



## Operators Guide

book2net Kiosk Production



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## 1. Introduction

Thank you for choosing a device from the book2net product family.

The book2net Kiosk A2 colour book scanner has been especially developed for the digitization of books, magazines, newspapers and documents in an public environment.

Compared to common devices, the operating costs of the book2net book scanner are extremely low and the device is almost maintenance-free. Thanks to its user-friendly operation, even unskilled walk-up operators can handle the device.



## 2. Safety Instructions

As a book scanner, the book2net Kiosk A2 color book scanner is a silently working office machine.

### Note

**The book scanner does not contain any sources for dangerous radiation.**

### 2.1. General instructions

Please observe the following safety instructions and regulations carefully when operating book scanner:

### Note

**Trained staff must carry out any maintenance work!**

**Observe the warnings attached to the machine!**

### 2.2. Power supply

The mains voltage in the device was laid according to the regulations for protection against accidental contact.

Ensure that the power supply corresponds to the book2net book scanner requirements. For further information please read the specifications listed. This device has been configured ex works according to your requirements! Trained staff must carry out any adjustments regarding a different input-voltage only.

For adjustments of electrical components, the device has to be turned off completely. To do so, pull out the power plug on the rear side of the device.

### Note

**The book scanner's AC power socket is equipped with two fuses of the type: 3.15 Ampere M semi time-lag; they are accessible from the outside.**

**In the event of damage or loss, both fuses must be exchanged.**



## 2.3. Operating environment

Please observe the following requirements when setting up the book scanner and choose an adequate location:

- Place the book scanner on a firm and vibration-free level surface
- Make sure to position the book scanner in a place where it is not exposed to direct sunlight and is not directly located next to a heating radiator.
- Do not load the light arms. Do not lean on the light arms and do not lift the book scanner at the light arms or hang anything over them.
- For cleaning the machine, use soft textiles with mild detergents only.
- Do not place any items on the book scanner.

Observe any rules and guidelines for meeting the requirements of a conventional scanner workplace.

## 2.4. Declaration of conformity

We hereby declare that the product at hand is in conformity with the CE-regulations and directives and is labelled as such.





### 3. Getting started

Switch on the book scanner. The power switch is accessible on the rear side of the device (fig. 1).



Figure 1

The illumination will lighten up.



Now start the *BookExpert* software by double-clicking on the icon on your desktop.

The scan software mask opens (fig. 2) and the book scanner starts with a short initialization.

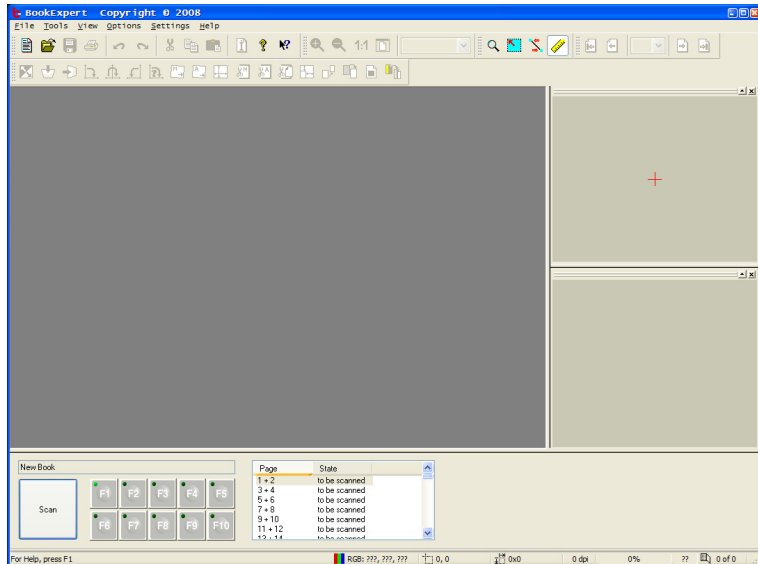


Figure 2



Place a document or bounded material directly on the book cradle in the centre of the layout section (fig. 4). The book cradle will vary its positions automatically, related to the weight of the document, to assure a careful handling of the document.

If needed, vary the position of the sliders by rotating the knobs in front of the cradle (fig. 3). The sliders will open constantly, generating a small gap where the book spine can be placed.

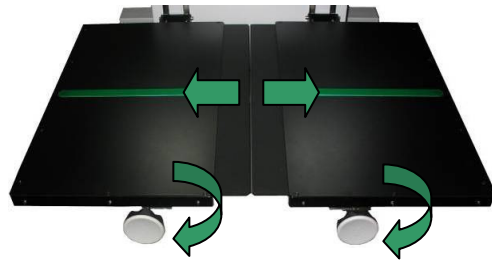


Figure 3

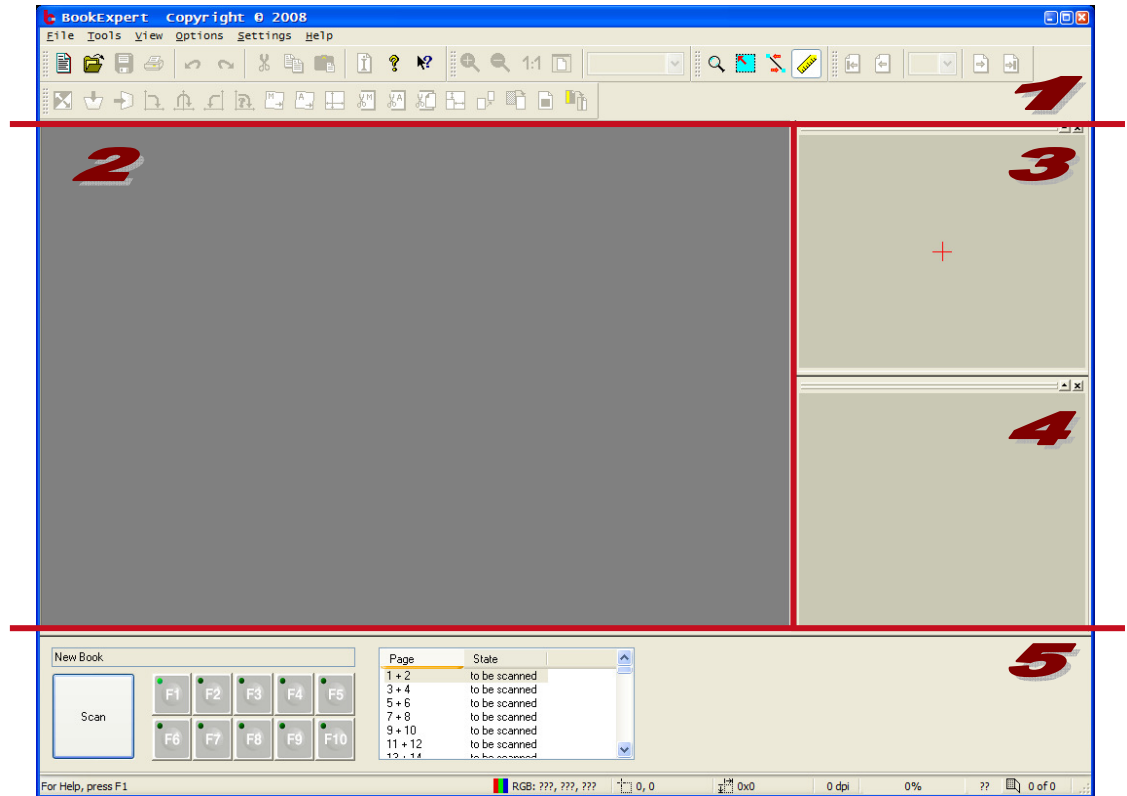


Figure 4



## 4. Operating the software

### 4.1. User interface



The user interface of the *BookExpert* software is divided in five different parts.

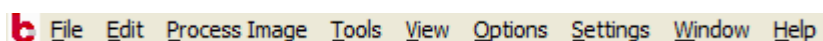
1. Main menu bar
2. Image preview window
3. Spy window
4. Overview window
5. Main scanning bar



### 4.1.1. Main menu bar

Here you have access to all features of the *BookExpert* software.

You are able to setup your book scanner, specify different scan jobs and also use many image enhancement features.



The tool bars give you a quick access to the most import features.



### 4.1.2. Image preview window

After releasing a scan or after opening an existing image from the hard disk it will be shown immediately in the *Image preview window*.

The quality of the overview is adjustable in three different steps under the menu item *View*.

### 4.1.3. Spy window

The *Spy window* will show you a detailed view of the image according to the position of the mouse pointer.

When moving the mouse to the *spy window* and clicking the right mouse button you have the opportunity to change the zooming factor in different steps from 12.5% up to 800%.

### 4.1.4. Overview window

The *Overview window* will always show you the full image even if you have zoomed into the image.

The quality of the overview is adjustable in three different steps when clicking with the right mouse button into the *Overview window*.



### 4.1.5. Main scanning bar

In the main scanning bar (fig. 5 on the next page) the actual selected scan job is presented and its current status.

You are able to change different scanning profiles (F1 to F10) for the actual scan job on the fly. The processing will be done in a separate thread in the background which will not influence the actual scanning time.

Nevertheless you are able to perform a scan by pressing the *Scan* button.

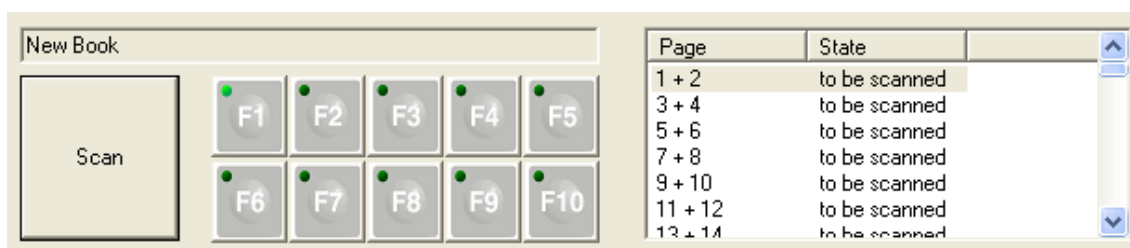


Figure 5



## 5. White reference

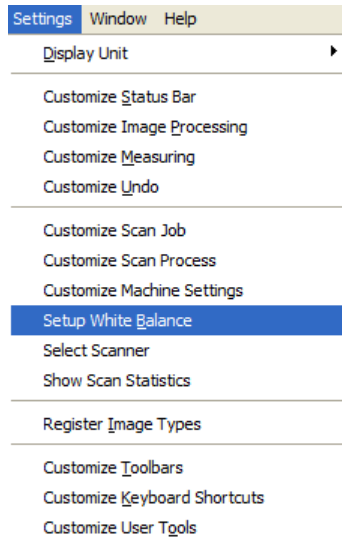


Figure 6

Setting up a white reference will sensitise the book scanner to the colour temperature of the ambient lighting on its place of installation.

With the glass cover open, place the delivered white reference sheet onto the book cradle and lock the glass cover in place again.


Scan a white reference by clicking the menu entry *Setup White Reference* under the menu item *Settings*. The book scanner will perform a scan and will store the data for processing colour images. Operate the glass cover lock, open the glass cover and remove the paper.

### Note

**If the ambient lighting conditions change drastically, the described procedure has to be redone.**



## 6. Scan Job

To perform the first scan, after starting the *BookExpert* software  and move the cursor to the menu entry *Settings* in the main menu. Select the submenu *Customize Scan Job*, and adjust the entries according to your preferences.

Here you are able to manage different job profiles. You can create new jobs, change or delete existing ones. For your convenience the date of creation and modification is shown besides the name of the job.

For an as active tagged scan job that is marked red (double-click with the left mouse button) the settings can be adjusted with the help of four different sliders.

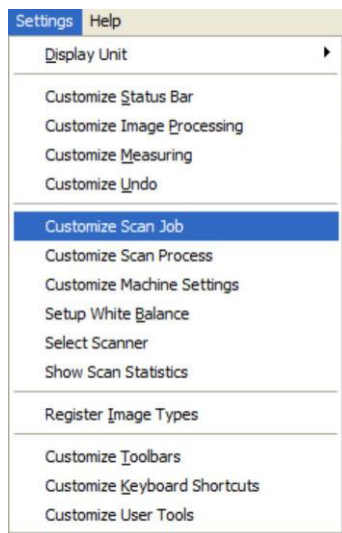


Figure 7

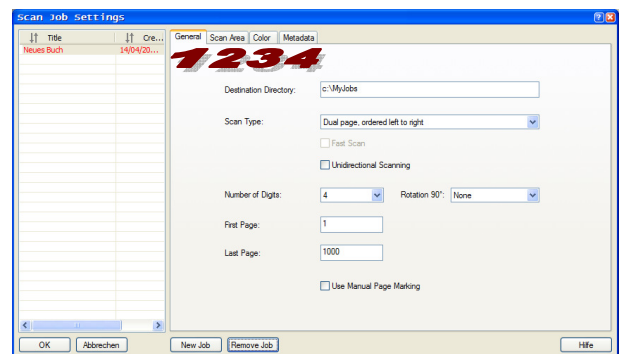


Figure 8

1. General
2. Scan Area
3. Color
4. Metadata



## 6.1. General

### 6.1.1. Destination Directory

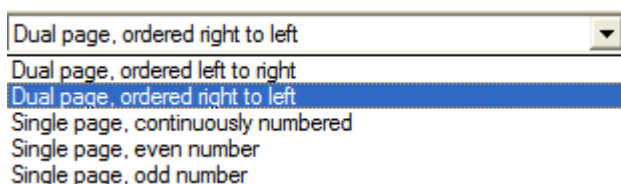
The *Destination Directory* determines where the files of your upcoming scanning project are going to be saved. The directory can be pointed to a folder or drive on the local machine, the network or to a removable medium.

**Note:**

**After releasing your first scan the processed files will be stored in a sub directory with the name of your Job Name directly under your chosen Destination Directory.**

### 6.1.2. Scan Type

After that the *Scan Type*, that affects the method of operation of the software, has to be selected. You can choose between the following:



#### 6.1.2.1. Dual page, ordered left to right

If this scan type is selected, the software reserves two indexes for every scan that is going to be released. This gives later on the opportunity to automatically divided pages and save them to two separate files. If no page splitting is selected, then both indexes will be taken for the filename of the double page.

#### 6.1.2.2. Dual page, ordered right to left

The software will use the same method for indexing as described above. The only difference is that at first the even-numbered index and then the odd-numbered index are used for the file naming.

#### 6.1.2.3. Single page, continuously numbered

This scan type may used for one-sided documents like newspapers were no automatic page splitting is needed.





### 6.1.2.4. Single page, even number and Single page, odd number

With this scan type only even-numbered indexes or odd-numbered indexes will be used for naming one-sided documents

### 6.1.3. Indexing behaviour

A scan job can be further specified in selecting the First Page and the Last Page and the Number of Digits that should be used for the file naming.

Number of Digits:	4
First Page:	1
Last Page:	1000

### 6.1.4. Scanning orientation

Also it is possible to modify the scanning orientation by rotating the image directly after scanning.

Rotation 90°:	<div style="border: 1px solid black; padding: 2px;"> <div style="background-color: #e0e0e0; padding: 2px;">None</div> <div style="background-color: #000080; color: white; padding: 2px;">None</div> <div style="padding: 2px;">Clockwise</div> <div style="padding: 2px;">Counter-Clockwise</div> </div>
---------------	---

### 6.1.5. Regions of interest

The *Use Manual Page Marking* scanning feature will give you the possibility to specify regions of interest.

<input checked="" type="checkbox"/> Use Manual Page Marking
---

Upon scanning frames will be displayed according to the selected *Scan Type*.

These frames can be used to specify exactly the content that has to be saved while not using automatically cutting functionality in the *Scan Process*.

Besides that the normal scanning workflow is to automatically forward the scanning result to a Scan Process that in a batch mode will process the image, using this feature will stop the workflow until the frames are set up properly and the user acknowledges the processing.

So it is guaranteed that the regions of interest are always set in place or can be modified if needed.



**Note**

A *Scan Process* used with this feature does differ from a standard workflow. The initial Imaging object has to be *Split Double Page* will extract the contents of the frames.

## 6.2. Scan Area

Under the menu item *Scan Area* you are able to mask the area where the book lies on the book cradle to reduce the scan time.

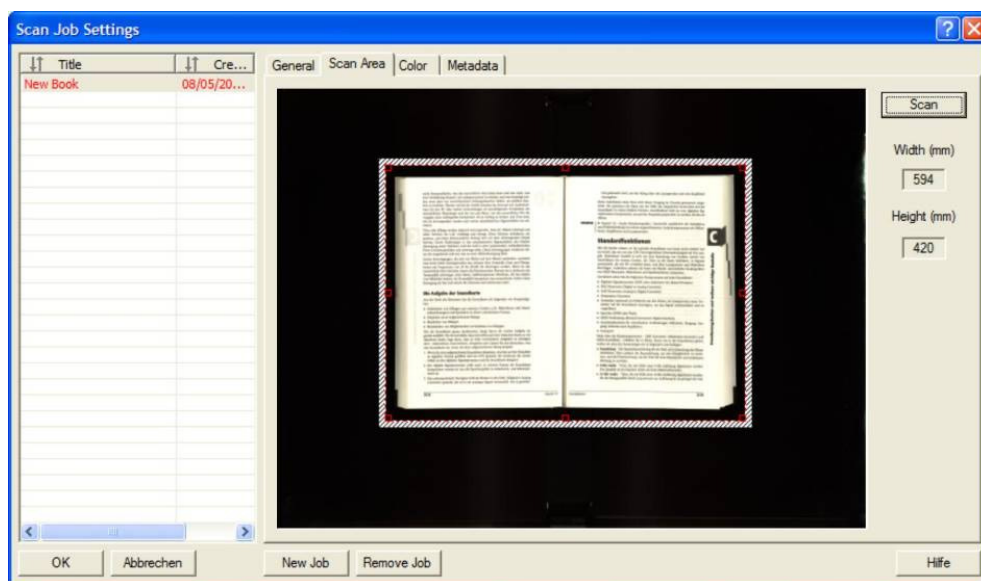


Figure 9



### 6.3. Color

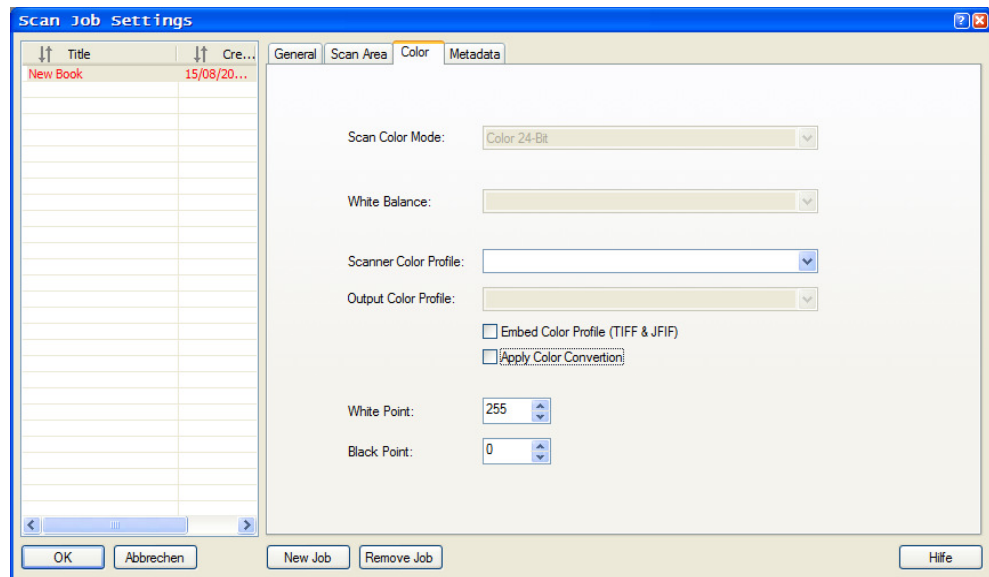


Figure 10

Under the menu item *Color* you are able to set up colour profiling. It is impossible to embed ICC profiles into saved TIFF or JPEG image files or convert between colour spaces.

Also it is possible to modify the white and black point of the scanned image,



## 6.4. Metadata

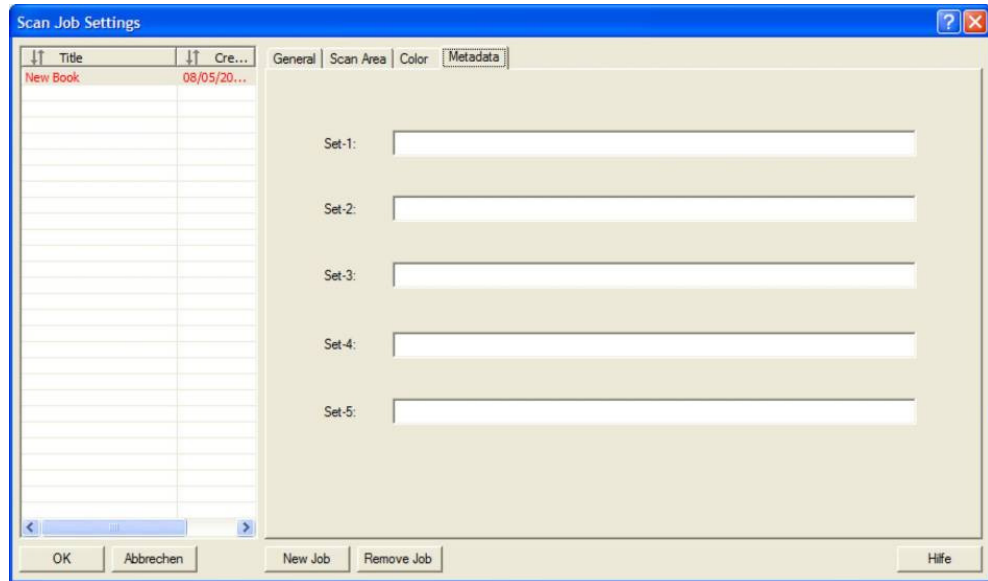


Figure 11

Under the menu item *Metadata* you have the opportunity to specify several TIFF tags whose values will be inscribed into the header of a TIFF image.



## 7. Scan Process

Besides different scan jobs you can specify ten different scan processes according to your preferences that can vary for example in file formats or in the sequence of the automated image enhancement process.

Select *Settings* from the main menu and click on the submenu *Customize Scan Process*. A new window will open.

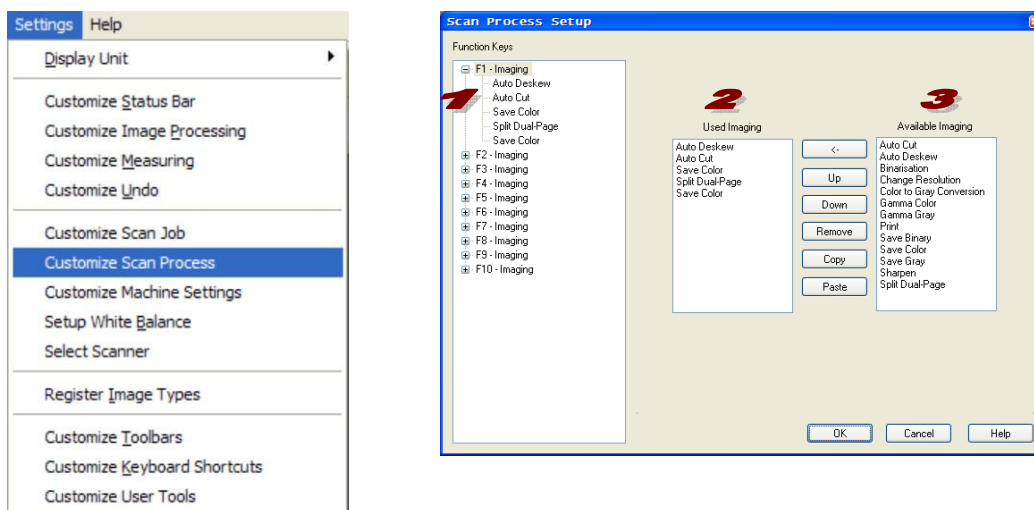


Figure 12

The defined scan process later can be selected via the main scanning bar or via the user panel in front of the book scanner.



## 7.1. Imaging

An imaging process is combination of several imaging enhancement objects that are automatically assigned to the image that was transferred from the book scanner to the software.

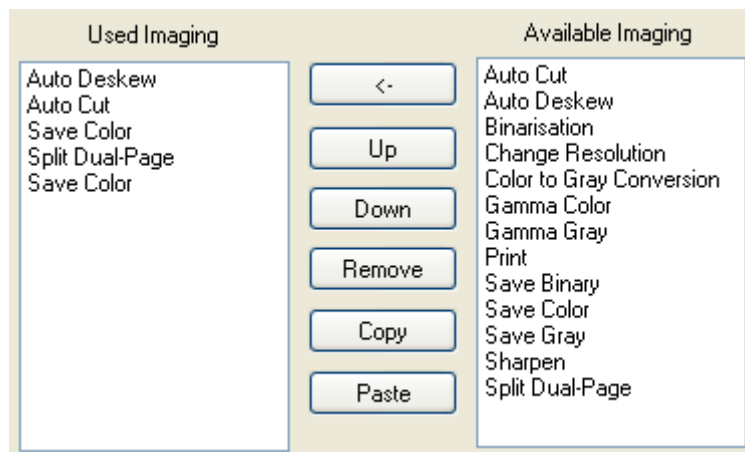


Figure 13

In a following step then you can adjust the special parameters for each entry you have selected.

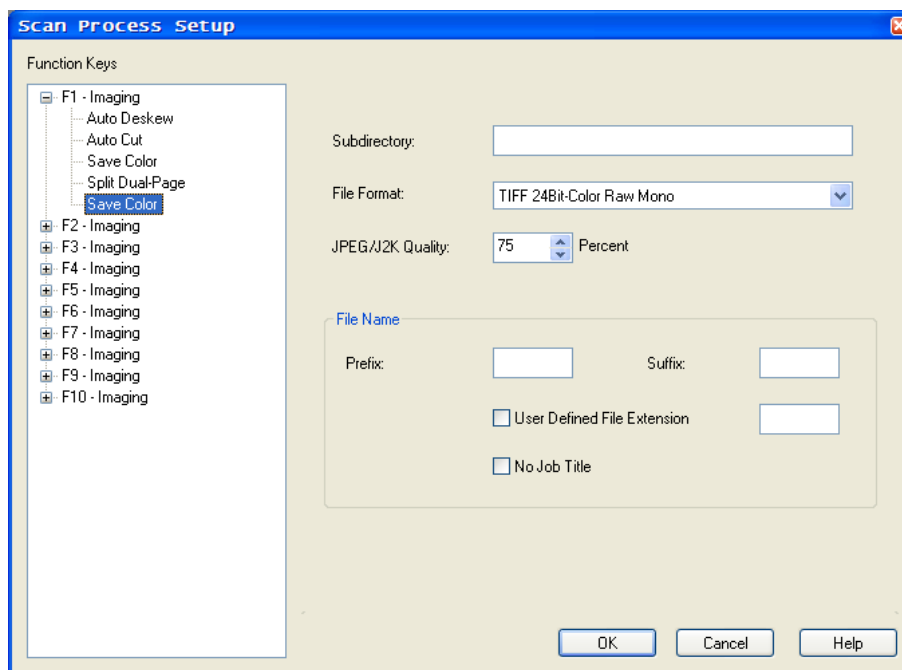


Figure 14

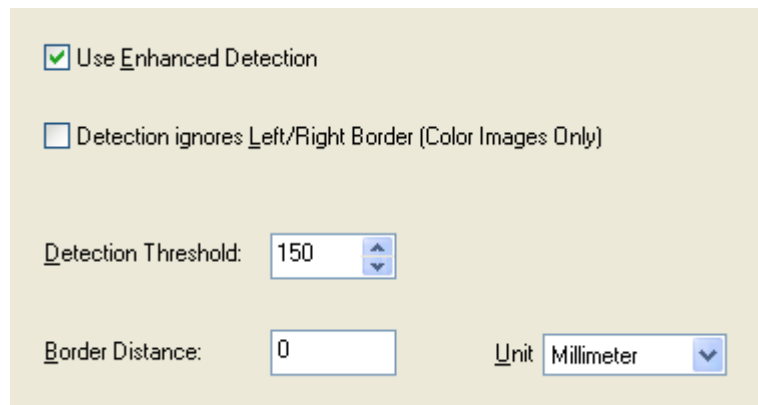


## 7.1.1. Objects

In the following you will find a list of available Imaging Objects that can be combined together as well as some example Scan Process.

### 7.1.1.1. Auto Cut

- The *Automatic Cut* command is ideal to remove edges from the image in the scanned document. The area calculated by BookExpert is determined by a threshold value.

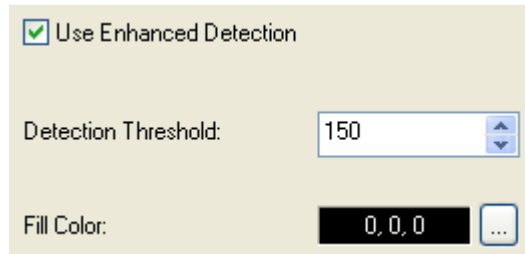


- Two detection algorithms are available and can be selected by activating or deactivating *Use Enhanced Detection*. It is preferred to use the enhanced detection method for books, whereas the standard detection behaviour is more suitable for single sheeted documents.
- If the book cradle is equipped with scanning bars it may be that the detection is affected. Using *Detection ignores Left/Right Border (Color Images Only)* will advance the cutting accuracy.
- The *Detection Threshold* that shall be used can be determined by manually using the *Automatic Cut* feature on an existing image. The determined value can be used to process similar documents like the following pages in a book.
- A safety border can be placed around the extracted area to assure that no important information is lost. It can be specified in millimetres or inch. If the inscribed distance is a negative value it will cut away more from the image.



### 7.1.1.2. Auto Deskew

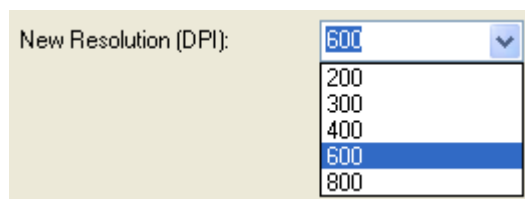
- The *Automatic Deskewing* command is ideal to equalize the image orientation of a document if it is placed slightly rotated on the layout section. The angle calculated by BookExpert is determined by a threshold value.



- Two detection algorithms are available and can be selected by activating or deactivating *Use Enhanced Detection*. It is preferred to use the enhanced detection method for books, whereas the standard detection behaviour is more suitable for single sheeted documents.
- The *Detection Threshold* that shall be used can be determined by manually using the *Automatic Deskew* feature on an existing image. The determined value can be used to process similar documents like the following pages in a book.
- If an image is rotated, edges must be filled up with a colour value. This value can be specified.

### 7.1.1.3. Change Resolution

- The *Change Resolution* command is ideal to scale the scanned image and reduce resolution or interpolate from the optical resolution of the scanner to a desired value.



- A resolution value can be selected from the drop down list or inscribed manually.



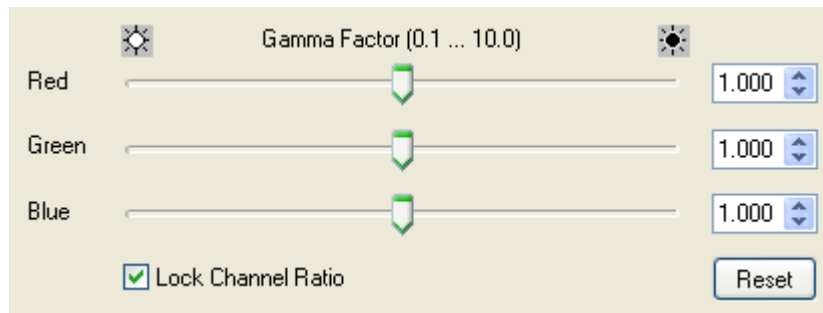


### 7.1.1.4. Color to Gray Conversion

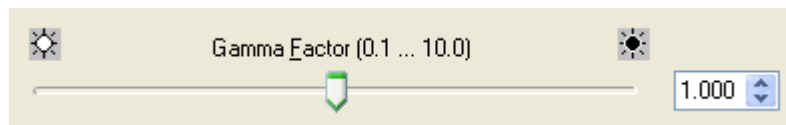
- The *Color to Gray Conversion* command is ideal to automatically convert from scanned colour images to grey scale and it is needed to be able to save grey scale images.

### 7.1.1.5. Gamma Color/Gray

- The *Gamma Color* command is ideal to automatically modify the gamma factor of the scanned colour image. It is needed to be able to save grey scale images.



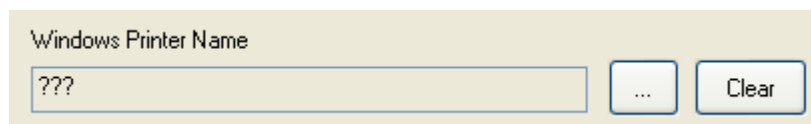
- The *Gamma Gray* command is ideal to automatically modify the gamma factor of the scanned grey scale image.



- The *Gamma Factor* that shall be used to modify a colour or grey scale image can be determined by manually using the *Gamma Correction* feature on an existing image. The determined value can be used to process similar documents like the following pages in a book.

### 7.1.1.6. Print

- The *Print* command is ideal to print out scanned images directly.

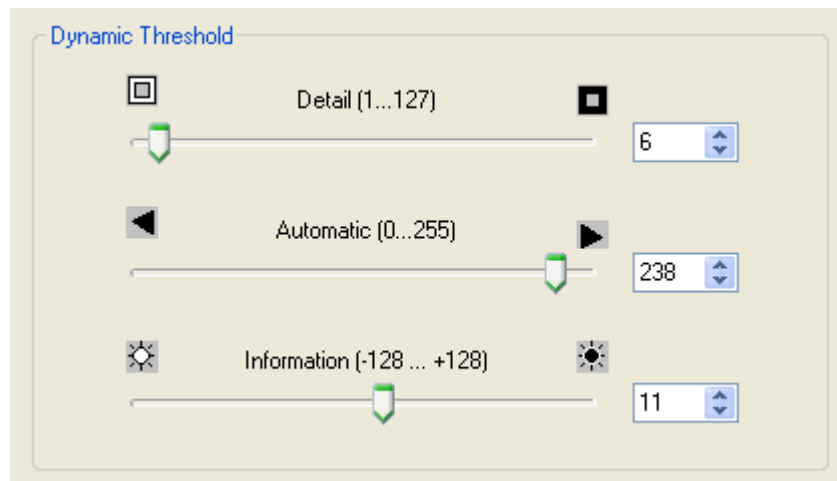


- Any available printer in the Operating System can be selected and adjusted.



### 7.1.1.7. Binarisation

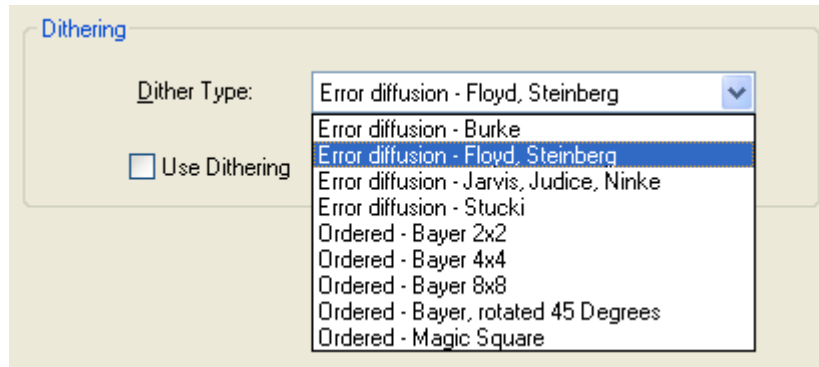
- The *Binarisation* command is ideal to automatically convert a grey scale image, which in front may be converted from colour to grey scales, to a black and white image. It is needed to be able to save black and white images.
- An black and white image can either be created by using a *Dynamic Threshold* value or by using a *Dithering* algorithm.
- The binarization function and values that shall be used can be determined by manually using the *Converting Grayscale Image To Bilevel Image* feature on an existing image. The determined value can be used to process similar documents like the following pages in a book.



- The following elements influence the calculation of the dynamic threshold value.
- Detail slider bar and field.  
Use this slider bar to set the area expansion for defining the threshold value. The higher this value, the larger the surrounding area used to calculate the threshold value. Low values result in sharp and detailed contours.
- Slider bar and entry field Automatic Factor.  
Use this slider bar to set the area expansion for automatically defining the threshold value. Low values reduce the effect of the information value entered below, while high values automatically adjust greyscale variations and the setting is restricted to a small area.



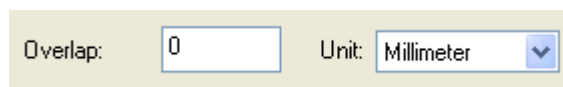
- Information slider bar and field.  
The threshold value between information and the image background is defined with this slider bar. The higher the Automatic factor (see above), the smaller the area, the value has an effect on and the more this value approaches 0.



- Use the Dither Type dropdown list to select the process for creating the grid. The dropdown list contains entries for creating sorted patterns (i.e. according to Bayer) as well as entries according to the error correction according to Floyd-Steinberg, Stucki, etc.
- Use the checkbox Use Serpentine Processing to influence the pattern creation, when using a procedure for error correction for creating the pattern.
- Try on a case-by-case basis the different processes and switches, to get the best results.

### 7.1.1.8. Split Dual-Page

- The *Split Dual-Page* command is ideal to separate images into left and right side by splitting the scanned image by 50%.

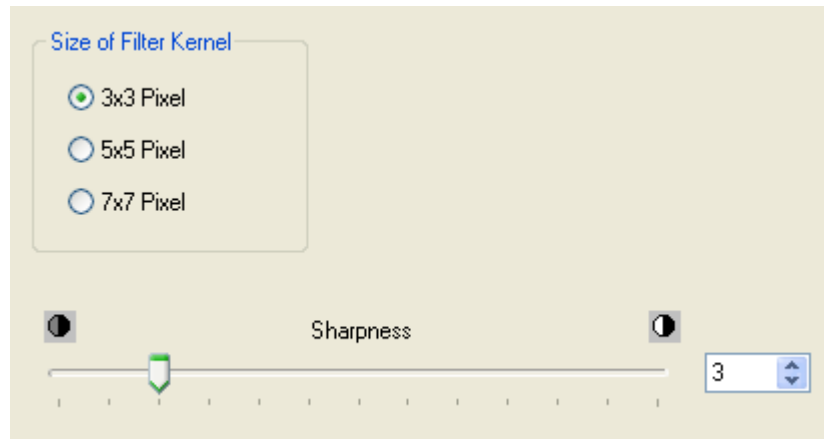


- An overlapping value can be specified to assure that now information is lost during operation.
- If *Use Manual Page Marking* is set up in the Scan Job this element must be the first entry in the list. Instead of cutting at 50% it will now extract the contents of the frames for further processing.



### 7.1.1.9. Sharpen

- The *Sharpen* command is ideal to increase the image sharpness in the scanned document. This filter restores object transitions (Edges) appearing unclear.



- Switch to select the Size of the Filter Kernel. The bigger the filter kernel, the sharper the image. However, large filter kernels require considerable more processing time.
- Slider bar and entry field Sharpness. This slider and field allow for setting the effect of the sharpness filter. Low values result in minimal effects. High values will result in the edges being greatly enhanced.



### 7.1.1.10. Save Color/Gray/Binary

- The *Save* command is ideal to save an image as each step of the image processing queue. As a starter, generating a backup image, or as the last entry, storing the end result.

Subdirectory:

- It is possible to automatically generate a sub directory where the images are stored. This directly will be created at the location of the Scan Job.
- According to the colour depth of the image different file formats are available.
- For colour images the following file formats are available.

File Format:

- TIFF 24Bit-Color Raw Mono
- JFIF 24Bit-Color, JPEG Image (.jpg)
- JPEG2000 24Bit-Color ISO-Part1 (.jp2)
- JPEG2000 24Bit-Color ISO-Part2 (.jpx)
- PDF, 24Bit-Color Deflate
- PDF, 24Bit-Color JPEG
- TIFF 24Bit-Color JPEG Mono
- TIFF 24Bit-Color JPEG Striped
- TIFF 24Bit-Color JPEG Tiled
- TIFF 24Bit-Color LZW Mono
- TIFF 24Bit-Color LZW Striped
- TIFF 24Bit-Color LZW Tiled
- TIFF 24Bit-Color Raw Mono
- TIFF 24Bit-Color Raw Striped
- TIFF 24Bit-Color Raw Tiled
- Windows BMP 24Bit-Color

- For grey scale images the following file formats are available.

File Format:

- TIFF 8Bit-Gray Raw Mono
- JFIF 8Bit-Gray, JPEG Image (.jpg)
- JPEG2000 8Bit-Gray ISO-Part1 (.jp2)
- JPEG2000 8Bit-Gray ISO-Part2 (.jpx)
- PDF, 8Bit-Gray Deflate
- PDF, 8Bit-Gray JPEG
- TIFF 8Bit-Gray JPEG Mono
- TIFF 8Bit-Gray JPEG Striped
- TIFF 8Bit-Gray JPEG Tiled
- TIFF 8Bit-Gray LZW Mono
- TIFF 8Bit-Gray LZW Striped
- TIFF 8Bit-Gray LZW Tiled
- TIFF 8Bit-Gray PackBits Mono
- TIFF 8Bit-Gray PackBits Striped
- TIFF 8Bit-Gray PackBits Tiled
- TIFF 8Bit-Gray Raw Mono
- TIFF 8Bit-Gray Raw Striped
- TIFF 8Bit-Gray Raw Tiled
- Windows BMP 8Bit-Gray
- Windows BMP 8Bit-Gray RLE8



- For black and white images the following file formats are available.

File Format:

TIFF G4 CCITT Mono
CALS Raster Type 1
Image Machines TG4
JEDMICS C4
PDF, 2Bit G4 CCITT
TIFF 2Bit LZW Mono
TIFF 2Bit LZW Striped
TIFF 2Bit LZW Tiled
TIFF 2Bit Raw Mono
TIFF 2Bit Raw Striped
TIFF 2Bit Raw Tiled
TIFF G3 CCITT Mono
TIFF G3 CCITT Striped
TIFF G3 CCITT Tiled
<b>TIFF G4 CCITT Mono</b>
TIFF G4 CCITT Striped
TIFF G4 CCITT Tiled
TIFF Huffman Mono
TIFF Huffman Striped
TIFF Huffman Tiled
Windows BMP 2Bit

- If a colour or grey scale based file format is selected that is using JPEG or JPEG2000 compression methods, a quality factor can be set ranging from 1 to 100%. Smaller values will result in smaller file size by reducing the image quality. For JPEG200 100% Quality will mean lossless compressed.

JPEG/J2K Quality:  Percent

- The automatically generated file name for each is determined by the Scan Job and the used Scan Type. An alternating index will be added automatically to be able to distinguish the scans from each other. This behaviour can be modified by adding prefixes or suffixes to the file name, removing the Job Title name or specifying file type extension differing from the default.

File Name

Prefix:  Suffix:

User Defined File Extension

No Job Title



## 7.1.2. Imaging Workflows

As stated above an imaging workflow is a combination of imaging objects that sequentially process the image, starting with the scan and ending with a save file.

The following may show standard workflows for different document types.

### 7.1.2.1. Single Page Newspaper

#### Scan Job

- Scan Type: Single Page, continuously numbered
- Rotation 90°: clockwise
- Scan Color Mode: Color

#### Scan Process

- Save Color
- Auto Deskew
- Auto Cut
- Convert to Greyscale
- Binarisation
- Save Binary

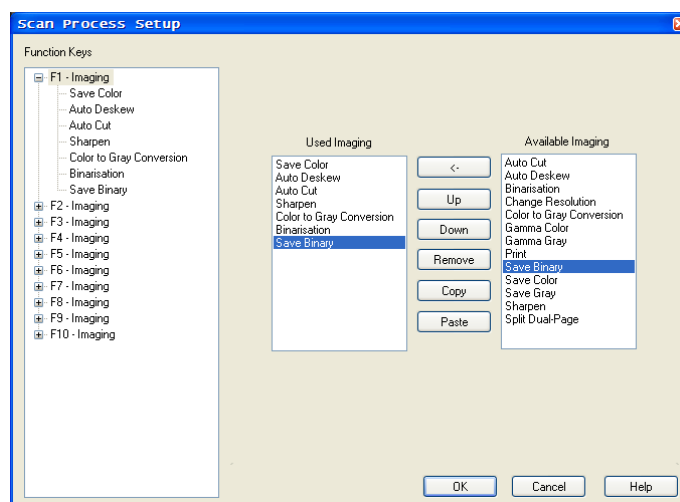


Figure 15

This example will scan a single page newspaper that due to its size was misplaced on the layout area in colour rotating it to its original portrait orientation.

The adapted Scan Process will firstly store a backup image in colour. Following to that the image will be deskewed and the black border around the document will be removed.

Because that it is wished to have a black and white image as the end result, before the original colour information is sharpened, converted to grey scales and then to black and white before saving.



## 7.1.2.2. Double Page Book (1)

### Scan Job

- Scan Type: Double Page, continuously numbered
- Scan Color Mode: Color

### Scan Process

- Save Color
- Auto Deskew
- Auto Cut
- Split Dual-Page
- Save Color

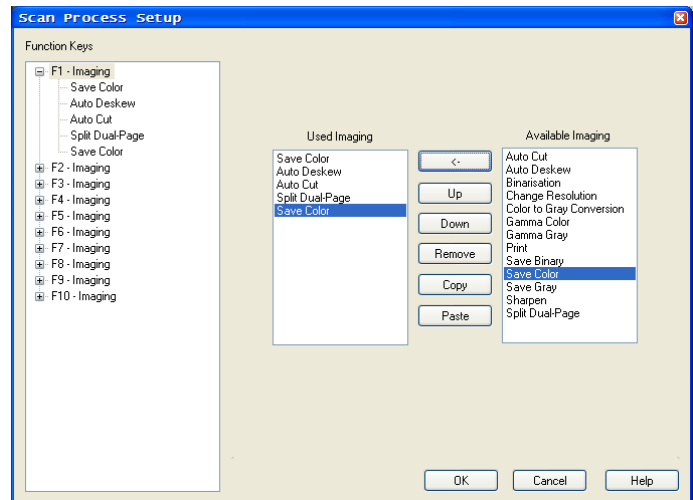


Figure 16

This example will scan a double paged book.

The adapted Scan Process will firstly store a backup image in colour. Following to that the image will be deskewed and the black border around the document will be removed.

Because that it is wished to have a left and right side as the end result, the original double page will be splitted at 50% followed by saving to colour images.





### 7.1.2.3. Double Page Book (2)

#### Scan Job

- Scan Type: Double Page, continuously numbered
- Scan Color Mode: Color
- Use Manual Page Marking

#### Scan Process

- Save Color
- Split Dual-Page
- Save Color

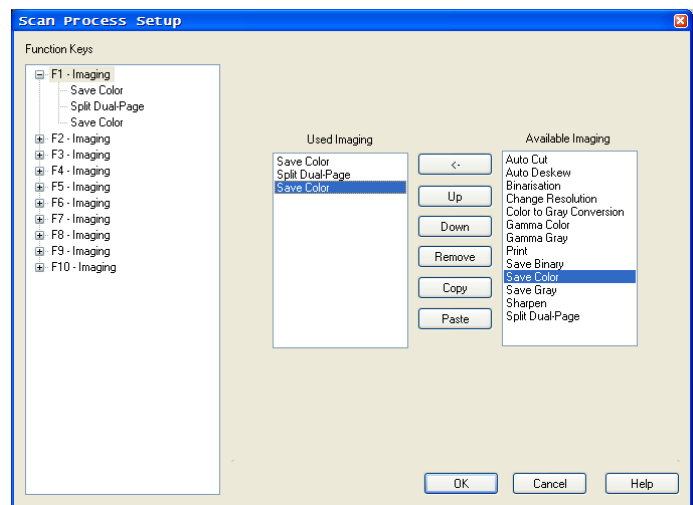


Figure 17

This example will scan a double paged book and generate two frames that can be used to specify left and right side.

The adapted Scan Process will firstly store a backup image in colour. Following to that contents of the before specified frames will be extracted and the saved as colour images.



## 8. Scanning

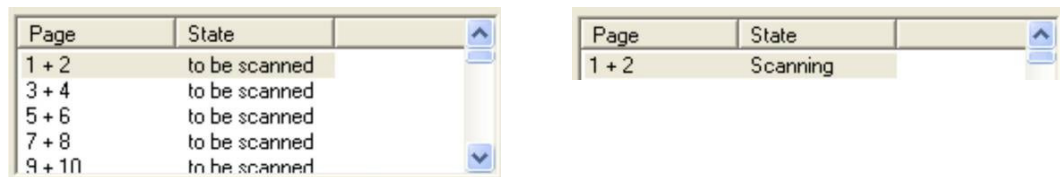
After creating a scan job and making the desired adjustments in a scan process you can perform your first scan.

Select the function key you have adjusted and want to use, then click on the *Scan* button.

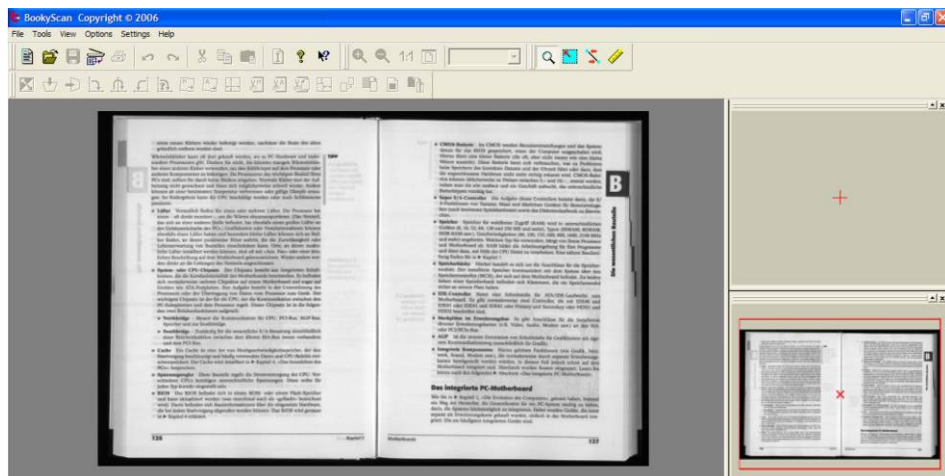


The book scanner starts to adjust itself to the starting position of the scan area specified before, and then releases a scan.

While the book scanner is performing the actual scanning process, you can inform yourself about its current status by viewing the status window on the bottom of the *BookExpert* software.



After completing the scan and delivering the data to the PC, an image of the scanned area is displayed for your convenience.



**Note**

**Image enhancement and storing to the hard disk are done as separate threads in the background and do not interrupt your actual scanning work.**

Page	State		Page	State	
1 + 2	Processing		1 + 2	Done	

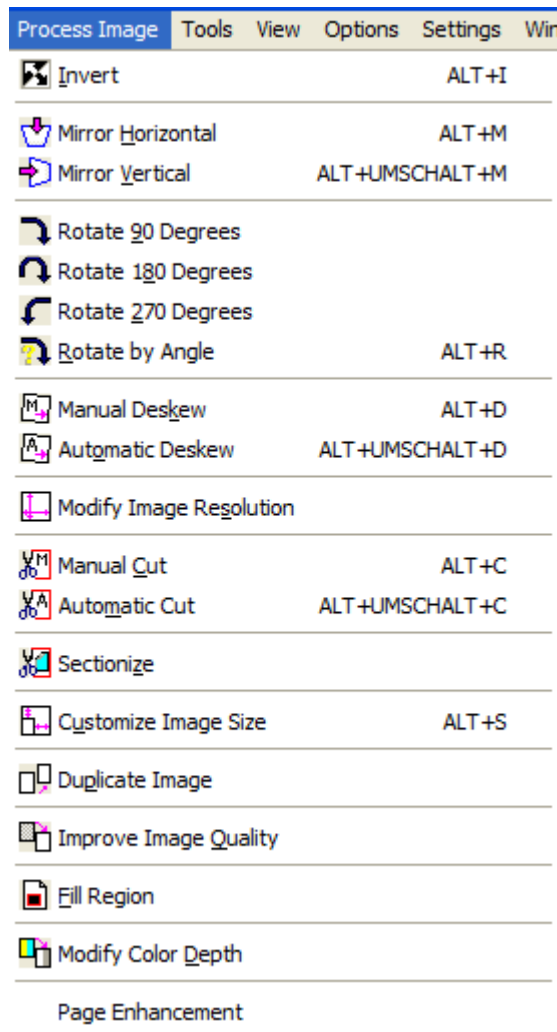
You can go on with turning the pages of the book and scanning, view the results within the software or adjust the image with the several image enhancement features that are accessible through the main navigation bar.



## 9. Image processing

With the BookExpert software you have access to several image processing tools.

Open the desired file and manipulate the image by choosing the desired function either from the menu item *Process Image* or by clicking the desired icon.



For a more precisely description of all available image enhancement features consult the documentation of the software.



## 10. Notes

