasterizing**/separating to TIFF (1-Bit TIFF for DotProof) in **RipServer**	ColorProof, (DotProof)
contone image (e. g. TIFF)		CMYK	(PhotoProof or RGB to RGB color conversion)	converting to **RGB** in **RipServer**	ColorProof
PDF			PDF-to-PDF conversion	PDF-to-PDF conversion in GMG ColorServer	ColorServer

File Filter (4)

All input files must first pass the file filter so that the program recognizes the input files.

In a workflow, you can specify the file format, color space, and so on of accepted input files.

For manual jobs, you can filter the input files by selecting a file type from the **Files** of type drop-down list in the **New Job** dialog box. More automated file filters are not required as you will manually select the input files.

Merge Files (5)

Multi-file formats only (3): Multi-file images (1-bit TIFFs, CT/LW files) need to be combined to a single image. This is either achieved by a description file or by using a pattern recognition. In a workflow, you can select an appropriate pattern recognition on the **Merge Files** tabbed page. In a manual job, you can either select an appropriate pattern recognition from the drop-down list in the **New Job** dialog box or you can manually load the input files on the **Merge Files** tabbed page.

Job/workflow parameters: **Merge Files** > **Pattern Recognitions**

Separating into CMYK (Conversion CT/LW, 6**)**

Contone image files in a RGB color space (1) need to be separated to CMYK (except when PhotoProof profiles are used).

Of course you can also color convert contone files that are already in a CMYK color space, for example, for applying an ICC-based color management (according to the output intent of the proof standard).

Job/workflow parameters: **Color Management** > **Conversion CT/LW** settings

Rasterizing (RIP, 7**)**

An input file containing lineworks (2), typically a PDF or EPS, needs to be rasterized by the integrated RIP. RIP resolution and other RIP settings are automatically optimized for the selected proofer.

Job/workflow parameters: **RIP** > **Advanced RIP Settings**

Creating 1-bit files (RIP)

Lineworks or contone image files are converted to 1-bit files by the integrated RIP for printing images in DotProof mode. Please note that using 1-bit input files from the original imagesetter is strongly recommended for achieving the most realistic simulation in GMG DotProof.

Job/workflow parameters: **RIP** > **1-Bit Creator**, **Advanced RIP Settings**

Main color management (Proof Output, 8**)**

Simulation of a **target printing condition** (for example, ISO Coated 39L), which is defined in the Proof Standard, on a certain **printer–medium combination** (for example, Epson Stylus Pro 4900 and GMG ProofMedia premium semiMatte 250).

Job/workflow parameters: **Color Management** > **Proof Output**

Images with spot colors

Color management is handled separately for spot colors. You will need to select (or set up in the system) a spot color set for a specific printer–medium combination. Spot colors are then automatically matched to identical channel names. You can also manually assign a spot color from a set to a color channel or directly define a color value in the **Manual Job Manager**.

Job/workflow parameters: **Printer** > **Spot Color Priority**; **Color Management** > **Channels**

Images with spot colors can also be converted by the use of multicolor ICC profiles.

Job/workflow parameters: **Color Management** > **Conversion CT/LW** settings

Converting into RGB (Conversion CT/LW)

Contone image files in the CMYK color space can also be converted to RGB (by the integrated RIP).

You can use an automated ICC color management in GMG ColorProof. With GMG ColorServer, you can use the more advanced DeviceLink MX4 technology for color management.

RGB conversion can make sense if further processing by an MX4 PhotoProof or RGB-to-RGB profile in GMG ColorServer is required. Please note that this would be a somewhat unusual situation, as these profiles are generally applied to images that are still in the (original) RGB color space after retouch.

As the gamut is generally clipped when converting images from RGB to CMYK, a conversion from CMYK back to RGB cannot restore potentially lost color information. For a color conversion of CMYK images, the use of an MX4 reseparation profile in GMG ColorServer is recommended.

Job/workflow parameters: **Color Management** > **Conversion CT/LW** settings

Workflows with GMG ColorServer

GMG ColorProof and GMG ColorServer can be integrated into one workflow by using cascaded hotfolders. For example, multiple hotfolders from GMG ColorServer can be linked to a specific GMG ColorProof workflow. This way, you can set up integrated and completely automated workflows for all kind of different applications and printers.

4.1 Supported File Formats

File type	*Supported formats*
PDF/PS files	PDF up to **PDF 1.7**, **PDF X-1/-3**, **PS**, **Photoshop EPS**, **Photoshop DCS 1.0** and **2.0**.
Contone files	Various **contone** file formats, for example: **TIFF** (compression types PackBits, LZW), **JPEG**, **Photoshop EPS**, **Photoshop DCS** 1.0 and 2.0, **TIFF/IT**, **Scitex CT/LW**, **Scitex Assign**.
	EPS and DCS files can also contain vector graphics (PS elements), but not necessarily. These file formats can also contain only a contone (TIFF) image. In the latter case, it is not required to rip input images before printing.
1-Bit TIFF	Various **1-Bit** file formats, for example: **1-Bit TIFF**, **Barco/Esko LEN**, **Presstek**.
	With a GMG DotProof license, you can use the program to extract the screening parameters from 1-bit input files and print screened proofs that closely match the dots on the press sheet and simulate the final color as well. Note that you can set up custom pattern recognitions in GMG DotProof to print any conventional 1-bit file.

File format recommendations

For achieving the most **realistic proof** results, the final 1-bit TIFF (especially when using GMG DotProof) or a file from the latest processing step possible should be used. This way, platesetter problems or other problems with the source files can be detected already at the proofing stage.

If a resampling is **not** required, **TIFF** (with LZW compression) is recommended as a fail-proof and compact file format. EPS is not recommended for contone images as the EPS file format needs more disk space than TIFF.

If a contone image needs to be **scaled** or **resampled** for the print, it is recommended to use **vector graphics** and **text** as input data for **optimum print** results.

PDFs (and PS files) are **directly supported** by GMG ColorProof, that is, use of an external RIP is not required for this kind of input files. This will also make your workflows very straightforward.

For PDF workflows, the easiest solution might be to directly use **PDF (X-1/X-3)** as input file format, as you can use PDF as a universal interchange format and GMG ColorProof is able to directly process PDF files (without internal PS conversions). The embedded output intent ensures correct normalizing of colors for embedded images that are not yet in the target color space. Please note that deviations between proof and final print production cannot be excluded if the output of the platesetter RIP differs from the internal output of the integrated RIP, especially if the images embedded into the file require a color conversion before rasterizing.

Compression recommendations

Use of lossy compression such as JPEG is **not** recommended. Please note that file formats such as PDF, PS, EPS, and DCS can contain compressed images. When creating such a file, make sure to use only **lossless** compression such as **LZW**, or use **no** compression for **all** images in the file. Check the image compression of files that were not created in-house. (Also, images subject to JPEG compression suffer information and quality loss **each** time they are edited and saved again, **regardless** whether the file format is JPEG, EPS, PDF, or TIFF.)

4.2 Image Settings

Image settings can be different for each single image in a job. Therefore, the image settings buttons in the navigation panel on the left in the **Manual Job Manager** are available only if at least one image is **selected** in the job preview on the right side. Selected images are indicated by a blue frame.

Tip Multiselect: When multiple images are selected (by holding down the CTRL key), identical settings can be applied to all selected images.

4.3 Multi-File Images

4.3.1 Multi-File Images

In general, one can distinguish between the following different input file types. Each file type can have different file formats, but all files of the file type show a common way of being processed in GMG ColorProof.

File type	*Image type*	*Example*
Single file	Contone, 8/16 bit	TIFF, JPEG
Multi-file	Halftone, 1 bit	TIFF + Sep
Multi-file	Contone, 8/16 bit	Scitex CT/LW
Multi-page	Contone, 8/16 bit	PDF
Multi-page and **multi-file**	Contone, 8/16 bit	Scitex CT/LW + Assign

The simplest case is a single file image. A single file can be loaded directly as a manual job into GMG ColorProof. If the **Filter** settings in the workflow are correct, it will be recognized, processed according to the color management settings, and printed by the workflow.

The other file types need more processing steps before they can be printed:

- **Merging**/combining multi-**file** images into a single image: Multi-file images need to be recognized as a single image (by the pattern recognition) and put together (merged).
- **Splitting up** multi-**page** files into single images: Each page of a multi-page file will be processed in the same way a single image. When creating a manual job, you can select the pages that should be processed.
- Input files that are both multi-page **and** multi-file are a very special case. In this case, the files first have to be merged to a single multi-page file. Then, the multi-page file will be split up into its pages.

Multi-file images can serve the following purposes:

- 1 Bit: Each file contains one separation / color channel with 1-bit color depth of the complete image.
- 8/16 Bit: Each file contains different parts of the complete image. The nature of these parts can be different, according to the file format. Files can contain linework data (and therefore generally need to be ripped).

General processing of multi-file images

After the input files passed the workflow **filter**, the files must be **recognized** as a **single** image by the workflow. In principle, there are two different ways for this.

If the multi-file image is defined in a description file, for example, Sep file (1-Bit) or Assign file (Scitex CT/LW), pattern recognition settings on the **Merge Files** page are not required and will be ignored for those file types. If a description file is not available, the multi-file image must be defined in a pattern recognition. We deliver **predefined** pattern recognitions for widely used multi-file images. By defining custom pattern recognitions, all types of multi-file images can be supported.

Handling of those files is a bit more complicated as settings on the **Filters** page and on the **Merge Files** page are required for correct file type recognition (**Filters**) and merging of files to the output image (**Merge Files**). If the **Filters** settings are correct, but not the **Merge Files** settings, the input files may be recognized correctly, but will then be processed as separate images and not one multi-file image.

If a multi-file image is loaded into a manual job or recognized by a workflow, all files that were added to the job and recognized as a single image are listed in the **Files** list on the **Merge** tabbed page of the **Manual Job Manager**. With the **Merge** feature, you can manually delete or add files that were not recognized and print the job again from the **History** view.

Merging multi-file images by using a description file

Multi-file images can be defined by a description file that specifies exactly which files will be combined to the final image. For using such a description file, you need to select the appropriate **File Format** filter. If the description file has been recognized by the workflow (or by the **New Job** dialog box), all image files described in the file will be automatically combined to the final image.

Definitions in the description file are binding. It is not possible to remove a file that is listed in the description file or to add a file that is not listed in the description file in the **Manual Job Manager** after the job has been created.

If there is a description file in a hotfolder, the program waits until all separation files defined in the sep file have been recognized. The input files defined in the description file will appear in the **Files** column of the workflow as soon as the description file passed the filter and is recognized by the workflow. After all image files defined in the description file have been recognized, the combined image will be added to a job. If one file is missing, the remaining files will stay unprocessed in the workflow (and have to be deleted manually from the hotfolder).

All settings on the **Merge Files** tabbed page (**Pattern Recognitions**, **Fixed Number of Separations**, and **Waiting Time**) will be **ignored** if a description file is present (and recognized by the filter).

Merging files by using a pattern recognition

If there is no such description file, you need to set up a pattern recognition. A pattern recognition is like a file naming convention that needs to be met so that GMG ColorProof will recognize and process the separate image files as a single image.

If a file that passed the filter is recognized by one of the provided pattern recognitions on the **Merge Files** tabbed page of a workflow, GMG ColorProof waits for further corresponding files until **one** of the following requirements have been met. The combined image (even if not "complete" according to the applied pattern recognition) is then instantly added to a job (according to **Nesting** rules).

- **Fixed Number of Separations**: The defined number of separation files has been reached. Use this parameter only if you are sure that you will never process more separations for this pattern recognition, for example, if you have set up a pattern recognition that processes always CMYK.
- The maximum **Waiting Time** has been reached. The **Waiting Time** is counted again each time a file that matches the same pattern recognition appears in the hotfolder.

Waiting Time is applied only to multi-file images that are defined by a pattern recognition. For all other images, the program checks whether the file size is still growing and starts processing as soon as the final file size has been reached. If the **Waiting Time** has been reached, the files that follow a pattern recognition will be merged into the final image, even though elements defined in the pattern recognition, for example, a color channel in case of a 1-Bit TIFF or the page (P) file in case of Scitex CT/LW, might be missing.

Tip For manual jobs, pattern recognitions can be selected in the **New Job** dialog box, **Merge files** drop-down list. For example, when selecting the predefined pattern recognition **Generic 1-Bit**, all selected separations will be automatically merged into an image when you click **Open** (or **Print**).

Conflicting pattern recognitions

As soon as an input file passes the filter and is being recognized by a workflow, the workflow tries to apply pattern recognitions that were selected for this workflow.

If those patterns have overlapping elements, but also contradict each other in some elements such as would be the case if Scitex CT/LW with and without Page (.P) file would be both selected, the result will be unpredictable. For example, it could be that the Page file would be used in one case, but not in another (by the same workflow), depending on which pattern recognition is applied. Therefore, it is recommended to use **separate** workflows for different input image types.

See also:

- "Setting up a Pattern Recognition" on page 33
- "Separated Multi-File Images (1 Bit)" on page 32

4.3.2 Contone Multi-File Images (8/16 Bit)

Some file formats such as Scitex CT/LW and TIFF/IT are always or can be multi-file formats. This means, that the final image is set up in **separate** input files. These files need to be merged according to the appropriate pattern for this file type to generate the output image.

This chapter explains the handling of multi-file formats that are contone or linework images, but not 1-bit. (Handling of 1-bit files is explained in the topic "Pattern Recognitions" on page 33.)

General rule: If the multi-file image is defined in a description file, for example, sep file (1-bit) or Assign file (Scitex CT/LW), pattern recognition settings on the Merge Files page are not required and will be ignored for those file types. If a description file is not available, the multi-file image must be defined in a pattern recognition. We deliver predefined pattern recognitions for widely used multi-file images. By defining custom pattern recognitions, all types of multi-file images can be supported.

The following table gives an overview on possible combinations for different input images. For single images and multi-file images with a description file, a pattern recognition is not required (— in **Merge Files** column).

Image type	*Filters*	*Merge Files*
Single (TIFF) input file in TIFF/IT format	TIFF/IT	—
Separate contone files (.ct), **high-resolution** contone files (.hc), and **lineworks** files (.lw). Files need to be merged and ripped. The **FP** file (.fp) defines the merging of the input files, including the positioning (offset) of elements (similar to a PDF).	TIFF/IT	TIFF/IT CT/LW
Single (TIFF) input file in Scitex CT/LW format	Scitex CT/LW	—
Separate contone file (.ct) and **lineworks** file (.lw), LW generally in a higher resolution. Files need to be merged and ripped. No offset between CT and LW defined (but can be manually defined in **Manual Job Manager**).	Scitex CT/LW	Scitex CT/LW without Page (.P) file
Separate contone file (.ct) and **lineworks** file (.lw), LW generally in a higher resolution. Files need to be merged and ripped. **Page** file (.p) defines the merging of the input files, including the positioning (offset) of elements (similar to a PDF). (Monochrome contone images (MP), binary picture images (BP), binary lineworks (BL), screened data (SD) are not supported.)	Scitex CT/LW	Scitex CT/LW with Page (.P) file

4.3.3 Separated Multi-File Images (1 Bit)

Separated images (**one** channel per file) are always multi-file formats. Generally, these images are **1-bit** TIFFs, but they can also be 8-bit TIFFs (still only one channel per file). This means that the final image is set up in **separate** input files. Each file has exactly one color channel. These files need to be merged according to the appropriate pattern for this file type to generate the output image.

The following table gives an overview on possible combinations for different input images. With a description file, a pattern recognition is not required (— in **Merge Files** column).

Image type	*Filters*	*Merge Files*
1-bit TIFF (.tif)	TIFF	Generic 1-bit, Subfolder as Image, FUJIFILM CelebraNT, or custom pattern recognition
1-bit TIFF (.tif, .tifs) with **Sep** (.sep) description file	GMG RipServer .sep	—
1-bit TIFF **Barco/Esko LEN** (.len, .tif)	Barco LEN	Barco Flex RIP
1-bit **Presstek**	Presstek	

Merging 1-bit TIFFs by using a description (sep) file

1-bit TIFF images can be defined by a description file that exactly specifies which separations will be merged to a single image. A description file is basically a text file that lists the exact file names of all separations. The **sep** file is automatically generated together with the corresponding 1-Bit TIFFs by the RIP.

To use a sep file, you need to select **GMG RipServer sep** in the **File Format Filter** list of the workflow (see preceding table). Otherwise, the sep file would be ignored and the 1-bit TIFFs would be processed as separate images. Under **Color Depth Filter**, you need to select **1-bit**. Otherwise, the workflow would not recognize 1-bit images at all.

You can select the sep file when creating a manual job or adding an image to a job. All 1-bit TIFFs that are configured in the sep file are automatically loaded into GMG ColorProof.

Merging 1-bit TIFFs by pattern recognition

If there is no such description file, you need to set up a pattern recognition (see "Pattern Recognitions" on page 33) that defines which files will be combined to the printed image and which file holds the information for which color channel. For example, the pattern recognition **Generic 1-bit** describes separation files with the naming convention "<file name>_<color channel>", for example "_black.tif" for the black channel.

If multiple workflows are linked to the same hotfolder, the top workflow in the list that uses a **1-bit TIFF** file filter will process the image, regardless of whether this workflow has a suitable pattern recognition or not. This could lead to printing separations as separate images. Therefore, take care that the Filters and Merge Files settings of all your workflows do not result in ambiguities or conflicts.

4.3.4 Pattern Recognitions

GMG ColorProof supports all separation file types from any RIP and also widely used multi-file (combined) image formats such as Scitex CT/LW. The detection of corresponding separations / image files is based on pattern recognitions. A pattern recognition is like a file naming convention that needs to be met so that GMG ColorProof will recognize and process the separate image files as a single image.

Several widely used pattern recognitions are already predefined in the program. If you use a RIP that is not supported by any of the predefined pattern recognitions, you need to set up a pattern recognition. Once set up, you can easily transfer pattern recognitions via export/import to other workflows (or workstations).

Setting up a Pattern Recognition

A pattern recognition is like a file naming convention that needs to be met so that GMG ColorProof will recognize, merge, and process **multi-file** image files as a **single** image.

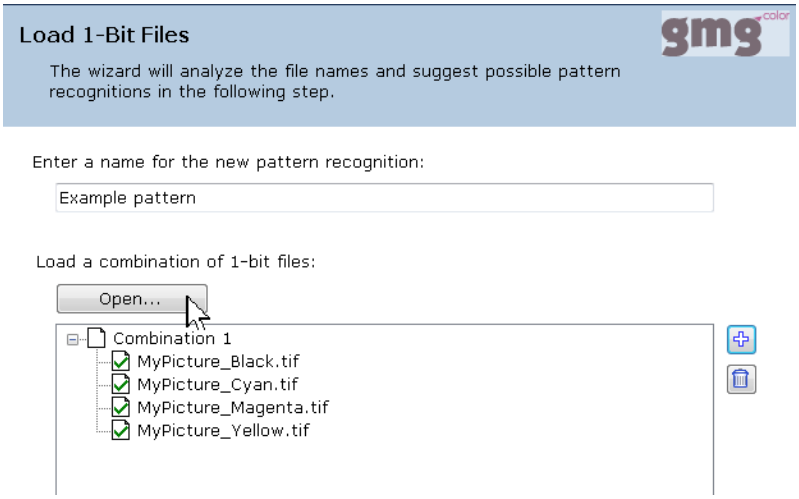
A multi-file image file name usually contains the following minimum elements:

- The **name** of the image, for example "MyPicture"
- The **color channel**, for example "Yellow"
- The file name **extension**, for example ".tif"

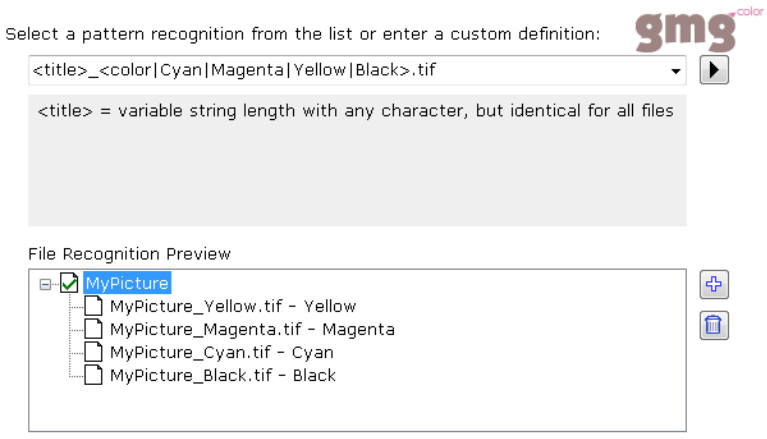
You need to set up a pattern recognition to capture the elements of the file name and point GMG ColorProof to the required information in the file name. Thus, GMG ColorProof will be able to interpret the file names and merge the final image from all required input files. A pattern recognition is set up via **regular expressions**, written in a dedicated syntax that is able to cover almost all possible file name patterns. To simplify this task, GMG ColorProof comes with a **Pattern Recognition Wizard**.

How to set up a pattern recognition

1. On the **Workflow** menu, click **Pattern Recognition**.
   The Pattern Recognition Wizard is started.
2. Enter a name of your choice for the patter recognition.
3. Click the **Open** button to select the files that need to be merged.
   In our example, we loaded four color separations.



4. Click the **Next** button to proceed.
5. Select one of the suggested pattern recognitions from the drop-down list, or define your own pattern recognition.
   The **File Recognition Preview** provides a convenient way to test the selected or defined pattern recognition on the fly.



   The preview shows the four 1-bit separation files correctly recognized as a single image according to the selected pattern recognition "<title>_<color|Cyan|Magenta|Yellow|Black>.tif". As the title is the same in all separations, the pattern recognition could also be set up as "<*>_<color|Cyan|Magenta|Yellow|Black>.tif".
6. Click **Finish** to save the pattern recognition.
   The pattern recognition will now be available for manual jobs and workflows.

Pattern recognition elements and syntax

This table lists all pattern recognition elements available in GMG ColorProof. You can combine any elements to capture the elements of your custom file names. The **title** and **color channel information** elements are **mandatory**. It is recommended to define the pattern recognition as exactly and as strictly as possible, to ensure a perfect match with all appropriate input files.

Pattern recognition element	*Example pattern*	*Example file name string*	*Interpretation*
XXX	.tif	.tif	File name **extension** or **fixed** file name element, spelled exactly as in the file name, e.g. ".tif" or "_"
*	*	MyPicture	Variable string with **variable** length
? or ???	???	GMG	Variable string with **fixed** length. The number of ? represents the number of characters in the string.
<*>	<*>	MyPicture	Variable string, but identical for all files
<?> or <???>	<???>	GMG	Variable string with fixed length, but identical for all files
<title>	<title>	MyPictureHasaLongName	The job name in GMG ColorProof will be derived from the title element.
<title:N>	<title:10>	MyPictureH	Limits the job name to a length of N characters
<color|Cyan|Magenta|Yellow|Black>			Color channel identifiers
<color|C/Cyan|M/Magenta|Y/Yellow|K/Black>			GMG ColorProof will search for C in the file name and interpret it as the Cyan color channel, and so on.
<color:4|1000/Cyan|2000/Magenta|3000/Yellow|4000/Black>			All (4) color channels are represented by numbers with 4 digits. 1000 = Cyan, 2000 = Magenta, and so on.
<color|Cyan|Magenta|Yellow|Black|Orange|PANTONE*|*>			GMG ColorProof will search for the color channel names Cyan, …, Orange, PANTONE* (with variable suffix) and *, which can be any string.
<color|C/Cyan|M/Magenta|Y/Yellow|K/Black|???/P???|*>			GMG ColorProof will search for C in the file name and interpret it as the Cyan color channel, and so on. A string with 3 digits is interpreted as a spot color channel name with a leading "P" (as in Pantone).

Sample patterns

This table lists some typical examples.with various applications.

Pattern recognition	*Description/Examples*
<title><.nlw|-CT?.nct>	Scitex CT/LW from Scitex Brisque RIP, without Assign file: Altona.nlw; Altona-CT1.nct; Altona-CT2.nct
<title><color|C/Cyan|M/Magenta|Y/Yellow| K/Black|(*)/*><??>.tif	Harlequin RIP, using parentheses in the file names. Any string in-between the parentheses will be interpreted as a spot color channel: AltonaC00.tif; Altona(P123)00.tif
<title>.<title>.<color|C/Cyan|M/Magenta| Y/Yellow|K/Black|*>.tif	Altona.P1.C.tif; Altona.P1.P123.tif
<title>_<color|C/Cyan|M/Magenta|Y/Yellow|K/Black|???/P???|????/P????|*>.tif	Altona_C.tif; Altona_123.tif; Altona_1355.tif
<title><color|PANTONE*|C/Cyan|M/Magenta| Y/Yellow|K/Black|*><??>.tif	AltonaPANTONE 123C00.tif; AltonaC00.tif

<title:12>????<color:4|1000/Cyan|2000/Magenta|3000/Yellow|0001/Black|*>*	The first 12 characters in the file name will be interpreted as the job name (title), followed by four variable characters, followed by four digits that encode the color channel: Alton-a123456yyyy 1000.tif; Altona123456 xxxx1123.-tif

4.3.5 Manual Merging of Images

With the **Merge** feature of the **Manual Job Manager**, you can manually merge 1-bit images that were not correctly recognized, or you can merge contone pixel images that have identical dimensions and resolution. This might be handy, for example, if you have separate images with text for different localizations of one image. You can then use the merge feature to overlay the "background" image with the "text" image.

The color channels of merged images are kept separate. If you have a Black channel in image A and a Black channel in image B, you will have two Black channels for the merged image (displayed on the **Channels** page). You could, for example, assign two different spot colors to these channels.

Corresponding color channels are then multiplied (as in **Multiply** channels in Adobe Photoshop, for example) before color management is applied.

4.3.6 Identifying the Screening Parameters

If you create a job with a **1-bit file**, GMG ColorProof automatically analyzes the separations and extracts the screening parameters. You can check and correct the screening parameters in the **Manual Job Manager** (**Image Settings** > **Screening** tab).

In **workflows**, you can predefine the screen detection with the following options (**Input Settings** > **Screen Detection** tab).

Option	*Short description*	*See also*
Automatic Screen Detection	Automatic detection of the screening parameters. The original screening is automatically extracted from the input files according to the search mode you select.	"Automatic Screen Detection—Search Modes" on page 36
Custom	If the input files always come from the same imagesetter (with identical screening parameters), it is not necessary to search for the screening parameters. Instead, it is recommended to enter fixed screening parameters to speed up the image processing.	
Print Spot Color as Solid Color	As the automated search can be quite time consuming, you have the possibility to print spot colors as solid colors. Use this option if you want your spot color separations not screened, but printed as solid 100% color. (It is not possible to enter **custom** screening parameters for spot colors in workflows, because the program does not know how many spot colors will be in an image and the order in which spot colors will be detected.)	

Automatic Screen Detection—Search Modes

In workflows, the screening parameters of 1-bit files can be detected automatically with the following search modes. The screening parameters of **Esko** 1-bit TIFF files, for example, can be read from the XMP metadata in the search modes **Standard** or **Adaptive (Full Search)**.

Search Mode	*Description*
Standard	The 1-bit data is decompressed and the search for an angle is finished as soon as a screen set can be identified. This is the most common and quickest search method. It can lead to wrong results if the image has very fine structure elements that could be misinterpreted as raster dots.
Full Search	The 1-bit data is decompressed and analyzed completely. This search method is the most accurate and time consuming, depending on the size of the data file.
Adaptive (Full Search)	Searches until the screen information for two channels could be identified. The screen information for the rest of the color channels is then assumed according to standard screen sets.

Checking the Screening Parameters in the Manual Job Manager

If the screening parameters of a 1-bit file cannot be clearly determined, the **Screening** state will be displayed as **Undefined** and you will be informed by a warning message in the info pane. In the **Manual Job Manager**, you can check the screening parameters manually (**Image Settings** > **Screening** tab).

Tip It is recommended to visually check the dots and the grid for **each** channel **separately**.

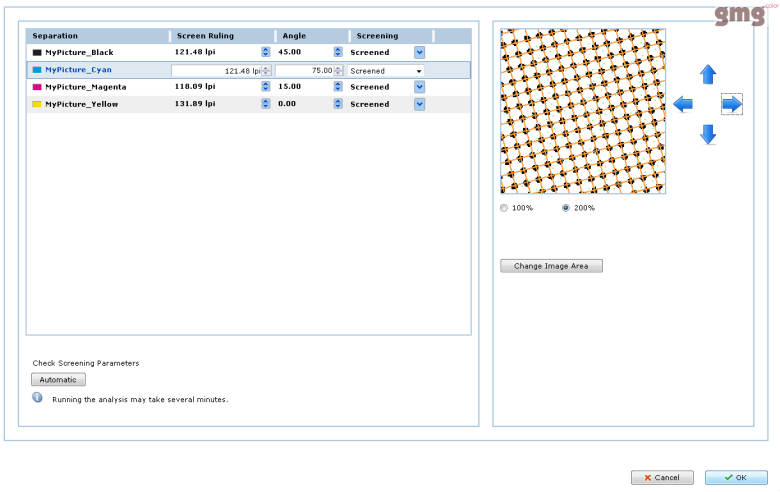


Fig. 10 Enlarged view of the Cyan separation.

If the screening parameters are correct, the grid must be aligned with the raster dots as shown in the screenshot. If the grid does not fit, you can correct the screen values manually until they fit.

How to manually check the screening parameters of a 1-bit image

1. In the preview pane on the right side of the of the **Manual Job Manager** dialog, select the image that you want to analyze.
2. Click the **Image** button on the navigation panel on the left.
3. Click the **Screening** tab.
4. Check the **Screen Ruling** and screen **Angle** settings that have been detected automatically.
5. Under **Check Screening Parameters**, click the **Manual** button.
   The dialog for checking the screening parameters is displayed..
6. To validate the screening parameters, select a color channel on the left to display the original dot shape and the screening.
   Use the arrow buttons to move the grid onto the dots to see if the angle and spacing in between the dots matches the grid. If the grid does not fit, modify the **Screen Ruling** and **Angle** on the left.
7. Optional: For a deeper analysis of the screening, click the **Automatic** button.
8. Click **OK** to confirm the settings.

4.4 PDF

4.4.1 Multi-Page Documents

- When creating a job with a multi-page document, each **page** will be loaded as a **separate** image frame into the job.
- Each page will be handled exactly like a separate **image**, so you could apply **different** color management settings, image labels, and so on to each page.

Note A job is limited to **128** images. Therefore, it is **not** possible to add a document with more than 128 pages to a job. Documents with more than 128 pages will be **ignored**.

4.4.2 PDF Page Boxes

A PDF page may define as many as five separate boundaries to control various aspects of the image processing. The option **Use PDF Bounding Box** enables you to set various page boxes in the **Manual Job Manager** (**Layout** tab > **Crop**) as well as in your **workflow** (**Image Processing**).

- The **Art Box** defines the extent of the meaningful content in a page (including potential white space), for example, a graphical element, as intended by the document creator.
- The **Bleed Box** information refers to the bleed settings in the marks and bleeds section of the print dialog box.
- Unlike the other boxes, the **Crop Box** has no defined meaning in terms of physical page geometry or intended use. It only defines where the page should be clipped. The default **Crop Box** is identical with the **Media Box**.
- The **Media Box** size is defined by the size of the page on which you choose to print your file. If the page size is not changed, the **Media Box** is identical with the original size of the page or image file.
- The **Trim Box** is taken from the document setup and defines the intended final size of the printed page after trimming. The **Trim Box** may be smaller than the **Media Box** if the page includes additional production-related information, such as printing instructions, cut marks, or control strips. The default **Trim Box** is identical with the **Crop Box**.

4.4.3 Raster Image Processing

The RipServer integrated into GMG ColorProof is based on the **latest PDF Print Engine technology** from **Adobe** Systems Incorporated, and as such based on the same PDF technology as Adobe Acrobat® and Adobe Creative Suite software. The new speed optimized technology leads to enhanced **output consistency** and **quality**, and an excellent **RIP stability**. This leads to excellent printing results (for proofing or production) in GMG ColorProof and thus to an improved overall print productivity and profitability. The integrated **Adobe® Color Management Module** (CMM) provides methods to transform colors using industry-standard International Color Consortium (ICC) color profiles (as defined under **Conversion CT/LW**).

Key features	*See also*
Latest PDF Print Engine technology from **Adobe** Systems Incorporated	
Direct processing of **PDFs** (without intermediate PS conversion) reflecting the on-going orientation from PS towards PDF as an universal interchange file format in print and prepress	
Full support of PDF up to **PDF 1.7**	"Supported File Formats" on page 29
GMG 1-Bit Creator (for GMG DotProof): A **user-defined** assignment of predefined **screening angles** to **color channels** offers more flexible screen options combined with the highest screening quality.	"1-Bit Creator for PDF/PS Files" on page 41

See also:

- "Proof Modes" on page 41
- "RIP Settings" on page 38
- "1-Bit Creator for PDF/PS Files" on page 41
- "Advanced RIP Settings" on page 40

RIP Settings

The settings for raster image processing such as the RIP resolution, anti-aliasing or font replacement are defined task-dependent in several places in GMG ColorProof. The following table provides you with an overview on the various RIP settings and where to look for them.

RIP Settings	*Where to find*
Manual Job Manager	**Image Settings** >**RIP Settings** tab
Workflow, printer-specific	**Print Settings** > **Printer** tab
Workflow, general	**Print Settings** > **RIP** > **RIP Settings**
Default RIP Settings	**System** view> **General** > **RIP Settings**

About EPS/DCS Files

Often EPS/DCS input files are TIFF images. In this case, ripping is not required and not recommended (option **Do not Rip Photoshop EPS/DCS Files**). Deselect this option only if input files contain vector graphics or text elements that need to be rasterized.

Print (and RIP) Resolution

Generally, the ideal print (and RIP) resolution is half the resolution of the **print mode** of the proof printer. Thus, for most proofs and printers (with a printing resolution of 720 dpi), a RIP resolution of **360 dpi** is sufficient. Higher resolution will not necessarily result in a higher quality. Please note that a higher resolution will result in a longer RIP and print time. The default resolution is **360 dpi** for **Epson Stylus Pro** printers and **300 dpi** for all **other** printers.

Anti-Aliasing

Aliasing effects occur whenever a vector graphics element is ripped into a raster image, or when a raster image is downsampled to a lower resolution. The higher the downsampling, the higher the aliasing effects, because several pixels are reduced to one. Without anti-aliasing, these edges would not appear smooth, but as jagged lines.



Fig. 11 Contone image without and with anti-aliasing

This image was rasterized in GMG ColorProof without anti-aliasing (1) and with anti-aliasing level 4 (2), **Supersampling** method. (Output resolution was 72 dpi.) You can see that the edges appear much smoother with anti-aliasing.

Anti-aliasing is a method for reducing aliasing effects, resulting in a smoothing of image edges by partially filling the edge pixels with intermediate color tones. In GMG ColorProof, **supersampling** is used as an anti-aliasing method, that is, image elements are ripped at a higher internal resolution. The image is then downsampled to the final output resolution afterwards. The extra pixels gained by the supersampling are used for a smooth rendering of edges.

The higher the **quality level**, the higher is the supersampling resolution. For example, an output resolution of 720 dpi and a quality level of 4 results in a supersampling resolution of 2880. The stronger the smoothing effect, the stronger is also the impact on the colors, for example, darkening of edges and lightening of small elements such as text. For an optimum GMG ColorProof performance and short processing time, it is therefore recommended to use a low anti-aliasing level, especially when a high output resolution is desired.

Different **filter types** applied during downsampling represent different methods for calculating the final pixels from the supersampled image. For example, when using the **Box Filter**, the color intensity of a final pixel is proportional with the area of overlap of the final pixel with the original image element. Whereas the **Box Filter** is applied to the whole image, the **Text Filter** only renders the edges of all text objects in a PDF/PS file, providing clear high-quality text. The text anti-aliasing is applied to plain text, not to lineworks objects. If you want to process files with many images and linework objects, the **Text Filter** may be an optimal choice to speed up the RIP processing.

Standard settings for a resolution of **360 dpi** would be an anti-aliasing level of **4** and a **Box Filter**. **Maximum** RIP resolution is **5760** without anti-aliasing and **2880** with anti-aliasing. **Maximum** quality level for anti-aliasing is **8**.

See also:

- "Advanced RIP Settings" on page 40

Advanced RIP Settings

In the **Manual Job Manager** (**Image Settings** > **Rip Settings**) and on the **Print Settings** > **RIP** tab of the **Workflow Properties** dialog box, you can customize those settings that are not used on a regular basis, for example, overprint settings or font replacement rules for missing fonts.

In this chapter, a general description of the concept behind those settings is provided. A more detailed explanation of all settings can be found in the info pane at the bottom of the dialog box in GMG ColorProof. Click an option to update the info pane with the related information.

Overprint settings

If the option **Force Black Overprint** is selected, the Black overprint rules defined in the input file are ignored. Instead, the Black overprint settings defined under **Overprint Settings** in GMG ColorProof are used. You can define a threshold for overprinting black, separately for vector graphic elements, and text elements. The same settings are also applied for **Device Gray** overprint.

If **Force Black Overprint** is not selected, the Black (and Device Gray) overprint settings (if any) defined in the input file will be applied and the overprint settings specified in GMG ColorProof will be ignored. Overprint settings of other colors, for example, spot colors, always remain unchanged, as specified in the input file.

A recommended default value is **95 % Black Overprint**, for text elements as well as vector graphics. **Forcing Black Overprint** leads to a higher reproducibility of the proofs, as overprint settings might be inconsistent between different input files from different input sources. On the other hand, using the same overprint rules for proofing and plate making may lead to proofs that are nearer to the final output of the printing machine.

Font replacement

All fonts that are not embedded in the input file are replaced by a font with matching name from the **Default Font Folder** specified in the **System** settings (**System** > **General** > **RIP Settings**). If no matching font name can be found in the **Default Font Folder**, the missing font is replaced with the (same) **Default Font** specified under **General Settings** in the job/workflow. If fonts are missing and **Use Font Replacement** was not selected, the job will be canceled with an error message.

Note Generally, fonts should always be embedded into the input files before ripping, and font replacement during the ripping process is not recommended, as the replaced fonts might have a different appearance than was intended by the user. Also, depending on the font replacement settings of the RIP that will later be used in the plate making process, the result of the proof and the final RIP might not be equivalent, especially, when multiple fonts are missing.

Separation types

The **Separation Type** is automatically preselected according to the color space of the input image and the target color space according to the selected proof standard.

Available options	*Description*
CMYK + spot color channels	Input file is ripped into a **multi-channel** contone image, with **CMYK** and **spot color** channels.
All to CMYK	Input file is ripped into a **CMYK** contone image. Spot colors are also converted to CMYK.
All to RGB	Input file is ripped into an **RGB** contone image. Spot colors are also converted to RGB. RGB input files can be converted from one standard RGB color space to another (gamut mapping) with the **All to RGB** separation rule, for printing with a PhotoProof standard.

Note Please note that according to the **PDF X-1/X-3** specification, only **CMYK** is allowed as output color space for a PDF X conversion and **spot colors** are always maintained. Therefore, only the **Separation** mode **CMYK + spot color channels** is available if the option **PDF X Processing** was selected on the **Conversion CT/LW** pages.

All to CMYK

Generally, you will want to **maintain** the **spot color** channels for proofing, to simulate the final result as close as possible.

Please note that you need to set up an appropriate **spot color database** with a **profile** for each **spot color** in GMG SpotColor Editor and link the correct spot color set to the calibration set in GMG ColorProof for an automated proofing of files containing spot colors.

If the required spot colors cannot be found in the database, you will be asked to manually assign color values to spot color channels for each job in GMG ColorProof. In this case, it might make more sense to convert all color channels to CMYK. Please note that if spot colors are converted to CMYK, the limited gamut (reflecting the limited gamut of the printing machine) of the proof printer will be used, that is, the desired ability of spot colors to extent the gamut of the printing machine will not be taken into account.

Note **Preseparated PS** or **PDF** files: When ripping a preseparated PS or PDF file, **spot color** channels are always **maintained**. Conversion of the spot color channels into CMYK (options **All to CMYK**) is not supported.

Proof Modes

In **ContoneProof** mode, the input image file in a job is automatically ripped into a **CMYK contone** image. GMG ColorProof supports different resolutions and quality levels, affecting ripping and printing speed.

See also:

- "RIP Settings" on page 38

In **DotProof** mode, PS/PDF files are ripped into **1-bit** files. GMG ColorProof supports different predefined screen sets. When separating into **1-bit**, you can select a **screen set**. Please ask the printing company for the screen set that will be used for plate making, to achieve a result as close to the final output as possible.

See also:

- "1-Bit Creator for PDF/PS Files" on page 41

1-Bit Creator for PDF/PS Files

Note Some of the features described in the following may not be included in the standard GMG ColorProof version and require an additional license (GMG DotProof, GMG FlexoProof, GMG ProfileEditor, GMG ProofControl Inline, or GMG OpenColor). Please contact your local dealer for details.

If the input file is **not** a 1-bit TIFF and **DotProof** mode is used as proof mode (on the **Proof Output** page), PDF/PS files are automatically ripped into 1-bit TIFFs by GMG 1-Bit Creator.

Please note that there might be differences in the 1-Bit Creator results between GMG ColorProof and the external RIP that is later used in the plate making process. For simulating ink dot patterns in the printing process with GMG DotProof, the use of the **same** 1-bit TIFFs from an imagesetter RIP for proofing **and** for plate making is recommended for a reliable prediction of effects such as moiré.

Even if the same screen is used in GMG ColorProof, the resulting dot pattern cannot be 100 % identical to the RIP output during the plate making process, because the RIP engine and the underlying algorithms might be different.

Defining the screening parameters

Please ask the printing company for the screening that will be used for plate making, to achieve a result in the proof as close to the final output as possible.

The screening angles are predefined in the screen set, but you can change the assignment of the screening angle to the color channel in the **Screen Set Parameters** grid. Other parameters defined in the screen set such as the screening frequency are shown for your information, but cannot be changed.

Group	*Short description*	*See also*
Screen Set	A screen set defines the screen frequency, the screening type, the dot shape, and the angle of the grid for each color channel separately. The RIP resolution is fixed and cannot be changed.	

If the final screen set that will be used for plate making is unknown, an often-used default screen set is **150 lpi, Euclidian, Cyan 75°, Magenta 15°, Yellow 0°, Black 45°**. The screen angles of the separate channels should be shifted at least by 15° towards each other for avoiding moiré effects.

4.5 Image Preview

The Image Preview shows an individual image placed in a job **without** the frame (i.e. without image label or extended paper tint area).

→ In the **Jobs** and **History** list, you can bring up the preview by selecting the listed image name with the mouse and selecting **Image Preview** from the context menu (right mouse click).

→ In the Manual Job Manager, you can preview an image by selecting the image on the **Layout** tab and selecting **Preview** from the context menu.

Soft-proof colors

Note An appropriate interpretation of the soft proof colors is only possible if your monitor is calibrated.

→ **System** view > **General** > Default View Settings: **Enable Soft Proof**

Images file formats such as TIFF and JPG are per default shown as a soft proof in the Manual Job Manager. This means they are color-managed for the installed monitor.

For PDF/PS/EPS files, a soft-proof is available only after the file has been **ripped** by the integrated RIP (see "Image Preview of PDF/PS/EPS Files" on page 42).

In cases where soft-proofing is not possible, you will see a small information box above the image.

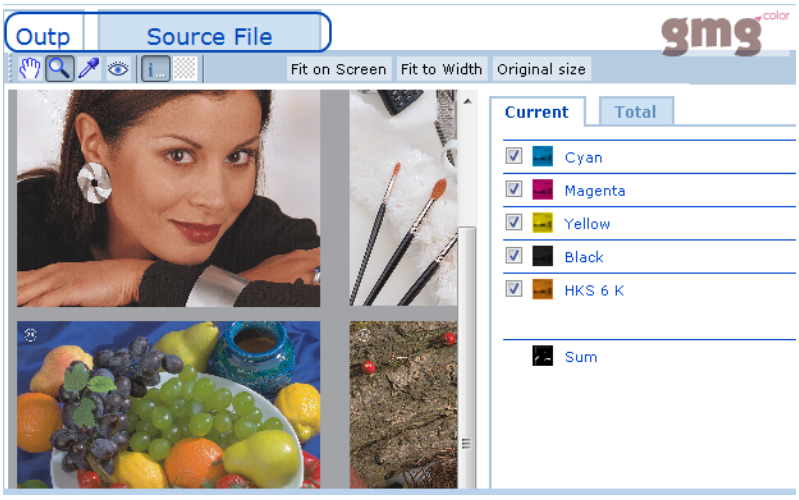
How does the soft-proofing work?

The color management for the soft-proofing is based on the ICC profile of the selected proof standard (input profile) and the monitor ICC profile (output profile). If no **Output Intent ICC** is defined in the proof standard, a temporary ICC profile is created on the fly from the MX4/MX5 profile of the proof standard, provided that it contains target values for the printing condition.

4.5.1 Image Preview of PDF/PS/EPS Files

Before a PDF/PS/EPS is ripped, the image preview is based on Adobe Acrobat ActiveX Control (available only if **Acrobat Reader 7** or Professional is installed on the same computer as GMG ColorProof) and shows the **Source File**.

After the RIP procedure, you need to put the job on hold (via the context menu) to bring up the **Output** preview (soft proof). This allows you to switch between **Output** and original **Source File** view as illustrated on the screenshot below.



Tip You can use the **Nesting** option **Hold Finished Jobs** (see "Automatic Nesting" on page 93) to create all workflow jobs (created by the corresponding nesting template) in status **Held**. You can then open the **Image Preview** for a selected image in the **Jobs** list directly from the context menu or open the job in the **Manual Job Manager**.

Note As printed jobs in the **History** list contain the **original** input file (not the ripped image), the output preview is **not** available in the **History** list.

View and zoom settings

Option	*Description*	*See also*
	Select the **Zoom** mode by clicking the magnifying glass button. The mouse pointer becomes a magnifying glass with a + or – sign in its center. Click in the center of the area that you want to magnify or reduce. Hold down the ALT key to switch to the opposite **Zoom** mode. Each mouse click magnifies or reduces the view.	
Fit on Screen	Allows you to view the entire image.	
Fit to Width	Adjusts the image to the available width of the window.	
Original Size	Displays the image in its original size.	
	Click the **Pipette** to determine the amount of the different inks used in a certain pixel area (e.g. 3 x 3 pixel) of an image. The percent values of the selected pixel area are displayed on the **Current** tab of the color box and refer to the **input values** of the image, not the color–managed values.	
	The **Filter** function can be used to highlight undefined spot colors.	
DotProof Mode	Only for 1-bit files. Use this option to toggle between Contone and DotProof view.	
	Clicking the **Channel Palette** brings up a color box on the right side which lists information about the current (mouse pointer) and total amount of the different inks in the image. To hide one or more separations, deselect the box to the left of each separation name.	
	If **Transparent Background** is selected, a **transparency checkerboard** is shown as a background for transparent areas in an image. If the option is **not** selected, paper white is shown for transparent areas.	"Printing an Undercoat" on page 44

4.6 Special Processing

4.6.1 Printing an Undercoat

Note Only available for printers with special inks such as white, gloss, or silver.

If you want to print an extra coating which is **not** defined in an image, for example a **white undercoat** (to increase the opacity of images on transparent or metallic foil) or a **finishing varnish** layer, you can add a customizable coating channel on the **Channels** page. This way, it is not required to add a spot color channel to the original image. The coating functionality is available for CMYK images and PDF/PS files.

How to add a Coating Channel in manual jobs

1. Create and open a job in the Manual Job Manager.
2. **Job** > **Printer Settings** > **Printer**: Select a printer with a special ink such as white or varnish.
3. Select a **Calibration Set** that supports the inks needed to print the image.
4. **Printer Settings** > **Print Layers**: Define the **print order** and activate the **layers** you want to print (see "Printing Multiple Layers with Special Inks" on page 58).
   (Please note that you first need to define the **Layer** (e.g. White) to be able to define the corresponding coating channel on the **Channels** page.)
5. **Image** > **Color Management** > **Channels**: Activate the option **Add Coating Channel**.
6. Choose a coating **Mode** and **Intensity**.
7. Define the coating by picking an option from the **Color** list.
   (Choose a predefined spot color from a spot color database, define a custom spot color by value, or, if you are using an MX profile with white information, select **mx white** from the list.)
8. Click **Print** to print the job.

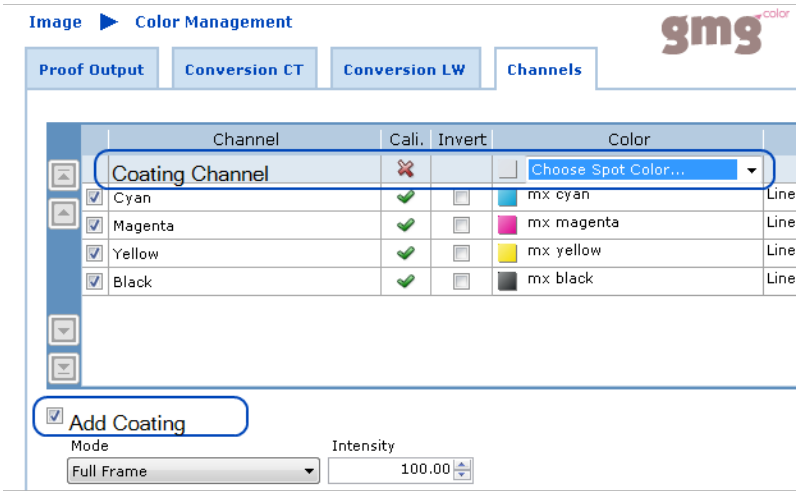


Fig. 12 Adding a customizable coating channel in the Manual Job Manager.

Coating Modes

The top image (1) will be printed without coating.

The bottom image (2) will be printed with a coating. The mode **Full Frame** is used. As you can see, all originally transparent areas are shown as white areas in the preview area, to visualize the white undercoat.

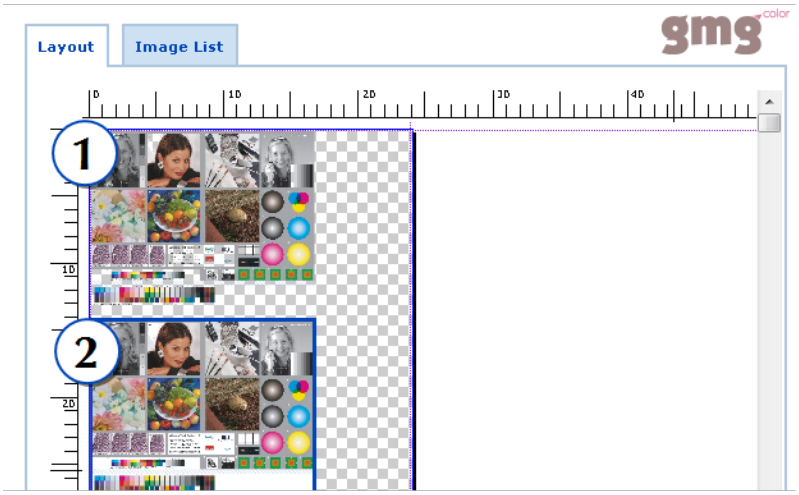


Fig. 13 Coating mode Full Frame.

Coated Area	*Description*
Full Frame	The dimensions of the coated area are determined by the full image **frame**, including **paper tint area**, **image label**, and **control strip**. Use this feature if you want to print an undercoat or a finishing varnish layer.
Only Non-Transparent Areas	The coating is printed only behind non-transparent objects. You can use this feature, for example, if you want to increase the opacity of the image when printing on a transparent foil, preserving the transparent areas of the image.

Coating Intensity

You can define the intensity of the coating in percent. Depending on the **Color** you selected for the coating channel, the intensity can also depend on the spot color settings, as described in the following.

- Pure ink: An **Intensity** of 100% means the highest density of the ink within technical limitations. (The **White** color, for example is handled as a white spot color with C0, M0, Y0, K0 and an area coverage of 100%.)
- Special inks from spot color databases (**db3**): An **Intensity** of 100% means the highest density of an ink as defined in the **Special Inks** settings and the highest density of CMYK as defined by the **100%** fulcrum in the spot color database. For example, if a white spot color in a spot color database is set to 50% and this spot color is printed as undercoat with an **Intensity** of 50%, the printed white ink coverage will be 25%.
- Custom spot color defined in **Manual Job Manager**: An **Intensity** of 100% means the highest density as defined by the **Tonal value in %**.

4.6.2 Cutting Contours

The upcoming trend to combine print and cut technology provides the market with a streamlined production process which reduces time and cost. In GMG ColorProof, you can create mockups with your print & cut inkjet, coming out printed & cut, ready to apply or show to your customers.

How do I use the cutting functionality?

To begin with, you need to open your PDF/PS file in a vector graphics editor such as Adobe Illustrator and set a cut path. After saving the cut path as a **spot color** channel, you open the file in the **Manual Job Manager** in GMG ColorProof and define the **Cutting Settings**, as described in the following.

When processing the job, GMG ColorProof extracts the cut path information from each PDF/PS page and generates a cutting processing step which is automatically started after printing. Individual cut channels can be used to combine regular cutting and perforation cutting.

How to create cut paths in Adobe Illustrator

In the following, you will learn how to add a cut path as a vector graphic to a document, using Adobe Illustrator CS4. Of course, this is only an example and you can also use any other vector graphics program.

After adding the cut path to the document, you will assign a **spot color** to it which is required to allow GMG ColorProof to recognize the path and determine where the cutter is applied. For help on creating paths for more complex graphics, please refer to the Adobe Illustrator Help.

Note The cut path should have no open ends, but form a **closed contour**. If you, for example, drew a half circle, the cutter would not only cut along the half circle line, but also close the gap, returning to the start point.

Note After creating the cut path, take care **not** to convert the vector object to a pixel based image, for example by ripping the file in another software, because GMG ColorProof needs vector information for the cutting functionality.

1. Open your document in Adobe Illustrator.
2. **Draw** a vector object as cut path by using the drawing or shape tools shown on the **Tools** panel on the left.
   (If the **Tools** panel is not displayed, select **Tools** from the **Windows** menu.)
3. On the **Windows** menu, select **Swatches**.
   The **Swatches** panel is displayed.
4. On the **Windows** menu, click **Color** and select the **Stroke** button to be able to assign a spot color to your path in the following steps.
5. Click the **New Swatch** button on the bottom of the **Swatches** panel to create a new swatch.
   The **New Swatch** dialog is displayed.
6. Enter any name for the swatch.
   (The exact name is not relevant for GMG ColorProof.)
7. Under **Color Type**, select **Spot Color**.
   (Just as with the name, the color is not relevant. GMG ColorProof only needs a spot color assignment to recognize the cut path.)
8. Click **OK** to confirm your changes.
9. **Save** the file.
   The file is now ready for print and cut processing in GMG ColorProof.

How to define the Cutting Settings in GMG ColorProof

Note The cutting settings are grouped into **Presets**. When changing a preset and **exporting** the associated job, it will not be possible to maintain the preset changes on the other system (the settings will be reset to the default values). Therefore, it is recommended to check the cutting settings after the import.

1. Open a file with cutting information in the **Manual Job Manager**.
2. Click the **Color Management** button on the navigation panel on the left and select the **Channels** tab.
3. In the **Color** column of the spot color channel with the cutting information, select **Define Cutting** from the drop-down list.
   The **Define Cutting** dialog is displayed.
4. Select or create a **Preset** from the drop-down list.
5. Define the cutting parameters such as the **Blade Pressure** or **Cutting Speed**.
6. Click **OK** to confirm your choice.
7. Optional: Repeat step 3 to 6 for each spot color channel with cutting information.
8. **Print** the job.
   The job is printed according to the selected parameters. After printing, cutting starts automatically. The cutter uses the vector cut paths within a spot color channel as a contour line for cutting.

5. Jobs

A single processing of a file is considered a **Job** and listed as such in the **Jobs** view, regardless whether the process was started by a **manual** job or by a **workflow** (defined in the **Workflows** view). All jobs are listed in the **Jobs** view until they are finished.

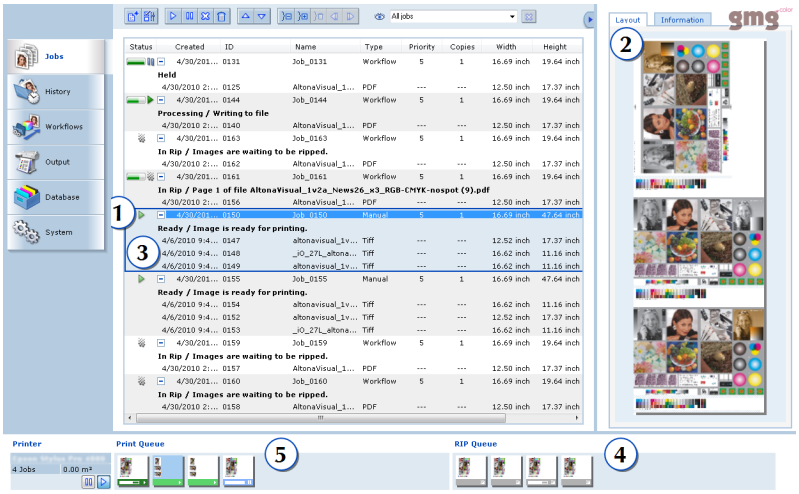


Fig. 14 Job information in the **Jobs** list.

A preview of the job (with control strips, label, and so on) selected in the **Jobs** list (1) is shown in the **Info** pane on the right side of the main window (2). The job item in the list also shows all images in the job (3) below the job info. When an image (and not the job info) is selected in the **Jobs** list, the **Info** pane is updated with a preview of the selected image (not shown).

Several **job status messages**, including a countdown of the selected number of copies, keep you informed about the current state of proceedings.

PDF/PS files are ripped first by the integrated RipServer. Jobs in status **In RIP** are added to the **RIP Queue** (4).

Ripped jobs (or jobs that do not need to be ripped first) are added to the **Print Queue** of the printer they will be printed on (5). Jobs in the print queue are highlighted by a different color bar, according to the job status, see following table.

You can select a job in **RIP Queue** and **Print Queue** with the mouse. The corresponding job in the **Jobs** list will be automatically selected and the **Info** pane will be updated.

All steps are logged during processing and listed in the **Information** tabbed page of the **Info** pane. The **Log** file can be exported.

If a job could **not** be processed, for example, because a required parameter is missing or invalid, an error message will show up in the **Jobs** view. The job is considered to be in **Error** or **Waiting for User Action** state. You can then edit the job properties to resolve the problem, and start the job again. If the problem is resolved by changing not the job itself, but the printer status, for example, changing the print medium loaded in the printer, the job will be automatically printed afterwards.

Job status information

A file can be in one of the following status in the **Jobs/History** view. The **Color** refers to the color of the job in the **Print Queue** or in the **RIP Queue**.

Status	*Color*	*Description*
Waiting	Green	Job waits in the job queue for further validation and processing. Jobs can be in **Waiting** status for a longer time if there are many jobs in the job list and the CPU load is high.

Status	*Color*	*Description*
Waiting For User Action	Orange	Job requires a user action before it can be printed, for example, changing the print medium loaded in the printer. The job will be automatically printed after the problem has been resolved.
Ready	Green	Job is ready for printing and waits in the job queue for the printer to be ready.
In Rip	Gray	PDF/PS images are ripped by the integrated RipServer, including **Conversion CT/LW**.
Preprocessing	Green	**Conversion CT/LW** (for non-PDF/PS image files)
Processing	Green	Images are processed, for example, color management is applied.
Printing	Green	Job is being printed.
Held	Blue	Job has been put on hold by the user or saved to the **Jobs** list for later use. Steps before status **Ready**, for example, job validation and **Waiting for User Action**, **Nesting**, or **In Rip** are **completed** before a job goes into the **Held** status. In **Held** status, the **Image Preview** is available for **PDF/PS** files. You can continue/start the processing a held job by clicking **Print**.
Canceled		Job has been manually canceled by the user.
Canceled on Printer		Job has been manually canceled by the user on the printer panel.
Error	Red	Job cannot be processed with the current settings. You can edit the job properties to resolve the problem, and start the job again.
Nesting	Violet	Job was created by workflows. Multiple images are nested by applying a nesting template. Job will remain in **Nesting** state until one of the finishing rules (**Finish Job and Start Printing**) of the **Nesting** template is met or until the printing is manually started by the user by clicking **Print**.
Printing Nested Job	Violet	A job in **Nesting** state that has been started by the user by clicking **Print**.
Nesting Canceled	Violet	A job in **Nesting** state that has been canceled by the user.
Nesting Deleted		A job in **Nesting** state that has been deleted by the user. It can take a while until the job is removed from the job list.
Drying		GMG AutoCali Wizard or GMG CaliWizard job. Test chart is being dried according to the specified drying time.
Preparing To Measure		GMG AutoCali Wizard or GMG CaliWizard job, before test chart is being measured.
Measuring		GMG AutoCali Wizard or GMG CaliWizard job. Test chart is being measured.
Finished		**Finished** jobs are moved to the **History** view. Cleanup/backup routines for printed images apply to finished jobs.
Finished, Images Deleted		Finished jobs in the **History** list, of which the **images** have already been **deleted** by cleanup/backup routines for printed images. Jobs in this status **cannot** be printed anymore.

5.1 Job Toolbar and Menu

The **Job** menu and toolbar allow you to set up and manage manual jobs and to pause, resume, remove, duplicate or export any listed job that is not yet being printed.

Tip Main program features are accessible by different methods, so that users can choose which way is most convenient to them. This documentation generally refers only to the toolbar or menu, even though there may be alternative methods.

- → Click a button on the **toolbar**. Move the mouse over a button (without clicking) to display a tooltip.
- → Click a command on a **menu**.
- → **Right-click** on an item and click a command on the **context menu**.
- → Press a **shortcut key**. Shortcut key combinations are listed next to the corresponding command on the menu.
- → **Double-click** an item (for example, a job or a workflow) to open the corresponding dialog box and edit settings.

Tip The import of jobs can be started from the **File** menu, automatically creating a new job from the imported *.job archive, with new job and image IDs.

Toolbar and menu commands

Icon	*Command*	*Shortcut*	*Meaning*
	**New Job**	CTRL+N	Adds a new manual job to the **Jobs** list. You can **directly print** a fast job by clicking the **Print** button (only one proof standard, with default settings). If you want to use multiple proof standards or custom settings, click the **Open** button to open the job in the **Manual Job Manager**.
	**Properties**	CTRL+O	Opens selected job in the **Manual Job Manager**. You can change the settings in the job and print it again, for example.
	**Print**	CTRL+P	**Prints** the selected job (again).
	**Hold**	CTRL+H	Puts the selected jobs **on hold**. Only available for queued jobs that have **not** been started yet. The job stays in the **Jobs** view and is marked as **Held**. You can start a job in status **Held** by clicking **Print**.
	**Cancel**	ESC	**Cancels** the processing of the selected job. The job stays in the **Jobs** view and is marked as **Canceled**.
	**Delete**	DEL	Permanently **removes** the selected job. **No undo possible**. You will be asked whether to also delete the image file(s) associated with the job.
	Save As		The selected job is saved as a *.job archive with all settings and images.
	Send To		The selected job is sent to a defined remote location (**System** view > **Remote Proofing**).
	Image Preview		Shows the processed and color managed **TIFF output image** as it will be printed on the target printer. Before the RIP procedure of **PDF/PS/EPS** files, the image preview displays the **Source File**. After the RIP procedure, you can switch between the original **Source File** view and the ripped TIFF **Output Preview**.
	Duplicate	CTRL+D	Duplicates job. A new job will be created with the same settings and a new Job ID and image IDs.
	**Increase Priority**	CTRL+UP	**Increases** the **priority** of the selected job. (**Manual Job Manager**: **Job** > **Printer Settings** > **Job Priority**; **Workflow Properties: General** > **Job Priority**)
	**Decrease Priority**	CTRL+DOWN	**Decreases** the **priority** of the selected job. (**Manual Job Manager**: **Job** > **Printer Settings** > **Job Priority**; **Workflow Properties: General** > **Job Priority**)
	**Collapse All**		Collapses all jobs in the **Jobs** view (if they are not yet collapsed).
	**Expand All**		Expands all jobs in the **Jobs** view (if they are not yet expanded).
	**Delete All Jobs**	CTRL+X	Can only be used in the **History** view. Permanently removes all jobs in the **History** view without affecting Jobs in the **Jobs** view. **No undo possible**.

5.2 Job List View

Selecting jobs

Jobs can be selected in the list with the mouse or by pressing the ARROW UP or DOWN key. You can also **select multiple** jobs while holding down the CTRL key. Selected jobs are highlighted by a different border and background color. To deselect all currently selected jobs, press the SPACE key. To quickly navigate to the beginning or end of your job list, use the POS1 or END key.

Job commands

Job commands such as **editing** job properties or **printing** a job (again) can be selected from the **Jobs**/**History** menu or from the context menu (by right-clicking on a job) and are applied to the selected job(s).

Image commands

Image commands such as **Image Preview** can be selected from the **Jobs**/**History** menu or from the context menu (by right-clicking on an image in a job) and are applied to the selected image. The **Image Preview** offers a high-resolution preview of the original image (without image processing such as cropping). You can zoom into the preview without quality loss.

Log file

On the **Info** pane on the right side, you can review and export the log file as an XML file. This is especially useful for troubleshooting. Please have the log file available when contacting the support.

5.3 Customizing the Jobs or History View

Jobs can be **sorted** alphabetically by different properties according to the column headers of the job list. Click a column header for sorting the job list by the property listed in this column; click the header again for sorting the list the other way round. Jobs with an identical property are listed in the order of processing.

A **filter** can be used for filtering the jobs listed in the **Jobs**/**History** view, for example, to list only jobs with a specific name. You can either select a predefined filter from the drop-down list on the toolbar, or you can enter custom filter terms into the text box on the toolbar.

You can customize the way columns are displayed in the **Jobs** and **History** view. For example, you can hide or show certain columns, change the order of sequence of columns, or increase the width for a column. The **Jobs** and **History** view can be customized independent from each other.

Column information

Column header	*Description*
Status	Status icon indicating processing, finished processing, canceled processing (error file)
Created	**Output** file creation date and time
ID	A unique ID is assigned to each job and image
Name	**Input** file name
Printer	Printer name and proof standard name
Type	Indicates whether a job was **manually** created or by a **workflow**
Priority	Job priority (as defined by the user in the **Input Settings** dialog box)
Copies	Number of copies of a job
Width	Width of image or total width of printed job
Height	Height of image or total height of printed job
Nesting	Indicates whether a job uses a nesting strategy or not

How to hide a column

1. Right-click any column in the **Jobs** or **History** view.
2. Remove the check mark next to the column header that you want to hide in the interface. Add the check mark next to the column header that you want to show.

How to resize a column

1. Point to the border between two columns until the mouse pointer changes to an arrow.
2. Click and drag to resize the width of the column left of the arrow.

How to change the order of columns

1. Click the column header of the column that you want to move.
2. Hold down the mouse button and drag the column to the new position. The column header will get a transparent appearance. When you point to a border in-between two columns, this border will be highlighted in blue to indicate a possible new position.
3. Release the mouse button at the desired new position.

5.4 Creating New Jobs

Jobs can be created by **workflows** or **manually** in the **Manual Job Manager**. When creating a manual job, you can either directly print the job (**QuickProof**) or you can configure the job settings and/or check the layout by opening the job in the **Manual Job Manager**.

Tip In the **Jobs** view, you can also create new jobs by **drag-and-drop** from Windows Explorer. In the **Workflows** view, you can also add new jobs to a **hotfolder** by **drag-and-drop** from Windows Explorer. The image files are physically copied into the hotfolder and processed according to the hotfolder/workflow settings.

You can later review the settings of finished jobs in the **History** view. You can reprint a job from the **History** with the same or changed settings.

How to create a new job

1. On the **File** menu, click **New Job** or click  on the toolbar.
2. Select the input file type, for example, TIFF or PDF. If you want to select input files in different file formats or if you want to see all files, select **All Files** (1).
   The browse box filters the files in the selected folder and displays only images in the selected input file format.
3. Select an **input** file (2). It is also possible to select **multiple** files (by holding down the CTRL or SHIFT key).
   All **recognized** images will be shown in the **Image Files** info box (3) at the bottom of the dialog box, each image in a **separate** row. **Unrecognized** files are also listed below the recognized files.
4. Select a **Proof Standard**, **Printer**, **Medium**, and **Calibration Set**.
5. Click **Print** to print the selected files directly without user interaction or click **Open** to edit the job in the **Manual Job Manager** (4).

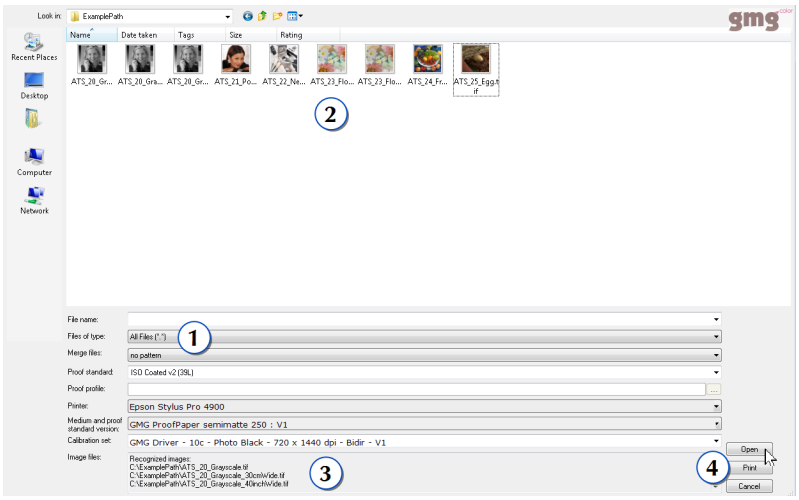


Fig. 15 New Job dialog box.

The screenshot shows the job settings described in the preceding instructions.

Creating a job with multiple images

You can create a job with multiple images in various ways:

- Select multiple images (**multiselect**) in the **New Job** dialog box.
- **Duplicate** an existing image in the job by selecting the image and pressing CTRL+D.
- Create **multiple duplicates** by selecting the image and defining a number of copies on the **Multiple Copies** tabbed page below the preview.
- Add **new** images to a job by clicking the **Add Image** button on the toolbar of the **Manual Job Manager**.
- Workflow, **Nesting**: Collect multiple images from separate workflows/hotfolders by defining a nesting template.

Creating a job from a job template

You can export jobs with all relevant settings and files and reuse them as templates for a faster creation of similar jobs.

1. Configure a job in the **Manual Job Manager** and select **Save As** from the **Job** menu.
   The **Save As** dialog is displayed.
2. Select a location to save the job to and click **Save** to save the job.
   The job is saved as *.job file. Import the job when you need it as a template for a similar job.
3. On the **File** menu, click **Import Job**.
   The **Import Job** dialog is displayed.
4. Select the exported job you want to use as a template and click **OK** to open it in the **Manual Job Manager**.
5. Right-click on the image you want to replace and select **Replace Image** from the context menu.
   The former image is replaced and the job can be printed with the new image, without having to be configured from scratch.

See also:

- "Jobs" on page 48
- "Job Toolbar and Menu" on page 49
- "Supported File Formats" on page 29
- "Multi-File Images" on page 30
- "Restarting Jobs" on page 70

5.5 Manual Job Manager

In the Manual Job Manager, you can manage all general job settings and all images to be printed together in one job (that is, on a single sheet of paper).

The Manual Job Manager is opened when you create a new manual job. You can also open any job in the **History** (regardless of how a job was created, manually or from a workflow) in the Manual Job Manager, change any settings, and print the job again.

The Manual Job Manager is divided into two major areas:

- **Job** Settings (1)
- **Image** Settings (2)

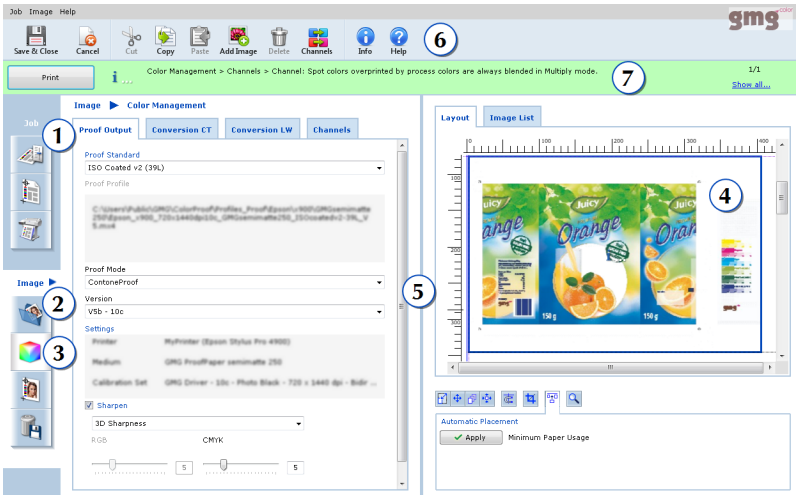


Fig. 16 Manual Job Manager, Image Settings area.

For an easy orientation, the two areas are visually separated by the white and blue and background of the navigation panel. The active area is indicated by a **white** background color (2); the inactive area has a **blue** background (1). An area automatically becomes active as soon as you click a button (3).

You can change any settings that affect the whole job in the Job Settings area (1).

The preview area on the right side of the Manual Job Manager (4) shows the complete job with all images, label, and control strips. Images are soft-proofed based on the ICC profile from the proof standard.

Images that are selected in the preview are highlighted by a blue border. You can change the settings of selected images in the Image Settings area (2).

To **resize** the settings and preview pane, point to the border between the settings and preview pane until the mouse pointer changes to a handle (5). Click and drag to resize the width.

In our example, the **Proof Output** page is shown, where you can change the proof standard and define sharpening effects. All displayed settings can be changed for multiple images at once.

The toolbar (6) provides quick access to often-needed software features such as adding a new image to a job and creating multiple copies of an image. The status of the job is clearly indicated with a green, orange or red color (7), giving instant visual feedback .

If you want to print several manual jobs in a similar line, you can save all settings that are not color/printer relevant (such as job labels, control strips, cleanup/backup settings) as **default settings** (**Job** menu > **Save as Default Settings**). The default settings automatically apply with the next job being opened in the Manual Job Manager.

Job and Image Settings

Group	*Short description*
Job Settings	The **Job Settings** affect the global parameters of a job. Here, you can define the job name, print medium, the job label and control strips, the printer and printer settings, and the calibration set that will be used for this job.
Image Settings	The **Image Settings** affect all images currently selected in the image preview. Therefore, the **Image Settings** area is only available if at least **one** image in the job is selected. All changes done in the **Image Settings** area will be applied to all selected images. If images have different settings, the corresponding software control will be unavailable. You can only change settings that are identical. This helps to avoid mistakes, for example, reset different proof standards in a job to the same proof standard. Settings that can be defined individually for each image are the pattern recognition and screening detection parameters for 1-Bit TIFFs, the raster parameters for PDF/PS files, color management settings, sharpening effects, image label and control strips (that will be printed together with each image), image marks, and cleanup and backup rules.

See also:

- "Creating New Jobs" on page 52
- "Restarting Jobs" on page 70
- "Layout" on page 65

5.6 Job Settings

5.6.1 Media Settings and Job Layout

All media sizes that are supported by at least one of the installed printers are available in the **Size** drop-down list. An error message will inform you if the selected media size is not supported by the printer that was selected for this job.

Job orientation settings **Portrait** and **Landscape** are available only for sheet media.

If **Fixed Length** (only available for roll media) is selected, the job length is limited to the specified length (similar to sheet media). If **Automatic Cut** is selected in the **Job Defaults** of a printer (**Job Defaults** > **Advanced** > **Automatic Cut**), the medium is cut at the fixed length value. Otherwise, the job length is automatically defined by the area filled with images.

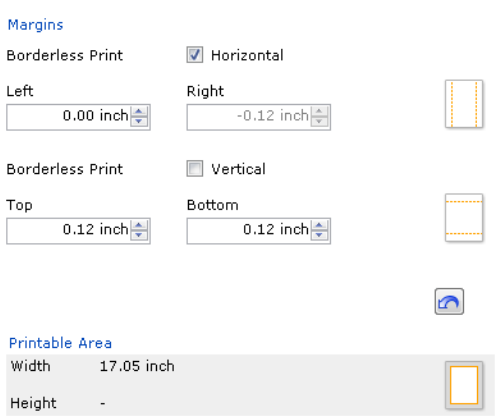
Margins and bleed

The **Printable Area** is defined by the **media size** minus the defined **margins**. The printable area is shown in the job preview area on the right side of the **Manual Job Manager** and can be filled with images (and control strips).

Some printers support **borderless** printing. Some printers allow borderless printing **horizontally** and **vertically**, some only in combination.

When **Borderless Print** is selected, **margin** settings are automatically changed to **bleed** settings. Printer prints the bleed in mm/inch over the border of the print medium. This way, a neat borderless printing without a white space is achieved and a possible misalignment of the medium in the printer is compensated.

Example:



In the example screenshot, the job is based on **17 inch** roll media. Therefore, the **printable area**, **without** any margins or bleed, is 17 inch wide.

The used printer supports a bleed of up to **0.12 inch**. As the option **Borderless Print** > **Horizontal** is selected, you can add a bleed of 0.12 inch to the print. This means, an image with a width of 17 inch + 0.12 inch bleed on the left and + 0.12 inch bleed on the right can be printed. This results in a total **maximum** printable area of **17.24**, meaning, you could print an image with a width of up to 17.24 inch. As default, the **Left** bleed is set to 0, to avoid that an image is unintentionally clipped by the bleed settings.

Available options	*Description*
Borderless Print Horizontal	Job is printed with 0 **left** and **right** margins. Only available for printers that support borderless printing.
Borderless Print Vertical	Job is printed with 0 **top** and bottom **margins**. Only available for printers that support (vertical) borderless printing. When a single job is printed, the medium is not cut. The medium is cut after the printer has printed the next job. Bleed is not available for vertical borderless print.
2 Cut Mode	Defined in the printer (**Output** > **Change Media** > **Advanced**), **Manual Job Manager** (**Job** > **Printer Settings** > **Advanced**), or **Workflow** (**Workflow** > **Print Settings** > **Advanced**). Only available for Epson printers, for **Borderless Print Vertical**. To avoid that a small part of the next job is cut together with the first job in a row (or vice versa), the printer prints a white area in-between jobs. Jobs are then cut borderless.

5.6.2 Job Label

A job label is printed at the end of a job and presents job-specific information such as the job creation time, or the used printer calibration. If you want to include information on individual images in a job, you can use **image labels**.

Job Label Settings

Option	*Description*
Label Type	You can choose between **preconfigured** labels or set up your own label by clicking the **Edit Label** button.
Format	Decide in how many rows you want the label to be printed.
Position	Job labels can be printed beneath or to the right side of a job.
Font Settings	Font type, size and color can be customized to your preferences. The gray text preview box shows you how your label text will look like.
Comment	Include a comment into the label by clicking into the text box and entering the desired information. The maximum size is 256 characters.

Label Types

Label Type	*Description*
Basic Label	Preconfigured label with basic label elements such as the image name, printing date and proof standard name. The GMG logo in the Basic Label is smaller compared to the one in the GMG Label.
GMG Job / Image Label	Preconfigured label with recommended label elements.
GMG Full Label	Contains all available label elements.
ISO 12647-7 Label	The **ISO 12647-7 Job Label** is a preconfigured label that covers the requirements for proof systems according to the ISO 12647-7 standard.
Custom label	To create a custom label, you can either duplicate and edit a preconfigured label, or create a new label (**Tools** menu > **Edit Labels**: **New**).

Label elements

Label Information	*Description*
General	General label information comprises very basic information such as the date, time of printing, job number or software version the file was printed with.

Label Information	*Description*
Color	Color label information contains all information referring to the used color management settings such as the color profile (proof standard) or date of the last calibration. • The GMG Standard Proof Logo is printed **only** if a GMG proof standard has been used and the printer calibration is in the range of the **Quality Criteria** defined in the GMG calibration set.  **GMG Proof Standard Logo** • **Manual** jobs: When using **multiple** proof standards in a job, information relating to the proof standard such as **Proof Standard Name** is **not** available for the job label. Instead, this information will be printed automatically together with the image control strips. • To include the **Printing condition** simulated in the proof, for example "PSO, PT 1/2 [ISO 12647-2:2004 / Amd 1", select the option **Proof Standard Description**. The information is automatically extracted. • To include the name of the **ink set** as given by the manufacturer, for example "Epson UltraChrome K3 Ink with Vivid Magenta", select the option **Calibration Set Description**. This information is automatically extracted. Only the first paragraphs (up to the first paragraph mark / hard line break) of the **Proof Standard Description** and **Calibration Set Description** are used for the label. If you are using custom proof standards and calibration sets that do not contain this information, you can use the **Comment** box and enter the data manually.
Format	Only for files that are not ripped: If you scaled an image, you can include this information in the label together with the image dimensions before and after scaling (**Image Format** / **Original Format**). If you used crop marks (> **Image Marks**), you can add information on where the crop marks have been placed.
Printer	The printer type and the user defined printer name can be printed into the label lines.

5.6.3 Job Control Strips

Job Control Strips are printed at the end of a job to verify the color accuracy of the print output.

Strip Type	*Description*	*Use of Sharpening*	*Use of Coating*
Proof Control Strip	Printed **per** proof standard used in the job. **Example**: If there are three images with three **different** proof standards, a separate job control strip is printed for **each** proof standard. Each control strip will get its own label with the proof standard name.	Printed **with** sharpening. MX4 color management is fully applied, including noise and missing dots simulation (if defined).	Proof control strips use the coating defined for the image. If several images with different coating settings have been added to a job, the settings of the **first image** are used.

Note Please note that **job control strips** cannot be used for GMG OpenColor jobs.

See also:

- "Using Control Strips" on page 188
- "Verifying Spot Colors" on page 190
- "Adding a Custom Control Strip" on page 177
- "Image Control Strips" on page 63

5.6.4 Printer Settings

Group	*Short description*	*See also*
Printer (and loaded medium)	The **Printer** list contains all printers that have been set up in the **Output** view. Next to the available printers in the drop-down list, the loaded medium is shown in parentheses. The loaded medium is the print medium that you selected when setting up the printer.	"Media Synchronization between Printer and Software" on page 121

Group	*Short description*	*See also*
Medium	You can select a print medium that is currently not loaded in the printer for the job from the **Medium** list. The job will be created in the status **Waiting for User Action**. The job will be automatically printed after you have changed the medium in the printer configuration in the **Output** view (select printer and click the **Change Media** button).	"Media" on page 157 "Changing the Print Medium" on page 101
Calibration Set	Only calibration sets are available that support the selected printer–medium combination. The **print mode** is defined in the calibration set. White ink printers: The undercoat mode (**Front** or **Reverse** print) is also defined by the print mode in the calibration set.	"Interplay of Color Management Items" on page 156 "Calibration Sets" on page 161 "Epson Stylus Pro WT7900 Print Modes" on page 138
Paper Tint Simulation	Paper tint option which can be turned off to print proofs **without** a **paper tint simulation**. Please note that removing the paper tint simulation affects the color accuracy. The option **Fill Gaps** fills the gaps between images with paper tint simulation so that the proof job appears more homogenous and is easier to cut. Also, irritating visual effects due to differences between the simulated paper tint and the original paper tint of the proof paper are avoided. This option is supported only if the same proof standard is used for all images in the proof job, as the paper tint is dependent on the proof standard.	"Paper Tint Simulation" on page 26
Spot Color Priority	When an image with spot colors is added to a job, GMG ColorProof automatically searches the spot color sets linked to the database for the spot color **channel names** in the image. The **Spot Color Priority** defines the **order of sequence** in which the spot color libraries are searched. Especially useful for power users using multiple printers and **load balancing**: You can easily and fast **"copy and paste" spot color settings** including activation/deactivation status and priority from one **printer** to another and from one **workflow** to another by using the corresponding toolbar buttons. You can also apply the settings to **all** connected printers. This feature also helps to keep your settings synchronized, for example, when a new spot color database is added. This feature is available even across different printer types, as long as the printers are in the same printer family (as defined in the calibration set).	"Spot Colors" on page 21

5.6.5 Printing Multiple Layers with Special Inks

Note Only for production printers that support multi-layer printing with special inks such as white, metallic, and clear.

With some printers, you can print single or multiple ink layers. The white ink can, for example, be used as an undercoat to increase the opacity of images when printing on a transparent media type. Metallic ink can be printed full tone or combined with CMYK to produce a wide range of metallic and pearlescent colors. Providing you with a **PANTONE Metallic** spot color sets, GMG ColorProof enables easy-to-use and highly accurate spot color simulations including gold, silver and bronze colors.

Instead of configuring separate jobs for each layer of white or clear ink, you can conveniently define print layers on the **Layers** tab (**Job** > **Printer Settings** > **Print Layers**). The print medium is automatically pulled back to its initial position after each layer to print the next layer. The order in which the layers are printed can be freely modified. All settings on the **Layers** tab are saved with each job and are restored for the next compatible job to reduce the configuration time.

Examples for multi-layer printing:

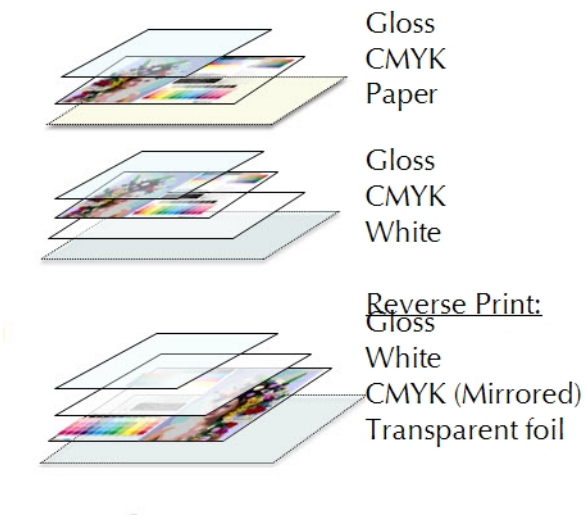


Fig. 17 Different print layers for special inks can be configured in a single job.

Note For more information on producing mockups with GMG ColorProof, please see our printer specific **Best Practices**.

Automated multi-layer printing

Let's assume you want to proof an image with 6 image channels: CMYK, white andclear ink. To view the channels of a selected image, you can click on the **Color Management** > **Channels** page. On the **Printer Settings** > **Printer** page, you can check the preselected calibration set. As for technical reasons white and clear ink cannot be printed at the same time, you need to either choose a calibration set with a **CMYK Only** color mode or include white and select a **W|CMYK** color mode instead. The remaining layers can be selected on the **Layers** tab, as shown on the following screenshot.
The **Main Job Layer** includes all colors covered by the selected calibration set on the **Printer** tab, in this case **CMYK**. In addition to the main layer, **White** and **Gloss** will be printed in our example (1). The **Order** column (2) reflects the order in which the layers will be printed which can be changed by clicking the arrow buttons on the left. In our example, we want to print a white coating onto the print medium before applying CMYK. If a validator message prompts you to select a different color mode for a layer, click on the respective **Change Settings** buttons (3) to open the layer settings. The layer settings can also be used to change the **resolution** of a layer, for example, you can print some layers in a faster 360 dpi print mode. With **Number of Copies** and **Overprint** you can multiply the selected layer. When selecting several copies of a layer, this layer will be printed several times one layer after the other with drying in between, whereas when selecting overprint passes, the print head will print the same line several times right on top of each other.

Note The print sequence is **not** visualized in the job or image **preview** so that potential output issues (such as printing a white undercoat on top of CMYK) will not be shown in the preview.

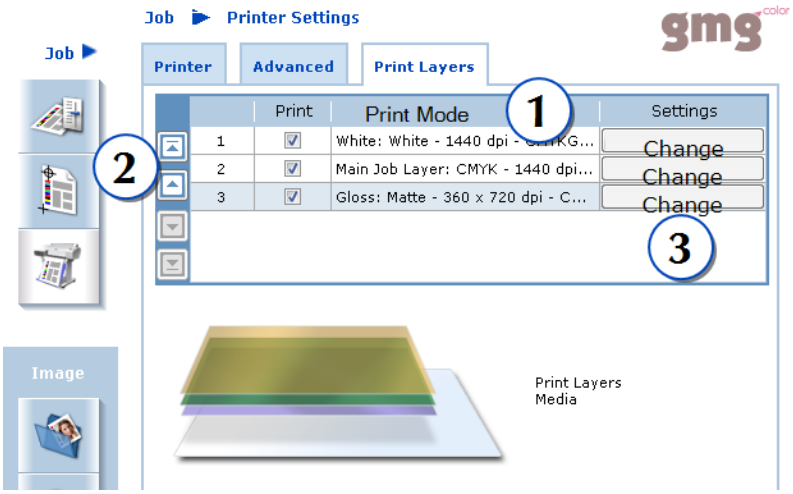


Fig. 18 Manual Job Manager: Automated multi-layer printing.

How does the spot color handling work?

Special inks are handled as spot colors in GMG ColorProof. A spot color can be defined with up to three special inks. If a spot color contains color data for multiple image channels, white takes precedence and the spot will be displayed on top of the **Channels** list (**Color Management** > **Channels**). The image channel order can be changed according to your requirements. If you, however, redefine a spot color after the channel list has once been arranged, it is not automatically updated accordingly.

Special inks are all printed in a separate layer except **Silver (Blended)** which is printed together with the CMYK layer. The spot color sets that simulate spot colors with special inks have been suffixed with the respective ink (for example **Silver** or **Silver Blended**). This way, the appropriate sets (**Printer** tab > **Spot Color Priority** list) can be easily recognized and the search sequence customized (see "Spot Colors" on page 21).

Manual multi-layer printing in separate jobs

If you want to **manually** define your layers or need a special layering not supported by the **Print Layers** functionality, you need to enable the option **Print Images on Top of Each Other** as shown on the following screenshot, so that the print medium is automatically pulled back to its initial position, ready to print the next layer.

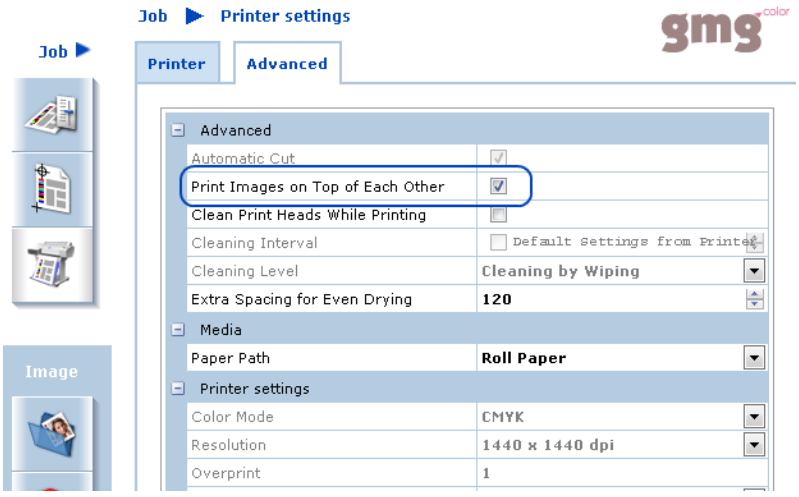


Fig. 19 Manual Job Manager: Printing Images on Top of Each Other.

5.7 Image Settings

5.7.1 Proof Output–Defining the Simulation Color Space

On the **Proof Output** page, you define the simulation color space (target printing condition) for your printer-medium combination. Furthermore, you can configure sharpening effects to make edges more clear and distinct.

Proof Output settings

Group	*Short description*	*See also*
Proof Standard	All information required for the color management of a certain printer–medium combination and for a specific print standard is tied into a **proof standard**.	"Proof Standards" on page 166
	RGB proof standards contain **PhotoProof** profiles which have been designed for photo printing applications and aim at printing particularly brilliant "RGB" prints.	"Printing Photographic and Fine Art Prints with PhotoProof" on page 16
	With a GMG OpenColor licence, you can also set up OpenColor proof standards with multicolor profiles for simulating spot color overprints.	"OpenColor Proof Standards" on page 168
Proof Mode	In **ContoneProof** mode, the input image file in a job is automatically ripped into a **CMYK contone** image. With a **DotProof** license, you can also print halftone proofs in **DotProof** mode, either using 1-bit imagesetter data or 1-bit files created by the built-in GMG 1-Bit Creator.	"Proof Modes" on page 41 "Printing Halftone Proofs with DotProof" on page 15
Sharpen	**3D Sharpness**: Highly efficient and easy-to-use sharpening tool. Use the slider to set an intensity from 0-20.	
	Unsharp Mask (USM): Use USM sharpening if you want to have more control on sharpening effects. USM sharpens by increasing contrast along the edges, making light pixels even lighter and dark pixels darker. The **Threshold** specifies how far apart pixels must differ in value before they are considered to be an edge. The **Amount** is like a volume control, increasing the contrast (how much darker/lighter the edge borders become) by a specific percentage. The **Radius** controls how wide the edge rims become—the wider the radius the larger the edge rims.	

Configuration dependencies

Dialog box	*Short description*	*See also*
New Job	The selected proof standard (**Proof Output**) defines the supported printer settings (**Calibration Set**). It is only possible to select a single proof standard during job creation, when loading the input file(s). Multiple proof standards per job can be defined in the **Manual Job Manager**.	"Creating New Jobs" on page 52 "Using Multiple Proof Standards in a Job" on page 61
Manual Job Manager	The selected calibration set (**Printer Settings**) defines the supported proof standards (**Proof Output**).	"Proof Output—Defining the Simulation Color Space" on page 61 "Printer Settings" on page 57

5.7.2 Using Multiple Proof Standards in a Job

You can simulate a different print standard for each image in the job. For example, you can duplicate an image in the job and then assign a different proof standard to each copy. Thus you can show your clients how the print result could possibly be altered under different target printing conditions.

Usually, when creating a job, you can select only a single proof standard for all images.

In the **Manual Job Manager**, you have the following possibilities to print a job with **multiple** proof standards:

→ Add a new image to the job and select a new proof standard.

→ Select an existing image in the job and select a new proof standard for this image.

How to use multiple proof standards in a job

1. Set up a job in the **Manual Job Manager**.
2. Select an image in the job preview area on the right side.
   The Image Settings become available.
3. On the toolbar, click the **Add Image** button.
   The Add Images dialog is displayed, offering the same settings as the New Job dialog, except that printer, medium, and calibration set cannot be changed, because these are global settings that can only be changed for the whole job.
4. Select an **input** file. It is also possible to select **multiple** files (by holding down the CTRL or SHIFT key).
5. Select a different **Proof Standard**.
6. Click the **Add Images** button to add the image to the job.
7. Repeat steps 2 to 6 for all proof standards you want to support.

See also:

- "Creating New Jobs" on page 52
- "Proof Output—Defining the Simulation Color Space" on page 61

5.7.3 Image Label

An image label is printed together with an image. For **each** image in a job, an individual image label can be defined. It can include information specific for an **image** such as the image name or format, and information on **color** such as the used color profile.

Note An image label is considered to be part of the image **frame**, which is important for nesting.

Image Label Settings

Option	*Description*
Label Type	You can choose between **preconfigured** labels or set up your own label by clicking the **Edit Label** button.
Format	Decide in how many rows you want the label to be printed.
Position	Job labels can be printed beneath or to the right side of a job.
Font Settings	Font type, size and color can be customized to your preferences. The gray text preview box shows you how your label text will look like.
Comment	Include a comment into the label by clicking into the text box and entering the desired information. The maximum size is 256 characters.

Label Types

Label Type	*Description*
Basic Label	Preconfigured label with basic label elements such as the image name, printing date and proof standard name. The GMG logo in the Basic Label is smaller compared to the one in the GMG Label.
GMG Job / Image Label	Preconfigured label with recommended label elements.
GMG Full Label	Contains all available label elements.
ISO 12647-7 Label	The **ISO 12647-7 Job Label** is a preconfigured label that covers the requirements for proof systems according to the ISO 12647-7 standard.
Custom label	To create a custom label, you can either duplicate and edit a preconfigured label, or create a new label (**Tools** menu > **Edit Labels**: **New**).

Label elements

Label Information	*Description*
General	General label information comprises very basic information such as the date, time of printing, job number or software version the file was printed with.

Label Information	*Description*
Color	Color label information contains all information referring to the used color management settings such as the color profile (proof standard) or date of the last calibration. ◥ The GMG Standard Proof Logo is printed **only** if a GMG proof standard has been used and the printer calibration is in the range of the **Quality Criteria** defined in the GMG calibration set.  **GMG Proof Standard Logo** ◥ **Manual** jobs: When using **multiple** proof standards in a job, information relating to the proof standard such as **Proof Standard Name** is **not** available for the job label. Instead, this information will be printed automatically together with the image control strips. ◥ To include the **Printing condition** simulated in the proof, for example "PSO, PT 1/2 [ISO 12647-2:2004 / Amd 1", select the option **Proof Standard Description**. The information is automatically extracted. ◥ To include the name of the **ink set** as given by the manufacturer, for example "Epson UltraChrome K3 Ink with Vivid Magenta", select the option **Calibration Set Description**. This information is automatically extracted. Only the first paragraphs (up to the first paragraph mark / hard line break) of the **Proof Standard Description** and **Calibration Set Description** are used for the label. If you are using custom proof standards and calibration sets that do not contain this information, you can use the **Comment** box and enter the data manually.
Format	Only for files that are not ripped: If you scaled an image, you can include this information in the label together with the image dimensions before and after scaling (**Image Format** / **Original Format**). If you used crop marks (> **Image Marks**), you can add information on where the crop marks have been placed.
Printer	The printer type and the user defined printer name can be printed into the label lines.

5.7.4 Image Control Strips

In contrast to job control strips that are printed for the complete job, image control strips are printed together with the image. Therefore, you can select image control strips for each image separately.

◥ If multiple proof standards are used in a single manual job, the proof standard name is printed together with each image control strip.

Note Printers supporting an integrated measuring device: When selecting the **Measuring Device**, you decide whether you want to perform a **fully automated** measurement with the **integrated** measuring device or whether you prefer a **manual** measurement with an **external** spectrophotometer

◥ **Load balancing and nesting**: If you have configured an image control strip for a printer supporting an integrated measuring device in a workflow, for example, an **Epson Integrated Measuring Device**, and the image is sent to a printer that does **not** support this measuring device type, the image control strip will not be printed. [When load balancing and nesting is used, it is recommended to use **job control strips** instead of image control strips, as job control strips can be configured individually for each installed printer.]

◥ The **proof** control strip is printed with **sharpening**. MX4 color management is fully applied, including **noise** and **missing dots** simulation (if defined in the MX4 profile).

Printing image control strips with white ink channels

If an image is printed with white ink, it generally makes sense to print the control strip with a white undercoat. Otherwise, it might be difficult or even impossible to measure the patches, especially on foil.

Tip If the document does not contain a white channel or if you do not want to print it, you can add an additional **empty** channel to the document in your preferred image editor and map this channel to white.

Therefore, GMG ColorProof **automatically** prints image control strips with a white undercoat if the following criteria are met:

- The image has an activated white color channel.
  —OR—
  The image uses a white **Coating Channel** added by GMG ColorProof.
- The white channel is mapped to "mx white" from the proof profile ("standard" MX profiles as well as GMG OpenColor profiles).
  —OR—
  The white channel is mapped to a **db3** spot color with the name "white".

Note If the white channel is mapped to a **custom** spot color (defined either in the **Manual Job Manager** or in the **Workflow**), the control strip will be printed **without** white undercoat.

See also:

- "Using Control Strips" on page 188
- "Verifying Spot Colors" on page 190
- "Adding a Custom Control Strip" on page 177
- "Adding a Custom Control Strip" on page 177
- "Job Control Strips" on page 57

5.7.5 Image Marks

Note The option **Outside Image** (for **Image Format**, **Crop Marks**, and **Middle Line**) is available only if an extended **Paper Tint Area** is defined.

The consistency of the marks settings with the image size is validated. If you enter invalid values, for example, so that the **Left** crop mark would be outside the image (including paper tint area), you will be informed by a warning message. For example, if the image is 5 cm wide and the paper tint area is extended 1 cm to the right side, you can enter a maximum of 6 cm for the **Left** value. Over 6 cm, the left crop mark would be outside the right border of the image.

Crop Marks

Crop marks indicate where you want the printed image to be cut. The values for **Left**, **Right**, **Top**, and **Bottom** define the crop box for an image, that is, the distance of the crop marks to the image border (from inside the image).

Inside Image means the crop marks are printed on top of the image. **Outside Image** means the crop marks are printed outside the image, directly next to the image borders, but the crop box is still inside the image.

As Frame (Inside) means that the crop marks are printed as a continuous line (not as separate crop marks in the image corners) on top of the image.

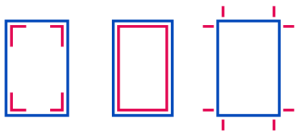


Fig. 20 Crops marks printed inside the image, as a frame, and outside the image (from left to right).

5.7.6 Setting up Backup and File Removal Routines

The options provided in GMG ColorProof to **delete** files after processing or backup allow you a smooth workflow, which is not interrupted by a limited capacity of the hard disk.

We recommend **backing up** the files first before deleting them (either manually or automated), ideally to a high volume network drive on a connected server. For each GMG ColorProof workflow, you need to specify a separate backup folder. This ensures that the workflow is kept concise and you can easily track the data flow.

Tip You can use backup folders also for setting up more complex workflows. If a **backup** folder is selected as an **input** folder of **another** workflow, you can automatically process a single source image file into **multiple** output files.

Note Files deleted by GMG ColorProof will **not** be moved to the Windows Recycle Bin, but **permanently** removed from the hard disk. Therefore, please set up these routines in GMG ColorProof workflows with great care. You can omit these options and choose a manual removal of files from the hard disk to avoid unintended data loss. In this case, please make sure that data is deleted before the maximum capacity of the hard disk is reached.

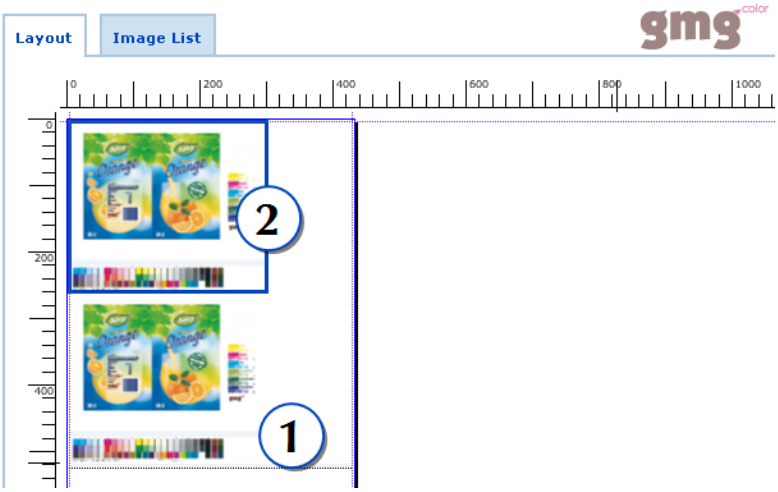
Note When using the **Cleanup** option for unprocessed files, make sure that the correct **folder path** is assigned to the hotfolder and that **only copies** (not valuable original files) of image files are moved into the hotfolder to avoid **data loss**. **All** unrecognized files will be deleted, even files that are **not** supported by GMG ColorProof or that are **no** image files, for example, Adobe Photoshop or Microsoft Word files. For example, if you would by accident assign the path *c:* to a hotfolder and use the option **Recursive**, this would result in deleting all files from the **c** partition of your computer (that can be accessed by the Windows user that has logged onto the computer).

It is advisable to **backup** input files to a separate hard disk drive, and delete the files automatically after a certain amount of time has passed, to avoid that the maximum capacity of the hard disk is reached, and all following jobs are stopped.

Cleanup/Backup options

Available options	*Description*
Hotfolder: **Clean up Unrecognized Files**	Files that did not pass the filter of any linked workflow are deleted.
Hotfolder: **Backup Unrecognized Files**	Files that did not pass the filter of any linked workflow are copied to a user-defined error files folder.
Workflow: **Clean up Processed Input Files**	Processed input files are **deleted** after processing.
Workflow: **Back up Processed Input Files**	Input files are **copied** to a user-defined backup folder when finished. Files in the backup folder can be automatically deleted after a user-defined period of time (after processing).

5.8 Layout



The layout area on the right side of the **Manual Job Manager** shows the complete job with all images, labels, and control strips. The cutting line is marked by a dotted horizontal line at the end of the job (1).

The complete area of an image is also referred to as an image **frame**. The image label, control strips, image and crop marks, and the extended paper tint area (**Image** > **Label/Strips/Marks**) belong to the area of the corresponding image. Frames that are selected are highlighted by a blue border (2).

Selecting one or multiple images

To select one or multiple images, do either of the following:

→ Click an image. Hold down the CTRL key to select multiple images.

→ With the mouse, drag a marquee around part or all of one or more images.

Handling of multiple images

Images added to the job are automatically positioned in a free space inside the **printable area** (**Job** > **Settings**) of the job. The printed job length is extended automatically, within the user-defined media limits (for example, sheet format or **Fixed Length**).

All settings that are applied to **all** selected images are updated in the settings pane on the left. You can change any setting, for example the proof standard, for all selected images with a single click.

See also:

- "Image Preview" on page 42
- "Image Preview of PDF/PS/EPS Files" on page 42

5.8.1 Layout Tools

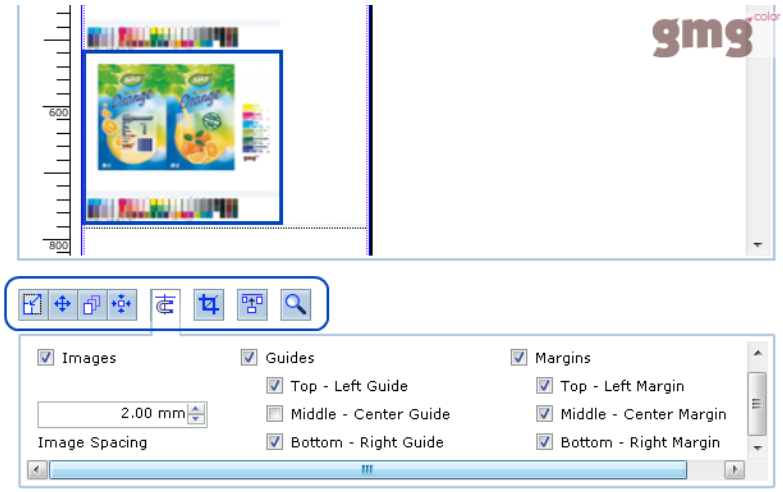


Image positioning with guides and margins.

Guides help you to align image elements to the horizontal or vertical axis. Guides appear as nonprinting lines that float over the job. You can move and remove guides from the preview area.

You can place a new guide by clicking into the vertical ruler on the left side or into the horizontal ruler on the top. You can then move the guide to a position in the job area by holding down the left mouse button and dragging the cursor with the mouse. Likewise, you remove a guide by dragging it outside the job area.

Guides are only active if the option **Guides** is selected in the tools pane beneath the preview area. Likewise, the job margins are only active as guides if the option **Margins** is selected.

Below the **Guides** check box, you can define to which **sides** of the selected image the guides will 'respond' by activating the corresponding check boxes. The left part of the option refers to horizontal guides, the right part to vertical guides. So, if you select the option **Top - Left Guide**, the **top** border of the selected image frame will stick to a **horizontal** guide, the **left** border will stick to a **vertical** guide. If you select **Middle - Center Guide**, the guide will serve as an axis of reflection. **Margins** are handled in the same way as guides.

You can resize the margins by entering values into the edit boxes in the settings pane on the left (**Job** > **Settings** > **Margins**).

In a similar way as with guides, you can align one image to another. Enter a desired **Image Spacing** to define the distance to the other image. The defined distance is maintained by a (hidden) guide. This way, you can manually place one image next to the other always keeping a precise distance.

View and zoom settings

Click the **Zoom** button in the tools pane beneath the preview area.

Option	*Description*	*See also*
Fit View to Width	Fits the media width in the preview area.	
Fit View to Height	Fits the job length in the preview area.	
	Select the **Zoom** mode by clicking the + or the – magnifying glass button. The mouse pointer becomes a magnifying glass with a + or – sign in its center. Click in the center of the area that you want to magnify or reduce. Hold down the ALT key to switch to the opposite **Zoom** mode. Each mouse click magnifies or reduces the view.	
Show Transparent Background	If **Show Transparent Background** is selected, a **transparency checkerboard** is shown as a background for transparent areas in an image. If the option is **not** selected, paper white is shown for transparent areas.	"Printing an Undercoat" on page 44

Automatic Image Placement

When creating a job with multiple images or PDF pages (manual or workflow job), GMG ColorProof automatically optimizes the job layout for a minimum paper usage.

However, if you manually add a new image to a job, the new image is placed following the existing images, to avoid messing up your layout. You can always use the **Automatic Image Placement** feature to rearrange and thus optimize the layout.

You can choose the orientation mode and a horizontal and vertical spacing between the images.

Orientation mode	*Description*
Original	Keeps the original orientation of the image or PDF page as defined in the input file.
Keep Current	Keeps the current orientation of all images. Images will be repositioned to optimize the layout, but not rotated. This option is especially helpful if you need a specific orientation or if you have a multi-page PDF and you want to keep all pages in a portrait orientation.
Automatic	Rotates images and PDF pages to minimize paper usage.
Portrait	Rotates images and PDF pages to **Portrait** orientation, i. e. so that the height is greater than the width.
Landscape	Rotates images and PDF pages to **Landscape** orientation, i. e. so that the width is greater than the height.

See also:

- "Optimizing the Layout for Cutting" on page 67

Cropping and PDF page boxes

Click the **Crop** button in the tools pane beneath the preview area. You can crop images from the borders, two points (which are displayed on a thumbnail image), or from width/height. Use **Crop to Fit** to crop the image to fit to the media width. This crops the part of the image which is exceeding the roll width.

The option **Use PDF Bounding Box** allows you to define the boundaries of a PDF document. There are five page boxes in the drop-down list you can choose from.

See also:

- "PDF Page Boxes" on page 38

5.8.2 Optimizing the Layout for Cutting

If you want to print multiple images or PDF pages in one proof job, for example to save media, and then separate the images by cutting, GMG ColorProof optimizes the layout for horizontal or vertical cut lines, or both. Images are automatically rearranged so that you will need a minimum number of horizontal and/or vertical sections to separate the images. You can control the orientation and whether GMG ColorProof is allowed to rotate the images or not by choosing an appropriate **Method** from the drop-down list.

How to optimize the job layout for cutting

1. Open the **Manual Job Manager** and load all images you want to print into the job.
2. On the **Layout** toolbar on the right side, below the job preview, click the **Automatic Placement** tab.
3. Under **Optimize Layout for Cutting**, add a check mark to the **Horizontal Cut Lines** or **Vertical Cut Lines**, or both, and click the **Apply** button.

GMG ColorProof rearranges the job layout.

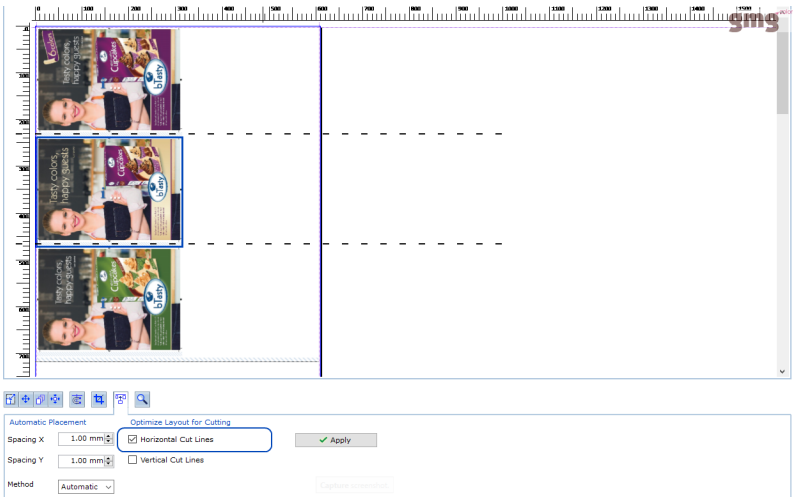


Fig. 21 Image placement optimized for horizontal cutting.

You will now be able to cut the printed job along horizontal cut lines (not shown in GMG ColorProof, but shown as dashed lines in this screenshot). The images have been rotated to find the optimal positioning, because **Automatic** has been chosen as the **Method**.

Vertical cutting

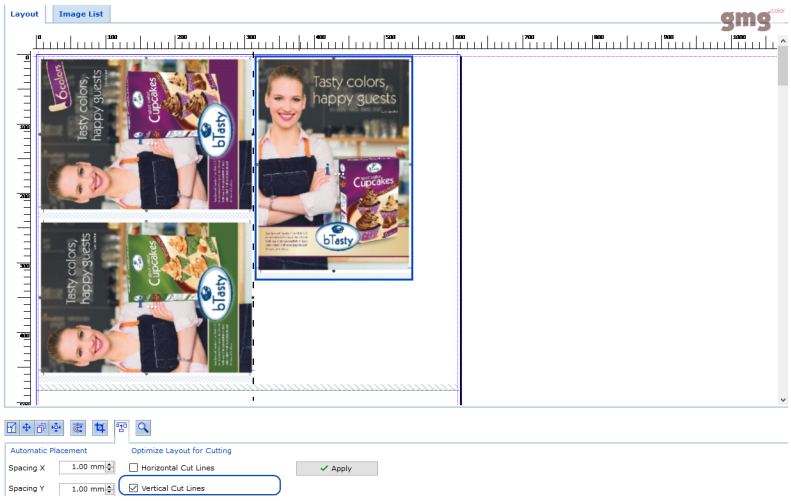


Fig. 22 Image placement optimized for vertical cutting.

You can now cut the images along a vertical cut line. The positioning is not optimal for horizontal cutting.

5.9 Moving Jobs Between Printers

5.10 History

Finished jobs are moved to the **History** view. To visualize the finished status of the jobs, all jobs are shown with a green check mark.

An additional comment informs you if and when a file will be automatically deleted (according to the settings defined in the job or workflow).

Selecting jobs

Jobs can be selected in the list with the mouse or by pressing the ARROW UP or DOWN key. You can also **select multiple** jobs while holding down the CTRL key. Selected jobs are highlighted by a different border and background color. To deselect all currently selected jobs, press the SPACE key. To quickly navigate to the beginning or end of your job list, use the POS1 or END key.

Job commands

Job commands such as **editing** job properties or **printing** a job (again) can be selected from the **Jobs/History** menu or from the context menu (by right-clicking on a job) and are applied to the selected job(s).

Info pane and preview

The info pane of the **History** view (**Layout** tabbed page) shows a preview of the printed job or image in the job (depending on what is selected in the job list).

Deleting jobs

Jobs can be deleted manually from the **History** view, or they can be deleted automatically as specified by the user in the **System** settings.

5.10.1 History Toolbar and Menu

The **History** toolbar and menu can be used to review and restart already processed jobs (manual jobs and jobs from workflows).

Tip Main program features are accessible by different methods, so that users can choose which way is most convenient to them. This documentation generally refers only to the toolbar or menu, even though there may be alternative methods.

- Click a button on the **toolbar**. Move the mouse over a button (without clicking) to display a tooltip.
- Click a command on a **menu**.
- **Right-click** on an item and click a command on the **context menu**.
- Press a **shortcut key**. Shortcut key combinations are listed next to the corresponding command on the menu.
- **Double-click** an item (for example, a job or a workflow) to open the corresponding dialog box and edit settings.

Toolbar and menu commands

Icon	*Command*	*Shortcut*	*Meaning*
	**New Job**	CTRL+N	Adds a new manual job to the **Jobs** list. You can **directly print** a fast job by clicking the **Print** button (only one proof standard, with default settings). If you want to use multiple proof standards or custom settings, click the **Open** button to open the job in the **Manual Job Manager**.
	**Properties**	CTRL+O	Opens selected job in the **Manual Job Manager**. You can change the settings in the job and print it again, for example.
	**Print**	CTRL+P	**Prints** the selected job (again).
	**Hold**	CTRL+H	Puts the selected jobs **on hold**. Only available for queued jobs that have **not** been started yet. The job stays in the **Jobs** view and is marked as **Held**. You can start a job in status **Held** by clicking **Print**.
	**Cancel**	ESC	**Cancels** the processing of the selected job. The job stays in the **Jobs** view and is marked as **Canceled**.

Icon	*Command*	*Shortcut*	*Meaning*
	**Delete**	DEL	Permanently **removes** the selected job. **No undo possible**. You will be asked whether to also delete the image file(s) associated with the job.
	Save As		The selected job is saved as a *.job archive with all settings and images.
	Send To		The selected job is sent to a defined remote location (**System** view > **Remote Proofing**).
	Image Preview		Shows the processed and color managed **TIFF output image** as it will be printed on the target printer. Before the RIP procedure of **PDF/PS/EPS** files, the image preview displays the **Source File**. After the RIP procedure, you can switch between the original **Source File** view and the ripped TIFF **Output Preview**.
	Duplicate	CTRL+D	Duplicates job. A new job will be created with the same settings and a new Job ID and image IDs.
	**Increase Priority**	CTRL+UP	**Increases** the **priority** of the selected job. (**Manual Job Manager**: **Job** > **Printer Settings** > **Job Priority**; **Workflow Properties: General** > **Job Priority**)
	**Decrease Priority**	CTRL+DOWN	**Decreases** the **priority** of the selected job. (**Manual Job Manager**: **Job** > **Printer Settings** > **Job Priority**; **Workflow Properties: General** > **Job Priority**)
	**Collapse All**		Collapses all jobs in the **Jobs** view (if they are not yet collapsed).
	**Expand All**		Expands all jobs in the **Jobs** view (if they are not yet expanded).
	**Delete All Jobs**	CTRL+X	Can only be used in the **History** view. Permanently removes all jobs in the **History** view without affecting Jobs in the **Jobs** view. **No undo possible**.

5.10.2 Restarting Jobs

You can restart a finished or canceled job any time as long as the corresponding input file is still physically present and has not been moved, regardless, whether it is a manual job or a job created by a workflow. You can keep or change the output settings for the second proof.

How to restart a job

1. Click the **History** button on the navigation panel on the left of the main window. In case of a canceled job (error file), click the **Jobs** button, because the job is not moved to the **History** view.
2. Select the job that you want to restart.
   (You can sort the jobs in the jobs list by clicking the column headers or you can filter the jobs by applying the filters in the drop-down menu.)
3. On the toolbar, click the **Print** button to restart the job.
   A new job (with a new ID) is created, and will be sent to the print queue according to its priority. The job will be displayed in the **Jobs** view, and then be sent to the **History** view when finished.

5.10.3 Job Reports

In the **History** view, you can archive job information in **HTML** format. In contrast to the job log **XML** file that can be generated via the **System** menu (> **Export Job Report**), this report contains only information for the selected job. This is very convenient when troubleshooting the RIP of a single file.

How to save a Job Report

1. Click the **History** button on the navigation panel on the left of the main window.
2. Select the job that you want to save the job information of.
   (You can sort the jobs in the list by clicking the column headers or you can filter the jobs by applying filters from the drop-down list .)
3. On the info pane on the right side of the main window, click the **Information** tab.
4. Click the **Save Job Report** button.
5. Browse to the target folder and click **Save** to archive the **report**.

6. Workflows

You can automate proofing by setting up **input** folders (referred to as **hotfolders**) or by defining print **spoolers** in the **Workflows** view. All image processing parameters such as color management, printer and media are predefined in one or multiple **workflows** connected to a hotfolder.

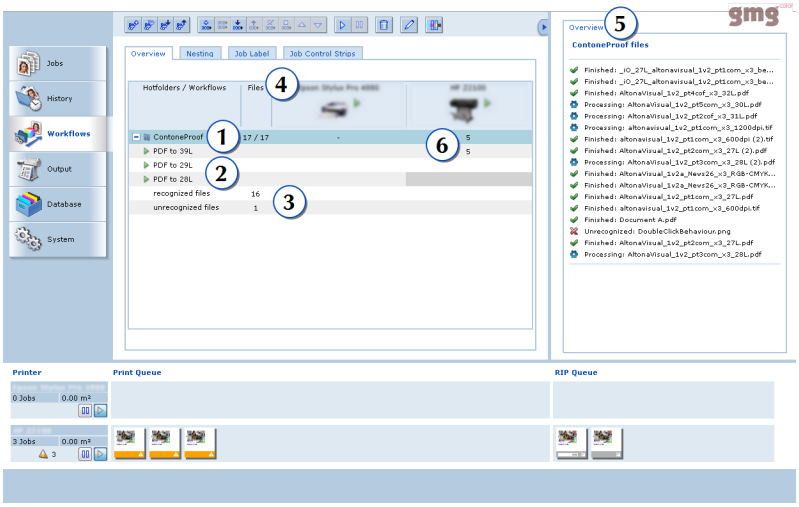


Fig. 23 Workflow overview.

Basically, you have the same options for defining the job options in a workflow as you have in the **Manual Job Manager**. Exception to this rule is, for example, the possibility to manually switch off a color channel in the image, which is available only in the **Manual Job Manager**.

It is possible to set up various workflows according to different input data or to different proof standards. You can name workflows according to your custom naming convention for an easy identification (for example for sorting and filtering) in the **Workflows**, **Jobs**, and **History** view. Multiple printers (printer pool) can be assigned to each workflow. **Load balancing** then automatically assigns a new image in the linked hotfolder to an **idle** printer from the **printer pool**.

Image files copied into the specified hotfolder (1) or sent to the specified print spooler are automatically **filtered** by the connected **workflows** (2). The first workflow (from top to bottom) that accepts the input image according to the **File Filter** settings processes the image and creates a job that is added to the **Jobs** list.

The number of recognized and unrecognized files is shown below the workflows (3) in the list. Files that are not processed by **any** connected workflow will show up under **Unrecognized Files**. (**Unrecognized Files** either do not follow the input filter settings of any workflow connected to the hotfolder or are generally not supported by GMG ColorProof.)

The **Files** column (4) shows you the files that are already analyzed by the program and the **total** number of all files in the hotfolder. When the **Files** column (4) is selected with the mouse, the info pane (5) provides more information on the **processing status** of all files in the hotfolder.

The printer columns show the number of files processed by a specific **workflow** and printed on a specific **printer** (6). In the screenshot, for example, 5 files are processed by the workflow **PDF to 39L** and are printed on printer MyPrinter.

See also:

- "Filtering and Processing Sequence" on page 88
- "Status of Input Files in a Hotfolder" on page 80
- "Jobs" on page 48
- "History" on page 68

6.1 Workflow Toolbar and Menu

In GMG ColorProof, you can set up multiple workflows to reflect different workflows in your company.

The **Workflow** toolbar and menu provide various useful functions to manage your workflows efficiently.

Tip Main program features are accessible by different methods, so that users can choose which way is most convenient to them. This documentation generally refers only to the toolbar or menu, even though there may be alternative methods.

→ Click a button on the **toolbar**. Move the mouse over a button (without clicking) to display a tooltip.

→ Click a command on a **menu**.

→ **Right-click** on an item and click a command on the **context menu**.

→ Press a **shortcut key**. Shortcut key combinations are listed next to the corresponding command on the menu.

→ **Double-click** an item (for example, a job or a workflow) to open the corresponding dialog box and edit settings.

Toolbar and menu commands

Icon	*Command*	*Description*
	**New Hotfolder**	Adds a new **hotfolder**. You can define the input folder (**hotfolder**) and **print spooler** settings in the hotfolder dialog box. Processing parameters are defined in the **connected workflows**.
	**Duplicate Hotfolder**	**Duplicates** the selected hotfolder and all **connected workflows**. All settings are maintained. The hotfolder dialog box is opened so that you can select a new input folder.
	**Import Hotfolder**	Imports a previously exported hotfolder into GMG ColorProof.
	**Export Hotfolder**	Exports the selected hotfolder with all settings into a file with the extension *hotfolder*.
	**New Workflow**	Adds a new **workflow**. A workflow is linked to a hotfolder. You can connect **multiple** workflows to the same hotfolder.
	**Duplicate Workflow**	Duplicates the selected workflow. All settings are maintained.
	**Import Workflow**	Imports a previously exported workflow into GMG ColorProof.
	**Export Workflow**	Exports the selected workflow with all settings into a file with the extension *workflow*.
	**Activate Workflow**	Activates a previously deactivated workflow.
	**Deactivate Workflow**	Deactivates a workflow. Deactivated workflows are handled as if they were not there at all (no file filtering, no processing). They can, however, still be opened and edited.
	**Move Up**	Moves the selected workflow up in the list of workflows connected to the hotfolder. Input files are filtered and assigned to workflows from top to bottom in the list.

Icon	*Command*	*Description*
	**Move Down**	Moves the selected workflow down in the list of workflows connected to the hotfolder. Input files are filtered and assigned to workflows from top to bottom in the list.
	**Continue**	Continues the processing of all jobs in the selected hotfolder or assigned to the selected workflow.
	**Hold**	Puts the selected hotfolder or workflow on hold. Click **Continue** to continue the job processing.
	**Delete**	Permanently deletes the selected hotfolder (including all linked workflows) or the selected workflow.
	**Properties**	Opens the selected hotfolder or workflow. You can change the settings in **Administration Mode**.
	**Pause All**	Pauses **all** hotfolders and workflows. This is useful if you need to edit all workflows and want to ensure no new jobs are generated meanwhile. Click **Continue** to continue the job processing,
	**Pause ProofControl Inline**	Pauses all workflows for a short time and automatically exchanges any selected control strip for an integrated measuring device with the equivalent for an external i1 measuring device. This is useful when you have many jobs to print and little time for drying and measuring.

6.2 Workflow List View

Selecting a hotfolder or workflow

A hotfolder or workflow can be selected in the list with the mouse or by pressing the ARROW UP or DOWN key. A selected hotfolder or workflow is highlighted by a different border and background color.

Hotfolder/workflow commands

Hotfolder/workflow commands such as editing or duplicating can be selected from the **Hotfolder/Workflows** menu or from the context menu (which appears when you right-click on a hotfolder/workflow) and are applied to the selected item.

6.3 Input Control: Hotfolder, Print Spooler, Drag-and-Drop

Hotfolders and workflows are used whenever a larger number of image files needs to be converted according to the same rules and output settings. Setting up hotfolders also leads to a higher degree of consistency and reproducibility. You can assign any number of input folders (referred to as hotfolders) to a single workflow. Each file physically present in a hotfolder automatically generates a separate **job** and is processed as specified in the **Output Settings** and **Color Management** settings.

The hotfolder defines only the input control itself. Which images are recognized and how they are processed is defined in the **Workflow Properties** dialog box. The workflow parameters are organized into several pages for defining the **Input Settings**, **Color Management**, **Load Balancing and Nesting** strategy, **Print Settings**, **Image Processing**, **Image Label and Control Strips**, **Cleanup and Backup** of printed images.

You can either set up a **Windows Print Spooler** or a **Hotfolder** as an input control of a GMG ColorProof workflow.

For processing in GMG ColorProof, it does not matter which input control you use. It depends on which input control is supported by (or more convenient to use) from third-party programs that should be integrated into the GMG workflow. In most cases, use of hotfolders is more versatile and supported by all programs (as a hotfolder is only a standard file folder). Hotfolders are also more convenient if the data is not generated or retouched in-house, but rather sent to you by an agency or client. Then you just need to copy the data into the appropriate GMG ColorProof hotfolder.

Hotfolders can also be accessed by **drag-and-drop**: You can select one or multiple image files with the mouse and drag-and-drop them onto a hotfolder. The image files are then physically copied into the hotfolder.

Note Using two **separate hard disk drives** connected to two **separate buses**, one for the **input** data / hotfolders, and one for the **System** GMG ColorProof processes the data and prints the proofs), can improve the software performance. Please note that two HDDs connected to the same bus or two partitions on the same HDD do **not** improve the performance.

Tip It is recommended to work out an appropriate naming scheme for all hotfolders so that you can easily identify the folders later.

See also:

- "Hotfolder Input Settings" on page 76
- "Windows Print Spooler" on page 79

6.4 Creating a New Hotfolder

Before the first hotfolder is set up, the **Workflow** list is empty. You will need to install a printer first, then set up a hotfolder, and then a workflow.

Tip With hotfolder technology, you can easily integrate the proofing process into other workflows, for example, a file conversion in GMG ColorServer and a following printing from GMG ColorProof. This can be achieved by using the **output** folder of a GMG ColorServer workflow as an **input** hotfolder for a GMG ColorProof workflow, thus **cascading** the hotfolders. It is also possible to use a **backup** folder (for backing up printed files) as a hotfolder, thus printing the input files to **multiple** outputs.

How to create a new hotfolder

1. Click the **Workflows** button on the navigation panel on the left of the main window.
2. Click the **Overview** tab.
   The workflow list is displayed. After a new program installation, the list is empty.
3. On the **Hotfolder** menu, click **New Hotfolder**.
   The **Hotfolder/Spooler Properties** dialog box opens.
4. Type a name into the **Hotfolder Name** box, for example, **ContoneProof**. This name serves as an identifier in the **Workflows** view in GMG ColorProof (and as default name of the Windows print spooler). The workflow name is specified later.
5. Click the **Input Folder** browse button to open the browse dialog and make a new input folder, or select an already existing folder.
6. Select **Normal** as **Hotfolder Type** .
7. Click **OK**.

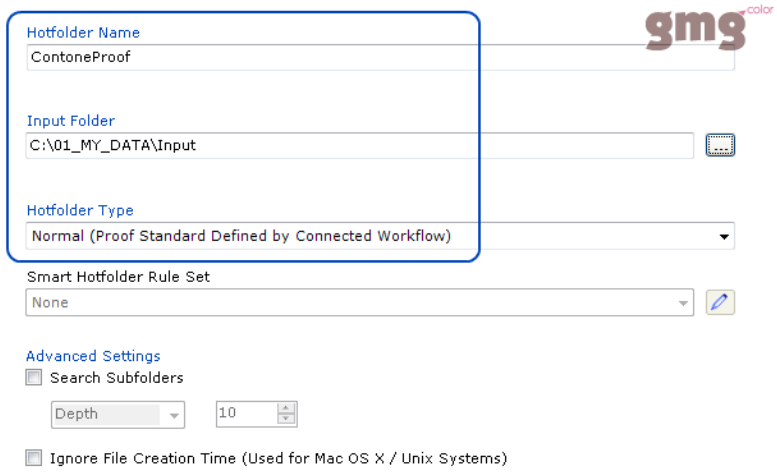


Fig. 24 Hotfolder with general input settings.

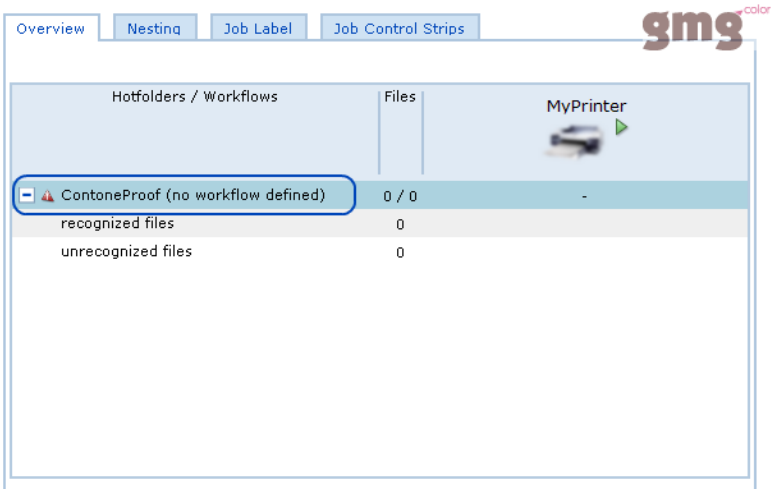


Fig. 25 Hotfolder listed on the Overview tab (without workflow yet).

The **Overview** shows the newly created hotfolder. The input folder is defined, but not, **which** input files should be processed, **how** they should be processed, and on **which printer** they should be printed. This is defined in the associated **workflow**.

See also:

- "Hotfolder Input Settings" on page 76
- "Creating a New Workflow" on page 81

6.4.1 Hotfolder Input Settings

General Input Settings

Group	*Short description*	*See also*
Hotfolder Name	The **Hotfolder Name** helps you to search and filter jobs in the **Jobs** and **History** view.	
Input Folder	You need to choose an existing or create a new input file folder. Images in this input folder will be **filtered** by the **workflows** that are linked to the hotfolder.	
Hotfolder Type	You can choose between three hotfolder types. The regular hotfolder type (**Normal**) serves most purposes and uses **fixed** settings, defined by the linked workflow. **Smart** and the **Job Ticket** hotfolders allow to use **variable** settings (different proof standards or custom profiles per workflow) by applying rules or XML parameters referenced in the image name.	"Smart Hotfolder" on page 77 "Smart Hotfolder Rule Sets" on page 78 "Job Ticket Hotfolder" on page 79
Windows Print Spooler	In addition to an input folder, you can also set up a Windows print spooler as an input control for the linked workflows. If **Windows Print Spooler** is selected, a printer with the **Spooler Name** will be installed under the Windows operating system. You always need to set up a hotfolder, because all print spooler jobs are first sent as physical printer (prn) files into the hotfolder before processing in GMG ColorProof.	"Windows Print Spooler" on page 79

Advanced Input Settings

Available options	*Description*
Search Subfolders	Not only the input folder itself, but also **subfolders** of the input folder will be scanned for input files. You can define the level, how deep in the folder hierarchy will be looked for input files. For example, with a **Depth** of **2**, the following folder path would be scanned: *C:\Data\CP05_Input\level1\level2*, whereas *C:\Data\CP05_Input* is the hotfolder, and *level1*is subfolder of the hotfolder, and *level2* is subfolder of *level1*.

Available options	*Description*
Ignore File Creation Time	This option is recommended for processing files on a UNIX file systems from Apple and SUN (UNIX or Mac OS operating system). It avoids that input files are processed twice. If this option is not selected, input files are regarded as new and will be processed when either the name, creation date, or modification date is changed. If this option is selected, the **Created** date of files is ignored.
Ignore File Modification Time	Similar to the option **Ignore File Creation Time**. If this option is selected, the Modified date of files is ignored. Please note that if this option is selected, files that were changed intentionally by the user will also be **ignored** and need to be renamed before processing.
Wait before Processing	If input files are moved to hotfolder(s) via a slow network connection, you might want to use the option **Wait before Processing** and enter a delay time that reflects the time the file needs to be completely moved into the hotfolder. If this option is not selected and the connection is slow, GMG ColorProof immediately starts processing the incomplete file, resulting in canceling the job.

Note Hidden system files created by **Mac OS X** operating systems such as Desktop Services Store **ds_store** files and **_resource forks** in hotfolders are automatically **ignored** by GMG ColorProof. Such files are moved/deleted when the corresponding image files are also moved/deleted (by using the backup routines configured in the hotfolder and workflow.

6.4.2 Smart Hotfolder

Note This hotfolder type is not included in the standard GMG ColorProof version and requires an additional license. Please contact your local dealer for details.

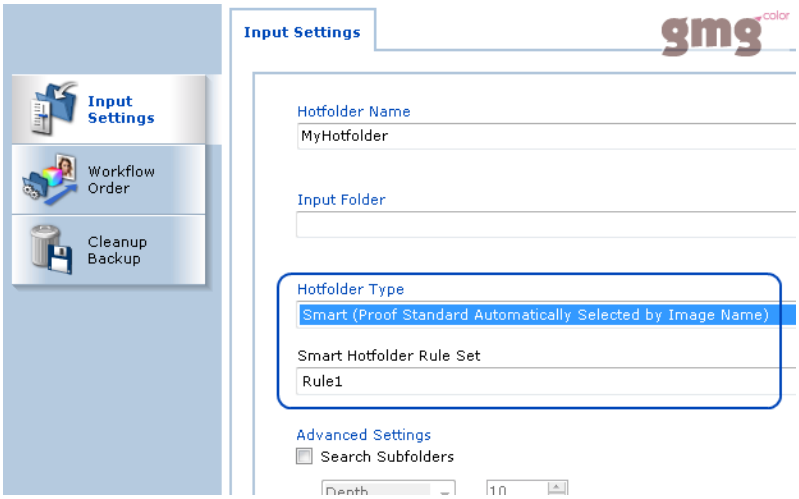


Fig. 26 Smart Hotfolder with Smart Hotfolder Rule Set.

A **Smart Hotfolder** allows you to process files with different proof standard requirements with just **one** workflow connected. This way, you can reduce 1:1 Hotfolder and Workflow combinations which often use the same parameters and only differ with regard to the proof standard or profile.

To use different proof standards with just one workflow, a **Rule Set** can be defined, comprising rules on how the proof standard or profile should be selected automatically from the image file name or file location. Basically, this approach is similar (though less complex) to using a job ticket, and may come in handy for workflow systems that do not output XML job tickets, or at least as a less cost-intensive alternative.

Tip Migrate your hotfolder to a Smart Hotfolder via the context menu.

6.4.3 Smart Hotfolder Rule Sets

All rules in a **Smart Hotfolder Rule Set** are based on the image file name or its location in the input folder structure. When an image is recognized in the hotfolder, the assigned rule set is checked for matches with the assigned subfolder or the image name. If no rule can be applied to an image, the proof standard defined in the connected workflow is used as a fallback for the color management.

Rule Set Settings

- Choose whether you want to use custom profiles or proof standards with the rule set. (If you decide for custom profiles, add the folder where the custom profiles can be found.)
- You can add multiple rules.
- You can also use wildcards such as the asterisk (*) for many characters. Wildcards are convenient if you have a high proofing volume and need to apply a huge number of profiles.
- You can define the spot color set priority.
- You can test the rule set and get immediate feedback from the system.

Example Rule Set

In the following example, all images located in the input subfolder named 39L beginning with 009 are processed according to the proof standard ISO Coated v2.

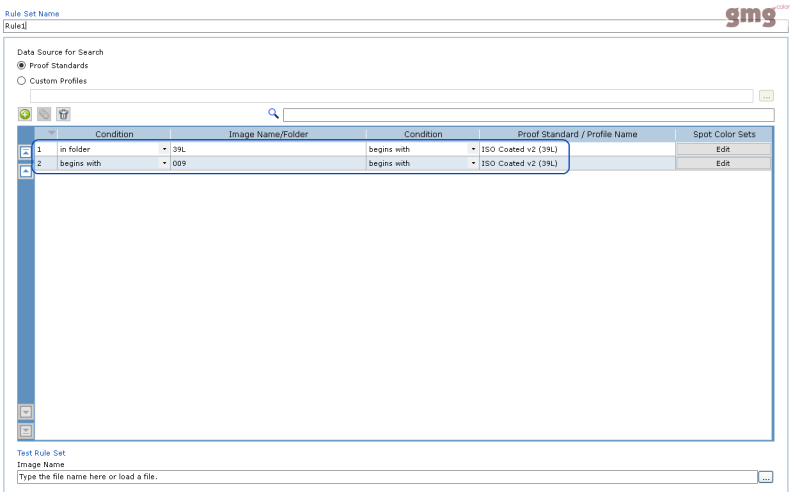


Fig. 27 Setting up a Smart Hotfolder Rule Set.

The defined rule overrides the proof standard that has been selected in the connected workflow.

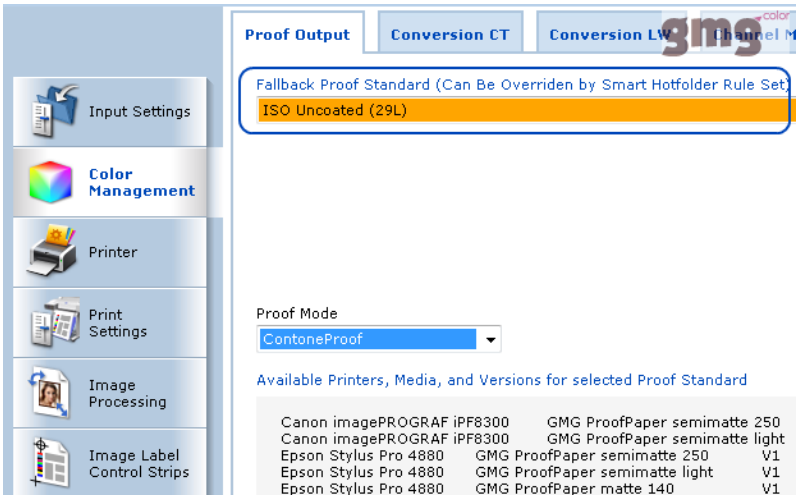


Fig. 28 Fallback Proof Standard in the connected workflow.

6.4.4 Job Ticket Hotfolder

Note This hotfolder type is not included in the standard GMG ColorProof version and requires an additional license. Please contact your local dealer for details.

A **Job Ticket Hotfolder** provides an XML interface for an easy integration of GMG ColorProof into any workflow system which is able to write a definable XML output file. All you need to do is copy your input file in a **Job Ticket Hotfolder** along with the XML job ticket created by your workflow system.

The job ticket can contain specific color management parameters to define the processing, for example, the **proof standard name**. This way you can use multiple proof standards with just one connected workflow.

How to use multiple proof standards with one workflow

1. Create a **Job Ticket Hotfolder** in GMG ColorProof, defining an input folder for your files.
2. Create a **workflow** in GMG ColorProof and connect it to the **Job Ticket Hotfolder**.
3. Drop the files you want to proof and XML job tickets with proof standard information referencing the input files via **file name** into the defined **Job Ticket Hotfolder**.
   The referenced input files are processed according to the defined parameters of the job tickets and the connected workflow.



Fig. 29 XML job ticket with proof standard information.

Tip This way, you can automate your color management system and reduce the administrative effort of setting up and managing a large number of different proof workflows.

6.4.5 Windows Print Spooler

If you prefer to access GMG ColorProof hotfolders/workflows directly from your custom image editor, you can use a Windows print spooler. When selecting the **Windows Print Spooler** option in a hotfolder, a Windows printer with the **Spooler Name** is automatically set up on the computer on which GMG ColorProof is running.

Note A **Windows Print Spooler** name with more than 12 characters can cause problems under Mac OS X. It is therefore recommended not to exceed this limit.

You can then select this printer from any custom application and print the image of interest on this printer. Here, printing means converting the image into a **PostScript** (PS) file and sending the file to a GMG ColorProof **hotfolder** for processing. The resulting PS files are handled by the connected workflows as any other PS input file. Make sure to select the **PS File Format Filter** in the workflow that you would like to use for processing spooler files. Otherwise, the files would not be recognized and would be moved to the **Unrecognized Files** list.

Available options	*Description*
PPD File	The default **PPD** file is **GMG 05** and should generally not be changed. This PPD version offers more print spooler options, especially more supported standard file formats, than **GMG 04**, which is identical to the default PPD of previous program versions and is provided only for compatibility reasons. You can **add** custom PPD files by simply copying the file into the **drivers** subfolder of the GMG ColorProof program folder (default path: <*installation path*>*PPD*\ ). The PPD name displayed in the drop-down list is taken from the header (**Product** string) of the PDD file.

How to set up a print spooler

Note If you want to access a print spooler from a separate computer via network, you need to share the printer to the network in the Windows operating system.

1. Select the option **Windows Print Spooler**.
   A printer with the hotfolder name will be installed under Windows. You can change the default name if you want. You can access the print spooler via the standard print dialog of your custom application.
2. Select **GMG 05** from the **PostScript Printer Description (PPD)** list. This PPD was optimized for use with GMG ColorProof 5 and supports various standard file formats.

6.4.6 Hotfolder Cleanup / Backup

The options provided in GMG ColorProof to **delete** or **back up** unrecognized files backup allow for a smooth workflow without interruptions caused by a limited capacity of hard disk.

How to set up backup and file removal routines for unrecognized files

1. On the navigation panel of the **Hotfolder / Spooler Properties** dialog box, click **Cleanup/Backup**.
2. Select the option **Clean up Unrecognized Files** and select a time.
   Input files that are not accepted by the filter settings of any connected workflow will be deleted from the hotfolder after this time.
3. Select the option **Back up Unrecognized Files** and click the browse button next to the empty text box.
4. Select the desired backup folder or create a new one, for example, *CP05_Backup_Unrecognized*.
   Unrecognized files from this hotfolder are copied to the backup folder. If you have selected both the **Cleanup** and the **Backup** option, this will result in a **Move** file action.
5. Select the option **Number if File Already Exists**.
   This option prevents already existing files from being overwritten by new files with the same name via adding an incremented number to the name of each file.
6. Select the option **Delete Backup Files after** and enter the number of hours after which a file moved to the backup folder will be deleted from the hard disk.

6.4.7 Status of Input Files in a Hotfolder

Recognized and Unrecognized Files

Recognized files are all files that have been recognized by the program, that is, the file type is known. Recognized files can be in status **Recognized**, **Processing**, or **Finished**. A recognized file can change to an unrecognized file after passing the workflow filters in case that it is not accepted by any workflow.

Unrecognized files are all files that have not been recognized by the program, that is, the file type is not supported or the file is damaged, or the file is **not** accepted by **any** workflow assigned to this hotfolder.

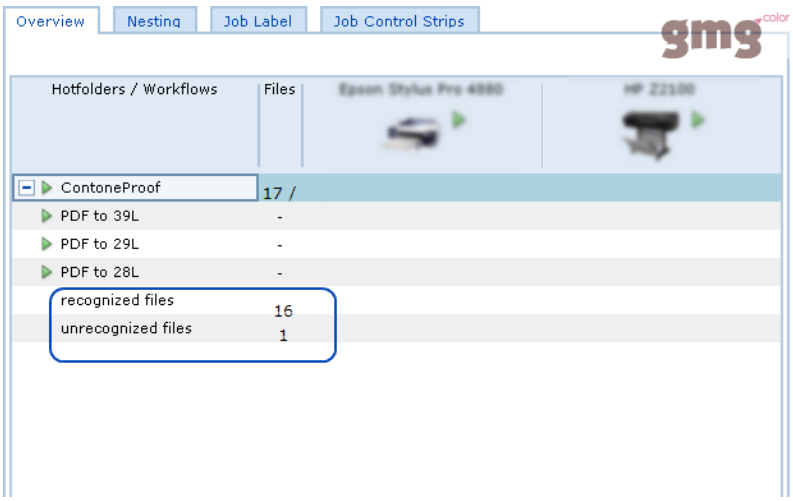


Fig. 30 Example hotfolder with recognized and unrecognized files.

In the **Files** column, our example hotfolder "ContoneProof" shows the number "17/23", 17 being the number of **recognized** plus **unrecognized** files, and 23 the **total** number of files. The difference ("6" in this example) are files that are either still in status **In Hotfolder** or already in status **Finished**.

Processing status

When a hotfolder cell in the **Files** column is selected with the mouse, the info pane on the right side of the main window shows more information on the processing status for each file in the hotfolder as described in the following table.

Icon	*Status*	*Description*
	In Hotfolder	First status of an input file after it has been copied into the input folder. The file has been found by the program, but the file type has not yet been recognized. The file type is still being analyzed by the program.
	Recognized	The file type is known to the program and will be passed through the workflow filters.
	Unrecognized	The file has passed the filters of all workflows, but no matching workflow has been found. The file will **not** be processed. Cleanup/backup rules for unrecognized files will be applied.
	Processing	The file has been accepted by a workflow filter and is being **processed** by the corresponding workflow. In case of a multi-page input file (PDF), the file will be split into single pages, referred to as **Images** in GMG ColorProof. Each image will be added to a **job**. Load balancing and nesting rules are applied when adding images to jobs. The exact status of each image can be checked in the **Jobs** list view.
	Finished	The image was printed and the corresponding job has been added to the **History** list. Cleanup/backup rules for printed files will be applied.

6.5 Creating a New Workflow

How to create a new workflow

1. Click the **Workflows** button on the navigation panel on the left of the main window.
2. Click the **Overview** tab.
   The workflow list is displayed. After a new program installation, the list is empty.
3. On the **Workflows** menu, click **New**.
   The **Workflow Properties** dialog box opens.
4. Type a name into the **Workflow Name** box, for example, **PDF to 39L**.
5. From the **Connect to Hotfolder** list, select the hotfolder you want to use as input folder / spooler for this workflow.

How to define filter settings

Tip With the **Embedded ICC Profile / Output Intent Filter**, you can automatically apply different proof standards according to the embedded ICC profile (PDF output intent) of a file. This way, you can use multiple workflows using the same hotfolder.

In the following steps, you will learn how to configure a strict workflow that accepts only PDF X compliant files with an ISO Coated v2 (39L) output intent.

1. Click the **Filters** tab.
2. On the right side of the **Embedded ICC Profile / Output Intent Filter** group, click the + button.
3. Select an **ISO Coated v2 (39L)** ICC profile. This filter accepts only files that are tagged with this ICC profile or have this ICC profile as output intent.
4. Under **Color Space Filter**, select **CMYK (+ Spot Colors)**.
   This filter accepts only CMYK files. PDFs that are not entirely RGB are also accepted.
5. Under **Color Depth Filter**, select **8/16 Bit**.
   This filter accepts all files that are **not** halftone (1-Bit). PDF/PS files are always 8/16 Bit files.
6. Under **File Format Filter**, select **PDF**.
   This filter accepts all PDF files.
7. Under **PS/PDF Settings**, select **PDF X Compliant**.
   This filter accepts only PDF files that are compliant with PDF X (i. e. have a PDF X output intent).

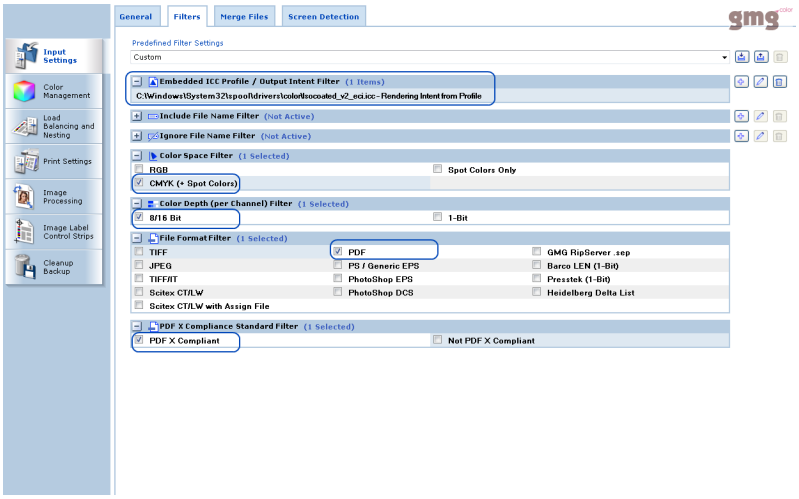


Fig. 31 Workflow Filter settings.

All criteria set in the filters have to be fulfilled for a file to be accepted as an input file for this workflow. In total, this means that only PDF X files with an ISO Coated v2 (39L) output intent and that are not completely RGB files (all images and linework elements in RGB) will be processed by this workflow.

Now the **Input Settings** are completely defined and you can proceed with the **Color Management** settings. (**Merge Files** is required only for composed images, for example, 1-Bit separations or CT/LW files. **Screen Detection** is required only for 1-Bit input files.)

How to define color management settings

1. Click the **Color Management** button on the navigation panel on the left of the dialog box.
2. From the Proof Standard list, select ISO Coated v2 (39L).

The gray info box shows installed printers and media supporting the selected proof standard.

How to define conversion CT/LW settings

1. Click the **Color Management** button on the navigation panel on the left of the dialog box.
2. Click the **Conversion CT** tab.
3. Select option **PDF X Processing if possible**.

Prior to the color management for the proof output, PDF X images and lineworks will be converted according to the embedded ICC profile and output intent information in the document. In this example workflow, all RGB images and elements in the PDF will be converted to the ISO Coated v2 (39L) output intent. (If this workflow supported input files that are **not** PDF X, these input files would not be converted. But according to the workflow **Filter** settings, only PDF X files are accepted as input files.)

How to select a printer and printer medium

1. Click the **Load Balancing and Nesting** button on the navigation panel on the left of the dialog box.
2. Select the printer that you would like to add to the printer pool for this workflow. If you have only one installed printer, you do not have to change the settings.
3. For each printer, select the printer medium from the drop-down list, for example, GMG ProofMedia premium semiMatte 250.

All other workflow settings are optional. You are now ready to use your hotfolder/workflow configuration. You can copy input files into the hotfolder, drag-and-drop them onto the hotfolder in GMG ColorProof, or use the **ContoneProof** Windows printer from your custom application.

Tip Try out the workflow with a test file. If everything works out for you, you can **duplicate** the workflow and use it as a basis for setting up additional workflows, for example, for different printing conditions / proof standards.

See also:

- "Workflow General Input Settings" on page 84
- "How Does the Color Management Work?" on page 14
- "Load Balancing and Nesting" on page 90
- "Printer Settings" on page 57

6.5.1 Duplicating a Workflow

You can use an existing workflow as a **template** to set up similar workflows. In the following example, one hotfolder is set up with three duplicated workflows using the same parameters, but different proof standards (according to the different output intents of the PDFs).

How to duplicate a workflow

1. Select the workflow that you would like to duplicate in the workflow list.
2. On the **Workflows** menu, click **Duplicate**.
   An identical copy of the workflow (except the name) will be created.
3. Double-click the new workflow to change the settings.
   You need to change only the settings that will be different from the original workflow, for example, the name and target printing standard.
4. Change the **Workflow Name** to **PDF to 29L**.
5. Click the **Filters** tab.
6. On the right side of the **Embedded ICC Profile / Output Intent Filter** group, click the + button.
7. Select an **ISO Uncoated (29L)** profile.
   Each file is processed by the correct workflow according to the PDF output intent.
8. Click the **Color Management** button on the navigation panel on the left of the dialog box.
9. From the **Proof Standard** list, select **ISO Uncoated (29L)**.
10. Repeat steps 1 to 9 for all proof standards you want to support.

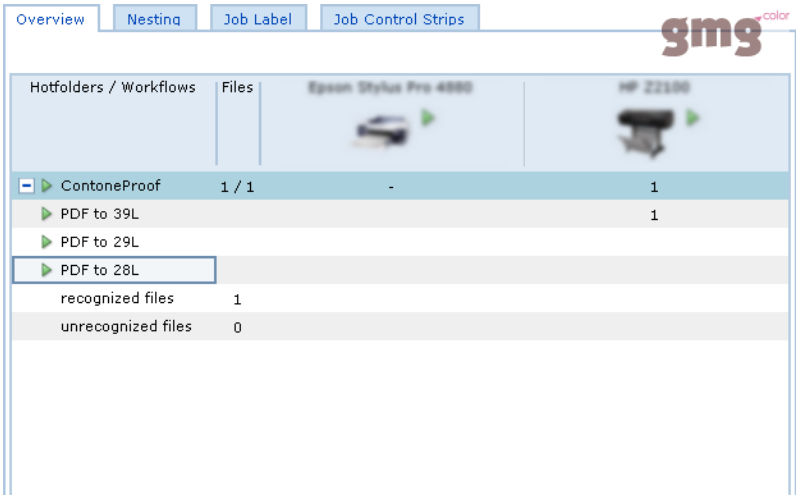


Fig. 32 Hotfolder with three connected workflows supporting different proof standards.

See also:

- "Overview of File Filtering and Processing in Workflows" on page 86

6.5.2 Workflow General Input Settings

General Input Settings

Group	*Short description*	*See also*
Workflow Name	The **Workflow Name** helps you to search and filter jobs in the **Jobs** and **History** view.	
Connect to Hotfolder	Defines the input folder for the workflow.	
Pages to Print	Instead of printing **All Pages**, you can also choose to print the **Odd Pages Only**, or the **Even Pages Only**.	
Priority	Jobs are processed in order of priority, that is, the **higher** the priority number of a job in the queue, the **earlier** the job is processed. The highest priority is **10**. Jobs with the same priority are processed in the order in which they were created.	
Copies	Number of copies that will be printed. You can define multiple copies of each input image. If you, for example, select three copies, each input file that is processed by this workflow will be placed three times **within** a job. If you do not want the selected number of copies to be placed in one job, but in **separate** jobs, select the **Create Separate Job for Each Copy**.	

6.5.3 Workflow Filter Settings

Filtering means that **only** images that have the selected properties (except **Ignore File Name Filter**) are accepted and processed by a workflow.

File filter settings are only applied to the **whole** file, not to elements of a file. For example, **Embedded ICC Profile** filters are applied to embedded ICC profiles of single image files (representing the output intent of the image) or to the output intent of a PDF file. They are not applied to ICC profiles embedded in images **inside** a PDF.

Workflow filter groups

Multiple filter **groups** are provided, filtering the input files on the basis of different criteria such as the file name, color space, and file format.

Filters from **different** groups are connected with a logical **AND**. This means, a file is processed only if **all** requirements are met. For example, if **CMYK** is selected as a **Color Space** filter and **TIFF** as an image format filter, only **TIFFs** in **CMYK** color space will be processed.

Filters from the **same** group are connected with a logical **OR**. This means, a file is processed if **any** one of the requirements are met. For example, if **CMYK** and **RGB** is selected as a **Color Space** filter, input files in CMYK **and** RGB color space will be processed.

Tip You can save your filter settings and share them with others or reload them whenever needed (**Filter Settings** > **Export** / **Import**).

Group	*Short description*	*See also*
Embedded ICC Profile / Output Intent Filter	Only **images** with an **embedded ICC profile** or **PDFs** with a defined **Output Intent** are accepted by this workflow. The **Embedded ICC Profile / Output Intent** filter is only active if at least one **Embedded ICC Profile / Output Intent** filter is defined. To ensure a fail-safe conversion, an **exact** match with the ICC profiles that are specified in the list is required. (The values in the profile are checked via a checksum.) If the profile was changed in any way and differs from the standard profile, it will not be matched with the profile selected for the filter, even though, for example, the profile name is the same. When printing a PDF with page specific output intents, this filter extracts the pages with the matching output intent and sends them to the workflow. **Note** If there are **multiple** workflows connected to the same hotfolder, PDF pages are processed only by the **first** workflow in the list with a matching output intent. The PDF is not recognized by following workflows even if some pages have a matching output intent. You will not be notified if some pages are not printed. If you want to print PDFs with page specific output intents, you need to create multiple hotfolders, each connected to a workflow with a matching output intent filter. Then copy the same PDF to all hotfolders. Each workflow will process only the pages with the matching output intent. Nesting is possible if the same proof medium is used. **Tip** You can still see the page numbers from the original document in the **Manual Job Manager** > **Image List**.	
File Name Filter	The **Include/Ignore File Name Filter** is only active if at least one **Include/Ignore File Name** filter is defined. If it is active, **only** files with the specified file naming convention are recognized by this workflow. If the **Include File Name Filter** is active, **only** input files having the defined characters or text strings in the file name will be processed. If the **Ignore File Name Filter** is active, input files having the defined characters or text strings in the file name will **not** be processed. You can define, **where** a name tag is positioned in the file name (begin, end, anywhere). Characters not supported in (Windows) file names (such as "?") are also not supported in file name filters.	
Color Space Filter	Only **images** in the selected color space are accepted by this workflow. The color space filter is **not** applied to **PDF** and **PS** files. For processing PDF and PS files, color space **CMYK (+ Spot Colors)** need always to be selected, regardless of the true color space of the input file.	
Color Depth Filter	Only **images** with the selected color depth are accepted by this workflow. Select **1-Bit** for halftone input data (DotProof, FormProof). Select **8/16 Bit** for input files that include multiple color channels (contone image files). The color depth filter is **not** applied to **PDF** and **PS** files.	

Group	*Short description*	*See also*
File Format Filter	This filter defines which input file formats are accepted by the workflow. These input files are not necessarily the files that are actually **processed**. Some of the available **File Formats**, for example, GMG RipServer.sep, are merely image **description** files that are not processed (printed) themselves. Rather, these files describe the image files that need to be merged to build the image itself. For example, if GMG RipServer.sep is selected, all TIFF files described in the sep file will be processed, even though TIFF is **not** selected in the filter settings. If a sep file is available, **Merge Files** settings are not required and are **ignored**. **File Format Filters** are also used in the **New Job** dialog box, **Files of type** drop-down list. For example, if GMG RipServer.sep is selected as file type when creating a manual job, you need to select only the sep file in the browse box. All image files referenced in the sep file will be recognized automatically and loaded into the **Manual Job Manager** when you click **Open** (or printed when you click **Print**).	"Pattern Recognitions" on page 33
PS/PDF Settings	**PDF X Compliant**: Only **PDF X** compliant PDFs are accepted by this workflow. **Not PDF X Compliant**: Only input PDFs **not compliant** to the **PDF X** standard are accepted by this workflow. If **both PDF X Compliant** and **Not PDF X Compliant** filters are set, **all** PDFs are accepted by this workflow. **Preseparated PS/PDF**: Activate this filter if you want to process preseparated PS/PDF files. **Conversion CT/LW** is **not** supported for **preseparated** PS/PDF files.	

Filter compatibility

Logics behind **Filter** settings are **not** validated by the program. It is possible to set up workflow filters that are not compatible to each other, for example, **RGB** and **1-Bit**, and will therefore result in accepting no input files at all. Please check the settings carefully before closing the workflow dialog box.

Likewise, the compatibility of **Filter** settings with other settings in the workflow is **not** validated by the program. For example, if you want a fail-proof processing of images tagged with an embedded **ISO Coated v2 (39L)** ICC profile, you will need to select the corresponding **Proof Standard** on the **Color Management** page. If you want to set up a **PDF X** workflow, you will need to select **PDF X Processing** on the **Conversion CT/LW** page. The **Filter** defines only **which** input files are processed by the workflow, but not **how** they are processed.

6.5.4 Overview of File Filtering and Processing in Workflows

Filtering means that **only** images or PDF with the selected properties are processed. (Any input files with file names matching the **Ignore File Name Filter** rules are excluded.)

The following illustration shows how input PDF files with different output intents are filtered and processed by different workflows. Different color management settings are used, according to the printing condition defined by the PDF output intent.

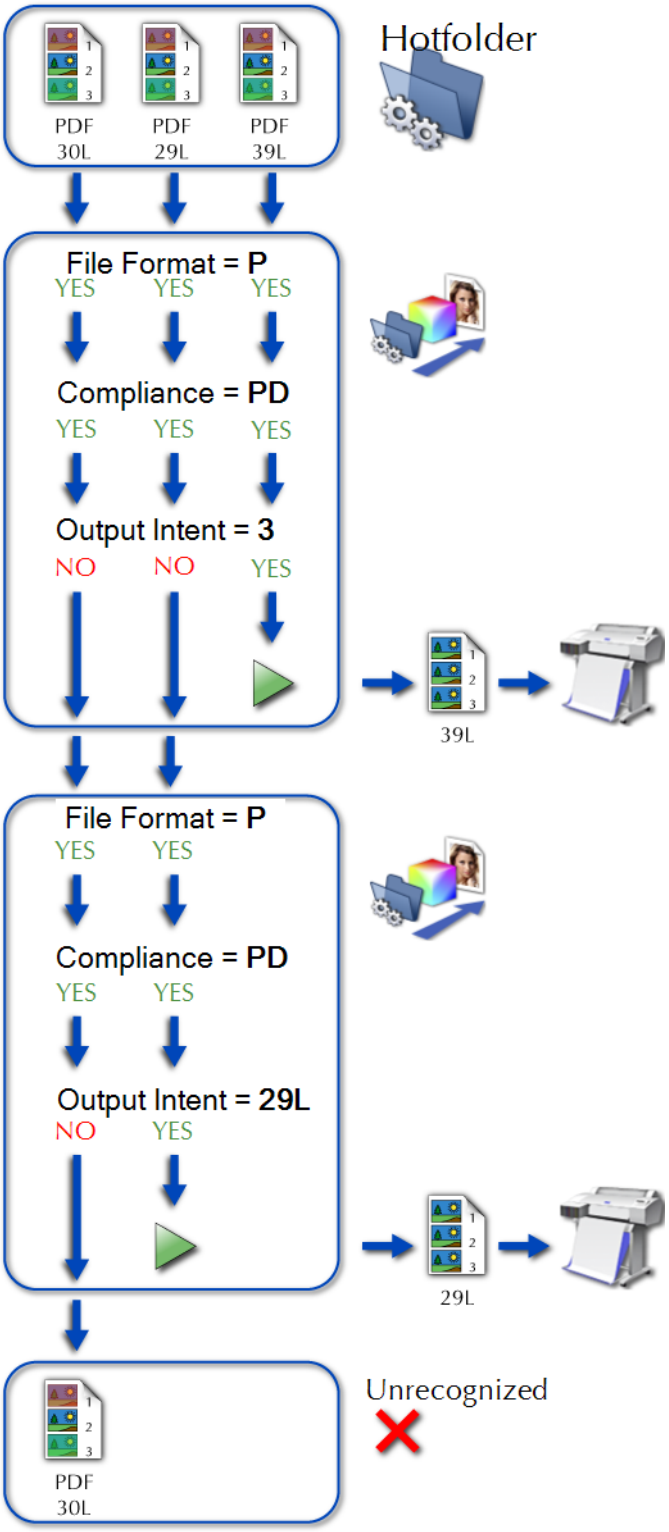


Fig. 33 Workflow filter.

The illustration shows an example of a hotfolder linked to two workflows: One for processing PDF X with an output intent of **ISO Coated v2 (39L)** and one for processing PDF X with an output intent of **ISO Uncoated (29L)**.

Both PDFs are dropped into the same hotfolder. In this example, the PDFs can be identical, apart from the output intent. This can be the case, for example, if the same print sample is going to be printed under different printing conditions.

Both files will be sent to the **top** workflow below the hotfolder in the workflow list (**39L**). All filter parameters such as **File Format**, **Color Space**, **Output Intent**, and so on, will be checked for both files. (Not all are shown in this illustration, but all are always checked.) The PDF X with the **ISO Coated v2 (39L)** output intent matches all filter settings. The other input file with the **ISO Uncoated (29L)** output intent does not match the **Embedded ICC Profile / Output Intent Filter** settings.

Therefore, only the **ISO Coated v2 (39L)** PDF file will be processed by this workflow. In the **39L** workflow, color management settings are defined for simulating the ISO Coated v2 (39L) printing condition in the proof. The ripped and color managed output image will be printed on an idle printer from the printer pool assigned to this workflow.

The other input file with the **ISO Uncoated (29L)** output intent rejected by the **39L** workflow is accepted and processed by the second workflow, **29L**.

The third input file is not accepted by **any** workflow. Therefore, it is sent to the **Unrecognized Files** list. It will be cleaned up by the **Cleanup/Backup** settings of the **hotfolder**.

6.5.5 Filtering and Processing Sequence

You can connect **multiple** workflows to the **same** hotfolder. Workflows connected to the same hotfolder are cascaded. This means that the workflow list sequence also shows the sequence of file filtering. The **top** workflow in the list is the **first** to scan an input file in the hotfolder according to the **Filter Settings**, and the bottom workflow is the last. The **File Filter** settings decide which workflow recognizes and processes which input file. The first workflow (from top to bottom) that recognizes the input image according to the **File Filter** settings will process the image. The number of files in progress (in the **Files** column) and the corresponding information in the info pane are updated accordingly.

The workflow sequence of filtering/processing is important, because one workflow processes only a subset of the input images, for example, only PDFs. The next workflow processes a different subset, for example, only images with a specific file name convention, or only images that are in a specific color space (embedded ICC profile), and so on. It can be useful to configure the last workflow in the list so that it will print all remaining files.

Files that are **not** recognized by the **File Filter** settings of **any** workflow will show up under **Unrecognized Files**.

Tip You can change the **File Filter** settings in a workflow and select the command **Rescan** from the hotfolder context menu to rescan the hotfolder. All input images that are not already assigned to a workflow are filtered according to the updated workflow settings.

When a file is recognized by the **File Filter** of a workflow, the following actions are performed. The parameters for these actions are defined in the corresponding **Input Settings** pages of the workflow.

Tab	*Short description*	*See also*
Merge Files	It is checked whether the input file is a single image that can be processed "as is" or whether there is a **sep file** that defines a group of separations or whether any available **Pattern Recognition** should be applied to the input files.	"Pattern Recognitions" on page 33
Screen Detection	(Only 1-Bit TIFFs, DotProof mode) **Automatic** or **Custom** screen detection occurs.	"Separated Multi-File Images (1 Bit)" on page 32

The resulting job is added to the **Jobs** list. If the printer is put on hold or the **Nesting** template puts the nested job itself on hold, you can open the created job in the **Manual Job Manager** and edit the job and image settings manually before printing.

6.6 Color Management

6.6.1 Proof Output–Defining the Simulation Color Space

On the **Proof Output** page, you define the simulation color space (target printing condition) for your printer-medium combination. Furthermore, you can configure sharpening effects to make edges more clear and distinct.

Proof Output settings

Group	*Short description*	*See also*
Proof Standard	All information required for the color management of a certain printer–medium combination and for a specific print standard is tied into a **proof standard**.	"Proof Standards" on page 166
	RGB proof standards contain **PhotoProof** profiles which have been designed for photo printing applications and aim at printing particularly brilliant "RGB" prints.	"Printing Photographic and Fine Art Prints with PhotoProof" on page 16
	With a GMG OpenColor licence, you can also set up OpenColor proof standards with multicolor profiles for simulating spot color overprints.	"OpenColor Proof Standards" on page 168
Proof Mode	In **ContoneProof** mode, the input image file in a job is automatically ripped into a **CMYK contone** image. With a **DotProof** license, you can also print halftone proofs in **DotProof** mode, either using 1-bit imagesetter data or 1-bit files created by the built-in GMG 1-Bit Creator.	"Proof Modes" on page 41 "Printing Halftone Proofs with DotProof" on page 15
Available Printers, Media, and Versions for selected Proof Standard	All available printers and media compatible with the selected proof standard are listed. If you want to use a specific printer–medium combination not shown on the **Printer** page, check whether you have defined a proof standard for the combination.	
Sharpen	**3D Sharpness**: Highly efficient and easy-to-use sharpening tool. Use the slider to set an intensity from 0-20.	
	Unsharp Mask (USM): Use USM sharpening if you want to have more control on sharpening effects. USM sharpens by increasing contrast along the edges, making light pixels even lighter and dark pixels darker. The **Threshold** specifies how far apart pixels must differ in value before they are considered to be an edge. The **Amount** is like a volume control, increasing the contrast (how much darker/lighter the edge borders become) by a specific percentage. The **Radius** controls how wide the edge rims become—the wider the radius the larger the edge rims.	

Configuration dependencies

Dialog box	*Short description*	*See also*
Workflow	The selected proof standard (**Proof Output**) defines the supported printer settings (**Calibration Set**). It is only possible to select a **single** proof standard per workflow. Multiple proof standards per job can be defined via **Nesting** across multiple workflows, or via Smart and Job Ticket hotfolders.	"Proof Output—Defining the Simulation Color Space" on page 61
	Custom mode: Custom proof standard has to be defined first before a custom calibration can be selected.	"Load Balancing and Nesting" on page 90
	Available Printers, Media, and Versions for selected Proof Standard: On the **Color Management** > **Proof Output** page, all available printers and media compatible with the selected proof standard are listed. Only printers and media listed here will also be available for load balancing and nesting.	"Hotfolder Input Settings" on page 76

6.6.2 Channel Mapping in Workflows

With the workflow option **Channel Mapping**, you can apply self-defined rules for an automatic mapping of image channels.

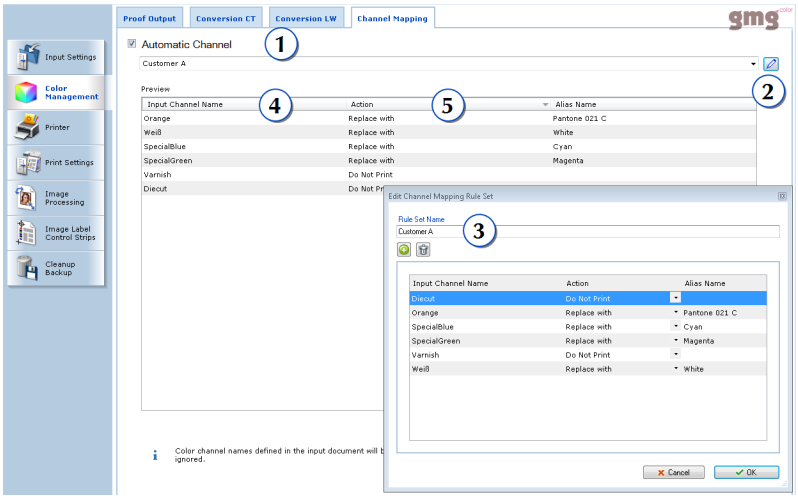


Fig. 34 Alias-mapping of spot colors in a workflow.

On the screenshot, you can see example rules defined in a customer-related set. To use and show the defined rule sets in a workflow, you need to enable the option **Automatic Channel Mapping** (1). To edit or create a new rule set, click the **Edit** button (2) next to the drop-down list. The top left shows the name of the channel mapping rule set (3). The **Input Channel Name** (4) is the spot color channel name as it appears in the input file. The **Rule** (5) defines how the spot color will be handled (either not printed or replaced by an alias color). For example, you can map a spot color named "Blue" to "Pantone Reflex Blue".

See also:

- "Alias-Mapping of Color Channels" on page 25

6.7 Load Balancing and Nesting

6.7.1 Load Balancing and Nesting

As a GMG ColorProof administrator, you have full control over each step of the complete process by defining workflow parameters. The smart logic behind the software allows you to combine **load balancing** together with **nesting strategies**. This way, you can use the full capacity of all your printers while saving media by **combining** "compatible" **images** to a single job. It might take a while to optimize the system for your printer pool and internal workflow, but once set up, you will greatly benefit from the high degree of automation.

The following illustration will give you an idea of how load balancing and nesting works in GMG ColorProof. The following information will describe the behavior in more detail.

Load Balancing and Nesting

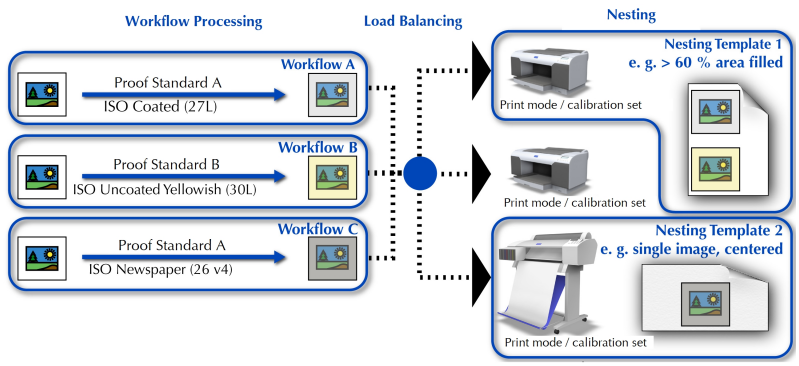


Fig. 35 Load balancing and nesting.

In this example, three workflows (A, B, and C) are set up to process images according to different proof standards. (For load balancing and nesting, it does not matter which workflow is linked to which hotfolder and which file filters are used for each workflow.)

One image is processed by each workflow (for example, by separate hotfolders or different file filter settings). Each workflow processes its image in a different way according to the workflow parameters, for example, using different proof standards. To give a specific example: if tagged with different ICC profiles, the three images would be identified by the Embedded ICC Profile filters defined in the workflow.

After color-managing the images, the software distributes them among the printers in the printer pool (load balancing). Two of the three images use the same nesting strategy (template 1, > 60 % image-filled space) and also have compatible printer settings (for example, both proof standards support the loaded medium GMG ProofPaper semimatte 250). These two images will be collected into the same job. The job will remain in **Nesting** state (in the **Jobs** view) until 60 % of the defined roll length is filled; with 60% filled, the job will be printed.

The image in workflow C uses a different nesting strategy (template 2). It is sent to a different printer from the pool, centered horizontally on the printer medium, and printed directly as a single image.

More information on Load Balancing

In the **Manual Job Manager**, you can directly define a job with multiple images and different proof standards. Idle printers can be manually selected from the list of available printers.

In a **workflow**, you view a similar list of available printers and supported media for the specific **workflow** settings on the **Load Balancing and Nesting** page. You can select the printer medium to be used for all jobs generated by this workflow and you can select the printers for load balancing.

Load balancing automatically assigns a new image in the linked hotfolder to an **idle** printer from the **printer pool**. The smart load balancing algorithm also takes the **image sizes** and the **media sizes** supported by the different printers from the pool into account. It picks the printer that either directly supports the image size **without resizing** the image or that requires the **smallest** change of the image size (if **Image Processing** rules have been defined by the user). If no printer in the printer pool supports the image size (after **Image Processing** is applied), an error job will be created that can be manually edited in the **Jobs** view and then sent to the printer.

When an image is placed into a hotfolder, it is immediately sent to an idle printer provided that the following requirements are met:

- The printer assigned to the job is part of the printer pool for this workflow.
- All printer settings (loaded medium, print mode) match the workflow settings.
- The image size fits onto the media size or there is no other printer available requiring less changes of the image size (**Image Processing**).

A job is created and appears in the job list. If no printer in the printer pool supports the image size (after **Image Processing** is applied), an error job assigned to the largest format printer is created and can be manually edited in the **Jobs** view and sent to the printer again.

Available printer-medium combinations

In the **Workflow** dialog box > **Color Management** > **Proof Output** page, all available printers and media **compatible** with the selected proof standard are listed. Only printers and media listed here will also be shown on the **Load Balancing and Nesting** page. If you want to use a specific printer–medium combination not shown on the **Load Balancing and Nesting** page, check whether you have defined a proof standard for the combination.

More information on Nesting

Nesting makes the situation a little bit more complicated, but also greatly enhances the automation capabilities of the program. Let us start with a basic situation—nesting without load balancing, that is, with only one printer in your printer pool.

Nesting allows you to automatically create jobs with **multiple images**, just as you would manually create jobs in the **Manual Job Manager**. This saves valuable proof media and can simplify your internal workflows, for example, if you collect all images for a certain client or for a certain print standard, printing them in a single job.

Every **Nesting Template** contains a set of nesting rules (a so-called nesting strategy). Several predefined nesting templates for common tasks are already provided by GMG Color GmbH & Co. KG, but you can also set up custom templates to fit your needs. For example, you can use a nesting rule requiring 60% of a defined roll length to be filled with images before printing. For the digital print production of photographic images with PhotoProof profiles, you could use a nesting rule requiring all images to be automatically centered, rotated to **Portrait** orientation, and printed as single images.

You can collect images across multiple hotfolders and workflows. The **Nesting** page in the **Workflows** view provides you with an overview of all nesting strategies currently used by your system. It shows which workflows and printers participate in which nesting strategy.

If load balancing **and** nesting are used in combination, GMG ColorProof looks for an idle printer first (load balancing) as soon as the first image is recognized in the linked hotfolder. The program checks whether the image size fits onto the medium size, and whether all other printer settings (loaded medium, print mode) are compatible with the workflow parameters according to the rules explained above.

A job in the status **Nesting** is created and appears in the job list. If **multiple** images with compatible print settings are in the hotfolder at the same time, the images are distributed on the sheet or roll for **minimized media usage**.

If a new image is placed into the hotfolder, it will be added to an already existing job in status **Nesting** provided that **all** requirements for load balancing (see above) are met. An new **optimized image placement** on the sheet or roll (to reduce media costs) is computed each time a new image is added to a **Nesting** job.

If one of the requirements is **not** met, a **new** job in status **Nesting** (assigned to another printer from the pool) will be created. If no printer in the printer pool supports the image size (after **Image Processing** is applied), an error job assigned to the largest format printer will be created.

Putting finished jobs automatically on hold after nesting

Activating the option **Hold Finished Jobs**, jobs created by a nesting template are automatically put on hold after the finishing rule defined in the nesting template is met.

This feature is very convenient if you want to check the final job in the **Manual Job Manager** before printing. Alternatively, you can use the **Image Preview** for **PDF/PS** files, as PDF/PS files are automatically put on hold after being ripped.

6.7.2 Nesting Strategies

Nesting is a process whereby as much width of the paper as possible is utilized by aligning or rotating many separate images before the job is printed.

Available options	*Description*
Automatic Nesting	Images are placed automatically according to the **minimum paper usage** (similar to the command **Automatic Placement** in the **Manual Job Manager**). Disadvantage: **Less** control on the job layout (only predefined settings for image **rotation** available). Advantage: Useful for nesting images in **different** sizes and orientations, maximum **savings** on print media.
Print Single Image per Job	Strictly speaking, this option is not a real nesting strategy, as only one image is placed per print job. This method is not used for saving print media, but is especially useful for production of photographic prints or for large-format printing (for example, newspaper proofs), where nesting would be inappropriate. Centered images are centered not only horizontally, but also vertically. This way, you are able to create **sheet-like** jobs such as DIN A4 or letter on **roll media** to ensure a uniform and pleasant visual appearance of proof jobs.
Single Line Nesting	Images are placed automatically according to the **minimum paper usage**, but only up to a **single** row of images in the nested job. The job is printed as soon as the defined percentage of **paper width** has been filled with images. Disadvantage: Offers less savings on print media than the **Automatic Nesting** mode. Advantage: You do not need to **cut** the print medium manually to separate multiple rows of nested images.
One Input File per Job	For multipage PDFs. All pages of one PDF document are printed in one proof job. Each page of a PDF is considered to be a separate image. The job is printed as soon as all pages of the document have been placed.

Nesting strategies that handle multiple images such as **Automatic Nesting** have two components:

- Rules for the automatic **placement** of images on the print medium, including automated **image transformations** such as scaling or cropping
- Rules for **finishing** the nesting state and printing the job: Either **time** based (job is printed after a predefined time) or after a predefined **paper usage** is reached. Rules are validated after all new images from the hotfolder have been placed in the job.

Tip You can check the **layout** of a job in **Nesting** status in the info pane and prematurely start printing by using the **Print** command from the context menu of a selected job.

6.7.3 Automatic Nesting

Group	*Short description*	*See also*
Automatic Placement	Images are placed automatically according to the **minimum** area the resulting layout requires on the print medium. You can define the **spacing** in-between images and the **orientation** of images. **Automatic** means the image is rotated in a way that a maximum number of images fits onto a minimum space. If **Portrait** (or **Landscape**) is selected, images are **always** rotated to portrait (or landscape) orientation, even though this orientation could lead to a higher paper usage.	
Maximum Job Age	The job is printed after it reaches the predefined time (counted after creation of the job in **Nesting** state). **All** jobs are printed after the predefined maximum time has been reached; this option **cannot** be deselected.	
Percentage %	The **percentage** of the printable area that is filled with images is checked after new images are added to a job in **Nesting** state. When it reaches the predefined threshold, the job is printed. You can define separate rules for **roll** and for **sheet** media. If you always want to reach a specific roll length rather than filling a specific percentage of the paper width, you can **deactivate** the percentage by defining a percentage of **100%**. As 100% paper usage cannot be reached even under ideal circumstances, the job will stay in **Nesting** state until the **Maximum Roll Length** has been filled.	Illustration below

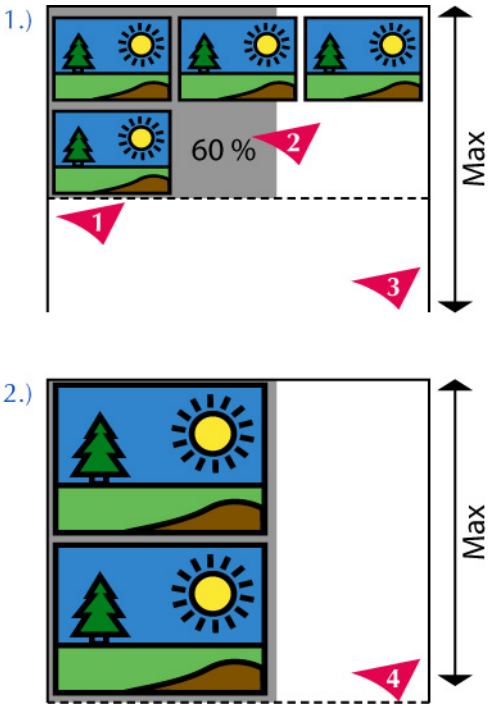


Fig. 36 Roll Media Settings for automatic nesting.

When using roll media, an **imaginary cut line** (1) is calculated each time a new image is added to a job in **Nesting** state. The border of the **printable area** is then defined by this cut line. The calculation of the paper usage area is then identical to the calculation for sheet media. (For sheet media, the printable area is defined by the media size minus the non-printable borders.)

The **required percentage** (60% in this example) of the printable area is shaded in gray in the illustration (2). Note that this is a simplification for illustration purposes. For fulfilling the rule, it does **not** matter **where** the images are placed on the printable area. Only the **sum** of the area occupied by images counts for calculating the percentage of paper usage. As soon as 60% of the printable area are filled with images, the job will be printed.

If the **Roll Maximum Paper Length** is reached, the job is printed immediately, regardless of the percentage of space filled with images. In the illustrated example 2, the images are too wide to fit two images next to each other, but not wide enough to cover the required percentage of the printable area. Therefore, the maximum length is reached without reaching the required percentage (4).

6.7.4 Single Line Nesting

Group	*Short description*	*See also*
Automatic Placement	Images are placed automatically according to the **minimum** area the resulting layout requires on the print medium. You can define the **spacing** in-between images and the **orientation** of images. **Automatic** means the image is rotated in a way that a maximum number of images fits onto a minimum space. If **Portrait** (or **Landscape**) is selected, images are **always** rotated to portrait (or landscape) orientation, even though this orientation could lead to a higher paper usage.	
Maximum Job Age	The job is printed after it reaches the predefined time (counted after creation of the job in **Nesting** state). **All** jobs are printed after the predefined maximum time has been reached; this option **cannot** be deselected.	
Paper Width	The **percentage** of the paper width that is filled with images is checked after new images are added to a job in **Nesting** state. When the filled percentage reaches the predefined threshold, the job is printed.	Illustration below

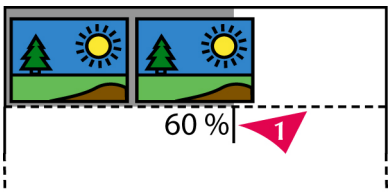


Fig. 37 Single Line Nesting.

The **required percentage** (60 % in this example) of the paper width is shaded in gray in the illustration (1). As soon as images (from workflows using this nesting template) fill at least 60 % of the paper width, the job will be completed and sent to the printer.

Different from **Automatic Nesting**, the used **area** is not regarded. Each **line** filled with images is printed as a separate job.

6.8 Image Processing

Workflows offer the same image processing functionalities you have access to from the Manual Job Manager. Thus you can fully automate GMG ColorProof without compromising on flexibility. With the **Processing of Images Larger than Media Size in Printer** feature, you can automate the printing process of larger images, replacing a manual rotation and placement of images by automated image processing rules.

Feature	*Short description*	*See also*
Processing of Images Larger than Media Size in Printer	Automated image processing rule applied to images that do not fit onto the media size defined for the printer in the **Workflow** dialog box > **Print Settings** > **Printer Advanced**. **Load balancing**: If printers with different media sizes are assigned to a workflow, the image is preferably sent to a printer where the image fits on the medium without rotation or resizing, if available. **Nesting**: **Processing of Images Larger than Media Size in Printer** is applied **before** the **Automatic Placement** rules from the nesting template (**Rotate**).	
Scale	Fixed scaling of images. Same functionality as in the **Manual Job Manager** > preview area > **Scale**. **Scale** is applied before **Processing of Images Larger than Media Size in Printer**.	
Mirror (Flip Horizontally)	Same functionality as in the **Manual Job Manager** > preview area > **Rotate** > **Mirror (Flip Horizontally)**.	
		
Invert All Channels	Same functionality as in the **Manual Job Manager** > **Image** > **Color Management** > **Channels** > **Invert**.	
Use PDF Bounding Box	Same functionality as in the **Manual Job Manager** > preview area > **Crop** > **Use PDF Bounding Box**.	"PDF Page Boxes" on page 38 "Layout" on page 65

Order of sequence

Image Processing rules defined in a workflow can interact with **Nesting** rules, defined in a nesting template assigned to the same workflow. This way, you can create a complex and fully automated image processing workflow.

The order in which the different image processing features are applied by the program is as follows.

1. The image is **resized** as defined in the **workflow** > **Image Processing** > **Scale**.
2. A **frame** is created from the image: Image label and control strips are added to the image.
3. The frame is assigned to a compatible **printer**, preferably to a printer with a media size that is large enough for the original size of the image. If the **job** settings of an existing nesting job are compatible, the frame is added to an **existing** job. Otherwise, a **new** job is created.
4. The frame is **rotated** as defined in the **nesting template** > **Automatic Placement** > **Rotate**.
5. The program checks whether the frame **fits** on the **printable area** of the job. The frame is **rotated**, **resized**, or **cropped** as defined in the **workflow** > **Image Processing** > **Processing of Images Larger than Media Size in Printer**.
6. The job will be processed and printed. (In case the frame still does not fit on the media size after image processing, the job will stay in status **Error** in the **Jobs** list. To resolve the issue, you can manually edit the job.)

Note If a fixed orientation (**Portrait** or **Landscape**) is defined in the **nesting** template and the **Processing of Images Larger than Media Size in Printer** rules allow a rotation to fit the media size, the placement of the frame on the media size takes precedence over the fixed orientation from the nesting template. This behavior helps to ensure an automated workflow with a minimum number of error jobs.

Example:

An image is in A1 format and **Portrait** orientation, that is, the image is 23.39'' wide and 33.11'' high. The image is added to a job that will be printed on a 24'' roll. With a width of 23.39'' in portrait orientation, the image fits on the roll width.

According to the nesting template, the rule **Rotate** = **Landscape** will be applied: The image will be rotated to **landscape**. In landscape, the image does not fit on the roll anymore.

According to the rule **Processing of Images Larger than Media Size in Printer = Rotate**, the image will be rotated back to **portrait**.

The job can now be processed and printed.

6.9 Workflow Cleanup / Backup

The options provided in GMG ColorProof to **delete** or **backup** input files after processing allow for a smooth workflow without interruptions caused by a limited capacity of hard disk.

How to set up backup and file removal routines for printed images

1. On the navigation panel of the **Workflow Properties** dialog box, click **Cleanup/Backup**.
2. Select the option **Clean up Processed Input Files** and select a time.
   Printed input files will be deleted from the hotfolder after this time.
3. Select the option **Back up Processed Input Files** and click the browse button next to the empty text box.
4. Select the desired backup folder or create a new one, for example, *CP05_Backup_39L*.
   All input files processed by this workflow are copied from the hotfolder to the backup folder when finished. If you have selected both the **Clean up** and the **Back up** option, this will result in a **Move** file action.
5. Select the option **Number if File Already Exists**.
   This option prevents already existing files from being overwritten by new files with the same name via adding an incremented number to the name of each file.
6. Select the option **Delete Backup Files after** and enter the number of hours after which a file moved to the backup folder will be deleted from the hard disk.

Nesting

In a workflow, cleanup/backup settings are defined for **images**. If nesting across **multiple** workflows (with different settings) is used, cleanup/backup settings according to the workflow generating the image are applied to an image in a nesting job.

7. Output–Printers

In the **Output** view, you can configure and calibrate your printers on the **Printers** (1) tabbed page.

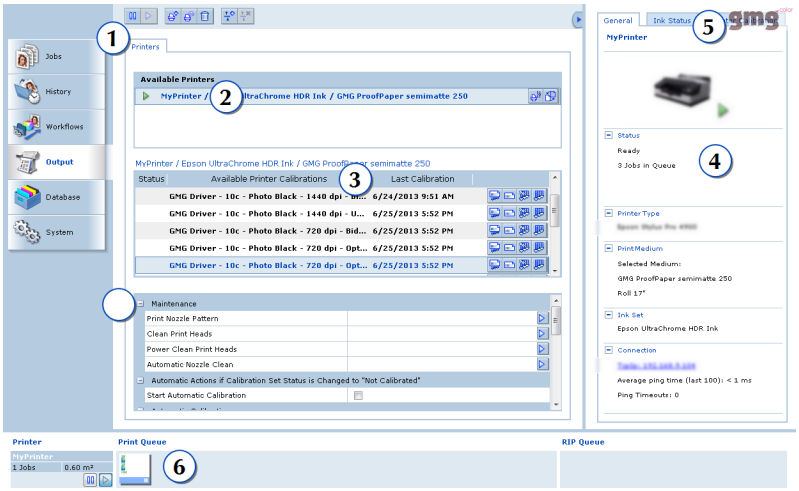


Fig. 38 Output view with one installed printer.

In the **Available Printers** (2) list, all printers are shown with the relevant hardware settings such as the ink set and the loaded print medium.

Click on a printer to update the list of **Available Printer Calibrations** (3). All calibrations for the selected printer and hardware parameters are shown together with the latest calibration date. You can **check** the calibration and **calibrate** the printer by clicking the respective buttons on the right side of each printer calibration.

The info pane (4) shows more information on the selected printer and printer calibration. For printers that support a bidirectional communication, you can also check the **Ink Status** (5) and printer status on-the-fly. When selecting a printer calibration, the **Printer Calibration** tab is added to the info pane, presenting all relevant information such as the supported **Print Modes** or the measuring device used the last time when calibrating the printer.

Each printer is visualized with a **Print Queue** (6) and a **RIP Queue** in the lower section of the **Output** view. The **Printer** info box in the left corner summarizes the workload of the printer and allows the user to **Hold** and **Continue** the job processing of the printer.

Every time you select a printer (2), the available printer calibrations (3) and maintenance functions (7) are immediately updated. Please note that the maintenance functions vary according to the printer type.

See also:

- "Maintenance" on page 103
-

7.1 Output Toolbar

You can configure existing printers and set up new printers on the **Printers** tabbed page of the **Output** view.

Tip Main program features are accessible by different methods, so that users can choose which way is most convenient to them. This documentation generally refers only to the toolbar or menu, even though there may be alternative methods.

- Click a button on the **toolbar**. Move the mouse over a button (without clicking) to display a tooltip.
- Click a command on a **menu**.
- **Right-click** on an item and click a command on the **context menu**.
- Press a **shortcut key**. Shortcut key combinations are listed next to the corresponding command on the menu.
- **Double-click** an item (for example, a job or a workflow) to open the corresponding dialog box and edit settings.

Toolbar commands

Icon	*Command*	*Shortcut*	*Description*
	**Hold**	CTRL+H	Puts all jobs assigned to the selected printer that are not yet processed on hold. Click **Continue** to continue the job processing.
	**Continue**	CTRL+P	Continue the job processing by a printer that is currently set on hold.
	**New Printer**	CTRL+N	Set up a new printer.
	**Duplicate Printer**	CTRL+D	Duplicates the selected printer. You need to enter a different name for the new printer. This feature is useful if you have multiple instances of the same printer type in use.
	**Delete Printer**	DEL	Permanently removes the selected printer. **No undo possible**.
	**Add Custom Printer Calibration**		Add a custom printer calibration if you want to calibrate a printer without using a predefined calibration set (not recommended).
	**Remove Custom Printer Calibration**		Remove a custom printer calibration.
	**Change Media**		Opens the **Change Media** dialog allowing you to change the selected print medium.
	**Configure Printer**		Opens the **Configuration** dialog of the selected printer.

7.2 Printer Control

After processing the input image (separation, rip, color management), the data finally needs to be converted into data the printer can "understand" or interpret. The color information needs to match the ink colors in the printer.

When printing from GMG ColorProof, this is generally done by **printer drivers** developed by GMG Color GmbH & Co. KG (GMG Driver). The reason for developing proprietary printer drivers is to be able to get more control over the print output, allowing to linearize each channel, change ink limits and accurately define spot colors (which ensures a more realistic overprinting with spot colors).

If you want to use **custom media** and create your own printer calibrations, you can in some cases also use the printer driver of the printer manufacturer as an **alternative** to GMG Driver. GMG Driver and manufacturer drivers may require different calibration file formats and processing steps. For example, multicolor printers with additional inks may require an MXC calibration file format. MXC calibrations are not supported in GMG ProfileEditor so that you need to create a calibration with the driver of the printer manufacturer instead.

7.3 Setting up a New Printer

Note The number of printers is limited by the software license on your dongle. If you cannot add a printer, please check the license. See also chapter "Where Can I View and Update My Licenses?". If your license does not support an additional printer, you will need to delete one of your existing printers first before setting up a new one. This way, you can switch between different printers that are not needed to be run in parallel.

GMG color management works with color profiles that target printer–media combinations, including printing parameters such as the print mode, resolution, and used inks. When setting up a printer, you are also setting up a **Proofing Condition** (see "Database—Managing Color Managements Items" on page 154).

How to set up a new printer

1. Click the **Output** > **New Printer** button on the toolbar.
   -OR-
   On the **Database** menu, point to **Printers**, and click **New**.
   The Add Item dialog is displayed.
2. Select a printer type from the **Printer** list.
   The Printer list shows all supported printer types and all printers found on the network.
3. Click the **Printer Properties** button on the right side of the **Printer** list.
   If you selected a printer found on the network, the printer properties are automatically filled in.
4. **Printer Properties**: Enter a **Name** for the printer.
   This name serves as an identifier in the **Output** view. You can also filter and sort jobs according to the printer name in the **Jobs** and **History** view.
5. **Printer Properties**: Select a **Connection Type**.
   Select **TCP/IP** or **USB** if you want to use a direct printer connection without spooler. Select **Spooler** if you set up a Windows spooler for this printer.
6. Click **OK** to confirm the **Printer Properties** and close the Printer Properties dialog.
7. Select the currently loaded **Media Type** and the appropriate **Media Size** from the **Media** list.
8. Select a **Calibration Set** for the defined printer-medium combination.
9. Optional: Select the Proof Standards you want to support.
10. Click **OK** to add the selected items to the database.

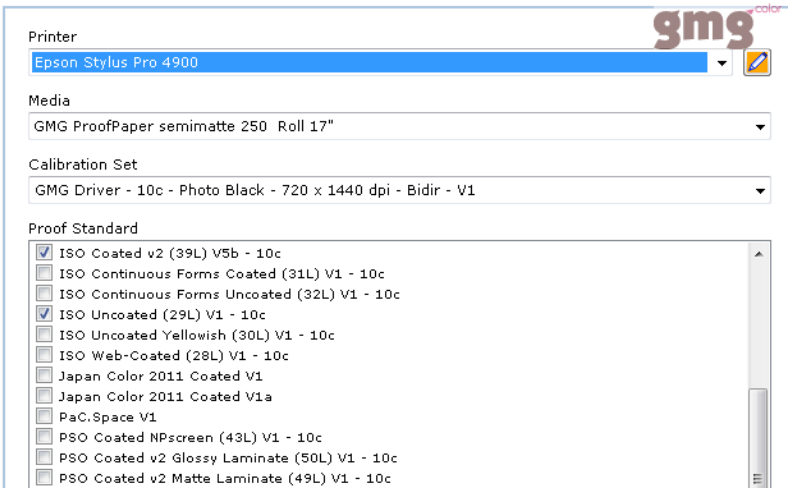


Fig. 39 Setting up a new printer with printer-specific color management sets.

Direct printer connection and bidirectional communication

Note Some connection modes such as USB are supported only by certain printer types. Please refer to the documentation of your printer for more information.

A bidirectional communication is supported by many (but not all) printers. In contrast to a printer connection via a Windows spooler, a bidirectional communication allows the application to send requests directly to and get responses from a printer. A bidirectional communication supports advanced features such as checking ink levels and printer status from within the application. A disadvantage, however, could be the fact that data loss can occur if the image file size of sent print jobs exceeds the internal memory of the printer.

We recommend connecting printers via **TCP/IP** in a **network**. Via TCP/IP, you can access the printer **directly** from within GMG ColorProof. You do not need to install anything on the operating system.

How to connect a printer via a Windows spooler

If you do not want to use a direct TCP/IP and USB connection, you can also set up a **Windows print spooler** instead. A spooler connection is often installed automatically together with the printer driver, so in most cases you will be able to directly select it in the **Printer Property** > **Connection** dialog. If it is not available, do the following to set it up first.

1. Open the Windows **Control Panel**.
2. Double-click the **Printers** icon.
3. Click **Add a printer** on the toolbar.
4. Click **Add a local printer** (can also be used for printers connected via intranet) and select the port or create a new one.
5. Click **Next**.
6. Select the printer from the list that you want to connect and click **Next**.
7. Select the driver and click **Next**.
8. Enter a printer name and click **Next**.
9. Select **Do not share this printer** and click **Next**.
   The printer will be connected to a Windows printer spooler.
10. Confirm by clicking **Finish**. (You do not need to print a test page now. Print a test image from GMG ColorProof after setting up the printer in the software.)

7.4 Defining the Printer Properties

Note It is recommended to regularly check that the printer properties in GMG ColorProof match with the actual configuration of your printer.

In the **Output** view, double-click a printer to call up the **Printer Properties** OR click the **Configure Printer** button on the right side of each printer.

General Settings

The **General Settings** tabbed page contains the basic parameters for setting up a printer. Click on the different parameters to show a description in the description box. The validator messages will help you to fill in the necessary information.

If printers can be equipped with different ink sets (for example, Epson Stylus Pro with **Photo Black** or **Matte Black**), you need to define which ink set is currently used by the printer. When changing the ink set, the printer automatically switches the calibration set. A recalibration might be required if the last calibration for this set is not valid anymore.

HP Z printers: From the 8 color ink set HP 70 Vivera (LM, M, LC, C, Y, LG, PK, MK) pigment inks, 7 colors are used in a print job. Depending on the printer media settings, either **Matte Black** (for GMG NewsPaper or other media that support only a low TAC) or **Photo Black** is used automatically.

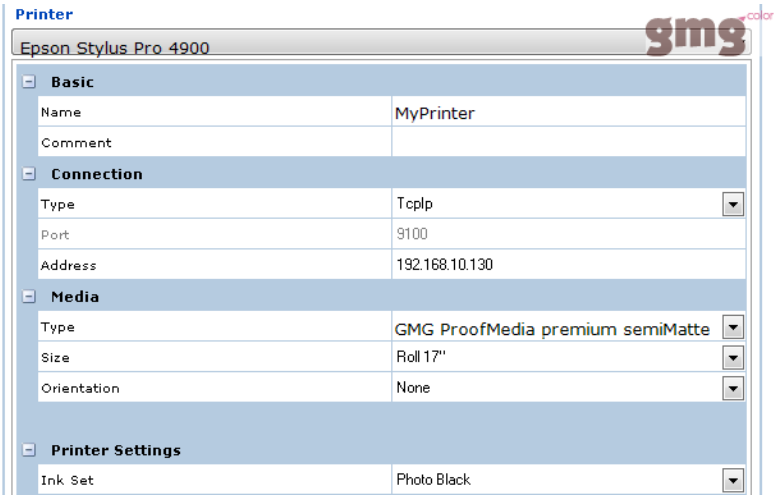


Fig. 40 General Settings in the Printer Properties dialog box.

Advanced Settings

On the **Advanced Settings** page, you have access to parameters that are not used on a regular basis. You need to adjust the settings only in case the connected printer hardware exhibits any individual variations that need to be compensated.

Advanced printer settings can also be defined in the **Manual Job Manager** and **Workflow** dialog box. In the Manual Job Manager and Workflow dialog box, the advanced settings also comprise **job specific** printer settings such as the **Print Mode** and **Resolution**. If you are using a GMG calibration set, these settings are grayed out, because they are defined by the selected **calibration set**. To change these settings, first switch to **custom** mode (**Calibration Set** > **Custom**) and select a custom calibration file.

Job Defaults

To save job configuration time, you can define **printer specific job defaults** that will be preselected for all jobs. All settings on this page can also be changed for each job in the Manual Job Manager (**Printer Settings** > **Advanced**) or in the Workflow properties (**Print Settings** > **Printer Advanced**).

Tip Media and **media specific** settings such as the respective drying time or paper feed adjustment can be changed in the **Change Media** dialog box.

See also:

- "Changing the Print Medium" on page 101
- "Advanced Media Settings" on page 158

7.5 Changing the Print Medium

Note Some printers with a **bidirectional** connection can send information about the currently loaded print medium to GMG ColorProof. If the media synchronization is activated, the software will be automatically updated after a media change in the printer.

When setting up a new printer, you need to define a print medium which you are going to use with the printer. If you change the print medium in your printer, it is very important to also change the medium in GMG ColorProof to make sure you are using the correct profiles for printing.

How to change the print medium

1. Click the **Output** button on the navigation panel on the left of the main window.
2. Select the printer that you want to change the printer medium for from the **Available Printers** list.
3. Click the **Change Media** button on the right side of the printer.
4. Select the currently loaded **Media Type** and the appropriate **Media Size** from the list. If a sheet type **Media Size** is selected, you need to define the **Orientation** of the sheet in the printer as well.
5. Optional: Change the proof media names.
6. Optional: Customize the **Media Specific Printer Settings** for the selected printer (e.g. the drying time).



Fig. 41 Changing the print medium in the Output view.

See also:

- "Media Synchronization between Printer and Software" on page 121
- "Media" on page 157

7.5.1 Media Specific Printer Settings

Note Some of the displayed settings are grayed out and can only be changed for the generic printer and media type **combination** in the **Database** view (see figure "10.3.2" on page 158) .

The **Media Specific Printer Settings** are valid only for the selected printer. When customizing the default values, these will be stored **separately** for the selected printer and media type, not for the generic printer-media type combination in the system database. This way, the custom settings are automatically restored when switching back to a certain media. To retrieve the (factory) default values of the generic combination, click the **Reset** button.

Available options	*Printer Type*	*Description*	*See also*
Roll Tension	Epson x890, x900, Epson WT7900	If you are experiencing unreliable print quality and patterning effects, it is recommended to adjust the **Roll Tension** (preceding a paper feed adjustment).	"Roll Tension Adjustment" on page 143
Vacuum	Epson Printers	If you are experiencing artifacts due to ink deflection and splatter, this might be caused by a too high vacuum, which increases the distance the ink has to travel before it reaches the medium (because the suction is distorting the medium).	
Platen Gap	Epson x890, x900, Epson WT7900	You can adjust the distance between the print head and medium. Normally, leave the **Platen Gap** to **Standard** for standard media types. If you find that printed images are smeared, increase the **Platen Gap**.	

Available options	*Printer Type*	*Description*	*See also*
Paper Feed Adjustment Mode	Epson Printers	The optimum **Paper Feed** depends on the media weight and thickness. To evaluate the **Paper Feed**, you can print and measure an image with a vertical length of 1000 mm. The measured length is entered as **Paper Feed Adjustment**. Alternatively, you can download test forms and **visually check** the printed images to fine-tune the paper feed.	"Manual Paper Feed Adjustment" on page 145
Drying Method	Printers with integrated measuring device	You can choose between **Active Drying** (with a fan) and **Air Drying**. When using **Active Drying**, the chart or strip is moved to the drying area after printing and is actively dried for 120 seconds (per default) to ensure all patches are evenly dried before being moved further down to the measuring device.	

7.6 Media Synchronization between Printer and Software

Some printers with a **bidirectional** connection can send information about the currently loaded print medium to GMG ColorProof. For these printers, you can **synchronize** the print medium selected in the software printer with the print medium selected on the printer panel. This feature minimizes paper usage and ensures reliable print results.

For printers without this synchronization capability, you need to manually select the correct media.

Canon imagePROGRAF printers

1. Set up your Canon imagePROGRAF printer in the **Output** view > **Available Printers**. Make sure you have established a **bidirectional** communication (TCP/IP).
2. Click the **Configure Printer** button to open the printer configuration settings.
3. Click the **Advanced Settings** view on the left and select the option **Synchronization with Medium in Printer**.
   GMG ColorProof will now automatically use the print medium selected on the printer panel. If the print medium is not available in the database, a warning will be shown.

HP Z printers

The media synchronization for HP Z printers offers three options to ensure identical media settings.

Available options	*Description*
Put Jobs on Hold	In case that the print medium selected in the software printer does not match with the print medium loaded in the paper tray, all jobs for the printer will be put on hold and are restarted automatically after paper change.
Use Loaded Medium	Synchronization with the printer is activated. The print medium loaded in the paper tray is used. An error message will inform you if the medium cannot be found in the GMG ColorProof database.
Ignore Loaded Medium	Synchronization with the printer is deactivated. The media type selected in the software printer is used. (not recommended)

7.7 Maintenance

All printers need an occasional tune-up. The maintenance functions, such as the cleaning of the nozzles or a print head alignment, can be accessed via the printer panel or the printer driver and have been included for ease-of-use in GMG ColorProof.

In the following table, you will find all maintenance utilities listed in the **Output** view, including the printer types and a general description.

Maintenance Function	*Printer Type*	*Description*	*See also*
Print Nozzle Pattern	Epson 4000, x400, x450, x600, x800, x880, x890, x900, WT7900, SC-Px000,Canon iPF, Canon iPFs	If the printing quality is declining, for example, faint or streaked in different colors, print a **nozzle check pattern** to see if any print head nozzles are clogged. Examine the nozzle check pattern. Each line should be complete, with no gaps. If the pattern is incomplete, click **Clean Print Heads** to unclog the nozzles. You should also print a nozzle check **after** every print head cleaning to see if the cleaning was successful. You may need to clean the print heads several times to get a clean nozzle check pattern.	
Clean Print Heads	Epson 4000, x400, x450, x600, x800, x880, x890, x900, WT7900, SC-Px000, Canon iPF, Canon iPFs, Roland VersaUV LEC	Unclogs the print head nozzles, so they can deliver ink properly. The cleaning takes several minutes to complete. If printing does not improve after the first cleaning, repeat the process two or three times. If the print quality still does not improve, start the **Power Clean Print Heads** service. Do not start this service while any printing is in progress. Every print head cleaning consumes ink. To avoid wasting ink, you should only clean the print head if the print quality declines.	
Clean Print Heads (Cyan, Magenta)	Roland VersaUV LEC	Instead of cleaning all print head nozzles, you can save ink and clean only those that are causing problems. The cleaning may take a few minutes to complete.	
Clean Print Heads (Yellow, Black)	Roland VersaUV LEC	Instead of cleaning all print head nozzles, you can save ink and clean only those that are causing problems. The cleaning may take a few minutes to complete.	
Power Clean Print Heads	Epson 4000, x400, x450, x600, x800, x880, x890, x900, WT7900, SC-Px000	If the normal cleaning process is not sufficient to clear the nozzles, perform a **power cleaning**. The power cleaning should not be performed more often than necessary as it consumes a lot of ink.	
Check and Clean	Epson 4000, x400, x450, x600, x800, x880	This service combines the nozzle check and subsequent cleaning cycle. A nozzle pattern is printed and evaluated by a built-in sensor. If some sections of the pattern are faint or incomplete, the nozzles are clogged. In this case, the print heads will be **automatically** cleaned and another test pattern will be printed to determine whether the cleaning was successful. **Check and Clean** can be scheduled to be performed at a specific day and time (> **Automatic Maintenance Scheduler**).	
Automatic Nozzle Clean	Epson x890, x900, WT7900, SC-Px000	Based on an automatic nozzle verification technology, the nozzle status is checked by a built-in sensor, requiring no media. If the nozzles need to be cleaned, the printer **automatically** runs a print head cleaning. The whole process requires very little ink and takes less than 15 seconds to complete.	
Print Nozzle Pattern in Job, before Images	Epson 4000, x400, x450, x600, x800, x880, Canon iPF, Canon iPFs	When activating this option, a nozzle check pattern is printed with **every** job. Using this option, the nozzle check **precedes** the image(s).	
Print Nozzle Pattern in Job, after Images	Epson 4000, x400, x450, x600, x800, x880, x890, x900, WT7900, SC-Px000, Canon iPF	When activating this option, a nozzle check pattern is printed with **every** job. Using this option, the nozzle check **follows** the image(s).	
Clean Print Heads after Number of Jobs	Epson 4000, x400, x450, x600, x800, x880, x890, x900, WT7900, SC-Px000, Canon iPF	You can specify a number of jobs for an automatic **head clean** every time you finish printing that quantity.	
Print Nozzle Pattern after Number of Jobs	Epson 4000, x400, x450, x600, x800, x880, x890, x900, WT7900, SC-Px000, Canon iPF, Canon iPFs	You can specify a number of jobs for an automatic **nozzle check** every time you finish printing that quantity.	

Maintenance Function	*Printer Type*	*Description*	*See also*
Check and Clean after Number of Jobs	Epson 4000, x400, x450, x600, x800, x880, SC-Px000	You can specify a number of jobs for an automatic nozzle check **and** head clean every time you finish printing that quantity. A nozzle pattern is printed and evaluated. If the nozzles are clogged, the print heads are **automatically** cleaned.	
Calibrate Paper Feed	HPZ2100, HPZ3200, HPZ6200	**Automatically** calibrates the paper feed and prints a paper feed calibration image. The calibration procedure takes approximately three minutes. It is recommended to perform a paper feed calibration for each **newly introduced media** type and if you notice **horizontal banding**.	
Color Calibration	HPZ2100, HPZ3200, HPZ6200	When printing with GMG Driver, a color calibration is **not** necessary. When printing with **HP Driver**, or after a print head has been replaced or a new paper type has been introduced, the printer has been turned off for a longer period of time, or the environmental conditions have changed noticeably, it is recommended to perform a **Color Calibration**. The calibration process runs fully automatically and requires no user interaction. The process takes about 8–10 minutes and includes the printing of a calibration test chart which is measured by the integrated spectrophotometer.	
Align Print Heads	HPZ2100, HPZ3200, HPZ6200	Precise alignment between print heads is essential for accurate colors and smooth color transitions. If your prints look grainy or blurry, click the **Align Print Heads** button. Also use this function whenever a print head has been replaced. If you have experienced a paper jam, it is recommended to **reinsert** the print heads and then start the alignment process. Do not use transparent or semi-transparent media to align the print heads.	
Align Print Heads after Number of Jobs	HPZ2100, HPZ3200, HPZ6200	You can specify a number of jobs for an **automatic print head alignment** every time you finish printing that quantity.	
Paper Feed Adjustment	Canon iPF, Canon iPFs	If your prints show **banding** in different colors, it is recommended to adjust the paper feed. This involves printing a test pattern. After measuring the pattern, the printer automatically adjusts the feed amount. A paper feed adjustment should be performed every time a new medium is introduced.	
Print Head Alignment (Standard)	Canon iPF, Canon iPFs	Automatic print head alignment, which fixes slight distortions and color misalignment.	
Print Head Alignment (Advanced)	Canon iPF, Canon iPFs	If the **Standard** mode does not improve the printing quality, use the **Advanced** mode. A print head alignment (**Advanced** and/or **Expansion**) should be performed every time a new medium is introduced.	
Print Head Alignment (Expansion)	Canon iPF, Canon iPFs	Use this mode if vertical lines are warped or colors are out of alignment while the printer driver option **High-Precision Printing** or **Priority on dot placement accuracy** is selected.	
Color Calibration	Canon iPF 6450	When printing with **Canon** print modes, it is recommended to perform a **Color Calibration** from time to time. The calibration process runs fully automatically and requires no user interaction. The process includes the printing of a calibration test chart which is measured by the integrated densitometer.	

8. Printer Calibration

Combined with MX proof profiles, a regular printer calibration ensures a consistent representation of colors. Undesired printer deviations caused by varying environment conditions such as temperature and humidity are counterbalanced. We recommend you to calibrate your printer(s) on a **regular** basis to ensure the highest **production stability** and **color quality**.

You can calibrate your printer easily by using a calibration wizard integrated into the main application. GMG ColorProof uses multiple **iteration cycles**, similar to a control loop, to **optimize** and update the calibration. The steps of each cycle are visualized in the wizard.

Printer calibration procedure

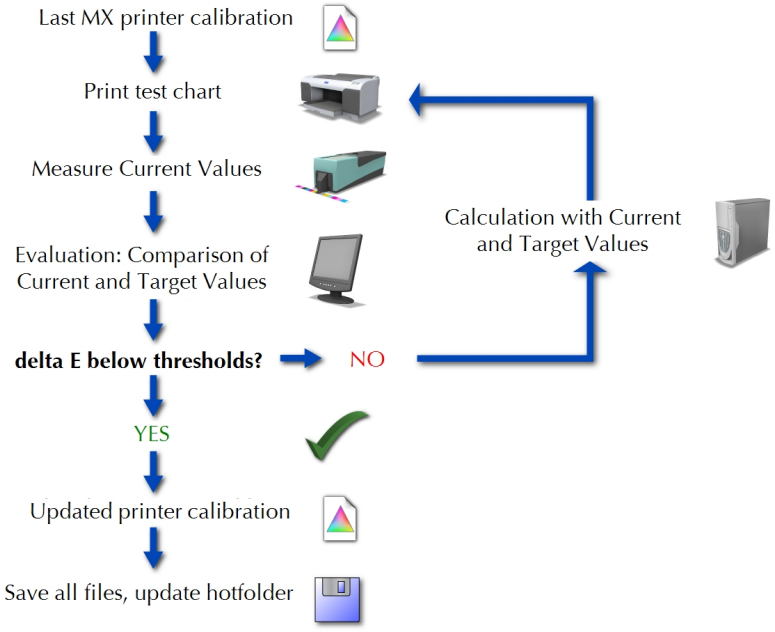
With the **calibration set** concept, printer calibration is as easy as it could possibly be: The target values are linked to the corresponding printer–medium combination and the measuring device in the GMG ColorProof database.

After connecting the measuring device to the computer and starting the Calibration Wizard (GMG CaliWizard), GMG ColorProof automatically detects all connected measuring devices and you simply have to select the spectrophotometer you want to use for the calibration. If the printer features an integrated measuring device, the calibration can be completely automated by using the GMG AutoCali Wizard.

The **initial calibration** file (MX3, MXC, or MX4) is defined in the calibration set. The appropriate target values are automatically extracted from the database. When calibrating a printer–medium combination for the first time, the **Initial Calibration** from the calibration set will be used.

For all following calibrations, the last saved printer calibration file is used as a basis for a recalibration. Each time a calibration is started, the **output values** are taken from the **last** saved printer calibration file. This way, the number of iterations you need for a successful printer calibration is minimized (saving valuable time and media).

The **threshold values** that need to be reached for a successful printer calibration are defined in the calibration set: The **target values** are specified in the printer calibration file linked to the calibration set and the **tolerances** for the target values are defined on the **Quality Criteria** page in the **Calibration Set** dialog box.



8.1 Measuring Device Settings

Measuring flexibility when calibrating the printer

The printer calibration file settings can be independent from the proof profile. This means, you can create a printer calibration file for a **different** measuring device than the one you use for calculating the proof profile. This way, you can use any measuring device that suits your needs for calibrating the printer on a regular basis. The achieved calibration status will be valid for all proof standards based on the same printer–medium configuration, independent of the measuring device settings.

Use of a UV cut filter

UV light affects color measurements made with spectrophotometers. Therefore, spectrophotometers can have integrated UV cut filters that may achieve more reproducible results in the visible color space. The software is capable of working with UV and non-UV measuring devices.

The Epson Stylus Pro x900 series can be equipped with an integrated measuring device with custom **Filter** and **Backing** settings.

The **HP Designjet Z** series features an **integrated** measuring device (HP embedded spectrophotometer) with UV cut filter and **black backing**.

Backing methods

As most print media are not 100% opaque, the color of the substrate, for example, the measuring table, underneath the test chart also affects the measurement values and thus the color profile.

For general purpose applications and according to the **ISO 12647-7 standard**, it is recommended to use white backing for **single-sided** prints.

Tip In case white backing is not available on your measuring device, you can place a highly opaque sheet (or multiple layers if the opacity is not sufficient) of white medium underneath the test chart. Preferably, the medium should have a lightness (L*) value between 92 and 97. The saturation value (C*) should not exceed 2.4.

8.2 Resetting a Printer Calibration

All **calibrations** listed under **Available Printer Calibrations** can be **reset** any time, making sure you can always return to the initial calibration file defined in the calibration set.

If you modify an initial printer calibration file linked within a calibration set, you can use the reset function so that the modifications become effective.

How to reset a printer calibration

1. Click the **Output** button on the navigation panel on the left of the main window.
2. Under **Available Printer Calibrations**, right-click a calibration set to bring up the context menu.
3. Click **Reset Calibration**.
4. You will be asked whether you want to reset the calibration or not. Click **Yes** if you want to use the initial calibration file as a new starting point.

See also:

- "Modifying a Calibration Set" on page 164

8.3 Calibration Tips

What to do if the pre-linearization or the printer calibration fails

If you experience problems getting a printer calibrated, please consider the following:

1. Check if the correct medium is loaded in the printer.
2. Shake the ink cartridges and replace expired ink cartridges.
3. Perform a nozzle check and print head cleaning.
4. Do a paper feed adjustment and print head alignment.

See also:

- "Printer Specific Information" on page 121

8.4 Calibration Check

8.4.1 Calibration Check

For Epson SureColor P printers and Epson Stylus Pro x900 and x890 printers with **integrated measuring device ILS30**, the validity of the printer calibration can easily be verified by printing a **GMG Calibration Control Strip**. The control strip is automatically measured by the printer in GMG ColorProof.

Note Some of the features described in the following may not be included in the standard GMG ColorProof version and require an additional license (GMG DotProof, GMG FlexoProof, GMG ProfileEditor, GMG ProofControl Inline, or GMG OpenColor). Please contact your local dealer for details.

The calibration control strip is verified against the target values from the printer calibration file linked to the corresponding calibration set. The result of the calibration check will help you to decide whether the printer needs to be recalibrated or not, thus saving valuable production time, ink, and media for unnecessary recalibrations.

Depending on the results, you can do one of the following:

1. Results are within your tolerances. No action required.
2. Additional printer checks such as printing a nozzle pattern and cleaning the print heads. Then, repeat the calibration check.
3. A printer recalibration is required.

Additional printer checks

In addition to checking the printer calibration, GMG recommends to print a **Nozzle Pattern** on a regular basis. This can be done manually or automatically with the **Automatic Maintenance** scheduler in GMG ColorProof (**Output** > **Printers** > **Automatic Maintenance**).

If the lines of the nozzle test pattern cannot be clearly distinguished, the print heads should be cleaned with the **Maintenance** features supported by the printer in GMG ColorProof (**Clean Print Heads**, **Check and Clean**, **Power Clean**).

See also:

- "Maintenance" on page 103
- "Printer Calibration" on page 106

8.4.2 Calibration Check Methods

In GMG ColorProof, the calibration check can be conveniently started in three ways, as described in the following.

Trigger	*Short description*	*Where?*	*See also*
Manually	You can manually print a calibration control strip from time to time to check the current status of your printers.	**Output** > **Printers** > **Available Printer Calibrations** > **Check Calibration**	"Manual Calibration Check" on page 109

Trigger	*Short description*	*Where?*	*See also*
Automatically, per **scheduler**	You can automatically print a calibration control strip in regular intervals. For each printer, a scheduler can be configured.	**Output** > **Printers** > **Automatic Calibration Check**	"Calibration Check Scheduler" on page 110
Automatically, when printing a **job**	You can print a calibration control strip as a **Job Control Strip**.	**Manual Job Manager** > **Job** > **Label/Strips** > **Job Control Strips** > **Calibration Control Strip** **Workflows** > **Job Control Strips** > **Calibration Control Strip**	

Printing a calibration control strip manually or per scheduler

If you print the calibration control strip without a job, i. e. manually or per scheduler, the strip will be printed **12 cm below the start**, with additional white space and a noise border. This extra space is added to avoid that printer instabilities will show up in the control strip. According to GMG tests, print results are very stable after the first 12 cm.

Note Printer stability could be an issue if you add the strip to very short jobs. In such cases, it is recommended to add white space to the job, for example, by moving the images down using the **Layout** tools in the **Manual Job Manager** until the strip is **12 cm away from the top**.

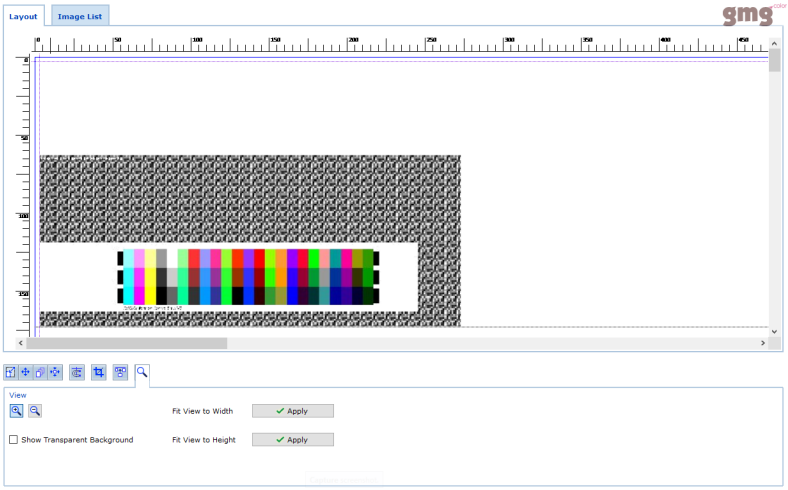


Fig. 42 Screenshot of the calibration control strip in the Manual Job Manager.

This screenshot shows how the calibration control strip will be printed if it is printed **outside** a job. When adding the strip to a job, it will be printed **without** the white space and noise border.

8.4.3 Manual Calibration Check

You can print a calibration control strip **without** printing a job, for quickly checking the printer calibration during the working day, in-between jobs. Based on the results of the calibration check, you can decide whether to calibrate the printer or not. In comparison to scheduling the printer calibration in fixed intervals, this helps you saving valuable production time, ink, and media.

How to perform a manual calibration check

1. Click the **Output** button on the navigation panel on the left of the main window.
2. Click the **Printers** tabbed page.
3. From the **Available Printers** list, select the printer for which you want to check the calibration status. The **Available Printer Calibrations** list is updated accordingly.
4. Select the **Printer Calibration** from the list you want to check.
5. Click the **Check Calibration** button  on the right side, next to the printer calibration.

   A calibration control strip is printed automatically.

8.4.4 Calibration Check Scheduler

Using this feature, you can automate the printer calibration check. You can define a regular interval in which the **Calibration Check** will be automatically started. You can use this feature to document the stability of your printer during the normal production workflow, eliminating the need to remind yourself to manually check the calibration.

How to schedule an automatic calibration check

1. Click the **Output** button on the navigation panel on the left of the main window.
2. Click the **Printers** tabbed page.
3. From the **Available Printers** list, select the printer for which you want to schedule the automatic calibration check.
4. Navigate to the **Automatic Calibration Check** group below the printer list. Select the calibration set that you want to check.
5. Select the calibration check interval.

See also:

- "Calibration Check" on page 108

8.5 CaliWizard (External Spectrophotometer)

8.5.1 GMG CaliWizard

GMG CaliWizard is used to calibrate printers with an external measuring device (for printers not supporting an integrated measuring device).

During the printer calibration process, the **last** saved printer calibration file is used as a basis for a recalibration of the printer. During the following iterative cycle, the **output values** in the printer calibration file will be optimized to reach the **target values** within the defined tolerances. The existing printer calibration file will then be **replaced** with the modified file.

The wizard will lead you through all steps required for the calibration. You can use other printers in the meantime. You can also set up jobs for the same printer that currently runs the calibration. They will be printed after the calibration will have been finished.

GMG ColorProof uses multiple **iteration** cycles, similar to a control loop, to optimize the calibration. The steps of a cycle are visualized in the wizard. The currently active step is highlighted by a white background color.

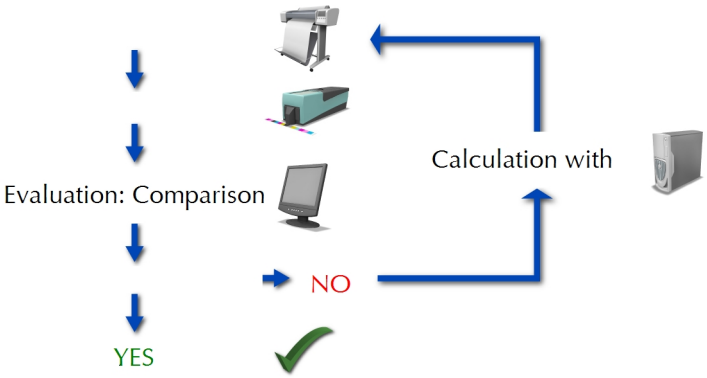
How to start GMG CaliWizard

1. Click the **Output** button on the navigation panel on the left of the main window.
2. Select the printer you want to calibrate from the **Available Printers** list.
3. Select the calibration set you want to use from the **Available Printer Calibrations** list.
4. Click the **CaliWizard** button on the right side of the calibration set.

   The GMG CaliWizard is started.
5. Follow the instructions of the wizard.

8.5.2 Iteration Cycle: Printing, Measuring, Evaluating

The aim of the iteration cycle is to match the **Target** values as closely as possible, within the tolerances defined in the calibration set. Following each iteration cycle, the program computes new CMYK output values based on the deviation between the target values and the measured current values. The new output values are used in the next **Printing** step. Thus, the **Current** values will become closer to the tolerances with **each** iteration, that is, **Printing**, **Measuring**, and **Evaluating**.



In the **Printing** step of the iteration cycle, you will print a color patch for each fulcrum in the corresponding data table. In the **Measuring** step, you will measure the color values of each patch as **Current** values. In the **Evaluating** step, you will **compare** the **Current** values with the **Target** values.

Step 1: Printing Test Charts

Test charts with color patches for spectrophotometric measurements are used for the following steps. Test charts have a different layout and size depending on the printer calibration they are used for and depending on the measuring device.

When calibrating a printer, a printer calibration test chart is printed with a separate color patch for each fulcrum in the printer calibration file. During the **first** printer calibration, the output color values corresponding to the input color values are taken from the printer calibration file linked as **Initial Calibration** within the calibration set. For all following calibrations, the output values are taken from the last saved printer calibration file.

The test chart job will be added to the job list with highest job priority. It is handled like any other job. The job name shows the number of the iteration cycle.

Pre-linearization: When the calibration is based on an **MXC** printer calibration, the input–output behavior of additional non-CMYK inks in the printer is analyzed and standardized first. To achieve this, a Pre-Lin test chart is printed and measured in an iteration cycle, just like a printer calibration test chart. The Pre-linearization data is saved in the MXC calibration file. If the pre-linearization cycle fails, the printer calibration will be canceled. (In this case, you might need to replace the inks.)

Step 2: Measuring Test Charts

The color values of the printed patches are measured (as **Current** values) with a spectrophotometer. Each **color patch** on a test chart represents a **fulcrum** (data point) in the corresponding data table within the printer calibration. By measuring patches, the data table is filled with data points.

(In case an MX3 printer calibration with no **K** values is used—**No Key Mode (CMY Only)** in GMG ProfileEditor)—black patches on the test chart are **not** measured. Values that have not been measured are marked with the following character: "–".)

Note Before you start measuring a test chart page, check that it is not visibly damaged, for example, by scratches. In case that a page cannot be used for measuring, go back to the **Printing** page and print the page again.

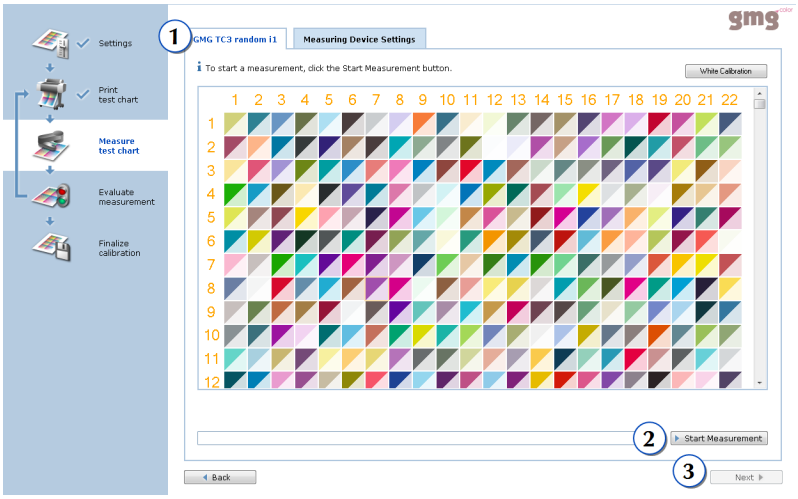


Fig. 43 Measuring page before starting the measurement.

Each test chart page is shown on a **separate** tabbed page (1) in the **Measuring** window.

Click **Start Measurement** (2) to start measuring the test chart page shown on the **front** tabbed page.

The measuring **progress** of the page is shown in the visualization of the test chart on the tabbed page. You can point to a **color patch** with the mouse to show a popup with more information. You can also measure single patches in this view.

After you have successfully measured **all** test chart pages, click **Next** to proceed to the next step (3).

How to measure test charts with multiple pages

Each test chart page is shown on a **separate** tabbed page in the **Measuring** window.

1. To measure a page, insert it into the measuring device, select the corresponding tabbed page, and click **Start Measurement**.
2. Repeat this procedure for all pages.

If there are too many test charts to fit in the window, you can click the small arrow on the top right side of the tabbed pages to bring hidden test charts or the **Measuring Device Settings** page to the front.

How to measure a single patch

This can be helpful, for example, if the measuring device cannot automatically scan the test chart.

1. In the test chart image, select a patch with the mouse and right-click it to show the context menu.
2. On the context menu, click the command **Measure Single Patch**.

Measuring Device Settings

You can click the **Measuring Device Settings** tabbed page to see the currently used measuring device parameters.

Depending on the used measuring device, some measuring parameters can be changed from within the software, for example, switching from **Scan** mode to **Single Patch** readings. Read-only parameters are grayed out and provided only for your information.

When using an X-Rite Eye-One, the software automatically switches to **Single Patch** mode if a row cannot be measured after three attempts.

Note Please check the hardware parameters such as **Standard Observer Angle**, **Illumination Type**, and **Filter** to ensure the software settings are correct and match the hardware configuration of the connected measuring device. Otherwise, this will result in wrong measurement values.

Step 3: Evaluating Measurement Results

In the **Printing** step, you have printed a color patch for each fulcrum in the printer calibration or color profile. In the **Measuring** step, you have measured the color values of each patch as **Current** values. In the **Evaluating** step, you will now **compare** the **Current** values with the **Target** values.

The aim of the iteration cycle is to match the **Target** values as closely as possible, within the tolerances defined in the calibration set. Following each iteration cycle, the program computes new CMYK output values based on the deviation between the target values and the measured current values. When creating a printer calibration file, the **full gamut** file linked within the printer calibration will be used as a reference to calculate the new output values. The new output values are used in the next **Printing** step. Thus, the **Current** values will become closer to the tolerances with **each** iteration, that is, **Printing**, **Measuring**, and **Evaluating**.

You can repeat the iteration cycle until the values are either within the tolerances or until you decide to end the cycle by accepting the best iteration.

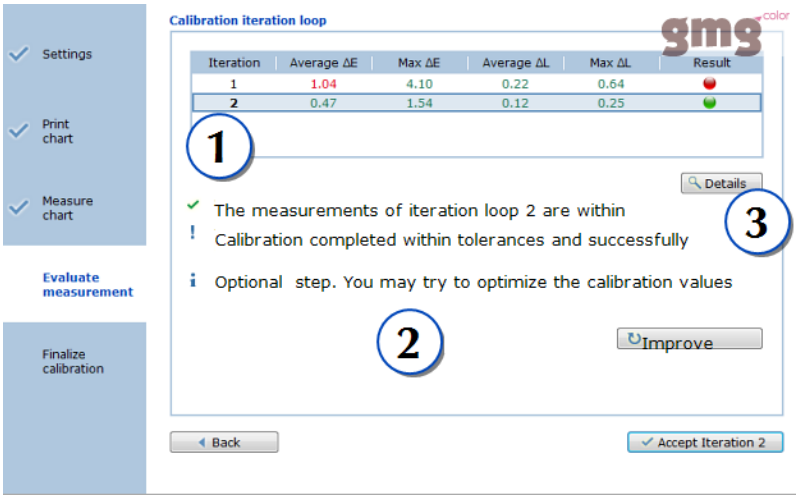


Fig. 44 Evaluating page after successful iteration cycle.

Accepting a successful iteration

The **Evaluating** page provides you with an overview on the results of the ongoing iteration cycle. The results of each **Iteration** (**printing** and **measuring** the test charts) are listed in a table (1).

If the current values of the first cycle (**Iteration 1**) are already within the tolerances (indicated by a green status lamp in the **Results** column), you can click the **Accept Iteration 1** button to accept the results. In the screenshot, the results of **Iteration 1** have not been within the tolerances (failed iteration).

Repeating a failed iteration

A failed iteration will be indicated by a red status lamp in the **Results** column. If an iteration fails, steps 1 and 2 will be repeated to further improve the calibration: The test chart will again be **printed** with the new output values and **measured**.

Generally, it makes sense to repeat the iteration cycle from the **last** iteration. However, you can also select a different one from the list and continue the iteration cycle from this iteration, thus ignoring the following iterations.

To continue the cycle, click the button **Improve further** (2). The label **Iteration 2** next to the button shows that **Iteration 2** will be repeated when the button is clicked.

You can show a table with all measured and target values for all patches by selecting an **Iteration** from the list and clicking the **Details** button (3). This can give you a hint on where to look for the problem if the printer cannot be calibrated.

Tip For example, if there are prominent color deviations in a specific color channel, you might need to replace the ink or clean the print heads. If the paper tint values (0, 0, 0, 0) are out of tolerances, you might have loaded the wrong media type into the printer.

Ending the iteration cycle by accepting a failed iteration

The iteration cycle can be repeated until the measured values are within the **tolerances** of the target values. However, if you are satisfied with the results of an iteration, you can also decide do end the iteration cycle and to proceed, thus **ignoring** the tolerances. To do so, **select the iteration** you are satisfied with from the list and click the **Accept Iteration** button to proceed.

Finalizing

The **Finalizing** page shows you a short summary of the **Results**. Please check the results carefully before clicking **Finalizing**.

When clicking **Finalizing**, you will accept the **Results** of the iteration cycle and save the new output CMYK values and the **Current** values from the last iteration within the printer calibration file.

Note This action cannot be undone. After leaving the **Finalize calibration** page by clicking the **Finalizing** button, you will not be able to go back to a previous step.

8.6 AutoCali Wizard (Integrated Spectrophotometer)

8.6.1 Automated Calibration with GMG AutoCali Wizard

GMG AutoCali Wizard is used to calibrate printers featuring an **integrated** measuring device. With the integrated measuring device, the whole process is fully automated, without user interaction required. You can use the **scheduler** to run the calibration in regular intervals (**Output** view > **Automatic Calibration Scheduler**).

Note Not all media types are recommended for using GMG AutoCali Wizard. GMG AutoCali Wizard will **only** be available if a **supported** medium is loaded into the printer. For example, in combination with NewsPaper media, GMG AutoCali Wizard is **not** available for a printer of the HP Designjet Z series. In this case, the grammage of the medium is not supported by the auto-calibration process. We recommend using an **external** measuring device for calibrating printer–medium combinations that are not supported by GMG AutoCali Wizard.

During the printer calibration process, the **last** saved printer calibration file is used as a basis for a recalibration of the printer. During the following iterative cycle, the **output values** in the printer calibration file will be optimized to reach the **target values** within the defined tolerances. The existing printer calibration file will then be **replaced** with the modified file.

The wizard will lead you through all steps required for the calibration. You can use other printers in the meantime. You can also set up jobs for the same printer that currently runs the calibration. They will be printed after the calibration will have been finished.

GMG ColorProof uses multiple **iteration** cycles, similar to a control loop, to optimize the calibration. The steps of a cycle are visualized in the wizard. The currently active step is highlighted by a white background color.

(HP only) Printer Maintenance Feature: Color Calibration

The printer maintenance feature **Color Calibration** makes sure that the system is reset to a stable and reproducible state before starting the calibration. In this step, the printer prints a small test chart and calibrates the colors against internal reference values. This feature can be manually run from the front panel of the printer. It is automatically run when GMG AutoCali Wizard is started.

How can I start an automatic calibration?

There are multiple ways to start GMG AutoCali Wizard.

Method	*Short description*	*See also*
Time based scheduling	An automatic calibration of one specific calibration set is started in regular intervals.	"Automatic Calibration Scheduler" on page 116
Calibration set is invalid	The calibration set needs to be recalibrated.	"Calibration Sets" on page 161
Manual action	You can start GMG AutoCali Wizard manually any time you want.	

How to start GMG AutoCali Wizard manually

1. Click the **Output** button on the navigation panel on the left of the main window.
2. Select the printer that you want to calibrate from the **Available Printers** list.
3. Select the calibration set that you want to use from the **Available Printer Calibrations** list.
4. Click the **AutoCali Wizard** button  on the right side of the calibration set.

   The GMG AutoCali Wizard is started.
5. Follow the instructions of the wizard.

8.6.2 GMG AutoCali Wizard Settings

If a printer selected in the **Available Printers** list supports an integrated measuring device, features specific to GMG AutoCali Wizard will be available in the context-sensitive area below the **Available Printer Calibrations** list.

Option	*Short description*	*See also*
Automatic Actions if Calibration Set Status is Changed to "Not Calibrated"	Actions triggered if a proof standard verification failed. The action is triggered only for the calibration set that was used when printing the job.	"Calibration Sets" on page 161
	If you are sharing printers in your work group, please note that the calibration can occupy the printer and thus delay print jobs from other instances of GMG ColorProof on other computers.	"GMG ProofControl Inline Settings" on page 184
Automatic Calibration	You can use the **default** tolerances for a successful printer calibration as defined in the calibration set or you can enter custom criteria that will be applied to the printer selected in the list.	"Customizing Quality Criteria for GMG AutoCali Wizard" on page 118
Automatic Calibration Scheduler	Using this feature, you can fully automate the printer calibration process.	"Automatic Calibration Scheduler" on page 116

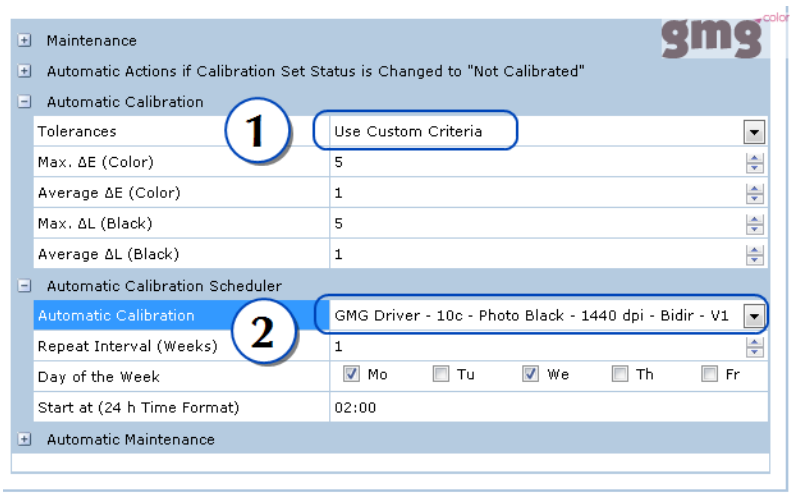


Fig. 45 Scheduling the recalibration and using custom criteria when calibrating a printer with GMG AutoCali Wizard.

Scheduler: You can automatically calibrate a printer featuring an integrated measuring device only for **one** calibration set at a time. You can select the calibration set that will be used by the scheduler under **Automatic Calibration Scheduler** > **Automatic Calibration** (2).

Custom quality criteria: If you want to use custom criteria instead of the quality criteria defined in the calibration set, you can select the option **Use Custom Criteria** (1) (**Automatic Calibration** > **Tolerances** > **Use Custom Criteria**). (Custom criteria apply not only to the scheduler, but to the **Automatic Calibration** in general, for example, if it is started manually.)

See also:

- "Quality Criteria" on page 163

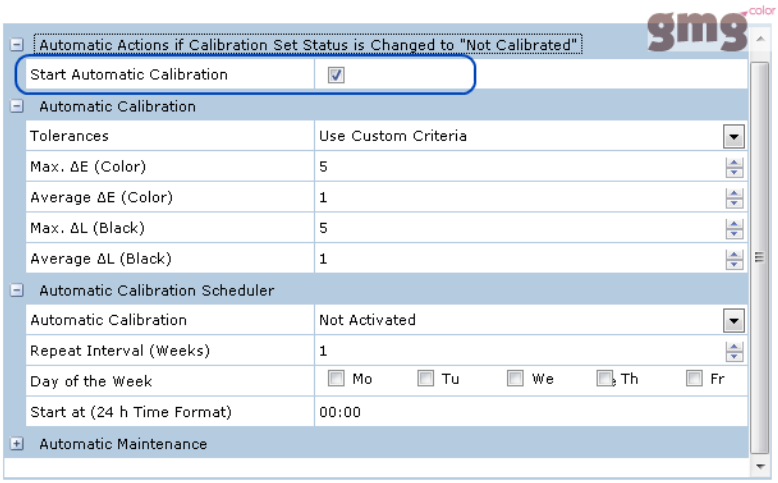


Fig. 46 Starting a recalibration automatically if the calibration is not valid anymore.

A recalibration will be started automatically for a calibration set as soon as its status changes to "Not Calibrated".

See also:

- "Calibration Sets" on page 161

8.6.3 Automatic Calibration Scheduler

Using this feature, you can fully automate the printer calibration process. You can define a regular interval in which GMG AutoCali Wizard will be automatically started, without user interaction required.

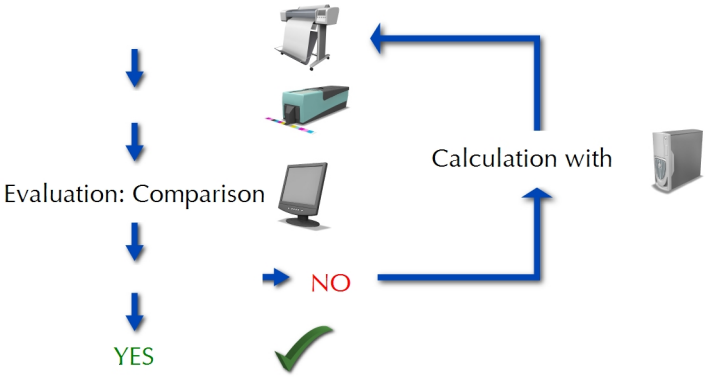
Tip Configure the **Automatic Calibration Scheduler** to start each night to achieve the most stable print results without compromising the production throughput of your facility.

How to schedule an automatic calibration

1. Click the **Output** button on the navigation panel on the left of the main window.
2. Click the **Printers** tabbed page.
3. From the **Available Printers** list, select a printer with an integrated measuring device.
4. Expand the **Automatic Calibration Scheduler** group in the bottom grid.
5. Under **Automatic Calibration**, select the **Calibration Set** you want to have calibrated. If you select **All**, all listed calibration sets will be calibrated one after the other.
6. Select the **Repeat Interval** and the **Day of the Week** as time interval for the automatic calibration.
7. Select the point of time when the calibration should be started (24-hour format).

8.6.4 Iteration Cycle: Printing, Measuring, Evaluating

The aim of the iteration cycle is to match the **Target** values as closely as possible, within the tolerances defined in the calibration set. Following each iteration cycle, the program computes new CMYK output values based on the deviation between the target values and the measured current values. The new output values are used in the next **Printing** step. Thus, the **Current** values will become closer to the tolerances with **each** iteration, that is, **Printing**, **Measuring**, and **Evaluating**.



In the **Printing** step of the iteration cycle, you will print a color patch for each fulcrum in the corresponding data table. In the **Measuring** step, you will measure the color values of each patch as **Current** values. In the **Evaluating** step, you will **compare** the **Current** values with the **Target** values.

Final Step: Evaluating and Finalizing the Calibration

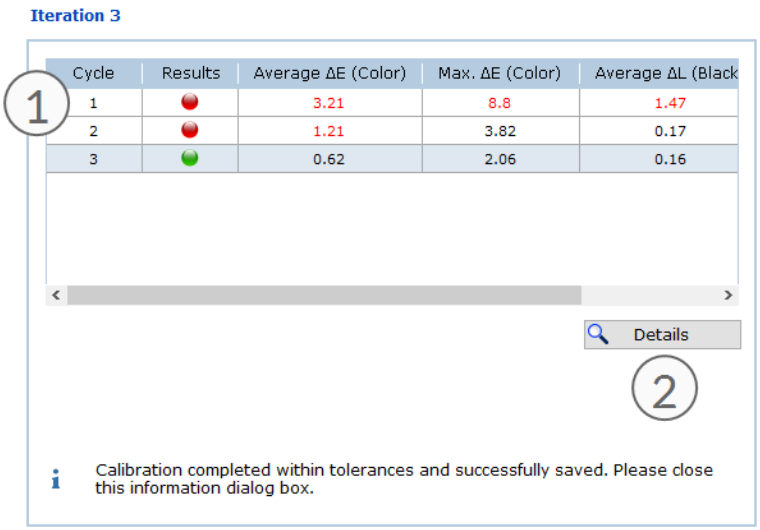
The iteration cycle is iterated until one of the following occurs:

- The measured values are in the **tolerances** of the target values. Printer status = **calibrated**. The printer calibration file with the new output values is automatically saved after a successful calibration.
- The **maximum** number of iterations is reached. Printer status = **not calibrated**.

The next time a calibration is started for the same printer–medium **configuration**, the output values are taken from the last saved printer calibration file. This way, the number of iterations you need for a successful printer calibration is minimized (saving valuable time and media).

See also:

- "Resetting a Printer Calibration" on page 107



GMG AutoCali Wizard after successful calibration.

The measured (current) values of the first iteration cycle (1) were outside the tolerances defined in the **Quality Criteria** of the calibration set. Therefore, **Print** and **Measure** steps have been repeated in a second iteration cycle.

The output values calculated after evaluation of the second cycle resulted in correct measured values in the third iteration. The printer status is set to "calibrated" and the printer can be used for printing. The updated calibration file is saved.

You can click the **Details** button (2) to show all results.

8.6.5 Customizing Quality Criteria for GMG AutoCali Wizard

The threshold values that need to be reached for a successful printer calibration are defined in the calibration set. You can **customize** the quality criteria in calibration sets (or switch them off completely for a given calibration set) on the **Quality Criteria** page in the **Calibration Set** dialog box.

Alternatively, you can also keep the quality criteria defaults in the calibration sets, and change the quality criteria before calibrating the printer with GMG AutoCali Wizard in the **Output** view > **Printers** > **Automatic Calibration**.

See also:

- "GMG AutoCali Wizard Settings" on page 115
- "Quality Criteria" on page 163

8.7 About Remote CaliWizard

GMG Remote CaliWizard is an easy to use **calibration client** for GMG ColorProof allowing you to calibrate your printers from a remote location.

Rather than unplugging, plugging or moving the measuring device every time you want to calibrate your printers, have one measuring device connected to a computer within your **local network** and calibrate multiple printers by logging into a host GMG ColorProof application. After measuring a test chart, the measurement results are automatically transferred to the host system which performs the necessary adjustments.

GMG Remote CaliWizard is fully compatible with all printers and measuring devices supported by GMG ColorProof.

8.7.1 Installing Remote CaliWizard

GMG Remote CaliWizard is part of the installation volume and requires no additional license. It is included in the GMG ColorProof setup.

Note Please check to ensure you are installing a compatible version. Both client and host component should have the **same version number**.

How to install GMG Remote CaliWizard

You can choose between three methods to install the application, depending on whether the computer on which you install the application will have an active **internet** connection or not.

Available options	*Description*
Web-based setup	This method is recommended if the computer on which you install the application has an active **internet** connection. You need to download only a very compact setup file. All required resources will be downloaded automatically from a GMG server via the internet. The setup file can be found in the download area of the GMG support website.
From DVD	If you received a DVD, this is the easiest way. All resources will be installed automatically from the DVD.
Downloaded ZIP archive	If the computer has no active internet connection and you have no DVD, you can download the setup and all resources as a ZIP archive (from a different computer) and then transfer the ZIP archive to the computer on which you want to install the application. The ZIP archive can be found in the download area of the GMG support website.

1. If you downloaded the ZIP archive from the GMG website, copy the **setup folder** to a local directory and extract all compressed files.
2. Double-click the **CP5_OS_5.x.x.exe** file to start the installation.
3. Select the program feature GMG Remote CaliWizard.
4. As you probably do not want to install the main GMG ColorProof application on the same computer, deselect all other program features. (It will of course not hurt to install them. It is just not required and will consume disk space.)
5. If you started the web-based setup, the installation wizard will automatically download the required resources from a GMG server via the internet.
6. When the installation is complete, click the **Finish** button to close the wizard.

8.7.2 Calibrating Your Printer from a Remote Location

Like GMG CaliWizard integrated in GMG ColorProof, the remote client conveniently guides you through every calibration step.

Setting up the GMG ColorProof host system for remote calibration

1. Double-click the GMG ColorProof program icon on the Windows desktop or click GMG ColorProof on the Windows **Start** menu
2. Click the **System** button on the navigation panel on the left of the main window.
3. Click the **General** tab.
4. Under **Remote CaliWizard Settings**, select the option **Start Host Service Automatically** to allow for remote access.
   The GMG ColorProof system is now ready to be used for remote calibration.

How to calibrate your printer at a remote site

1. Click GMG Remote CaliWizard on the Windows **Start** menu of the client computer.
   The Remote Calibration login dialog is displayed.
2. Under **Host Name**, enter the **IP address** the GMG ColorProof host system.
3. Click the **Connect** button to establish the connection to the host system.
   The client connects to the given host address and shows the start dialog of GMG Remote CaliWizard.
4. Select the printer you want to calibrate from the **Available Printers** list.
5. Select the calibration set you want to use from the **Available Printer Calibrations** list.
6. Click the **CaliWizard** button  on the right side of the calibration set.

   The GMG CaliWizard is started.
7. Follow the instructions of the wizard.

For further information on the individual steps performed in an iteration cycle, please see the following chapters.

9. Printer Specific Information

In the printer specific chapters, you can find further information on printers from specific printer series. Please note that the information is rather specific and cannot be applied to all types of printers.

9.1 Supported Printers

Manufacturer	*Model*	*See Also*
Canon	Canon imagePROGRAF iPF 6300, 6300S, 6350, 6400, 6400S, 6410, 6410S, 6450, 6460, 8300, 8300S, 8310, 8310S, 8400, 8400S, 8410, 8410S	"Canon imagePROGRAF" on page 123 "Canon imagePROGRAF x300S, x400S Speed Series" on page 126
Epson	Epson Stylus Pro 4000, 4400, 4450, 4800, 4880, 4900, 7400, 7450, 7600, 7800, 7880, 7890, 7900, WT7900, 9400, 9450, 9600, 9800, 9880, 9890, 9900, 10600, 11880, Epson SureColor SC-P6000/8000, 5000/7000/9000 V + LLK, 10000/20000, P75x0/P95x0, Epson SC-S80600	"Epson Stylus Pro WT7900" on page 135 "Epson Stylus Pro 7890, 9890" on page 133 "Epson Stylus Pro 4900, 7900, 9900" on page 129 "Epson SC-P6000, 8000 and SC-P5000, 7000, 9000 Printers" on page 139 "GMG ColorProof Tutorials"
HP	HP Designjet Z2100, Z3100, Z3200, Z5200, Z6100, Z6200	"HP Designjet Z3200 Photo" on page 146 "HP Designjet Z5200 PostScript Printer" on page 148 "HP Designjet Z6200 Photo" on page 149
Mimaki	Mimaki UJF-706	"Mimaki UJF-706" on page 152
Roland	Roland VersaUV LEC-330, 540 Roland VersaUV LEC2 series Roland VersaUV LEJ-640 Roland VersaCAMM VS-300, 420, 540, 640 Roland VersaCAMM VSi-300, 540, 640	"Roland VersaUV LEC 330/540, LEJ 640" on page 150 "Roland VersaCAMM VS/VSi Series" on page 151

9.2 Media Synchronization between Printer and Software

Some printers with a **bidirectional** connection can send information about the currently loaded print medium to GMG ColorProof. For these printers, you can **synchronize** the print medium selected in the software printer with the print medium selected on the printer panel. This feature minimizes paper usage and ensures reliable print results.

For printers without this synchronization capability, you need to manually select the correct media.

Canon imagePROGRAF printers

1. Set up your Canon imagePROGRAF printer in the **Output** view > **Available Printers**. Make sure you have established a **bidirectional** communication (TCP/IP).
2. Click the **Configure Printer** button to open the printer configuration settings.
3. Click the **Advanced Settings** view on the left and select the option **Synchronization with Medium in Printer**.
   GMG ColorProof will now automatically use the print medium selected on the printer panel. If the print medium is not available in the database, a warning will be shown.

HP Z printers

The media synchronization for HP Z printers offers three options to ensure identical media settings.

Available options	*Description*
Put Jobs on Hold	In case that the print medium selected in the software printer does not match with the print medium loaded in the paper tray, all jobs for the printer will be put on hold and are restarted automatically after paper change.
Use Loaded Medium	Synchronization with the printer is activated. The print medium loaded in the paper tray is used. An error message will inform you if the medium cannot be found in the GMG ColorProof database.
Ignore Loaded Medium	Synchronization with the printer is deactivated. The media type selected in the software printer is used. (not recommended)

9.3 Measurable Areas of Integrated Measuring Devices

The measurable area of some integrated measuring devices can be **smaller** than the printable area of the printer. If a control strip is placed outside the measurable area, the measuring device will technically not be able to measure it, as shown in the following illustration of the measurable area of an Epson integrated measuring device.



Fig. 47 Sketch illustrating the technical limitation.

The sketch illustrates that the problem is more likely to occur if multiple images are positioned in landscape orientation. Two pages are placed next to each other in the job. The gray area is out of range for the integrated measuring device. The second page in the job (and thus also the image control strip which is placed directly beneath the image) exceeds the measurable area and cannot be measured.

One strategy to solve this problem is to open the printed job from the **History**, rearrange the images and print the job again. The following table provides you with information which may help you in rearranging the images so that all control strips are placed within the measurable area.

Overview on the measureable areas

Epson printers:

Printer	*Paper Width (mm)*	*Measurable Area (mm)*	*Non-Measurable Area (mm)*	*Non-Measurable Area (inch)*
Epson Stylus Pro 4900	432	395	37	1.46
Epson Stylus Pro 7900 / WT7900 Epson SC-P 6000/7000	610	470	140	5.51
Epson Stylus Pro 9900 Epson SC-P 8000/9000	1118	991.45	126.55	4.98
Epson Stylus Pro 7890	610	470	140	5.51
Epson Stylus Pro 9890	1118	991.45	126.55	4.98

Canon iPF printers:

The measurable area of the Canon iPF 6450 series is limited to the left, right and top side, so that control strips should always be placed at the bottom of an image.

Printer	*Paper Width (mm)*	*Left Margin*	*Right Margin*	*Top Margin*
Canon imagePROGRAF 6450	< 550	30	30	110/170
Canon imagePROGRAF 6450	>= 500	30	87	110/170

Other strategies to ensure that a printed control strip can be measured

- Use **job control strips** instead of image control strips. Job control strips are always printed within the measurable area.

  Note Please note that **job control strips** cannot be used for GMG OpenColor jobs.

- Workflow jobs: Use a nesting template and activate the option **Place Control Strips within Measurable Area**.
- If you are using an Epson Stylus Pro 7900 printer, use a **17"** roll. The measurable area completely covers the roll width.

9.4 Canon

9.4.1 Canon imagePROGRAF

The Canon imagePROGRAF printer series has been developed by Canon Inc. specifically with high-quality printing of photographic and fine art and contract-proofing in mind. From a very early stage of development, GMG and Canon formed a strong cooperation in the field of color management. Together, both companies have been able to achieve impressive results.

With GMG DotProof or GMG FlexoProof, you can be sure to take full advantage of the latest printing technology. With a GMG DotProof XG or GMG FlexoProof XG license, you can fully exploit the extended color space of the Canon LUCIA EX inks with additional **Red**, **Green**, and **Blue** for producing highest quality halftone proofs with highly realistic spot color simulations.

Printer features

- This high-quality printer prints a very large color space by using Canon LUCIA EX Ink with additional **Red**, **Green**, and **Blue** inks.
- Canon imagePROGRAF iPFx3x0, iPFx4x0 can print 12 colors (12c) in total: Cyan, Photo Cyan, Magenta, Photo Magenta, Yellow, Photo Gray, Gray, Photo Black, Matte Black, Red, Green, Blue. Depending on the selected media type, either Photo Black (PK) or Matte Black (MK) is used. [Pre-installed print modes based on the GMG Driver state the used ink set in the print mode name.]
- 4 picoliter ink droplets ensure the smoothest color gradations, the highest resolution and accuracy.
- Prints show an excellent scratch resistance.
- The Canon imagePROGRAF iPF 6450 series is equipped with an **integrated** measuring device from X-Rite. Together with GMG AutoCali Wizard, printer calibration becomes very easy and fully automated.
- Media information can be downloaded onto the printer via the **imagePROGRAF Media Configuration Tool** provided by Canon. You can also upload **custom** media from the Canon printer to GMG ColorProof. For further information, please refer to the "Media Configuration Tool Guide" from Canon.
- Create job copies by the printer: Canon imagePROGRAF iPFx3x0, iPFx4x0 have an integrated **hard disk**. When creating a manual job with the **Number of Copies** feature (**Manual Job Manager** > **Job** > **Printer Settings** > **Printer**), job copies are created **directly** by the printer hardware. This feature greatly increases your production **speed**.

Note Job copies created by the printer are **identical** copies, with identical label information. The job creation time printed in the label is the point of time when the job was created in GMG ColorProof.

Drying times

The drying time before spectrophotometric measurements is very important for achieving correct measurement results. Different settings are recommended for different types of measurement.

Measurement Type	*Drying Time*
Measuring a control strip	5 min
Recalibrating (GMG CaliWizard)	5 min
Measuring a Full Gamut test chart	5 min
Measuring a Gamut test chart	15 min
Optimizing an MX4 Profile	15 min

See also:

- "Media Synchronization between Printer and Software" on page 121

Printer Drivers for Canon iPF x3x0, 64x0 Printers

If you want to use **custom media** and create your own printer calibrations, you can in some cases also use the printer driver of the printer manufacturer as an **alternative** to GMG Driver. GMG Driver and manufacturer drivers may require different calibration file formats and processing steps. For example, multicolor printers with additional inks may require an MXC calibration file format. MXC calibrations are not supported in GMG ProfileEditor so that you need to create a calibration with the driver of the printer manufacturer instead.

Note DotProof is supported **only** for GMG Driver.

GMG Driver using MXC calibration data

Note Please note that GMG ProfileEditor does **not** support **MXC** calibration files. It is not possible to create **custom** printer calibrations for this combination of printer type and driver.

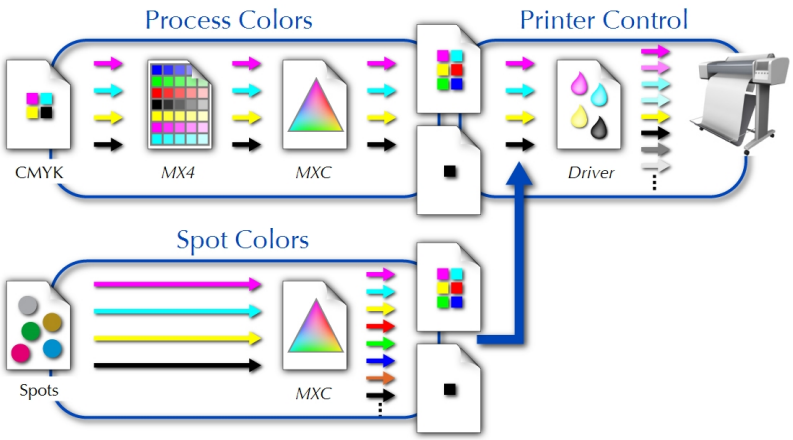


Fig. 48 Color management process using GMG Driver and MXC printer calibration file.

Following the main color management step, an **MXC** printer calibration file is used to reseparate the CMYK color data to the multicolor space of the printer with additional inks such as RGB or OG. To ensure a consistent print quality and repeatability, a printer linearization file is part of this reseparation, adjusting the input-output behavior of the additional non-CMYK inks according to a predefined printer status. Data is optimized for the color space of the printer-medium combination and processed further by the printer driver.

Spot colors are processed **separately** and are merged with the process color channels in the driver. The printer driver then processes all color data and directly controls the printer, defining at which places each nozzle releases ink onto the print medium.

The MXC calibration file also includes the **full gamut** data of the printer. Therefore, no separate full gamut file is provided for this printer calibration type and you cannot view the full gamut in GMG GamutViewer.

Canon Driver using MX3 calibration data (No Key)

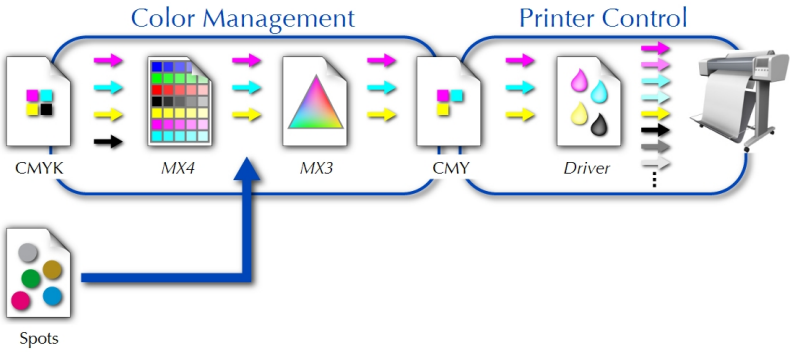


Fig. 49 Color management process using a driver from the printer manufacturer and an MX3 printer calibration file.

As with most high-quality photo printers, the driver supplied by the printer manufacturer is an **RGB** driver. An RGB driver accepts only three input channels (either RGB or "virtual CMY"). Thus the MX4 profile used in the color management step needs to separate the input data from CMYK to **CMY** (**Separation Mode**: **No Key**). The driver then reseparates the three input channels to the output inks of the printer.

The driver and the MX3 printer calibration should **only** be used together with an appropriate MX4 that has been created for this particular printer–medium combination and print mode. Using an MX4 that sends K channel data to the MX3 and finally to the printer may lead to undesired print results.

As with the process colors, it is important that **spot colors** are also reseparated to CMY before entering the processing chain. This reseparation step is done in the spot color profile from the spot color database (db3).

Using Canon Calibration Link Technology with GMG ColorProof

Note It is recommended to use the GMG calibration technology for high quality proofing. As GMG calibration files cannot be shared among multiple printers, they do **not** support the Canon calibration link technology.

Note When using Canon Calibration Link, the printer status in GMG ColorProof will be shown as "not calibrated". All jobs will be paused and remain unprocessed in the printer queue. You will need to start each job manually by selecting the job and clicking the **Print** button. Furthermore, the Load Balancing feature in GMG ColorProof workflows will not be available, as it works only with calibrated printers.

The following describes the interplay of GMG ColorProof and Canon printers which can be calibrated via Canon Calibration Link instead of the GMG calibration technology.

After loading the media information to GMG ColorProof, you need to set up a custom calibration set with Canon print modes as a formal requirement of the software. The calibration set will not be used for calibrating the printer, it is just required for job processing.

The calibration target created with the Canon Media Configuration Tool will be used and recalibrated via the **Color Calibration** functionality which can be started from the printer panel or from within GMG ColorProof. There is no direct calibration file exchange from GMG ColorProof. So you will use the Canon Media Configuration Tool to manage the printer calibration files and load them onto a printer.

Whenever you create a proof job with the print mode specified within the calibration set, the Canon calibration file stored on the printer will be automatically used by GMG ColorProof.

The following checklist provides you with a summary showing all steps required for using the Calibration Link technology with GMG ColorProof. Please follow the referenced topics or documents in the **See also** column for detailed step-by-step instructions.

Checklist

Step	*Short description*	*See also*
Create a calibration file	Create a calibration file with the Canon **Media Configuration Tool** as described in the Canon documentation and load the file onto all printers you want to calibrate using the **Calibration Link** technology.	Canon Calibration Link Setup Guide
Exchange media information	Make sure the Canon **Media Configuration Tool** is installed on the same computer as GMG ColorProof. GMG ColorProof: Set up your printer with an TCP/IP connection to be able to exchange the media information between printer and software.	"Exchanging Media Information between Printer and Software" on page 129
Set up a custom calibration set	GMG ColorProof: Set up a calibration set with a linear MX3 calibration file as **Initial Calibration** (default path:<GMG ColorProof installation path>\Profiles_Linear\linear.mx3). Use this set for all proofing jobs. This calibration set is needed only as a required component of the processing chain in GMG ColorProof, it will not be used for calibrating the printer.	GMG-ColorProof-5_Tutorial_CustomMediaSupport_en.pdf "Adding a Custom Calibration Set" on page 165
Calibrate the printer via **Color Calibration**	GMG ColorProof: Select the printer in the **Output** view and start the **Color Calibration** in the **Maintenance** section. **Color Calibration** prints a test chart, measures it with the integrated densitometer and compares the measured values with the calibration target. The function can also be started manually on the printer panel.	

9.4.2 Canon imagePROGRAF x300S, x400S Speed Series

The Canon imagePROGRAF speed printer series combine quality and efficiency to get print jobs done nearly three times faster than equivalent quality printers.

Note The Canon imagePROGRAF **iPF8310S** , **6410S**, **8410S** printers are only available in China.

Printer features

- The Canon imagePROGRAF iPF6300S, iPF8300S, iPF6400S, and iPF8400S printers come with speed-oriented print modes and print a large color space using Canon LUCIA EX inks.
- The speed series can print 8 colors (8c) in total: Cyan, Light Cyan, Magenta, Light Magenta, Yellow, Gray, Photo Black, Matte Black. Instead of additional colors (such as RGB), these printers have double nozzles for Cyan, Light Cyan, Light Magenta and Gray.
- 4 picoliter ink droplets ensure the smoothest color gradations, the highest resolution and dot accuracy.
- The prints show an excellent scratch resistance.
- Create job copies by the printer: Canon imagePROGRAF iPF6300S, iPF8300S, iPF6400S, and iPF8400S have an integrated **hard disk**. When creating a manual job with the **Number of Copies** feature (**Manual Job Manager** > **Job** > **Printer Settings** > **Printer**), job copies are created **directly** by the printer hardware. This feature greatly increases your production **speed**.

Note Job copies created by the printer are **identical** copies, with identical label information. The job creation time printed in the label is the point of time when the job was created in GMG ColorProof.

- The Canon imagePROGRAF **iPF6400S** can be optionally equipped with an **integrated** measuring device from X-Rite.
- Media information can be downloaded onto the printer via **imagePROGRAF Media Configuration Tool** provided by Canon. For further information, please refer to the "Media Configuration Tool Guide" from Canon.
- 24″ and 44″ models available

Drying times

The drying time before spectrophotometric measurements is very important for achieving correct measurement results. Different settings are recommended for different types of measurement.

Measurement Type	*Drying Time*
Measuring a control strip	5 min
Recalibrating (GMG CaliWizard)	5 min
Measuring a Full Gamut test chart	5 min
Measuring a Gamut test chart	15 min
Optimizing an MX4 Profile	15 min

See also:

- "Media Synchronization between Printer and Software" on page 121

Print Modes for Canon imagePROGRAF x300S, x400S

In GMG ColorProof, print modes are defined in the **Calibration Set** comprising information on how many colors are supported, which ink set will be used, the resolution and printing direction. The Calibration Set is, in turn, determined by your choice of **Printer** and **Print Medium**.

Note All available Calibration Sets are **filtered** according to the printer and the print medium you select.

If you select a **custom print medium**, you might have to create a **custom Calibration Set** (using a fixed print mode). If you need more flexibility, you can also select the required print settings manually for each job (only possible in **Custom** mode).

In the following table, you can find a brief description of the available **Canon imagePROGRAF x300S, x400S** print modes categorized according to their quality level.

Available Print Modes

Quality Level	*Resolution*	*Passes/Inch per Second*	*Description*
Normal Quality	2400 x 1200 dpi	8 p /33 ips (40 ips)	Fastest print modes for good proofing quality. The **iPF 8x00S** prints slightly faster (40 ips) in **Normal Quality** print modes than the **6x00S** (33ips) due to faster carriage speed.
Higher Quality (Fast)	2400 x 1200 dpi	8 p/25 ips	Second-fastest print modes (same speed/quality balance with both printer models).
High Quality	2400 x 1200 dpi	16 p /33 ips	Print modes for high-quality proofing tasks.
Higher Quality	2400 x 1200 dpi	16 p /25 ips	Print modes for extra high quality proofs which also require the comparatively longest printing time.

Comparison of Printer Drivers for Canon iPF x300S, x400S Printers

If you want to use **custom media** and create your own printer calibrations, you can in some cases also use the printer driver of the printer manufacturer as an **alternative** to GMG Driver. GMG Driver and manufacturer drivers may require different calibration file formats and processing steps. For example, multicolor printers with additional inks may require an MXC calibration file format. MXC calibrations are not supported in GMG ProfileEditor so that you need to create a calibration with the driver of the printer manufacturer instead.

Note DotProof is supported **only** for GMG Driver.

GMG Driver using MX3 calibration data

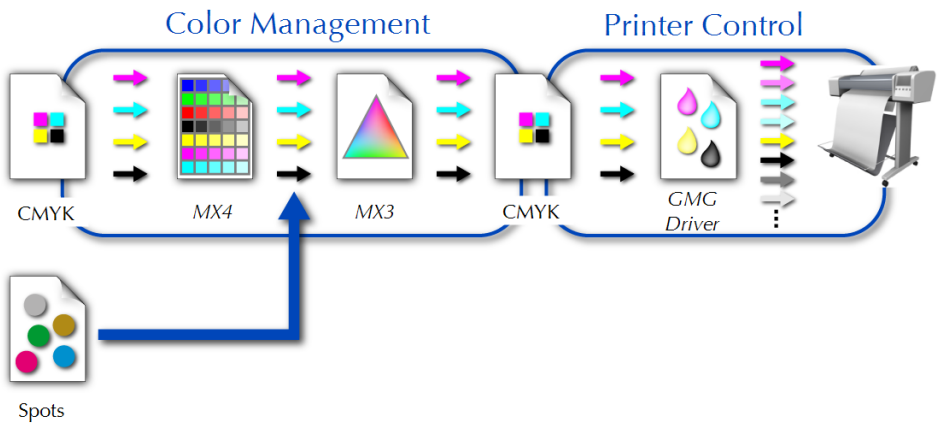


Fig. 50 Color management process using GMG Driver and an MX3 printer calibration file.

Many inkjet printers feature more than four inks, often adding light versions of the usual CMYK such as Light Cyan or Light Magenta. As the hues of both ink versions are very closely matched, the printer uses the lighter versions of Cyan or Magenta when printing lighter colors and progressively moves to the darker (normal) ink when printing midtones and darker areas.

Regarding channel control in profiling, these printers are **CMYK printers**. Therefore, MX4 profiles and gamut file formats based on CMYK channels are used to convert the input CMYK color space to the printer color space. Following the color profile, a three-dimensional **MX3** printer calibration profile is applied to fine-tune the CMY channels. The K channel is linearized separately which allows for smaller test charts.

Spot colors are converted to CMYK by the corresponding spot color profile from the spot color database (db3) and are merged with the process color channels before the color channels enter the MX3 printer calibration file.

Canon Driver using MX3 calibration data (No Key)

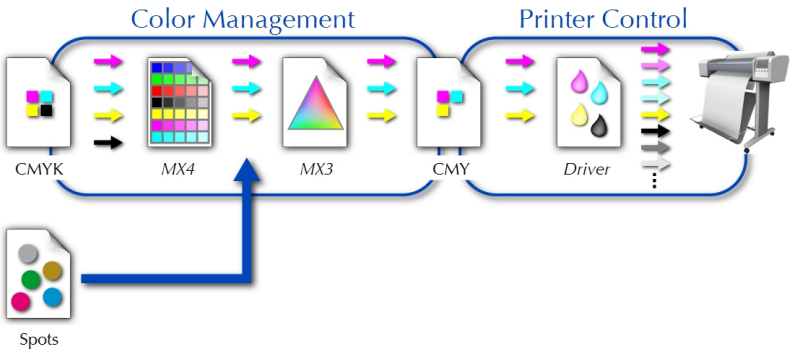


Fig. 51 Color management process using a driver from the printer manufacturer and an MX3 printer calibration file.

As with most high-quality photo printers, the driver supplied by the printer manufacturer is an **RGB** driver. An RGB driver accepts only three input channels (either RGB or "virtual CMY"). Thus the MX4 profile used in the color management step needs to separate the input data from CMYK to **CMY** (**Separation Mode**: **No Key**). The driver then reseparates the three input channels to the output inks of the printer.

The driver and the MX3 printer calibration should **only** be used together with an appropriate MX4 that has been created for this particular printer–medium combination and print mode. Using an MX4 that sends K channel data to the MX3 and finally to the printer may lead to undesired print results.

As with the process colors, it is important that **spot colors** are also reseparated to CMY before entering the processing chain. This reseparation step is done in the spot color profile from the spot color database (db3).

9.4.3 Exchanging Media Information between Printer and Software

Canon imagePROGRAF iPFx3x0, iPFx4x0 printers can establish a **bidirectional** (TCP/IP) connection with GMG ColorProof and exchange media information so that GMG print media can be **downloaded** to the printer and custom media from the printer **uploaded** to GMG ColorProof.

The media information exchange requires the **Media Configuration Tool** provided by Canon. The tool is not included in the GMG ColorProof setup and can be found on the driver CD that comes with the printer or can be downloaded from the Support area of the Canon website: (http://www.canon.com/). For further information, please refer to the Media Configuration Tool Guide or the software help from Canon.

As soon as the TCP/IP connection to the printer is established, the installed **Media Configuration Tool** automatically downloads all GMG print media to the printer. Following that, any custom print media (created with the Media Configuration Tool) are uploaded from the printer to the GMG ColorProof database. You do **not** have to launch the tool for starting the transfer, this will take place fully automatically in the background.

In the **Available Printers** list, select the printer and check the status of the media information on the **info pane** on the right side.
If the transfer was successful, the status **Download onto Printer Successful** is displayed.

Note Before **first use** of a newly added print medium, it is strongly recommended to perform a **print head alignment** and **paper feed adjustment**.

9.5 Epson

9.5.1 Epson Stylus Pro 4900, 7900, 9900

Note If not mentioned otherwise, the Epson Stylus Pro **WT7900** uses the same color management technology and supports the same features as the Epson Stylus Pro **4900, 7900**, **9900** series. For further information, see also "Comparison of Printer Drivers for Epson Stylus Pro x900 Printers" on page 137.

Printer features

- These high-quality printers made by Epson print a very large color space by using Epson UltraChrome HDR Ink with additional **Orange** and **Green** inks. Due to the light gray inks, very **smooth** gradations can be achieved in the **highlights**.
- Depending on the Epson print mode, either Photo Black (PK) or Matte Black (MK) are used. [Pre-installed print modes based on the GMG Driver state the used ink set in the print mode name.]
- GMG Driver print modes for **compatibility** with Epson **x880** series calibrations and profiles: With these **4c** and **8c** print modes, you can use all GMG and custom MX3 printer calibrations and MX4 proof profiles you might have in use for printers of the Epson Stylus Pro x880 series. Available Compatibility Mode print modes are: GMG Driver - Photo Black - **8c** - 720 x 720 dpi, GMG Driver - Matte Black - **4c** - 720 x 720 dpi
- **Epson Driver** print modes for **custom** calibrations and profiles: GMG also supports custom printer calibrations based on Epson Driver print modes. You can use the GMG starter kit to easily create your own printer calibration and proof profile for support of custom print media.
- The Epson Stylus Pro 4900, 7900, 9900 can optionally be equipped with an **integrated** measuring device (embedded SpectroProofer). Together with GMG AutoCali Wizard, printer calibration becomes very easy and fully automated. GMG AutoCali Wizard supports sheet media on Epson Stylus Pro 4900 printers. Due to the small sheet size, the test chart will be divided in two. The two test charts will then be printed and measured one after the other.
- To make the transition between different measurement conditions more convenient, GMG ColorProof has been equipped with an auto-switch for M0, M1, and M2. Reading the measurement condition from the selected calibration set or proof standard, the correct measurement mode is automatically applied.

Printer hardware settings

- For using GMG ProofMedia, select the correct media type, for example GMG ProofPaper semimatte 250, in GMG ColorProof and select **Epson Proofing Paper White Semimatte** in the **printer** panel.
- Preinstalled calibration sets support only **white backing**. Please make sure that you use SpectroProofer with **white** backing plates.

Drying times

For printers with an embedded SpectroProofer, the drying time after printing is very important for achieving correct measurement results. Different settings are recommended for different types of measurement. Drying settings can be changed in the **Change Media** dialog for each printer (> **Media Specific Printer Settings**).

Measurement Type	*Drying Method*	*Drying Time*
Measuring a control strip	Air Drying	5 min
Recalibrating (GMG AutoCali Wizard)	Air Drying	5 min
Measuring a Full Gamut test chart	Air Drying	5 min
Measuring a Gamut test chart	Air Drying	15 min
Optimizing an MX4 Profile	Air Drying	15 min

Printer maintenance

- The nozzle status is checked by embedded sensors without using media. The check is performed fully automatically, without user interaction required.

Comparison of Printer Drivers for Epson Stylus Pro x900 Printers

If you want to use **custom media** and create your own printer calibrations, you can in some cases also use the printer driver of the printer manufacturer as an **alternative** to GMG Driver. GMG Driver and manufacturer drivers may require different calibration file formats and processing steps. For example, multicolor printers with additional inks may require an MXC calibration file format. MXC calibrations are not supported in GMG ProfileEditor so that you need to create a calibration with the driver of the printer manufacturer instead.

Note DotProof is supported **only** for GMG Driver.

GMG Driver using MXC calibration data

Note Please note that GMG ProfileEditor does **not** support **MXC** calibration files. It is not possible to create **custom** printer calibrations for this combination of printer type and driver.

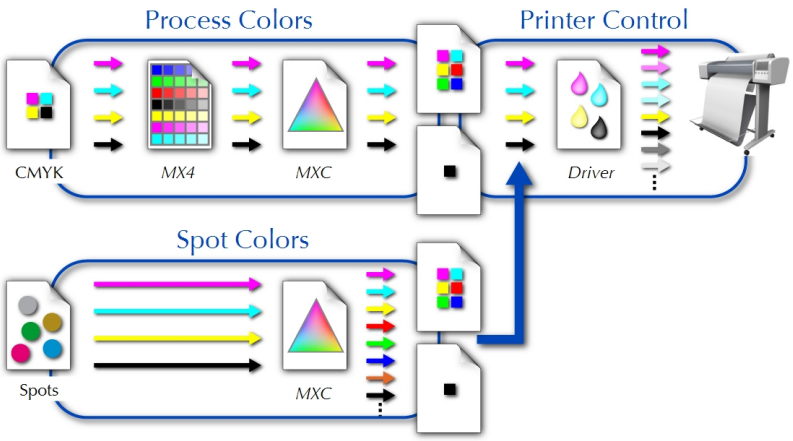


Fig. 52 Color management process using GMG Driver and MXC printer calibration file.

Following the main color management step, an **MXC** printer calibration file is used to reseparate the CMYK color data to the multicolor space of the printer with additional inks such as RGB or OG. To ensure a consistent print quality and repeatability, a printer linearization file is part of this reseparation, adjusting the input-output behavior of the additional non-CMYK inks according to a predefined printer status. Data is optimized for the color space of the printer-medium combination and processed further by the printer driver.

Spot colors are processed **separately** and are merged with the process color channels in the driver. The printer driver then processes all color data and directly controls the printer, defining at which places each nozzle releases ink onto the print medium.

The MXC calibration file also includes the **full gamut** data of the printer. Therefore, no separate full gamut file is provided for this printer calibration type and you cannot view the full gamut in GMG GamutViewer.

Epson Driver using MX4 calibration data

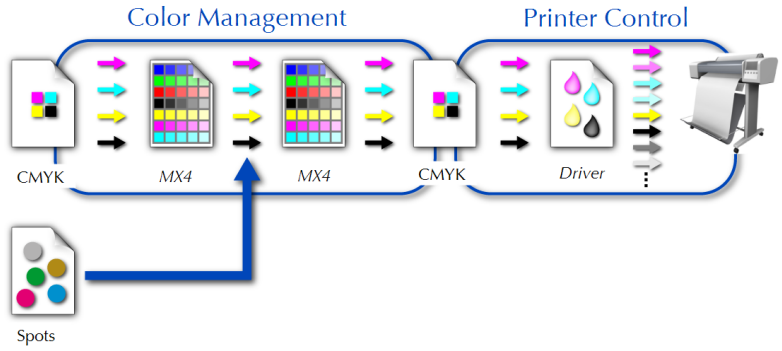


Fig. 53 Color management process using a driver from the printer manufacturer and an MX4 printer calibration file.

To ensure control of the K channel, a four-dimensional **MX4 printer calibration** file needs to be used with the manufacturer driver.

The MX4 printer calibration file adjusts the CMYK data according to a predefined printer status and hands it to the printer driver. The driver then reseparates the CMYK color data to the multicolor space of the printer with additional inks such as RGB or OG.

Spot colors are converted to CMYK by the corresponding spot color profile from the spot color database (db3) and are merged with the process color channels before the color channels enter the MX4 printer calibration file.

Note The MX4 file format offers advanced profile parameters such as **Dot Gain** or **Missing Dots**, which can be used in proof profiles. Profiles with advanced profile parameters **cannot** be used as printer calibrations.

Epson x880 Series Compatibility Mode

When using **Compatibility Mode** print modes for Epson Stylus Pro **4900, 7900**, **9900**, the color management is performed in exactly the same way as for the Epson **x880** printer series.

The following print modes are supported in version 5.0 and later versions:

Print Mode	*ContoneProof*	*DotProof*	*x880 Comp.*
GMG Driver – Photo Black – **10c** – 720 x 1440 dpi	x		
GMG Driver – Matte Black – **10c** – 720 x 1440 dpi	x		
GMG Driver – Photo Black – **8c** – 720 x 720 dpi	x	x	x
GMG Driver – Matte Black – **8c** – 720 x 720 dpi	x	x	x
GMG Driver – Matte Black – **4c** – 720 x 720 dpi	x	x	x
GMG Driver – Photo Black – **4c** – 720 x 720 dpi	x	x	x

Note When printing on **uncoated** media, it is recommended to use **uni-directional** printing.

The **10c** print modes are standard print modes using all 10 inks of the ink set. They support **MXC** printer calibrations and **MX4** proof profiles.

The 4c and 8c print modes feature a **compatibility mode** for printer calibrations and proof profiles for the Epson Stylus Pro **x880** series. With these print modes, you can use **all** preinstalled and custom MX3 printer calibrations and MX4 proof profiles you might have in use for printers of the Epson Stylus Pro x880 series.

Note **Compatibility Mode** print modes do **not** support the wider gamut of the Epson Stylus Pro 4900, 7900, 9900 printers. Negligible color deviations might occur between printers of the Epson Stylus Pro x880 series and 4900, 7900, 9900.

Note **Compatibility Mode** for **DotProof** is to be considered as the best possible match. For optimum color accuracy, it is recommended to use an existing MX5 profile for an Epson Stylus Pro x880 printer as a basis and optimize the profile with 1 or 2 iterations in GMG ProfileEditor.

Note In **DotProof** mode, it is strongly recommended to use **uni-directional** printing.

Roll Tension Adjustment

In most cases, a roll tension adjustment is not required (**Roll Tension** = Standard). A roll tension adjustment is required **only** if you experience problems passing the tolerances of a control strip despite a successful printer calibration. As the roll tension affects the paper feed adjustment, it should always be performed first, followed by a validation of the paper feed adjustment (see "Manual Paper Feed Adjustment" on page 145).

9.5.2 Epson Stylus Pro 7890, 9890

Printer features

- These high-quality printers made by Epson print twice as fast as their predecessors and deliver superior print quality using Epson UltraChrome K3 Ink with Vivid Magenta, a unique formulation of Magenta pigments for extreme blues and purples.
- Epson Stylus Pro 7890, 9890 can print 8 colors (8c) in total: Cyan, Light Cyan, Vivid Magenta, Vivid Light Magenta, Yellow, Light Black, Light Light Black, Photo Black / Matte Black.
- Depending on the Epson print mode, either Photo Black (PK) or Matte Black (MK) are used. [Preinstalled print modes based on the GMG Driver state the used ink set in the print mode name.]
- GMG Driver print modes for **compatibility** with Epson **x880** series calibrations and profiles: With these **4c** and **8c** print modes, you can use all GMG and custom MX3 printer calibrations and MX4 proof profiles you might have in use for printers of the Epson Stylus Pro x880 series. Available Compatibility Mode print modes are: GMG Driver - Photo Black - **8c** - 720 x 720 dpi, GMG Driver - Matte Black - **4c** - 720 x 720 dpi
- **Epson Driver** print modes for **custom** calibrations and profiles: GMG also supports custom printer calibrations based on Epson Driver print modes. You can use the GMG starter kit to easily create your own printer calibration and proof profile for support of custom print media.
- The Epson Stylus Pro 7890, 9890 can optionally be equipped with an **integrated** measuring device (embedded SpectroProofer). Together with GMG AutoCali Wizard, printer calibration becomes very easy and fully automated.
- Control strips can be printed together with the proof and are automatically verified by GMG ProofControl.

Printer hardware settings

- For using GMG ProofMedia, select the correct media type, for example GMG ProofPaper semimatte 250, in GMG ColorProof and select **Epson Proofing Paper White Semimatte** in the **printer** panel.
- Preinstalled calibration sets support only **white backing**. Please make sure that you use SpectroProofer with **white** backing plates.

Printer maintenance

- The nozzle status is checked by a built-in sensor and does not require printing. The check is performed fully automatically, without user intervention required (**Output** > **Maintenance** > **Automatic Nozzle Clean**).

Comparison of Printer Drivers for Epson Stylus Pro x890 Printers

If you want to use **custom media** and create your own printer calibrations, you can in some cases also use the printer driver of the printer manufacturer as an **alternative** to GMG Driver. GMG Driver and manufacturer drivers may require different calibration file formats and processing steps. For example, multicolor printers with additional inks may require an MXC calibration file format. MXC calibrations are not supported in GMG ProfileEditor so that you need to create a calibration with the driver of the printer manufacturer instead.

Note DotProof is supported **only** for GMG Driver.

GMG Driver using MX3 calibration data

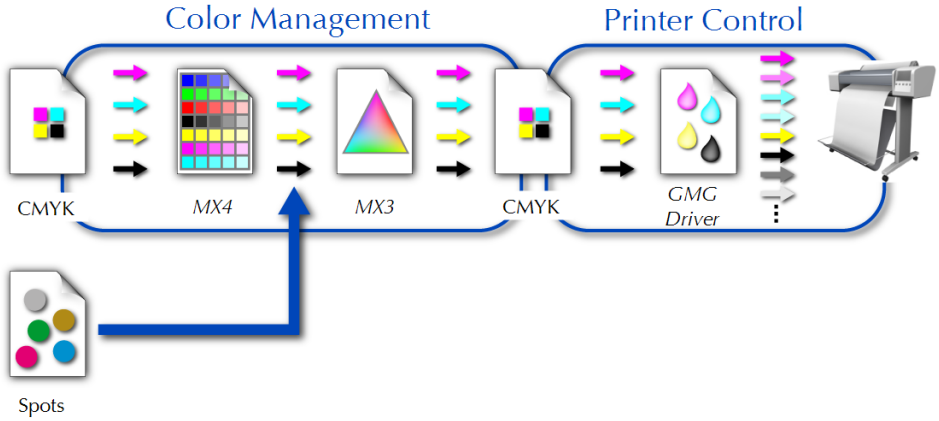


Fig. 54 Color management process using GMG Driver and an MX3 printer calibration file.

Many inkjet printers feature more than four inks, often adding light versions of the usual CMYK such as Light Cyan or Light Magenta. As the hues of both ink versions are very closely matched, the printer uses the lighter versions of Cyan or Magenta when printing lighter colors and progressively moves to the darker (normal) ink when printing midtones and darker areas.

Regarding channel control in profiling, these printers are **CMYK printers**. Therefore, MX4 profiles and gamut file formats based on CMYK channels are used to convert the input CMYK color space to the printer color space. Following the color profile, a three-dimensional **MX3** printer calibration profile is applied to fine-tune the CMY channels. The K channel is linearized separately which allows for smaller test charts.

Spot colors are converted to CMYK by the corresponding spot color profile from the spot color database (db3) and are merged with the process color channels before the color channels enter the MX3 printer calibration file.

Epson Driver using MX4 calibration data

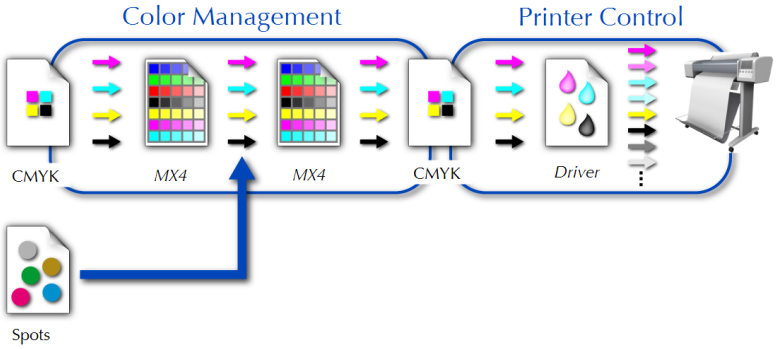


Fig. 55 Color management process using a driver from the printer manufacturer and an MX4 printer calibration file.

To ensure control of the K channel, a four-dimensional **MX4 printer calibration** file needs to be used with the manufacturer driver.

The MX4 printer calibration file adjusts the CMYK data according to a predefined printer status and hands it to the printer driver. The driver then reseparates the CMYK color data to the multicolor space of the printer with additional inks such as RGB or OG.

Spot colors are converted to CMYK by the corresponding spot color profile from the spot color database (db3) and are merged with the process color channels before the color channels enter the MX4 printer calibration file.

Note The MX4 file format offers advanced profile parameters such as **Dot Gain** or **Missing Dots**, which can be used in proof profiles. Profiles with advanced profile parameters **cannot** be used as printer calibrations.

Available Print Modes for Epson Stylus Pro 7890, 9890

GMG ColorProof provides you with several print modes each optimized for a certain quality and throughput.

Note Print modes for GMG Driver should be used for GMG ProofMedia. Print modes for **Epson Driver** should be used for **custom** media.

Print Mode	*Colors*	*Printing Resolution*	*Calibration File Format*	*DotProof*
GMG Driver – 8c – Photo Black – 720 dpi	CcMmYKkk	720x720	MX3	x
GMG Driver – 8c – Matte Black – 720 dpi	CcMmYMBkk	720x720	MX3	x
GMG Driver – 4c – Photo Black – 720 dpi	CMYK	720x720	MX3	x
GMG Driver – 4c – Matte Black – 720 dpi	CMYMB	720x720	MX3	x
Epson Driver – Photo Black – 2880 x 1440 dpi	CcMmYKkk	2880x1440	MX4	
Epson Driver – Matte Black – 2880 x 1440 dpi	CcMmYMBkk	2880x1440	MX4	
Epson Driver – Photo Black – 1440 dpi	CcMmYKkk	1440x1440	MX4	
Epson Driver – Matte Black – 1440 dpi	CcMmYMBkk	1440x1440	MX4	
Epson Driver – Photo Black – 720 x 1440 dpi	CcMmYKkk	720x1440	MX4	
Epson Driver – Matte Black – 720 x 1440 dpi	CcMmYMBkk	720x1440	MX4	
Epson Driver – Photo Black – 720 dpi	CcMmYKkk	720x720	MX4	
Epson Driver – Matte Black – 720 dpi	CcMmYMBkk	720x720	MX4	
Epson Driver – Photo Black – 360 x 720 dpi	CcMmYKkk	360x720	MX4	
Epson Driver – Matte Black – 360 x 720 dpi	CcMmYMBkk	360x720	MX4	

9.5.3 Epson Stylus Pro WT7900

The **Epson Stylus Pro WT7900**, developed by **Seiko Epson Corporation**, has been designed specifically for proofing **flexographic** and **gravure** print jobs that require the color white. The **Epson UltraChrome™ HDR White Ink** is based on a breakthrough clear organic resin technology, which forces light to scatter randomly, producing a very pure white with high density. Furthermore, the white ink has optimum capabilities to mix it with colored inks to produce tinted white tones and pastels.

In comparison to alternative methods, proofing for flexography applications with the Epson Stylus Pro WT7900 is really easy and does not require expert skills.

As the Epson Stylus Pro WT7900 is based on the same technology and inks as **Epson Stylus Pro 7900**, **9900**, the technical capabilities of the white ink printer are comparable with Epson Stylus Pro 7900, 9900.

Note If not mentioned otherwise, the Epson Stylus Pro **WT7900** uses the same color management technology and supports the same features as the Epson Stylus Pro **7900**, **9900** series. For further information, see also "Comparison of Printer Drivers for Epson Stylus Pro x900 Printers" on page 137. Note that printer calibration files and proof profiles for use with the Epson Stylus Pro 7900, 9900 are **not** compatible with Epson Stylus Pro WT7900.

Printer features

- As the Epson Stylus Pro 7900, 9900 series, this high-quality printer made by Epson prints a very large color space by using Epson UltraChrome HDR Ink with additional **Orange** and **Green** inks. Furthermore, this revolutionary inkjet printer can print water-based **White** ink, which is ideal for flexo packaging business applications.
- The Light Gray and Light Light Gray inks used by the Epson Stylus Pro 7900, 9900 are replaced with White ink and cleaning liquid. The printing qualities of both printer series are comparable and are both excellent. Due to the light gray inks, gradations in the highlights might appear a little bit smoother when printing on the Epson Stylus Pro 7900, 9900.
- Epson Stylus Pro WT7900 can print 9 colors (**9c**) in total: Cyan, Light Cyan, Magenta, Light Magenta, Yellow, Photo Black, Orange, Green, White.
- With the Epson Stylus Pro WT7900, it is possible to print images with a **white undercoat**. This is useful, for example, to increase the opacity of images when printing on a transparent foil such as GMG ProofFilm transparent 139 or Epson ClearProof™.
- When printing white undercoat on transparent media, the color space is slightly smaller in the highlights in comparison to printing on GMG ProofMedia, because the luminance of the Epson UltraChrome™ HDR White Ink is slightly lower than the white point of GMG ProofMedia.
- When selecting the print mode **Reverse Print**, the print job is mirrored and the white ink is printed on top of the other inks. This results in the impression that the image is printed "behind" the foil.
- **Epson Driver** print modes for **custom** calibrations and profiles: GMG ColorProof also supports custom printer calibrations based on Epson Driver print modes. You can use the GMG starter kit to easily create your own printer calibration and proof profile for support of custom print media.
- The Epson Stylus Pro WT7900 can optionally be equipped with an **integrated** measuring device (embedded SpectroProofer). Together with GMG AutoCali Wizard, printer calibration becomes very easy and fully automated.
- Control strips can be printed together with the proof and are automatically verified by GMG ProofControl.

Special ink channels

Special inks (white, metallic, and clear inks as supported by the printer) are handled as spot colors in GMG ColorProof (unless you are using an MX profile with white ink information which allows you to map the image white channel to the profile white channel). You can fine-tune the behavior of the spot color channel by adjusting the **Area Coverage** or by using a spot color **gradation** (sfg) file. You can also control the color composition by defining the tonal value and opacity of each ink, for example defining the amount of metallic ink used in a spot color.

See also:

- "Color Channels" on page 20
- GMG-SpotColorEditor_QuickStartGuide_en.pdf

Printer hardware settings

- For using GMG ProofMedia, select the correct media type, for example GMG ProofPaper semimatte 250, in GMG ColorProof and select **Epson Proofing Paper White Semimatte** in the **printer** panel.
- GMG calibration sets support only **white backing**. Please make sure that you use SpectroProofer with **white** backing plates.

Printer maintenance

- The nozzle status is checked by a built-in sensor and does not require printing. The check is performed fully automatically, without user intervention required (**Output** > **Maintenance** > **Automatic Nozzle Clean**).
- Print heads are filled with a **cleaning liquid** when the printer is switched off. This is required to avoid clogging due to the higher viscosity of the white ink.
- The **white ink cartridge** must be shaken **once a week** to prevent sedimentation of the pigments. To ensure a fail-proof production and long print head life, GMG ColorProof will automatically remind you to agitate the white ink cartridge in regular intervals: A warning sign will be shown in the info pane in the **Output** view seven days after setting up the printer in GMG ColorProof. You can click on the warning sign to bring up a message box telling you to shake the white ink cartridge. By clicking OK, you confirm that you have manually shaken the cartridge.

Comparison of Printer Drivers for Epson Stylus Pro x900 Printers

If you want to use **custom media** and create your own printer calibrations, you can in some cases also use the printer driver of the printer manufacturer as an **alternative** to GMG Driver. GMG Driver and manufacturer drivers may require different calibration file formats and processing steps. For example, multicolor printers with additional inks may require an MXC calibration file format. MXC calibrations are not supported in GMG ProfileEditor so that you need to create a calibration with the driver of the printer manufacturer instead.

Note DotProof is supported **only** for GMG Driver.

GMG Driver using MXC calibration data

Note Please note that GMG ProfileEditor does **not** support **MXC** calibration files. It is not possible to create **custom** printer calibrations for this combination of printer type and driver.

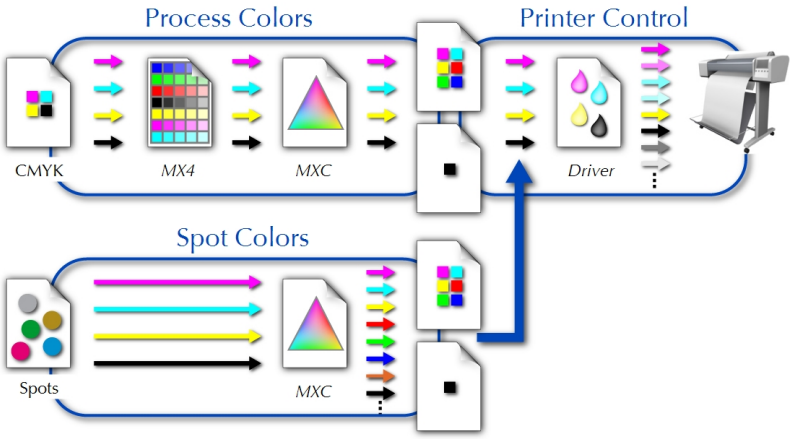


Fig. 56 Color management process using GMG Driver and MXC printer calibration file.

Following the main color management step, an **MXC** printer calibration file is used to reseparate the CMYK color data to the multicolor space of the printer with additional inks such as RGB or OG. To ensure a consistent print quality and repeatability, a printer linearization file is part of this reseparation, adjusting the input-output behavior of the additional non-CMYK inks according to a predefined printer status. Data is optimized for the color space of the printer-medium combination and processed further by the printer driver.

Spot colors are processed **separately** and are merged with the process color channels in the driver. The printer driver then processes all color data and directly controls the printer, defining at which places each nozzle releases ink onto the print medium.

The MXC calibration file also includes the **full gamut** data of the printer. Therefore, no separate full gamut file is provided for this printer calibration type and you cannot view the full gamut in GMG GamutViewer.

Epson Driver using MX4 calibration data

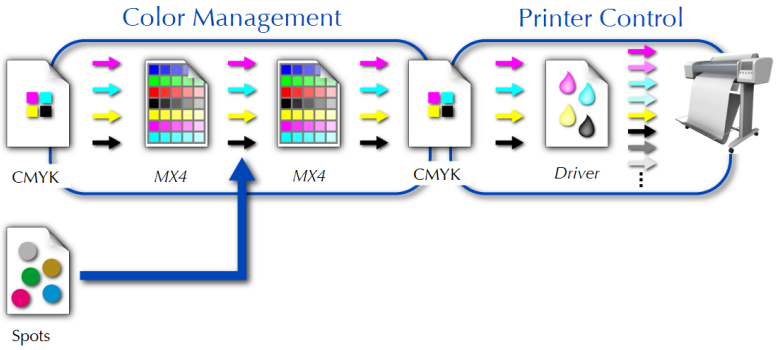


Fig. 57 Color management process using a driver from the printer manufacturer and an MX4 printer calibration file.

To ensure control of the K channel, a four-dimensional **MX4 printer calibration** file needs to be used with the manufacturer driver.

The MX4 printer calibration file adjusts the CMYK data according to a predefined printer status and hands it to the printer driver. The driver then reseparates the CMYK color data to the multicolor space of the printer with additional inks such as RGB or OG.

Spot colors are converted to CMYK by the corresponding spot color profile from the spot color database (db3) and are merged with the process color channels before the color channels enter the MX4 printer calibration file.

Note The MX4 file format offers advanced profile parameters such as **Dot Gain** or **Missing Dots**, which can be used in proof profiles. Profiles with advanced profile parameters **cannot** be used as printer calibrations.

Epson Stylus Pro WT7900 Print Modes

With the print mode **Reverse Print**, you can mirror the print job reversing the order of the print sequence of all color channels. This results in the impression that the image is printed "behind" the foil. This behavior depends on the **print mode** used, which is defined in the **calibration set**. Colors appear highly **vivid** and **clear**. The gamut is **larger**. The print is highly **resistant** to scratches.

In the **Manual Job Manager**, the calibration set is selected under **Job** > **Printer Settings** > **Printer** > **Calibration Set**.

In the **Workflow** dialog box, the calibration set is selected under **Print Settings** > **Printer** > **Calibration Set**.

9.5.4 Epson SC-P6000, 8000 and SC-P5000, 7000, 9000 Printers

Printer features

- These high-quality printers made by Epson print a very large color space by using next generation Epson Ultrachrome inks with new chemical composition for higher durability and improved black density.
- The Epson SC-6000, 8000 and SC-P5000, 7000, 9000 models are the direct successors of the Epson Stylus Pro x890 and x900 series. GMG ColorProof supports the Epson SC-P5000, 7000, 9000 with violet and LLK ink setup. Due to the new ink configuration, profiles and spot color sets created for Stylus Pro x900 printers need to be **converted** for use on SC-P printers.
- The printers can optionally be equipped with an integrated measuring device (ILS 30, no support for ILS 20). The mounter and measurement unit of the Spectroproofer ILS 30 is interchangeable between old and new printer series.
- To make the transition between different measurement conditions more convenient, GMG ColorProof has been equipped with an auto-switch for M0, M1, and M2. Reading the measurement condition from the selected calibration set or proof standard, the correct measurement mode is automatically applied.
- To create printer calibrations and proof profiles for 3rd party media, you can download Starter Kits from our website (**Support** > **Download Area**).

Recommended drying times

For printers with an embedded SpectroProofer, the drying time after printing is very important for achieving correct measurement results. Different settings are recommended for different types of measurement. Drying settings can be changed in the **Change Media** dialog for each printer (> **Media Specific Printer Settings**).

Measurement Type	*Drying Method*	*Drying Time*
Measuring a control strip	Air Drying	5 min
Recalibrating (GMG AutoCali Wizard)	Air Drying	5 min
Measuring a Full Gamut test chart	Air Drying	5 min
Measuring a Gamut test chart	Air Drying	15 min
Optimizing an MX4 Profile	Air Drying	15 min

Printer maintenance

- The nozzle status is checked by embedded sensors without using media. The check is performed fully automatically, without user interaction required.

Comparison of Printer Drivers for Epson SC-P5000,7000,9000 Printers

If you want to use **custom media** and create your own printer calibrations, you can in some cases also use the printer driver of the printer manufacturer as an **alternative** to GMG Driver. GMG Driver and manufacturer drivers may require different calibration file formats and processing steps. For example, multicolor printers with additional inks may require an MXC calibration file format. MXC calibrations are not supported in GMG ProfileEditor so that you need to create a calibration with the driver of the printer manufacturer instead.

Note DotProof is supported **only** for GMG Driver.

GMG Driver using MXC calibration data

Note Please note that GMG ProfileEditor does **not** support **MXC** calibration files. It is not possible to create **custom** printer calibrations for this combination of printer type and driver.

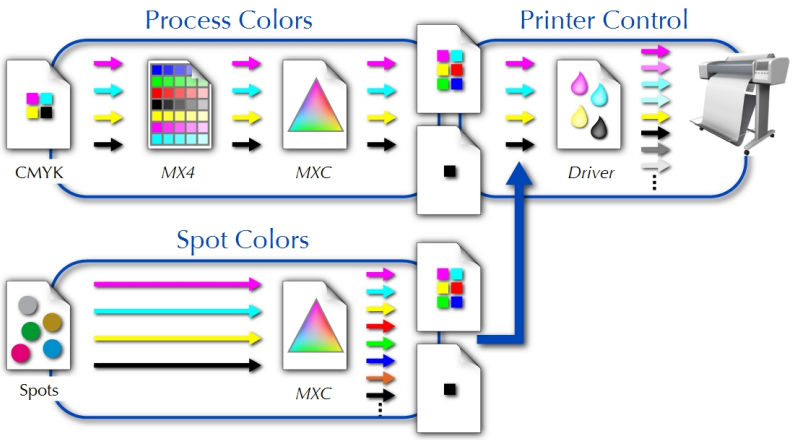


Fig. 58 Color management process using GMG Driver and MXC printer calibration file.

Following the main color management step, an **MXC** printer calibration file is used to reseparate the CMYK color data to the multicolor space of the printer with additional inks such as RGB or OG. To ensure a consistent print quality and repeatability, a printer linearization file is part of this reseparation, adjusting the input-output behavior of the additional non-CMYK inks according to a predefined printer status. Data is optimized for the color space of the printer-medium combination and processed further by the printer driver.

Spot colors are processed **separately** and are merged with the process color channels in the driver. The printer driver then processes all color data and directly controls the printer, defining at which places each nozzle releases ink onto the print medium.

The MXC calibration file also includes the **full gamut** data of the printer. Therefore, no separate full gamut file is provided for this printer calibration type and you cannot view the full gamut in GMG GamutViewer.

Epson Driver using MX4 calibration data

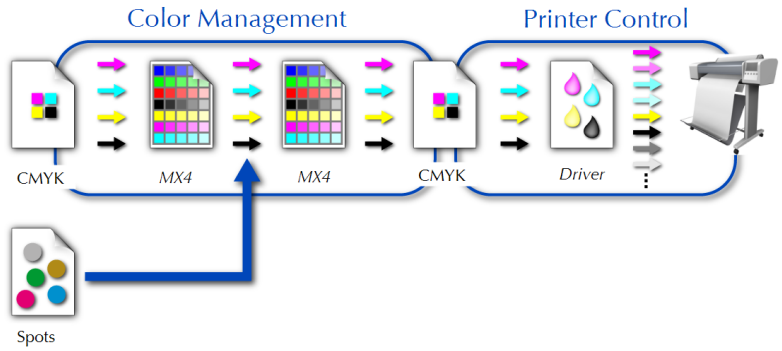


Fig. 59 Color management process using a driver from the printer manufacturer and an MX4 printer calibration file.

To ensure control of the K channel, a four-dimensional **MX4 printer calibration** file needs to be used with the manufacturer driver.

The MX4 printer calibration file adjusts the CMYK data according to a predefined printer status and hands it to the printer driver. The driver then reseparates the CMYK color data to the multicolor space of the printer with additional inks such as RGB or OG.

Spot colors are converted to CMYK by the corresponding spot color profile from the spot color database (db3) and are merged with the process color channels before the color channels enter the MX4 printer calibration file.

Note The MX4 file format offers advanced profile parameters such as **Dot Gain** or **Missing Dots**, which can be used in proof profiles. Profiles with advanced profile parameters **cannot** be used as printer calibrations.

Comparison of Printer Drivers for Epson SC-P 6000,8000 Printers

If you want to use **custom media** and create your own printer calibrations, you can in some cases also use the printer driver of the printer manufacturer as an **alternative** to GMG Driver. GMG Driver and manufacturer drivers may require different calibration file formats and processing steps. For example, multicolor printers with additional inks may require an MXC calibration file format. MXC calibrations are not supported in GMG ProfileEditor so that you need to create a calibration with the driver of the printer manufacturer instead.

Note DotProof is supported **only** for GMG Driver.

GMG Driver using MX3 calibration data

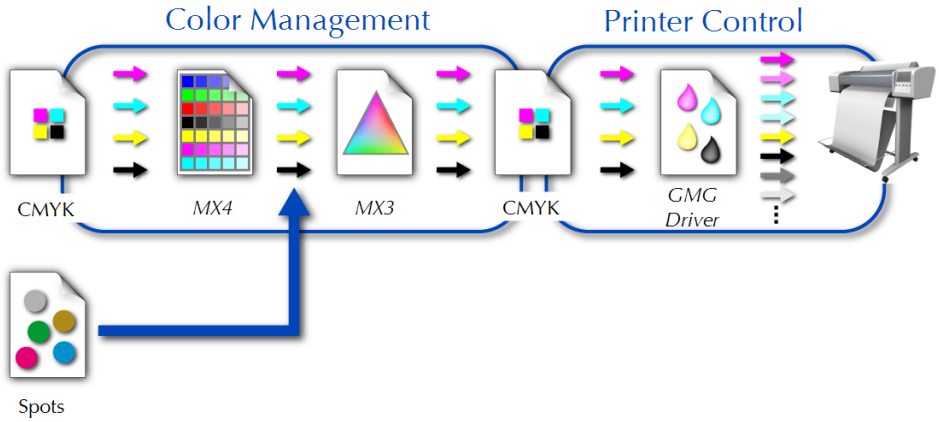


Fig. 60 Color management process using GMG Driver and an MX3 printer calibration file.

Many inkjet printers feature more than four inks, often adding light versions of the usual CMYK such as Light Cyan or Light Magenta. As the hues of both ink versions are very closely matched, the printer uses the lighter versions of Cyan or Magenta when printing lighter colors and progressively moves to the darker (normal) ink when printing midtones and darker areas.

Regarding channel control in profiling, these printers are **CMYK printers**. Therefore, MX4 profiles and gamut file formats based on CMYK channels are used to convert the input CMYK color space to the printer color space. Following the color profile, a three-dimensional **MX3** printer calibration profile is applied to fine-tune the CMY channels. The K channel is linearized separately which allows for smaller test charts.

Spot colors are converted to CMYK by the corresponding spot color profile from the spot color database (db3) and are merged with the process color channels before the color channels enter the MX3 printer calibration file.

Epson Driver using MX4 calibration data

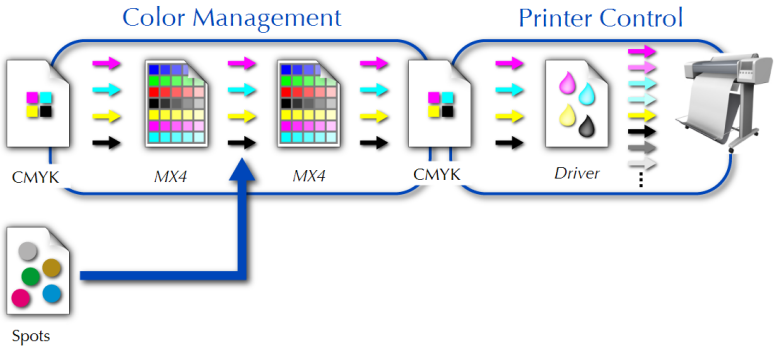


Fig. 61 Color management process using a driver from the printer manufacturer and an MX4 printer calibration file.

To ensure control of the K channel, a four-dimensional **MX4 printer calibration** file needs to be used with the manufacturer driver.

The MX4 printer calibration file adjusts the CMYK data according to a predefined printer status and hands it to the printer driver. The driver then reseparates the CMYK color data to the multicolor space of the printer with additional inks such as RGB or OG.

Spot colors are converted to CMYK by the corresponding spot color profile from the spot color database (db3) and are merged with the process color channels before the color channels enter the MX4 printer calibration file.

Note The MX4 file format offers advanced profile parameters such as **Dot Gain** or **Missing Dots**, which can be used in proof profiles. Profiles with advanced profile parameters **cannot** be used as printer calibrations.

Connecting Your Epson SC-P Printer via SNMP

GMG ColorProof supports the latest version of Simple Network Management Protocol (SNMP) version 3 to connect your printer. This version offers enhanced data security. Authentication is used to ensure that only authenticated applications can connect to the printer. The SNMP data will be encrypted so that it cannot be read by unauthorized users. This ensures the security of your data and the data of your clients, especially if a printer is connected via the internet.

If the connection settings of your hardware printer have been set to SNMPv3, all applications connecting to your printer such as GMG ColorProof will need to provide the correct authentication, i. e. user name and password stored on the printer to be able to connect. Otherwise, the printer will refuse the connection.

For more information how to enable SNMPv3 on your printer, please refer to the documentation of the printer manufacturer.

Note If you cannot establish a printer connection, check if SNMPv3 has been enabled on the hardware printer and if so, check the authentication settings in GMG ColorProof.

How to enter the authentication

1. On the **Output** tabbed page, under **Printers**, click the **Configure Printer** button next to your Epson SC-P printer.
2. On the **General Settings** tabbed page, expand the **Connection** group and fill in the **User Name**, **Authentication**, and **Encryption** settings matching the settings of your hardware printer.
3. Confirm with **OK**.

GMG ColorProof will establish a connection to the printer.

Roll Tension Adjustment

In most cases, a roll tension adjustment is not required (**Roll Tension** = Standard). A roll tension adjustment is required **only** if you experience problems passing the tolerances of a control strip despite a successful printer calibration. As the roll tension affects the paper feed adjustment, it should always be performed first, followed by a validation of the paper feed adjustment (see "Manual Paper Feed Adjustment" on page 145).

9.5.5 Epson SC-P10000, 20000

Printer features

- The Epson SC-P10000, 20000 models are the successors of the Epson Stylus Pro 11880. These 44"/64" printers are primarily designed for photo printing and proofing.
- The high-quality models print a very large color space by using next generation Epson Ultrachrome inks with high-density Photo and Matte Black inks.
- The printers run on **Epson Driver** print modes for which GMG also supports custom printer calibrations.
- GMG ColorProof provides an MX4 calibration set for GMG ProofMedia premium semiMatte 250.
- Available proof standards are Adobe RGB, sRGB, ECIRGBv2 and ISO Coated v2 (39L).
- Only **ContoneProof** mode is supported.

Recommended drying times

For printers with an embedded SpectroProofer, the drying time after printing is very important for achieving correct measurement results. Different settings are recommended for different types of measurement. Drying settings can be changed in the **Change Media** dialog for each printer (> **Media Specific Printer Settings**).

Measurement Type	*Drying Method*	*Drying Time*
Measuring a control strip	Air Drying	5 min
Recalibrating (GMG AutoCali Wizard)	Air Drying	5 min
Measuring a Full Gamut test chart	Air Drying	5 min
Measuring a Gamut test chart	Air Drying	15 min
Optimizing an MX4 Profile	Air Drying	15 min

Printer maintenance

- The nozzle status is checked by embedded sensors without using media. The check is performed fully automatically, without user interaction required.

9.5.6 Paper Feed Adjustment

A paper feed adjustment helps with inaccurate feeding of certain media types. It is mandatory to perform a paper feed adjustment when **setting up** a new printer and for **each** new media type you want to use.

If you experience problems to calibrate a printer or to pass the tolerances of a control strip despite a successful printer calibration, we also recommend to check the paper feed.

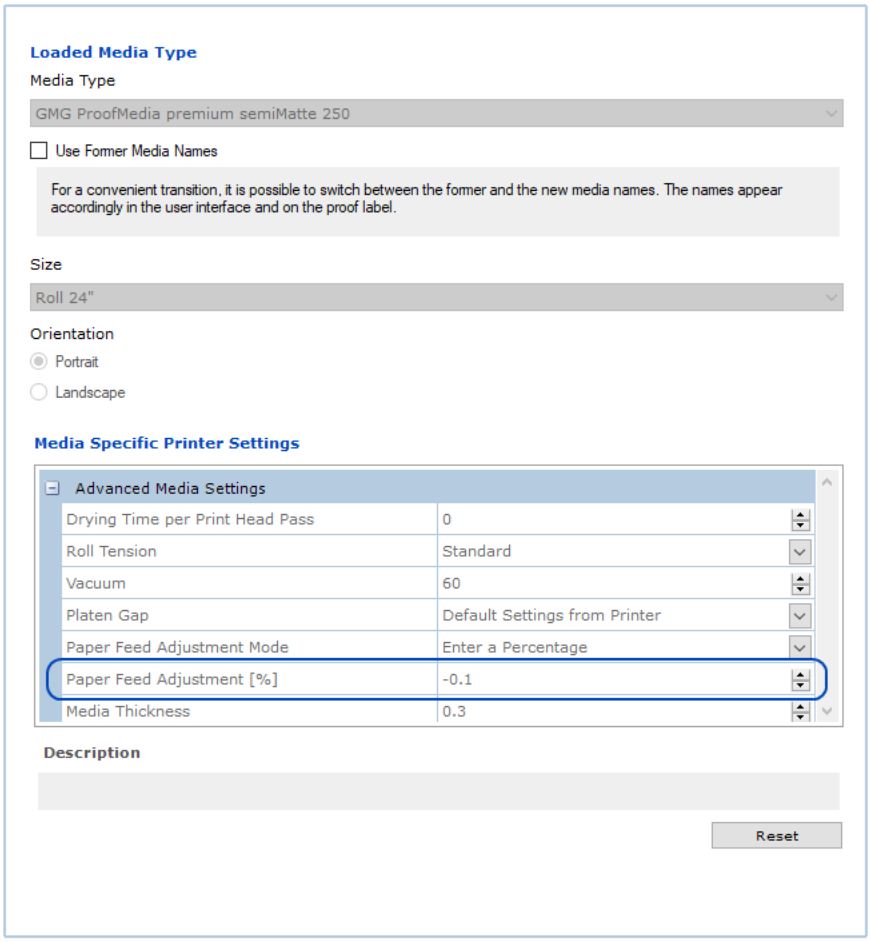


Fig. 62 Paper Feed Adjustment value (Change Media dialog box).

Please use the **Automatic Paper Feed Adjustment** if your printer can be used with this feature. You can find a list of supported printers and further information under the following link: "Automated Paper Feed Adjustment" on page 144

If your printer is not one of the supported models, please perform a **manual** paper feed adjustment. You can find further information under the following link: "Manual Paper Feed Adjustment" on page 145

Automated Paper Feed Adjustment

The automatic paper feed adjustment can only be used with GMG media and is available for the following printers:

- Epson Stylus Pro 4900
- Epson Stylus Pro 7900
- Epson Stylus Pro 9900
- Epson SureColor SC-P5000
- Epson SureColor SC-P7000
- Epson SureColor SC-P9000

For the automatic measurement, you need an Epson SpectroProofer with the internal measurement unit ILS30.

During the automated paper feed adjustment, a small test pattern is printed and measured a few times by the integrated measuring device. The paper feed is adjusted accordingly in GMG ColorProof. This feature helps to ensure a fail-safe calibration process and an optimal print quality. It is highly recommended to perform this procedure if you experience any print quality or calibration issues.

How to start a automated paper feed adjustment

You just need to start the procedure. The **GMG Paper Feed Adjustment** wizard will perform the adjustment automatically in iteration cycles until an optimal value is found.

1. Click the **Output** button on the navigation panel on the left of the main window.
2. Under **Printers** > **Available Printers**, click the **Start Paper Feed Adjustment** button on the right side of the printer name.
   The **GMG Paper Feed Adjustment** wizard is started. The **GMG Paper Feed Adjustment Strip V1** will be printed and measured automatically until an optimal value is found. This value will be saved as the **Paper Feed Adjustment** value under **Media Specific Printer Settings**. The wizard will close automatically.
3. To see the result, you can click the **Change Media** button on the right side of the printer name.

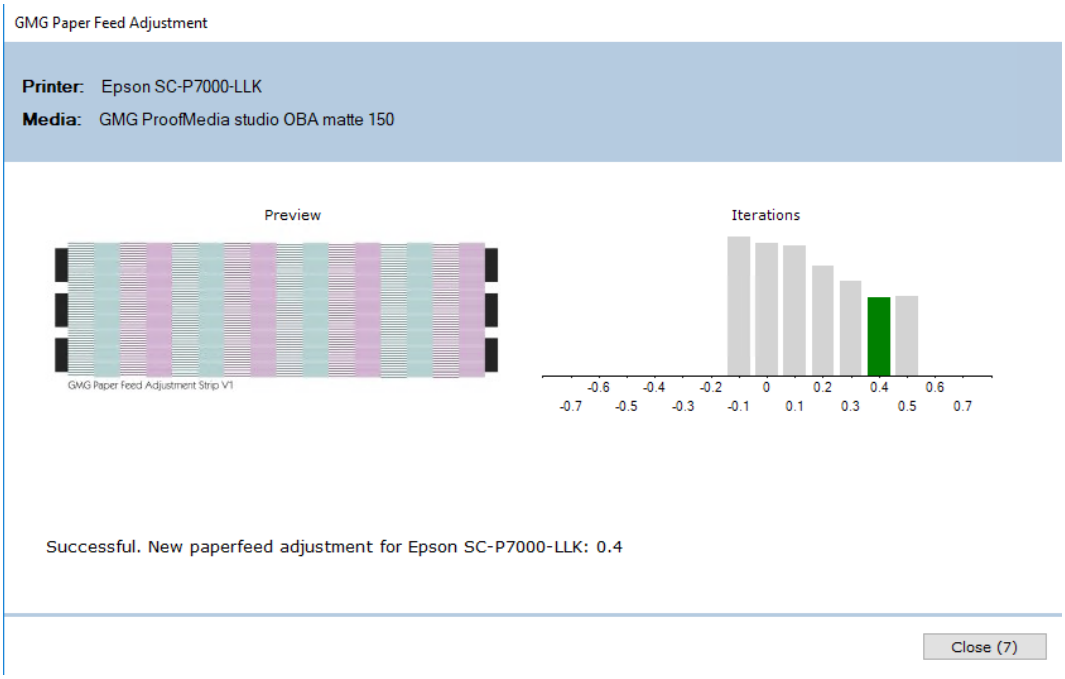


Fig. 63 GMG Paper Feed Adjustment.

In the screenshot, you see the result of the completed process. The wizard has run seven iteration cycles shown in the graph on the right side. The lower the column in the graph, the better is the adjustment. The paper feed behavior adjustment with each cycle until 0.4. 0.5 was not as good as 0.4, so the value will be set to 0.4.

Manual Paper Feed Adjustment

Please only perform a manual paper feed adjustment if your printer **cannot** be used with the **Automated Paper Feed Adjustment** feature. The automated paper feed adjustment is easier to perform and ensures optimal adjustment. You can find a list of supported printers and further information under "Automated Paper Feed Adjustment" on page 144.

To perform a manual paper feed adjustment, please proceed as follows.

1. Print and measure the linked test image with a ruler.
   If the **Paper Feed Adjustment** is adjusted correctly, the result should be exactly 280.00 mm.
2. Adjust the **Paper Feed Adjustment** value as described in the test image.

9.6 HP

9.6.1 HP Designjet Z3200 Photo

Proofing to industry standards is extremely simple with the HP Designjet Z3200 due to the integrated measuring device tightly meshing with the automatic calibration, monitoring and recalibration functionality in GMG ColorProof.

Printer features

- This high-quality printer prints a very large color space by adding additional **Red**, **Green**, and **Blue** inks.
- HP Designjet Z3200 Photo printers can print 10 colors (10c) in total: Light Cyan, Magenta, Light Magenta, Yellow, Light Gray, Gray, Photo Black / Matte Black, Red, Green, Blue, (Gloss Enhancer). Depending on the selected media type, either Photo Black (PK) or Matte Black (MK) is used. Some print modes also use Gloss Enhancer (E). [Preinstalled print modes based on the GMG Driver state the used ink set in the print mode name.]
- The **integrated** measuring device allows for convenient and fully automated working procedures, ensuring that each proof turns out 100% color-accurate.
- Control strips can be printed together with the proof and are automatically verified by GMG ProofControl.

Available Color Management Sets

GMG ColorProof supports the profiles of all common industry standards such as ISO, GRAcOL, SWOP, 3DAP and offers color management sets for various HP, GMG and other print media.

If you want to use a different print medium, you first need to add the print medium in the **Database** view (**Database** > **Media**). You can then proceed to the next step and create a calibration set and a proof standard for the new printer-medium combination.

All these steps are explained step for step in our printer-specific **Starter Kits** which are available in the **Support Area** of our website.

Note Custom media should be thoroughly tested before use to ensure optimum quality.

See also:

- GMG-ColorProof-5_Tutorial_StarterKit_HPZ3200_HP-Driver_en.pdf

Drying times

The drying time before spectrophotometric measurements is very important for achieving correct measurement results. Different settings are recommended for different types of measurement.

Measurement Type	*Drying Time*
Measuring a control strip	5 min
Recalibrating (GMG AutoCali Wizard)	5 min
Measuring a Full Gamut test chart	15 min
Measuring a Gamut test chart	15 min
Optimizing an MX4 Profile	5 min

Comparison of Printer Drivers for HP Designjet Z3200 Photo Printers

If you want to use **custom media** and create your own printer calibrations, you can in some cases also use the printer driver of the printer manufacturer as an **alternative** to GMG Driver. GMG Driver and manufacturer drivers may require different calibration file formats and processing steps. For example, multicolor printers with additional inks may require an MXC calibration file format. MXC calibrations are not supported in GMG ProfileEditor so that you need to create a calibration with the driver of the printer manufacturer instead.

Note DotProof is supported **only** for GMG Driver.

GMG Driver using MXC calibration data

Note Please note that GMG ProfileEditor does **not** support **MXC** calibration files. It is not possible to create **custom** printer calibrations for this combination of printer type and driver.

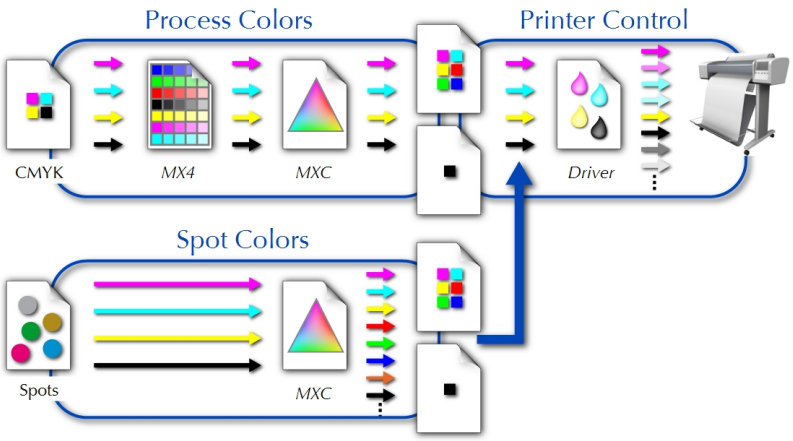


Fig. 64 Color management process using GMG Driver and MXC printer calibration file.

Following the main color management step, an **MXC** printer calibration file is used to reseparate the CMYK color data to the multicolor space of the printer with additional inks such as RGB or OG. To ensure a consistent print quality and repeatability, a printer linearization file is part of this reseparation, adjusting the input-output behavior of the additional non-CMYK inks according to a predefined printer status. Data is optimized for the color space of the printer-medium combination and processed further by the printer driver.

Spot colors are processed **separately** and are merged with the process color channels in the driver. The printer driver then processes all color data and directly controls the printer, defining at which places each nozzle releases ink onto the print medium.

The MXC calibration file also includes the **full gamut** data of the printer. Therefore, no separate full gamut file is provided for this printer calibration type and you cannot view the full gamut in GMG GamutViewer.

HP Driver using MX3 calibration data in No Key Mode

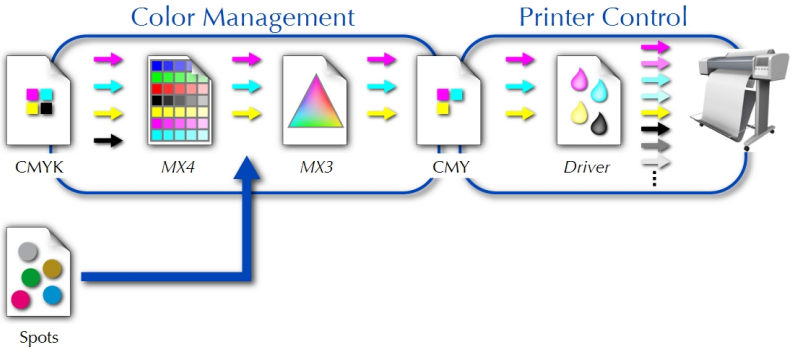


Fig. 65 Color management process using a driver from the printer manufacturer and an MX3 printer calibration file.

As with most high-quality photo printers, the driver supplied by the printer manufacturer is an **RGB** driver. An RGB driver accepts only three input channels (either RGB or "virtual CMY"). Thus the MX4 profile used in the color management step needs to separate the input data from CMYK to **CMY** (**Separation Mode**: **No Key**). The driver then reseparates the three input channels to the output inks of the printer.

The driver and the MX3 printer calibration should **only** be used together with an appropriate MX4 that has been created for this particular printer–medium combination and print mode. Using an MX4 that sends K channel data to the MX3 and finally to the printer may lead to undesired print results.

As with the process colors, it is important that **spot colors** are also reseparated to CMY before entering the processing chain. This reseparation step is done in the spot color profile from the spot color database (db3).

9.6.2 HP Designjet Z5200 PostScript Printer

The HP Designjet Z5200 is a very easy-to-use large format printer which has been designed for small copy shops and burgeoning print providers who are interested in bringing large format printing into their business.

Printing to industry standards is extremely simple with the HP Designjet Z5200 due to the integrated measuring device tightly meshing with the automatic calibration, monitoring and recalibration functionality in GMG ColorProof.

Printer features

- The HP Designjet Z5200 can print 8 colors (8c) in total: Cyan, Magenta, Yellow, Light Cyan, Light Magenta, Light Gray, Photo Black / Matte Black. Depending on the selected media type, either Photo Black (PK) or Matte Black (MK) is used.
- The **integrated** measuring device allows for convenient and fully automated working procedures, ensuring that each proof turns out 100% color-accurate.
- Control strips can be printed together with the proof and are automatically verified by GMG ProofControl.

Available Color Management Sets

GMG ColorProof supports the profiles of all common industry standards such as ISO, GRAcOL, SWOP, 3DAP and offers color management sets for various HP, GMG and other print media.

If you want to use a different print medium, you first need to add the print medium in the **Database** view (**Database** > **Media**). You can then proceed to the next step and create a calibration set and a proof standard for the new printer-medium combination.

All these steps are explained step for step in our printer-specific **Starter Kits** which are available in the **Support Area** of our website.

Note Custom media should be thoroughly tested before use to ensure optimum quality.

See also:

- GMG-ColorProof-5_Tutorial_StarterKit_HPZ5200_en.pdf

Drying times

The drying time before spectrophotometric measurements is very important for achieving correct measurement results. Different settings are recommended for different types of measurement.

Measurement Type	*Drying Time*
Measuring a control strip	5 min
Recalibrating (GMG AutoCali Wizard)	5 min
Measuring a Full Gamut test chart	15 min

Measurement Type	*Drying Time*
Measuring a Gamut test chart	15 min
Optimizing an MX4 Profile	5 min

9.6.3 HP Designjet Z6200 Photo

The HP Designjet Z6200 photo printer has been especially designed for photo print shops, design companies, advertising agencies and commercial printing, delivering high-quality photo prints with an exceptional grayscale and color accuracy.

Proofing to industry standards is extremely simple with the HP Designjet Z6200 due to the integrated measuring device tightly meshing with the automatic calibration, monitoring and recalibration functionality in GMG ColorProof.

Printer features

- This high-quality printer prints a very wide color space by adding chromatic red and two black tones for smooth shading transitions.
- HP Designjet Z6200 Photo printer can print 8 colors (8c) in total: Light Cyan, Magenta, Light Magenta, Yellow, Light Gray, Photo Black / Matte Black and Chromatic Red. Depending on the selected media type, either Photo Black (PK) or Matte Black (MK) is used.
- The **integrated** measuring device allows for convenient and fully automated working procedures, ensuring that each proof turns out 100% color-accurate.
- Control strips can be printed together with the proof and are automatically verified by GMG ProofControl.

Available Color Management Sets

GMG ColorProof supports the profiles of all common industry standards such as ISO, GRAcOL, SWOP, 3DAP and offers color management sets for various HP, GMG and other print media.

If you want to use a different print medium, you first need to add the print medium in the **Database** view (**Database** > **Media**). You can then proceed to the next step and create a calibration set and a proof standard for the new printer-medium combination.

All these steps are explained step for step in our printer-specific **Starter Kits** which are available in the **Support Area** of our website.

Note Custom media should be thoroughly tested before use to ensure optimum quality.

See also:

- GMG-ColorProof-5_Tutorial_StarterKit_HPZ6200_HP-Driver_en.pdf

Drying times

The drying time before spectrophotometric measurements is very important for achieving correct measurement results. Different settings are recommended for different types of measurement.

Measurement Type	*Drying Time*
Measuring a control strip	5 min
Recalibrating (GMG AutoCali Wizard)	5 min
Measuring a Full Gamut test chart	15 min
Measuring a Gamut test chart	15 min
Optimizing an MX4 Profile	5 min

9.7 Roland

9.7.1 Roland VersaUV LEC 330/540, LEJ 640

GMG's key concepts—standardization and repeatability—and the versatility of the Roland printer allow for highly individual digital **mockups**. While the color management in GMG ColorProof ensures accurate process and spot color reproduction, the printer is kept in tight tolerances by the calibration and recalibration capabilities of the software.

Printer features

- The **VersaUV LEC series** developed by **Roland**, features powerful print and cut UV inkjets designed for high quality package **prototyping** and short-run production with the ability to print on a vast range of media.
- With the **VersaUV LEJ-640** Roland introduces a UV inkjet flatbed with the ability to print on **both** roll media and rigid substrates up to 13mm (0.51″) thick and a media width up to 64″.
- Printing **CMYK**, Opaque **White** and **Clear** inks in both gloss and matte, at resolutions up to 1440 dpi with six high-precision print heads, the **VersaUV** allows for unmatched versatility and remarkably rich special effects ranging from high gloss finishes to custom-textured three-dimensional effects—you can choose any combination of matte and gloss and layer them for interesting patterns - even Braille.
- Featuring the new environmentally friendly **Roland ECO-UV inks**, the **VersaUV** produces brilliant graphics that can be flexed and stretched across both curved surfaces and sharp edges without feathering or cracking.
- **Roland Intelligent Pass Control** technology enables smooth gradations and flawless solid colors.
- Safe, **low heat UV LED lamps** allow printing on heat-sensitive and pressure sensitive media such as shrink foils without any risk of damage. The LED curing technology can be turned on and off instantly for on-demand operation, requiring no warm up time.

Special ink channels

Special inks (white, metallic, and clear inks as supported by the printer) are handled as spot colors in GMG ColorProof (unless you are using an MX profile with white ink information which allows you to map the image white channel to the profile white channel). You can fine-tune the behavior of the spot color channel by adjusting the **Area Coverage** or by using a spot color **gradation** (sfg) file. You can also control the color composition by defining the tonal value and opacity of each ink, for example defining the amount of metallic ink used in a spot color.

See also:

- "Color Channels" on page 20
- GMG-SpotColorEditor_QuickStartGuide_en.pdf

Contour cutting

With the integrated cutting technology, these printers offer a one-step operation which is also supported in GMG ColorProof. This way, you can create mockups already cut into shape.

See also:

- "Cutting Contours" on page 45

Available Proof Standards and Calibration Sets

GMG proof standards and calibration sets for **VersaUV** printers are available for the following print media:

- **GPPG Photo Paper Gloss**
- **UV Clear Polyester**

If you want to use a different print medium, you first need to add the print medium in the **Database** view (**Database** > **Media**). You can then proceed to the next step and create a calibration set and a proof standard for the new printer-medium combination.

All these steps are explained step for step in our printer-specific **Starter Kits** which are available in the **Support Area** of our website.

See also:

- GMG-ColorProof-5_Tutorial_StarterKit_Roland-LEC-LEJ_en.pdf

Printer hardware settings

- To achieve maximum print quality, we recommend that a Roland technician adjusts the **print head position** by 0.6 mm (from 2.2 mm low/3.2 mm high to 1.6 mm low/2.6 mm high).
- The **VersaUV LEC** series is available with three different ink configurations: **CMYK+White+Gloss** , **CMYK+Gloss+Gloss**, **CMYK+White+White**.

Printer maintenance

- Due to the **Intelligent Ink Circulation System**, the white and clear inks are circulated every eight hours to keep the tube system in the printer clean. The **white** ink cartridge, however, still needs to be **shaken** prior to use each day to achieve homogeneous print results.

Tip For more information on producing mockups with GMG ColorProof, please see our printer specific **Best Practices**.

9.7.2 Roland VersaCAMM VS/VSi Series

The **VersaCAMM VS/VSi** printer series, developed by **Roland**, enters the printing market with powerful print and cut inkjet printers designed for high quality package **mockups** and short-run production. With the capability to print **CMYK**, **Light Cyan**, **Light Magenta**, **White** and **Metallic** ink, at resolutions up to 1440 dpi, these printers allow for unmatched versatility and remarkably rich special effects, offering a whole new metallic color palette.

Ready-to-use color managements sets

GMG provides ready-to-use proof standards and calibration sets for **VersaCAMM VS** printers for the following print media:

- Coated vinyl white self-adhesive foil: **Roland SCM-GVWG**
- Transparent PET film: **Solvent Clear Film**
- Coated Paper: **TriSolv Paper 3684**

Custom color management sets

If you want to use a different print medium, you first need to add the print medium in the **Database** view (**Database** > **Media**). You can then proceed to the next step and create a calibration set and a proof standard for the new printer-medium combination.

All these steps are explained step for step in our printer-specific **Starter Kits** which are available in the **Support Area** of our website.

Note Custom media should be thoroughly tested before use to ensure optimum quality. Though solvent ink printers can technically print to uncoated media, it is recommended to use specially treated media to enhance color and quality.

See also:

- GMG-ColorProof-5_StarterKit_Roland VersaCAMM_en.pdf

Special ink channels

Special inks (white, metallic, and clear inks as supported by the printer) are handled as spot colors in GMG ColorProof (unless you are using an MX profile with white ink information which allows you to map the image white channel to the profile white channel). You can fine-tune the behavior of the spot color channel by adjusting the **Area Coverage** or by using a spot color **gradation** (sfg) file. You can also control the color composition by defining the tonal value and opacity of each ink, for example defining the amount of metallic ink used in a spot color.

See also:

- "Color Channels" on page 20
- GMG-SpotColorEditor_QuickStartGuide_en.pdf

Contour cutting

With the integrated cutting technology, these printers offer a one-step operation which is also supported in GMG ColorProof. This way, you can create mockups already cut into shape.

See also:

- "Cutting Contours" on page 45

Printer maintenance

Due to the **Intelligent Ink Circulation System**, the white and metallic ink are circulated every eight hours to keep the tube system in the printer clean. The cartridges, however, still need to be **shaken** prior to use or when prompted by the printer to achieve homogeneous print results.

Tip For more information on producing mockups with GMG ColorProof, please see our printer specific **Best Practices**.

9.8 Mimaki

9.8.1 Mimaki UJF-706

Note To access the printer via USB, you need to install the latest printer driver provided by the printer manufacturer on the same computer you installed GMG ColorProof on. The printer driver can be downloaded from the website of the manufacturer.

Note A Windows print spooler is not supported by the Mimaki UJF-706.

Printer features

- The **Mimaki UJF-706** is a UV curing flatbed printer with a **large print area** (70 x 60 cm) designed for **prototyping**, **proofing** and personalized short-run production with the ability to print on flexible and rigid media up to 15 cm thickness such as metal, tin, glass, styrene, shrink foil, PET or OPP.
- Printing **CMYKLcLm** (with Light Cyan and Light Magenta), **White** and **Clear** ink, at resolutions up to 1200 dpi, the **UJF-706** allows for superb detail, vibrant colors and rich special effects with gloss finishes. Due to a sophisticated print head arrangement, white and full color inks can be printed **simultaneously** without slowing down the printing speed. All inks can be applied in **multiple layers** enabling three-dimensional printing.
- Equipped with a **Spray Suppressor System**, which prevents satellite ink drops, the **UJF-706** ensures higher print reliability and quality.
- The **UV lamp** allows printing on heat-sensitive and pressure sensitive media such as **shrink foils** without any risk of damage.
- Sheet by sheet or optional roll-to-roll functionality
- Of the two available **UV inks** for hard and for flexible print applications, GMG ColorProof only supports the **hard ink type**, as it reflects a **wider gamut** and can be used with **clear** ink (which is not the case with the flexible ink).

Special ink channels

Special inks (white, metallic, and clear inks as supported by the printer) are handled as spot colors in GMG ColorProof (unless you are using an MX profile with white ink information which allows you to map the image white channel to the profile white channel). You can fine-tune the behavior of the spot color channel by adjusting the **Area Coverage** or by using a spot color **gradation** (sfg) file. You can also control the color composition by defining the tonal value and opacity of each ink, for example defining the amount of metallic ink used in a spot color.

See also:

- "Color Channels" on page 20
- GMG-SpotColorEditor_QuickStartGuide_en.pdf

Available Proof Standards and Calibration Sets

GMG proof standards and calibration sets for **UJF-706** printers are available for the following print media:

- **Luminor 25 S10 Clear Foil** (with curing intensity set to 50%)

If you want to use a different print medium, you need to add the print medium in the **Database** view (**Database** > **Media**) and assign the printer to the medium. You can then proceed to the next step and create a calibration set and a proof standard for the new printer-medium combination. All these steps are explained in detail in our printer-specific **Starter Kits**.

See also:

- GMG-ColorProof-5_Tutorial_StarterKit_Mimaki UJF-706_en.pdf

Media Handling

The **Mimaki UJF-706** offers an optional roll unit to support roll media. Roll media is, however, used just like sheet media, with a fixed size (maximum and default size = 70 x 60 cm). To feed the roll media, you can enable an automatic feed after each job (**Job** > **Printer Settings** > **Advanced** > **Paper Feed after Printing**). You can furthermore specify a **Spacing between Jobs** in millimeters, so that the print medium is advanced by the job length plus the defined spacing before the print head returns to the starting point and prints the next job.

Tip For more information on producing mockups with GMG ColorProof, please see our printer specific **Best Practices**.

10. Database–Managing Color Managements Items

In the **Database** view, you set up your working space.

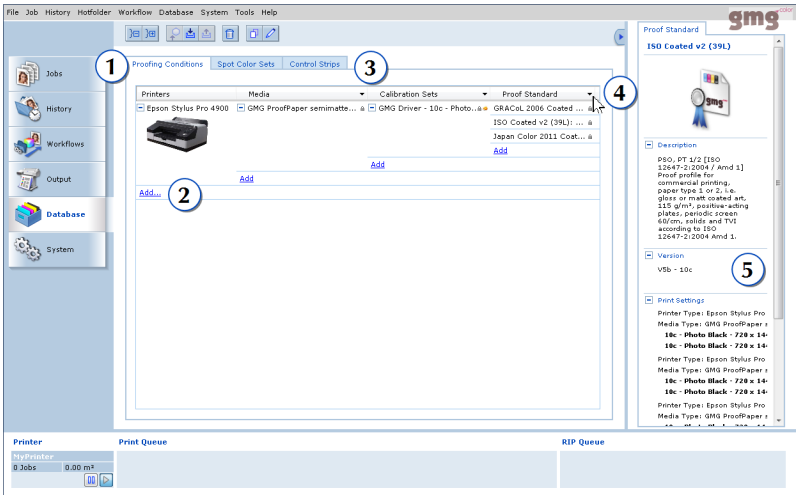


Fig. 66 Database view with one installed printer.

Your working space can be individually arranged by adding printer, media, calibration set and proof standard combinations (= **Proofing Conditions**, 1). In the example screenshot, you can see three **Proofing Conditions** representing the color space of an Epson Stylus Pro x900 printing on GMG ProofPaper semimatte 250 with a GMG 10c print mode, to simulate three target printing conditions (GRACol 2006, ISO Coated v2 and Japan Color 2011).
You can add **Proofing Conditions** by clicking the **Add** link (2) in each column. **Spot Color Sets** and **Control Strips** can be added on separately tabbed pages (3).
Click the arrow button on the column headers (4) to quickly **filter** the data in the column lists.
The info pane (5) provides more information on an item that is currently selected in a list, for example, the proof profiles linked within a proof standard.

All color profiles, printer calibration files, and spot color profiles used in GMG color management sets are **linked** with each other in the database. When setting up a manual job or workflow, all required profiles are **automatically** extracted from the **database** when printing the job. The **file administration** of application data is thus completely **automated** and offers the unmatched advantage of a **fail-proof** color management: All important parameters and profiles such as the proof standard and printer calibration are validated before printing a job. It is not possible to create a job with a color profile not compatible to the printer or medium.

Note GMG color management sets are **read-only** and can be edited **only** after **duplication**. Files linked to those color management sets such as printer calibration files, proof profiles, spot color databases and ICC profiles should **not** be edited by the user. Modifications might lead to unwanted results. Modified files might be overwritten by the installer without notice when updating the software.

10.1 Database Toolbar and Menu

The **Database** toolbar and menu provide various useful functions to manage your color management data. The **Database** submenus are described in separate topics.

Tip Main program features are accessible by different methods, so that users can choose which way is most convenient to them. This documentation generally refers only to the toolbar or menu, even though there may be alternative methods.

- Click a button on the **toolbar**. Move the mouse over a button (without clicking) to display a tooltip.
- Click a command on a **menu**.
- **Right-click** on an item and click a command on the **context menu**.
- Press a **shortcut key**. Shortcut key combinations are listed next to the corresponding command on the menu.
- **Double-click** an item (for example, a job or a workflow) to open the corresponding dialog box and edit settings.

Toolbar commands

Icon	*Command*	*Shortcut*	*Description*
	**Collapse All**		Collapses all items in the tree (if they are not yet collapsed).
	**Expand All**		Expands all items in the tree (if they are not yet expanded).
	**Import**	CTRL+I	Imports a previously exported item into GMG ColorProof.
	**Export**	CTRL+E	Exports the selected item with all settings into a file with the extension **caliset/standard/spot/media/strip**. All color profiles /spot color databases linked to the item are exported as well.
	**Delete / Delete Unused Items**	DEL	Deletes the selected / unused items. Custom items are permanently deleted, GMG items can be recovered any time (**Database** > **Add**).
	**Properties**	CTRL+O	Opens selected item. GMG color management sets are **read-only** and can be edited **only** after **duplication**.
	Download		**From Folder**: Starts the **Download Wizard** for detecting differences between two folders containing color management files (files with the extension **caliset/standard/spot**). New and changed color management files are listed and can be downloaded from the specified source folder. **From GMG OpenColor**: With a GMG OpenColor connection license, you can access a defined **OpenColor Server** and download project files that automatically generate new OpenColor proof standards. The file comparison and download can also be scheduled (**System** > **General** > **Centralized Color Management Settings**: **Automatic Download**).
	Change Media Names		If you are using the new GMG ProofMedia, you can correspondingly change the media names.

10.2 Interplay of Color Management Items

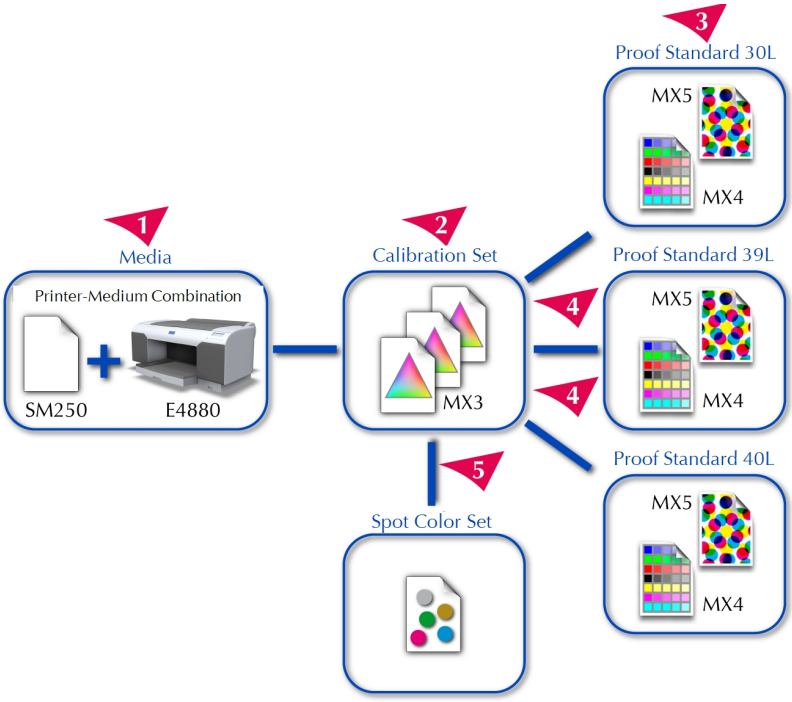


Fig. 67 Color management items and how they are linked.

When setting up your printer in GMG ColorProof, you see all media and media sizes supported for this printer. Each printer–medium combination, for example, Epson Stylus Pro 4880 and GMG ProofPaper semi-matte 250, (1) is grouped into **Print Settings** within a calibration set (2). A calibration set contains all files and information required to calibrate a set of printer and media types, for all supported measuring devices. In other words, each calibration sets contains multiple printer calibrations, one for each measuring device.

As you can see, the **calibration set** (2) plays a central role in the database and links the different kinds of files that hold the information for color management. When printing a job, your specific selection of a printer, medium, and print mode points to the required calibration set.

In the same way, a **spot color set** (5) is also linked to a calibration set in the database. **Proof standards** (3) contain the **proof profiles** for a given printer–medium combination (**MX4** for ContoneProof,**MX5** for DotProof,**MXN** for OpenColor, ICC for ICC based color management and soft-proofing). Proof standards are linked to the calibration sets in the database (4).

Each calibration set is generally linked to multiple proof standards, for example, ISO Uncoated Yellowish (30L)and ISO Coated v2 (39L). This reflects the fact that you need to calibrate a printer–medium configuration only **once** for proofing **all** kind of different print standards. There is a separate **Proof Standard** item for each printer–medium combination in the list in the **Database** view. If you open a proof standard item in the list, you see a list of all calibration sets that are supported by this proof standard.

See also:

- "Media" on page 157
- "Proof Standards" on page 166
- "Calibration Sets" on page 161
- "Spot Color Sets" on page 173

10.3 Media

GMG ColorProof comes with predefined GMG ProofMedia for all commonly used proof printers. These media cannot be edited. You can duplicate GMG ProofMedia and use them as a template for custom media, though. For using a custom medium, you need to create a printer calibration file in GMG ProfileEditor and to add a calibration set for this printer calibration. You also need a color profile for the custom medium.

For each media type, for example, GMG ProofMedia premium semiMatte 250, you can define available **media sizes**. You cannot assign a specific media size to a specific printer, you can only set up media sizes globally for **all** printers. When closing the dialog box, GMG ColorProof validates the media sizes for the selected printers. Only sizes that are supported by the selected printer are displayed in the **Media** list and can be selected for a job.

You can set up or remove custom media sizes. Standard media sizes such as roll 13'' or A4 cannot be deleted.

Automated Media Management

Some printers such as HP Z and Canon imagePROGRAF iPFx3x0, iPFx4x0 support an automated media management.

HP Z: The GMG ColorProof database holds all HP Z printer media that are currently available on the market. You can also set up custom media in GMG ColorProof. Synchronization works in two directions, from GMG ColorProof to the printer and vice versa.

Canon imagePROGRAF: For enabling the synchronization, it is required that **imagePROGRAF Media Configuration Tool** provided by Canon is **installed** on the computer. (The tool is not included in the GMG ColorProof setup. For further information, please (see "Exchanging Media Information between Printer and Software" on page 129).)

Already existing and new custom printer media are **downloaded** automatically via TCP/IP from the GMG ColorProof program onto the printer.

If a print medium **cannot** be loaded from the program to the printer, it is listed in the **Info** pane, on the right side of the main window, also informing you on the reasons why the download failed (for example, no parent paper has been defined for a certain print medium as illustrated in the following screenshot).

Only HP Z: Printer media information is also **uploaded** from the printer into the GMG ColorProof database. The information, which print modes are supported by which printer medium is also uploaded. This way, you have always a broad range of media available for your printers. However, We recommend using GMG ProofMedia for best proofing results. Please note that GMG ColorProof supports only the most important print modes for these printers that will either result in an excellent **quality** (for proofing or production) or in a fast print **speed**. By selecting the appropriate print mode, print quality and speed are up to your preferences or requirements.

10.3.1 Media Menu

The **Media** list in the **Database** view shows all print media that have been set up for use. You can add predefined GMG proof media and custom media. Custom media can be set up from scratch, or by duplicating GMG media.

Tip Main program features are accessible by different methods, so that users can choose which way is most convenient to them. This documentation generally refers only to the toolbar or menu, even though there may be alternative methods.

- Click a button on the **toolbar**. Move the mouse over a button (without clicking) to display a tooltip.
- Click a command on a **menu**.
- **Right-click** on an item and click a command on the **context menu**.
- Press a **shortcut key**. Shortcut key combinations are listed next to the corresponding command on the menu.
- **Double-click** an item (for example, a job or a workflow) to open the corresponding dialog box and edit settings.

Menu commands

Icon	*Workflow command*	*Shortcut*	*Meaning*
	**New**	CTRL+N	Adds a new print medium to the database.
	**Duplicate**	CTRL+D	**Duplicates** the selected print medium. All settings except the **name** of the medium are maintained. The Parent Paper information is also copied from the duplicated medium. You can duplicate GMG media and then customize the duplicate.
	**Import**	CTRL+I	Imports print media (*.media) into GMG ColorProof.
	**Export**	CTRL+E	Exports the selected print medium with all settings.
	**Properties**	CTRL+O	Opens the selected print medium. (Please note that GMG media are read-only.)
	**Delete**	DEL	Permanently deletes the selected print medium..
	**Advanced**		You can define advanced media settings such as media thickness and **Paper Feed Adjustment** here. For some print media, you need to define a **Parent Paper**.
	**Size**		You can define supported media sizes for each media type here. The settings refer to all printer–medium combinations of the same media type. Supported media sizes are also automatically validated for each printer type.

10.3.2 Advanced Media Settings

The **Advanced Media Settings** are **default** settings for printer–medium combinations. When changing the medium in the software, the new defaults are automatically extracted from the database.

Tip When creating a new medium, it is recommended to duplicate an existing printer–medium combination with a comparable media type and use this as a template.

Available options	*Printer Type*	*Description*	*See also*
Parent Paper	HP Z, Canon imagePROGRAF iPFx3x0, iPFx4x0,Canon imagePROGRAF iPF6300S, iPF8300S, iPF6400S, and iPF8400S, Roland VersaUV LEC-330, Mimaki UJF 706.	You need to define a **Parent Paper** for each new medium. New media for the named printers without a **Parent Paper** will not be available for setting up a calibration set, proof standard, or printer.	

Available options	*Printer Type*	*Description*	*See also*
Drying time per Print Head Pass	Epson	The drying time per pass is the time the printer carriage remains (after one pass is printed) at one side of the printer before the printing of the next pass begins. In other words the printer waits the specified time until it prints the next line. This ensures that the print medium is completely dry and avoids ink running from one line to another. The ideal drying time depends on the print medium and ink set. Generally, a drying time per pass may range between about zero and two seconds. GMG ColorProof provides default drying times for each supported printer–medium combination. If you are experiencing problems with ink pooling, you can increase the drying time between print head passes.	
Drying time per Page	Epson 7600, 9600, 4000, x450, x800, x880	After printing a job, the printer waits the specified drying time until the printed job is fed out of the printer (or cut from the roll) and the next job is started. This ensures that the print medium is completely dry and avoids ink smudging from one page to another. The ideal drying time depends on the print medium and ink set. GMG ColorProof provides default drying times for each supported printer–medium combination.	
Drying time before measurement		For printers that have an integrated measuring device, the drying time is also very important for the calibration results, as the measurement results can differ significantly if the ink is not completely dry. On the other hand, convenience does not always allow waiting until the ideal point of time. Therefore, the drying time might be a compromise between quality and speed.	
Media Thickness	Epson	Thickness/caliper of the print medium in mm. Use the **Media Thickness** as specified by the manufacturer of the print medium. As a rule of thumb, you can also use the grammage of the medium in micrometers (µm), rounded up to 1/10 of a mm or [Grammage / 1000] mm for standard weight media. For example, GMG ProofPaper semimatte 250 has a caliper of about 250 µm = 0.3 mm.	

10.3.3 Custom Media Support

Note Use of custom media is supported only by GMG ColorProof 5 Standard Version or higher licenses. GMG ProfileEditor is included only in GMG ColorProof 5 Pro Version or higher licenses.

GMG ColorProof offers predefined proofing conditions comprising color management sets for all GMG ProofMedia. If you want to use your own **custom** print media, you need to create corresponding color profiles with GMG ProfileEditor and (in case of spot colors) GMG SpotColor Editor.

Tip Further information on how to proof with custom media can be found in the tutorial GMG-ColorProof-5_Tutorial_CustomMediaSupport_en.pdf.

The following table lists all printers and printer drivers supporting **custom** media in ContoneProof mode.

Note DotProof can only be supported with GMG Driver.

Printer series	*Driver*	*DotProof*
Canon iPF	Canon Driver	
Canon iPFs	Canon Driver	
Canon iPFs	GMG Driver	x
Epson 40-76-96	GMG Driver	x
Epson x400	GMG Driver	x
Epson x450	GMG Driver	x
Epson x800	GMG Driver	x

Printer series	*Driver*	*DotProof*
Epson x880	GMG Driver	x
Epson x890	Epson Driver	
Epson x890	GMG Driver	x
Epson 11880	GMG Driver	x
Epson x900	Epson Driver	
Epson SC-P7000, 9000	Epson Driver	
Epson SC-P6000, 8000	GMG Driver	x
Epson WT7900	Epson Driver	
HP 5000	GMG Driver	x
HP 5500	GMG Driver	x
HP Z3200	HP Driver	
HP Z6200	HP Driver	
Roland VersaUV LEC-330, 540	GMG Driver	x
Roland VersaUV LEJ-640	GMG Driver	x
Roland VersaCAMM VS-300, 420, 540, 640	GMG Driver	x
Mimaki UJF 706	GMG Driver	x

10.3.4 Adding a Custom Medium

→ Duplicate an existing media type and use this as a template.

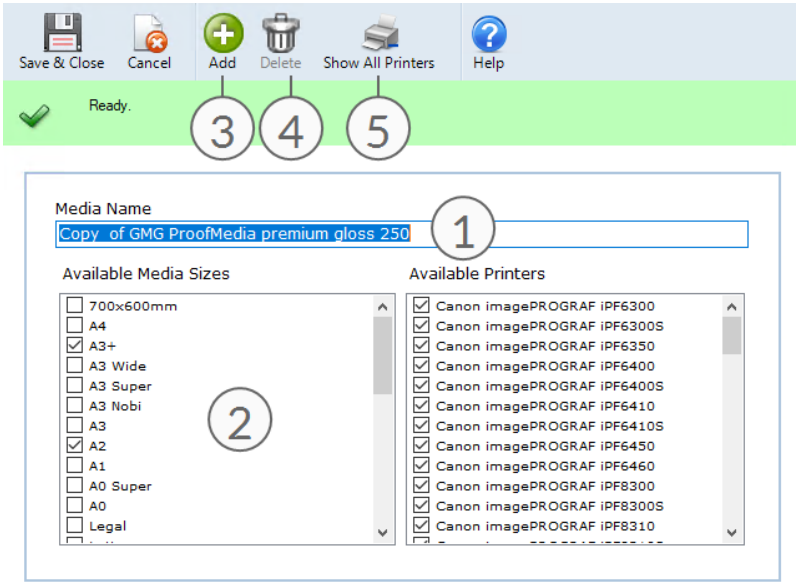


Fig. 68 Adding a custom print medium to the GMG ColorProof database.

You can set up custom media types under any name (1). You can then define available media sizes as a global property of this media type, for all printers (2). You can also define new custom media sizes (3) or delete sizes (for all printers).

The media type (with all sizes) needs to be assigned to printer types (4). In our example, the print medium is assigned to all available printer types.

Select **Show All Printers** (5) to update the list with **all** printers supported in GMG ColorProof.

How to add custom media

1. On the navigation panel on the left of the main program window, click **Database**.
2. On the **Proofing Conditions** tab, right-click an existing media type in the list and select **Duplicate**.
   —OR—
   Create a new media type from scratch by clicking **Database** menu > **Media** > **New** .
3. Enter a **Media Name**.
4. In the **Available Media Sizes** list, select the media sizes that you want to support with this print medium.
5. In the **Available Printers** list, select all printers you want to use with this medium.
6. Click **OK** to confirm the settings.
   The new media type is added to the database. In the next step, you need to define the **Advanced Media Settings**.

How to define the Advanced Media Settings

→ In the **Database** view, right-click the new print medium in the **Media** list and select **Advanced** from the context menu.
Define parameters such as the media thickness. If you are unsure, keep the default settings and change the settings only if you experience any problems. For all printers using a **Parent Paper** parameter, select a **Parent Paper** from the drop-down list.

See also:

- "Advanced Media Settings" on page 158
- "Media Synchronization between Printer and Software" on page 121

10.4 Calibration Sets

A calibration set contains all files and information required to calibrate a set of printer and media types, for all supported measuring devices. Due to different printing technologies, there are different calibration file formats (**MX3**, **MXC**, or **MX4**).

Each time a printer is calibrated, the corresponding MX printer calibration file is updated in the database. If no valid calibration file is available, the printer shifts into status **Not Calibrated** and all jobs are put on hold until the printer is calibrated again.

For a reliable and good print quality, a printer should be calibrated in regular intervals. Each calibration set contains **Quality Criteria** to validate and determine the calibration status.

Calibration Set settings

Page	*Description*	*See also*
Properties	General data such as the name and the version number. The **Printer ICC Profile** has been included for an optional ICC based color management, defining the conversion from the intermediate Lab color space to the printer color space.	
Print Settings	List with all printer-medium and print mode combinations covered by the calibration set. Select an item in the list to show the details on the right side of the page. Each printer type within a calibration set has been assigned with a **Reference Print Mode**. After calibrating the reference mode, it is possible to switch the print medium or print mode without having to calibrate the new combination. Changing the **Reference Print Mode** will not change the calibration set ID, so that you can conveniently use the same calibration set with different print settings on different computers.	

Page	*Description*	*See also*
Measurement	The **Measurement** tabbed page of a calibration set lists all printer calibration files for all supported measuring devices. The **Initial Calibration** file serves as a starting point of a calibration containing averaged output values to reduce the number of iterations otherwise required. After calibrating the printer for the first time, the link to the initial calibration file is broken and an updated system copy is used for all following calibrations. You can restore the link to the initial calibration file by **resetting** a calibration. The **gamut** and **full gamut** file play a key role in the process of calibrating a printer. The full gamut file is saved **within** the calibration file and thus not visibly linked in the calibration set. The gamut is linked to the calibration set in the GMG ColorProof database and represents the color space of the printer-medium combination.	"Printer Calibration" on page 106 "Resetting a Printer Calibration" on page 107
Quality Criteria	The **Calibration Tolerances** in each calibration set have been defined with care to ensure predictable and accurate colors. All criteria can, however, be changed or deactivated. With the **Reset** button, you can reset your changes again to GMG default values. **Maximum Age** is the time span after which a recalibration is required, set to ensure a regular recalibration process for premium proof quality. **Delta E** is the distance between output and target color. The higher Delta E, the stronger is the deviation from the target color. **Delta L** refers to the luminescence, that is, to the Black (K) channel. The higher Delta L, the stronger is the deviation of the luminescence from the target color.	"Quality Criteria" on page 163 "GMG ProofControl Inline Settings" on page 184 "GMG AutoCali Wizard Settings" on page 115

10.4.1 Print Settings

Instead of calibrating each print mode, print medium and printer type separately, you can unite similar printer-medium and print mode combinations (which share a similar gamut) and assign **Reference Print Settings** which are used in the calibration procedure for printing and measuring calibration test charts. After calibrating the printer with the selected reference settings, the linked printer calibration file is updated and valid for **all** print settings: if the **Reference Print Settings** are in status "calibrated", all other print settings are calibrated, too.

Example: a successful calibration for the color mode **W|CMYK** will at the same time validate the calibration for the color mode **CMYK Only** (provided both print modes are linked to the same calibration file). This will reduce the time and effort to calibrate by hours.

The functionality is available for GMG calibration sets as well as for custom calibration sets. You can individually configure which media and print modes shall use the same calibration file.

Note By using different media types within a custom calibration set, you may not achieve the proof quality required by a print standard. If you want to proof according to a standard, it is recommended only to group media types with close to identical properties.

Advantages of using multiple print settings

- Easier configuration and update of customized application data
- The same calibration file can be used for a whole printer series (e.g. Epson x900) instead of just one printer type
- Printers with special inks such as white or metallic ink can use the same calibration file for multiple color modes
- Possibility to use several media types within a calibration set, for example media with similar properties
- Simplified remote proofing: mapping of imported and exported application data much easier due to shared components

Multiple Print Settings example:

The following screenshot shows a typical example of the grouping concept: all printer types of a certain series are listed with a media type and a subset of **Print Settings** (1). Each group has been assigned with **Reference Print Settings** (2) which are used when calibrating the corresponding printer type. If you select a **Print Setting**, all associated parameters are listed on the info pane (3) on the right side, showing exactly which settings have been defined.
In the present case, **Print Settings** for calibrating CMYK for bidirectional printing have been defined as **Reference Print Settings**. After calibrating these **Reference Print Settings**, all other **Print Settings** are also in status "calibrated" without affecting the proof quality. The increase in flexibility without loss of quality is due to the fact that the **Print Settings** defined in GMG calibration sets only differ in terms of printing direction, resolution and color mode (as the special inks of this printer type, e.g. metallic ink, do not need to be calibrated, they are completely covered by the reference settings) and not in terms of color-relevant criteria.

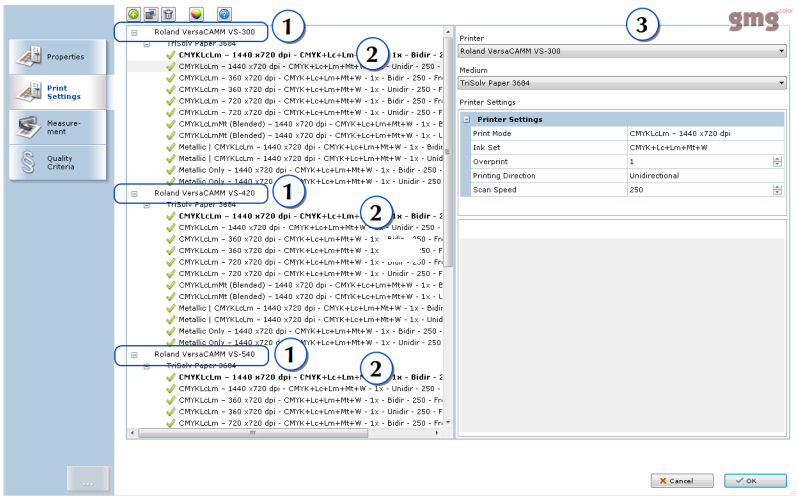


Fig. 69 Example for multiple Print Settings within a calibration set.

10.4.2 Quality Criteria

The interval when a recalibration is scheduled and the tolerances for meeting the target values are defined in the calibration set.

The defined **Calibration Tolerances** need to be reached for a successful printer calibration. Use higher values if you want to speed up the calibration process (less steps) on the cost of color accuracy.

Customizing quality criteria

Note The GMG Standard Proof Logo is only printed to the **label** if factory-default sets with **unmodified** quality criteria were used or if custom quality criteria were defined in the calibration set that are **stricter**. When lowering the quality criteria, the GMG Standard Proof Logo will not be printed in the label.

Note Changing the quality criteria of a calibration set will turn the status of the same to **"not calibrated"**, displaying the date of the last calibration. This **status change** is intentional and accords to our concept of production security.

You can **customize** the quality criteria in factory-default calibration sets (or switch them off completely for a given calibration set) on the **Quality Criteria** page in the **Calibration Set** dialog box. For example, if your printer shows an exceptionally stable printing behavior, you can increase the **Maximum Age** of a calibration set or do not use this criterion at all. This helps to save valuable time and resources. On the other hand, you can also use stricter quality criteria to reflect the very high quality standards in your facility.

By clicking the **Reset** button, you can reset the **Quality Criteria** to defaults (overwriting your customized settings).

Calibration sets with modified quality criteria can be easily identified by the tag **GMG customized** in the **Calibrations Sets** list. Unmodified (factory-default) calibration sets are denoted as **GMG**; custom calibration sets (created by the user) are denoted as **Custom**, as shown in the following screenshot.

Alternatively, you can also keep the quality criteria defaults in the calibration sets, and change the quality criteria when **calibrating** the printer in the GMG CaliWizard dialog box. When using GMG AutoCali Wizard for printers with integrated measuring device, you can change the quality criteria in the **Output** view > **Printers** > **Automatic Calibration**.

See also:

- "Quality Criteria for White Ink Printers" on page 164
- "Customizing Quality Criteria for GMG AutoCali Wizard" on page 118

10.4.3 Quality Criteria for White Ink Printers

As for CMY **Color** and **Black**, there are additional **Calibration Tolerances** referring to the **white ink** channel, available for white ink printers. Per default, they are deselected, because for most applications, a calibration control of the white ink is not required.

Note Depending on the ink technology, printing with white ink can take a relatively long drying time (approximately 30 minutes for each test chart).

Coating for calibration

Printer calibrations for white ink printers are valid for prints with **and** without coating. However, if **most** of your prints are generated **with** a white undercoat, it is strongly recommended to print a white undercoat when calibrating the printer.

To do so, select the option **Add Coating Channel** and enter the **Intensity** you will mainly use when printing jobs later. When calibrating a printer, the coating is always printed in **Full Frame** mode. (You can change both settings on a job-to-job basis later, independent of the settings for calibration.)

See also:

- "Printing an Undercoat" on page 44

10.4.4 Modifying a Calibration Set

GMG ColorProof provides you with ready-to-use calibration sets for GMG and other proof media. Except for the quality criteria, GMG sets are **read-only** and cannot be modified. If you **duplicate** a GMG set, it automatically has the same properties as the original except that it is not read only anymore and can be modified in any way you like.

Modifying a duplicated calibration set

When modifying a duplicated set, you also need to consider the following:

→ Link the new calibration set to all **proof standards** linked to the original calibration set.

→ **Calibrate** the printer with the new calibration set.

→ Select the new calibration set for the **Automatic Calibration Scheduler**.

→ Select the new calibration set for all **workflows** using the original calibration set.

→ Remember to use the new calibration set when creating **manual jobs**.

Modifying a custom calibration set (already calibrated)

Custom calibration sets (which are not read-only) can be directly modified, without making a duplicate. If the calibration set is already in use by a printer (you already calibrated the printer with the set), you need to **reset** the calibration set for your modifications to become effective. The reason for this is that GMG ColorProof uses a system **copy** of the **Initial Calibration** file right after the first printer calibration which is used for all following printer calibrations. The link to the calibration set is broken after the first calibration and can only be reestablished by using the **Reset** functionality. Thus, your modifications will be **ignored** until you reset the calibration set.

→ For all printers using the calibration set, reset the calibration set in the **Output** view > **Available Printer Calibrations** list.

→ **Calibrate** all printers using the calibration set.

See also:

- "Resetting a Printer Calibration" on page 107

10.4.5 Adding a Custom Calibration Set

Note GMG color management sets are **read-only** and can be edited **only** after **duplication**. Files linked to those color management sets such as printer calibration files, proof profiles, spot color databases and ICC profiles should **not** be edited by the user. Modifications might lead to unwanted results. Modified files might be overwritten by the installer without notice when updating the software.

Before you can set up a calibration set, you need to create a **printer calibration** for your printer-medium and print mode combination. For more information on custom printer calibrations, please see our printer-specific **Starter Kit** tutorials available on our website (**Support Area** > **Downloads** > **Printer Utilities** >**Starter Kits**).

You need to set up one calibration set for **each** printer-medium combination and hardware parameter (such as the ink set) that directly affects the colors you are going to use. You can create a new calibration set by duplicating and modifying an existing calibration set or create a calibration set from scratch. In this chapter, you will learn how to create a new calibration set from scratch.

How to add a custom calibration set

1. On the **Database** menu, point to **Calibration Sets**, and click **New**.
   The New Calibration Set dialog is displayed.
2. On the **Properties** page, enter a **Name** for the calibration set.
3. Enter a **version number**.
   The version number serves as a unique identifier if you have several versions of the same set. It is advisable to use a naming convention, for example, V1, V2, V3, and so on, but you can enter any string you like.
4. Optional: Select an **ICC Printer Profile** if you want to use an ICC based color management.

How to define the Print Settings

1. Click the **Print Settings** page.
2. On the toolbar, click the **+** button to add new print settings.
3. Select the **Printer** you want to use from the drop-down list on the right side.
   The printer type is displayed in the tree view on the left side.
4. In the tree view on the left, click the next node (< undefined >) to bring up the **Medium** drop-down list and select the print medium you want to use.
   The default **Print Settings** for the printer-medium combination are displayed as end node.
5. In the tree view, click the **Print Settings** (print mode) node to show the properties of the printer-medium combination on the right side.
6. Adjust the default properties (e.g. the print mode) as required.
7. Optional: Add as many **Print Settings** as you like and choose a **Reference Print Mode** for calibration. Due to this functionality, you can use the same printer calibration file for multiple color modes or media with similar properties.

How to add printer calibration files to the calibration set

1. Click the **Measurement** page.
2. Click the **+** button to add a measuring device and the corresponding printer calibration and gamut file.
3. Select the measuring device that you will use for this printer from the list.
4. In the **Initial Calibration** column, click the browse button, browse your folders, and select the printer calibration file.
5. In the **Gamut** column, click the browse button, browse your folders, and select the corresponding gamut (CSC) file. (Do **not** select the full gamut file.)
6. To set up more measuring devices, repeat steps 2 to 5.

How to set up quality criteria for the printer calibration

1. Click the **Quality Criteria** page.
2. Select the quality criteria for this calibration set. If the quality criteria are not met anymore, print jobs using this calibration set will be put on hold until the printer is successfully recalibrated.
3. If you are calibrating a color mode with White for printing a **white undercoat**, activate the option **Add Coating Channel**.
   When calibrating a printer, the coating is always printed in **Full Frame** mode.

See also:

- "Calibration Sets" on page 161
- "Modifying a Calibration Set" on page 164

10.5 Proof Standards

The introduction of standardized characterization data opened the possibility to offer **optimized DeviceLink profiles** for diverse printer-medium combinations. These profiles are the core of our **proof standards** which hold all information required for the color management of certain printer–medium combinations, each complying with a specific **print standard**, for example, ISO Offset 39L.

GMG ColorProof provides you with all world-wide accepted standards and a wide range of printer-medium combinations. In case your combination is not supported, you can easily set up your own standards with custom MX DeviceLink profiles (created in GMG ProfileEditor and GMG OpenColor), or, alternatively, use ICC profiles.

All proof standards are **protected** via a **checksum**: If a profile used in a proof standard has been altered, jobs based on this proof standard will not be printed anymore and you will be informed by a job error message.

Tip With a GMG OpenColor licence, you can also set up GMG OpenColor proof standards to dynamically calculate n-channel profiles on the fly (see "OpenColor Proof Standards" on page 168).

Color Management settings

Group	*Short description*	*See also*
MX Based	(Default) DeviceLink profiles for **ContoneProof** (MX4) and **DotProof** (MX5) are used for the color management. Soft-proofing is based on the **Output Intent ICC** profile. If no **Output Intent ICC** profile is defined in the proof standard, soft-proofing will be based on the MX profile.	"Printing Halftone Proofs with DotProof" on page 15
ICC Based	ICC profiles are used for the color management (only ContoneProof mode available). The **Output Intent ICC** profile from the proof standard defines the input color space and the **Printer ICC** profile from the calibration set defines the output color space.	

Group	*Short description*	*See also*
MXN/MXD Based	OpenColor profiles are used for the color management. In OpenColor proof standards, the profile cannot be manually selected, but is automatically retrieved from the OpenColor database, or calculated "on demand". To manually select a **specific** OpenColor profile, we added this function in a regular proof standard to use **ContoneProof** (MXN) and **DotProof** (MXD) profiles for the color management.	"OpenColor Proof Standards" on page 168

Linked calibration sets

The **Calibration Sets** page shows all calibration sets linked to the proof standard. Together with the proof standard, a calibration set ensures a consistent representation of colors, counterbalancing deviations caused by varying environment conditions.

Select a calibration set in the list to display all relevant information such as the **Print Settings** on the info pane on the right. You can link or remove calibration sets by using the buttons on the toolbar.

Tip You can also link **custom** calibration sets to GMG proof standards without the need to duplicate the standards first. Please note that the GMG Standard Proof Logo will not be printed within a job or image label when you are using a custom calibration set.

GMG ProofControl Inline print standards

GMG proof standards are already **preconfigured** with all GMG ProofControl print standards, ready-to-use for a proof verification with GMG ProofControl Inline . If you want to use **custom** GMG ProofControl print standards, you can easily generate them directly within a proof standard as described in topic "Adding a Custom GMG ProofControl Standard" on page 171.

See also:

- "Proof Verification" on page 187

10.5.1 Checksum Protection of Profiles

All proof standards are **protected** via a **checksum**: A checksum is created from the linked color profile in the moment a new proof standard is **created** and added to the database or if an existing proof standard is changed and saved in the **Database** view.

Jobs using this proof standard are printed only if the profile is still exactly the same. This is verified by the software which is comparing the current checksum of the linked profile with the checksum provided in the database. If the checksum is not matching, the profile has been changed. In such a case, the job will not be printed and the user will be informed by a job error message. This prevents that a profile is changed by accident and jobs are printed with the wrong profile.

If you **changed** a profile **deliberately**, you need to open the proof standard referencing the changed profile in the **Database** view. Select the changed profile type on the **Color Management** tab and confirm by clicking **OK**. The profile checksum is then updated in the database and the proof standard is ready-to-use again.

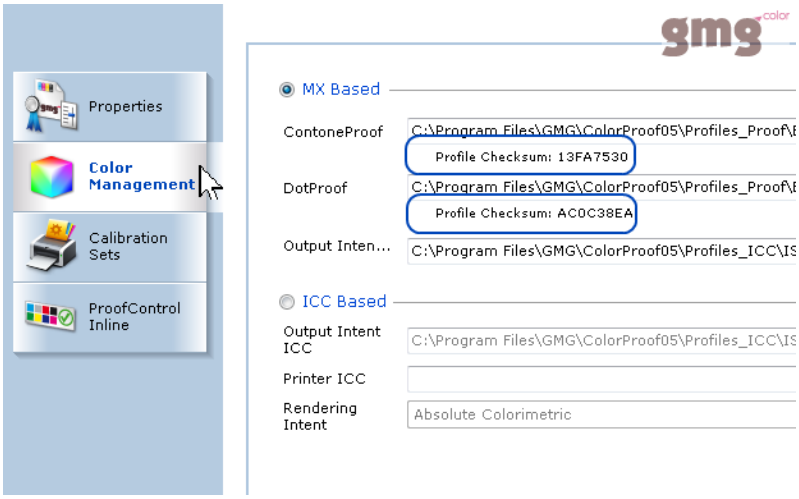


Fig. 70 MX profile checksums in GMG proof standards.

10.5.2 OpenColor Proof Standards

With GMG OpenColor, you can easily calculate **multichannel** profiles, for example, based on 5, 6, or 7 process colors instead of just CMYK. The software uses a new proofing technology that precisely predicts the color appearance of printed inks, particularly spot color overprints.

GMG ColorProof can connect to GMG OpenColor and request a profile for a specific proofing condition. The connection to GMG OpenColor is defined in each OpenColor proof standard.

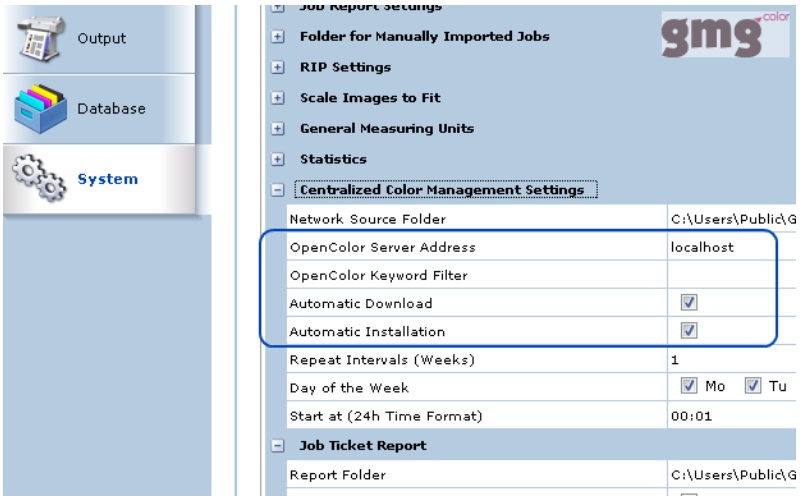
OpenColor proof standards can be created **manually**, like normal proof standards, or **automatically**, by scheduling a download of new OpenColor projects.

Note OpenColor proof standards support only GMG ProofMedia. You can reference only calibration sets that use GMG media types. OpenColor proof standards do **not** support custom media types.

Tip For more information on multicolor proofing, please see the separate documentation available for GMG OpenColor.

How to automatically create an OpenColor proof standard

1. In GMG OpenColor, create a new project.
2. In GMG ColorProof, **System** view > **General** > **Centralized Color Management Settings**: **OpenColor Server Address**: Enter the **IP address** of the computer GMG OpenColor is running on.
3. Optional: **OpenColor Keyword Filter**: Enter keywords as a filter to download only projects that include the defined keywords.
4. Activate the option **Automatic Download** and schedule the update.
5. Activate the option **Automatic Installation**.
   Any new or changed projects are downloaded, automatically generating a matching OpenColor proof standard.



How to manually create an OpenColor proof standard

1. On the **Database** menu, point to **Proof Standards**, and click **New**.
   The New OpenColor Proof Standard dialog is displayed.
2. **Properties**: Enter a name for the proof standard.
3. Enter a **Version** number.
   The version number serves as a unique identifier if you have several versions of the same proof standard. It is recommended to use a naming convention, for example, V1, V2, V3.
4. **Database Connection**: Enter the **IP Address** of the computer GMG OpenColor is running on.
   (Please note that the connection requires the Web Service defined in the **Preferences** of GMG OpenColor.)
5. **Printing Process**: Select a **Project** from the drop-down list.
   (The Project list contains all projects that have been published.)
6. Optional: **Available Printing Inks**: Check to ensure all inks you need are listed and available for profiling.
7. **Calibration Sets**: On the toolbar, click the **+** button to link a calibration set to the proof standard.
   It is recommended to use the **Custom Filter** to show **Calibration Sets for Installed Printers Only** and select the recommended calibration set for the printer-medium combination you are using.
8. Click **OK** to confirm your choice.

Recommended calibration sets for use with OpenColor profiles

It is strongly recommended to use a calibration set that corresponds to the respective **Proofing Condition** in GMG OpenColor. Using a calibration set with fewer colors or less resolution would be contrary to the proof quality GMG OpenColor is capable of achieving.

- Epson Stylus Pro x900: GMGDriver - 10c – Photo Black – 720 x 1440 dpi – Unidir – V1 GMG
- Epson Stylus Pro WT7900: GMG Driver – 6c + OG – Reverse Print – 720 x 1440 dpi - Unidir - V1 GMG
- HP Designjet Zx200: GMG: Driver - 10c – PhotoBlack – 1200 dpi – 14 Pass – Bidir – V1 GMG
- Canon imagePROGRAF iPF x3x0, x4x0: GMGDriver - 11c – 2400 x 1200 dpi – Bidir – Higher Quality (Fast) – Canon LUCIA EX Ink – V1 GMG

10.5.3 Adding a Custom Proof Standard

Note GMG color management sets are **read-only** and can be edited **only** after **duplication**. Files linked to those color management sets such as printer calibration files, proof profiles, spot color databases and ICC profiles should **not** be edited by the user. Modifications might lead to unwanted results. Modified files might be overwritten by the installer without notice when updating the software.

You can add a custom proof standard by duplicating and modifying an existing proof standard or create a new proof standard from scratch. In this chapter, you will learn how to create a proof standard from scratch.

Before you can set up a custom proof standard, you need to create a printer calibration and **calibration set** for your printer-medium combination (see "Adding a Custom Calibration Set" on page 165).

How to add a custom proof standard

1. On the **Database** menu, point to **Proof Standards**, and click **New**.
   The New Proof Standard dialog is displayed.
2. On the **Properties** page, select a print standard from the **Name** drop-down list, for example, ISO Coated v2 (39L), or enter a custom name.
3. Enter a **Version** number.
   The version number serves as a unique identifier if you have several versions of the same proof standard. It is advisable to use a naming convention, for example, V1, V2, V3, and so on, but you can enter any string you like.
4. On the **Color Management** page, select the color management mode you would like to use for this standard.
   (**MX based** color management is recommended for highest-quality prints.)
5. For MX based color management, select an **MX4** proof profile for **ContoneProof** or **PhotoProof**.
6. Optional: For **DotProof** mode, select an **MX5** proof profile.
   (DotProof is supported only by MX based color management.)
7. Select an **ICC Output Intent** profile for soft-proofing.
8. Optional: For an **ICC based** color management, select an **ICC Output Intent** profile to define the input color space and the rendering intent.
   The output color space is defined by the **ICC Printer** profile from the calibration set.
9. On the **Calibration Sets** page, click the **+** button on the toolbar to link a calibration set to the proof standard.
   (A proof standard can also be linked to multiple calibration sets. Use the **Custom Filter** to show only calibration sets for your printer and/or calibration sets that share the same printer and media type.)
10. Click **OK** to confirm your choice.

10.5.4 Adding a Custom GMG ProofControl Standard

The GMG ProofControl **Print Standard XML** files linked to a proof standard on the **Proof Verification** tabbed page provide the **target values** and the **tolerances** for a verification by printing a control strip together with the proof job. This control strip will be measured either automatically by the measuring device integrated into the printer (requires a GMG ProofControl Inline license) or manually in GMG ProofControl. GMG ColorProof and GMG ProofControl will automatically compare the measured colors with the target values as defined in the proof standard and show the results to you. If the differences between measured values and target values are within the tolerances, the proof is ok. You can use official target values and tolerances provided by organizations such as FOGRA or you can easily create and use your own criteria.

Note Make sure that the **Filter** and **Backing** settings of the GMG ProofControl print standard match the measurement condition when measuring the control strip. Otherwise, proof verification will not be possible.

How to link an existing GMG ProofControl print standard to a proof standard

You can use this option if you want to use an already existing GMG ProofControl print standard XML.

Tip To support different measuring conditions, for example, different control strips or measuring devices with and without UV cut filter, you can link **multiple** print standards to the same proof standard. You can then flexibly select one of the defined control strips in the proof job.

1. On the **Proof Verification** page, click the **Add** button on the toolbar to add a new empty slot for a print standard XML to the **Target Values** table.
2. In the **Target Values** table, **ProofControl Standard** column, click the browse button and select the corresponding XML file.
3. Optional: In the **Target Values** > **Filter** column, select the filter settings used when measuring the control strip. This information will be read out from the print standard if available.
4. Optional: In the **Target Values** > **Backing** column, select the backing method used when measuring the control strip. This information will be read out from the print standard if available.
5. To set up more measuring conditions, repeat steps 1 to 5.

Tip You can also easily generate custom GMG ProofControl standards for verification from the selected MX profile. For more information on this, please see chapter "Adding a Custom GMG ProofControl Standard" on page 171.

How to create a new custom GMG ProofControl print standard

GMG Products offer you three methods:

- In GMG ColorProof, you can **automatically** generate custom GMG ProofControl standards from the **color profile** linked within the proof standard.
- If you are using the GMG ProofControl Inline option in GMG ColorProof, you can also automatically generate a custom GMG ProofControl standard from **previous control strip measurements** (**jobs** in the **History**).
- With the separate application GMG ProofControl, you can create new or modify existing GMG ProofControl print standard XML files. Please follow the link for more information: Creating a Custom Print Standard

How to generate a custom GMG ProofControl standard from the profile in GMG ColorProof (Generate from Proof Standard)

GMG ColorProof uses the **Default Control Strip** and calculates target values for each patch from the color space of the profile.

Note Make sure that the profile includes all color channels that are used in the control strip. For example, if the selected control strip uses CMYK, the profile also needs to include CMYK channels.

1. Make sure a **Default Control Strip** is selected.
2. Optional: In the **Target Values** > **Filter** column, select the same measurement condition that was used for profile creation.
3. **Proof Standard** > **Proof Verification**: Click the **Generate from Proof Standard** button and select the profile you want to use the Lab target values from.
   (The options in the menu relate to the profiles linked on the **Color Management** tabbed page of the proof standard.)
4. Add as many GMG ProofControl standards as required.
   The generated GMG ProofControl standard is automatically added to the **Target Values** list. The XML file is saved to the following default path: *<installation path>\ProofControlAddOnData\Standards*.

When creating a job using this proof standard and the control strip you selected as default control strip, the generated GMG ProofControl standard will be used for verification.

How to generate a custom GMG ProofControl standard from previous measurements

GMG ColorProof uses the **Default Control Strip** and calculates target values for each patch from **previously measured control strips**. To do so, you will need at least one job in the **History** that used the same control strip and was measured with an integrated measuring device, regardless whether the proof verification of this job failed or not. For example, you could generate a first version of the GMG ProofControl standard XML from a proof profile, which might lead to a failed verification. This is usually the case when the **Current Values** of the profile have been edited manually. Then you can generate a new version of the GMG ProofControl standard XML from the measured job. As the new target values are derived from the actual measurement values of the control strip in the job, the target values will fit perfectly to your printing condition, and you can expect a passed verification when printing under the same condition.

1. Make sure a **Default Control Strip** is selected.
2. **Proof Standard** > **Proof Verification**: Click the **Generate from Measured Jobs** button and select the control strip measurements from jobs in the **History** you want to use.
   GMG ColorProof calculates target values for each patch from the measurement data. Multiple measurement values will be averaged. The generated GMG ProofControl standard is automatically added to the **Target Values** list. The XML file is saved to the following default path: *<installation path>\ProofControlAddOnData\Standards*.

When creating a job using this proof standard and the control strip you selected as default control strip, the generated GMG ProofControl standard will be used for verification.

See also:

- "Using Control Strips" on page 188

10.5.5 Updating Proof Profiles in GMG ProfileEditor

With the proof profile conversion feature in GMG ProfileEditor, you can update existing proof profiles for use with new printers or new media.

How to convert Proof Profiles

1. Start GMG ProfileEditor .
2. On the **File** menu, click **Open** and select the proof profile you want to convert.
3. On the **Tools** menu, click **Convert Profile**. The **Convert Profile** dialog box is displayed.
4. Select the printer and medium combination you want to convert the profile to and confirm with **OK**.
5. The profile is updated according to the new printer and medium combination.
6. On the **File** menu, click **Save as** and save the profile under a new file name.

10.6 Spot Color Sets

Note You can set up your own spot color sets and spot color profiles in the separate program GMG SpotColor Editor. For more information on spot color profiles, gradation corrections or calibrated spot colors, please see the separate documentation available for GMG SpotColor Editor.

A spot color set contains all information required for the color management of spot colors for a certain set of printer and media types. Each spot color set in GMG ColorProof is linked to a spot color **database** (*.db3). GMG ColorProof provides you with spot color databases for widely used spot colors, for example, from Pantone, DIC, or HKS.

Example: The spot color set **PANTONE® GOE coated - Ex880 GMGsemimatte250** includes all spot colors of the **PANTONE® GOE coated** set for **Epson Stylus Pro x880** printers and GMG ProofMedia premium semiMatte 250.

As spot colors extend the limited gamut of the printing machine and the print result is considered to be independent of the printing condition, the print standard is not relevant for spot colors and thus not linked within a set. Each spot color set is, however, linked to at least one calibration set.

See also:

- "Adding a Custom Spot Color Set" on page 175
- "Spot Colors" on page 21

10.6.1 Printing Spot Colors with a Gradation Correction

For most spot color applications, it is only required to print the spot color as full-tone (100%) color. You can, however, create spot color gradations (*.sfg) in GMG SpotColor Editor which can be applied to a spot color in two ways, as described in the following.

- Link the sfg file to one or multiple **spot colors** in the db3 spot color database (using GMG SpotColor Editor). For more information on how to do this, please see the separate documentation available for GMG SpotColor Editor.
- Link the sfg file to a **spot color set** if you prefer flexibility, applying one gradation correction per GMG ColorProof **workflow**. You can load a gradation correction (sfg file) in the **Workflow** dialog box. A gradation correction loaded in the workflow takes precedence over gradation files that might be linked to spot colors in the spot color set.

How to link a gradation correction to a spot color set in a workflow

1. On the navigation panel on the left of the main window, click **Workflows**.
2. Open a workflow.
3. On the navigation panel of the **Workflow Properties** dialog box, click **Print Settings**.
4. Select a spot color set on the **Spot Color Priority** list and click **Choose Gradation File** on the **Gradation** list.
5. Close the **Workflow Properties** dialog box. The gradation file is now used for all jobs created by this workflow that use spot colors from this spot color set. A conflicting gradation linked to any spot color from this set in the spot color database will be **ignored**.

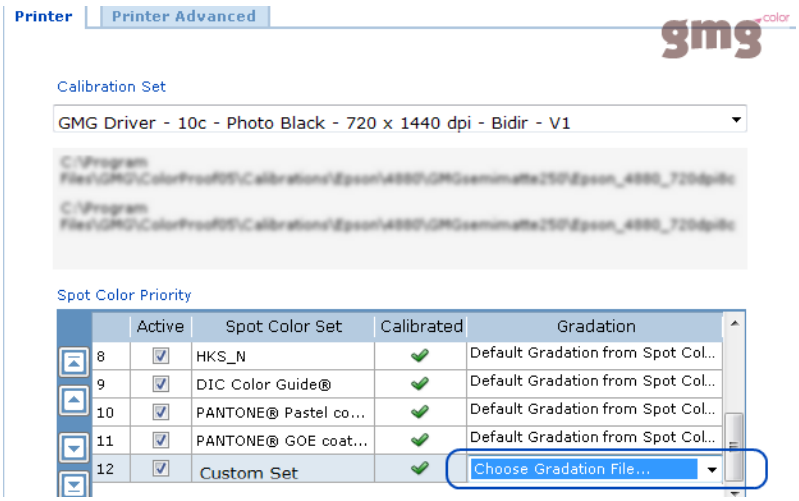


Fig. 71 Assigning a gradation file in a workflow.

How to link a gradation correction to a spot color in a manual job

1. On the navigation panel on the left of the main window, click **Jobs** and create a new job.
2. On the navigation panel of the **Manual Job Manager** dialog box, click **Color Management**.
3. Click the **Channels** tab.
4. Select a spot color channel and click **Choose Gradation File** in the **Gradation** list.
5. Browse for the *.sfg file you want to use and click **Open** to load the file.
   A conflicting gradation linked to the same spot color in the spot color database will be **ignored**.

10.6.2 Optimizing Spot Colors

Note This feature requires a **GMG ProofControl Inline license** and a proof printer with an **integrated measuring device**.

Note GMG spot color sets are read-only and can only be optimized after being **duplicated**. When duplicating an already existing spot color set, the linked db3 database (> **Import**) is also duplicated to avoid unwanted changes in the original spot color database. You can edit the name of the db3 copy in the **SpotColors** program subfolder.

Spot colors can be challenging to proof. There are several reasons why you may want to adjust the default values in the spot colors libraries. Maybe you need to modify spot colors to better match a customer's preference. Or you need to produce spot colors based on your particular print environment. With GMG ColorProof, you can simply select a range of spot color swatches to print using your selected printer, MX profile, and media. The integrated **Spot Color Optimization** wizard will guide you through the optimization, helping you to conveniently achieve the desired output values.

For optimizing the spot colors, the wizard prints spot color patches, measures them, compares the measurement values with the lab target values and recalculates the CMYK values in the db3 until the defined tolerance range or maximum number of iterations is achieved.

When printing the spot colors, the paper tint defined in the selected color profile is used to simulate the paper tint effect of the final output paper you usually print with. All optimized spot colors will, however, be saved as **paper tint neutral** spot colors in the database (db3) so that you can use the spot colors with more than just one proof standard. This is done by **subtracting** the paper tint from the spot color profile when updating the spot color database. If you then use an optimized (and paper tint neutral) spot color in a proof job, the paper tint from the selected color profile (proof standard) is used for printing the spot colors.

This in turn means that since optimized spot colors are optimized for a certain proof standard, you might find unwanted color deviations when using proof standards with strongly varying paper tints, for example ISO Coated v2 and ISO Uncoated Yellowish.

How to optimize spot colors

1. In the **Database** view > **Spot Color Sets** tab, right-click a (custom) spot color set and select **Optimize** from the context menu.
   The Spot Color Optimization wizard is started.
2. Select the printer and print settings you want to use for printing the patches.
3. Click **Next**.
4. Select a proof standard or load an MX profile.
   The proof standard or profile contains the paper tint values required to simulate the paper type you plan to use. This is important because different media generate different color results.
5. Click **Next**.
6. Select the **Proof Mode** and a test chart template.
   You can choose between templates for **full tone** and **gradient** spot colors.
7. Select the spot colors you want to print and measure.
8. Click **Next**.
9. Define the tolerance range for the acceptable deviation of output and target values (delta E).
10. Select an optimization mode (automatic or manual).
    Clicking the **Next** button, GMG ColorProof prints the selected spots, one patch for each fulcrum, using the paper tint value of the selected MX profile.
11. Run optimization cycles until you are satisfied with the results.
    (Click the **Details** button for more detailed information on the measured values.)
    When finishing the optimization, the spot color database is updated with the calculated output values. The measured values and color names are printed next to the color patches.

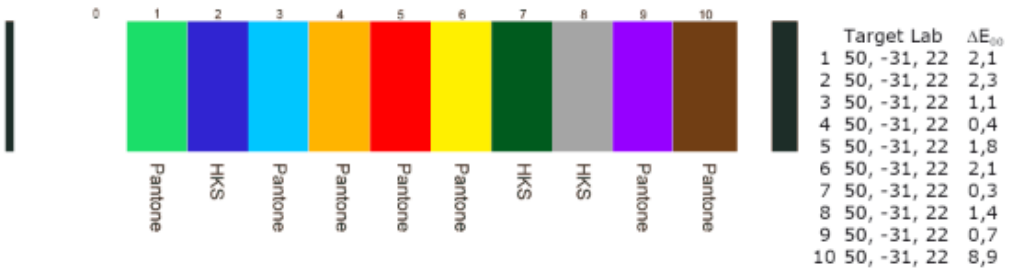


Fig. 72 Spot color swatches with measured delta E values.

10.6.3 Adding a Custom Spot Color Set

You can manage and set up your own spot color databases in the GMG SpotColor Editor, a separate program integrated in GMG ColorProof. You can then import spot color sets from the custom spot color database into GMG ColorProof. GMG SpotColor Editor is a profile editor for spot colors and has a very similar functionality as GMG ProfileEditor has for CMYK process colors. Creating custom spot colors requires similar steps as for creating a custom MX4 proof profile.

How to add a custom spot color set

1. On the **Database** menu, point to **Spot Color Sets**, and click **New**.
   The **New Spot Color Set** dialog box is displayed
2. On the **Properties** page, enter a **Name** for the spot color set.
3. Enter a **Version** number.
   The version number serves as a unique identifier if you have several versions of the same spot color set. It is recommended to use a naming convention, for example, V1, V2, V3, and so on, but you can enter any string you like.
4. On the **Import** page, click the browse button and select a spot color database (**db3**).
   (The **Information** tab provides more information and a preview of the spot color set. You can browse all spot color sets in the spot color database and select the one that includes the desired spot colors.)
5. On the **Calibration Sets** page, click the **+** button on the toolbar to link a calibration set to the spot color set.
   (A spot color set can also be linked to multiple calibration sets. Use the **Custom Filter** to show only calibration sets for your printer and/or calibration sets that share the same printer and media type.)
6. Click **OK** to confirm your choice.
   The new spot color set is displayed in the **Spot Color Set** list in the **Database** view.

Tip For more information on custom spot colors, please refer to our separate Quick Start Guide of GMG SpotColor Editor: GMG-SpotColorEditor_QuickStartGuide_en.pdf.

10.7 Control Strips

10.7.1 Control Strips Menu

The **Control Strips** tabbed page in the **Database** view shows all control strips available in the GMG ColorProof database. You can, of course, also set up your own, custom control strips.

Tip Main program features are accessible by different methods, so that users can choose which way is most convenient to them. This documentation generally refers only to the toolbar or menu, even though there may be alternative methods.

- Click a button on the **toolbar**. Move the mouse over a button (without clicking) to display a tooltip.
- Click a command on a **menu**.
- **Right-click** on an item and click a command on the **context menu**.
- Press a **shortcut key**. Shortcut key combinations are listed next to the corresponding command on the menu.
- **Double-click** an item (for example, a job or a workflow) to open the corresponding dialog box and edit settings.

Menu commands

Icon	*Workflow command*	*Shortcut*	*Meaning*
	**New Control Strip**	CTRL+N	Adds a new control strip to the database. A control strip of type **Proof Standard** is used for controlling that the printed proof is in the tolerances (as defined, for example, by FOGRA) with GMG ProofControl. Type **Printer Calibration** is used for controlling that the printer is still calibrated according to the tolerances defined in the calibration set or according to custom criteria by using the **Check Calibration** feature.
	**Import**	CTRL+I	Imports a previously exported control strip into GMG ColorProof.
	**Export**	CTRL+E	Exports the selected control strip into a file with the file name extension *strip*.
	**Delete**	DEL	Permanently deletes the selected control strip. Note that the control strip image file is not deleted. Only available for custom control strips (added by the user).

10.7.2 Adding a Custom Control Strip

GMG ColorProof provides you with control strips for all widely used print standards. You have furthermore the possibility to create **custom** control strips for contone and 1-bit proofing, or create DotProof strips from existing contone strips.

To create a custom control strip, you need a suitable image (TIFF) file and optionally a control strip XML file for GMG ProofControl (containing the patch definitions).

Control strip images for ContoneProof

Control strip image files for ContoneProof must meet the following requirements. After the import, the control strip can be used in vertical and horizontal orientation.

- 8-Bit CMYK TIFF

Control strip images for DotProof

For each screen ruling, raster dot shape, and screening angle that you are going to print, a **separate** control strip is required. For example, you need to import two separate custom control strips for printing one image with 50 lpi screen ruling and another image with 100 lpi screen ruling.

Because it is possible to use control strips in horizontal and vertical orientation in GMG ColorProof, you need to import **two** separate control strip image files for one DotProof control strip: One image in **horizontal** and one in **vertical** orientation.

Control strip image files for DotProof proof mode must meet the following requirements. The images should be produced by the **same** imagesetter used for the plate making of the images that will be proofed together with the control strip. The RIP and the RIP settings used directly affect the color and visual appearance of the printed image.

- 1-Bit CMYK TIFF
- Two images with the following naming convention are required for a DotProof control strip. <name> is a placeholder for any custom name. The <name> must be identical for both files. <color channel> is a placeholder for the color channel of the separated 1-bit file: **Cyan**, **Magenta**, **Yellow**, **Black**.
  - <name>_<color channel>_K0.tif: control strip in the desired layout
  - <name>_<color channel>_K90.tif: the same image, but rotated by 90 degrees. The image needs to be rotated in the RIP program that is used for the plate making, do **not** use an image editor.
- All files with identical image size and resolution

How to add a custom control strip

1. Click the **Database** button on the navigation panel on the left of the main window.
2. On the toolbar, click the **New Control Strip** button.
3. Enter a **Name** for the control strip.
4. Under **Import Control Strip**, click the browse button and select all image files that are required for the new control strip (one 8-bit file for ContoneProof, eight 1-bit files for DotProof).
5. Select the **Measuring Device** you are going to use for measuring this control strip from the drop-down list.
6. Select a **Control Strip Type** from the drop-down list.
   Control strips of the **Proof Standard** type are used for verifying the color accuracy of a proof. Control strips of the **Printer Calibration** type are used for checking the printer calibration.
7. Optional: Select a GMG ProofControl control strip XML for verification in GMG ProofControl.
8. Check the preview and click **OK** to import the image files and add the control strip to the database.



Fig. 73 Custom DotProof control strip ready for import.

The screenshot shows an example for a DotProof control strip consisting of eight files. The eight 1-bit TIFF separations for the DotProof control strip have been successfully loaded.

Following the confirmation by clicking OK, the control strip will be added to the GMG ColorProof database.

You can then use the new control strip for a manual job or workflow.

See also:

- "Creating DotProof Strips from Contone Strips" on page 179

10.7.3 Creating DotProof Strips from Contone Strips

For verifying the color accuracy of a halftone proof, you will need a screened version of a control strip, matching the screening of the image to be proofed. You can either screen an existing contone control strip such as Ugra/Fogra Media Wedge CMYK, a spot color strip, or import a screened custom control strip "Adding a Custom Control Strip" on page 177.

GMG ColorProof features an easy-to-use control strip generation for 1-bit proofs which allows for individually screened control strips. The DotProof strip is generated from a selected Contone strip which is either exported and screened with an external imagesetter RIP (recommended) or with the integrated GMG 1-Bit Creator.

How to create a DotProof from a Contone control strip (External RIP)

1. On the **Tools** menu, select **New 1-Bit Control Strip**.
   The **New 1-Bit Control Strip for DotProof** dialog box is displayed.
2. Select the **Measuring Device** you are going to use for measuring this control strip from the drop-down list.
3. Select a contone strip template from the drop-down list.
4. Under **Screening Settings**, select **Screen with Imagesetter RIP**.
5. Click the **Export Contone Strip** button to export the strip and screen it in your imagesetter RIP.
   The screening in the RIP will result in four 1-bit files. This ensures that the strip is screened in the same way as your images.
6. Click the **Import Screened 1-Bit Strip** button to import the screened files.
   GMG ColorProof imports the 1-bit files and automatically assigns each file to a channel. You can check and edit the channel assignment in the **Separation** column.
7. Enter a **Name** for the control strip.
8. Click **Add to System** to add the DotProof control strip to the GMG ColorProof database.

How to create a DotProof from a Contone control strip (Internal Screening)

1. On the **Tools** menu, select **New 1-Bit Control Strip**.
   The **New 1-Bit Control Strip for DotProof** dialog box is displayed.
2. Select the **Measuring Device** you are going to use for measuring this control strip from the drop-down list.
3. Select a contone strip template from the drop-down list.
4. Under **Screening Settings**, select **Screen with GMG 1-Bit Creator**.
5. Select the appropriate screen set from the drop-down list.
6. Enter the screening angles for the CMYK channels.
7. Enter a **Name** for the control strip.
8. Click **Add to System** to add the DotProof control strip to the GMG ColorProof database.

11. System View

On the **General** settings tab of the **System** view, you define **global settings** such as the measuring units used in the program or the temporary file folder required for ripping jobs.

You can also define **default settings** for required parameters in manual jobs and workflows, for example, a scaling method or default font for font replacement. The default settings are suggested each time when you set up a manual job or hotfolder. You can still change settings in the Manual Job Manager or in a workflow, if required.

On the **Color Conversion** tab, you can set up default conversion rules for manual jobs (only required for files that are not in the target color space yet). If you want to use **WebClient**, **ProofControl Inline**, or **ColorProof GO**, you need to configure these applications on the respective tabs. On the **Remote Proofing** tab, you can configure your system for sending proof jobs to remote sites and receiving proof jobs from remote sites.

11.1 System Menu

You can toggle between standard and **Administration** mode and password-protect the **Administration** mode in the **System** menu. You can set up **database files** such as proof standards, calibration sets, printer media, control strips, and spot color sets. You can also edit **general system** settings and **default** settings. You will find more details on submenu items such as proof standards in the corresponding chapters.

Tip Main program features are accessible by different methods, so that users can choose which way is most convenient to them. This documentation generally refers only to the toolbar or menu, even though there may be alternative methods.

- → Click a button on the **toolbar**. Move the mouse over a button (without clicking) to display a tooltip.
- → Click a command on a **menu**.
- → **Right-click** on an item and click a command on the **context menu**.
- → Press a **shortcut key**. Shortcut key combinations are listed next to the corresponding command on the menu.
- → **Double-click** an item (for example, a job or a workflow) to open the corresponding dialog box and edit settings.

Menu commands

Command	*Shortcut*	*Description*
General	CTRL+S	Opens the **General** system settings tabbed page. You can change all global program settings and defaults in the **General** view.
Check Database		To find database file structure errors, you can run a **Database Consistency Check**. If one of the checks does not complete successfully, the Error Log will provide you with a clear message on the problem.
Administration Mode	CTRL+SHIFT+A	Switches from the standard (non-secure) operating mode to **Administration Mode**. Users can change system settings and workflows only in **Administration Mode**.
Administrator Password		You can set up or change the password for **Administration Mode** here.
No Password Protection		Use this command to remove the password protection for the **Administration Mode**.
Environment Backup > **Create**	CTRL+B	Creates a backup of the entire GMG ColorProof system, including all **folder paths** (hotfolders, backup folders), all **program settings**, and all **linked files** such as color profiles.
Environment Backup > **Restore**	CTRL+R	Restores the entire GMG ColorProof system from a previously saved backup file. Note that the **Restore** command will overwrite your current system and that this action cannot be undone.

Command	*Shortcut*	*Description*
Language		You can change the language of the program here. The user interface will be updated after **program restart**.
Remote Proofing > **Manage Remote Sites**		Opens an **overview** on all **FTP** and network accounts for defining new remote sites or editing already existing ones. Also includes an e-mail notification service.
Remote Proofing > **File Upload**		Shows and tracks the **status** of proof jobs that are uploaded to an FTP account.
Export Job Report		**Exports** the **Job Report** (containing all relevant information on processed jobs) as XML file.
Reset Job Report		**Clears** the **Job Report**, deleting all entries.
Calibration Override		Allows you to load and overwrite printer calibration files (**Output** view > **Available Printer Calibrations**: **Open Calibration File** button).

11.2 Administration Mode

11.3 General System Settings

On the **General** settings tab of the **System** view, you define **global settings** such as the measuring units used in the program or the temporary file folder required for ripping jobs. You can also define **default settings** for required parameters in manual jobs and workflows, for example, a scaling method or default font for font replacement. The default settings are suggested each time when you set up a manual job or hotfolder. You can still change settings in the Manual Job Manager or in a workflow, if required.

Group	*Short description*	*See also*
Productivity	Activate the option **Set Duplicated Jobs on Hold** if you want to use duplicated jobs as **templates** and need an auto-store to edit them before printing. When the option is not activated, duplicated jobs are immediately queued and printed. With the option **Move Job to Another Printer if Printer Cannot Print** pending jobs are automatically moved to another printer in case the initially assigned printer fails to print the job. Both printers need to use the same calibration set.	
Environment Backup Scheduler	Schedule the system to automatically backup your data in regular time intervals.	
Automatic Image Placement	Image spacing / keyboard increment that is applied when moving an image manually by keyboard commands in the **Manual Job Manager**.	
Default Settings	You can deactivate the automatic check for software updates and usage tracking here.	Default Settings
Default Cleanup Settings	Routines that delete jobs automatically from **History** list.	
Default View Settings	Settings for the job preview in Manual Job Manager, info pane, and print queue.	
Remote CaliWizard Settings	Network settings and automatic start of the host service for the integrated remote calibration tool.	"About Remote CaliWizard" on page 118
E-Mail System Notifications	GMG ColorProof supports e-mail alerts to inform you of job errors and printer / calibration issues. To receive alerts, you need to configure the SMTP server settings (**System** view > **Remote Proofing** tab: **Outgoing E-Mail Notifications**).	"Remote Proofing Settings" on page 198
File System Watcher	The **File System Watcher** is a behind-the-scenes utility monitoring all files in the file system (used by manual or workflow jobs) to trigger job status changes. You can configure the scan interval in milliseconds, the default value being 500 ms and the minimum value 200 ms.	
ICC Defaults	Color Management Engine used for ICC based color conversion / color management.	
Job Report Settings	Storage location and clean up settings for job reports.	"Job Report" on page 182
Folder for Manually Imported Jobs	Jobs that have been imported manually (**File** > **Import Jobs**) will be imported to this folder.	

Group	*Short description*	*See also*
Advanced RIP Settings	Default RIP settings. Can be changed in **Manual Job Manager** and **Workflow** dialog. • **RIP Temporary Folder**: During the RIP, temporary files are generated that will be deleted when a job is finished. These files are temporarily saved in the specified folder. It is recommended to assign the temporary folder to a hardware drive that is **separate** from the hardware drive that holds the output folder. Please make sure that enough disk space is available for the output folder as well as the temporary folder. • **Default RGB/CMYK ICC Profile**: If neither an embedded ICC profile is available, nor an ICC profile was assigned to the job for Conversion CT/LW in GMG ColorProof, the default CMYK or RGB ICC profiles specified here will be used for a conversion from **RGB to CMYK** or vice versa. This applies only to PDF/PS input files that are ripped by the integrated RipServer. (Please note that ICC settings defined in the job or workflow always overrule the default color spaces defined in the **System** settings.)	
Scale Images to Fit	Method used for scaling images. Default is **Supersampling**. If you want to maintain sharp edges, **Repeat Pixel** can be used instead.	
General Measuring Units	Measuring units used globally in the program. Different units are used for defining the print resolution, the screening resolution, and for all other settings such as the preview or the paper width.	
Centralized Color Management Settings	One-way file synchronization control settings for distributing color management data across multiple GMG ColorProof instances. The synchronization functionality distributes new and changed files from a "source" location, for example a folder in a local network, to a "target" location. You can use the scheduler to run the synchronization automatically in regular intervals.	"Database Toolbar and Menu" on page 154 "Interplay of Color Management Items" on page 156
Job Ticket Report	Creates a report for each job created by a job ticket, providing you with a complete list of all processing steps.	

11.4 Reports

11.4.1 Job Report

GMG ColorProof automatically creates a system log file report providing you with an overview of **all** processed jobs. This job report holds all user relevant information such as the print date, media and ink usage per job and image (for printers that support tracking of media and ink usage), dimensions, and PDF output intent. The job report can, for example, be used by a system operator to **monitor** the job processing. It is also an ideal basis for **billing**, **cost controlling**, and resource planning. Furthermore, the job report can be read by external systems to track the processing status. The universal XML format allows an easy exchange with your MIS.

The job report can be configured in the **System** view, on the **General** tabbed page. It is saved as **ColorProofLog.xml** into the specified **Job Report Folder**. The job report is updated immediately after a job has been processed (job status **Finished**, **Canceled**, or **Error**).

You can **export** and **reset** the job report in the **System** menu. The tracking interval can be defined by the **Report Cleanup** settings in the **System** view, on the **General** tabbed page. When the time limit or the job count has been reached, a new report file will be created. If the option **Backup Report** is selected, all previous report files will be kept. Otherwise, the report file will be deleted as soon as a new file is created.

The job report is saved in an **XML** file format. This file format has the advantage that it can be used very flexibly. For example, you can open the **ColorProofLog.xml** in Microsoft Excel and use all features offered by a standard spreadsheet program such as filtering, calculations, graphs, and so on.

You can also open the file in a standard web browser application. The same contents will be shown in HTML table layout, as defined in the **transform.xsl** stylesheet file also saved to the specified **Job Report Folder**. In this case, the **transform.xsl** must be available in the same folder as the job report file. Please remember to copy both files if copying the job report into a different folder.

Time	Id	Name	State	Type	NestingT	Printed	Prio	Copies	ColorSpace
5/17/2010	565	Job_0565	Finished	Manual	No Nesting	Yes	7	1	CMYK
5/17/2010	567	Job_0567	Finished	Manual	No Nesting	Yes	6	1	CMYK
5/17/2010	571	Job_0571	Finished	Workflow	Automatic	Yes	5	1	Multicolor
5/17/2010	573	Job_0573	Finished	Workflow	Automatic	Yes	5	1	CMYK
5/17/2010	575	Job_0575	Finished	Workflow	Automatic	Yes	5	1	CMYK
5/17/2010	577	Job_0577	Finished	Workflow	Automatic	Yes	5	2	CMYK
5/17/2010	579	Job_0579	Finished	Workflow	Automatic	Yes	5	1	CMYK
5/17/2010	581	Job_0581	Finished	Workflow	Automatic	Yes	5	1	CMYK
5/17/2010	583	Job_0583	Finished	Workflow	Automatic	Yes	5	1	CMYK
5/17/2010	587	Job_0587	Finished	Workflow	Automatic	Yes	5	1	Multicolor
5/17/2010	589	Job_0589	Finished	Manual	No Nesting	Yes	5	1	CMYK
5/17/2010	591	Job_0591	Finished	Manual	No Nesting	Yes	3	2	CMYK
5/17/2010	591	Job_0591	Finished	Manual	No Nesting	Yes	3	1	CMYK

Fig. 74 ColorProofLog.xml opened in Microsoft Excel.

Customizing the job report

The following information is intended for advanced users only. It is assumed that you already have a basic understanding of **XML**, **XSL** (Extensible Stylesheet Language), and **XSLT** (Extensible Stylesheet Language Transformations).

If you open the **ColorProofLog.xml** file in an XML or in a basic text editor, you will see that the **transform.xsl** file is referenced in the line **<?xml-stylesheet type='text/xsl' href='transform.xsl'?>**.

XSL is a stylesheet language for XML files, defining the layout, styles, colors, etc. of how the XML file will be shown in the application in which it is opened. Thus, the visual appearance of the **ColorProofLog.xml** file is defined in the **transform.xsl** file.

If you open the **transform.xsl** in a basic text editor, you will see that the layout is defined by an HTML table. By modifying the XSL file, you can display the job report in any layout you like, with custom fonts, colors, and so on. The output format is defined by the **output mode** of the XSL. Apart from **HTML**, the report file can, of course, also be shown as unformatted **text** or just as an **XML** tree. You can show and hide any information available in the job report, as the **shown content** is also defined in the XSL file.

Note XML and XSLT are international standards. Please have a look at the web sites http://www.w3.org/XML/ and http://www.w3.org/TR/xslt for further information.

11.4.2 Job Ticket Report

If a file has been processed with a job ticket, GMG ColorProof generates a **Job Ticket Report**. The **Job Ticket Report** is an XML file which contains all results of the processing steps (e.g. the used standard or profile, channels, verification results). The location path of the report can be configured in the **System** view > **General** tab.

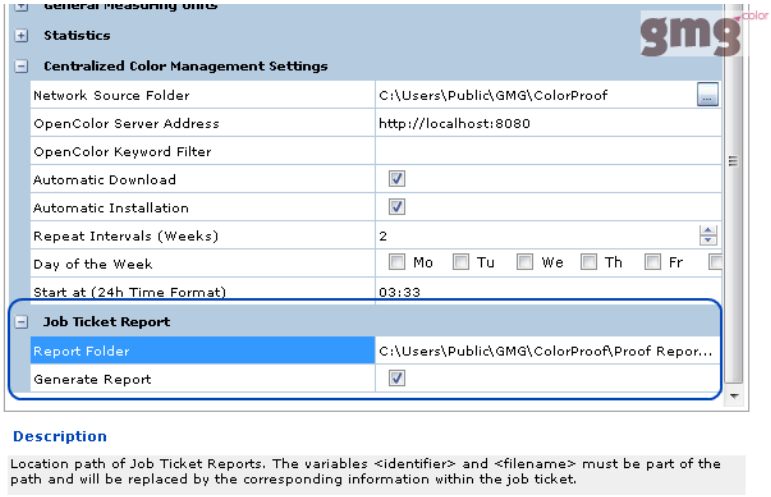


Fig. 75 Job Ticket Report Settings.

In the below screenshot of an example report, you can see the job name in GMG ColorProof, used calibration and media, and the image dimensions. The report details comprise all important information concerning the color management and the used proofing components, and provide useful information on the color accuracy based on the control strip measurements.

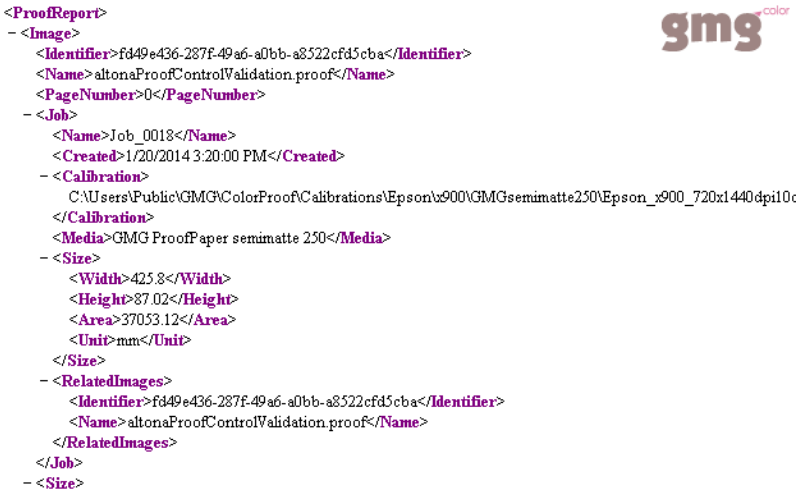


Fig. 76 Example job ticket report.

See also:

- "Job Ticket Hotfolder" on page 79

11.5 WebClient

11.5.1 Connecting GMG ColorProof to GMG WebClient

11.6 ProofControl Inline

11.6.1 GMG ProofControl Inline Settings

Note Some of the features described in the following may not be included in the standard GMG ColorProof version and require an additional license (GMG DotProof, GMG FlexoProof, GMG ProfileEditor, GMG ProofControl Inline, or GMG OpenColor). Please contact your local dealer for details.

Group	*Short description*	*See also*
General Settings	Settings that apply to GMG ProofControl Inline in general. For example, you can choose a custom data location on the network.	
Proofer Supporting Direct Label Printing	Settings applying only to printers that are physically able to roll back the print medium and print a label next to the control strip.	
Proofer Not Supporting Direct Label Printing	If your printer does not support label printing or if you want to print the labels on an external label printer, use these settings to automatically transfer the verification data to the connected label printer.	
Report Printing	Apart from printing a label, you can also have a detailed report printed, showing all measured values and giving you a good overview on all parameters.	
Failed Proof Standard Verification	Actions that are triggered automatically if a verification of a proof standard fails after printing a proof control strip. This feature efficiently prevents that several jobs fail the check in a row due to an uncalibrated printer. If a verification fails, only the calibration set that was used for printing the job and only for the used printer will be set to "Not Calibrated". When the option **Set Printer on Hold** is activated, the software printer in GMG ColorProof is set to hold automatically each time the verification of a proof standard control strip fails, giving you the opportunity to check the printer before printing the next job. You can click the **Continue** button on the **Output** toolbar to unpause the printer.	"Verifying a Proof with GMG ProofControl Inline" on page 191

12. Job Monitoring

13. Proof Verification

Note Some of the features described in the following may not be included in the standard GMG ColorProof version and require an additional license (GMG DotProof, GMG FlexoProof, GMG ProfileEditor, GMG ProofControl Inline, or GMG OpenColor). Please contact your local dealer for details.

Without a standardized control strip which can be measured by the producer and the customer, any print can just be considered no more than a pretty picture—it may or may not relate to the press output.

Only if a proof is verified against an official print standard, you can be sure it will be possible to reproduce the colors on the press.

- Customer service: You might want to provide certified standard proofs to your customers.
- Internal production/quality control: You might want to assess the quality you produce. This might also help to avoid warranty claims and support issues.

So, how can you verify that your proofs are color accurate and meet the requirements of your standards?

Automatic proof verification with GMG ProofControl Inline

GMG ProofControl Inline is a module for GMG ColorProof featuring a **fully automated** verification of **proof control strips** measured with the **integrated measuring device** of the proof printer.

If you have a GMG ProofControl Inline license on your computer, but no GMG ProofControl license, you will be able to install GMG ProofControl to review data, to print a label, or to customize print standards. You can then link the customized print standards to the corresponding proof standards in GMG ColorProof. You will be able to access **all** GMG ProofControl features **except** measuring with an external measuring device. For this feature, you will need a full GMG ProofControl license.

Advantage	*New Feature*
Automated proof verification and quality assurance procedures for ContoneProof applications	According to world-wide standards such as ISO. Can be flexibly customized for in-house standards. - Automated verification of the print standard - Automated label printing
ISO standard conformity	The new report format complies with the ISO 12647-7 standard. Reports can be printed directly from GMG ColorProof or from the external GMG ProofControl application.
Assure color quality on remote proofing stations	If a GMG ProofControl Inline license is available on the target remote location, imported proofs will be automatically verified.
Enhanced support of larger teams, improve your quality assurance workflow	Manage your proof verification check results on a central server in a network. Measurement data will be automatically saved to a custom location from GMG ColorProof. You can review the data and print reports from the main GMG ProofControl application.

Proof verification with GMG ProofControl

GMG ProofControl is a stand-alone tool for proof verifications. It has to be purchased separately.

The program offers the following features:

- Measure control strips with an X-Rite i1 or integrated measuring device
- Print a verification label on an external label printer
- Review measurement data, also measured from GMG ColorProof
- Print a detailed report
- Edit print standards and adjust the tolerances to suit your needs

How does a proof verification work?

Official printing conditions such as "ISO Coated v2 (39L)" reference characterization data describing expected print results for different input color values (from the original image as the creator has intended) and tolerances that need to be met in order to comply with the standard.

Sounds a bit complicated?—With GMG ProofControl or GMG ProofControl Inline, the procedure is actually very easy and consists of three straight-forward steps.

1. **Printing**: You will print a control strip together with the image. (Control strips are provided by official organizations. The license to use them are part of the GMG ProofControl and GMG ProofControl Inline product.)
2. **Measuring**: The color patches of the control strip are measured with a spectrophotometer.
3. **Verification**: GMG ProofControl and GMG ProofControl Inline compare the measurement values with the target values defined by the print standard. (Widely used print standards are also part of the GMG ProofControl and GMG ProofControl Inline product.) There are two possible results:
   - **Pass**: The measurement values match the target values within the tolerances. As official target values and an official control tool are used for verification, the proof is considered to be compliant with the standard. You can tag your proof with a label to show the results to your customers.
   - **Fail**: The measurement values are out of tolerances.

Note For compliance with most officially used standards, a proof verification alone is not sufficient. The standard might also expect to follow quality assurance guidelines and to use a certified proofing system using an approved software, printer, and print medium. GMG ColorProof, GMG DotProof and GMG FlexoProof, and GMG ProofMedia together with high-quality printers from several manufacturers are certified for widely used standards. For more information, please contact our sales channel partners.

See also:

- "Using Control Strips" on page 188
- "Verifying Spot Colors" on page 190

13.1 Using Control Strips

Which kind of control strips are supported in GMG ColorProof?

- Control strips defined by an official print standard, **CMYK** only: Available for factory-default and custom proof standards, and GMG OpenColor proof standards
- Control strips defined by an official print standard, CMYK and **spot colors**: Available for GMG OpenColor proof standards
- GMG **spot color** control strips: Dynamically generated from the spot color channels used in the image
- **GMG OpenColor** control strips: Dynamically generated from the color channels (GMG OpenColor inks) used in the image
- GMG Calibration Control Strip: Used for checking if the printer still works in the tolerances or needs to be recalibrated

All four CMYK channels need to be available.

When using a **multicolor ICC profile**, you can verify the **CMYK** part (if available) of the profile and single **spot colors**, but not the overprinting behavior of the spot colors.

What do I need to do?

If you are using a factory-default GMG proof standard, you just need to select an image or job control strip in the job and GMG ColorProof will use the correct target values as defined in the proof standard out of the box.

Likewise, if you are using a GMG OpenColor proof standard, GMG ColorProof will take the target values from the proof profile and you do not need to worry about it.

If you want to use stricter tolerances or verify against a custom print standard, however, you need to take care that appropriate **target values** and **tolerances** are defined as explained in the following.

Customize tolerances and target values

You want to use **stricter tolerances**? You can create a custom print standard in GMG ColorProof and then edit the tolerances in GMG ProofControl.

You want to use **custom target values**? You can create a custom print standard either from an official print standard or from the proof profile and then edit the target values (and tolerances) in GMG ProofControl.

Note Proof verification will fail if target values in the print standard XML do not match with the target values in the proof profile.

The procedure is slightly different whether you are using a proof profile from GMG OpenColor or not as shown in the following table.

Proof profile	*How it works*
Without GMG OpenColor	Target values and tolerances for **CMYK** are always taken from a GMG ProofControl **Print Standard XML** file linked to the proof standard, which needs to match the selected control strip. If there are no target values for the selected control strip, proof verification will **not** be possible. Target values for spot colors will be extracted from the **spot color set** (db3). You have multiple options to create your own custom GMG ProofControl Print Standard XML file. Please follow the link for more information: "Adding a Custom GMG ProofControl Standard" on page 171 GMG ColorProof will use the **Evaluation** rules defined in the GMG ProofControl Print Standard, i.e. the delta E tolerances for the **substrate**, **CMYK**, and **spot colors**. Please see here how to customize the tolerances in GMG ProofControl: Creating a Custom Print Standard
With GMG OpenColor, custom proof standard (**static** and **dynamic** profiling)	You have the option to define the target values for **CMYK** and spot colors by linking **GMG ProofControl Print Standard XML files** to the proof standard. **Note** If there are no CMYK target values for the selected control strip in the GMG ProofControl Print Standard XML files, proof verification will **not** be possible. **Note** Proof verification will **fail** if target values in the print standard XML do not match with the target values in the proof profile. To ensure that they match, you can create the GMG ProofControl Print Standard XML file from the proof profile as explained in the following. You can create a **custom** GMG ProofControl Print Standard XML file for a **static** proof standard with the action **Generate From Proof Standard** > **From Contone MXN**. For a **dynamic** proof standard, this action is not available. However, you can create a static proof standard with an MXN profile, create the GMG ProofControl Print Standard XML file from this proof standard, and then link it to a dynamic proof standard. Please follow the link for more information: "How to generate a custom GMG ProofControl standard from the profile in GMG ColorProof (Generate from Proof Standard)" on page 171 Please see here how to customize the tolerances in GMG ProofControl: Creating a Custom Print Standard If you do **not** link any Print Standard XML file to the proof standard, target values will be calculated from the proof profile and the tolerances from the **Default Control Strip** will be used. **Note** If CMYK is not included in the proof profile, proof verification will **not** be possible. When using dynamic profiling, the proof profile requested from GMG OpenColor will include only the colors channels that are available in the input document. In this case, the document needs to include CMYK color channels.

Note Please note that **job control strips** cannot be used for GMG OpenColor jobs.

See also:

- "Adding a Custom GMG ProofControl Standard" on page 171
- "Verifying Spot Colors" on page 190

13.2 Verifying Spot Colors

If you want to know how well spot colors printed in an image match the reference values, you can add a spot color control strip to your image in GMG ColorProof (> **Image Control Strips**).

With an **integrated** ILS30 measuring device and a GMG ProofControl Inline license, all patches are automatically measured and a verification label is printed on the proof.

GMG OpenColor spot colors are validated by comparing the measured values against the Lab target values from the **multicolor** profile. In both cases, the Delta E values are printed in a label, showing you which spot colors can be reproduced by your printer-medium combination and which colors are out-of-gamut. You can optionally define **tolerances** for a pass/fail verification of the spot colors.



Available spot color control strips

- **Fogra MediaWedge Multicolor 5C**, **6C**, **7C**, **8C**: Verification is supported when using a printer with an integrated ILS30 measuring device and a GMG OpenColor proof profile or proof standard.
- **IDEAlliance ECG Digital Control Strip 2019**: For CMYK OGV printing processes. Verification is supported when using a printer with an integrated ILS30 measuring device and a GMG OpenColor proof profile or proof standard.
- The **GMG Spot Color Strip - Full Tone** uses only 100% full tone patches and has a fixed size of 10 patches. GMG ColorProof assigns the first 10 spot color channels found in the image to the 10 channels of the control strip. The strip contains one full-tone patch (100% fulcrum) for each spot. If the image contains more than 10 spot colors, exceeding spots will be ignored.
- The **GMG OpenColor Control Strip** uses full tone patches **plus** additional spot color **tints** for the verification process. Only spot color tints with corresponding measurements in the GMG OpenColor database can be validated. Verification is supported when using a printer with an integrated ILS30 measuring device and a GMG OpenColor proof profile or proof standard.

How to verify spot colors with an integrated measuring device

1. On the navigation panel on the left of the main program window, click **System**.
2. Click the GMG ProofControl Inline tab.
3. In the **Proofer Supporting Direct Label Printing** group, from the **Print Label Automatically on Proofer** list, select **Always** or **Only if Verification Passed** to directly print the label on the proof.
4. Create a job for an image with spot colors.
5. **Image** > **Label/Strips/Marks** > **Image Control Strips**: Select the option **Control Strip 1** (or 2).
6. From the **Measuring Device** list, select the **integrated** measuring device you are using.
7. Under **Control Strip Type**, select a **spot color control strip** and determine where to place the strip.
8. Print the job.
   GMG ColorProof prints the job with the control strip. The color patches will be automatically measured by the integrated measuring device. The print medium will be rolled back and the GMG ProofControl Inline label will be printed next to the control strip.

How to verify spot colors with an external measuring device

Note Verification of spot color control strips in GMG ProofControl is supported only for the X-Rite i1 measuring device and only for spot colors from a **db3** spot color set, **not** for spot colors from GMG OpenColor.

1. Start GMG ProofControl.
2. Under **Options** > **ColorProof Connection**, select the option **Use Automated Measurement Import**. Browse your folders and select the folder where the measurement jobs are saved (default path: *<installation path>\GMG\ColorProof05\ProofControl Output*).
3. Create a job in GMG ColorProof using an image with spot colors.
4. **Image** > **Label/Strips/Marks** > **Image Control Strips**: Select the option **Control Strip 1** (or 2).
5. From the **Measuring Device** list, select i1.
6. Under **Control Strip Type**, select **GMG Spot Color Control Strip - Full Tone** and determine where to place the strip.
7. Print the job.
   GMG ColorProof prints the job with the control strip. The job is automatically exported to the GMG ProofControl **Hotfolder** defined in step 2 and displayed in the main view in the **Jobs** list.
8. Switch to GMG ProofControl and select the measurement job in the **Jobs** list.
9. Measure the strip with an i1.
10. Click on the **Print Label** button on the toolbar to print a label with the verification results.

13.3 Verifying a Proof with GMG ProofControl Inline

Note Some of the features described in the following may not be included in the standard GMG ColorProof version and require an additional license (GMG DotProof, GMG FlexoProof, GMG ProfileEditor, GMG ProofControl Inline, or GMG OpenColor). Please contact your local dealer for details.

Recommended printer settings

Note GMG ProofControl Inline does **not** support sheet media on Epson Stylus Pro 4900 printers.

For printers with an embedded SpectroProofer, the drying time after printing is very important for achieving correct measurement results. Different settings are recommended for different types of measurement. Drying settings can be changed in the **Change Media** dialog for each printer (> **Media Specific Printer Settings**).

Measurement Type	*Drying Method*	*Drying Time*
Measuring a control strip	Air Drying	5 min
Recalibrating (GMG AutoCali Wizard)	Air Drying	5 min
Measuring a Full Gamut test chart	Air Drying	5 min
Measuring a Gamut test chart	Air Drying	15 min
Optimizing an MX4 Profile	Air Drying	15 min

How to verify a proof and print the label automatically

1. On the navigation panel on the left of the main program window, click **System**.
2. Click the GMG ProofControl Inline tab.
3. In the **Proofer Supporting Direct Label Printing** group, from the **Print Label Automatically on Proofer** list, select **Always** or **Only if Verification Passed**.
4. Create a job for an Epson Stylus Pro x900 printer.
5. **Job** > **Label/Strips** > **Job Control Strip**: Select the option **Proof Control Strip**. (Alternatively, select an image control strip.)

   Note Please note that **job control strips** cannot be used for GMG OpenColor jobs.

6. From the **Measuring Device** list, select **Epson Integrated Measuring Device**.
7. Select a **Control Strip Type** and determine where to place the strip.
8. Print the job.

GMG ColorProof will print the job with the control strip. The color patches will be automatically measured by the integrated measuring device.

The print medium will be rolled back and the GMG ProofControl Inline label will be printed next to the control strip. If you have selected the option **Only if Verification Passed**, only labels with the result "Passed" will be printed. If you have selected the option **Always**, labels with the result "Failed" will be printed as well.

The verification status of each job will be shown in the **History** view.

Note GMG ColorProof does not validate that the **control strip** matches the **proof standard** used when printing a job. If a proof verification fails, check that an appropriate control strip has been used.

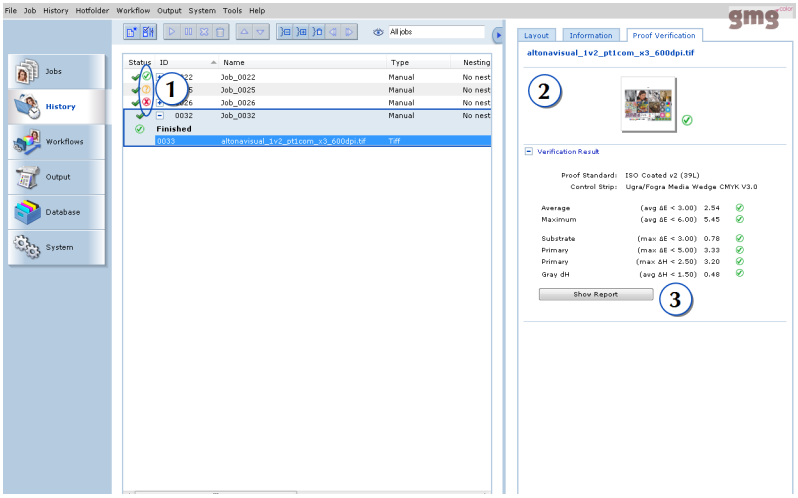


Fig. 77 Proof verification status shown in the History view.

The three highlighted jobs show the three possible verification statuses **Pass**, **Unknown**, and **Fail**.

	Description	*Additional Info*
1	Verification status	The overall verification status of the entire job is illustrated by a green check mark (Pass), red cross (Fail), or yellow question mark (Unknown). "Unknown" means that a verification was not possible for any reason, for example, because the proof standard did not contain target values compatible with the measured control strip. Printing multiple control strips in a single job: If the verification of only one control strip failed, the verification status of the entire job will also be "Fail", even if the verification of all other control strips passed.

	Description	*Additional Info*
2	Verification results	For different print standards, different criteria are specified for verification of a proof. Therefore, you might find different parameters for different print standards in the software. If all required criteria are met, the verification status is **passed**.
3	**Show Report** button	Generates a report compliant with the ISO 12647-7 standard in XHTML format. You can right-click the upper part of the report window to open the context menu and print the report on any printer installed on the Windows operating system. The report shows the used standard and control strip, the measurement conditions, the verification results, and the measurement values for all color patches.

How can I prevent that several jobs in a row fail the verification?

Generally, proofs that fail the verification cannot be used for contract proofing. In most cases, a verification fails because the printer is not in a calibrated state. This can easily overcome by recalibrating the printer.

GMG ColorProof efficiently prevents that further jobs are printed after the first job failed the verification, which saves valuable production time and resources. You can activate this function here: **System** > GMG ProofControl Inline > **Failed Proof Standard Verification** > **Set Calibration Set to "Not Calibrated"**.

In combination with the function **Output** > **Printers** > **Automatic Actions if Calibration Set Status is Changed to "Not Calibrated"** > **Start Automatic Calibration**, GMG AutoCali Wizard will start automatically, thus minimizing the downtime of a printer.

Example:

You are using two print modes on the same printer–medium combination. For example, job A uses a print mode with a resolution of 300 dpi and job B uses a print mode with a resolution of 600 dpi. Both jobs use the same proof standard, ISO Coated v2 (39L). The proof verification of job A failed, but was successful for job B.

This means that the "300 dpi" calibration set needs to be recalibrated for this printer–medium combination. The "600 dpi" calibration set is still ok and can be used for printing.

See also:

- "GMG ProofControl Inline Settings" on page 184
- "GMG AutoCali Wizard Settings" on page 115

Remote proofing

With GMG ProofControl Inline, users at remote locations can automatically verify proofs against their standards.

- To use GMG ProofControl Inline, only the **target** remote location needs the license, not the creator of a job. If the target remote location does not have a GMG ProofControl Inline license, control strips will be measured **without** a verification. (The measurement data can still be imported into GMG ProofControl for a manual verification.)
- As using a custom proof profile (without using a proof standard) is **not** supported by GMG ProofControl Inline, you need to **link** the job data to the job when exporting (option **Link to Color Profiles**) so that the proof profile of the target remote location will be used. The export option **Embed Color Profiles** is **not** supported.
- To guarantee a smooth workflow, jobs containing control strips for an integrated measuring device will be printed anyway. If the job is printed on a printer that does **not** support such a device, the job will be printed **without** the control strip.

See also:

- "Remote Proofing" on page 196
- "Verifying Spot Colors" on page 190

13.4 Verifying a Proof with GMG ProofControl

13.4.1 Verifying Control Strips in GMG ProofControl

The following shows you how to select a control strip in GMG ColorProof, measure the strip in GMG ProofControl with an i1 measuring device and print a verification label.

How to verify a GMG ColorProof proof job with an X-Rite i1

1. Create a job in GMG ColorProof.
2. **Job** > **Label/Strips** > **Job Control Strips / Image Control Strips**: Select a **Control Strip**.
3. From the **Measuring Device** list, select **i1**.
4. Under **Control Strip Type**, select the control strip you want to use.
5. Under **Position**, determine where to place the strip.
6. Print the job.
   GMG ColorProof prints the job with the control strip. The job is automatically exported to the defined GMG ProofControl **hotfolder** and displayed in the main view in the **Jobs** list (see "Importing Measurement Data into GMG ProofControl" on page 194).
7. Switch to GMG ProofControl and select the measurement job in the **Jobs** list.
8. **Measure** the patches of the printed control strip with the connected measuring device.
   After a successful measurement, all color patches are visualized and the measured values are displayed in the **Verification Results** area.
9. Click the **Save** button on the toolbar to save the measured values to the database.
   (All measurement data can be loaded again by clicking on the corresponding job in the **History** list.)
10. Click on the **Print Label** button on the toolbar to print a label with the verification results.

13.4.2 Importing Measurement Data into GMG ProofControl

Measurement data from GMG ColorProof can be **automatically** or **manually** imported into GMG ProofControl.

Automatic import of measurement jobs and data

With our automatic import option, every job with a control strip that finished processing in GMG ColorProof is automatically handed over to GMG ProofControl so that the strip can be measured with an i1 or, if already measured with an integrated measuring device, selected in the **History** list to print a label or report for it.

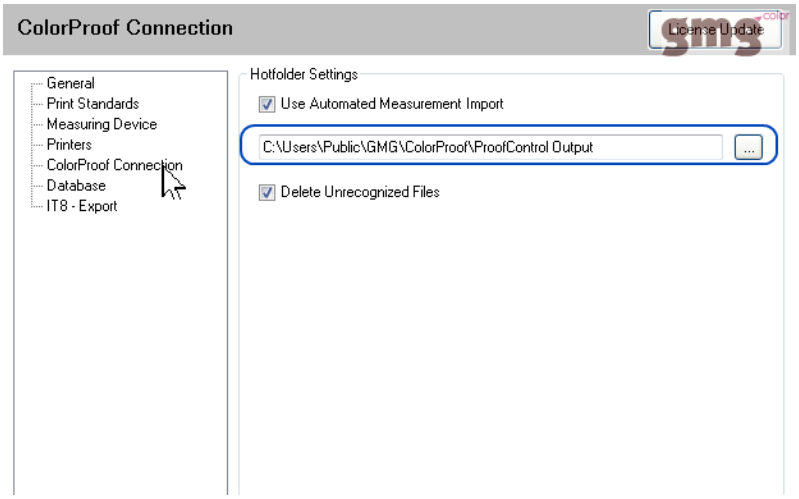


Fig. 78 Automatic measurement import via hotfolder.

How to import measurement jobs from GMG ColorProof via a Hotfolder

1. On the toolbar of the GMG ProofControl main window, click **Options**.
2. In the tree view pane on the left, click **Connectivity Options**.
3. Select the option **Automatic Measurement Import**. Browse your folders and select the folder where the measurement jobs are saved (default path: *Users\Public\GMG\ColorProof\ProofControl Output*).
4. Optional: Enable the cleanup functionality **Delete Unrecognized Files** to delete all unrecognized files.
5. Confirm with **OK**.
   The selected folder is scanned every 10 seconds for new data. All incoming data is automatically listed in the **Jobs** and **History** list in the main program view.

Manual Measurement Import (PMV Files)

If you are using an **integrated** measuring device and want to **manually** import measurement data, you need to activate the manual import option (**Options** > **Measuring Device** > **Use Manual Import of PMV Files**) and define the folder which ColorProof uses for storing the measurement data (default path: *Users\Public\GMG\ColorProof\ProofControl Output*). As soon as you activated the manual import option, a **Load** button is shown on the status display of the measuring device.

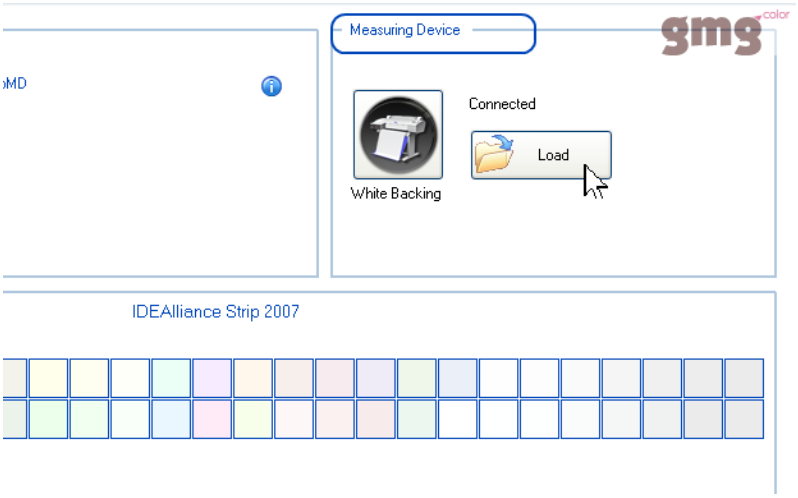


Fig. 79 Manual import of PMV measurement files.

→ Click the **Load** button to import single *.pmv measurement files.

Tip The data shown in the **Import Measured Values** dialog is filtered by the selected **Filter** and **Backing** options (**Options** > **Measuring Device** > **Manual Measurement Import**).

14. Remote Proofing



Fig. 80 Sharing the workload across multiple remote sites.

One of our key concepts is to enable our customers to always achieve exactly the same print results, whether a printer is located next room or in another country. With the enhanced remote proofing functionality in GMG ColorProof, you have every opportunity to move work between different locations.

GMG ColorProof enables you to access, store, and share your work from any location. You can configure an automated **up/download** of proof jobs and color management data such as profiles, spot color sets, calibration sets, media, control strips using an FTP server or network location. With the optional password and write protection, you can securely share files with multiple clients or associates. Furthermore, you can share profiles or spot color sets on a network drive, **centralizing** the management of custom application data.

Tip GMG ColorProof **Remote Proofing Only**: Instead of buying full licenses for sender **and** target site, you can install a remote proofing edition of GMG ColorProof at the remote site to produce "ready-to-print" jobs from other GMG ColorProof installations. The **Remote Proofing Only** license allows to print imported jobs, calibrate printers and perform printer maintenance, import, create and edit color management sets, and connect to GMG OpenColor to create multicolor profiles. Please ask your local dealer for further details.

The following table shows the different possibilities for sharing files and printing proof jobs in between different locations.

Options	*Short description*	*See also*
Manual remote proofing	Proof jobs and color management files can each be exported manually by selecting the file and using the **Save As** or **Sent To** command from the context menu. For the import, you can use the **File** menu or the **Import** buttons on the respective **System** tabs.	"Manual Remote Proofing" on page 199
Automated remote proofing via FTP	You can set up an automated job export by using the option **Export Job for Remote Proofing** in a workflow (Workflow properties > **Printer**).	"Automated Remote Proofing" on page 200
	To automatically **import** proof jobs from an FTP server and load balance them, you can configure an automatic transfer to a **hotfolder** which can directly send the jobs to the job list in GMG ColorProof.	"Managing Remote Proofing Sites" on page 197
	All remote sites can be configured and managed centrally (**System** view > **Remote Proofing** > **Manage Remote Proofing Sites**).	
WebClient	The client-server architecture of GMG ColorProof allows to create proof jobs and drag and drop files to remote GMG ColorProof hotfolders and workflows and have them processed, printed and validated.	GMG-WebClient_QuickStartGuide_en.pdf
Sharing data on a central server	If you are using **custom** profiles and application data and want to share them through a central server, you can easily synchronize your database by a one-time export and import of files.	"Sharing Data Through a Central Server" on page 202

14.1 Managing Remote Proofing Sites

Note To be able to use the FTP client within GMG ColorProof, you need to turn off any **proxy settings** within your browser (> **Internet Options**).

Sharing job files can be invaluable if a print provider has multiple locations and wants to be able to distribute work between them. On the **Remote Proofing** tab, you can set up remote sites for an automatic **upload** of proof jobs to an FTP or network location. The defined remote site can then be selected in the Manual Job Manager (**Send to** button) or Workflow dialog (**Printer** > **Export Job for Remote Proofing**) to automatically transfer the jobs to the other system.

Options	*Short description*	*See also*
E-Mail Notifications	To inform the recipient of the proof job that a new job has been uploaded to his FTP or network location, GMG ColorProof features an **optional** e-mail notification service. Following each upload / download of a proof job, the notifier automatically sends a notification including the name, ID, and creation date of the job file to the given e-mail address(es). (Requires **Outgoing E-Mail Notifications**.)	
Export Job Options	When setting up a job, you usually define a lot of data such as the job settings, the image files, color profiles, and so on. When sending a proof job to a remote site, you can embed these color management files (option **Embed Color Profiles**) or **link** them (**Link to Color Profiles**).	"Embedding or Linking Color Management Data?" on page 198
Security Options	For security reasons, you can **password-protect** your proof jobs so that the receiver of the jobs needs to enter the password before he is allowed to import the job. You can furthermore write-protect the image and job settings to ensure the proof is printed exactly as intended.	
Target Location	Settings for **uploading** proof jobs. Proof jobs can be automatically uploaded to a defined FTP or network location, or to a specific printer.	

Proof standards and spot color sets

Generally, it is recommended to **link** the color management data (provided the respective files are already present on the target system). If any file is **not** present on the target system, you can either export and import the respective file separately or you **embed** the data. When embedding the data, all used files are added to the proof job and the job will be imported in **read-only** mode.

Printer calibration

If a job uses a calibration set, the job transfer mode is irrelevant for the printer calibration, as a job with a calibration set is **always** printed with the current calibration file of the target printer. As all calibration sets are valid for a **printer series** such as Epson Stylus Pro x900 printers, you do not need to have the exactly same printer on the target system, but can also print a job for an Epson Stylus Pro 4900 on a 7900 model.

If you set up a job with a **custom** calibration file (and not a calibration set), the color management files have to be **embedded** when exporting / uploading the job to be able to import the job on another computer. Consequently, the job is printed with the embedded custom calibration file and not with the current calibration of the target printer (which is **not** recommended).

Control strips

If a proof job uses a control strip that is already present on the target system, the job can be easily uploaded via the **Link Job Data** option. Custom control strips (which are not present on the target system), however, cannot be embedded like any other file that is not present on the target system. To import a proof job that uses a custom control strip, you need to export and import the control strip separately (**Database** view > **Control Strips** >**Export/Import** button).

14.1.1 Embedding or Linking Color Management Data?

When setting up a job, you usually define a lot of data such as the job settings, the image files, color profiles, and so on. Depending on whether a job is sent to a remote site **with** the used color management data (option **Embed Color Profiles**) or if those are **linked** (**Link to Color Profiles**), there are a few things which need to be taken into consideration when exporting or importing a job.

If you select the transfer mode **Embed Color Profiles**, all used application data will be embedded into the proof job. This mode should be used when uploading proof jobs with **custom** application data (which are not present on the target system). Proof jobs with embedded data are always **write-protected** to ensure that the remote proof is printed exactly as defined by the sender. If you upload jobs with GMG application data, which are also present on the target system, use the transfer mode **Link to Color Profiles**. When linking the job data, only the internal database IDs of the used application data are written inside the XML structure of the proof job, no files are sent along with the job.

14.2 Remote Proofing Settings

On the **Remote Proofing** tab, you can configure your system for sending proof jobs to remote sites (> **Remote Proofing Sites**) and receiving proof jobs from remote sites (> **Import FTP Settings**). For a seamless communication between sender and receiver, add your e-mail settings to keep updated on the proof status.

Group	*Short description*	*See also*
Outgoing E-Mail Notifications	Fill in your e-mail settings for sending e-mail notifications, for example, to inform other users when you sent a proof job to their FTP or network location. Check to ensure your settings are set up correctly by sending a test e-mail.	
Remote Proofing Sites	Settings for **sending** proof jobs to remote sites. Click the **Edit** button to set up and manage remote proofing sites. When you want a proof job to be printed on a remote site, you can then select the defined remote site in the Manual Job Manager (**Send to** button) or Workflow dialog (**Printer** > **Export Job for Remote Proofing**). This way, proof jobs can be sent automatically to a target folder on an FTP or network location.	"Managing Remote Proofing Sites" on page 197
Incoming E-Mail Notifications (Sent by Remote Site)	If you want a **feedback** notification on sent proof jobs, fill in an e-mail address of yours. The e-mail address is then embedded in the proof jobs and used by the notification service on the remote site to return an import notification, for example.	
Import FTP Settings	Settings for **receiving** proof jobs. Proof jobs can be automatically imported from a defined FTP hotfolder and added to the job list in GMG ColorProof. Available only if the option **Automated Job Import from FTP** is selected. If GMG ColorProof is not picking up jobs from your FTP server, please check your antivirus firewall settings to ensure they are not blocking the communication between GMG ColorProof and FTP server.	
Import Hotfolder Settings	You can alternatively automate the job import by specifying a target hotfolder. All proof jobs that are copied or moved to this folder are automatically added to the job list in GMG ColorProof. If the imported jobs are password protected, you need to save a password list as a text file (Passwords.txt) into the hotfolder. Passwords are entered in separate lines into the text file (line break as separator).	

Group	*Short description*	*See also*
Import Job Handling	When importing a job with a larger media size than the one defined in the **Target Printer**, you can specify a **default action** for the import. You can either keep the original job layout and then manually define a different media size or you can apply an automatic placement with predefined settings for the image rotation. Importing remote jobs can be made dependent on a specific **dongle serial number**, forcing the system to only accept remote jobs from a specific sender. To do so, insert one or more serial numbers and protect the entry with the administrator password. The jobs exported out of the sender system automatically contain the license serial number information of the sender. On import, jobs can be automatically **put on hold** instead of directly being added to the print queue.	

14.3 Manual Remote Proofing

Proof jobs and color management files can each be transferred **manually** to another location by selecting the file and using the **Send To** command. For the import, you can use the **File** menu (> **Import Job**) or the **Import** commands for the respective **Database** items. You can automate the file import by defining an import hotfolder (**System** > **Remote Proofing**> **Automated Job Import via Hotfolder**).

How to manually transfer proof jobs to another system

1. Configure a proof job in the Manual Job Manager and click **Job** > **Send To**.
   The Send To dialog is displayed.
2. Select a **Target Remote Site** from the drop-down list.
3. Optional: Click the **Edit** button to edit a remote site.
4. Click **Send** to upload the file to the selected remote site.

Note Already printed jobs can be exported from the **History** list by right-clicking on a job and selecting the **Send To** command from the context menu.

How to manually import proof jobs

1. **System** > **General**> **Folder for Manually Imported Jobs**: Select a folder for extracting the proof jobs you want to import to.
2. On the **File** menu, click **Import Job**.
   The Import Job dialog is displayed.
3. Browse for the job you want to import.
4. Optional: If you activate the option **Print Directly**, the job will be directly sent to the **Print Queue**. If you do not select this option, the job will be opened in the **Manual Job Manager**.
5. Click **Open** to import the job.
   The job archive is extracted to the specified **Folder for Manually Imported Jobs** and added to the **Jobs** list. If the job was password-protected, you will need the correct **password** to import the file.

Note Import jobs with **embedded** color profiles are only saved **temporarily**. After printing the job, all embedded job data such as the proof standards and spot color sets are deleted. This ensures that custom profiles are only used for the submitted jobs and that the database of a remote system is not cluttered with custom proof standards which are not used in local workflows.

How to import proof jobs by use of a hotfolder

1. **System** > **Remote Proofing** > **Import Hotfolder Settings**: Activate the option **Automated Job Import via Hotfolder**.
2. Under **Job Import Hotfolder**, select a folder for the import files.
   This folder will be scanned in regular intervals for incoming job files.
3. Copy proof jobs to the specified **Job Import Hotfolder**.
   All proof jobs will be automatically extracted and added to the job list in GMG ColorProof.

Tip GMG ColorProof creates a file called **Errors.txt** in your **Job Import Folder**. In case the extraction or the import of a job fails, open this error log to see what causes the problem.

Password protection

When exporting a file, you can optionally enter a **password** to protect your files. This way, no files can be imported without entering the correct password. To automatically import password-protected jobs, you need to enter the password(s) into the **Passwords.txt** file which you can find in your **Job Import Hotfolder**. Just open the text file and type in the password(s), one per row, and save the file when you are finished.

14.4 Automated Remote Proofing

Proof jobs can be automatically uploaded to an FTP target folder or network location, either by multi-select in the job lists (> **Send to**) or by using the option **Export Job for Remote Proofing** in a workflow (Workflow properties > **Printer**). Complementing the automated job upload, exported jobs can be automatically downloaded and printed from a target directory on a remote site.

How to automatically export jobs from a workflow to an FTP server

1. **System** > **Remote Proofing** tab > **Remote Proofing Sites**: Click the **Edit** button to configure a new remote site.
   The Manage Remote Sites dialog is displayed.
2. Click the **Add** button to add a new remote site.
3. Enter a name for the remote site.
4. Under **Color Management**, select a transfer mode for the color management data.
   Select the transfer mode **Embed Color Profiles** to embed the job data into the export archive (job is read-only in this case). Select the transfer mode **Link to Color Profiles** to link the job data (recommended if the color profiles are already present on the target system).
5. Optional: Use a password protection.
6. Optional: Enter the e-mail address of the recipient to notify him, when a job has been uploaded to his site.
   (Requires **Outgoing E-Mail Notifications**.)
7. Under **Target Location** > **Automatic Transfer**: Select **FTP**.
8. Browse for an FTP **Target Folder** to export the jobs to.
9. Fill in the necessary parameters for the FTP connection.
10. Optional: Test the FTP connection by clicking the **Test** button in the bottom right corner of the window.
    (The network connection will be established automatically using the Windows internet options.)
11. Click **OK** to confirm the settings.
12. Close the Manage Remote Sites dialog and open the workflow you want to export jobs from.
13. On **Printer** tab, activate the option **Export Job for Remote Proofing**.
    Please note that load balancing and nesting are not available for remote proofing.
14. Under **Target Remote Site**, select the remote site you set up in the previous steps.
15. Click **OK** to confirm the settings.
    All proof jobs created by this workflow will now be uploaded to the specified target location instead of being printed. If you want to first print and then upload the proof jobs, you can select the option **Print on Local Printer before Exporting**.

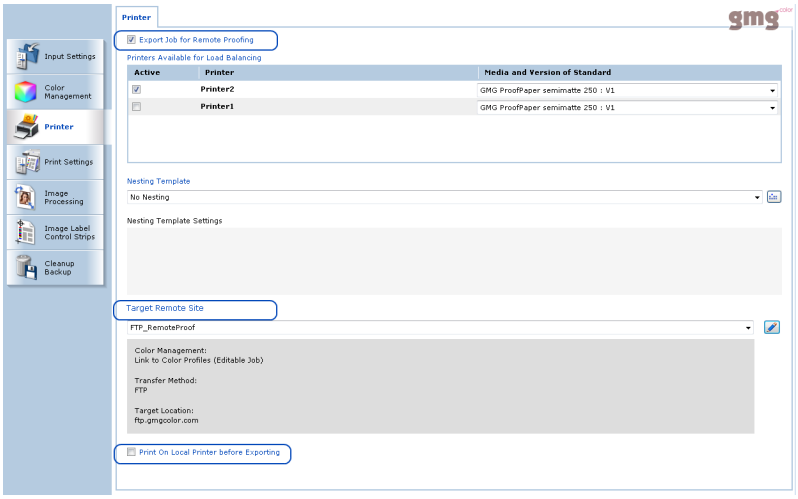


Fig. 81 Automatic export of proof jobs from a workflow.

How to automatically import proof jobs from an FTP server

1. **System** > **Remote Proofing** tab > **Import FTP Settings**: Activate the option **Automated Job Import from FTP**.
2. Fill in the necessary parameters for the FTP connection.
3. Define a hotfolder to transfer the proof jobs from the FTP server to your local computer.
   This way, all files will be automatically downloaded from the FTP server and added to the job list in GMG ColorProof, load balancing the jobs to the available printers.

Import Job Handling—Image placement of imported proof jobs

In general, a remote proofing job is printed exactly as it was configured before the export. Thus the image placement is not changed if this is not necessary in order to print the job. If, however, a proof job has been configured for a larger media size than available on the import system, the proof job needs to be edited. With the **Import Job Handling** functionality, you have the choice between manually editing the image placement of proof jobs (> **Keep Original Job Layout**) or using the automatic placement of GMG ColorProof (> **Apply Automatic Image Placement**).

When keeping the original placement, a job that was configured for a larger media size and is load balanced to a printer with a smaller media size, is put on hold and needs to be opened and configured in the Manual Job Manager. If you select the automatic image placement, GMG ColorProof tries to rotate the images in a way that they fit on the smaller media size. If an automatic placement is not possible (because the images still do not fit), the job is also put on hold and needs to be configured manually.

14.5 Sharing Data Through a Central Server

In the following, you will learn how to share **custom** profiles or spot color sets on a **local** network for reasons of **maintenance**.

Basically, all you have to do is: set up custom proof standards or spot color sets with the target file paths on **one** computer, export the sets, and import them **once** to all other computers.

Note Whenever a profile is changed, the **checksum** will be updated, too. If you want to print a job with a profile that has been **changed**, you will, for reasons of process safety, be informed of this change by an error message in the **Jobs** list. Please open the corresponding proof standard and confirm this change by clicking the **OK** button.

How to share proof profiles or db3 files through a central server

1. **Copy** all proof profiles or db3 files you want to maintain and share from the respective subfolders of the main program folder to a network drive.
2. **Open** the corresponding proof standard or spot color set in GMG ColorProof by double-clicking on it.
3. Enter the **link** to the profile or db3 file you copied to a network drive in step one. (Proof Standard: **Color Management** tab, Spot Color Set: **Import** tab.)
4. Click **OK** to save your changes.
5. Right-click the proof standard or spot color set in the **Database** view and select **Export** on the context menu.
   The **Export** dialog is displayed.
6. Click the **Save** button to **export** the proof standard or spot color set.
   All linked files are exported along with the selected proof standard or spot color set. The link to the network you entered in step 3 will be preserved and checked when importing the file. If the path cannot be found on the target system, the default path of the imported file will be used.
   After exporting a proof standard or spot color set, you can change or edit the linked profile/db3 file any time without having to repeat the procedure on all connected computers.
7. **Import** the standard or set in another GMG ColorProof instance (with the given file path, i.e. link to the network).
8. **Check** the properties of the imported file and click **OK** to add it to your database.
   This way, you can set up the same color management sets for use on several computers in your work group, being sure to always use the latest version of the profile or db3 file.

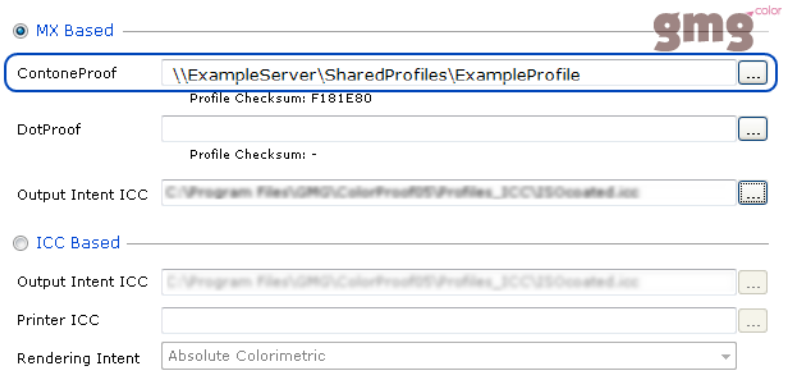


Fig. 82 Proof Standard with a network link to a shared profile.

15. Maintenance

15.1 Environment Backup

GMG ColorProof features a full backup of workflows and the environment. Moreover, it is possible to export and import specific workflows, for example, if you want to share a certain configuration with a colleague. The environment backup can be created on one computer and restored on another, independent of the used operating system and the drives on which the paths are defined. This way, you can quickly transfer a specific configuration to a different computer.

The **environment backup** feature saves and restores all **folder paths** (hotfolders, backup folders) and all **program settings**. It also saves **linked files** such as color profiles.

An environment backup is also a very convenient feature if you need to set up the program on a **new computer**.

If you follow a very strict security protocol in your company, it might also be worth considering to use the **Restore Backup** feature for restoring the settings at the begin of each working day, to make sure that no manual changes were applied to any folders or workflows, and thus to guarantee the full productivity of your workflow setup.

To avoid data loss, especially when having a larger number of workflows, we recommend that an administrator saves a backup on a **regular** basis (for example, once a month) and/or each time **before** performing a software update.

Tip Use the **Backup Scheduler** to **automatically** create environment backups in regular time intervals (**System** view > **General** > **Environment Backup Scheduler**).

How to save a backup

1. On the **System** menu, point to **Environment Backup**, and click **Create**.
2. Browse to the desired folder and save the backup under any file name.

How to restore a backup

Note As critical system parameters might be changed from software version to software version, it cannot be guaranteed that an environment backup from a previous version can be restored on a newer installation. Restore an environment backup **only** from the **same** software version you have used when creating the backup.

Please make sure that you have **full write access** on all directories where folders are linked to GMG ColorProof. Otherwise, the **Restore Environment Backup** command might not be able to restore all folders.

1. On the **System** menu, point to **Environment Backup**, and click **Restore**.
2. Browse your folders and select a backup (**env**) file.

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