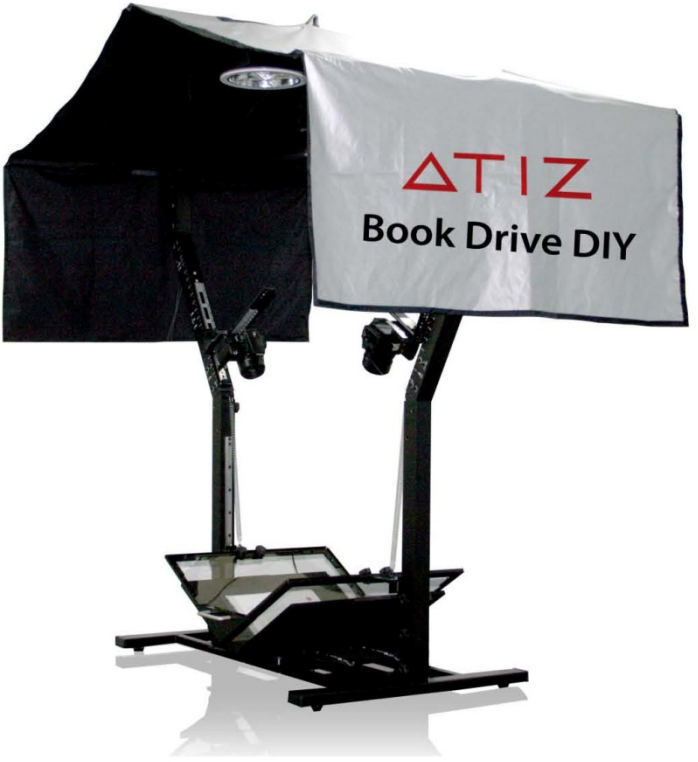
ATIZ

User manual



BookDrive DIY

Hi-performance book scanning platform.

atiz.com

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General Information

Introduction

Thank you for choosing BookDrive DIY (DIY), a digital camera-based book scanning solution. With the DIY, you are now able to create high-quality digital images or e-books. You don't need to be a professional photographer, DIY lets you do that easily. This manual will assist you in assembling the product and familiarizing yourself with how to operate the device. It contains all the necessary information for the set up, as well as its functions and capabilities.

Copyright Notice

The use of this scanner is subject to the applicable copyrights for the documents you are scanning. Please observe the copyright laws very carefully. Any use of this scanner that infringes the copyright of others is strictly prohibited.

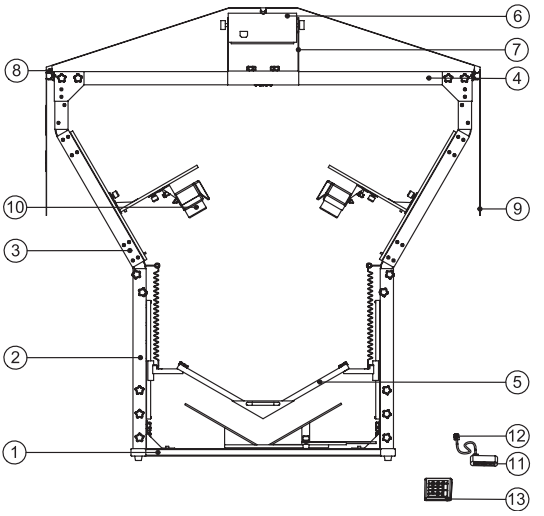
Safety Precautions For Installation & Relocation

**** Assemble everything on the floor first. Once the assembly is done, carry the whole thing with at least 2 persons from the floor onto the table. ****

- Place the machine on a level surface to ensure proper working condition.
- Do not place the machine in a hot, humid, dusty, or poorly ventilated environment. Prolonged exposure to these adverse conditions can damage the machine.
- Do not place the machine near heaters or volatile, flammable, or combustible materials that may catch fire.
- Refrain from relocating the machine after it has been fully assembled into a complete working unit.
- DIY is not designed to be lifted. Do not lift or relocate the machine once it has been fully assembled. To relocate the machine, de-assemble it into parts first and then re-assemble them again at the desired location.
- Maintain 12 inch clearance from the wall for easy access during usage and maintenance.
- Do not tilt the machine.

Components

BookDrive DIY has the following components:

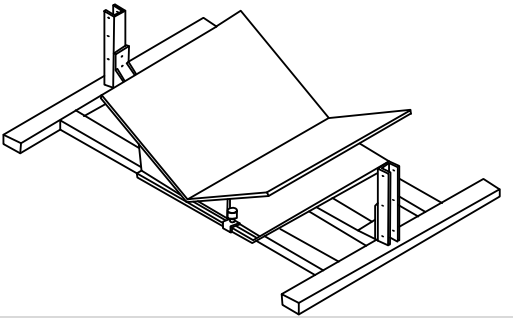


1.	Base	1 unit
2.	Sliding sets (L, R)	2 units
3.	Camera mounts (L,R)	2 units
4.	Top bar (L,R)	1 unit
5.	V-shaped transparent platen	1 unit
6.	Lamps	2 units
7.	Lamp hanger	1 unit
8.	Rod	2 units
9.	Shade	1 unit
10.	Cameras (optional)	2 units
11.	USB hub	1 unit
12.	USB cables	3 units
13.	USB numeric keypad	1 unit
14.	Springs	2 units

Components

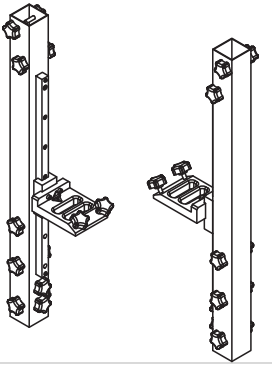
1. Base

On top of the base is a V-shaped book cradle.



2. Sliding sets (L,R)

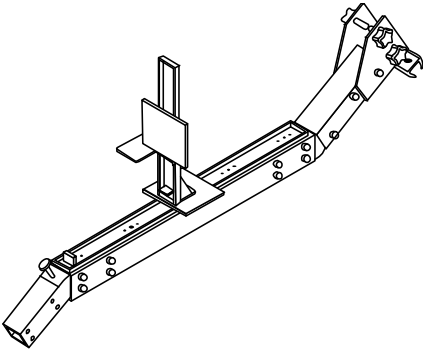
They are the parts that help move the transparent platen up and down to press the book and make the page flat.



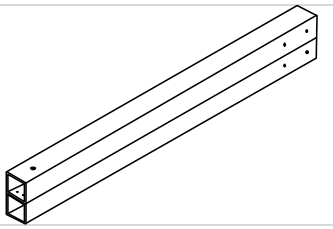
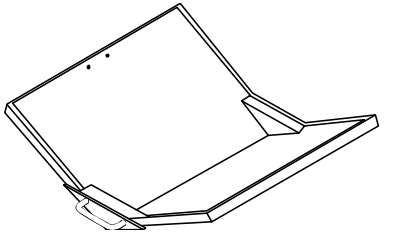
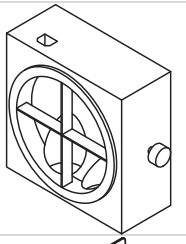
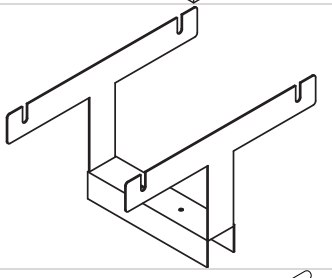
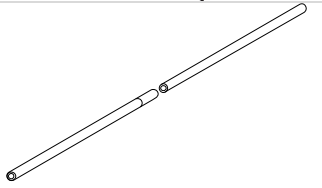
3. Camera mounts (L,R)

Each camera is to be mounted on the camera mount. The mount allows the camera to be moved on 2 planes: vertically and horizontally.

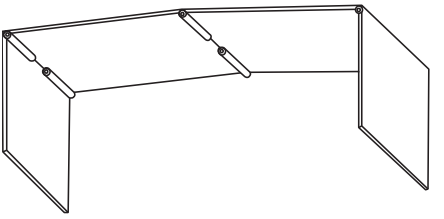
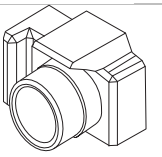
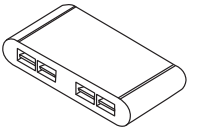
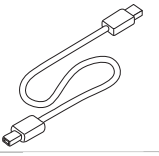
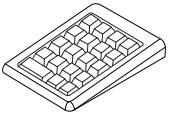
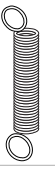
- Users may slide the camera up vertically for capturing books that have wide pages.
- Users may slide the camera horizontally so the distance between the camera and the book is shorter.



Components

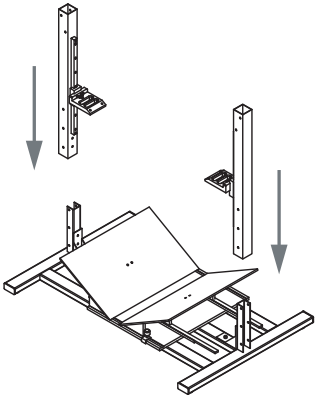
4. Top bar (L,R) This is the structure on the top of the platform. Two parts are to be connected to create a single long bar for use in hanging the lamps and the shade.	
5. V-shaped transparent platen The purpose of the transparent platen is to keep the page flat during scanning.	
6. Lamps The lamps come with their own power cords.	
7. Lamp hanger The lamp hanger is used to hang the two lamps.	
8. Rod Rod is used for hanging the shade.	

Components

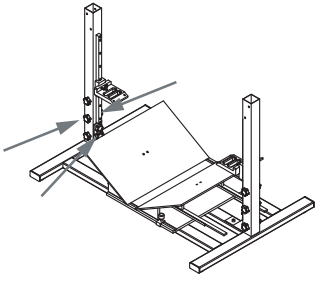
9. Shade Shade keeps most ambient light and reflections away.	
10. Cameras	
11. USB hub	
12. USB cables	
13. USB numeric keypad	
14. Springs	

Steps to assemble:

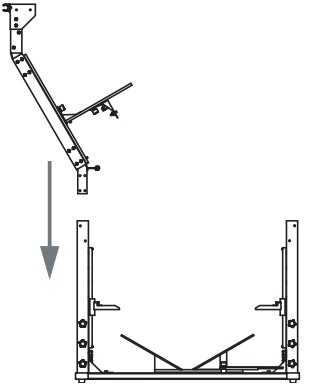
1. Place the base on the table.
2. Fasten the sliding sets (L, R) to the base as shown below.



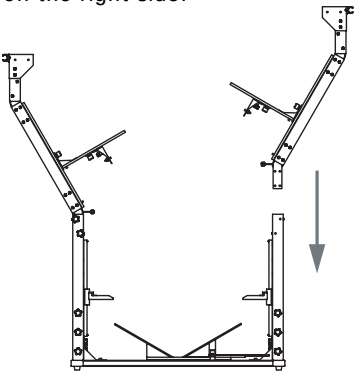
3. Tighten all three knobs on the front and the rear. Do the same on the inner side.



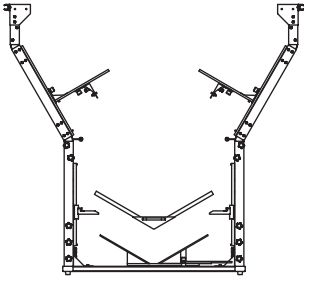
4. Fasten the left camera mount to the left sliding set. Tighten the knob.

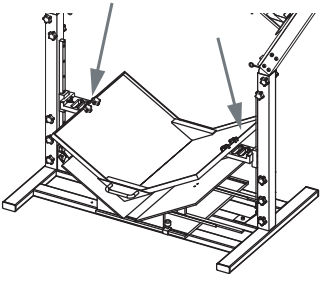


5. Do the same on the right side.

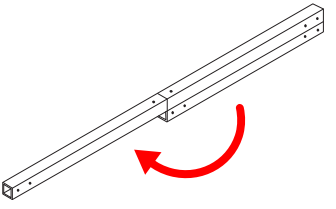


6. Fix the V-shaped transparent platen with the sliding sets. Tighten 2 knobs with nuts at each left and right side.

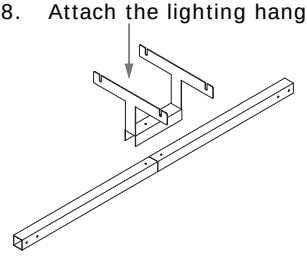


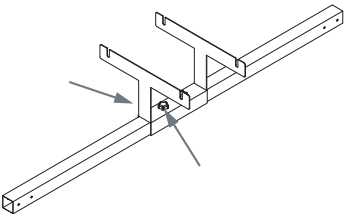


7. Rotate the top bar.

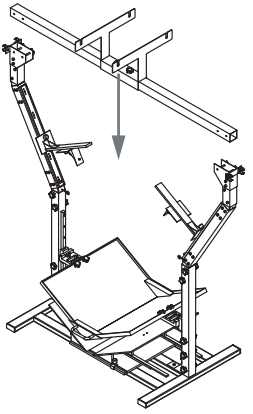


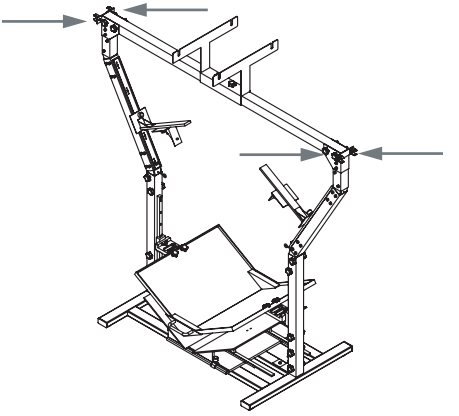
8. Attach the lighting hanger to the top bar. Tighten the 2 knobs.



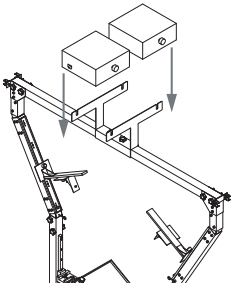


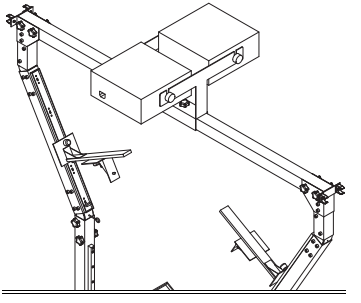
9. Combine the top bar to the platform as shown below. Tighten the 4 knobs on each side.



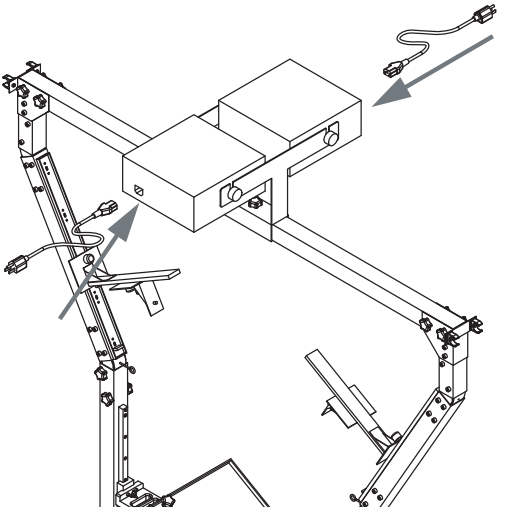


10. Assemble the lamps to the lamp hanger.

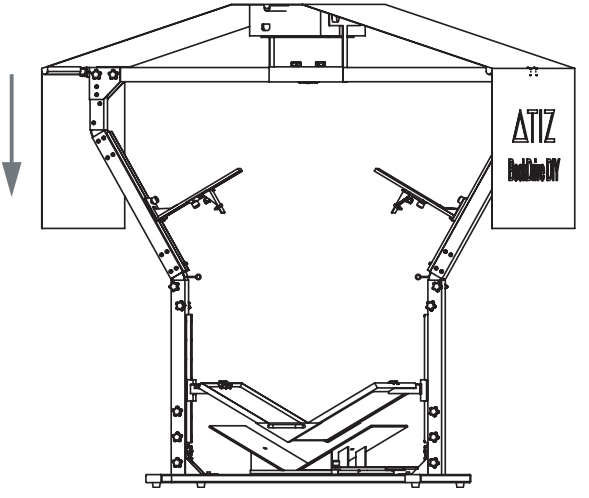




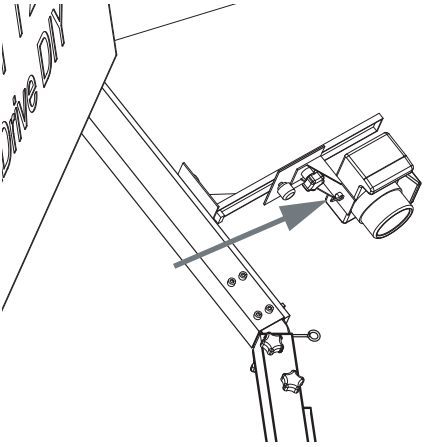
11. Plug the AC cord into the lighting set.



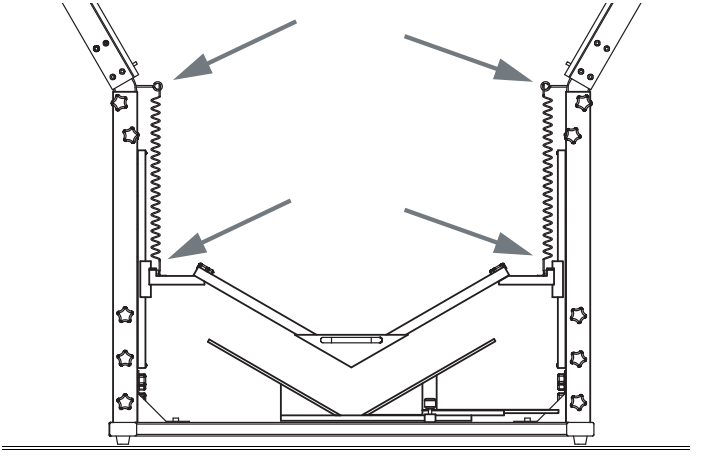
12. Put the shade on the top bar.



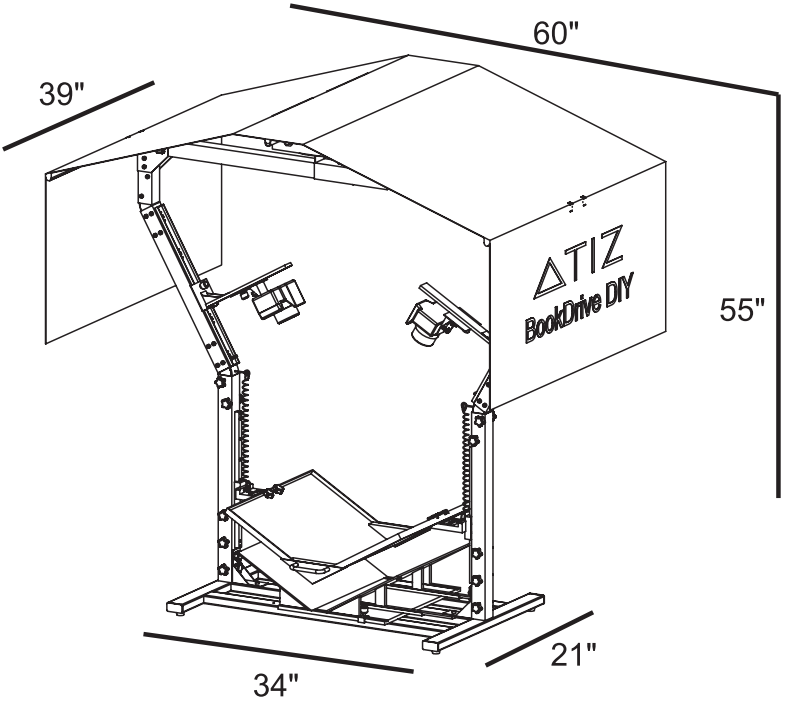
13. Install the cameras and tighten the screws on both sides.



14. Install the springs on both sides.



Dimension & Weight



Dimension: (L) 34” x (W) 21” x (H) 55”

Weight: 40 kg. (88 lbs.)

System Requirements

Operating System	Windows XP (Service Pack 2), Vista
CPU	Pentium 1GHz or Better
RAM	Minimum 512MB (2GB is recommended)
Interface	Hi-speed USB 2.0
Driver	Canon Camera Driver
Display	1,024 x 768 pixels/ High Color (16 bit) or Better

Note:

BookDrive Capture comes with 2 software packages:

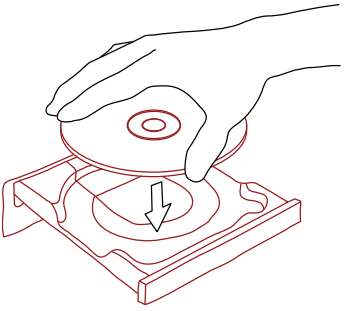
1. BookDrive Capture software (for controlling the cameras)
2. BookDrive Editor (for post image processing)

As for BookDrive Editor, it works on both Windows XP and Windows Vista.

How to Install the Sofware

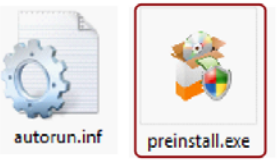
Installation Procedure

1. Close any programs that are running and insert the Atiz software CD into the computer's drive.

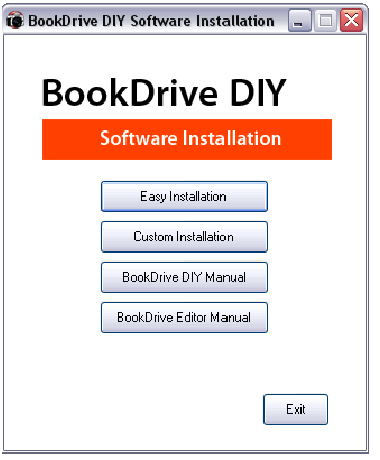


If the installation panel does not appear automatically, please use the following procedure.

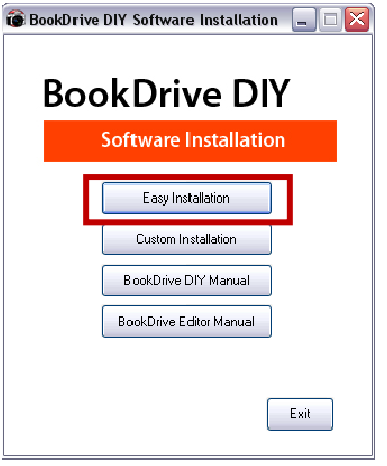
1 Open **My Computer**
2 Right-click the CD-ROM icon and select **Open**.
3 Double-click **preinstall.exe**



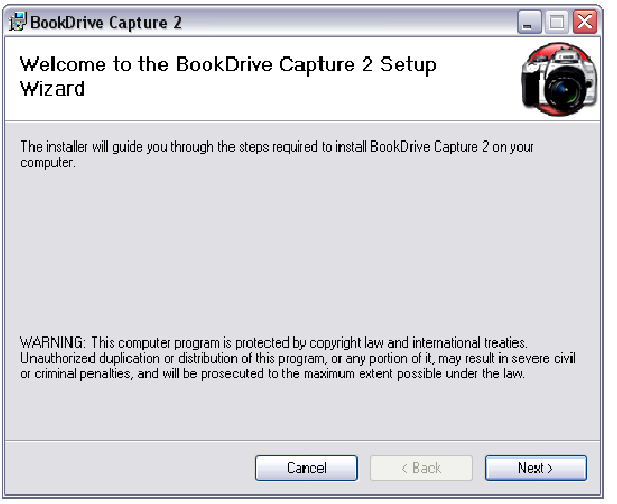
2. After a few seconds, you should see the following dialog come up.

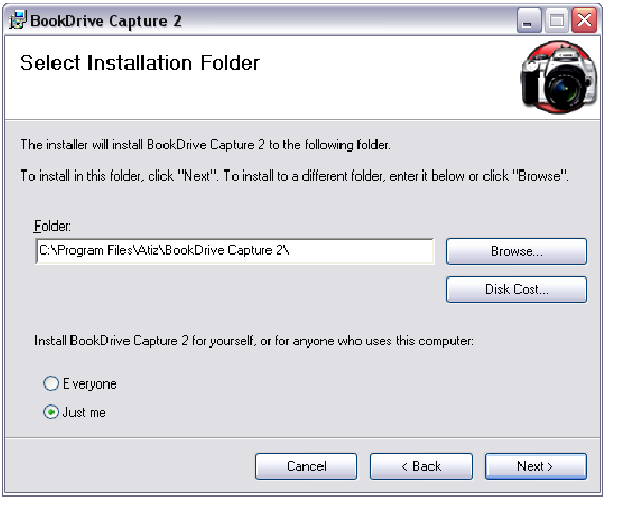


3. Select **Easy Installation**. Two software programs will be installed. They are BookDrive Capture software (for capturing images) and BookDrive Editor software (for processing the images).

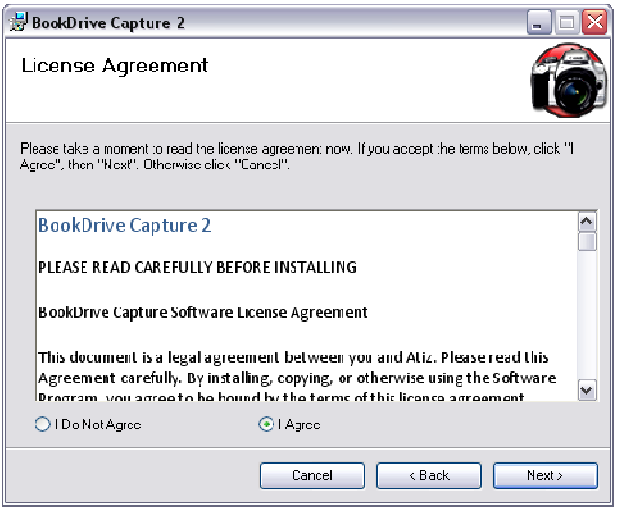


4. Proceed to next steps by selecting **Next**.

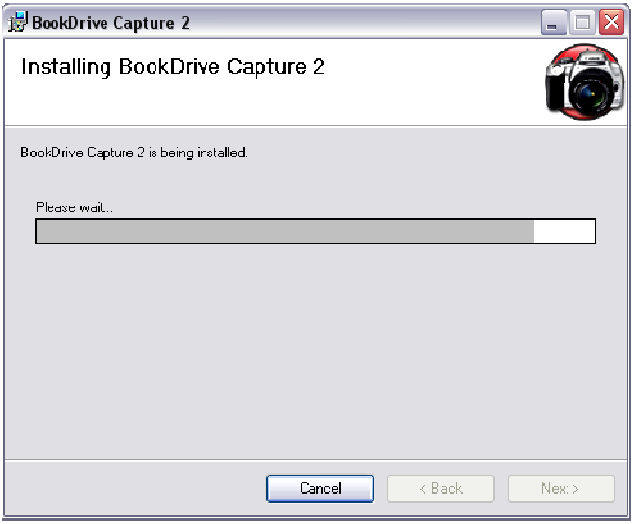




5. Please review the License Agreement. If you agree, select "**I Agree**" and click **Next**.

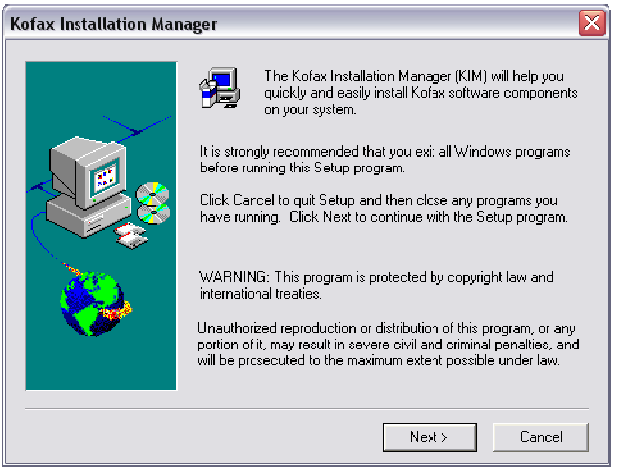


6. BookDrive Capture software will be installed.

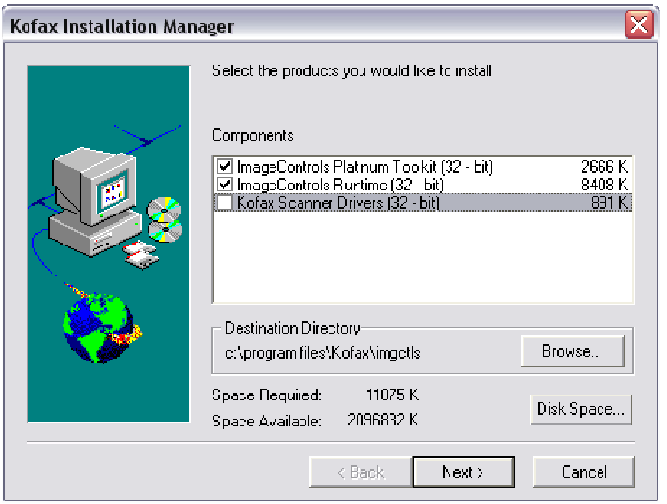


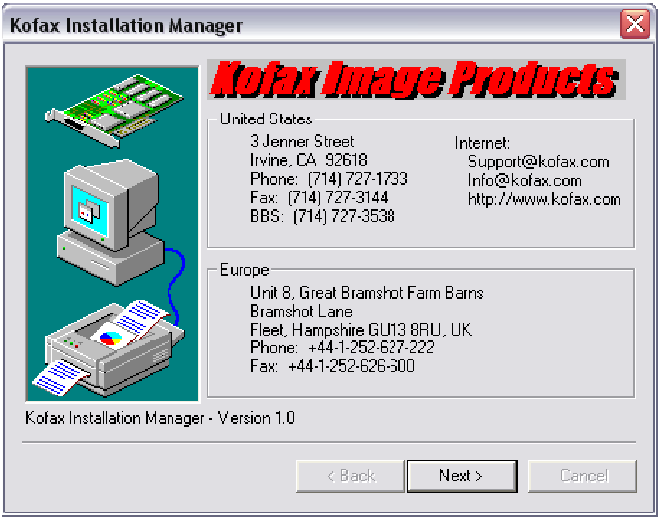
7. After installation of BookDrive Capture software is complete, select **Close** (to proceed to install another software).

7.1 Kofax Installation Manager will appear.

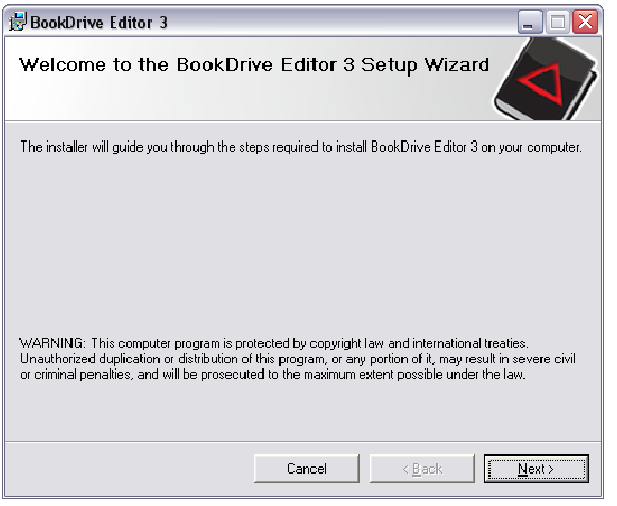


How to Install the Sofware

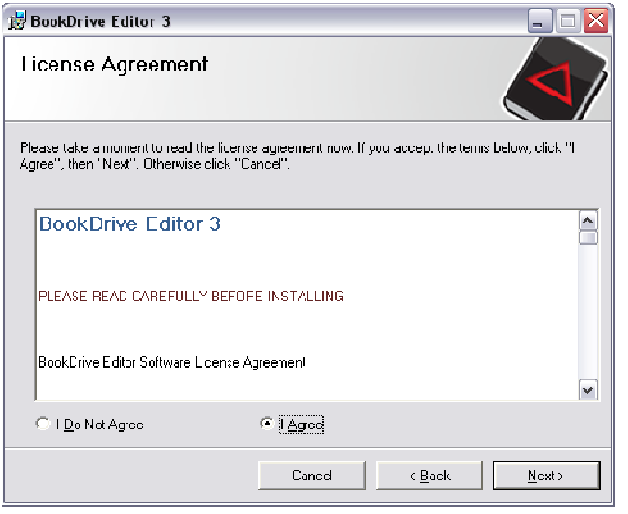




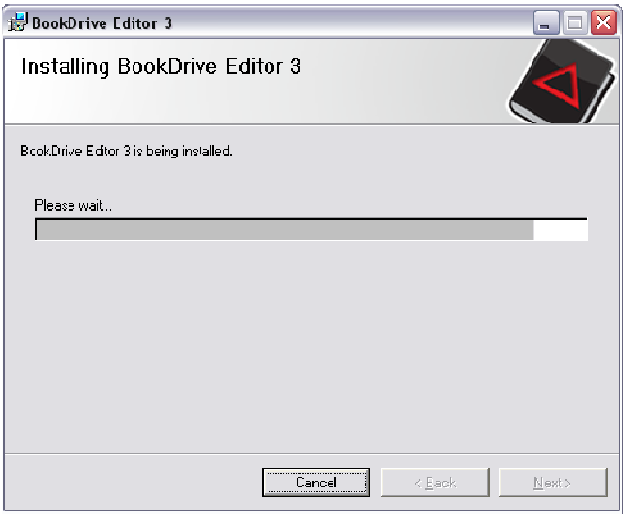
8. The Welcome screen to BookDrive Editor will appear.



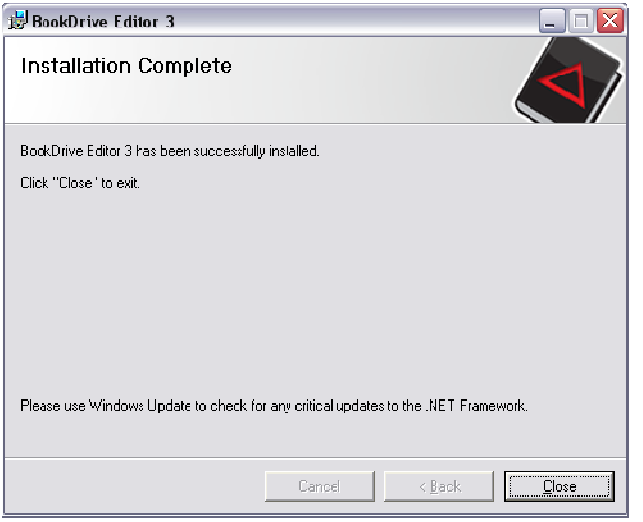
9. Review the License Agreement. If you agree, select "**I Agree**" and hit **Next**.

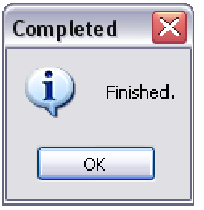


10. Proceed until the installation is complete.



11. It will appear like this when the installation of BookDrive Editor is complete.

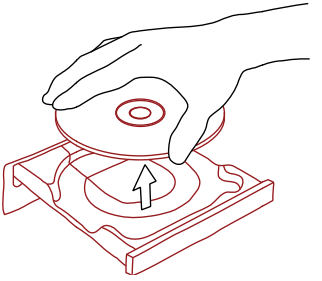




Click **Close** and then **OK**.

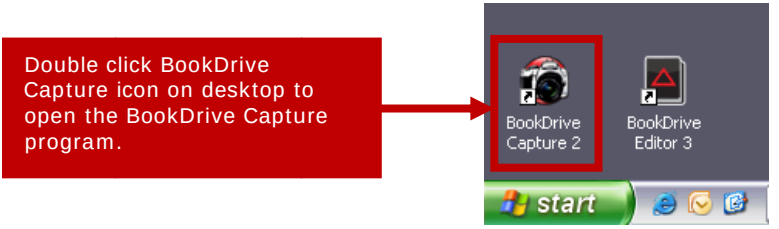
12. BookDrive Capture and BookDrive Editor shortcuts will now appear on your desktop.

13. Remove the disk from the computer's drive.

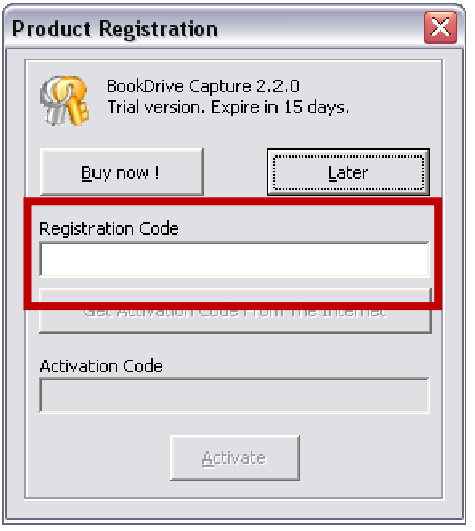


How to Activate the Software

After the software installation is complete, next step is to activate the software.



1. After opening the program, you will see the following dialog that asks for registration.

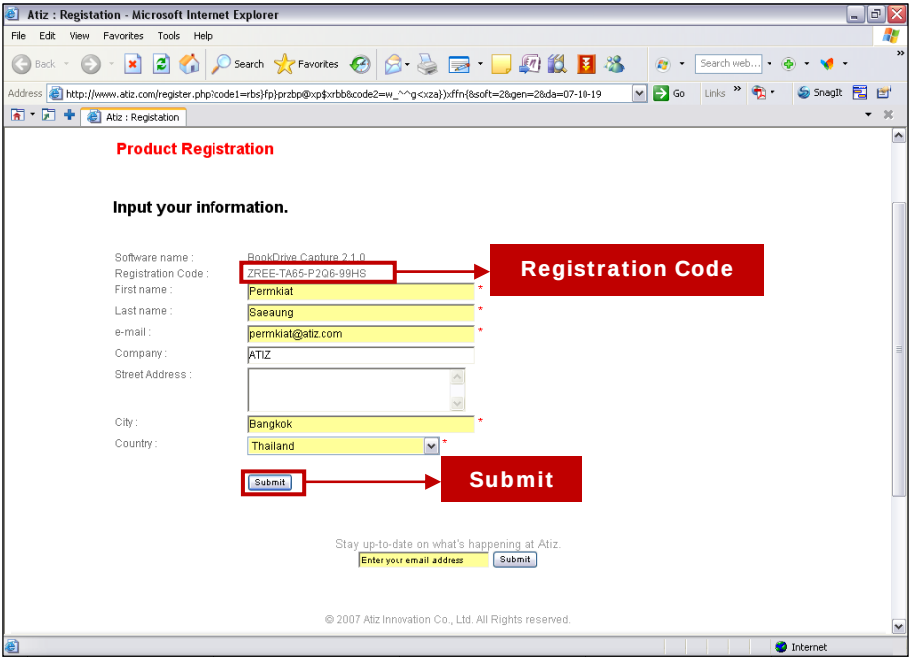


2. Please fill in your **Registration Code**. (Your Registration Code is located on the back of your CD case)

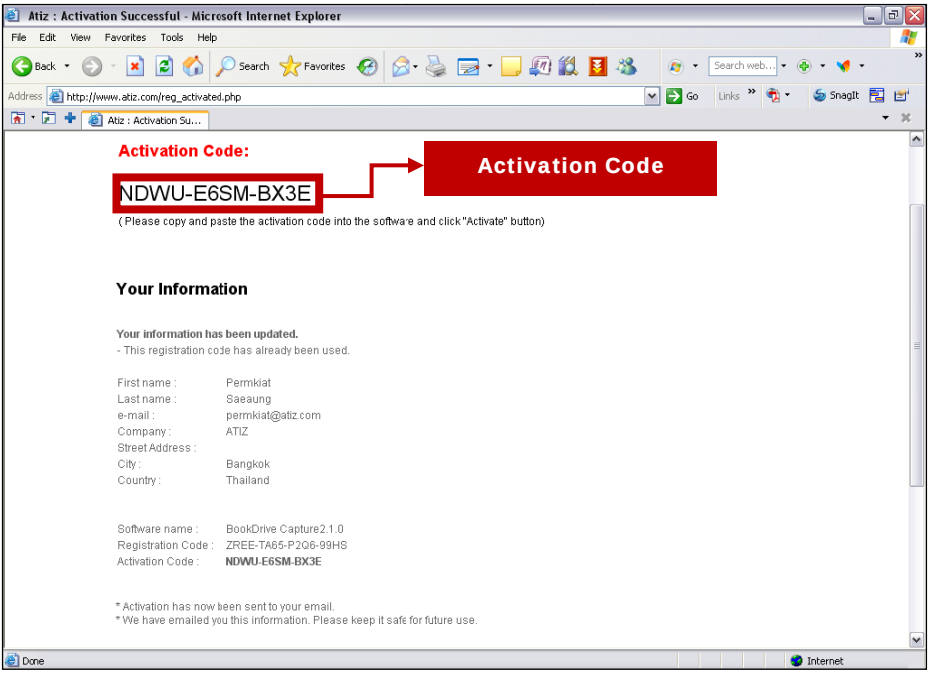
3. Once you have filled in the Registration Code, click **Get Activation Code From The Internet**.

4. You will be redirected to Atiz online registration page. Please fill in your information.

   Atiz will use this information to contact you in the future about the software upgrades when they are available. Once you have filled in the information completely, click **Submit**



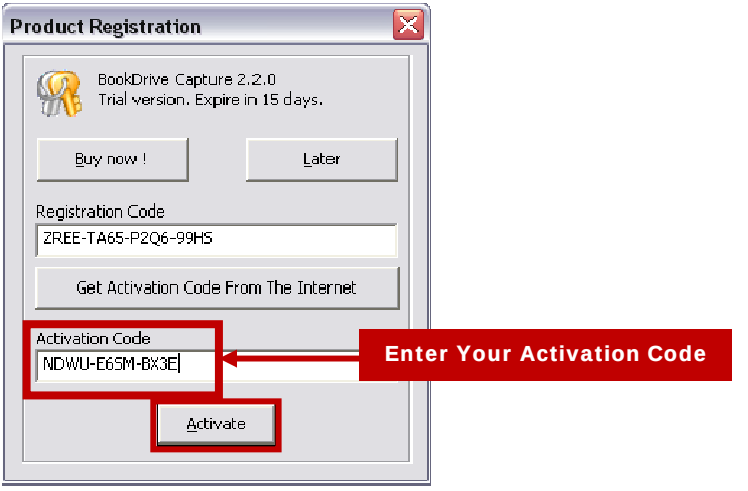
5. The information will be sent to Atiz server. If your information and the Registration Code are correct, you will receive the Activation Code.



How to Activate the Software

6. The Activation Code is used to activate your copy of the software. Copy your Activation Code and paste it on the Registration window.

(MAKE SURE THERE IS NO BLANK SPACE IN THE BOX.)



7. Click **Activate** and the program will finish the installation successfully.

Note: Once you are done with the activation of BookDrive Capture software, repeat this process with the activation of BookDrive Editor software.

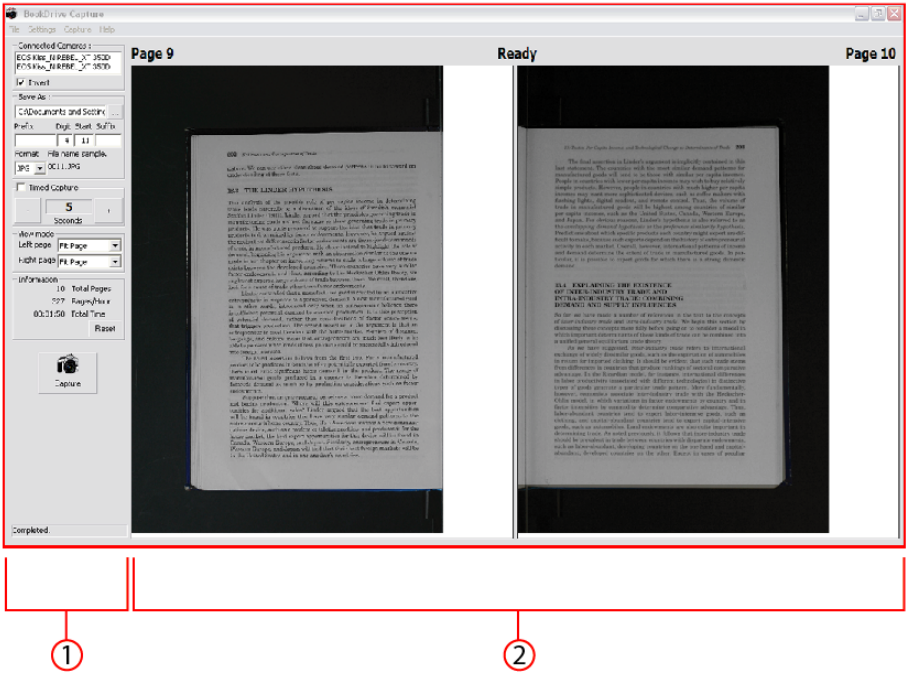
BookDrive Capture

Introduction to BookDrive Capture

The DIY package comes with BookDrive Capture and BookDrive Editor. BookDrive Capture is an application for controlling your cameras to capture images. BookDrive Editor is an application for post-scanning image processing.

The User Interface

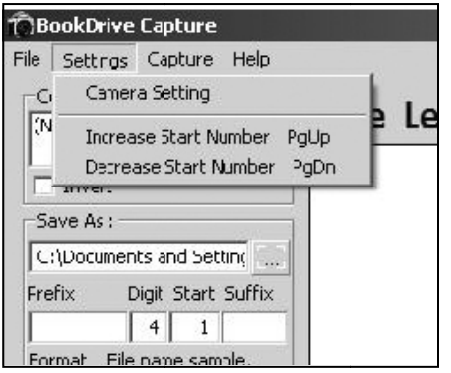
BookDrive Capture tells you what the connected cameras are. It allows you to control those cameras to manually capture images or automatically capture images at time lapse.



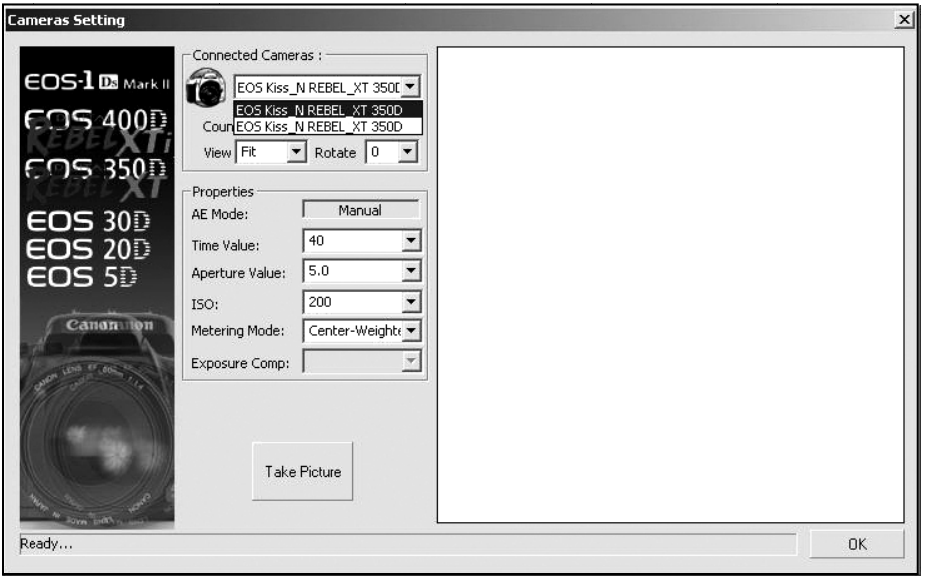
1. BookDrive Capture control panel
2. Captured Images

Camera Setting

You can set up your camera setting by using BookDrive Capture software. Click on “Settings” menu and choose “Camera Setting”.



Please set your camera configuration for the best image quality. If you connect more than one camera you can select another camera to configure the settings. You can only set up one camera at a time.



Connected Cameras
Choose your camera to change the settings.

View
Select the scale of sample picture in sample picture box. You can choose “Fit” to stretch the image or choose “Actual size” to view the 100% detail.

Rotate
Rotate image in sample picture box clockwise or anti-clockwise. (It only changes the view that you see on the screen, but it does not actually rotate the images during the normal capturing process.)

Properties box
The properties value is depending on camera configuration. Different camera model will have different camera properties.

AE Mode
Set the camera operation mode. (Recommended setting is manual mode)*

Time value
Set the camera shutter speed. (Recommended setting is 1/40 second)*

Aperture value
Set the camera’s aperture value (Recommended setting is 5.0)*.

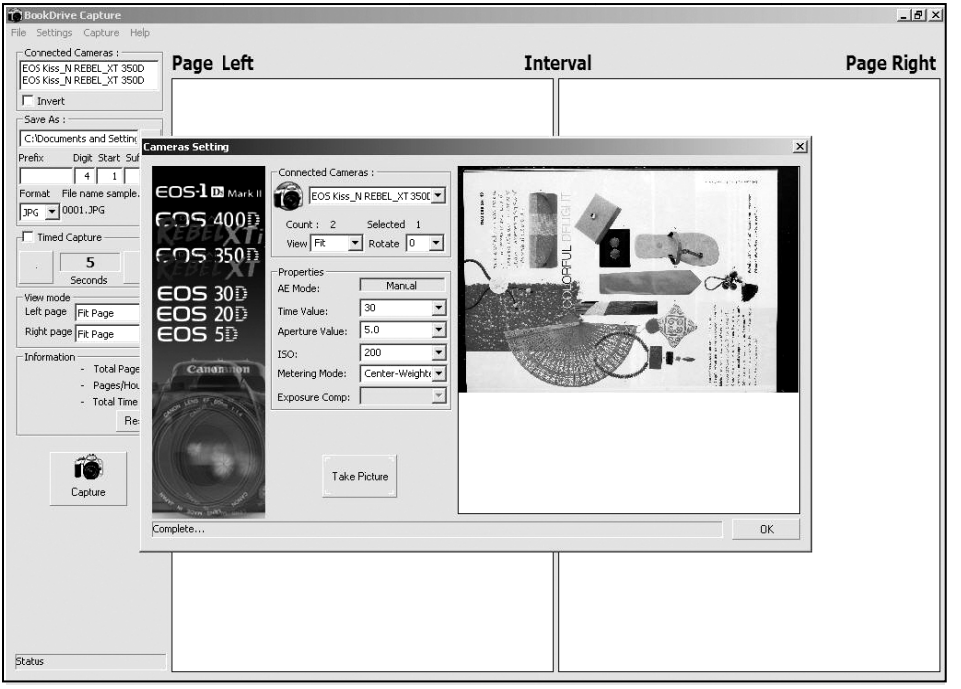
ISO
Set the light sensitivity (Recommended setting is 200) *The shutter speed, Aperture value, ISO and other camera setting is depending on your camera, lens and your environment.

Metering Mode
Setting the light measurement

Evaluative Metering
Partial Metering
Center-Weighted Averaged Metering
In general, the Center-Weighted Averaged Metering is recommended.

Exposure Comp
If you are using AV or TV mode this setting is used to set the light compensation.
-2, -1 2/3, -1 1/3, -1, -2/3, -1/3, 0, +1/3, +2/3, +1, +1, 1/3, +1 2/3, +2

BookDrive Capture

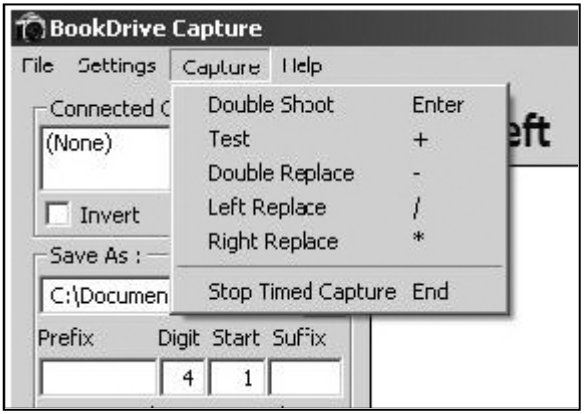


This image shows camera setting using BookDriveDIY.
While you are setting the cameras you can take a sample picture to check if you are happy with setting. After you finished setup click OK to finish setup.

Increase Start number
Page number will increase automatically every time you capture. (Page number start from 0)

Decrease Start Number:
Page number will decrease automatically every time you capture. (Page number must grater than 0)

Capture Tab



The standard capture mode is Double Shoot (capture image from both cameras). To double shoot, simply press “Enter”.

Test mode is used to take sample pictures (the images taken will be discarded). Press “+” to use this functionality.

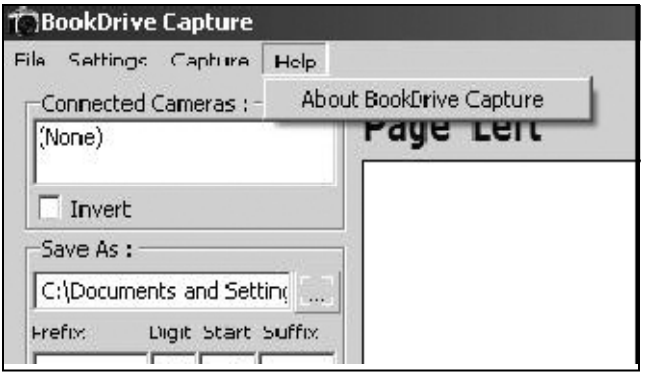
If your captured images are not good enough you can fix the most two previous images by recapturing double images to replace the preceding two images.

The new images shot will take the place of the previous two that are not quite good.

Press “-” to do a double replace.
Alternatively, you can select to replace only either left or right page.
Press “/” to do a left page replace.
Press “*” to do a right page replace.

While you are in “Timed Captured mode”, if you want to stop the timer from running, just press “End”.

Help Tab



You can find information about the BookDrive Capture and supported cameras on the About BookDrive Capture menu.

BookDrive Capture

The Control Panel

1. Connected cameras: This dialog box shows the cameras controlled by BookDrive Capture. You can swap the cameras by clicking Invert.

2. Save As: This dialog box allows you to select the location where you want to save your images. You can change the file name, add the file prefix.

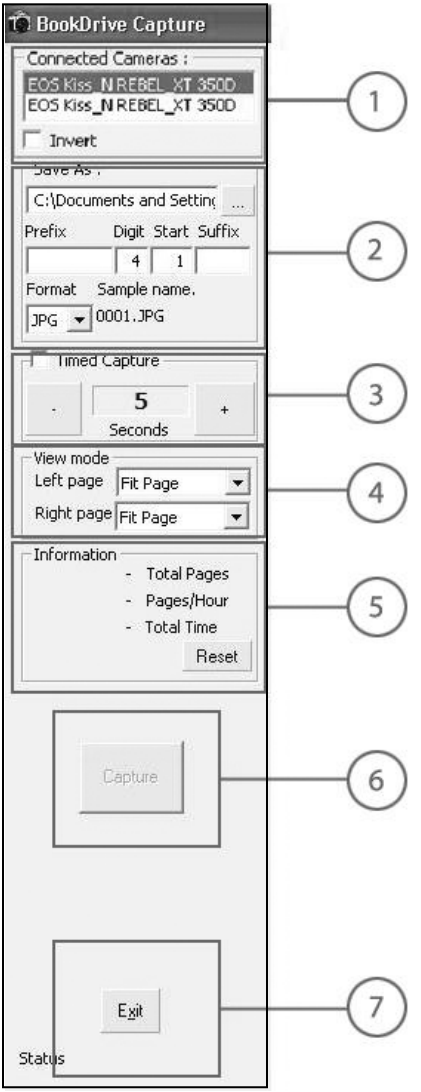
3. Timed Capture: This is an automatic capture countdown. After capturing each image the timer will re-start.

4. View mode: allows users to choose various view modes: fit page, 100%, 200%, etc.

5. Information: This will provide you statistics of total captured images, productivity (pages per hour) and total digitizing time.

6. Capture: Pressing this button will capture the image. If you use the timed capture the “Stop” button will appear.

7. Exit: Click here if you want to end the program.

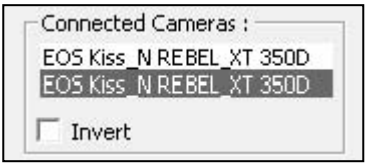


More Info

1. Connecting the cameras

You can connect you cameras to the PC directly by plugging to the PC USB port or you can first connect the camera to the USB hub and then connect the USB hub to the PC. You need to connect both cameras to the PC before you can capture an image.

Camera sequence



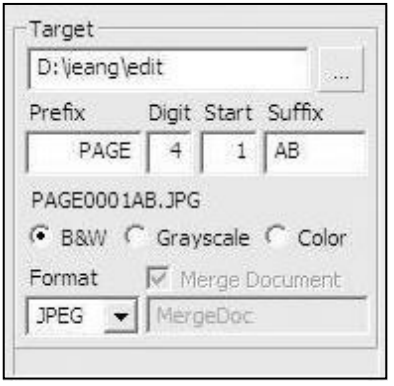
The first connected camera's image always displays on the left side. If you want to display the left page of a book on the left screen side you need to connect the right camera first. As we use the same camera model, it may look a little confusing and hard for us to tell which is which. Do not worry. You can always identify the camera by capturing some sample images and if the images appear in reverse (because you connect the leftcamera first), just check the "Invert" box.

2. Default saving destination

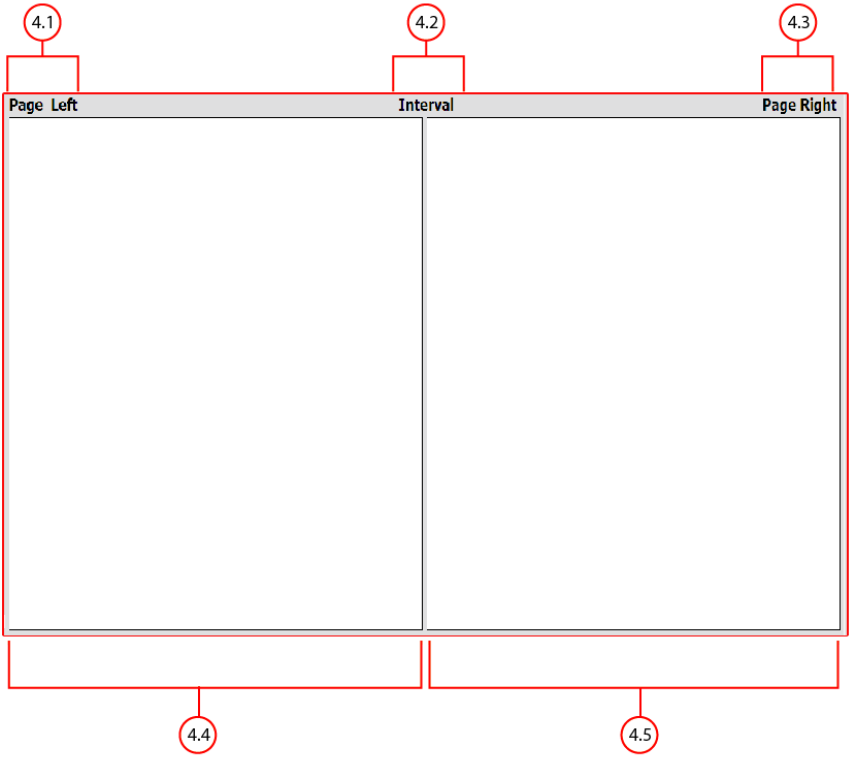
The default destination if left unchanged is in your "My Pictures" folder.

3. File saving

BookDrive Capture primarily save images in JPEG format. You will have an opportunity to change the images to other formats (JPEG, PDF, or TIFF) in the Editor application. The image name will be "prefix + digit + suffix".



4. Captured Image Window



4.1. Page Left: This caption informs you of the left page number. The page counter will automatically increase every time you capture.

4.2. Status Bar: This caption informs you of the current status of the capture session. When the capture process starts the message will change to left capture; right capture (If you used the “TimedCapture” it will display the countdown time)

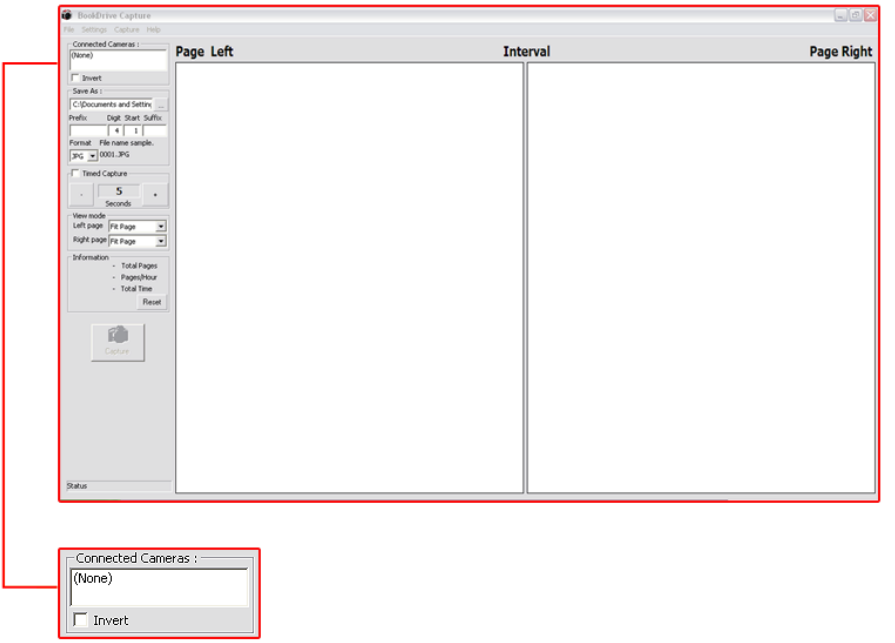
4.3. Page Right: As with Page Left it will inform you what page you are on. The page counter will automatically increase when you capture.

4.4. Left Sample Image: This box will show the captured image from the first camera.

4.5. Right Sample Image: This box will show the captured image from the second camera.

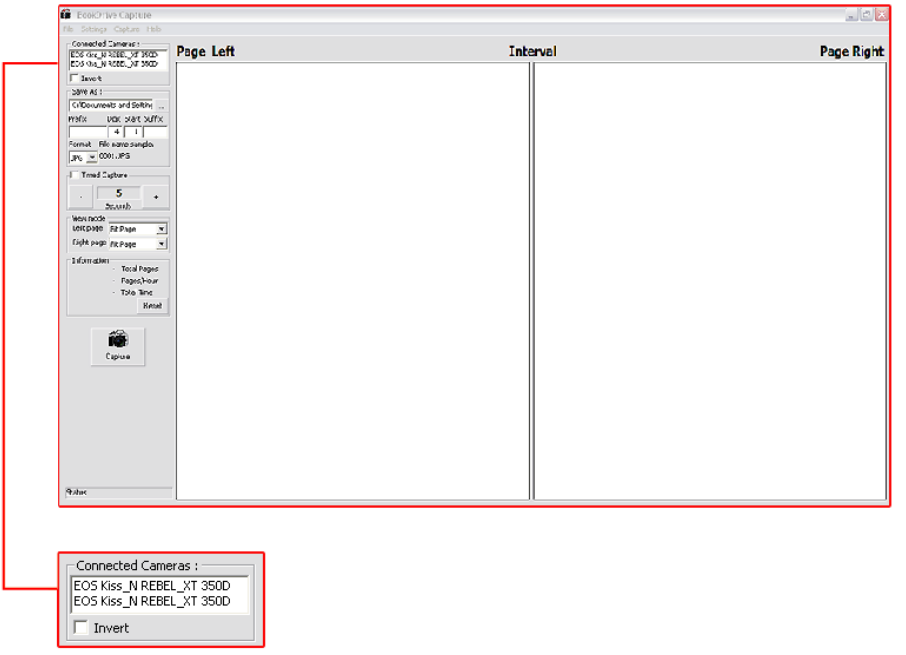
Using the BookDrive Capture Program Step-by-Step In the last chapter we introduced you to the BookDrive Capture program. Now it is time to start capturing images with your BookDrive DIY. Please follow the step-bystep procedure to guide you through the capturing process. Once you have installed the BookDrive DIY software the BookDrive Capture icon will automatically appear on your desktop. You can also start the program from Start => Programs =>Atiz =>BookDrive Capture

1. Double click the BookDrive Capture icon. Once the program is started, you will see the following dialog.



2. If you didn't connect the camera yet, the Connected Cameras window will say, None.

3. Turn on the right camera first. The first connected camera images will display on the left side of screen (The right camera will take shots on the left and the left camera will take shots onthe right). Turn on the left camera next.

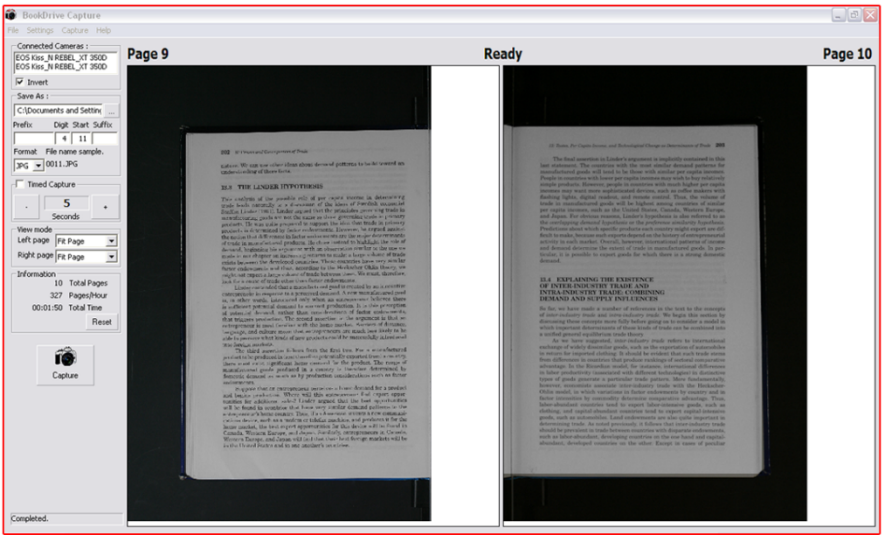


When you turn on each one, the Connected Cameras window will show the model of the cameras.

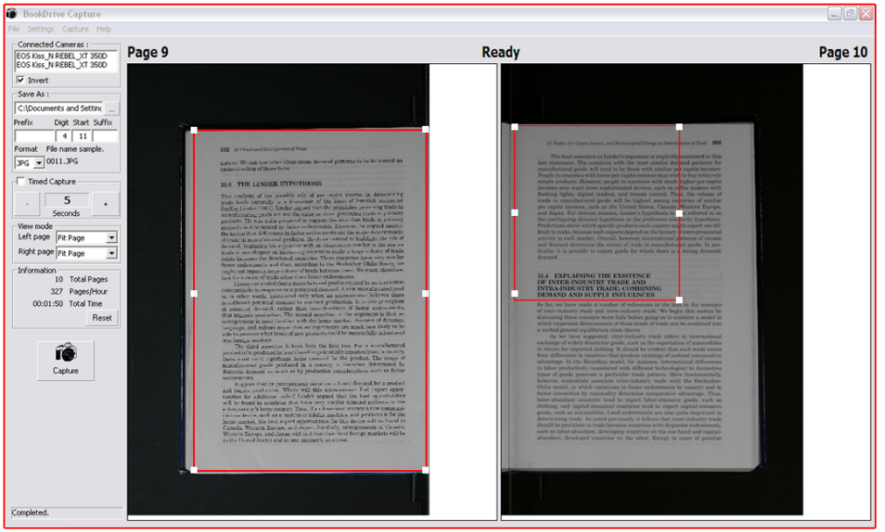
If you turn on the camera but nothing happens please check the USB cable and software driver.

Note:
In case you connect (turn on) the left camera before the right one and the displayed images are swapped, you can check the “Invert” box and swap the images back.

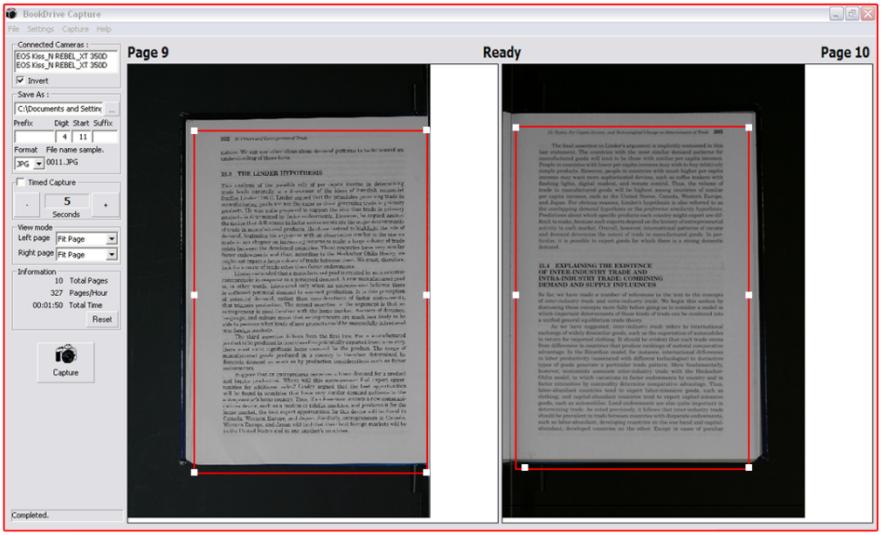
4. Choose the destination folder by clicking the “Browse” button (…) and selecting the desired folder.
5. Press the “Capture” button and the image will appear in the window.



6. Drag the cursor to create the red guideline.

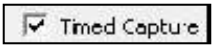


You will use this red box as the guideline for every page so thateach page is captured in the same position. Having all the pagestaken at the same position will help you considerably during the postscanning image processing.



You can adjust the book position if the book is accidentally misplaced. The automatic crop process will only work accurately if the book is in the same position for every image.

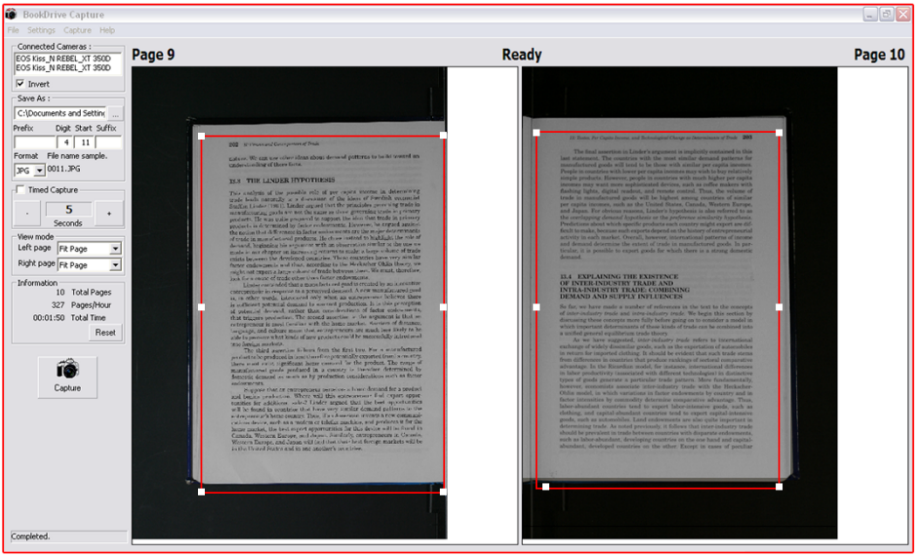
7. When you have familiarized yourself with the BookDrive DIY you can use the automatic-capture feature by clicking the “Timed Capture” box.



Adjust the countdown timer by clicking the “Plus” button toincrease time or the “Minus” button to decrease time. You can adjust time from 1 to 7 seconds.

8. Start the automatic-capture process by clicking the “Capture” button.The program will automatically capture images until you click “Stop”.

You can stop the automatic-capture process by clicking the “Stop” button and you can restart it by checking the “Timed Capture” check box.



9. If you finish your capture session press the “Exit” button.

BookDrive Editor

Once the book has been digitized with BookDrive Capture you can edit and enhance the images. We also provide BookDrive Editor, the software that helps align, cleanup and fit the images.

BookDrive Editor performs:

Cropping – By specifying a region, identified as an area of the page, you can neatly cut excessive background out of the images.

Deskewing - An acquired image may be misaligned within a frame due to improper alignment of the camera or the book. This task helps you by performing automatic alignment of the images.

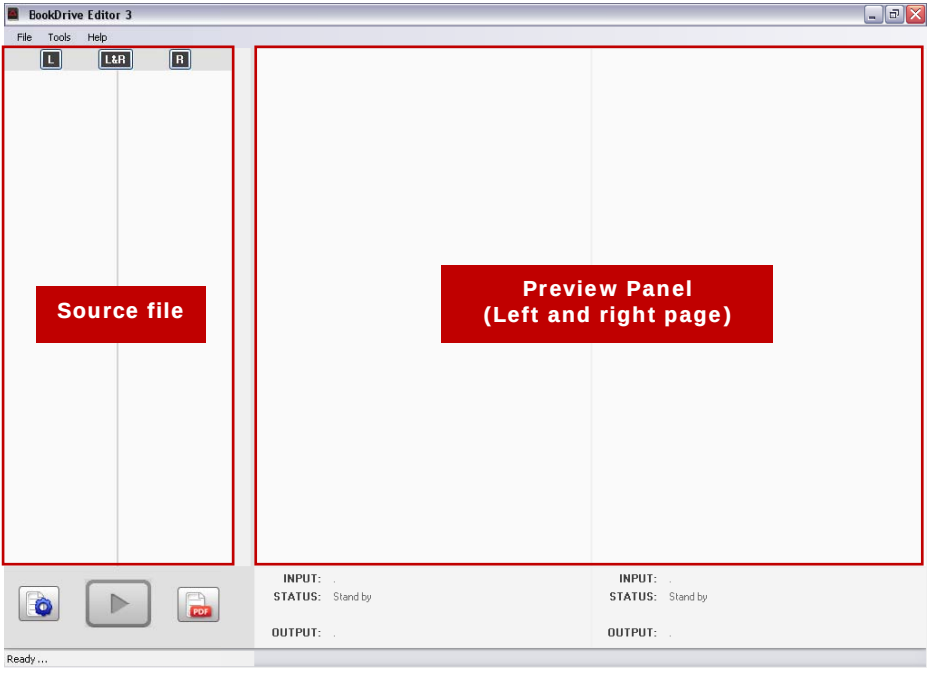
Auto-level – This task helps you enhance the images by adjusting contrast and brightness to the optimal level. This task also performs automatic color adjustment. BookDrive Editor is designed to perform all these tasks automatically. All you have to do is provide valid settings and the rest of the process will be taken care of by the software. This feature will help you have a similar format for every image.

Key Features of BookDrive Editor 3

	Rotation Rotates images to the correct orientation.
	De-skew Compensates for image skew during scanning, resulting in straight images.
	Auto Level Automatically adjusts to the level in the histogram of the images to make them their color look smoother.
	Crop Crops unwanted area of the images out.
	Brightness and Contrast Allows the adjustment of brightness and the contrast of the images. Brightness and Contrast adjustment.
	Sharpen Sharpening makes images look sharper. It brings out details that were not there before.
	Black border removal Eliminates the black edges typically generated by scanners with black backgrounds. It also reduces the file size while improving legibility.
	De-speckle Helps eliminate noise such as speckles and streaks that are either present on the original document or generated during the scan.
	Background removal Removes the unwanted, dirty or dusty background from the document and leave only clean and clear background.
	Resize Images can be resized to any standard size or custom size.
	File storage and retrieval Supports TIFF, multi-page TIFF, PDF, JPEG file formats
	Image compression TIFF compressions: CCITT_G3, CCITT_G4, LZW JPEG compressions: JPEG Quality, LZW

Starting BookDrive Editor

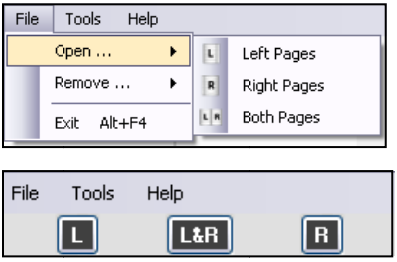
Start BookDrive Editor software by double clicking the program icon. The program will appear and should look like this.



The main interface of the program consists of the left area and the right area. The left area lists all the source files to be processed. The right area is a preview panel, which will show output images as they are being processed.

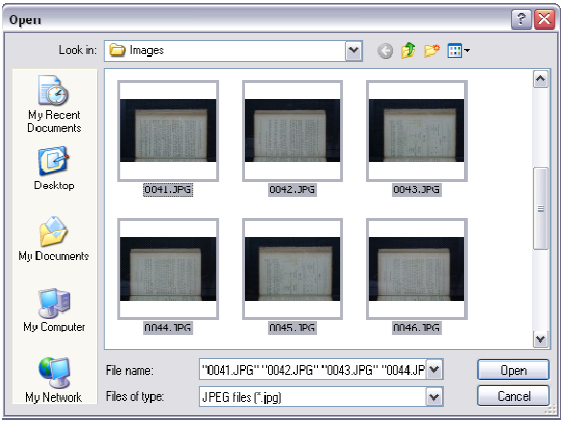
BookDrive Editor

To start, you need to add images to the program. You can do that by either selecting from the menu or simply click its button.

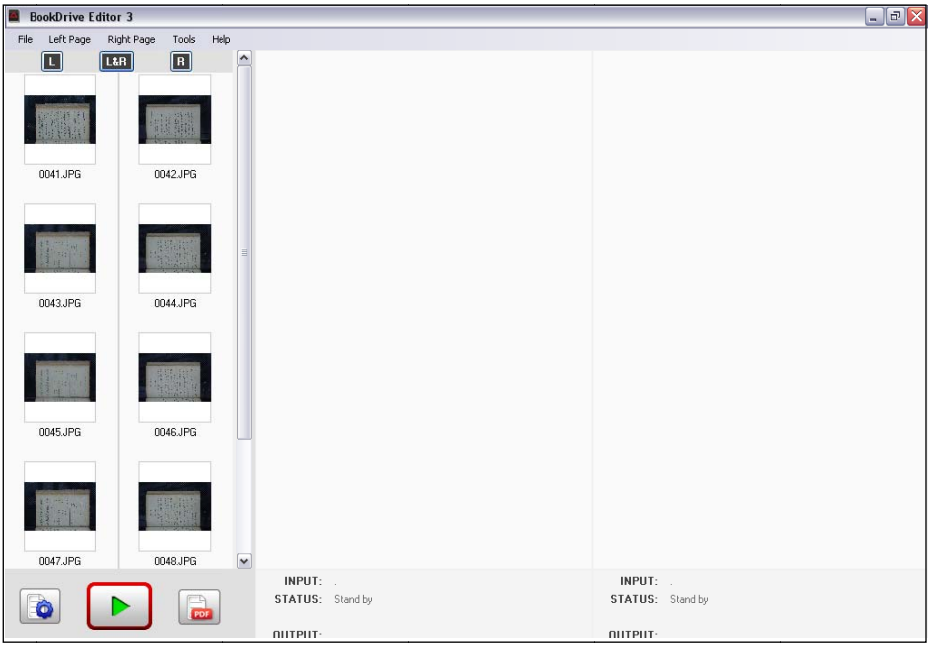


There are many ways to add images to the program:

1. By selecting from the menu. Select File / Open / Left Pages, Right Pages, or Both Pages.
2. By clicking the button.
   There are 3 buttons relevant here:
   the one showing “L” (meaning to add only the left pages);
   the one showing “L&R” (meaning to add both left and right pages); and
   the one showing “R” (meaning to add only the right pages)
3. By drag and drop. You can also drag and drop left images to the left column and drag and drop right images to the right column.



- If you click the button, you should see this open window.
- The open window allows you to select the files you want to add for processing.
- To select many files, do a mouse drag or hold **Ctrl** while clicking on each image.
- To select all, press **Ctrl + A**.
- After select, click **Open**. The program will add those selected images and show their preview thumbnails.



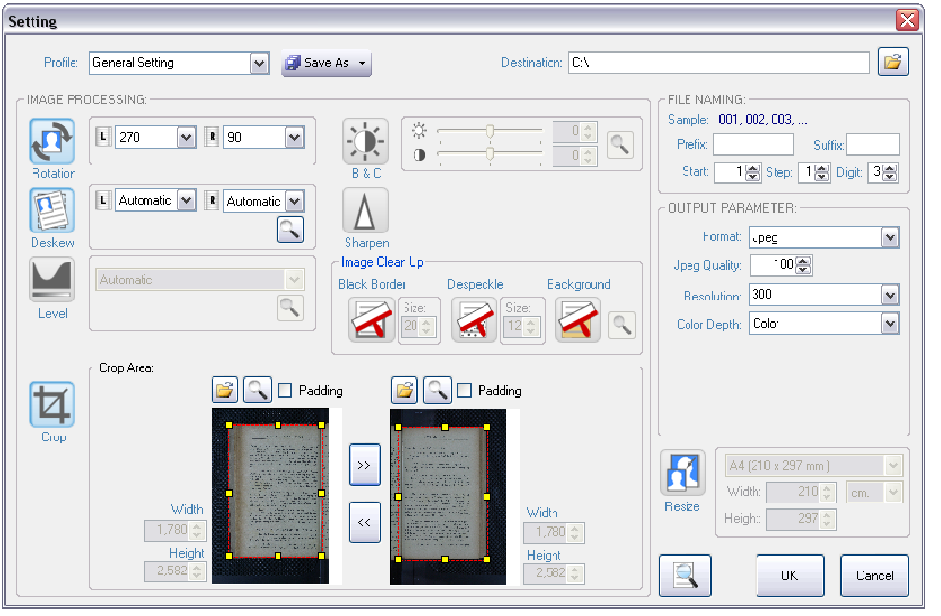
How images are sorted and put in an order?

The software will automatically sort the selected images based on their file names. The ones with lower values will be on top. The ones with higher values will at the bottom.

If you select the both L&R page option, the program will sequentially put the first one on the left, the second one on the right, the third one on the left, the fourth one on the right, and so on until the last image.

Next step is to do settings.

Click **Settings** button.
You will see the Setting window as shown here:



This is the page where you set all the parameters to make the program produce the final images to your liking.

You do not have to do new settings every time you want to process images. BookDrive Editor allows you to save all those parameters in what is called a "**Profile**".

Once you have saved the Profile that contains the parameters that you want, next time that you use BookDrive Editor, just select the Profile that you save and open it for use.

The area that allows you to **open**, **save**, and **delete** a Profile looks like this:

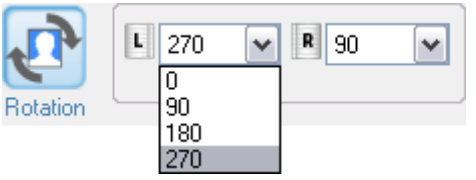
Settings

To enable any image operation, just press the icon representing the intended image operation.
For example, this is what will appear if you want to enable image rotation.

Image rotation is disabled.

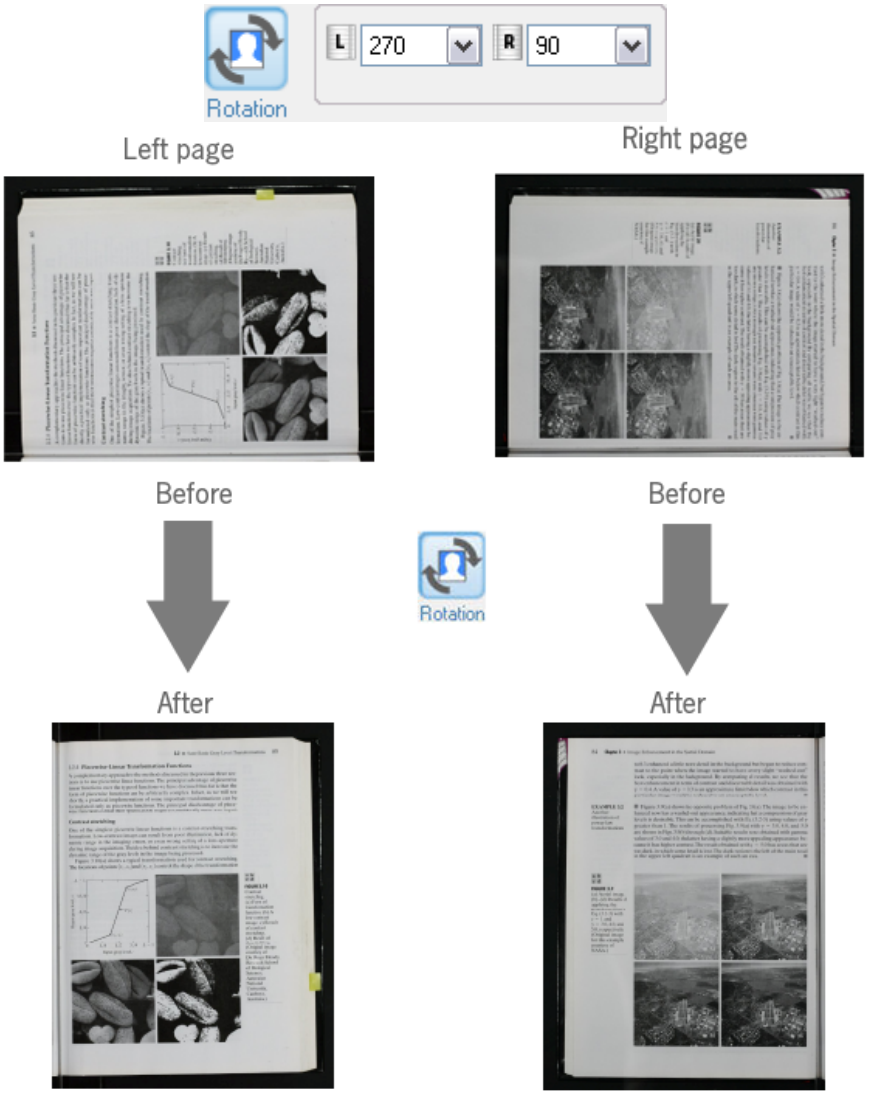
Image rotation is enabled.

Rotation



For rotation, you have options to select to rotate 0, 90, 180 or 270 degrees.

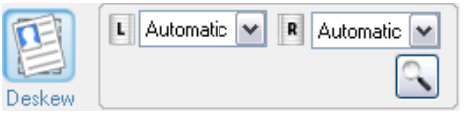
Example:


Rotation
L
270
R
90
Left page
Right page
Before
Before
Rotation
After
After

Deskew

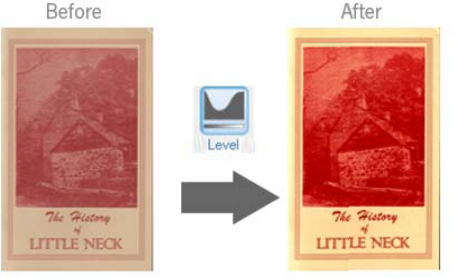
Compensates for image skew during scanning resulting in straight images.

Select **Auto** if you don't know the exact degrees to rotate. Alternatively, you can manually set a value that you want the image to be rotated (between -15 to 15 degrees).



Level

Automatically adjusts to the level in the histogram of the images to make them their color look smoother.



Crop

Crops unwanted area of the images out
The cropping setting area looks like this:

Some available options under cropping image operation include:

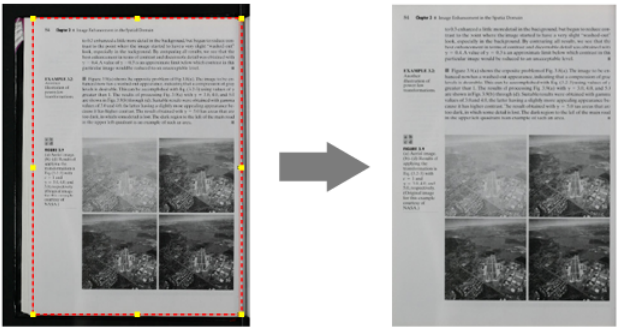
Load another image to see its thumbnail related to cropping.

Preview of how output will look like after cropping and padding.

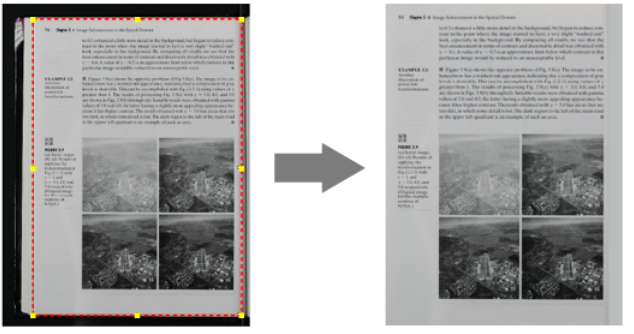
Copy the parameters of the left page to the right.

Copy the parameters of the right page to the left.

Before Normal Crop After



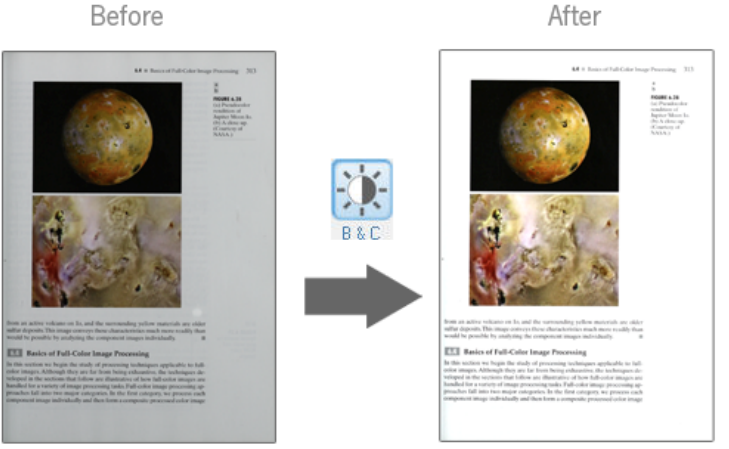
Before Padding Crop After



Note: The red rectangle that marks a crop area can be moved by a mouse drag.

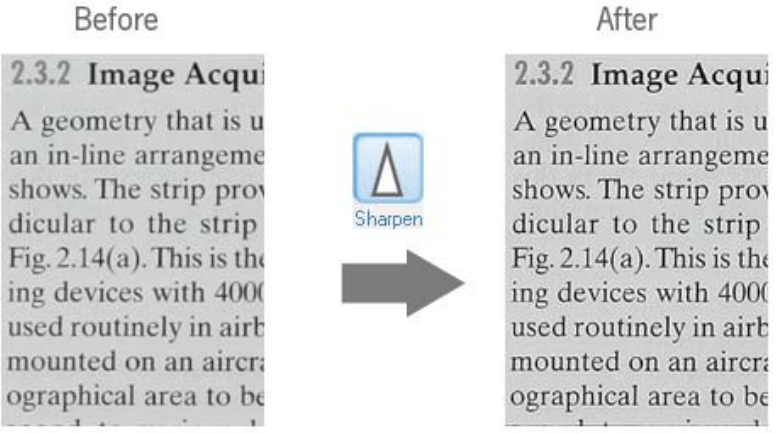
Brightness and Contrast

Allows the adjustment of brightness and the contrast of the images.



Sharpen

Sharpening makes images look sharper. It brings out details that were not there before.



Black border removal

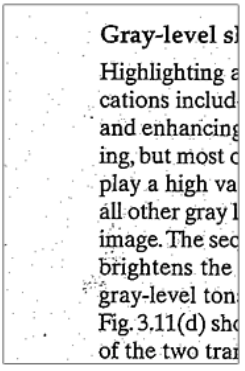
Eliminates the black edges typically generated by scanners with black backgrounds. It also reduces the file size while improving legibility.

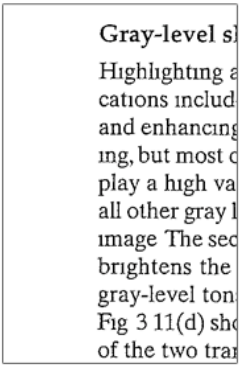
Before

After

De-speckle

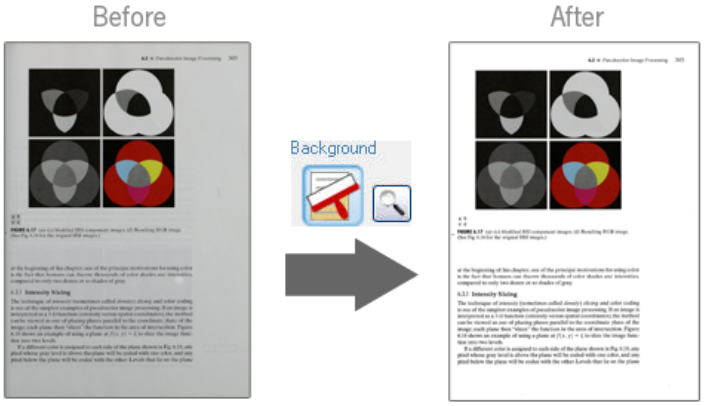
Helps eliminate noise such as speckles and streaks that are either present on the original document or generated during the scan.





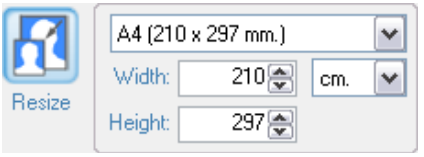
Background removal

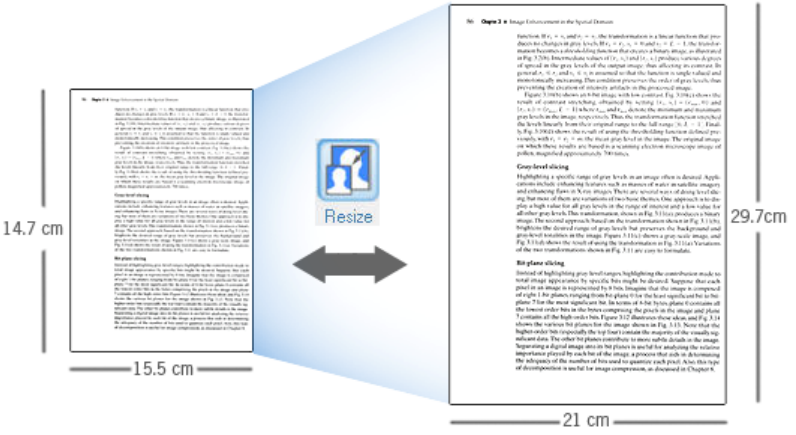
Removes the unwanted, dirty or dusty background from the document and leave only clean and clear background.



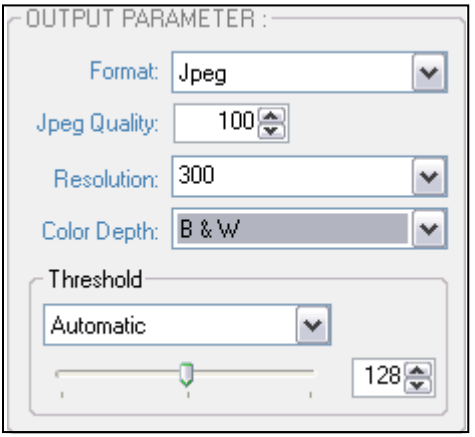
Resize

Images can be resized to any standard size or custom size.





Output file selection

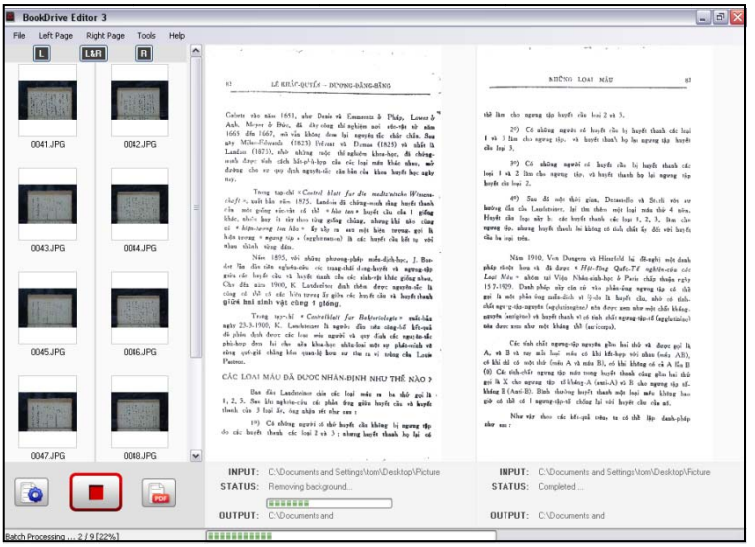


- The available output format options are TIFF or JPEG.
- Available compressions for TIFF are LZW, CCITT G3, CCITT G4
- Users can also select the level of compression for JPEG format by setting its quality level.
- Resolution is where you can set DPI of the output image. You can select 100, 200, 300, 600 DPI or specify the exact desired DPI.
- Available color options are: Black and White, Grayscale and Color.
- As for Black and White conversion, there are many types of conversions allowed. This has to do with the threshold of how a given a pixel is converted to either a black or white pixel.

    - Fixed (threshold value is set at 128)
    - User defined (users can define other threshold values)
    - Automatic (the level of optimal threshold will automatically be selected by the computer).
    - Highest Quality (this setting can be known as dynamic localized thresholding, which means there can be many thresholding values on a page. If selected, the program will scan the entire page and automatically adjust the thresholding values for optimal values throughout the pages. This setting will take the longest time but will provide the best quality.)

Run batch

Once all the settings have been made, it's time to run the batch image processing operations. Simply hit the Run Batch button.

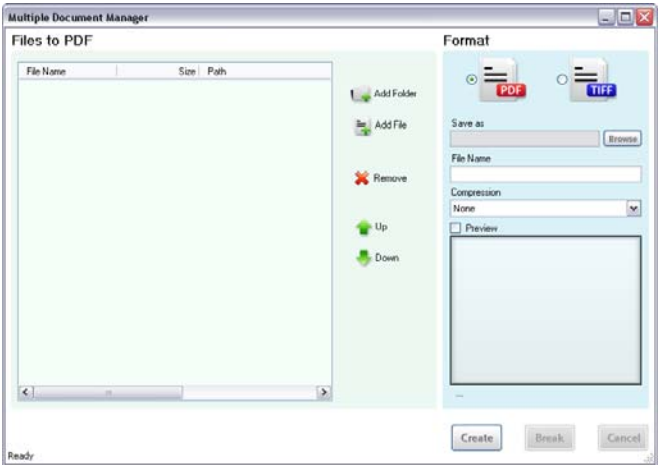


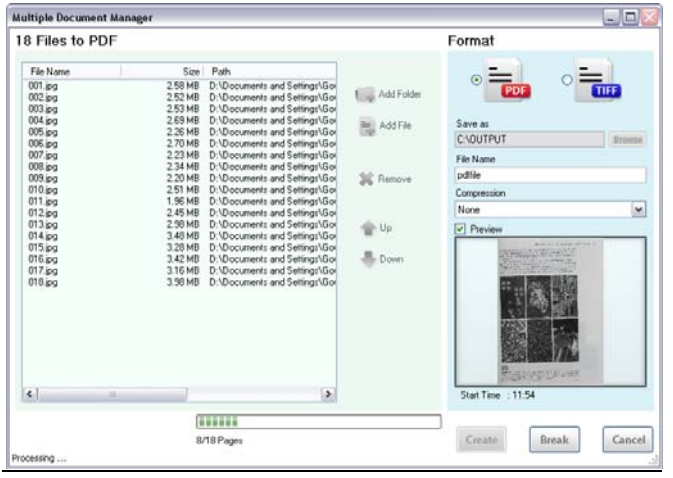
If you want to stop, click the same button again.

Creating PDFs

BookDrive Editor 3 can create PDFs or Multi-page TIFF by clicking the **PDF** button.

Once clicked, you will see the following window.



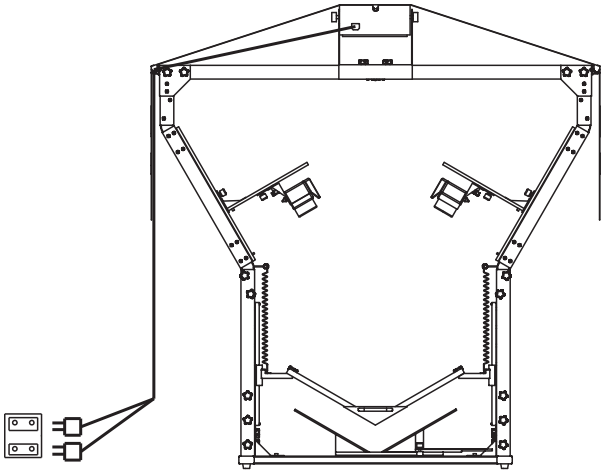


Steps

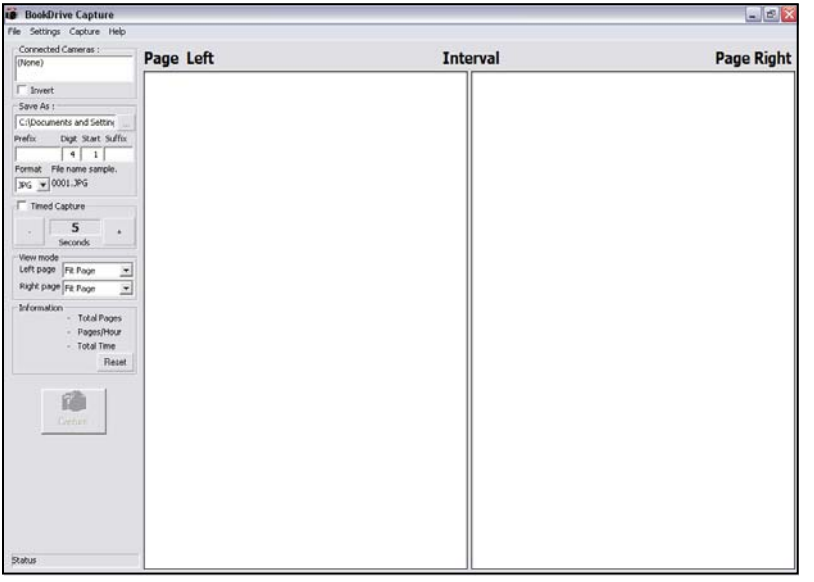
1. Click **PDF** button.
2. Select the images you want to export to PDF.
3. Select the output format (PDF or TIFF) and other parameters.
4. Click **Create**.

Steps in using BookDrive DIY

1. Plug-in the lamps' AC cables.

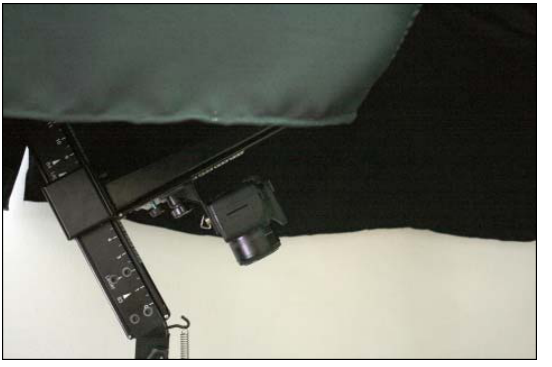


2. Open BookDrive Capture software.



3. While both cameras are being connected (but remain turned off) to the PC via USB cables, turn on the right camera first. Wait until BookDrive Capture recognizes it and the message, telling that the first camera is connected, is shown on the software screen.

4. Turn on the left camera. Wait until BookDrive Capture recognizes it and the message, telling that the second camera is now connected, is shown on the software screen.



5. Try taking a few shots to see if the whole page of the book is in the shot. If not, adjust it properly. (see how to adjust the camera position properly in the next chapter called “Camera Setup”)

6. Once you’re happy with how the camera produces the sample shots, you can start capturing pages of a whole book.

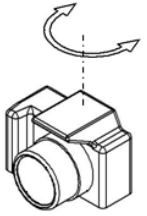
Camera Setup

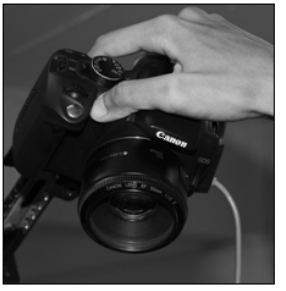
The following steps will guide you to ensure that you set the cameras correctly.
The most basic thing to remember is that the camera on the right captures the left pages while the camera on the left captures the right pages. Once you know this, when you see that the left images are crooked, the correct step is to adjust the position of the right camera, and vice versa.

Adjusting the position of the cameras

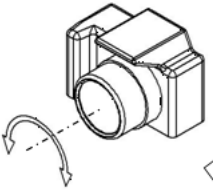
In this manual we will use 2 terms to describe the needed actions: yaw and roll.

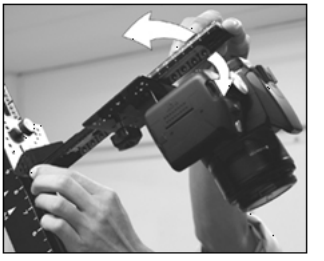
1. Yaw; (turn the camera around a vertical axis)





2. Roll; (turn the camera around the horizontal axis) To do this, you need to use the L-key to loosen the nuts a little bit just so that you can turn it to the direction you want.



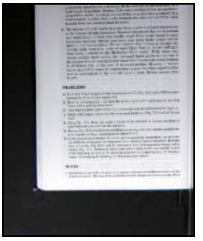


Camera Setup

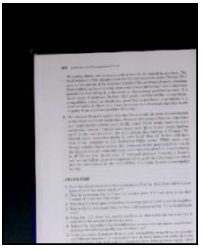
Scenarios

Left Image

1. If the top of the page is out of the frame,



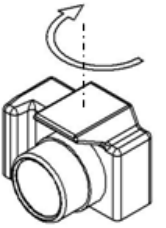
2. If the bottom of the image is out of the frame,



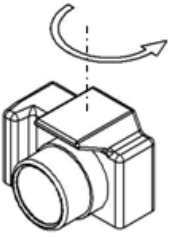
3. If the image tilts to the left,

Right Camera

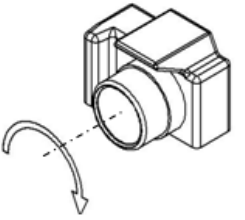
CW Yaw (turn clockwise around a vertical axis)



CCW Yaw (turn counter-clockwise around a vertical axis)



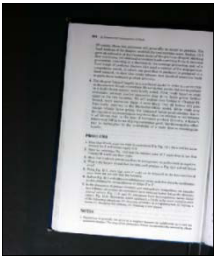
CW Roll (turn clockwise around a horizontal axis)



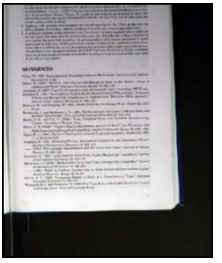
Camera Setup

Right Image

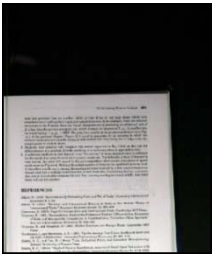
4. If the image tilts to the right,



5. If the top of the image is out of the frame,

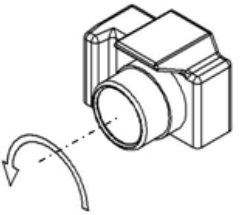


6. If the bottom of the image is out of the frame,

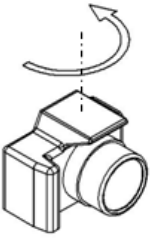


Left Camera

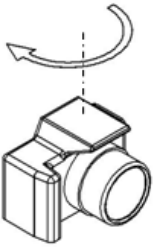
CCW Roll (turn counter-clockwise around a horizontal axis)



CCW Yaw (turn counter-clockwise around a vertical axis)

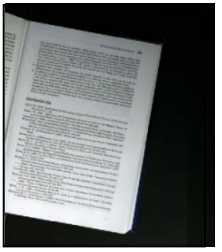


CW Yaw (turn clockwise around a vertical axis)

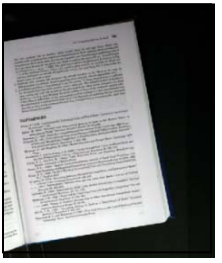


Right Image

7. If the image tilts to the right,

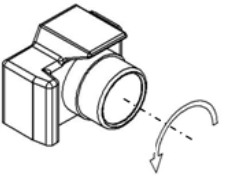


8. If the image tilts to the left,

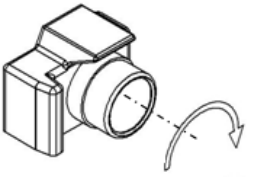


Left Camera

CCW Roll (turn counter-clockwise around a horizontal axis)



CW Roll (turn clockwise around a horizontal axis)



Maintenance

Basic maintenance tips

Dirt or dusts can interfere with the pictures. To clean BookDrive DIY, simply use a dry or damp cloth to clean off the dust.

After use, please use the caps to cover the camera lenses. Try to use large piece of cloth to cover BookDrive DIY when it will not be in use for a long period of time.