

V11

Nesting and Repetitions

Step&Repeat

User Manual

RIP SOFTWARE - VERSION 11 - CALDERA 2018



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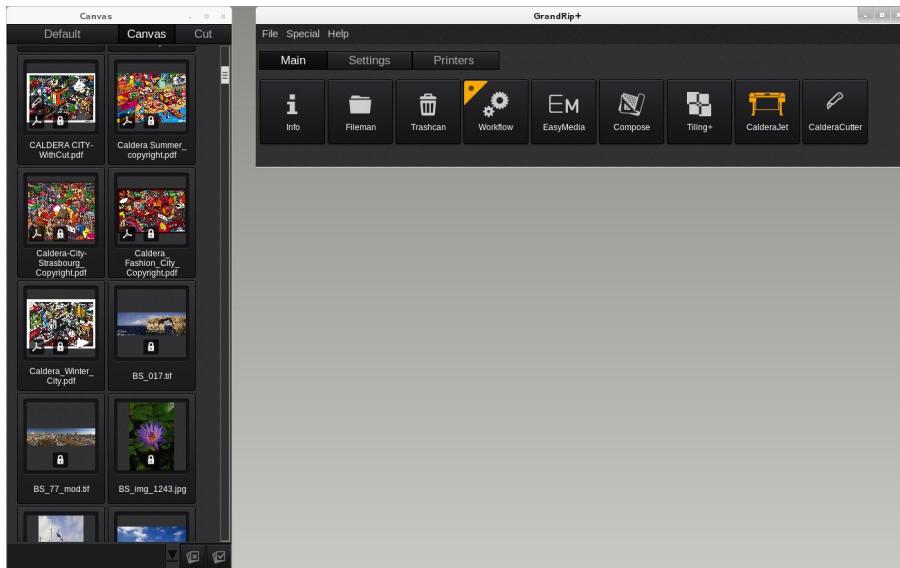
STEP&REPEAT

Find the Step&Repeat

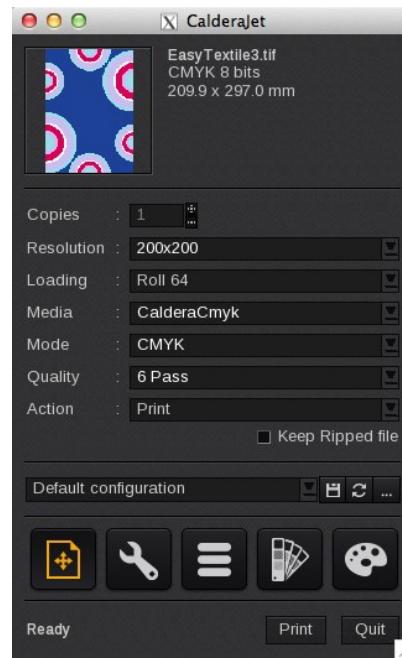
The **Step&Repeat** functionality has its own tab in the **Print** module's configuration page.

To go to the **Step&Repeat** tab:

1. Open **Caldera RIP** and select your printer.

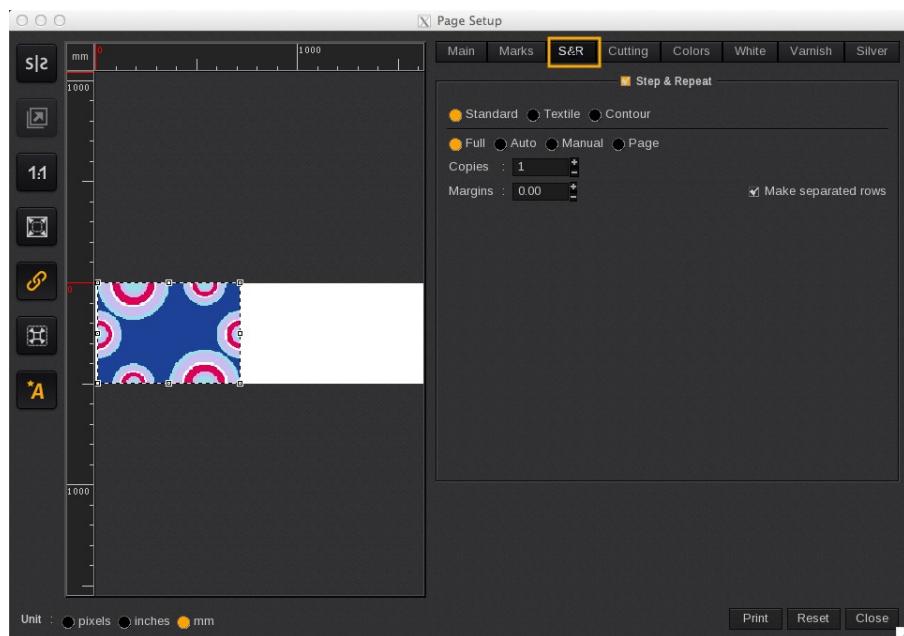


2. Add your image then click on the *Page Setup* button.

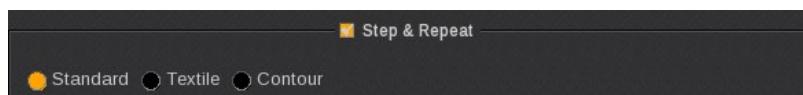


FIND THE STEP&REPEAT

3. Click on the S&R tab and activate the option by clicking on the **Step & Repeat** check box.



By default it opens in **Step&Repeat Standard** mode. When the user possesses the proper key, **Textile** and **Contour** modes can also be chosen. Switch from one mode to the other by clicking on its name.

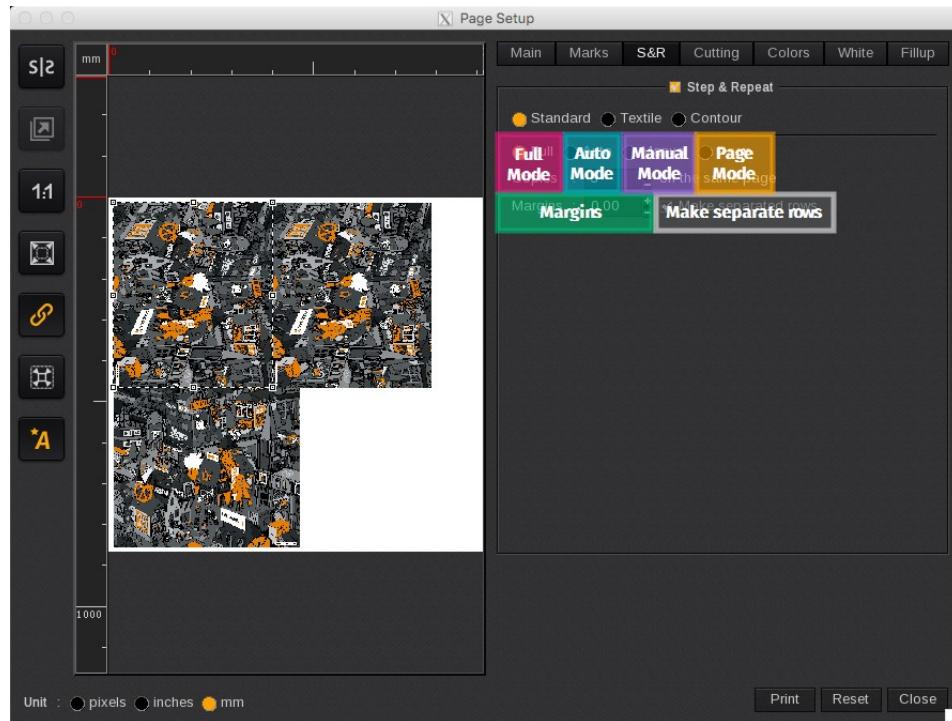


Standard Step&Repeat

This feature exists in the **Caldera RIP** solutions since several versions. It has been moved from the Main tab to its own tab. Now it is more visible and easier to use.

StandardStep&Repeat allows the user to do several copies of one image and to optimize their placement on media depending on the chosen mode and options.

Overview



The window can be divided in three parts:

Full mode of copies placement: all copies are nested on the same page	Go to "Modes" on the next page
Auto mode of copies placement: typically results in one row of images printed multiple times	Go to "Auto mode" on page 7
Manual mode of copies placement: manually specify number of copies per page and number of pages to print	Go to "Manual mode" on page 8
Page mode of copies placement: fills the current page with the maximum number of copies possible	Go to "Page mode" on page 9
Margins: margins between each copy.	Go to "Margins" on page 10
Make separated rows: when enabled separates copies into straight rows creating a white space to make cutting each row easier.	Go to "Make separate rows" on page 12

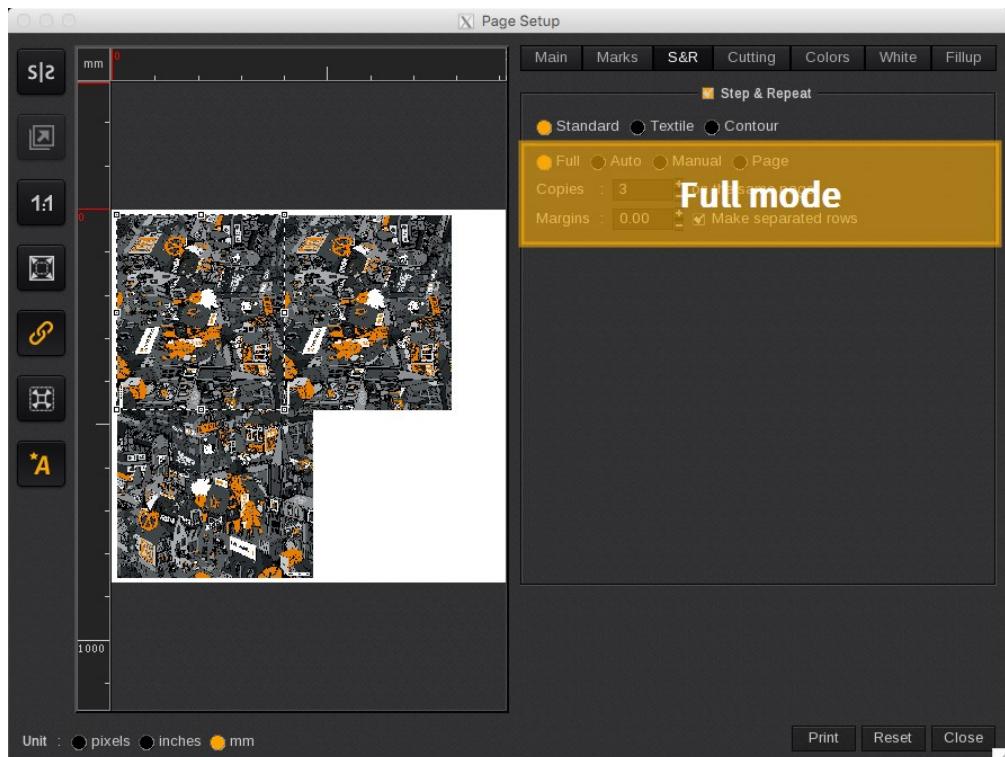
Note: Changes applied are dynamic and are immediately displayed in the preview section.

STANDARD STEP&REPEAT

Modes

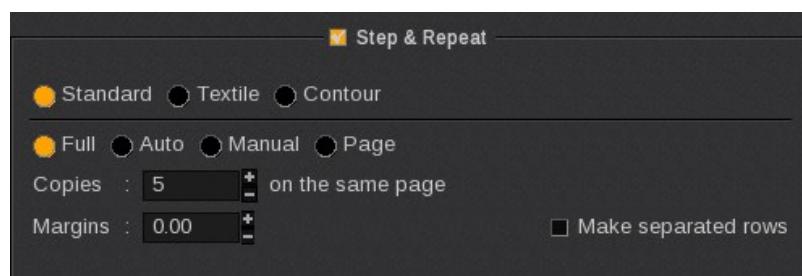
Four copies disposition modes exist: **Full**, **Automatic**, **Manual** and **Page**.

Full mode



As mentioned when **Standard Step&Repeat** is selected there are four copy placement options available: **Full**, **Auto**, **Manual**, and **Page**.

The **Full** mode puts all copies on the same page and doesn't allow for more copies than what the page allows. This option does not create more pages if the number of copies entered exceeds the maximum number of copies permitted on the page.



If the page format is a sheet (e.g. A4), the maximum number of copies in the print job will depend on the following:

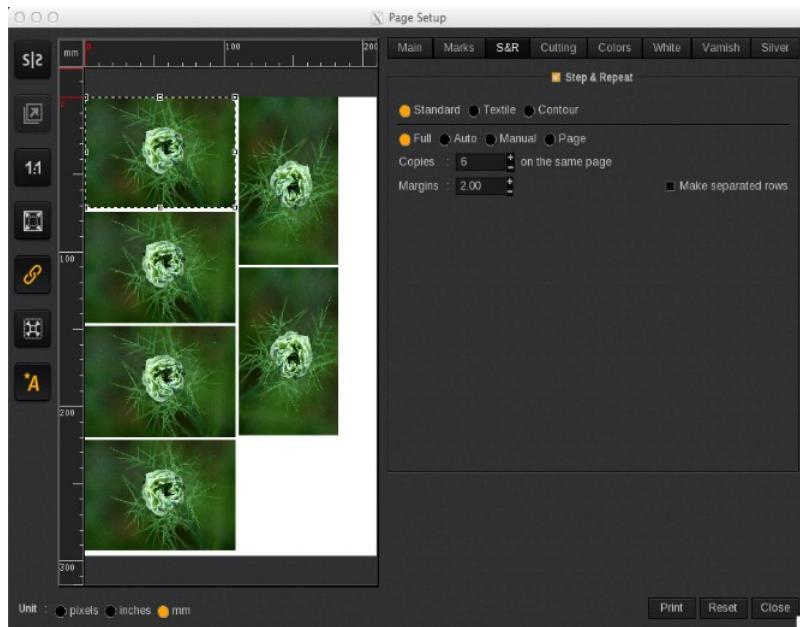
- The image size (and the maximum number of copies that can be placed on the sheet with that size)
- The image orientation
- The make separate rows option (if enabled or disabled)
- The margins applied

If a greater number is entered into the **Copies** field than what the page allows, it will automatically revert back to the maximum number of copies that can fit on the page.

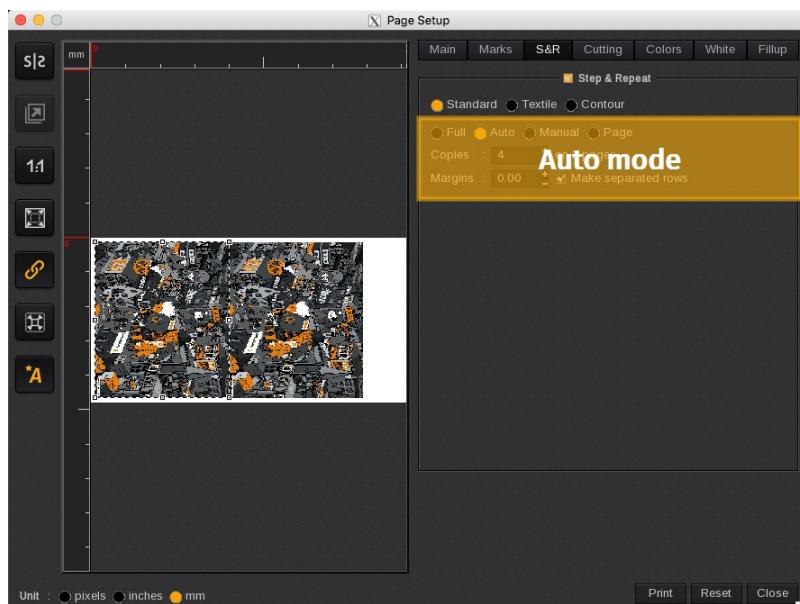
Note: In **Full** mode, the maximum number of copies is restricted to 1000.

STEP&REPEAT

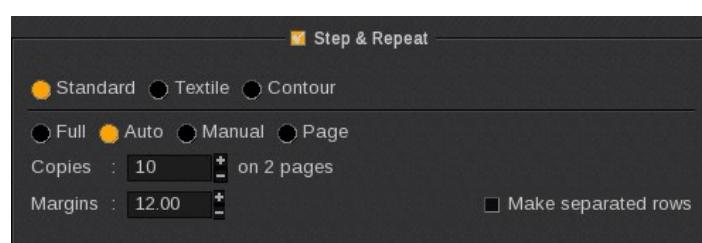
In the example below there are 6 copies on 1 page. This will result in 1 print job in the **Spooler**, and it will be printed once (1 copy).



Auto mode



The **Auto** mode option combines multipage and image placement optimization in one. When the number of copies desired exceeds the number of copies the page allows, the page is duplicated. The number of copies will automatically be doubled and no intermediate number of copies can be entered.



In roll mode, a “page” corresponds to one row. So even in roll mode a maximum copy number per page exists.

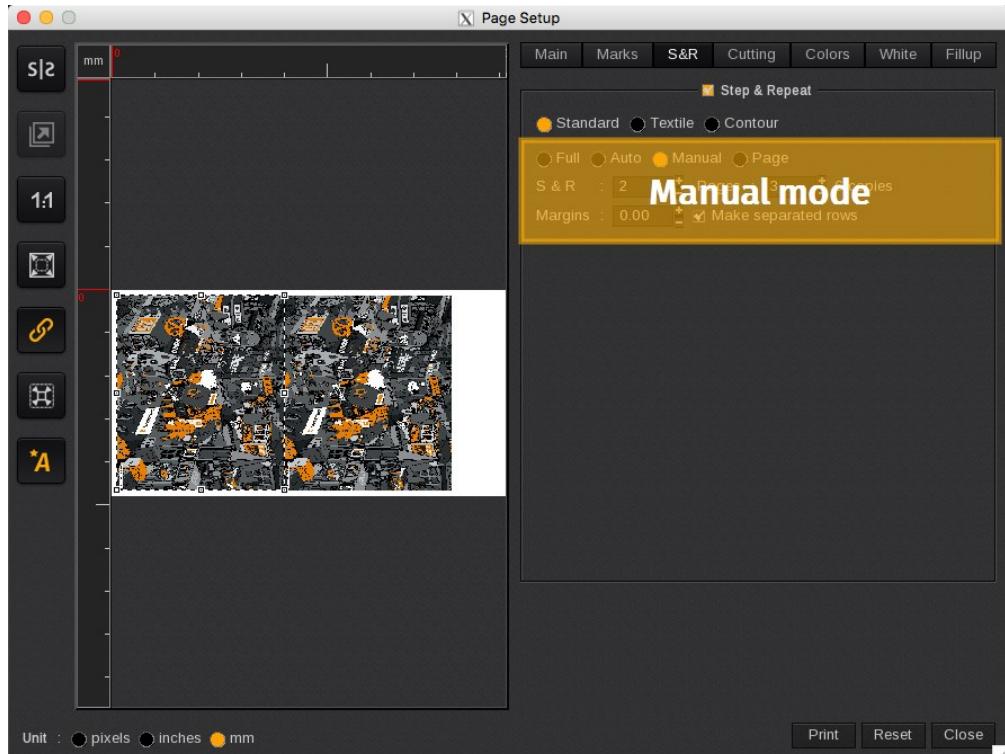
STANDARD STEP&REPEAT

In the example below there are 10 copies on 2 pages. This will result in 1 print job in the **Spooler**, and it will be printed twice (2 copies).

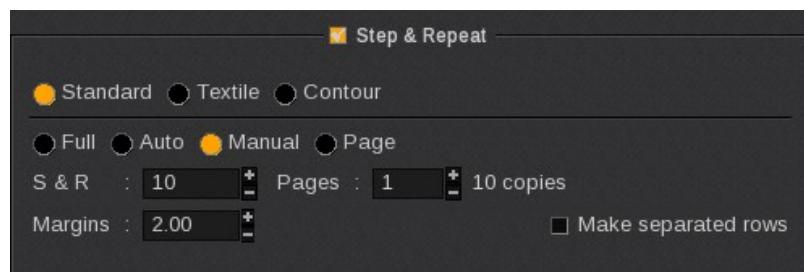


Presentation in sheet (A4) and roll format.

Manual mode

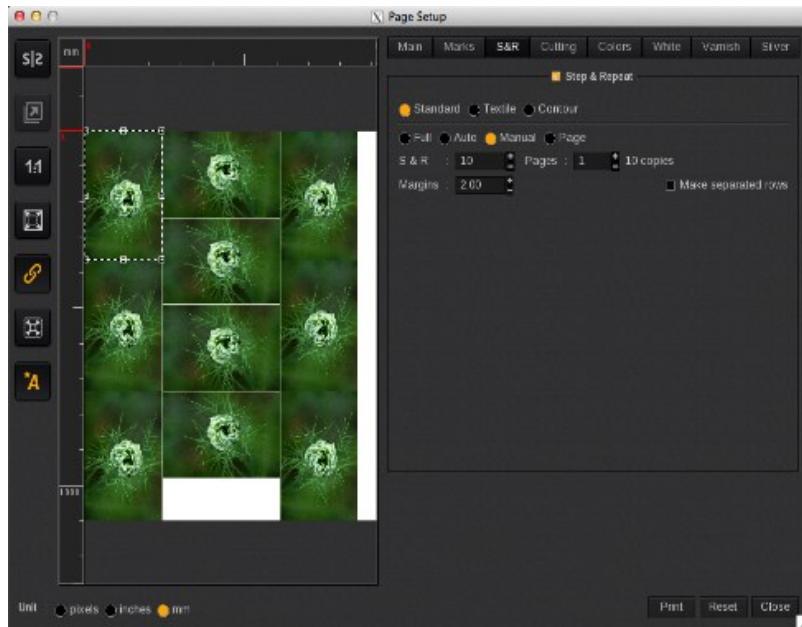


The **Manual mode** option allows you to specify the number of copies per page and the number of pages. You can place all copies on the same page if they fit or use the multipage option. Each page is a duplicate of the first page.

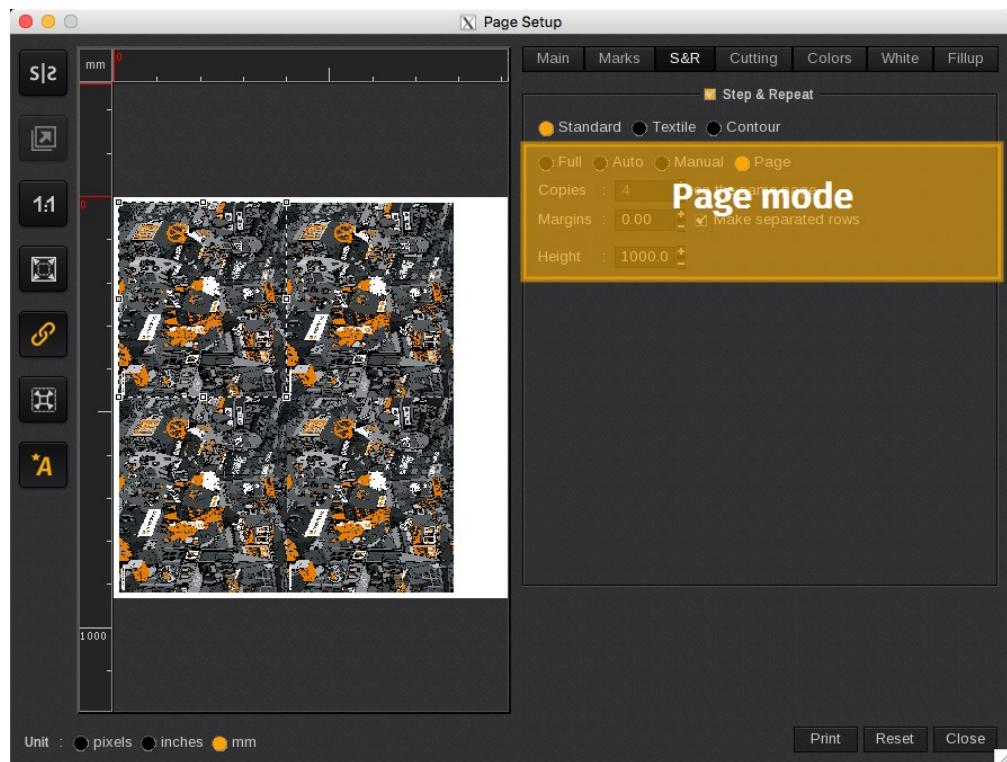


STEP&REPEAT

In the example below there are 10 copies on 1 pages. This will result in 1 print job in the **Spooler**, and it will be printed twice (1 copy).

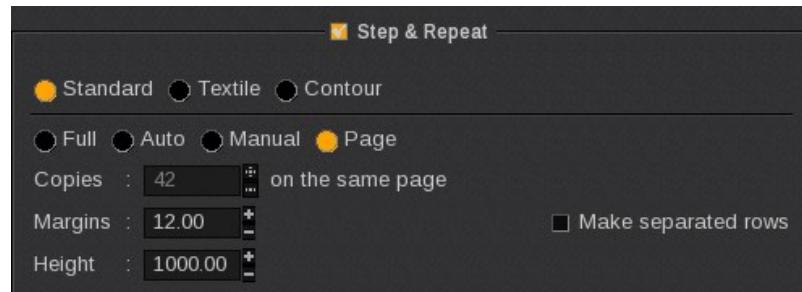


Page mode



STANDARD STEP&REPEAT

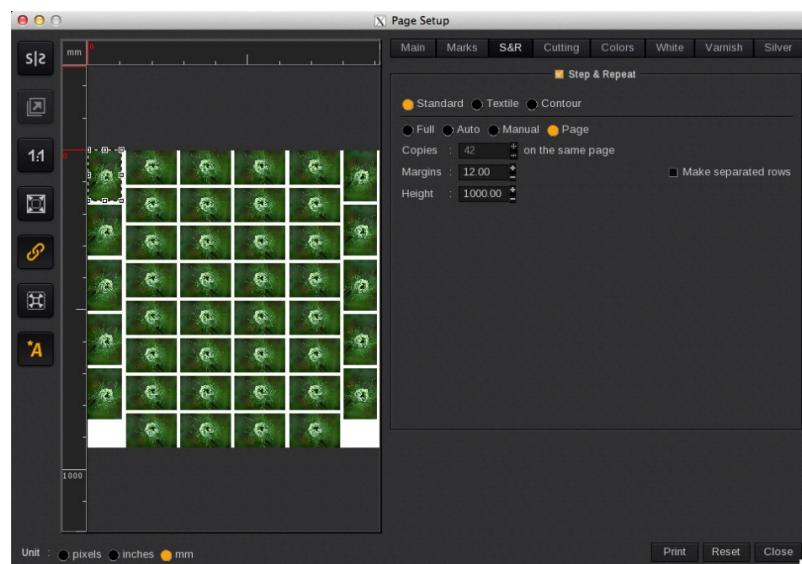
The options in **Page** mode are determined by the media type selected:



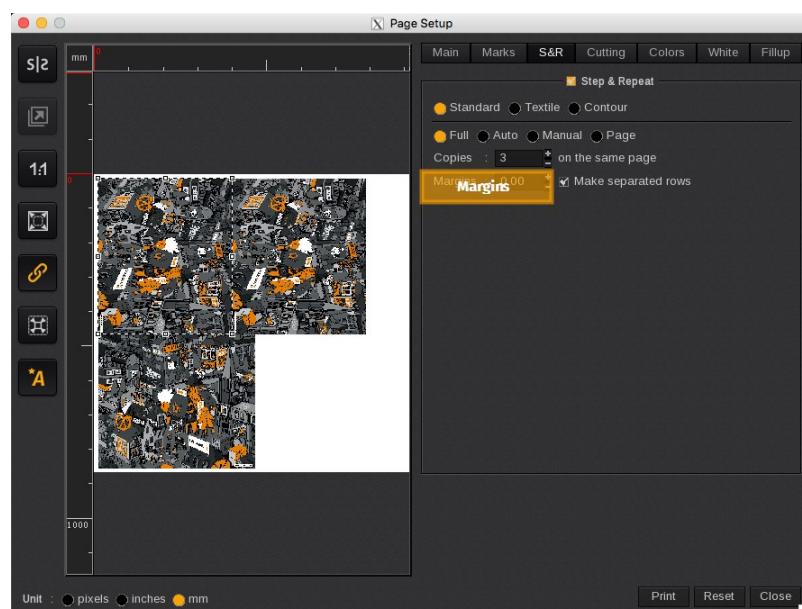
- **Sheet:** fills the sheet with the maximum number of copies (similar to **Full** mode but without the ability to choose the number of copies and to duplicate the sheet).

- **Roll:** specifies a **height** to get a “page size” and then fills the page with the maximum number of copies.

In the example below there are 42 copies on 1 page. This will result in 1 print job in the **Spooler**, and it will be printed once (1 copy).



Margins

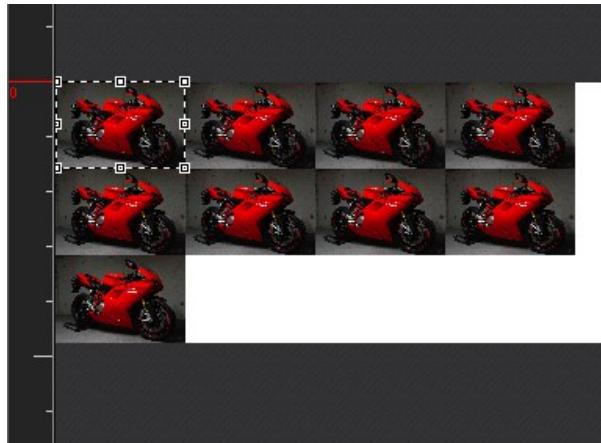


STEP&REPEAT

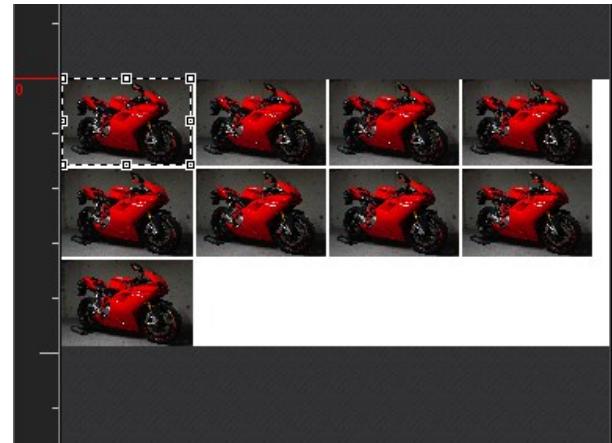
The **Margins** tool adds a margin or space around each copy. The margin is placed between copies on the same row and between each row, if applicable. The unit of measurement for the margins is defined in the page configuration tools.

Margins : 0.00

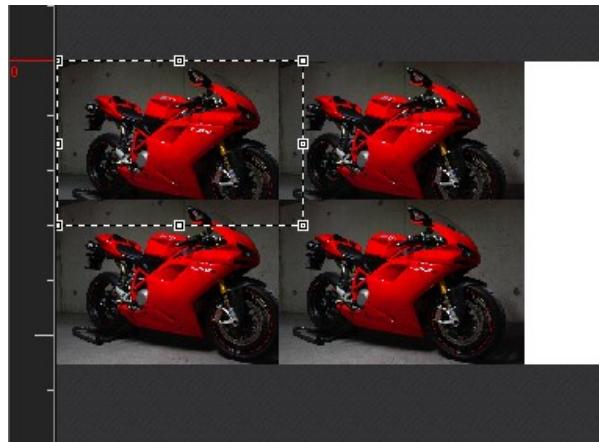
Below are three examples of how the margins tool can be utilized.



NO MARGIN: no margin or space is applied between each copy.



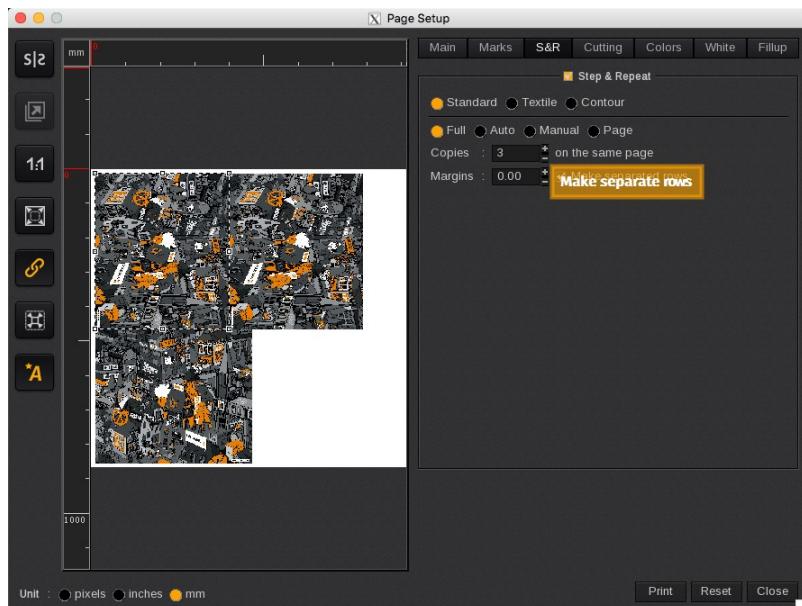
POSITIVE MARGIN: a margin or space is added between each copy and between each row.



NEGATIVE MARGIN: an overlap is applied to each copy. The right copy goes above the left one and the bottom copy goes above the one on top.

STANDARD STEP&REPEAT

Make separate rows



When **Standard Step&Repeat** is enabled the option **make separate rows** is available. This option organizes the copies by rows where each row forces each copy to have the same orientation.

This option makes cutting each row easier with a trimmer or cutter.

The **make separate rows** option is not useful in **Auto** mode when the page format is set to roll. In this case, copies are automatically organized by rows.

The option is also not as useful when the image orientation mode is fixed. Only the image automatic orientation option allows copies to have different orientations in order to optimize space on the media.



Image automatic orientation option.



Make separate row is **activated**. For each row, only one image orientation is allowed.

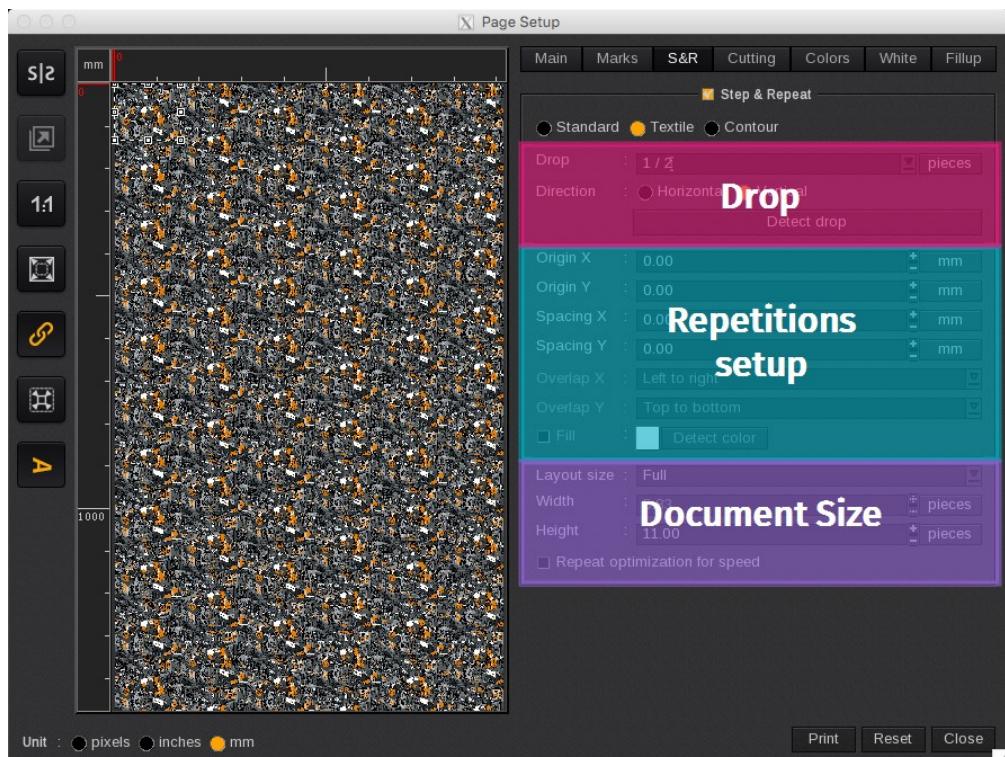


Make separate row is **deactivated**. The layout is optimized to reduce media waste.

Tex&Repeat

Tex&Repeat is an option. Its use may require the purchase of a specific key, depending on your RIP package.

Overview



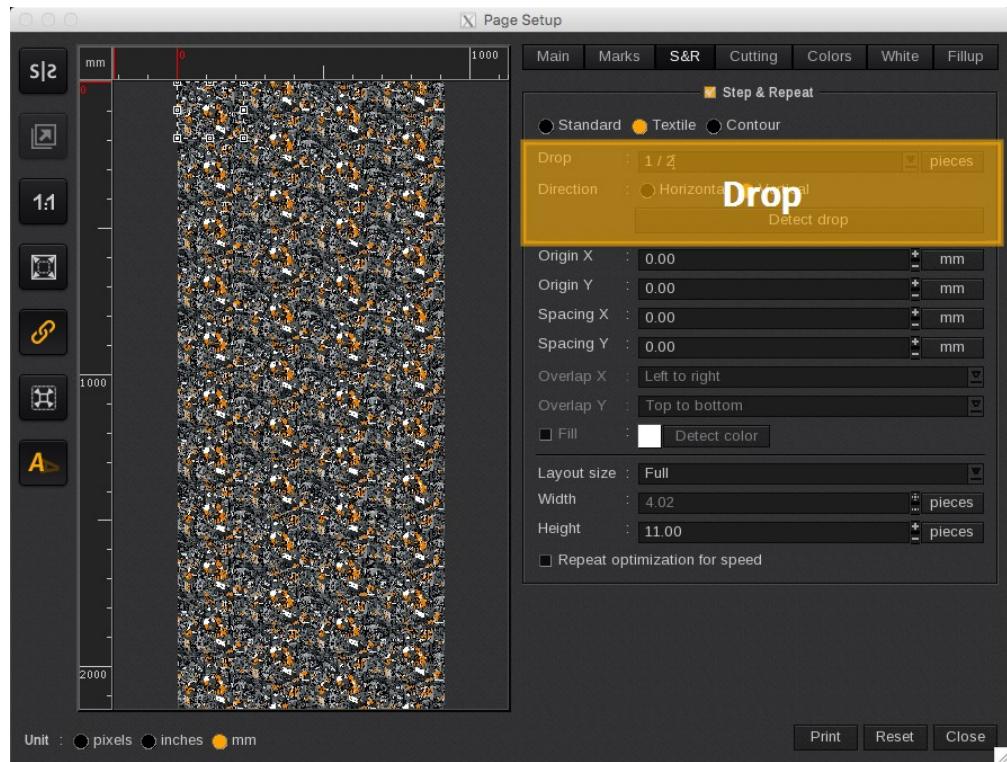
The window can be divided in three parts:

The drop	Go to "The drop" on the next page	
The repetitions page setup	Go to "Repetition setup" on page 15	
The document size	Go to "Document size" on page 19	

The preview is dynamic and allows to see real time changes made on the page configuration.

Tex&Repeat does not allow to choose an automatic image orientation because the drop depends on the orientation so it cannot vary from one repetition to the other. By default, the original orientation is chosen.

The drop

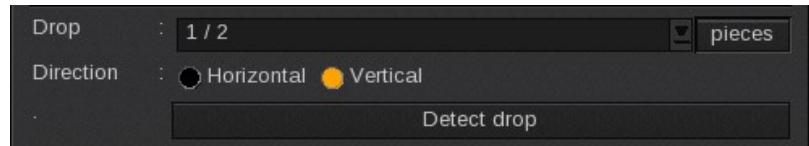


What's the drop?

In textile printing, the image repetition side by side is not used because it creates a symmetric effect that is visually unpleasant. To avoid this, images are created to be reproduced with a **drop**.

The **drop** is either a distance or a fraction. For example a 1/3 vertical **drop** means that the next repetition will be placed right to the previous pattern with a drop of a third down.

Drop setup



Using the **Detect drop** button, Tex&Repeat is able to automatically detect the image drop.

Be careful, using the detect drop button with wide images containing a large amount of pixels may take a longer processing time (up to several minutes).

This button is efficient in most cases whereas the drop can be set up manually. In this case the user will have to specify the followings:

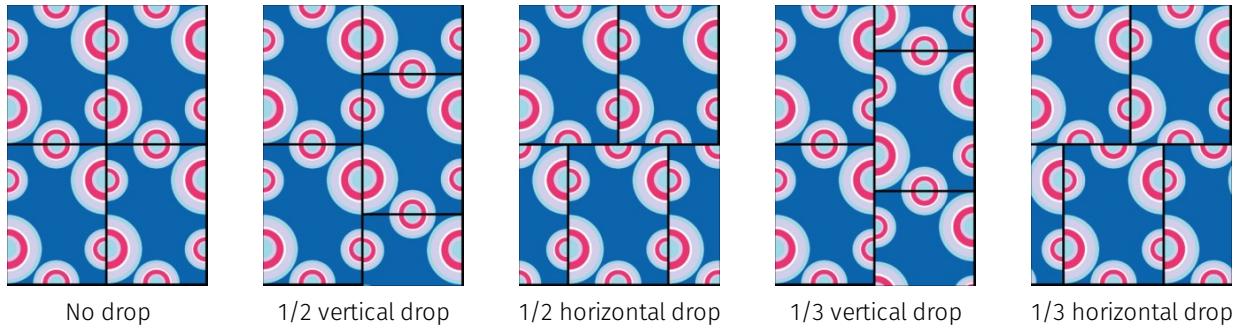
- **Drop:** the drop can be indicated in number of pieces or in distance (either in pixels, inches or millimeters depending on the unit chosen for the page configuration tools).

When the drop is defined in pieces, it can be either under a fraction or a value shape.

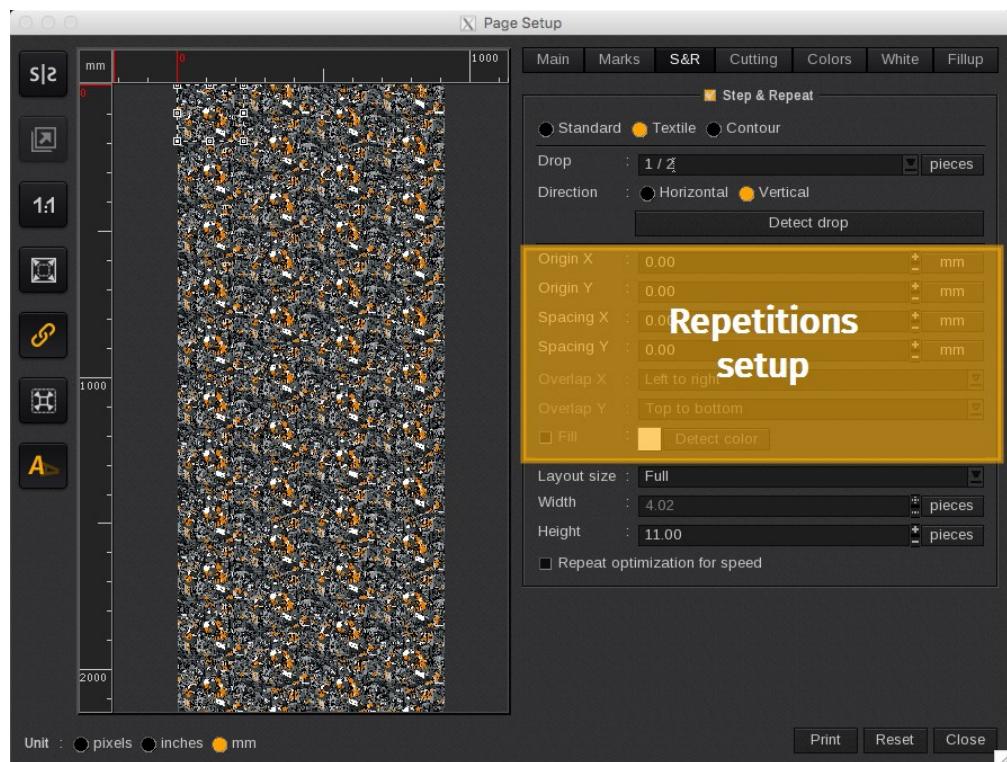
- **Direction:** the direction either **horizontal** or **vertical** indicates the plan according which the drop will be done. (See examples).

- **Vertical:** repetitions are normally placed in columns. The repetition placed on the same line, is moved to the back with the drop size.
- **Horizontal:** repetitions are normally placed in lines. The repetition placed on the same column, is moved to the right with the drop size.

Drop examples



Repetition setup



The page setup allows to move forward the image origin and to define spacing and overlap procedures.

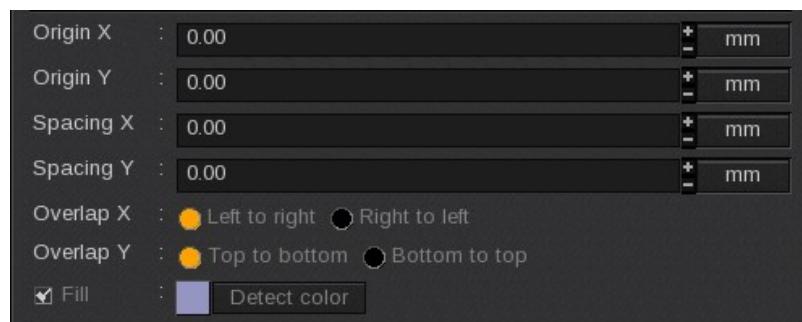


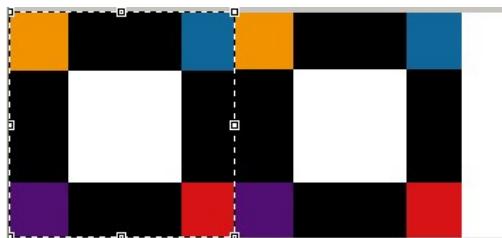
Image origin

The image origin can be moved forward on the page. This move is indicated in number of pieces or in distance (either in pixels, inches or millimeters depending on the unit chosen for the page configuration tools). By default, origins are fixed at 0.00.

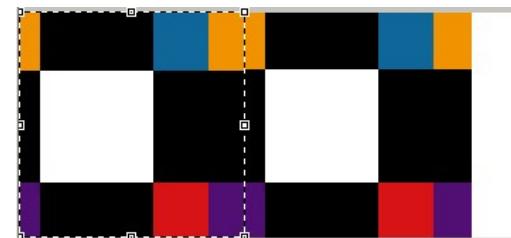
TEX&REPEAT

The origin has to be chosen between -1 and 1 piece. It is recommended not to use a negative origin. A 1 X and 1 Y origin displays the image as if no move has been made.

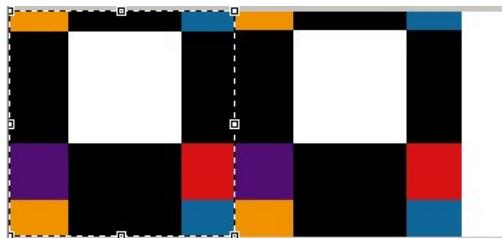
Origin move examples. The image drop is 1/1. On the original place, the white square is center.



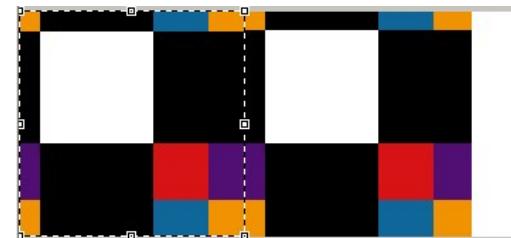
Original position



X origin moved (+70mm). Copies are impacted at the right of the line.



Y origin moved (+70mm).



X and Y origins moved (+70mm).

Spacing

In Spacing fields, numbers can either be positive or negative. When positive, a space appears between the copies that can be filled. When negative, an overlap is created.

By default, no spacing is specified.

Be careful, the piece size calculation takes the spacing into account. A piece is the image size + the spacing.

The piece size has influence on the drop calculation and the size of the document.

Filling

A positive spacing moves the repetition right (X) and down (Y) creating some space between the copies.

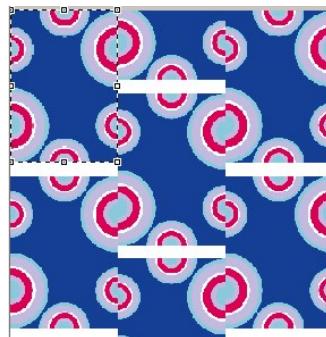
Positive spacing examples:



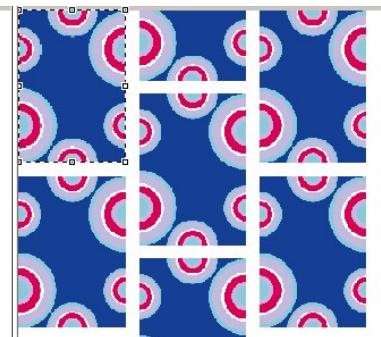
Original position



X spacing (+30mm).



Y spacing (+30mm).



X and Y spacing (+30mm).

STEP&REPEAT

By default, the space generated is considered as an unprinted area. It is possible to fill this space with color. To fill the space, the box has to be checked:

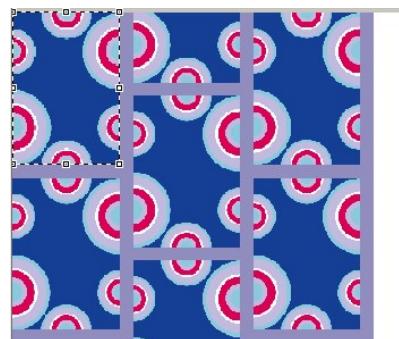


Clicking on the colored square opens the following pop-up to change the color:



The color modes available are: LAB, HSV, XYZ or CMJN, RVB and Grey.

The **Detect color** button allows the user to let the system choose the proper color to fill in. The image border color will be detected and applied or, if the image has multiple border colors, an average value will be calculated.



The color used to fill the space has been calculated with the detection color button.

Overlap

A negative spacing moves the repetition left (X) and up (Y) creating an overlap between copies. The overlap principle can be defined according to:

- The X axis:
 - Left to right: the left copy is over the right one.
 - Right to left: the right copy is over the left one.
- The Y axis:
 - Top to bottom: the top copy is over the bottom one.
 - Bottom to top: the bottom copy is over the top one.

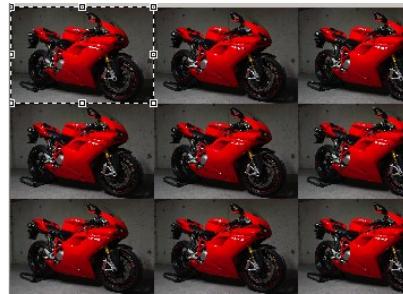
When there is an overlap on the X axis and on the Y axis, the X axis makes its move first then the Y does (see last example).

TEX&REPEAT

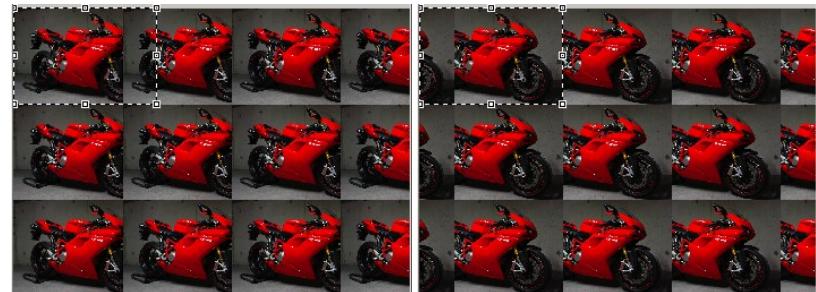
Overlap examples:

The chosen image is not relevant for textile printing. This choice has been made to have a better vision of the overlaps.

Original position



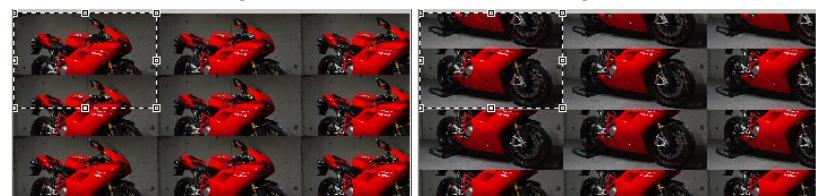
X spacing (-80 mm).



Left to right

Right to left

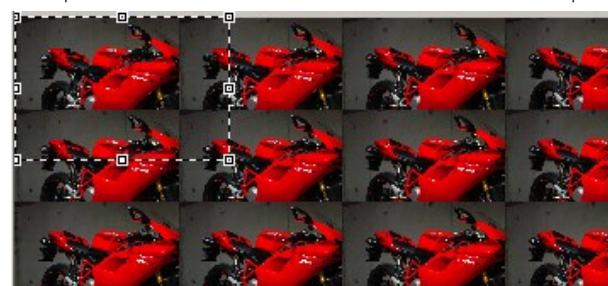
Y spacing (-80 mm).



Top to bottom

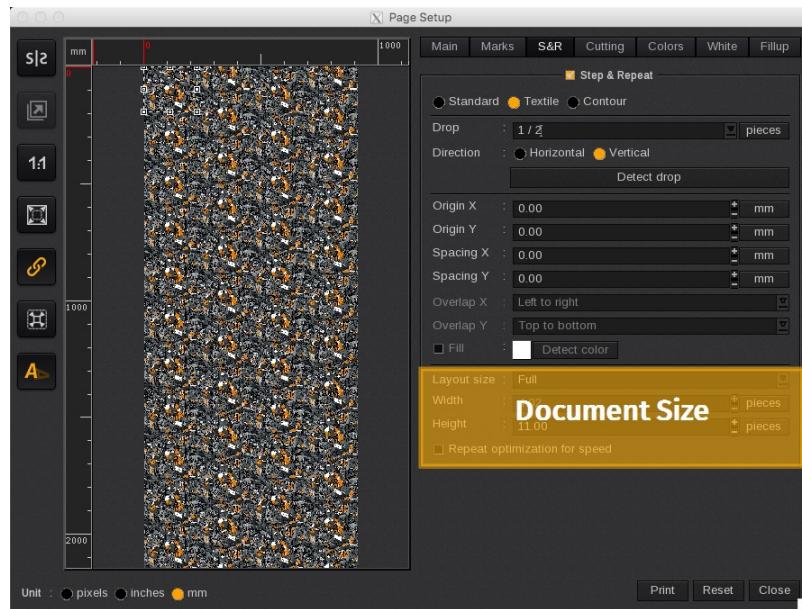
Bottom to top

X and Y spacing
(-80 mm).

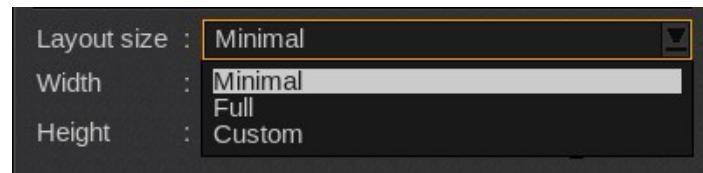


Left to right and top to bottom.

Document size



In this set-up window users can define the document size, which can be: **Minimal**, **Full** or **Custom**.



Minimal

This mode creates the image's pattern. It is the smallest motif of the original image which can be reproduced with a 1/1 drop.

The pattern size cannot be changed. It depends on the drop and the direction.

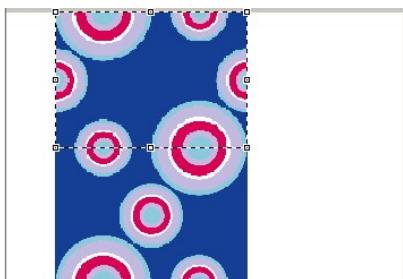
The size is automatic so the width and height fields cannot be changed.

For the size calculation: if the drop is represented as a x/n fraction so:

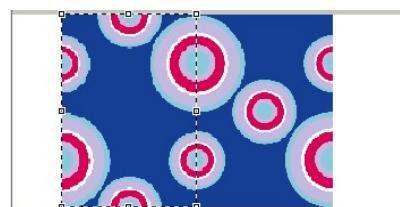
- If the direction is **vertical**: n repeats of the image will be placed on 1 **line** (using the drop).
- If the direction is **horizontal**: n repeats of the image will be placed on 1 **column** (using the drop).

Be careful, the number of repeats can be limited depending on the page format.

Examples:



1/2 vertical pattern.



1/2 horizontal pattern. (To realize this horizontal example we simply changed the image orientation.)

Full

This mode covers the page completely by placing the proper number of copies.

When the page format is roll type, the height is specified by the user. If not, none of the **Width** and **Height** fields can be changed.

When available, the **height** can be specified in number of pieces or in units of distance.

Example:



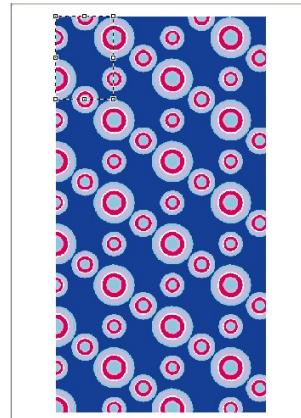
A4 filled with the Full mode

Custom

This mode allows the user to indicate manually the number of copies in width and height to put on the page.

The page format limits the number of copies. If it is a sheet, width and height will be limited whereas only the width will be limited in roll mode.

Example:



Page format: A4, the screenshot dimensions are used.

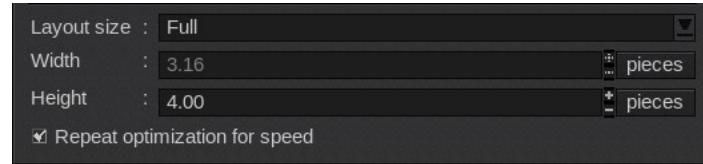
Repetitions are placed in the center of the page on purpose to show that the user is free to do as he wants.

STEP&REPEAT

Repeat optimization for speed

This option is available only for file-based printer drivers.

It increases the speed of **Tex&Repeat** jobs but disables the use of Annotations, Color bars and QR Codes.

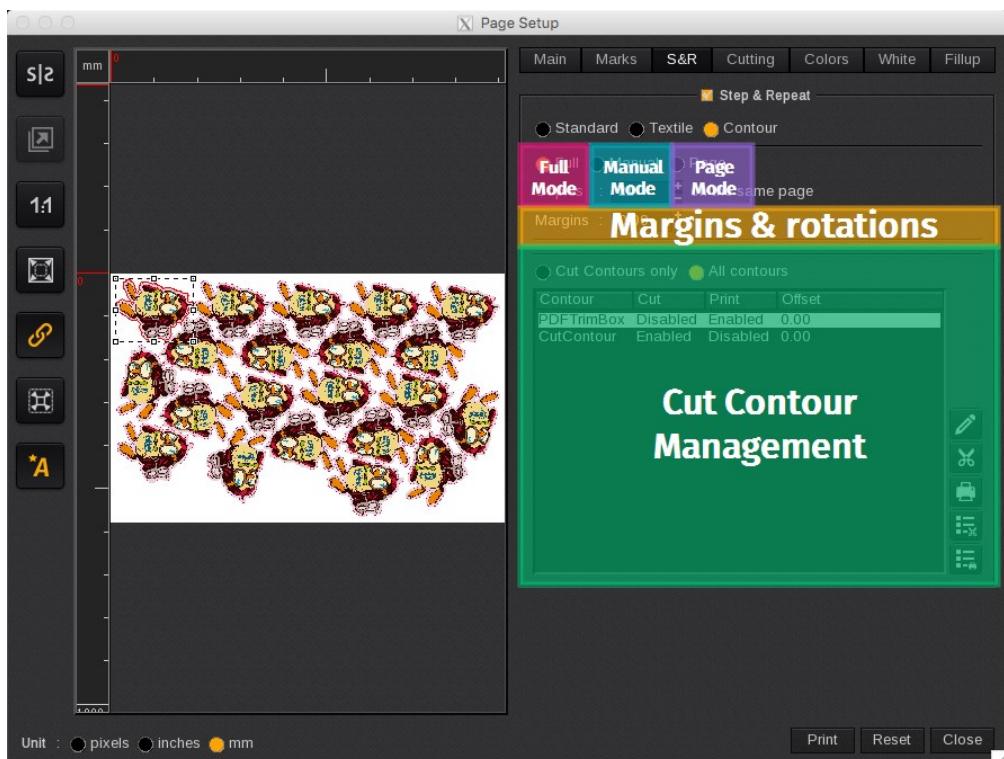


ContourNesting

The **ContourNesting** **Step&Repeat** feature optimizes copy placement on the media by using the cut contour line in the graphic. When **Contour** mode is selected, the cutline in the graphic is automatically enabled.

ContourNesting is an option. Its use may require the purchase of a specific key, depending on your RIP package.

Overview



The window can be divided in five parts:

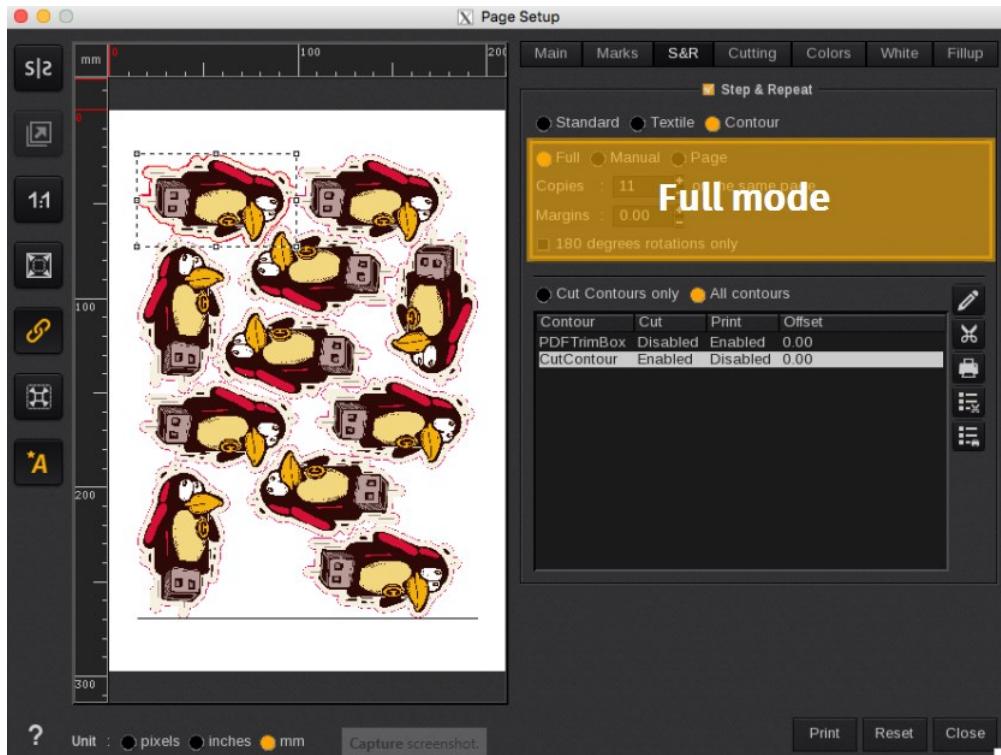
Full mode of copies placement: all copies are nested on the same page	Go to "Modes" on the facing page
Manual mode of copies placement: manually specify number of copies per page and number of pages to print	Go to "Manual mode" on page 24
Page mode of copies placement: fills the current page with the maximum number of copies possible	Go to "Page mode" on page 25
Margins & rotations: margins between each copy and restrict rotations to 180° only.	Go to "Margins" on page 26
Cut Contour Management: manages the cut contour lines in the graphic.	Go to "Cut contour management" on page 28

Note: Changes applied are dynamic and are immediately displayed in the preview section.

Modes

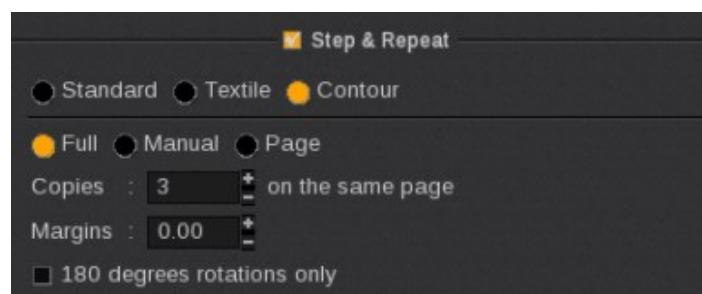
Three copies disposition modes exist: **Full**, **Manual** and **Page**.

Full mode



As mentioned when **Contour Step&Repeat** is selected there are three copy placement options available: **Full**, **Manual** and **Page**.

The **Full** mode puts all copies on the same page and doesn't allow for more copies than what the page allows. This option does not create more pages if the number of copies entered exceeds the maximum number of copies permitted on the page.



If the page format is a sheet (e.g. A4), the maximum number of copies in the print job will depend on the following:

- The image size (and the maximum number of copies that can be placed on the sheet with that size)
- The image's orientation
- The make separate rows option (if enabled or disabled)
- The margins applied

If a greater number is entered into the **Copies** field than what the page allows, it will automatically revert back to the maximum number of copies that can fit on the page.

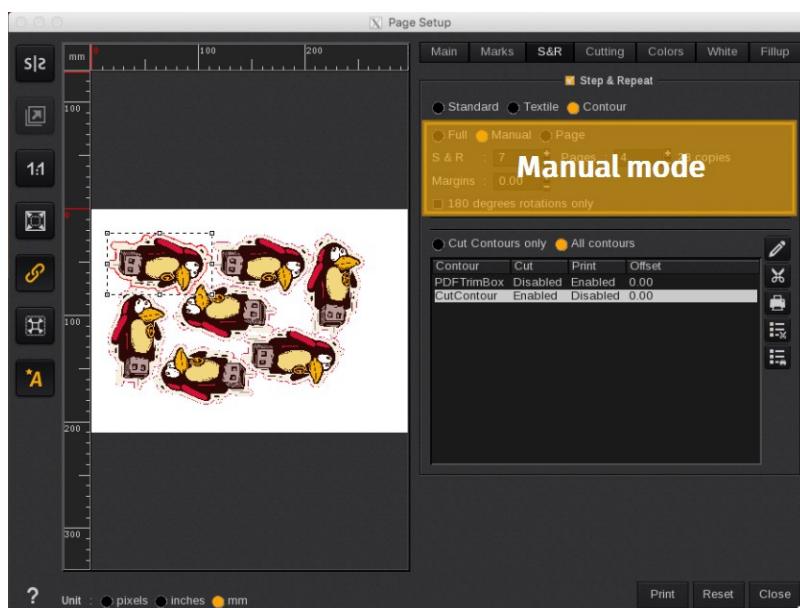
Note: In **Full** mode, the maximum number of copies is restricted to 1000.

CONTOURNESTING

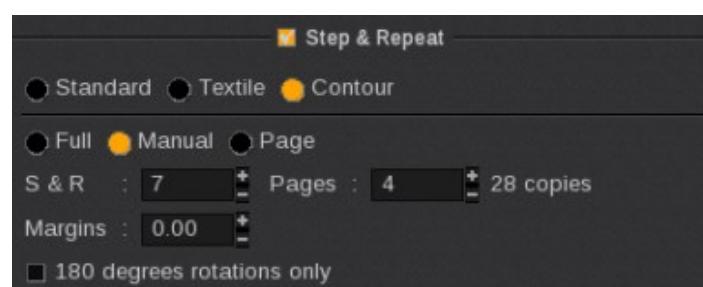
In the example below there are 3 copies on 1 page. This will result in 1 print job in the **Spooler**, and it will be printed once (1 copy).



Manual mode

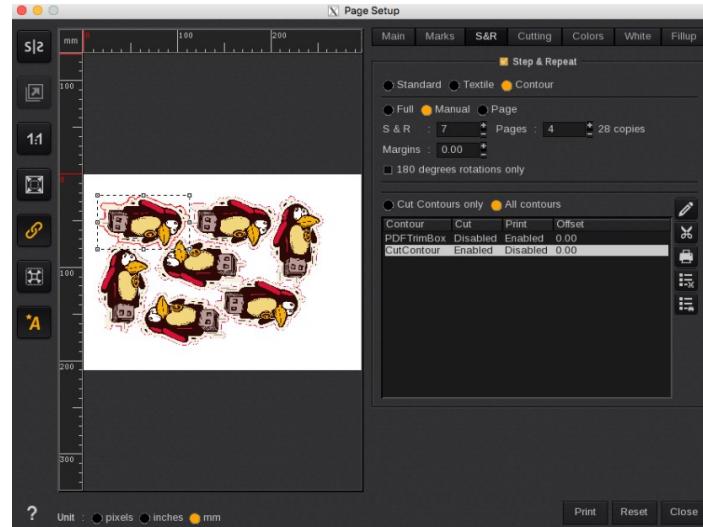


The **Manual** mode option allows you to specify the number of copies per pages and the number of pages. You can place all copies on the same page if they fit, or use the multipage option. Each page is a duplicate of the first page.

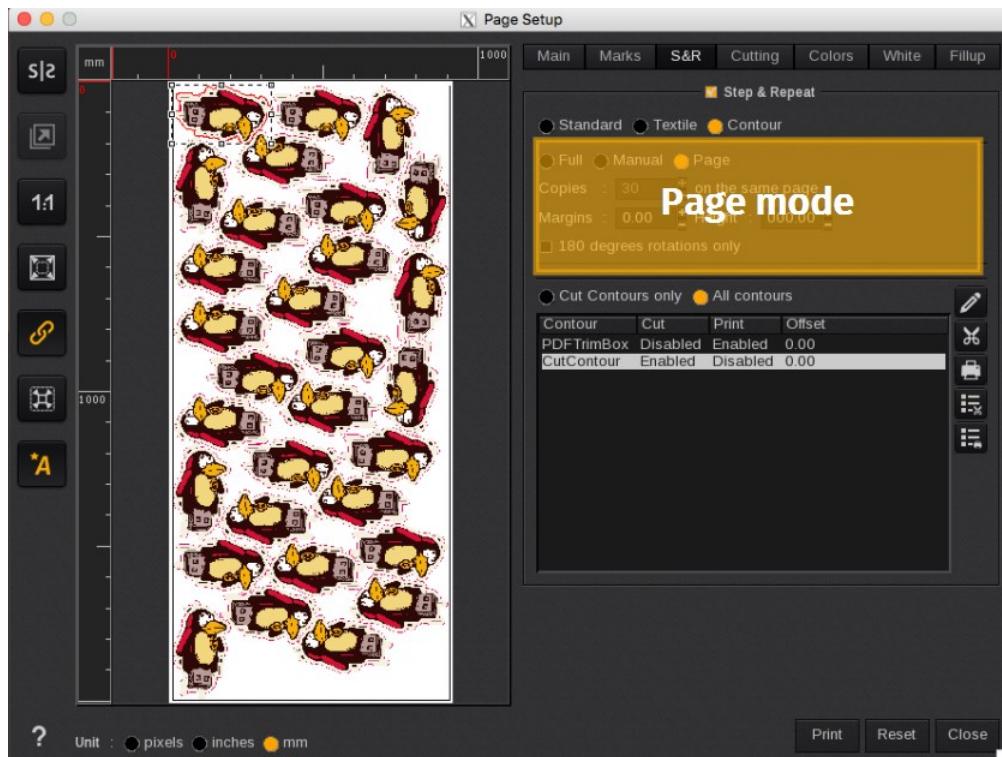


STEP&REPEAT

In the example below there are 7 copies on 4 pages. This will result in 1 print job in the **Spooler**, and it will be printed four times (4 copies).

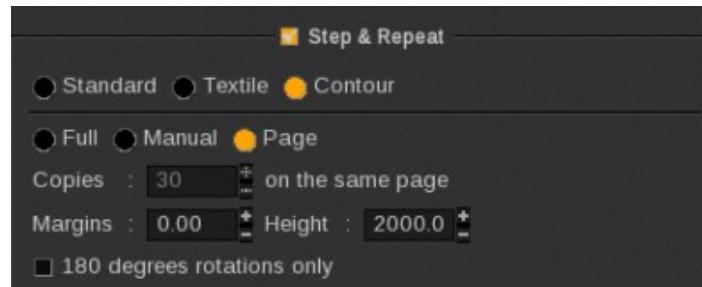


Page mode



CONTOURNESTING

The **Page** mode options are determined by the media type selected:



- **Sheet:** fills the sheet with the maximum number of copies (similar to the **Full** mode but without the ability to choose the number of copies and to duplicate the sheet).
- **Roll:** specifies a **height** to get a “page size” and then fills the page with the maximum number of copies.

In the example below there are 7 copies on 1 page. This will result in 1 print job in the **Spooler**, and it will be printed once (1 copy).



Margins



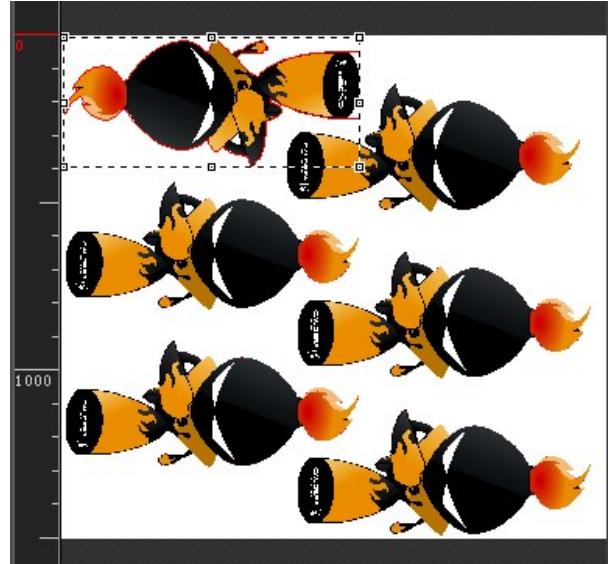
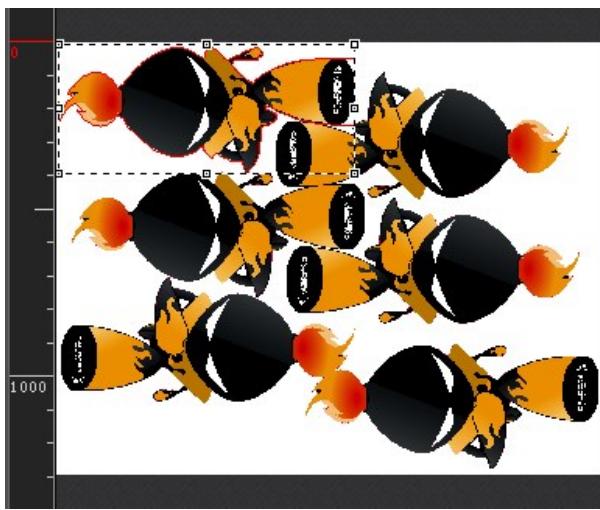
STEP&REPEAT

The **Margins** tool adds a margin or space around each copy. The margin is placed between copies on the same row and between each row, if applicable. The unit of measurement for the margins is defined in the page configuration tools.

Margins : 0.00

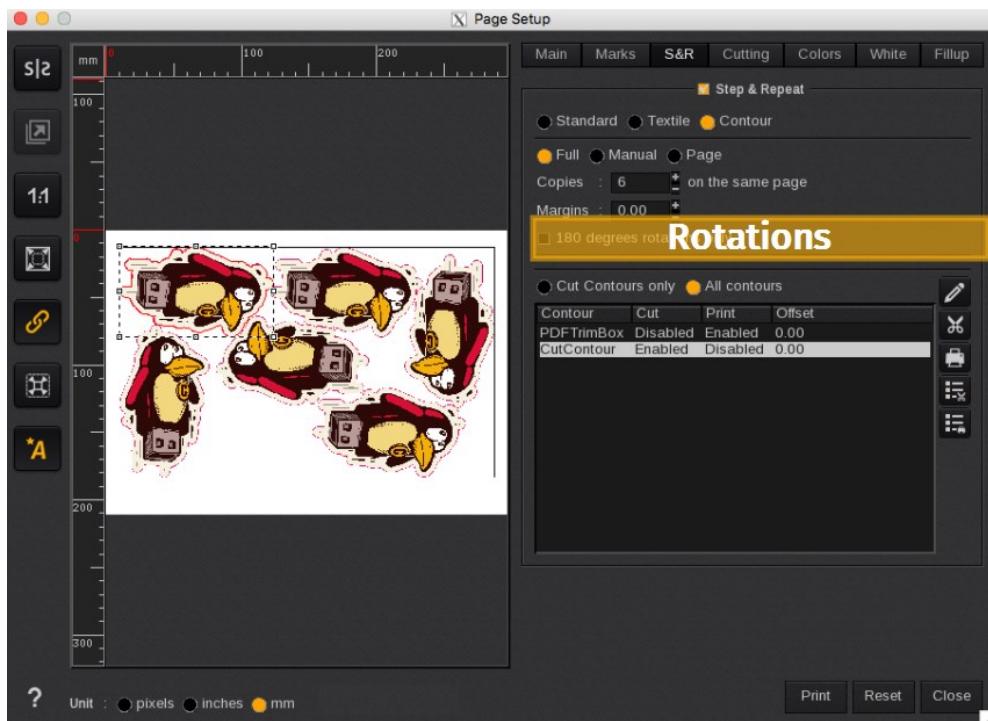
Below are two examples of how the margins tool can be utilized.

Note: negative margins are not allowed.



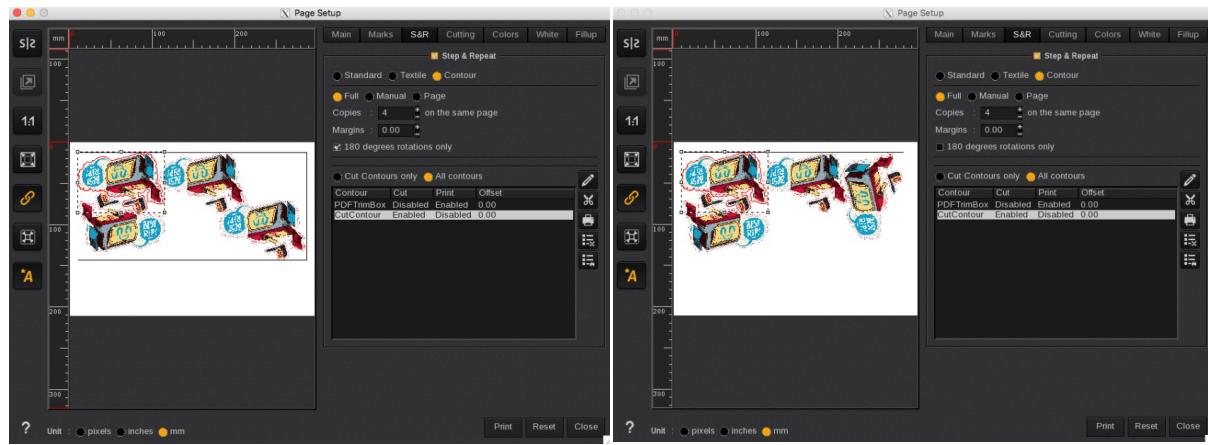
NO MARGIN: no margin or space is applied between each copy. POSITIVE MARGIN: a margin or some space is added between each copy.

Rotations



CONTOURNESTING

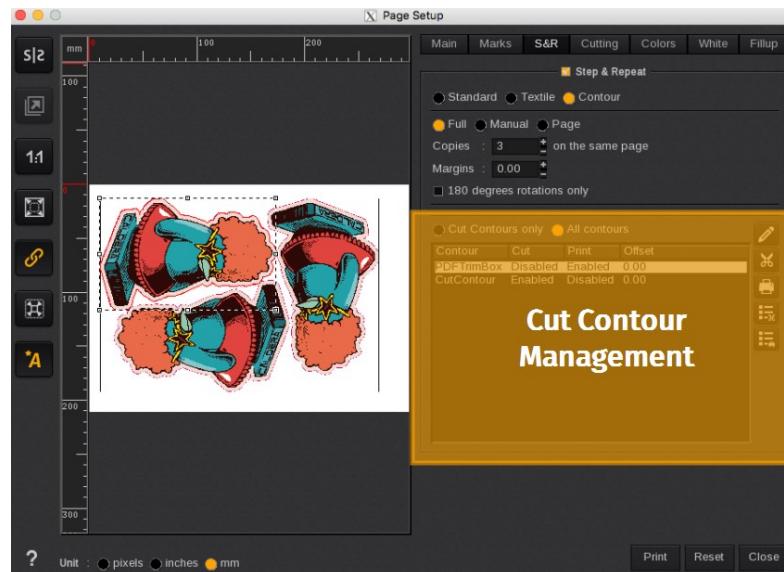
The **180 degrees rotations only** check box restricts rotations to 0 and 180 degrees. Thus, for fabric, textile, traffic signs and packaging market it allows you to print following the fiber direction. If you uncheck the option 0, 90, 180 and 270 degrees rotations are allowed.



180 degrees rotations only.

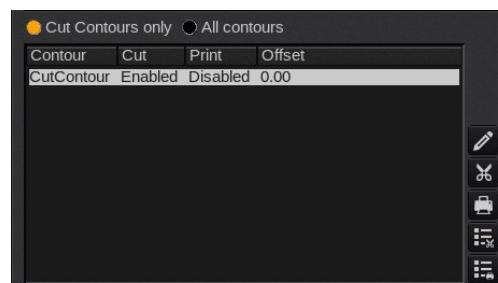
All rotations allowed.

Cut contour management



When **ContourNesting Step&Repeat** is enabled, you can manage the cut contour lines from the S&R tab. Changes applied to the S&R tab are automatically reflected in the Cutting tab and vice versa.

Please note that only contours that are enabled for the cut are taken into account for **ContourNesting Step&Repeat**.



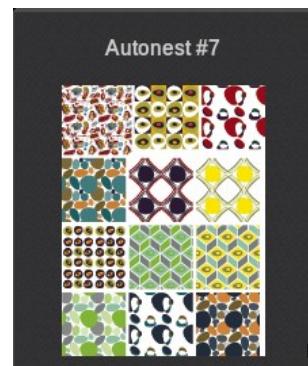
For further information please refer to the **VisualCut** manual that details the elements. It is available in **About -> Documentations** and on **CalderaDesk**.

Step&Repeat Nesting

What is Step&Repeat Nesting?

The **Nest as block** option when enabled, nests the copies as a block so other images being nested won't be mixed into the block. When disabled, the copies are nested independently and other images being nested may be mixed into the nested print job.

Nest as block is an option. Its use may require the purchase of a specific key, depending on your RIP package.



Example of blocks made with **Tex&Repeat and Standard Step&Repeat** and nested with **Nest-O-Matik**. Example of blocks made with **Tex&Repeat** to create a textile swatch book.

Note: Several **Autonests** will not be created in the **Spooler** as long as you keep the same print parameters while sending images to **Nest-O-Matik**.



On this example, the dogs are nest as a block whereas the FlameBoys which have several sizes, are nested separately.

Limitations

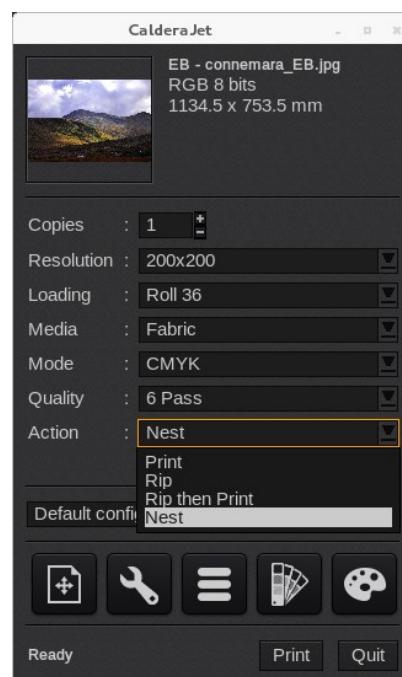
Be careful, **Tex&Repeat** is not compatible with cutting actions: either using the cut tab or trimmers. As for any other nesting, if the printing or cutting parameters are changed from one block to another, a new **Autonest** task will be created.

STEP&REPEAT NESTING

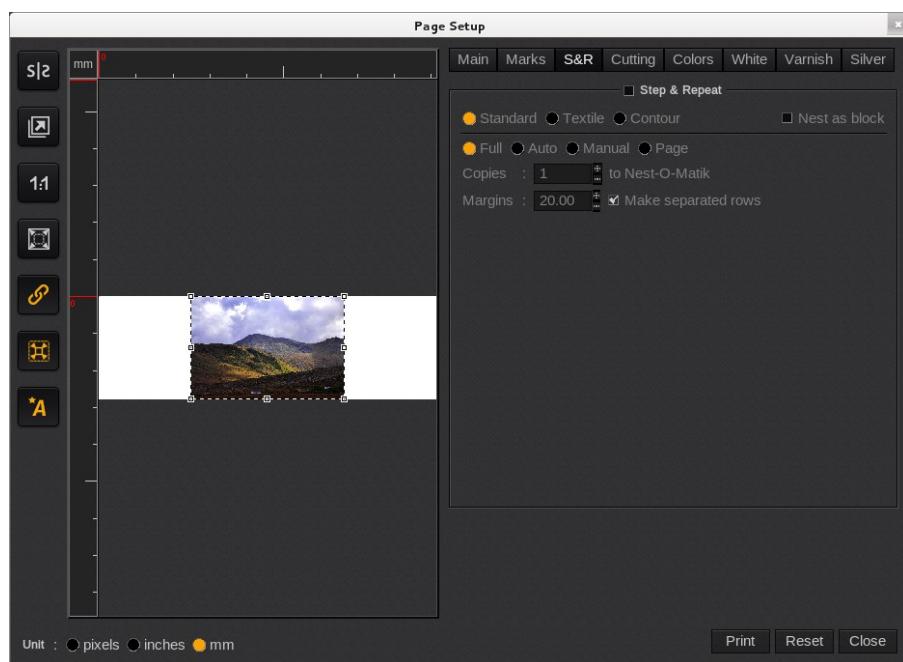
Step&Repeat Nesting Workflow

Below are detailed steps describing the **Nest as a block** workflow.

1. Open your module and add your first image.
2. From the **Action** drop-down menu, select **Nest**.



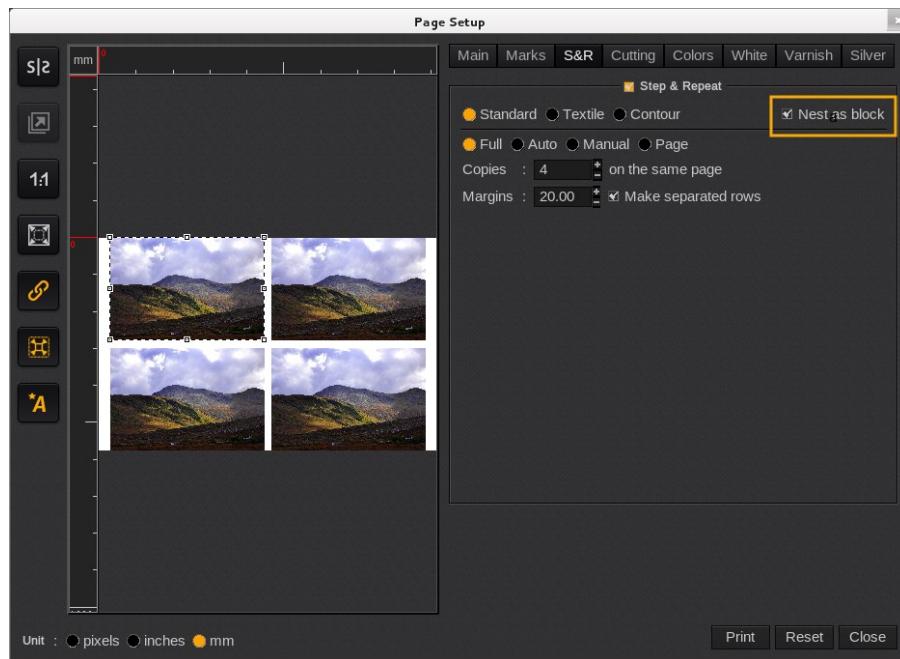
3. Open the **Page Setup** and go to the S&R tab.



4. Select the type of **Step&Repeat** you want to use: **Standard**, **Textile** or **Contour**.
5. You can see the new option at the top right of the window. It is called: **Nest as block**.

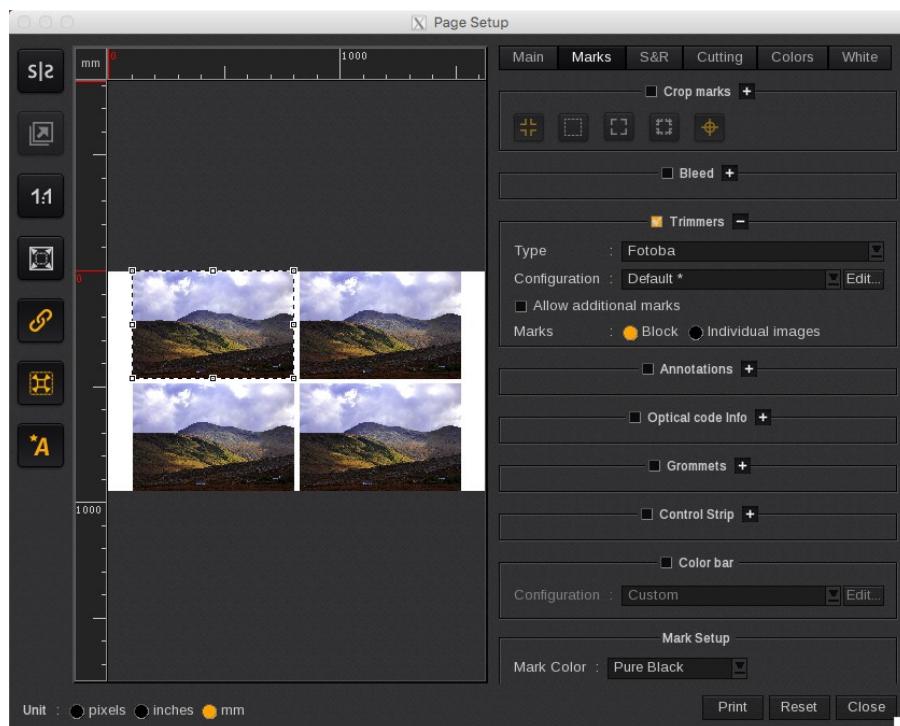
STEP&REPEAT

6. Enable the Nest as block feature.



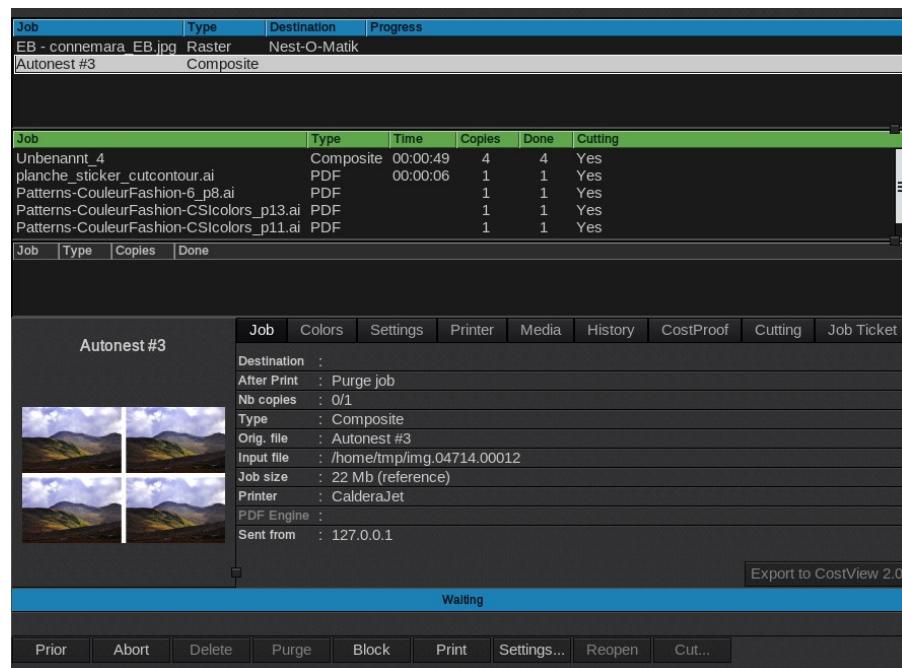
7. Set your Step&Repeat and print parameters accordingly.

8. If you use a Trimmer (Kala, Fotoba or Crest), you can see that a new field appears only when Step&Repeat Nesting is activated. This field is Marks and allows you to choose if you want to put cutting marks around the Block only or to consider every image of the block as Individual Images.



STEP&REPEAT NESTING

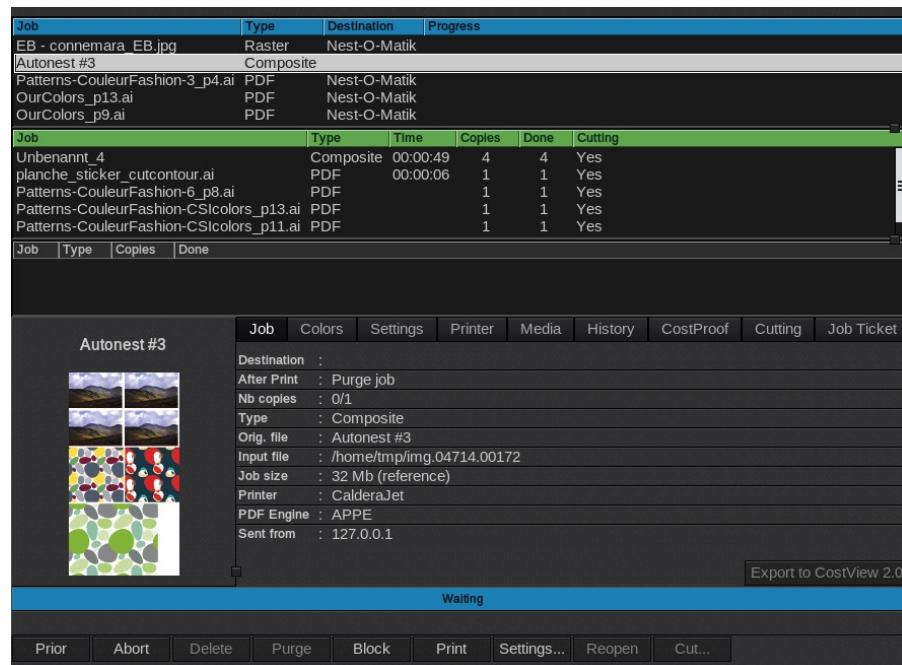
9. When finished, click **Print**. Your block of images will then be sent to the **Spooler** and put into an **Autonest** task.



10. Then drag and drop your next image directly into the *Page Setup* window and start over at step 3.

11. Continue until you have finished nesting all of the blocks and images you want to print. Then send the job to print from the **Spooler**.

Note: Your print may also start automatically when the conditions you defined in the **Spooler** settings are reached (e.g. maximum size reached).



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