Excourse PressPerCent
User Guide

ABOUT PRESSPERCENT

Development of Excourse PressPerCent application was started in the middle of 1990's. The main purpose of it was to create a simple ink key pre-setting software tool — a popular subject at the time when press manufacturers and printers were in search of less expensive, space-and-time saving solutions to replace hardware plate scanners (that never were extremely reliable, among other things). Since then PressPerCent evolved to include more features our customers and OEM partners requested, such as: support of internal job formats for many press types and models, calculation of maximum total ink values, spot color preview, automatic job processing through hot folders, flexible press configurations, etc.

Technically the application itself represents an area coverage calculator. It converts jobs in various input file formats into bitmap images with relatively low resolution (PressPerCent's internal jobs format), then it counts number of pixels with different color values and shows results as percentages. The calculation is done for several area types specified by user: entire printable area of the printing press, page area of the job, stripes that correspond to ink zones of the printing press, or any rectangle that user selected on screen using touchpad or mouse.

These results could be modified using correction curves, viewed on screen, printed on office printer, exported to various file formats: plain text, PDF, PPF or internal formats that could be loaded into printing press consoles. All export operations (except for the PDF export, that essentially is the same as printing and is performed through OS X printing subsystem) in PressPerCent are implemented via plug-ins mechanism that allows to add support for new export format versions or to tailor specifics of some plug-in to individual customer's needs without changing a code of host PressPerCent application itself.

Suggestion: Before you will start using PressPerCent, you should decide what exactly you would like to do with the application and how do you plan to integrate it into your existing workflow, then you should configure various application settings to your needs or tastes and test this setup. Backing up files of working configurations for safe-keeping or future needs is always a good idea (PressPerCent is not an exclusion from this case).

ABOUT THIS USER GUIDE

This short user guide will provide you with basic and general information that can help to investigate various application features. It expects that you already posses some basic knowledge of computers (including Apple's OS X operating system) and it does not cover trivial details like: "To quit the application, please, choose **Quit** command from **File** menu". However, if you feel that some parts of this user guide are particularly obscure and should be expanded, please, contact us — we will consider adding more information on the subject in future updates of this guide. Also, please, be aware that this text was written by non-English speaker who lives in parts where almost no one understands the difference between 'a' and 'the' articles (that, of course, any properly educated person should know by heart).

This user guide is split in two parts: **Using PressPerCent**, that covers basic details of the application, and **Configuring PressPerCent**, that serves as a quick reference for application configuration dialogs and settings. The details of export formats support by different plug-ins are not covered in this user guide. Please, see documents that may accompany specific plug-in or contact us for details.

This user guide describes features of PressPerCent application **version 3.4.7** (that was released in **September 2016**). If you use newer or older version, there could be some differences in features or behavior.

If you have any comments about PressPerCent application or this user guide, please, share them with us via e-mail address: info@excourse.com. Without your valuable input and feature requests the further development of the application will not be possible (and today's versions of PressPerCent were quite different if existed at all)!

PART I: USING PRESSPERCENT

In this part of the user guide we will try to summarize what you can do with PressPerCent application, and what is the typical usage we know PressPerCent's users did put the application to. This list, of course, is incomplete, we excluded from it some more exotic examples like "printing cylinders inspection", sorry.

1. INK KEYS PRE-SETTING

This was the primary purpose of PressPerCent application. It was created as a software replacement for hardware plate scanners — big, heavy, expensive and not very intelligent devices that were used to scan printing plates and calculate percentage of imaged area for stripes with the same width and plate positions as ink zones of the press machine. Universal plate scanners (that were used for whole range of printing equipment made by one or several press manufacturers) did not modify these area coverage values that were transferred (via network, floppy, job card, etc.) directly to the press consoles. During the job preparation plate scanner 'pure' area calculations were adjusted for this or that specific press model using curves (or other algorithms) built into the press console and converted into ink key values (that press operator could sees and control with buttons, 'light pens', etc.). The basic idea behind whole this thing was to improve make-ready times, reduce paper and ink waste, and do other things that improve business for printing companies …and, amazingly, it did actually work.

PressPerCent can accomplish the same task, using files in PPF/TIFF/PDF formats as a source data (instead of physical printing plates). It can also apply various correction curves to area coverage calculation to convert it into ink key values that press operator can set during make-ready. The results could be viewed on screen, exported to various file formats (using export plug-ins) or printed on sheets of paper (to be set manually for less advanced press consoles). The quality of such pre-setting depends on the printing press type, model, condition and accuracy of correction curves (both in press console and in PressPerCent — if any curves are used at all).
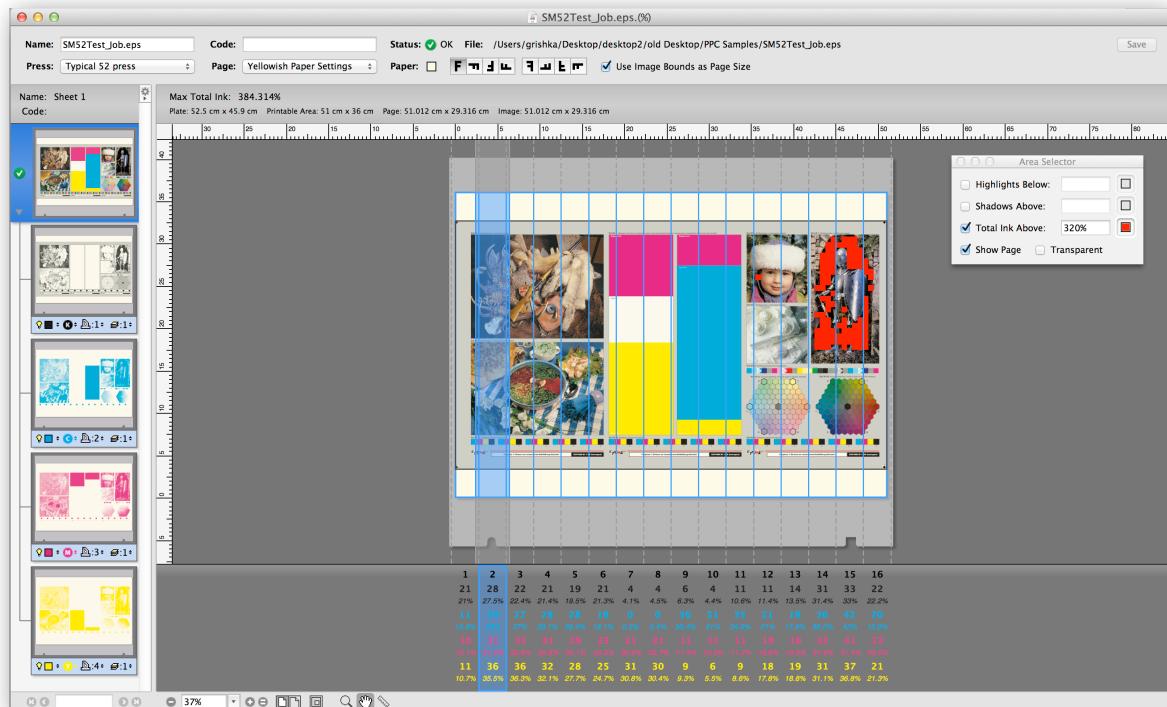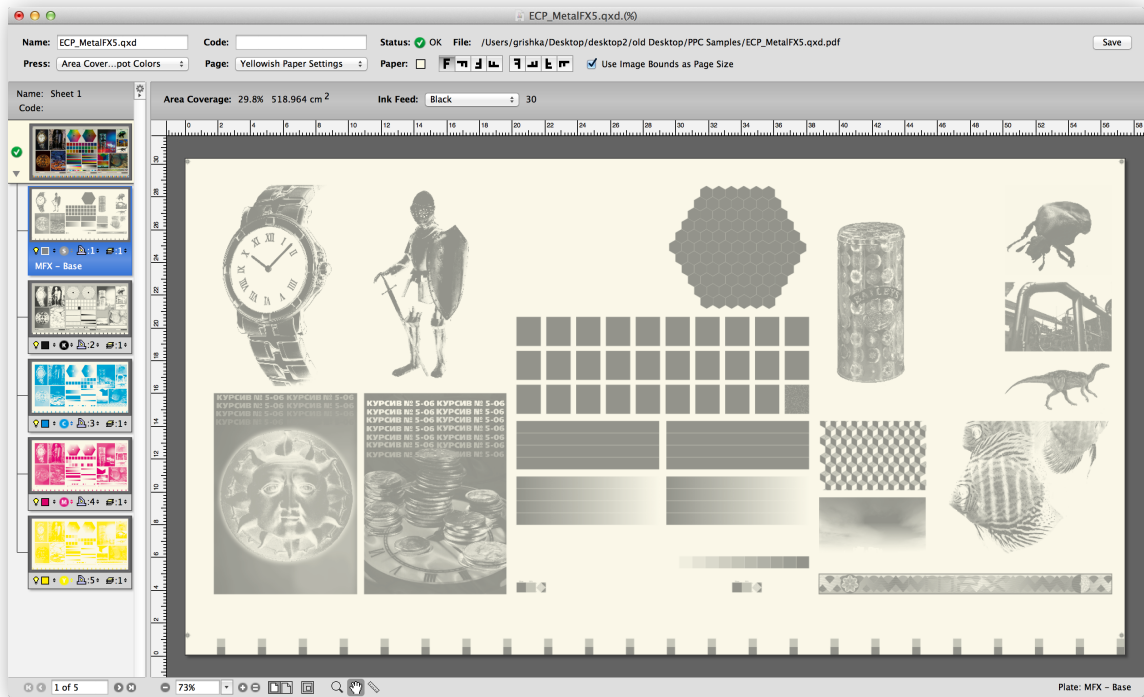

Job window of PressPerCent application with ink zone values displayed (zone #2 is selected).
Areas with maximum Total Ink above 320% are marked with red color.

2. AREA COVERAGE ESTIMATION

Another common usage of PressPerCent application is to calculate imaged area for entire size of the printing plate (or for the size of the printable are of the press, or for the page size of the job). These values could be used to estimate the amount of ink required to print some job. This feature may also help to packaging printers (including those with flexographic equipment) to calculate amount of Pantone inks or even to digital printers (to quote the price based on toner consumption estimates).

Note: If you only need to know the area coverage for a job (without ink zone information) just switch off the **Ink Key Zones** checkbox in PressPerCent **Press Settings** dialog (this will turn off calculation and display of ink zones that you do not need).

Job window of PressPerCent application with area coverage calculation shown for selected metallic spot color plate.

3. JOB PREVIEW AND INSPECTION

Although it is too late to re-separate images or modify colors of text and vector graphics on pages of the job when plates and are ready for printing and PPF file that accompanies them was submitted to PressPerCent for ink zones calculation, the printer should pay attention to stuff like Total Ink Limit (TIL) warnings and take appropriate steps to avoid possible problems: reduce the speed of the printing press, adjust anti set-off spray powder amount, choose different paper stock or ask for another set of re-separated plates and PPF files.

PressPerCent calculates maximum total ink value for each sheet of the job and shows the problematic areas based on user defined sample size (that allows to ignore control bars and registration marks that may exceed Total Ink Limit without negative effects).

It could also be a demanding task to predict the exact results of printing with spot colors, especially with tricky inks like varnish or metallics when the order of printing inks may have significant effects on the result. Printing on colored, tinted or metallic paper presents a similar problem. In PressPerCent a user can define the order of inks and their units assignment, specify if the ink is transparent or opaque and choose the tint for paper color. If the job is to be printed in several runs (four color job on two color press, for example) the output of each run could be previewed or printed.
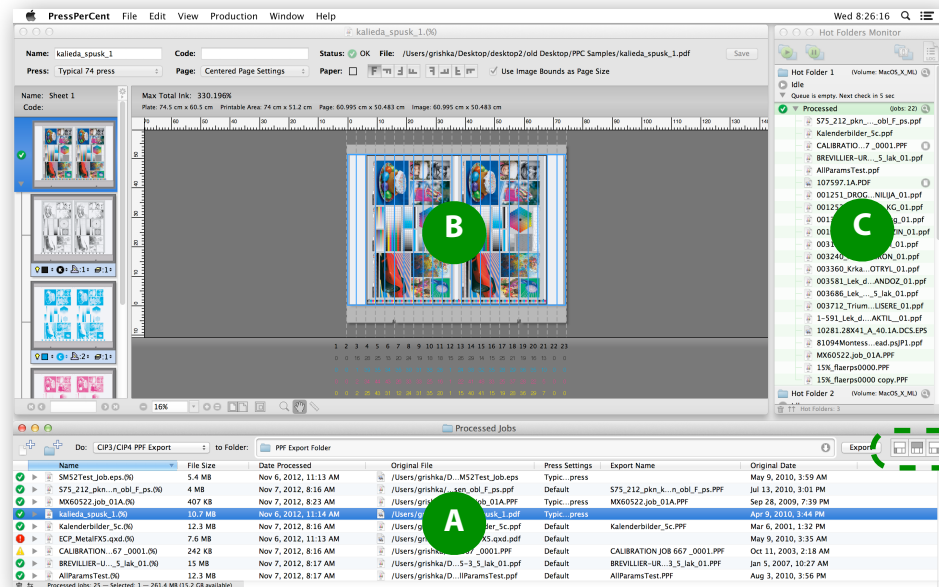
USER INTERFACE

PressPerCent allows users to choose between two display modes for their daily work: the single window interface that shows all important information in one compact view, or the same information split into several parts in multiple windows.
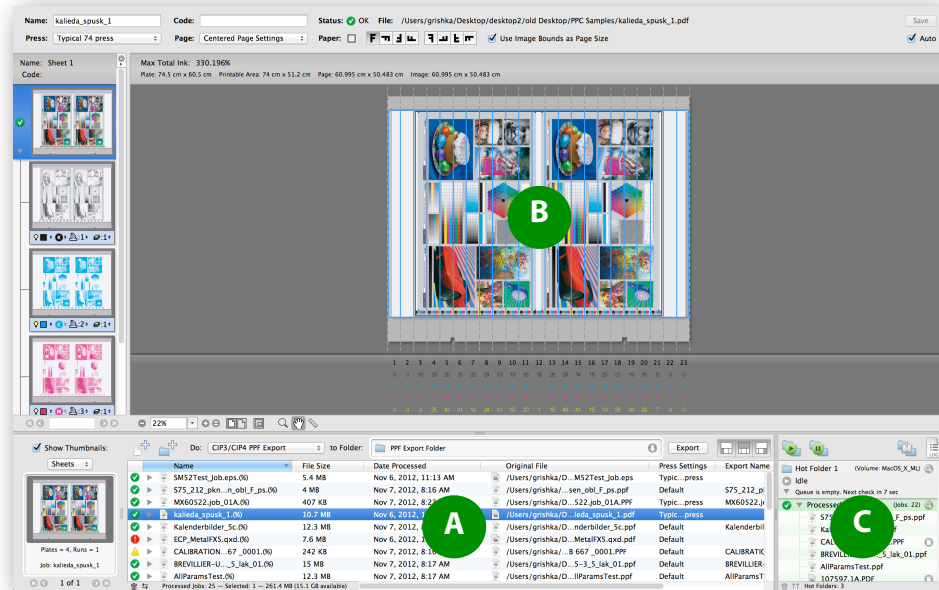
In the first case **one window** shows the list of all **processed jobs** in its bottom part (A), **job's preview** in top part (B) and **hot folders** status on the right side (C). This type of display does not require user to open any additional windows and switch between them to perform the most frequent and common tasks. This is the recommended mode for those who use PressPerCent for automatic jobs processing or for those who do not have a need to inspect several documents side by side.

In the second case parts of this unified single window could be hidden or moved to *separate windows*: hot folders list display could be hidden or opened in another window called **Hot Folders Monitor** (C), job's content could be inspected and modified in individual *document windows* (B) (one window per job), even small thumbnail in left part of **Processed Jobs** list (A) could be hidden from view if desired (for example, to speed up selection of processed jobs in the list).

To control these display modes toggle 'on' or 'off' three buttons located in right top corner of processed jobs list

COMMON TASKS

This section contains quick overview of some common tasks that you can perform with PressPerCent and user interface elements that you can use to accomplish these. If you are new to PressPerCent application, we recommend to read the following few pages (or just leaf or scroll through and look at pictures).

As was already mentioned, PressPerCent is an area coverage calculator. You normally use it to **open and process** jobs in one of supported file formats. At this step the incoming jobs are converted into application's internal jobs format, that essentially is just a collection of low resolution pixel maps (one image per plate/separation of the job). These jobs in internal format have "(%)" suffix at the end of their file names and reside within "Processed Jobs" folder. You can **inspect or modify** content of these jobs in document windows, then **print or export** them to PDF (or to other file formats supported via export plug-ins).

Below you will find a quick description of all of these common tasks.

1. OPEN AND PROCESS

There are three different commands you can use to open and process jobs with PressPerCent:

✦ **Open/Process** command from **File** menu brings to screen standard system **Open** dialog where you can navigate through hard drives, servers and folders to select one or several files to process. For each file PressPerCent will create new job in "Processed Jobs" folder. After the jobs are processed they will be automatically opened for user inspection.

✦ **Open/Process Folder as Single Job** command from **File** menu brings to screen standard system **Choose Folder** dialog where you can select a folder that contains several files you want to process. These files will be processed and combined into one PressPerCent job. For example, you can use this feature, to open several files with 1-bit TIFF separations as a single job. PressPerCent scans the chosen folder (and all sub-folders within it), then it sorts the files in alphabetical order, process them one-by-one and combine the result into one big job.

✦ **Process All Jobs in Folder** command from **File** menu is similar to **Open/Process Folder as Single Job**. It also processes all jobs found in user-specified folder (and its sub-folders), but it does not combine the result into one job. It allows you to process quickly all files within some folder (as if you have opened them one-by-one using **Open/Process** command). The jobs will not be opened in PressPerCent's document windows automatically after they are processed.
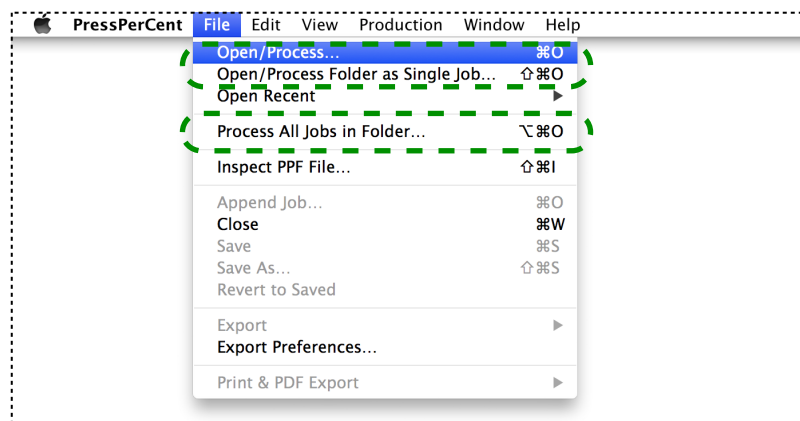
You can automate jobs processing using "Hot Folders". This way you do not have to manually choose files with "open/process" commands. Use **Production** panel of **Preferences** dialog to setup and configure one or several hot folders, then use **Hot Folders Monitor** window (or commands from **Production** menu) to start or pause them. **Hot Folders Monitor** allows you to control hot folders processing.

2. CHECK AND MODIFY

After the job was processed its job-file in internal PressPerCent's format (with "(%)" extension) appears in "Processed Jobs" folder. Contents of this folder is shown in **Processed Jobs** list. You can select entries in this list to open, print, export or delete jobs that they represent. To open jobs just double-click their list entries, to do other operations use contextual menu commands (do Control-click or secondary-button-click on selected entries to invoke contextual menu).
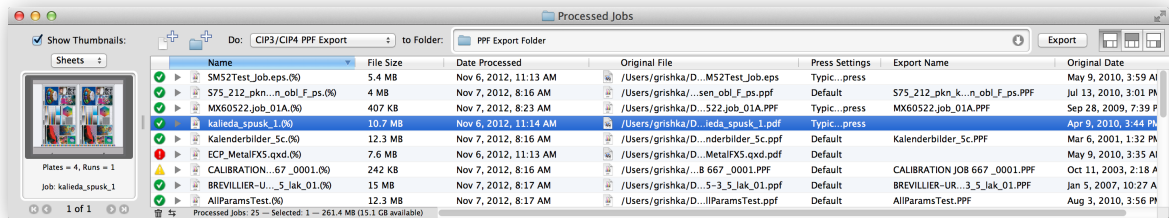
The document window of PressPerCent's job has three distinct parts:

✦ *Info header* (A) in top part of the window. Here you can see and edit job's name, change press and page settings that are assigned to this job, modify page orientation and paper color.

✦ *Preview area* (B) contains the image of selected sheet (or side, or plate) of the job, shows ink zone values (displayed below the image) and brief information about this plate or side (shown above the image). You can zoom in and out to look at preview at higher or lower magnifications, use **Measure Tool** to check color values under mouse pointer. You can also use **Area Selector** inspector to look at areas with certain total ink values.

✦ *Thumbnails list* (C) on the left side of the window allows you to select different sheets, sides or plates of the job. Here you can rearrange sheets, sides and plates, use commands from contextual menu or from action pop-up menu (menu with small "cog" icon button) to make job single-side or double-sided, to add and delete sheets or plates, etc.
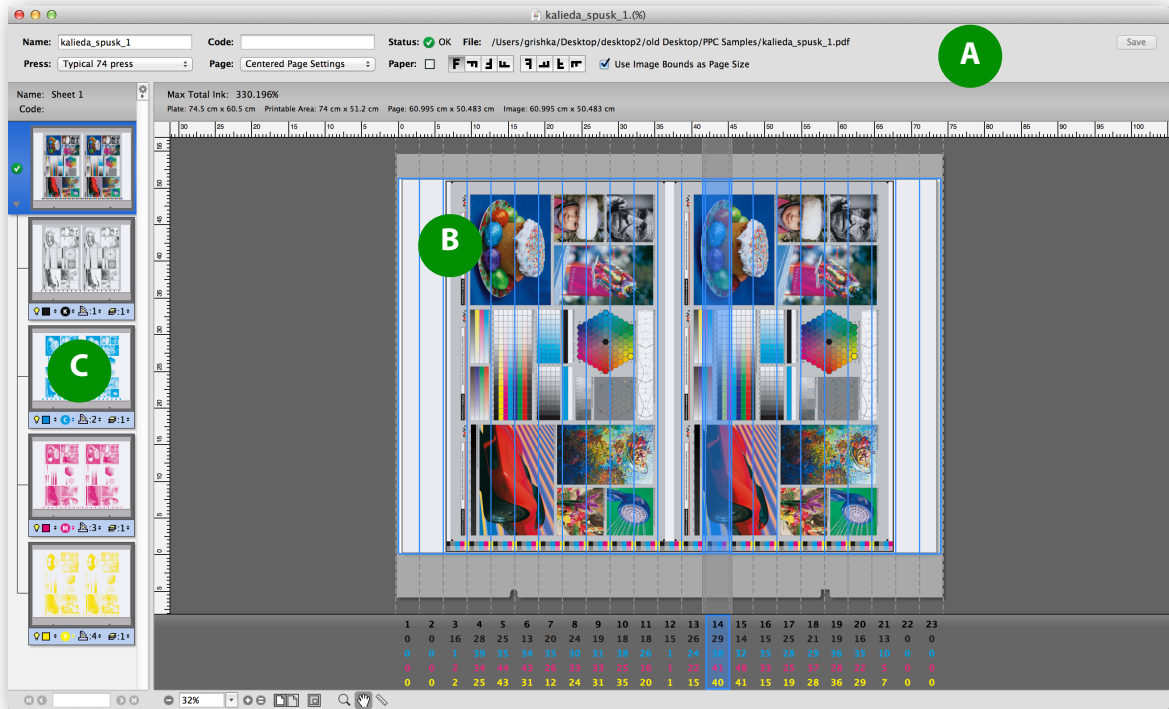
Plates representation in the thumbs list has the following control elements that you can use to change its separation color or to assign it to be printed on some specific unit of the printing press:

✦ *Visibility*. Click this light bulb icon to exclude the plate from preview image of its side. This could be helpful, for example, if you want to see how image of the job will look without this ink.
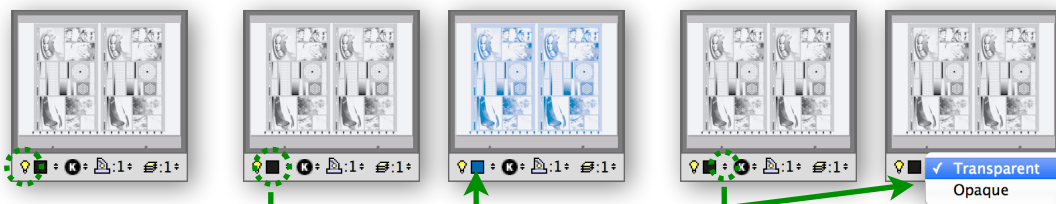
✦ *Preview color*. This small rectangle shows color of the ink that will be used for plate's preview. Click this rectangle to set its color to **Color Mixer** inspector. To change the ink preview color, you can drop new color on the plate's rectangle from **Color Mixer** inspector or from spot color palette. You can make ink transparent or opaque using pop-up menu beside the color rectangle. Opaque inks will cover the image printed by other inks before them, transparent inks will overprint the image. If one or more inks in the job are opaque the resulting image will depend on printing order of the inks. The printing order is controlled by *unit* and *run* numbers assigned to the plate (see below).

✦ *Separation type*. This icon and pop-up menu define if this plate has one of process (C, M, Y, K) colors or spot color. If you set the separation type to **Spot** color, the plate rectangle in thumbnails list will expand, to accommodate one additional line where you can see the spot color name. Double-click this line to edit the name of the spot color.
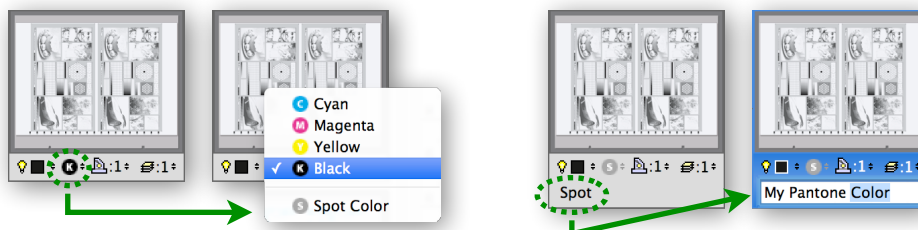
✦ *Unit number*. This control element shows the number of the printing press unit that will be used to print this plate. You can click this control to choose a different unit from pop-up menu. If one unit was assigned to more than one plate of the job, its number will be shown in red. You can create additional *run* (see below) if you want to print more than one plate of the job on the same unit.
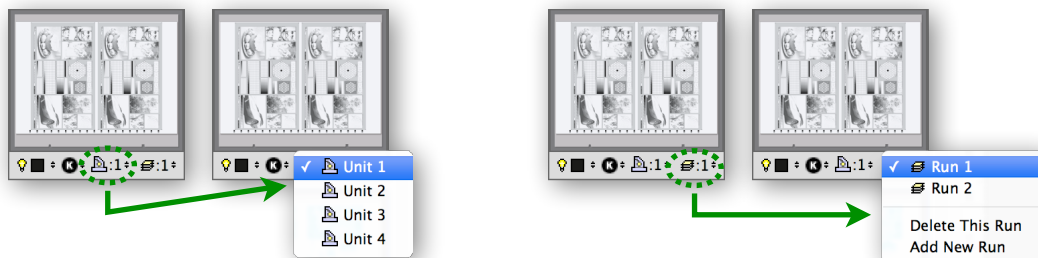
✦ *Run number*. If the number of plates in the job exceeds the number of units of the printing press, you have to split printing of this job into several "runs" (or "passes of a sheet through the press"). For example, to print 4 separations of CMYK job on 2-color press, you will need 2 runs. To create additional press runs and to assign different runs to different plates you can use run number pop-up menu. To add new run you should click this control and choose **Add New Run** command. To delete existing press run (if more than one press run exists) choose **Delete This Run** command.

You can restore initial plates to units and runs assignment (that is based on press configuration defined in the "Press Settings") by choosing **Reset Unit and Run Assignment** command from contextual menu or from thumbnails list's action pop-up menu.

3. PRINT AND EXPORT

After the job was processed and inspected you can print or export it. To print or export a *single job* you can open it by double-clicking its entry in **Processed Jobs** list and choose appropriate print or export command from **File** menu. Standard system **Print** or **Save** dialogs will appear after that.
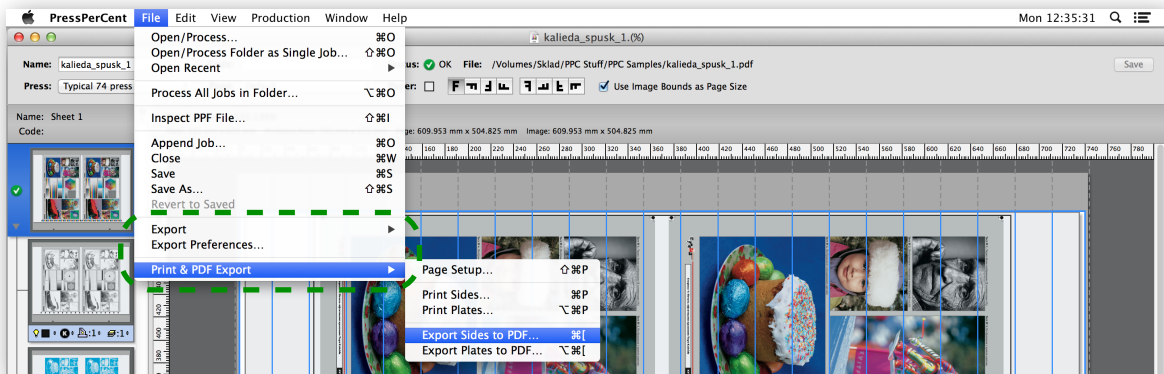
To export *single job or several jobs* without opening them, you can select their entries in **Processed Jobs** list and choose appropriate print or export command from **Do** pop-up menu in top part of the list or a command from contextual menu (Control-click or secondary-button-click selected entries to invoke the contextual menu).
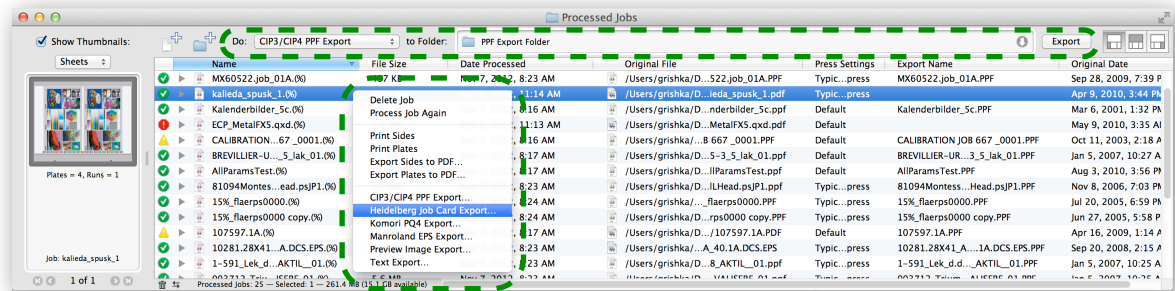

If you choose to print or export *several jobs* using contextual menu, another dialog window will appear in front of you. Here you have an opportunity to decide which jobs you want to print or export and re-arrange the order of these jobs. Available export options depend on specific export plug-in features.
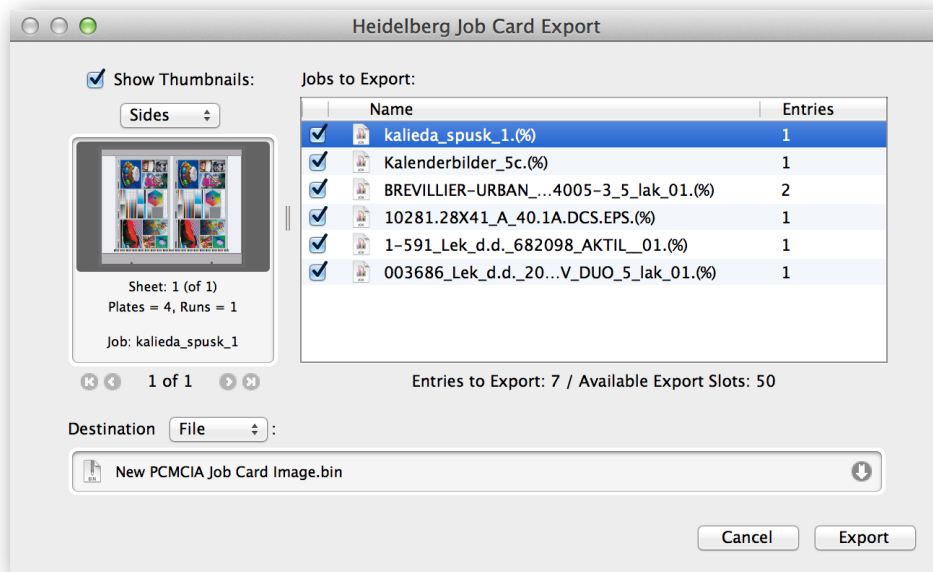
4. CIP3 PPF INSPECTION

There are other additional tasks that you can perform with PressPerCent application. One of them is the inspection of jobs in CIP3 PPF format. This feature allows you to look at the original content of incoming PPF file before processing it and decide if you want to preserve its page orientation or paper properties.

To inspect PPF file choose **Inspect PPF File** command from **File** menu.
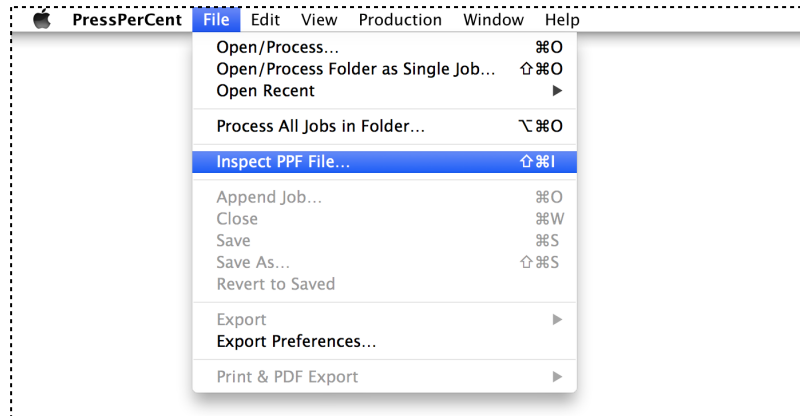
After you select the file (using standard **Open** dialog), new window will appear in front of you. In its left part you can see preview image of the CIP3 PPF job and several checkboxes (below the image) that you can use to inspect plate, paper or press printable area specified in this PPF file. The right part of the window contains another set of checkboxes that allows you to preserve some page and paper properties or transfer curves if they are specified in this file. If you will not select any of these checkboxes, the job will be processed according to PressPerCent's *default page settings* (see the next parts of this user guide for information about **Page Settings** configuration).
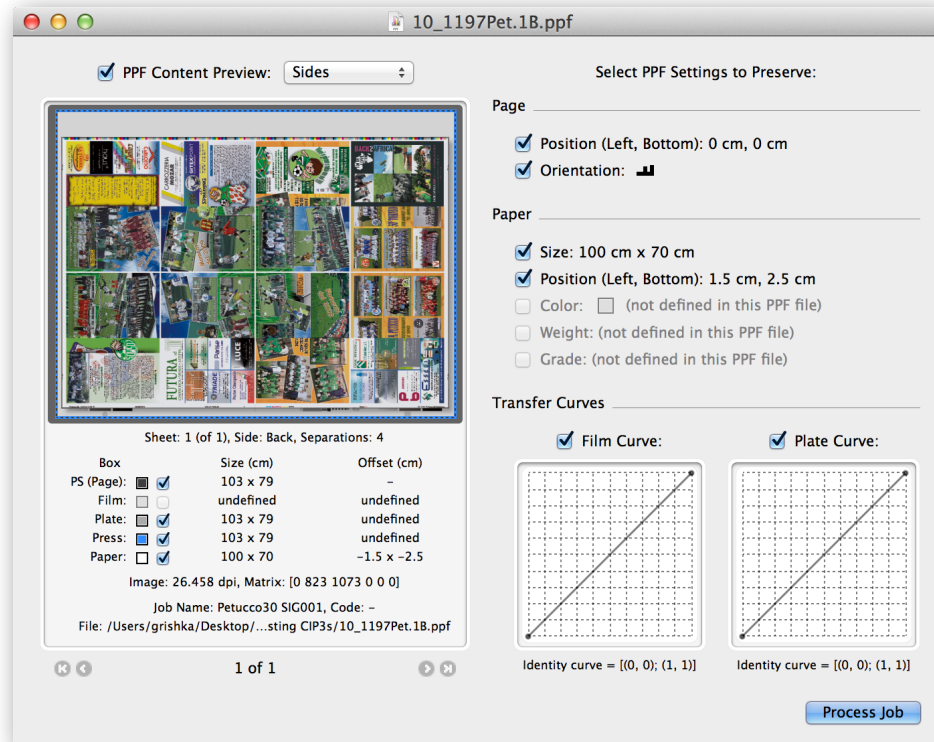
To process the PPF file after inspection click **Process Job** button.

PART II: CONFIGURING PRESSPERCENT

This part of the user guide contains description of different panels and fields of PressPerCent's configuration dialogs. These dialogs allow you to configure settings of PressPerCent application and to create presets for various needs. They could be divided into three types:

✦ **Preferences** that control application-wide settings like measurement units, color of elements in document windows, settings for export plug-ins, hot-folders, etc.

✦ **Press Settings** that define properties of your printing equipment like number of printing units, size of printable area, plate size, type of inking controls, etc.

✦ **Page Settings** that define common properties of jobs like image and paper position, page orientation, type and color of paper, etc.

You can create as many sets of press and page settings as needed, save them to different preset files and assign to individual jobs when some specific configuration is required (depends on production needs). For example, you can create separate settings files for different printing presses your company has or for different inks or paper used on each press.

All preferences and settings in PressPerCent could be accessed and configured using commands from **PressPerCent** application menu (a menu with title "PressPerCent" that is located in top left corner of the menu bar, beside Apple menu).
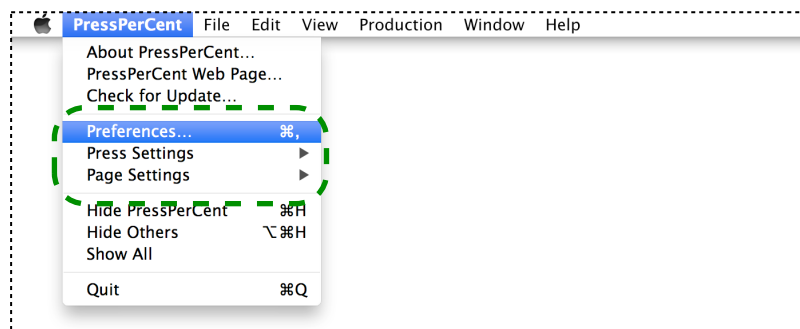

There is one command that brings to screen application **Preferences** dialog and two independent submenus with options that bring on screen various **Press** and **Page Settings**.
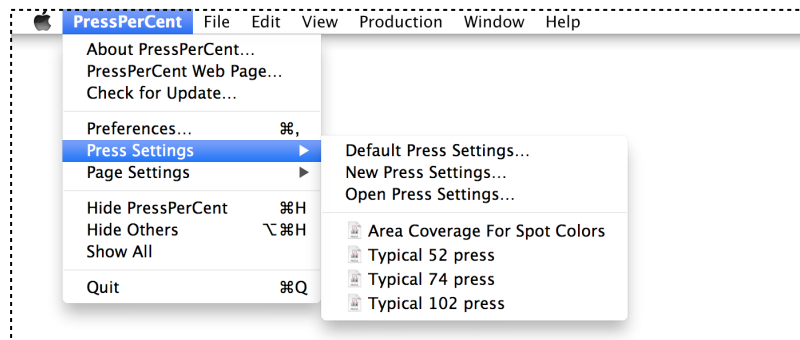
PREFERENCES

To open **Preferences** dialog choose **Preferences** command from **PressPerCent** application menu. After you finished with modifications, do not forget to click **Apply** button to save the changes. **Backup** and **Restore** buttons could be used to used to manage copies of application settings in user specified files (for archival purpose).
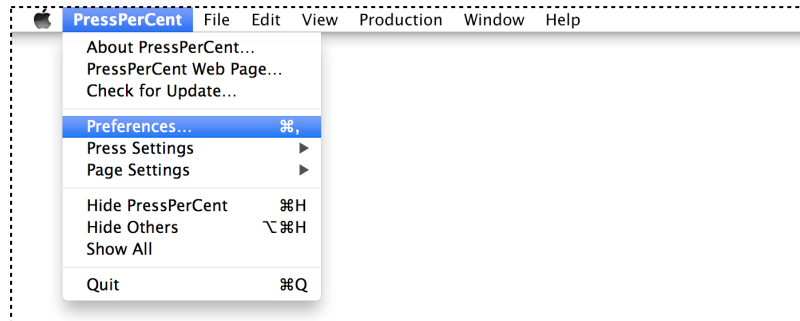

GENERAL

General panel of **Preferences** dialog controls measurement units and colors that are used in document windows. It also defines settings for **Processed Jobs Folder** and **Activity Log**.

"Processed Jobs" is the folder where PressPerCent stores jobs in its internal format after it processes incoming files. In this panel you can change location for "Processed Jobs" folder and choose if old jobs should be automatically deleted after certain number of days, or when their number exceeds certain value, or if there is a new incoming job that has the same name as existing job.

Note: Moving "Processed Jobs" folder to network volume is not the best idea. It will depend on network and server connection speeds and, if these are nor fast enough, it can slow down all PressPerCent operations. Local or external hard drive is more suitable location for "Processed Jobs".

Activity Log keeps track of jobs processing. You can choose to log only processing of the jobs from hot folders, or only operations performed with explicit user actions (like choosing commands from **File** menu), or both kinds of these tasks. You can also choose to automatically delete older log entries.

Note: If you have several thousands of entries in PressPerCent's Activity Log application startup time may become too long. A good idea to preserve application performance will be to limit number of log entries, so it will nor exceed 10 000 (or fewer) entries.
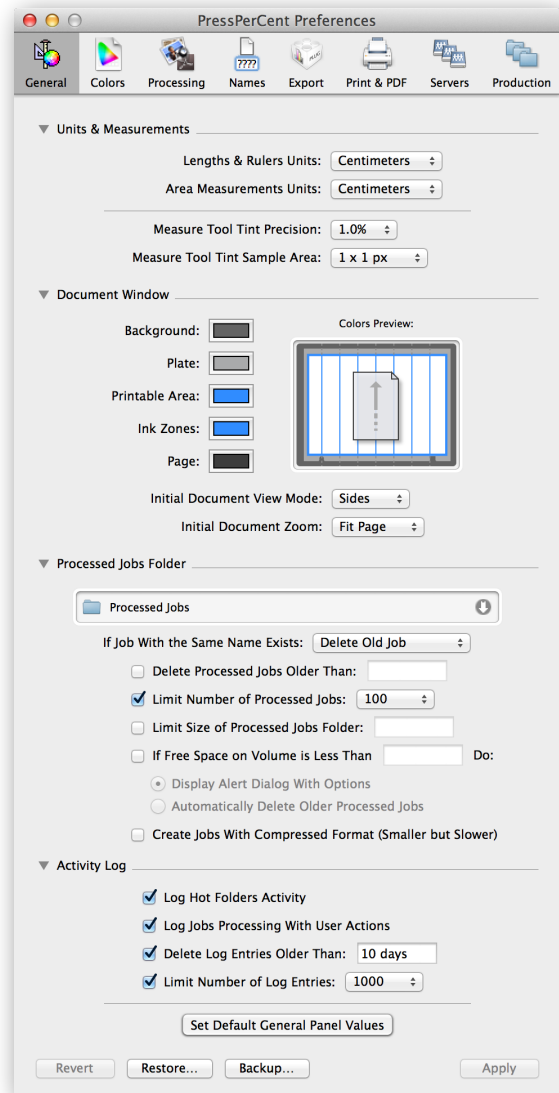
COLORS

Colors panel of **Preferences** dialog allows you to define what spot color libraries to use and what ICC profiles to choose for all types of colors.

You can use palettes in EPS, ACB and ACBL format as **Spot Color Libraries**. If color approximation values of some spot color is not specified in the incoming job, PressPerCent will search for its definition in checked spot color libraries (in top-to-bottom order set in this list). Click **Add** button to add more libraries to the list.

You can also define a list of additional spot colors including **Non-printable** colors. Separations that have non-printable spot color names will be excluded from ink calculations and export data. Such separations could be created by workflow systems for proofing purpose (they may contain products dimensions and other marks that appears on proofs but will be excluded from printing plates output).

Select **ICC Profiles** that in your opinion produce the most visually accurate colors. These profiles are used only for preview and have no effect on accuracy of calculations.
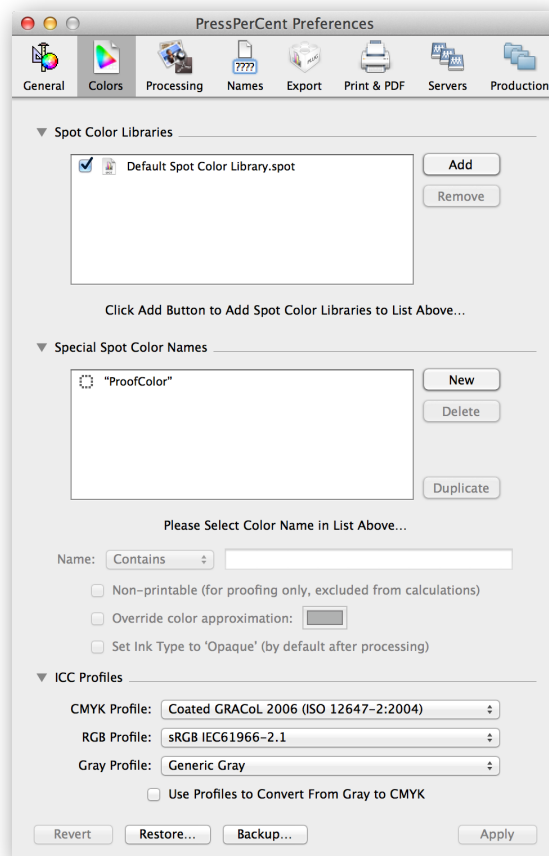
PROCESSING

Processing panel of **Preferences** dialog defines **processing schemes** that contain options and various criteria to specify when jobs are ready to be processed, what resolution to use for processing and should any post-process action to be performed afterwards.

Default processing scheme is used for all jobs that are processed with manual selection commands in **File** menu. Other processing schemes can be assigned to hot folders in **Production** preferences.

If you use PressPerCent to process 1-bit TIFF files in hot folders, you can turn on **Combine Multiple TIFF files Into One Processed Jobs option**. In such case names of 1-bit TIFF files will be analyzed according to selected scheme in **File Names Parts Parsing** pop-up menu and files with identical **Processed Job Name** parts will be combined into a single job. In this section you can also configure custom parts configuration scheme to suite your 1-bit TIFF workflow.

Resolution of 50.8 dpi is normally sufficient for calculations and preview. You can increase it to improve display of small objects at higher magnifications.

CIP3 PPF files with single plates data can also be automatically combined.
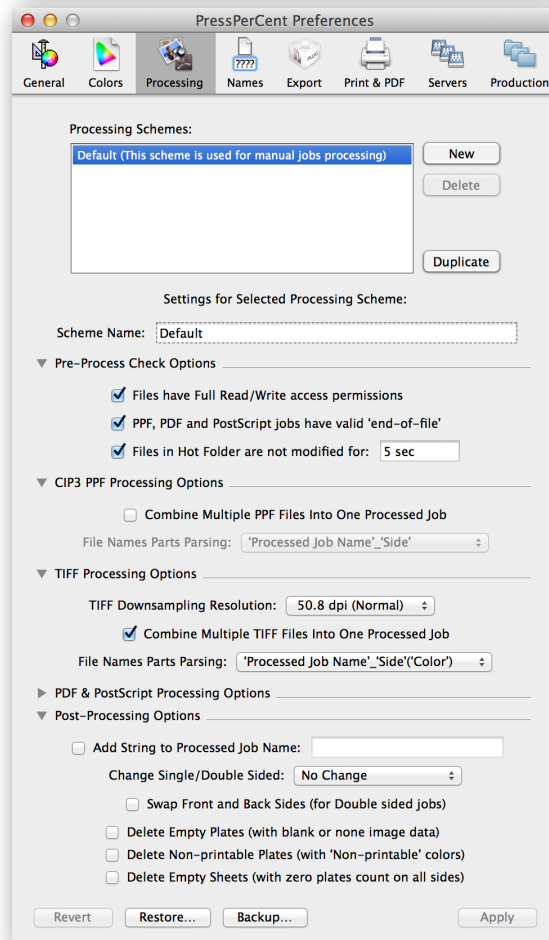
For jobs in PostScript or EPS format you can choose between built-in OS X ("Quartz") conversion or Adobe Distiller (if it is installed as a part of Acrobat package). Incoming PostScript jobs are automatically converted to PDF using this option and then processed like other PDF jobs. (You may want to look at **Appendix A** of this user guide for PDF, PostScript and EPS conversion recommendations.)

Produced PDFs Folder is the location to keep intermediate PDF files (that are created during PostScript conversion).
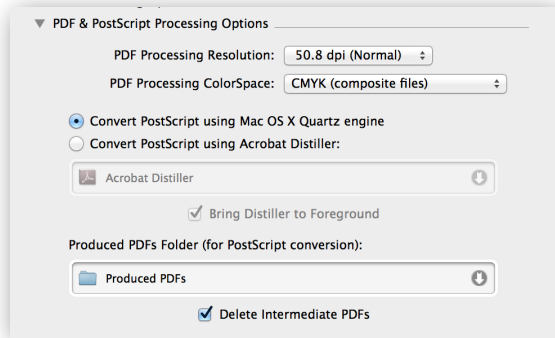
NAMES

Names panel of **Preferences** dialog allows you to create **name presets** — custom rules that will be used to generate names for export files.

By default PressPerCent creates export files that have the same names as that of processed jobs (with additional files counter, if more than one file will be created for one job).

In this panel you can define more specific rules for export names that may consist of one or several **parts**. These parts can be substrings of job name (original file name, parent folder name, sheet name, etc.), sheet/side/run numbers, export date or time, any additional user-defined characters or strings and file export counters.

These name presets could be used not only to create names of export files or printout jobs, but also for other strings and information in these files (depending on available export plug-in options).

Configuration of the name presets is entirely up to your workflow conventions and existing equipment limitations.

Parts Order Scheme section of this panel shows compact preview of all parts in name preset. You can drag-and-drop these parts to change their order. Individual part types and their type-specific options are configured in **Parts Configuration** section. You can add new parts using small button with "+" sign in it. To remove existing part that is no longer needed in the name preset click "–" button beside it.

Note: Parts with sheet, side, plate and run types or numbers will have effect on names generation only if the export plug-in performs export of individual files for sheets, sides and plates.

Other options in this panel allow to define parts delimiter character or to limit character set for file names to MS-DOS requirements. The later may be useful if the press console was made some 10-20 years ago and has certain limitations for acceptable file names. In this case you also will have to limit generated file name to '8.3' scheme.
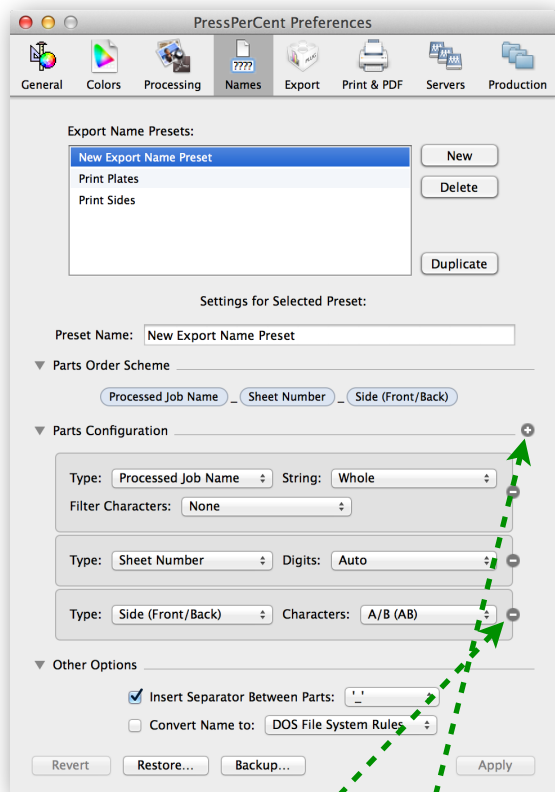
EXPORT

Export panel of **Preferences** dialog contains the list of export plug-ins that are located in **Plug-Ins** folder in the same folder as PressPerCent application (or in *~/Library/Application Support/PressPerCent/* folder of active user).

To add new export plug-in to PressPerCent, click **Add** button; to remove existing plug-in from the list, click **Remove** button. To duplicate or rename existing plug-ins, click **Manage** button, then do necessary tasks in "Plug-Ins" folder using Finder and restart PressPerCent.

Various popular export plug-ins for PressPerCent could be found in "Optional Plug-Ins" folder on the DMG image that contains PressPerCent application files. If the plug-in you require is missing from this collection, please, contact Excourse to check if we can find or make one for you.

Click each plug-in in the **Installed Plug-Ins List** to configure its individual options and settings. These options are different from one plug-in to another and are not discussed in this user guide. See notes that may accompany each plug-in for details on its specific features.

Plug-in's options are divided in two parts:

The first one defines **Names for Export Files** and allows you to choose **name presets** for file names or other strings and values that could be in the file. (See the previous page of the user guide for some details about name presets.)

The second part defines **Other Export Options** the plug-in may have. These options are specific for each export format type.

Note: If you frequently need to perform export operations using the same plug-in with different options (for example, you have two different printing presses that have the same internal file format), you can create several copies of this plug-in and configure them differently. Duplicate the plug-in's file in "Plug-Ins" folder, give to this copy some different meaningful name and configure it as needed using this panel of **Preferences** dialog.
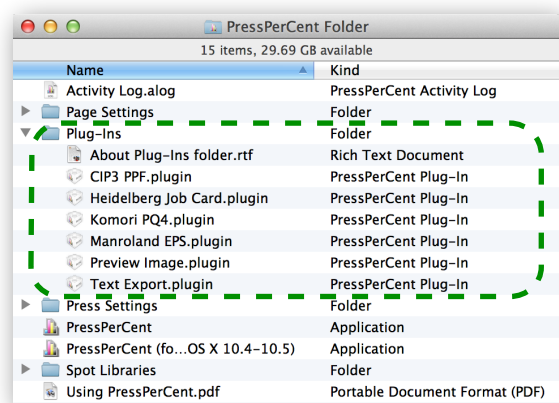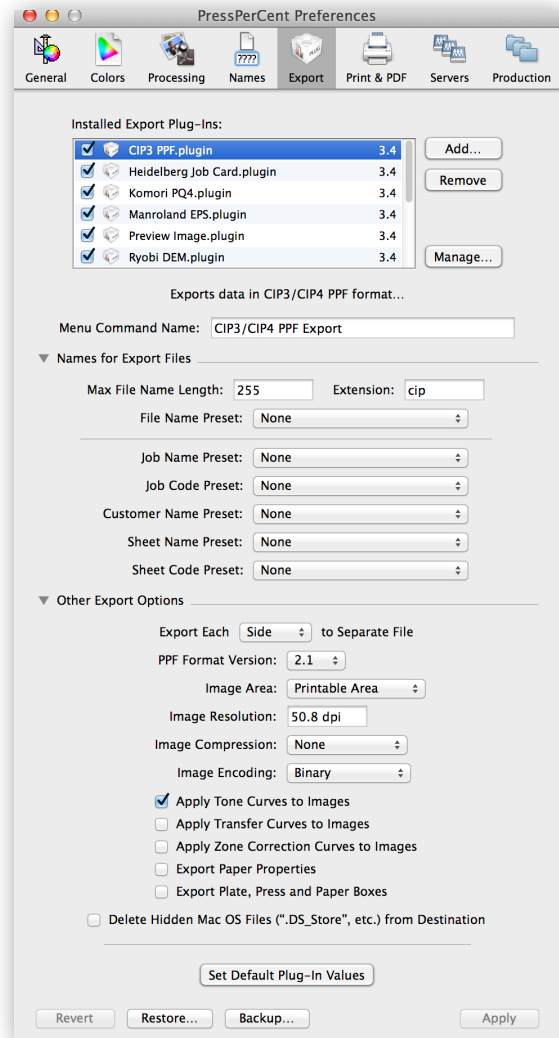
PRINT & PDF

Print & PDF panel of **Preferences** dialog controls commands that will be used to print jobs or to export them to PDF files. You can create as many printing commands as needed and use different ones to print with different paper sizes or on different printers.

In **General Settings** section you can select between print or PDF export **Command Type**, choose if you want each page of printout contain image of one side or one plate of the job, define **Page Setup** (paper size and orientation), and select **name preset** to generate names for print jobs or export files (see description of **Names** panel of **Preferences** dialog on the previous pages).

Format for Printer pop-up menu allows you to choose default printer that will be utilized to configure page setup for print and PDF export jobs. Please, make sure that the printer you chose in this menu support paper size selected using **Page Setup** button.

Job Information section contains checkboxes that define what kind of data you want to see on printout page. You can switch off some of these checkboxes if you do not need that specific lines of information to be printed.

In **Fonts** section of this panel you can configure font names and sizes for text information on printout (or PDF) page.

Suggestion: It is a good idea to preview a printout before printing and adjust font sizes if default settings produce results that are too large to fit on chosen page size or too small to be comfortable for press operators.

Preview Image section defines settings for images of plates and sides on printout pages. If you plan to print jobs on monochrome or black-and-white printer, choose **Grayscale** from **Printout ColorSpace** pop-up menu (this also reduces amount of data that will be sent to printer and improves printing times).

Image Resolution setting controls the level of details on a printed page (it also defines amount of data that will be sent to printer). Setting scale pop-up to **Actual Size 1:1 (100%)** option allows to print layout proofs on wide-format printers. Several checkboxes in lower part of this section can be switched off to avoid printing of rectangles that show plate and paper dimensions or ink zone lines.
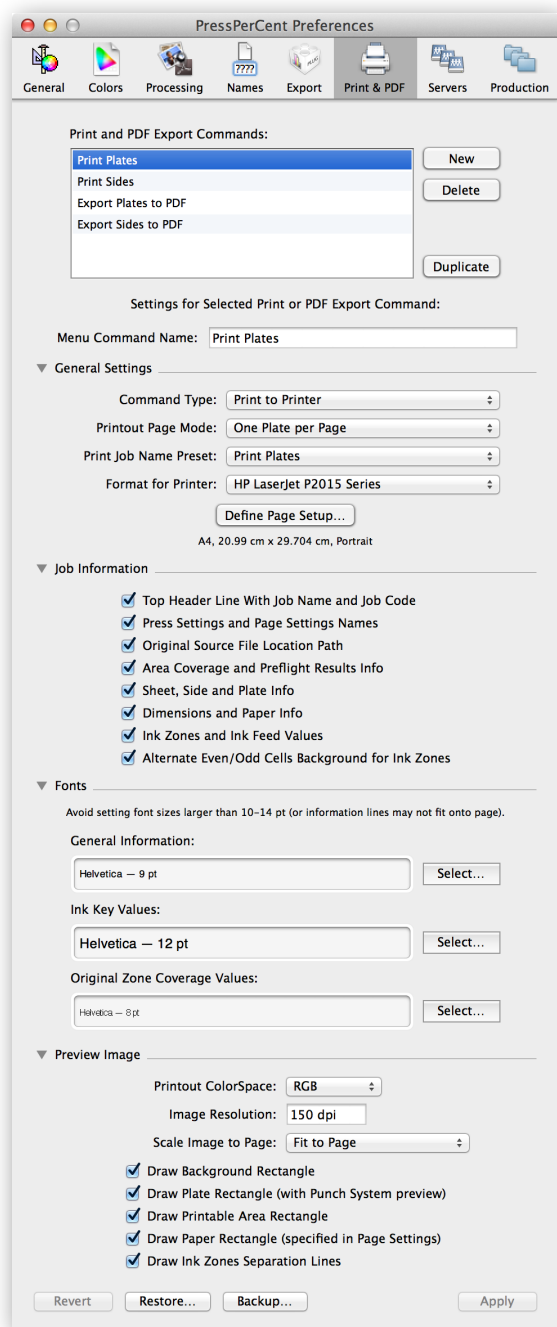
SERVERS

Servers panel contains the list of network servers that could be automatically mounted or quickly accessed from **Production** menu of PressPerCent application.

To add new server to the list click **New** button, then enter server's network address and other required information like login and password in fields below.

The servers could be automatically mounted at two occasions: during PressPerCent's start up and when one of hot folders can not be found. In the later case it does not matter if this hot folder was located on the network server or not.
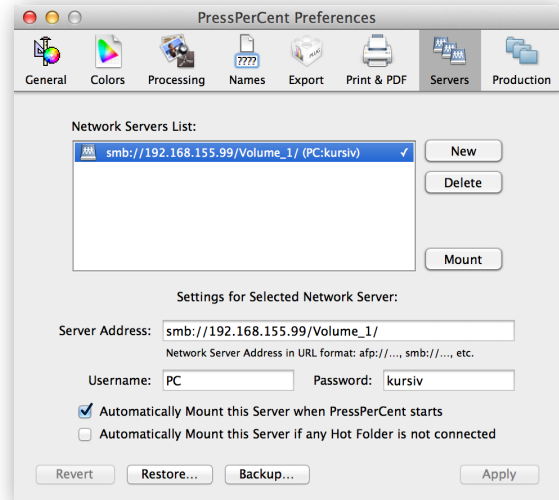
PRODUCTION

Production panel of **Preferences** dialog allows you to set up hot folders that will be used for automatic jobs processing.

Click **Add** button to add a folder to the list, then define its settings: how often the folder should be scanned for new files, what processing scheme, page and press settings to use, what actions should be performed and what to do with files after processing.

Use Master Hot Folder Location checkbox could be used to quickly recreate in different location a set of hot folders that reside within specific "Master" folder. For example, you may want to use this feature to move several hot folders from one hard drive (or network server) to another. To do it: click small arrow icon on right side of master folder location field and choose a folder that contains all hot folders you plan to move. Small icon with letter "M" will appear beside each hot folder that is located within this folder. Then click the button button again and select new master folder in the location you want to move hot folders to. After that select each hot folder in the list and click **Create** button, to recreate new empty hot folder in new location.

You can specify one or more **Hot Folder Actions** that will be performed for jobs in the hot folder. To add new action click small button with "+" sign in it. To remove not needed actions click "–" button beside the action you want to remove.
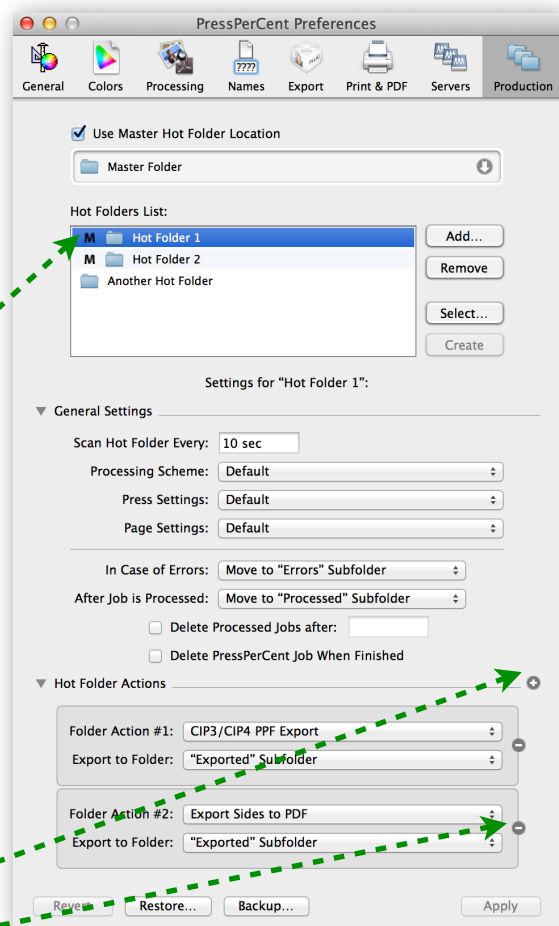
Hot folder actions include all printing and export commands in the application as well as "Process" action (that only processes jobs and adds them to "Processed Jobs" list without doing additional actions and "Copy to Folder" action (that copies job files to another location, for example, to a different hot folder).

PRESS SETTINGS

Press Settings in PressPerCent application is a group of settings that defines properties of printing equipment (like printing presses) that will be used to calculate area coverage values for the job. With press settings you can configure number of printing units, plate size, size of printable area, number of ink keys and other settings. Press settings could be saved as individual files and automatically assigned to jobs.

There are two kinds of press settings in PressPerCent:

✦ *Default* press settings that are stored with the application preferences and automatically assigned to new jobs processed with manual user selections (with **Open/Process** commands from **File** menu).

✦ *File-based* press settings that are saved to preset files with user-defined names and could be automatically assigned to processed jobs from specific hot folders. These press settings files are kept in **Press Settings** folder located in the same folder as PressPerCent application (or in *~/Documents/ PressPerCent/* folder of active user).
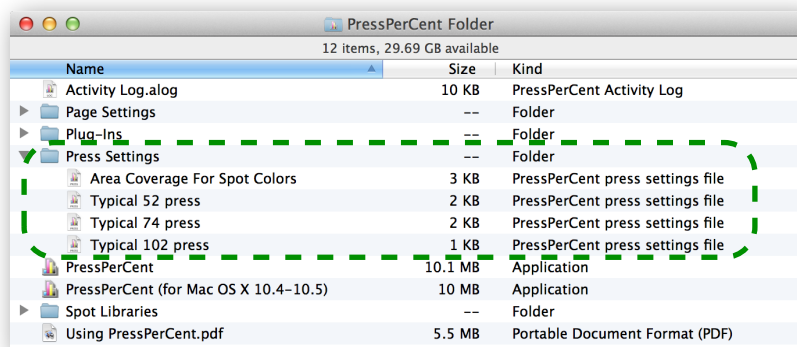
You can change press settings assigned to any job by opening this job and choosing a different press settings from **Press** pop-up menu in document window. Similar pop-up menu in **Production** panel of **Preferences** dialog allows you to assign appropriate press settings for each hot folder. These pop-up menus have default press settings as their first item and then the list all the press setting files in **Press Settings** folder.

To edit press settings you should open **Press Settings** dialog using one of the commands in **Press Settings** sub-menu of **PressPerCent** application menu:
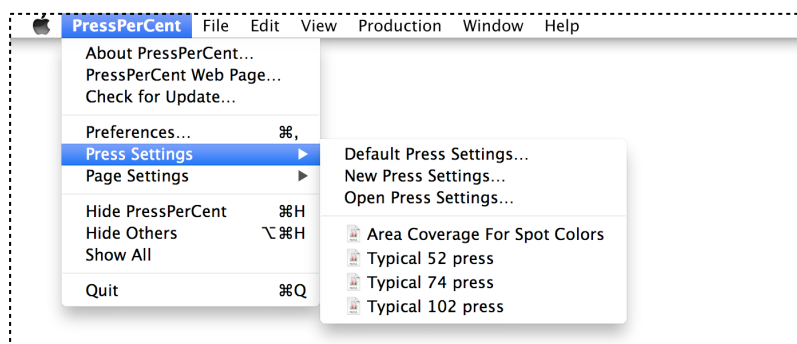
✦ **Default Press Settings** command opens the dialog with default press setting.

✦ **New Press Settings** command creates new file-based press settings (that you should save to **Press Settings** folder afterwards). Initial settings are copied from default press settings.

✦ Other commands in this sub-menu open system file selection dialog or one of existing file-based press settings with specific name from **Press Settings** folder.

When you are finished with modifications in **Press Settings** dialog, do not forget to click **Apply** or **Save** buttons to save changes. You can also use **Load** button to load settings from other press settings file or **Save a Copy As** button to save settings to new file.

GENERAL

General panel of **Press Settings** dialog allows you to configure a type of the printing press, number of units it has and the order of inks you usually use to print jobs.

There are three types of printing equipment from PressPerCent's point of view. The first type is only capable of single-sided printing and is referred to as **standard sheet-fed** in **Sides** pop-up menu. The second and the third type can print both sides (front and back) at once and are referred to as **web press** and **perfecting sheet-fed**. For two-sided equipment you can set **Auto Rotate Back Sides** option, if 180° rotation is needed for correct orientation of back sides. For perfecting press you should define what side is printed first and after what unit sheet turn happens.

For the case when a press has less units than a job has plates (separations) to print, you can split printing into several "runs" (or "passes of a sheet through the press"). The examples of this situation could be: CMYK job on 2-color press (you can print blacK and Yellow on the first run then Cyan with Magenta on the second) or CMYK + Spot job on 4-color press (process inks first, followed by spot inks on the second run).

The graphical preview of units/runs configuration scheme (in the center part of this panel) allows you to set up press units and inks order for each run of the job. To do so: click a unit on the scheme and configure "rules" that will be used to assign specific plates to it. You can assign correction curves that will adjust ink zones and ink feed values if they are different from unit to unit or from ink to ink for this press. For double-sided units of web press you can independently configure rules for two sides of each unit.

Note: Perfecting sheet-fed press type is similar to web press type with opposite side unit rules made inactive (as shown on picture to the right). Not all perfecting equipment should be configured as perfecting sheet-fed press type. Required sides type setting depends on the press console data format and the export plug-in that will be used to create job data for pre-setting.

Suggestion: If you frequently print jobs with specific order of spot colors, you can make a special press settings for this case. For example, you can set 1st unit of the press to print specific metallic ink that has word "silver" in its name (or white ink with word "white"), next four units to print CMYK and the remaining units — spot colors sorted by Pantone numbers.
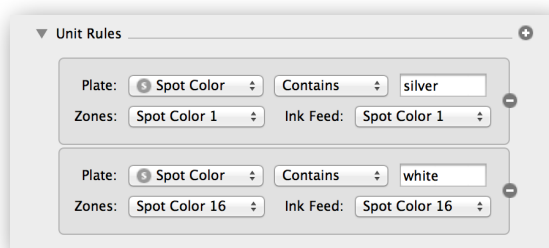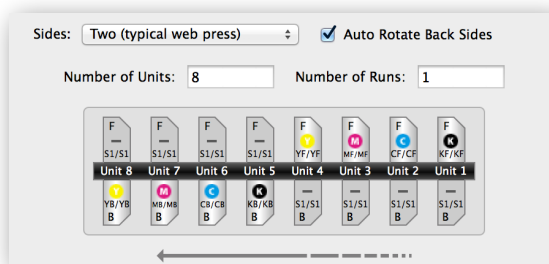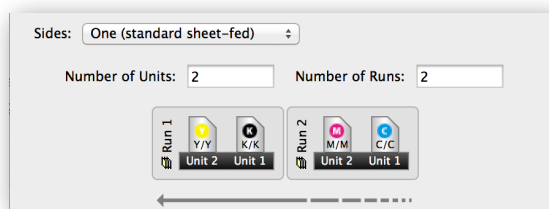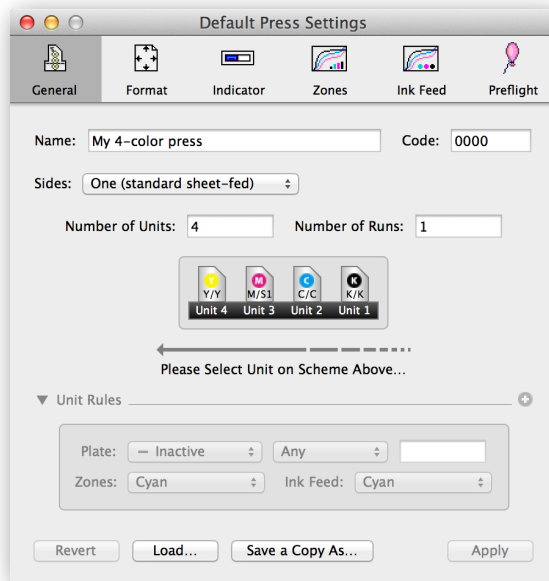
FORMAT

Format panel of **Press Settings** dialog is where you set up plate size, size of printable area, number and size of ink zones the printing press has.

If you do not need ink zones calculation, you can switch off **Ink Key Zones** checkbox. If you need to calculate only area coverage for the page size of each job you can switch off all the remaining checkboxes in this panel (**Printable Area** and **Plate Size**).

The type of **Register Punch System** that you can specify in this panel is used only for preview and for information purposes, it has no effect on calculations.

Zone Width field defines the actual width of ink zone. You can find this value in technical specification of your press, or measure it with ruler. This value is used to determine position of each zone on printing plate or on printable area of the press. **Calculation Width** defines the width of a stripe that will be used to calculate area coverage for each zone. You can set this value to be equal to zone's width or you can make it slightly wider to allow correction for plate positioning and adjacent zones influence. For example, for ink "zone width" of 30 mm you can set "calculation width" to 40 mm. This will give you smoother ink zone profiles.
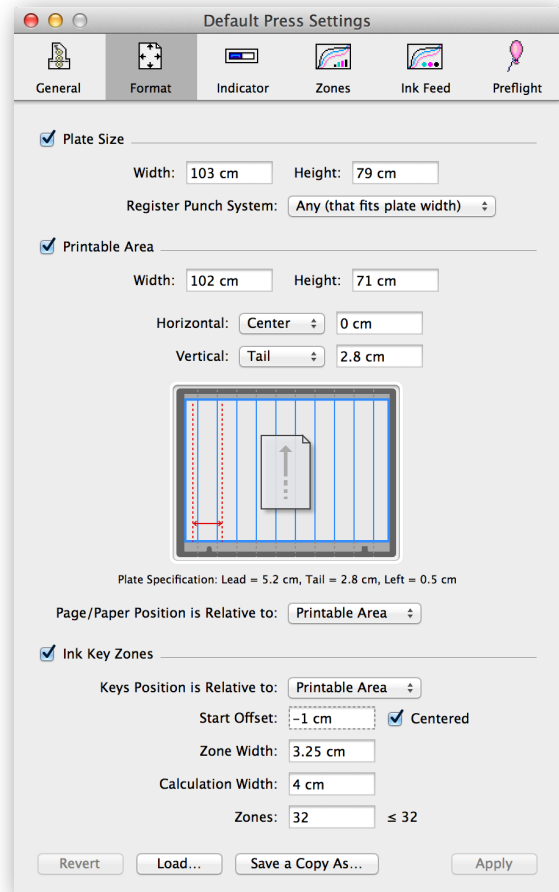
INDICATOR

Indicator panel of **Press Settings** dialog allows you to make ink key values in application windows look similar to controls on your printing press console.

In general case, when your press uses **Percents** for ink key values (or values in range: 0 – 99), you do not have to make any changes to settings in this panel. However, if your press ink controls are different, you may want to set up **Custom Values**. For example, if imagination of printing press engineers told them to make ink controls with let's say 16 "coarse" and 20 "fine" positions, you probably should setup the custom values as: 1st digit: 0 to 15, 2nd digit: 0 to 19. Look at your press console or its operator guide.

Note: You can set other options like a type of **Value Rounding**. (**Nearest + Up at 0%** choice is for the case where nearest rounding is used everywhere except for 0% area, where any non-zero value is rounded up.)

During zone curves calibration process you may want to switch on **Also Display Original Zone Coverage Values** checkbox in this panel.
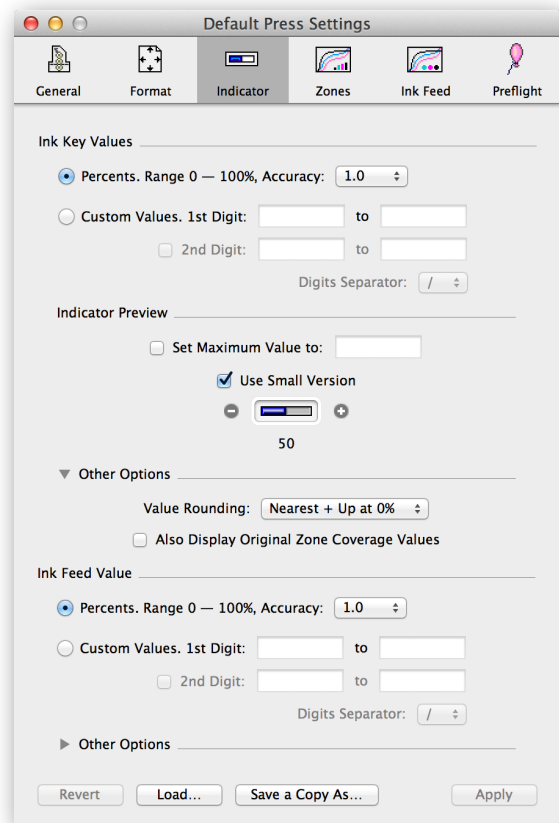
ZONES

Zones panel of **Press Settings** dialog lets you define correction curves that will be used to convert calculated ink zone area coverage to actual ink key values for the press console. Area coverage values are called **Positions** in this panel and are shown on horizontal axis of the graph. Ink key values are referred to as **Values** and are shown on vertical axis.

You can setup up to 20 curves that could be assigned to individual press units in **General** panel of this dialog. The action pop-up menu (a menu with small "cog" icon button) contains several commands and options that might be useful, including **Make All Zone Curves Like This** that allows you to make all 20 zones curves of identical shape with a single command.

You can use **Force Minimal Value** field to specify the minimal ink key value the press operator can set (for example, some experienced operator on older press insists that he never sets ink keys below "2"). **Force Value = 0 for Position ≤ X** checkbox will preserve starting [0,0] point in this case.

Suggestion: You should calibrate the zones correction curves to match your press. See **Appendix B** for details.
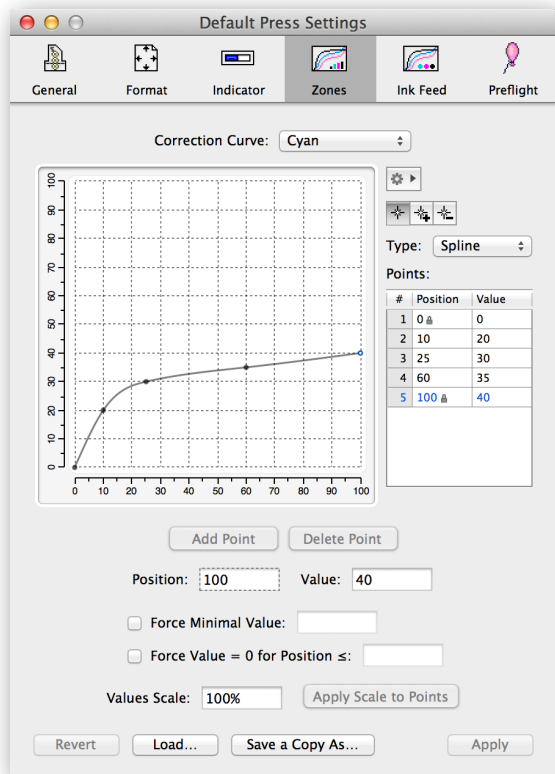
INK FEED

Ink Feed panel of **Press Settings** dialog allows you to specify curves that defines the relation between ink feed (or "ink sweep", or "ductor speed", etc.) value of the press and percentage of ink coverage for its printable area.

Just like with **Zones** curves from the previous panel, you may setup up to 20 different curves that could be assigned to individual press units rules in **General** panel.

Suggestion: It is advised to set some fixed middle (50% or similar) ink feed value before starting calibration process for zone curves. The middle value could be achieved with a flat linear shape of curve from [0; 50] to [100; 50] points.

Note: Some export file formats and plug-ins treat ink feed value as printable area coverage percentage for the plate. In this case, you can leave the curve at its default [0; 0], [100; 100] linear shape.
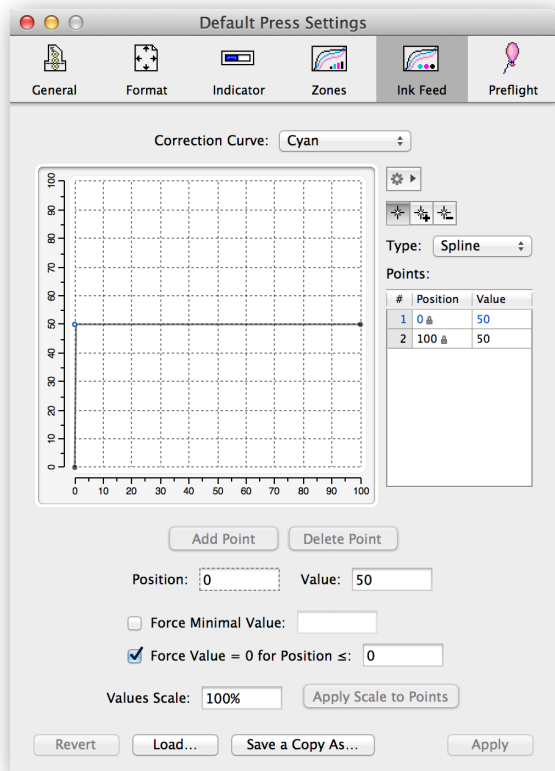
PREFLIGHT

Preflight panel of **Press Settings** dialog allows you to setup some simple criteria that will be checked during processing of the jobs. Of course, it is too late to do any changes to the job when plates are ready and the PPF file is being processed by PressPerCent, but showing few more warnings can do no harm as well.

If you set condition option to **Error** and the job is processed automatically from some hot folder, its processing will be stopped and the job will be moved to "Errors" subfolder of the hot folder. **Warning** option does not stop processing of the job, but you can see appropriate warning status in **Hot Folders Monitor** or in **Activity Log**.
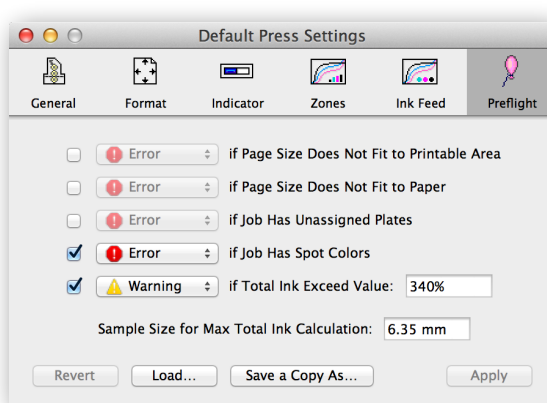
Using this panel you can define the **Sample Size** that will be used for job's maximum total ink calculation (and also for screen preview of Total Ink Limit using **Area Selector** inspector).

Note: You can set sample size value to zero (0) to include into calculation (and screen preview) areas of minimal size that is equal to 1 pixel of the job's processed image. The actual sample size (in inches or millimeters) in this case will depend on the processed bitmap's resolution (that could configures in **Processing** panel of **Preferences** dialog).

Suggestion: Non-zero sample size value is required to exclude from total ink calculation small page elements like color bars and registration marks (otherwise Max Total Ink value for CMYK jobs that have registration marks will always be 400%).

PAGE SETTINGS

Page Settings is another group of settings (similar to **Press Settings** discussed in the previous section) that define properties of PressPerCent's job such as: page position, orientation, paper position, paper color and various transfer curves. Just like with press settings, these settings could be saved as presets to files and assigned to new or existing jobs.

There two kinds of page settings: *default* page settings that are saved with the application preferences and are used for new jobs processed with **Open/Process** commands and *file-based* page settings that are saved to individual files in **Page Settings** folder located in the same folder as PressPerCent application (or in *~/Documents/PressPerCent/* folder of active user) and assigned to jobs processed via hot folders.

To edit default page settings choose **Default Page Settings** command form **Page Settings** sub-menu of **PressPerCent** application menu. To edit page settings file choose its name from the same sub-menu (or choose it with **Open Page Settings** command). To create new page settings based on defaults use **New Page Settings** command. Click **Apply** or **Save** buttons to save changes after you finished with modifications. Click **Load** button to load settings from another file or click **Save a Copy As** button to save to a new file.
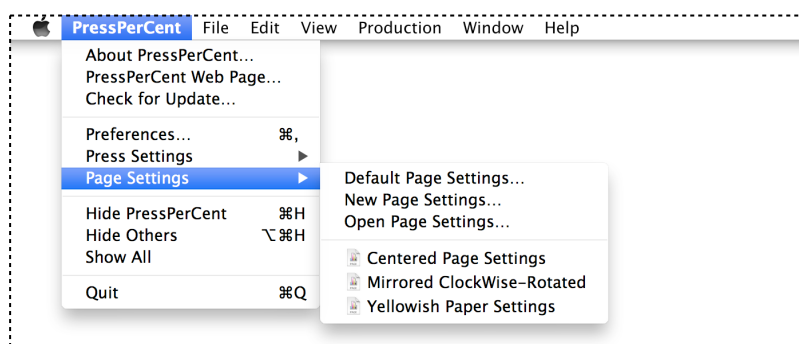

POSITION

Page panel of **Page Settings** dialog defines **Page Position** and **Orientation** that will be used to place the image of the job's plate onto the printing press coordinate space. Page position is specified using **Horizontal** and **Vertical** pop-up menus and offset values. (Plate rectangle or printable area rectangle could be defined as a reference coordinate space in **Format** panel of **Press Settings** dialog.)

Suggestion: You can switch on **Use Image Bounds as Page Size** checkbox for the jobs that were created with larger print formats than the actual images they contain on pages. Switching this checkbox 'on' will crop white margins to the outer limits of crop, registration and other printing marks.

Default Orientation could be set to one universal setting for all jobs, or you can use two options for jobs with different orientations (for example, to rotate only 'tall' (portrait) jobs by 90°). You can later change orientation for each individual job using similar orientation buttons in document window.
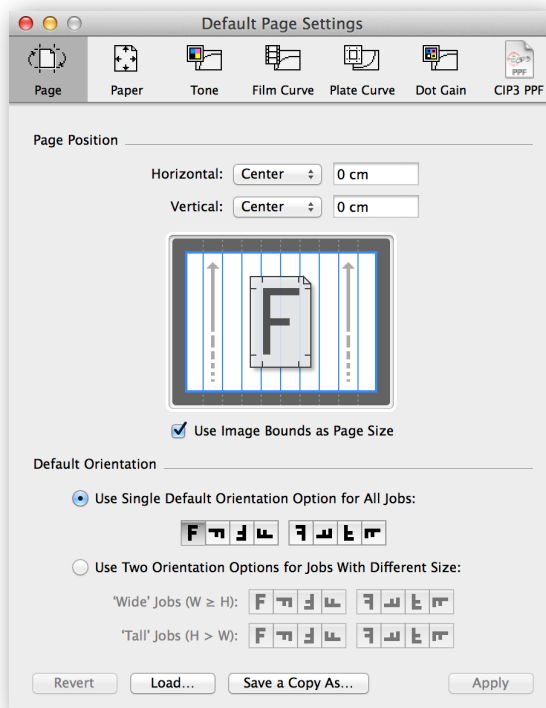
PAPER

Paper panel of **Page Settings** dialog contains **Paper Size** and **Properties** specifications you can define for paper in your jobs.

These attributes are used for screen preview and in informational fields. Paper size could also be used to limit coverage calculation area if **Shrink Measurement Area to Paper Size** checkbox is selected. Paper position and offsets are defined in relation to plate size or printable area of the printing press.

Note: You can define **Color** of paper for more realistic screen preview. If the **Paper Size** is not defined, the color will be applied to entire printable area defined in **Press Settings** or to job's image size rectangle (if the printable area is not defined also). You can also select custom **ICC Profile** for this paper and inks combination.

Note: Some export plug-ins may include paper specification in their output. So, in certain cases these settings may be needed for future processing.
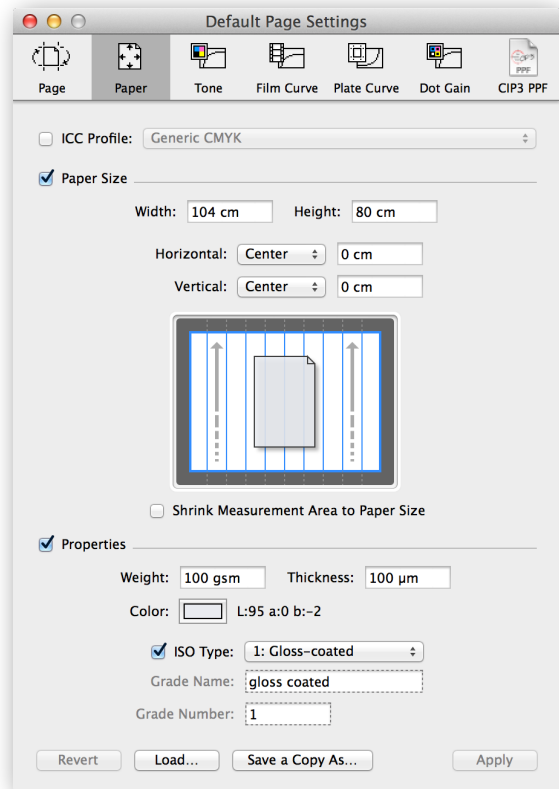
TONE AND DOT GAIN CURVES

Tone panel of **Page Settings** dialog allows to setup curves that compensate or imitate dot calibration curves of the RIP (like TVI, NPD or other adjustments).

For example, using these curves you can try to restore dot percentage values in 1-bit TIFF files to make the processed image look similar to original pages of the job. Or you can try to make the results of PDF processing in PressPerCent to have the same CMYK (and spot color) halftone values as that of 1-bit TIFF files from the RIP.

Unlike "tone" curves that have effect on both preview image and calculation results in PressPerCent, "dot gain" curves (in **Dot Gain** panel of **Page Settings** dialog) have effect only on calculation. You can also use these curves to simulate or check dot percentage measurements on the printed sheet with "Measure Tool" in document window. "Measure Tool" shows both original values and results of dot gain simulation.

Each of these 20 curves could be later selected for individual plates/separations of processed job using pop-up menu in document window.

Note: For spot colors you can define name-based search criteria to assign specific curve to this or that color or ink.
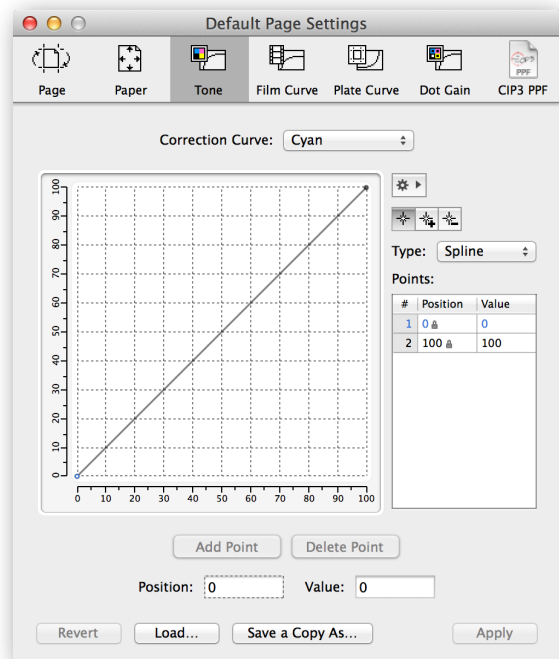
FILM AND PLATE CURVES

Film Curve and **Plate Curve** panels of **Page Settings** dialog define transfer curves for imagesetter film output and platemaking process. The film curve specifies the relation between halftone percentage in source file (horizontal "X" axis) and corresponding dot percentage values on the film measured with densitometer (vertical "Y" axis). The plate curve is the relation between film and plate dot values. These curves are part of CIP3 PPF format specifications. They have effect on both preview image and calculation results in PressPerCent.

Suggestion: If you have no idea what it all is about, leave the curves at their default linear shapes (with start at zero [0; 0] and end at [100; 100] points).

Note: If you are using PressPerCent to process incoming PPF files with non-linear film or plate curves, you can import or set to preserve these curves using **CIP3 PPF** panel in this dialog.
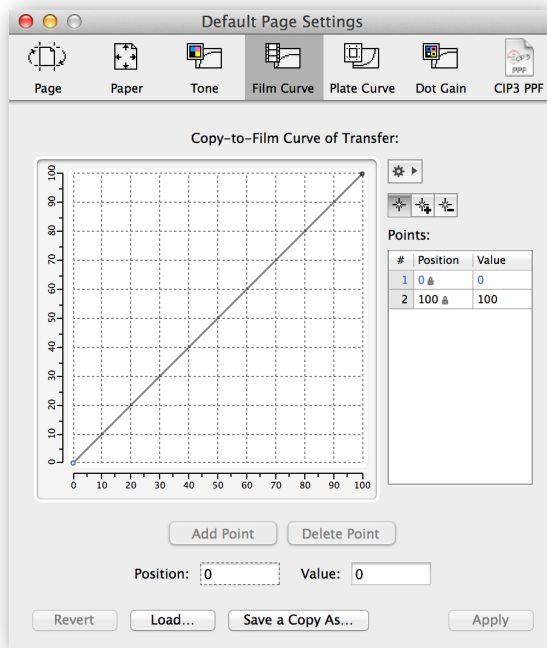
CIP3 PPF

CIP3 PPF panel of **Page Settings** dialog allows you to specify what properties of CIP3 PPF files will be preserved during jobs processing.

Your PPF files may already contain properly configured page orientation, paper size and paper properties or film/plate transfer curves that should be used to process the jobs. If you want to preserve these settings, set appropriate checkboxes 'on'. If you want these settings to be ignored (and replaced by page, paper and curves specifications from this **Page Settings** dialog), set them to 'off'.

You can also load (or import) properties of page, paper and transfer curves from existing PPF file to the panels of this dialog. Click **Select CIP3 PPF File** button and select PPF file you want to load the settings from. The file will be processed and its contents will be displayed in a dialog (that closely resembles results of **Inspect PPF File** command from **File** menu). Check the settings you want to import, then click **Load** button.

Suggestion: For example, you may want to use this feature to load paper attributes if you do not want to configure them manually.

If the PPF file does not contain some of these settings (not every PPF file specifies paper properties or transfer curves), appropriate checkboxes in this dialog will grayed out and be disabled.
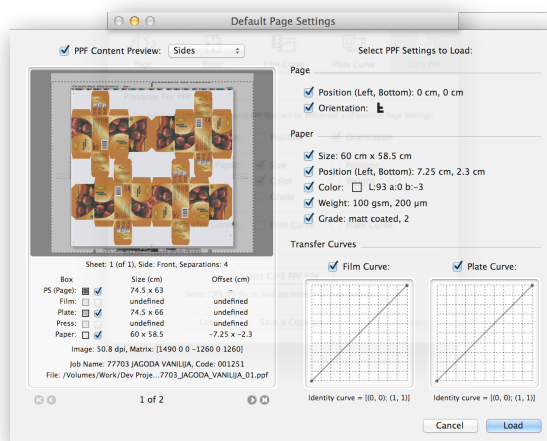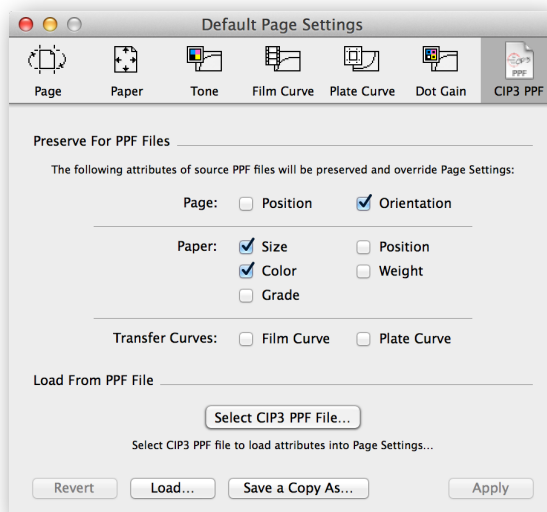
APPENDIX A: FILE FORMATS SUPPORT

PressPerCent can process incoming jobs in several file formats. However, some input formats are better suited for this or that particular purpose (while others formats have certain limitations). Below you will find a list of file formats that PressPerCent can process with few comments on their usability.

CIP3 PPF

CIP3 (known as 'CIP4' today) **PPF** (Print Production Format) is a special file format created in mid 1990-s to be used as a universal job specification that can connect prepress with printing and post-press operations. Today more modern JDF format replaced the PPF in areas of processes integration, yet PPF is still alive and widely used when it comes specifically to ink key presetting for the printing presses.

PPF is the preferable file format to use with PressPerCent. If your RIP or workflow system is able to create PPF files, we do recommend to use them. Technically PPF file is just a collection of low resolution images of job's printing plates (separations) wrapped in few lines with additional information. When PressPerCent process the PPF file it just re-saves their images in its own internal format.

Benefits: Simple file format with minimal probability of processing error in different systems. PPF files are small and could be quickly copied over network or processed. These files are usually created by RIPs or workflow systems and contain the same image that was output to CtP-plates (with all proper imposition settings, orientation, registration marks, color bars, etc.)

Suggestion: PressPerCent should be able to process virtually any PPF file that conforms to CIP3 specification. If you have control over PPF export settings in your workflow system, the recommended settings for PressPerCent are: image resolution = 50.8 dpi for typical B1-B2 sheet fed presses or 12.5 dpi for big web presses, compression = Run Length Encode (RLE), encoding = binary. This will produce PPF files that are small enough to transfer, yet they produce good area calculation results.

Note: There is still a popular misunderstanding that generic PPF files produced by common workflow or RIP systems already contain all required ink zone calculations inside them, and that the only thing that is left to do is to transfer these files to the press console. This is not the common case. Generic PPF files contain only low-res preview images (and basic information about plate sizes and separation ink names). Unless your press console has built-in software that can process PPF files and to calculate area coverage for zones (like new KBA or Hans Gronhi press models can do, for example), a presetting tool like PressPerCent is required to process the PPF file and to convert its image data to area coverage or ink key values in proprietary file format readable by the press console.

TIFF

TIFF (Tagged Image File Format) is a popular image format used in graphic arts industry. If your RIP or workflow system is able to export TIFF files with low resolution job preview images or to create full resolution 1-bit separations for CtP devices you can use these files with PressPerCent.

Benefits: Image-only format with no-chance for interpretation or processing errors. If TIFF files are created by RIP or workflow systems, they contain the same image as will be imaged on CtP-plates.

Suggestion: PressPerCent should be able to process any TIFF file that does not use proprietary compression schemes. High resolution images will be down-sampled by PressPerCent to create smaller files for its internal use. You can control the down-sampling resolution with **TIFF Downsampling Resolution** pop-up menu in **Processing** panel of **Preferences** dialog. The recommended setting that is suitable for both: area calculation and screen preview is 50.8 dpi.

To process a set of of separations in 1-bit TIFF format place all the files that belong to one job into a folder and select it with **Open/Process Folder as Single Job** command from **File** menu. If you process a set of TIFF files for more than one side or sheet of the job, PressPerCent will try to identify images that belong to different sides or sheets using parts of their file names. You can control these settings using **Combine Multiple TIFF Files Into One Processed Job** options in **Processing** panel of **Preferences** dialog. These combine options are also applied to TIFF files processing using hot folders. (It's not required to place all TIFF separations into a wrapper-folder for hot folders processing, but this could be a recommended solution in case if it takes too many seconds for each separation of the same job to appear in hot folder.)

Note: If you plan to use low-res preview TIFF files created by your RIP or workflow systems, you should check first that these TIFF files are usable for the purpose. Some RIPs may create preview files only in RGB colorspace or convert all spot colors to process. So, make sure that your low-res TIFF files are in CMYK colorspace and all spot color separations are saved to individual spot channels. You can check this using general purpose image editor (like Adobe Photoshop), just open a sample file and look at its image mode and number of color channels.

PDF

PDF nowadays becomes more and more popular format for submitting jobs to print. However, if your RIP or workflow system is able to produce PPF or TIFF files, we do recommend to use these formats instead. PDF is much more complex file format than PPF or TIFF. The results of PDF processing depend greatly on RIP settings and might be different from one system to another (your workflow RIP and PressPerCent may process the same PDF file differently).

PressPerCent uses built-in Apple's OS X PDF-engine (sometimes referred to as "Quartz") to process PDF files. It's fast and compliant with modern PDF format versions, but has certain limitations that you should be aware of. As a quick summary: to be correctly processed your files should be either **pre-separated** PDF files (that contain one grayscale page per each separation) or **composite** PDF files (contain not-separated full color pages) that have only objects in CMYK colorspace (without spot colors or RGB objects) and have minimum overprinting.

The following objects in **composite** PDF files will not be correctly processed by OS X PDF-engine:

✦ *Spot colors*. All spot colors (like Pantone inks) will be separated to CMYK according to their approximation color values. If your job contains spot colors, please, use pre-separated PDFs or other formats (PPF or TIFF).

✦ *Grayscale objects*. Objects in composite PDF files with color data in monochrome grayscale colorspace will be converted to CMYK using OS X system ICC profiles. The result will have color CMY components in addition to black. If your want "pure black" text or images, use black K channel of CMYK colorspace instead of single channel Grayscale when you create the files.

✦ *Overprints*. OS X PDF-engine ignores overprint attribute in composite PDF files. In most cases it does not affect the results of area coverage calculations (because normally CMYK overprinting is limited to trapping of very small areas). However, there are certain prepress software tools that are used to convert pre-separated PDFs to composite format, by just piling up all the separations of source files on top of each other and setting overprint attribute to all of them. Such combined 'composite' PDF files will not be correctly processed. Use original pre-separated PDF files instead.

Note: Pre-separated PDF files could be created using Adobe Acrobat software or other applications that offer options to print or save separations of the job to PostScript (or PDF) format files. If you plan to use pre-separated PostScript files, please, check the next section of this Appendix for notes about PostScript-to-PDF conversion options.

POSTSCRIPT AND EPS

Over the last decade PDF format managed to replace **PostScript** almost everywhere where it was originally used, yet PostScript still has some limited usage with older RIP systems without native PDF-support.

Suggestion: PressPerCent converts PostScript files to PDF format before processing them. So, all composite PDF format limitations (mentioned in the section above) are equally related to composite PostScript files. To summarize: your PostScript files either should be pre-separated (contain one grayscale page per each separation) or composite files that contain only CMYK colorspace objects.

You can configure PressPerCent to use either built-in OS X PostScript-to-PDF converter or Adobe Distiller application. Adobe Distiller has more conversion options that you can configure (if needed).

You can also convert PostScript to PDF without using PressPerCent (for example, with Adobe Distiller on another computer) and submit the result to PressPerCent in PDF format. If you convert pre-separated PostScript to PDF files using Adobe Distiller, make sure that you selected two checkboxes in **Advanced** panel of Distiller's **Adobe PDF Settings** dialog: **Process DSC comments** and **Preserve document information from DSC**. These checkboxes are required for Distiller to include plate separation names into the PDF files. Without them there will be no way to identify process and spot separations in the PDF file and to tell which one is Cyan, which one is Yellow or which one is Pantone 123, for example. If PressPerCent will be unable to identify separation colors it will treat the file as composite PDF and will separate each page into CMYK plates.
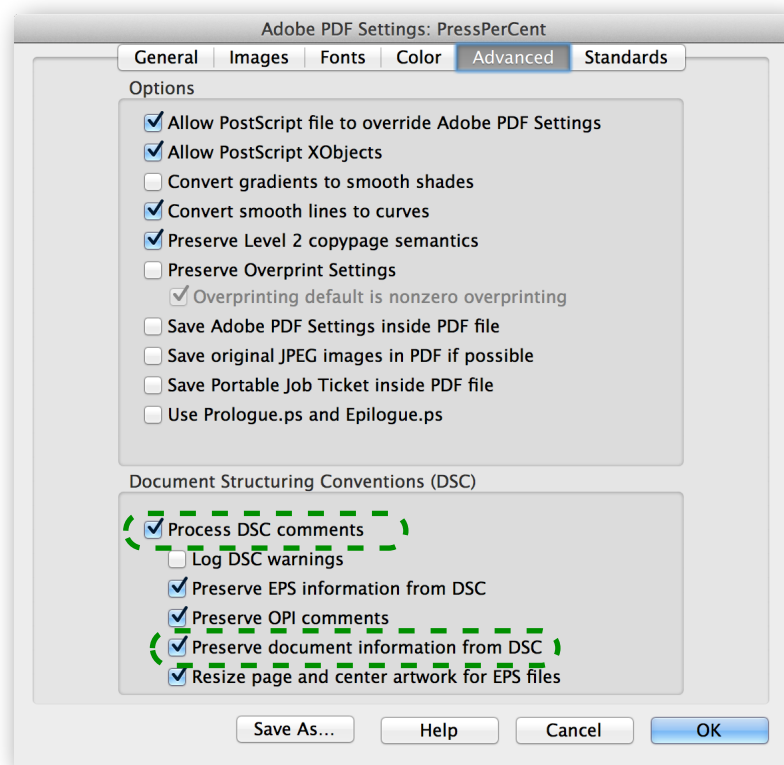
A sample file with Distiller PDF Settings is supplied with PressPerCent application.

Note: PressPerCent can also process **EPS** (Encapsulated PostScript) files including DCS (Desktop Color Separations) format that was used by copy-dot scanning systems during their brief existence. These files will also be converted to PDF format using either built-in OS X engine or Adobe Distiller. The recommended DCS version is: DCS 2.0 single file format. Please, check that PressPerCent can correctly process your DCS files before using this type of files.

APPENDIX B: CALIBRATING INK ZONES CURVES

*Thanks to Charlie Scandrett of Pressnet Pty Ltd.*

When you are using PressPerCent for ink keys presetting of a printing press, you usually have a choice between two types of ink zone values and two kinds of file formats to export for the press console:

✦ *Area coverage values* that represent pure results of ink zone imaged area calculation, uncorrected by any correction curves or other means. These values should be transferred to the press console, then loaded and used just like plate scanner data (with appropriate correction options the press console offers for this situation). You do not have to make any calibration for zones curves in PressPerCent in this case. Yet, you should calibrate curves in the press console or ask technician that service the press to do so. We sometimes refer to the file format that is used to transfer these values as "plate scanner format".

✦ *Ink key values* that correspond to actual values of ink keys on the press console. These values are loaded as they are, as if they belong to a job previously printed and saved on this press console (not to a new job that needs initial pre-setting). In this case you should perform calibration of ink zone curves in PressPerCent application to adjust for specific behavior of this press. We sometimes refer to the file format that caries this type of values as "job-save format".

The second of the described cases, requires to perform calibration of ink zone curves in PressPerCent's press settings using the following steps. The basic idea is to fix **Ink Feed** (or "ink sweep", "ductor speed", etc.) on the press at some predefined middle value (50% or similar) and to recommend to the press operator always start jobs with this value (unless correction for some special case is really required). Then you should adjust **Zones** curves in press settings to be used with these fixed ink feed values.

STEP 1

Prepare a test form that fits printable area of the press and has well-defined area coverage values, like on the picture below. This sample uses "3 points" calibration: 10%, 25% and 60%. You can make a similar form with more points for better accuracy, for example, 5 points (5%, 10%, 20%, 40%, 60%), 10 points, etc.
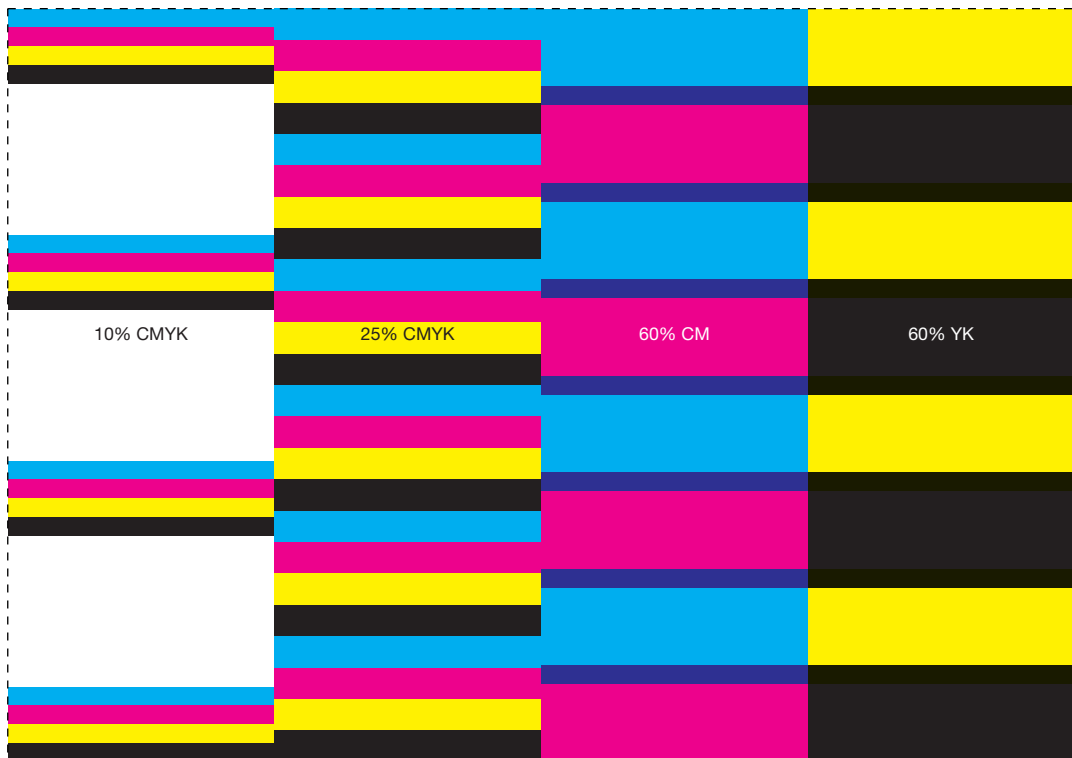
STEP 2

Open **Press Settings** dialog in PressPerCent. Set all zone curves (in **Zones** panel of the dialog) to their default linear shape (with start at zero [0; 0] and end at [100; 100] points). You can use **Reset All Zone Curves** command from action pop-up menu (a menu with small "cog" icon button) to do so.
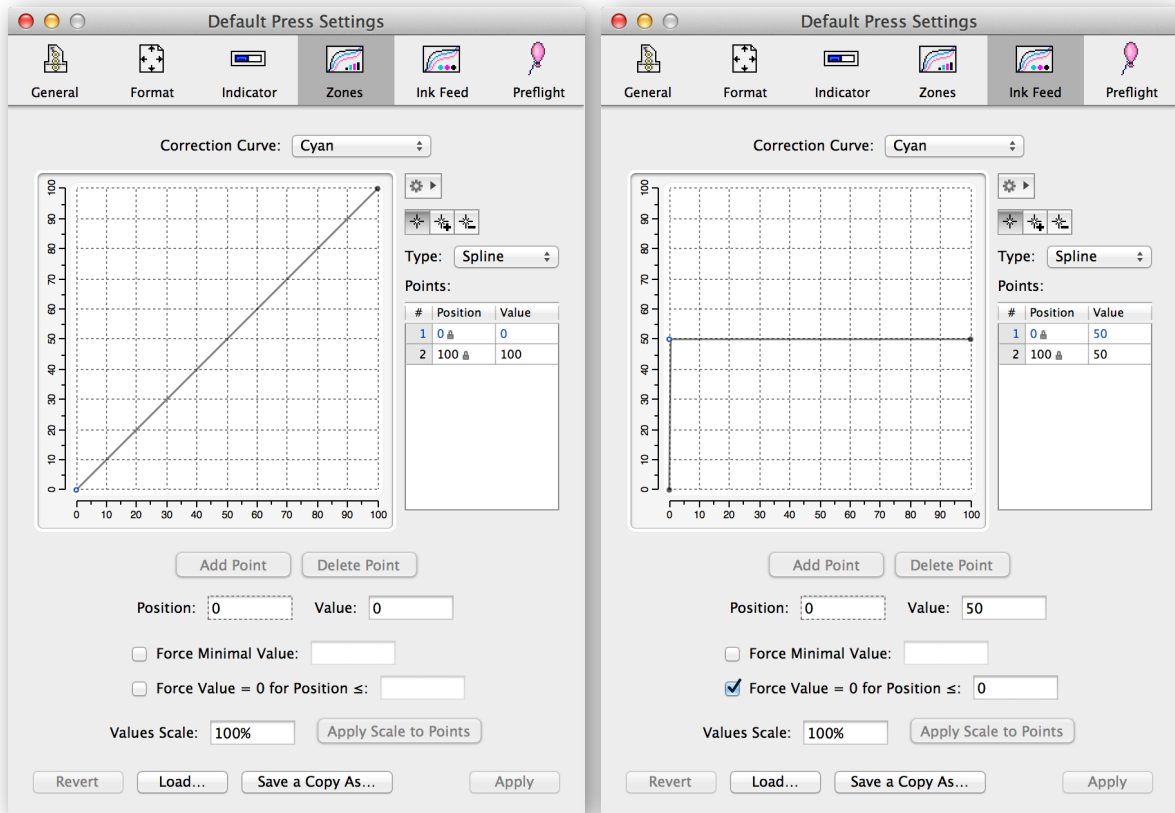
Set all ink feed curves (in **Ink Feeds** panel of the dialog) to fixed middle values (50% or similar value your press operator feels comfortable with). This middle value could be achieved with by a flat-line curve that starts at [0; 50] point and ends at [100; 50] point. You can quickly make all 20 ink feed curves of press settings identical by choosing **Make All Ink Feed Curves Like This** command from action pop-up menu.

STEP 3

Process the form you made in **Step 1** with PressPerCent and print or write down initial ink zone values.

STEP 4

Print the test form on your press (50-100 sheets), measure ink densities (or Lab values) and adjust ink keys on press console so, that you achieve standard values required for this paper type and inks (for example, K 1.8, Y 1.3, C 1.45, M 1.4). Print some more sheets (50-100) and check densities again until you got stable reading in desired range.

STEP 5

Write down the final ink key values you set on the press console and adjust **Zones** curves in PressPerCent's press settings accordingly. To do so, you can add 3 points to the curves with positions (on horizontal axis) at 10, 25 and 60% and values (on vertical axis) equal to the ink key values from the console. Number of points and their positions depend on the test form you created and initial area coverage values calculated by PressPerCent.

Final shape of zone curves may look like one on the picture to the right.

Note: The picture shows a typical shape of the curve. It usually start out sharp in 0-30% area and gradually becomes flatter. If you feel a need to make more detailed and accurate calibration, you should add more points in 0-30% area and not to worry about 50% and above.

STEP 6

You can de-ink the press, re-export the job and print some more sheets to check if the curves need additional adjustments.

STEP 7

After you finished with calibration procedure you can print the final results. There is a **Also Display Original Coverage Values** checkbox in **Indicator** panel of press settings dialog that you can temporary switch on during the calibration. With this checkbox on PressPerCent's printouts will contain original "uncalibrated" values shown under calculated and calibrated ink key values.
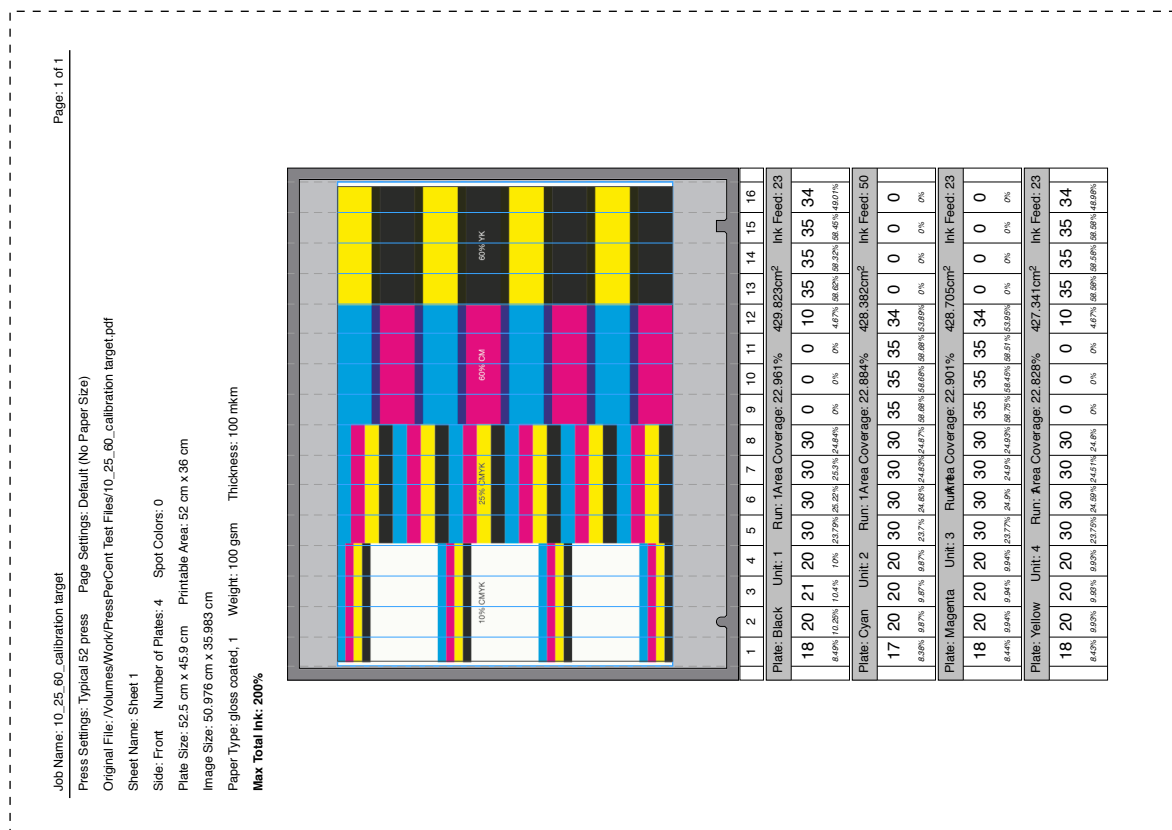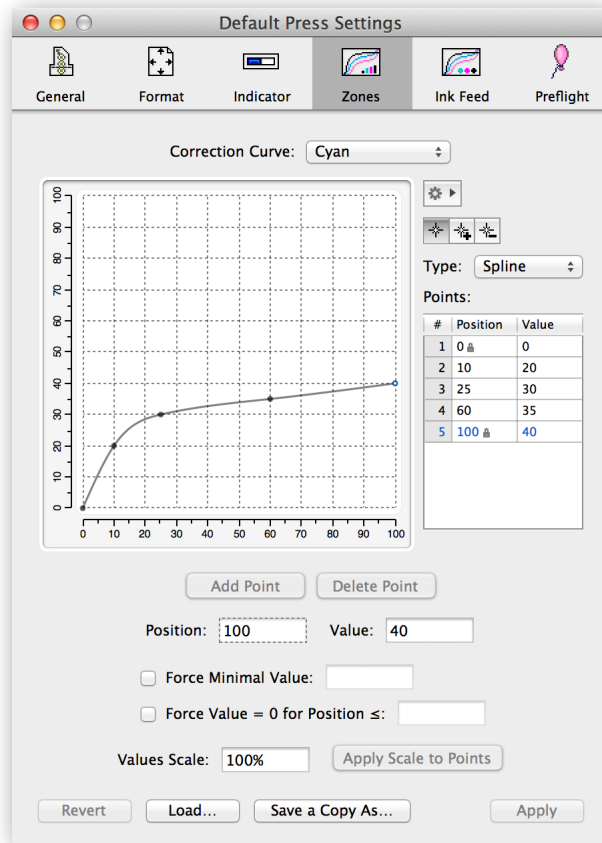
PressPerCent's printout. Rotated 90° to conserve space on this page.