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# **Watkiss PowerSquare™224**

## **User Manual**

**Offline Model with Side-Trimming option**

English, Issue 5, June 2013

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Effective Serial No. WA/PSQ/0800 onwards

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# Introduction to the Watkiss PowerSquare™224

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Thank you for choosing the Watkiss PowerSquare™224.

## Your Manual

The Watkiss PowerSquare™224 User Manual describes how to do these tasks.

- Operate the Watkiss PowerSquare™224
- Find and correct error conditions
- Do normal maintenance tasks

Operator training is given when the PowerSquare is installed. To make sure you use your PowerSquare correctly, read your manual.

In this manual the 'Watkiss PowerSquare™224' is referred to as the 'PowerSquare'.

The 'P2T Two Knife Trimmer' is referred to as the 'Side-Trimmer'.

## Safety Information

Safety information is included in the separate "Safety Information Manual".  
*Read the safety information before you use your PowerSquare.*

## Warning and Caution Messages

The warning and caution messages used in this manual are shown below.



**WARNING:** A *WARNING* message tells you that a procedure or operation can be dangerous. To prevent injury, you must follow the instructions.



**CAUTION:** A *CAUTION* message tells you that a procedure or operation can damage the machine or the product. To prevent damage, you must follow the instructions.

## Installation

Your PowerSquare must be installed by a Watkiss service engineer. Special knowledge is needed to install the machine.



**CAUTION:** *Only connect the machine to a mains power supply of the correct voltage with a good earth-connection. The correct machine-voltage is shown on the label at the mains power supply input on the rear of the machine. If the machine is connected to the wrong supply, the warranty is cancelled.*

## How to Get Help

If you have any questions or problems, refer to the problem solving section in this manual (see “Error Conditions, Problems and Solutions” on page 53). Contact your PowerSquare supplier for further help.

## Description of the PowerSquare

### Introduction

The PowerSquare processes sets of printed pages into stitched books. The main parts are shown below. The PowerSquare can be fitted with a standard Stacker or with a Book Stacker. An optional Side-Trimmer can be fitted.

### Operator Side of the PowerSquare

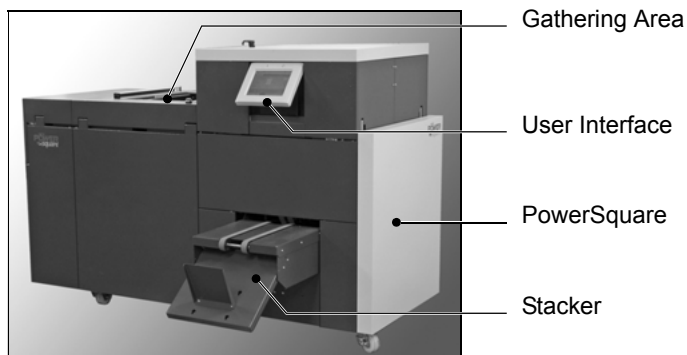


FIGURE 1. Operator Side of the PowerSquare.

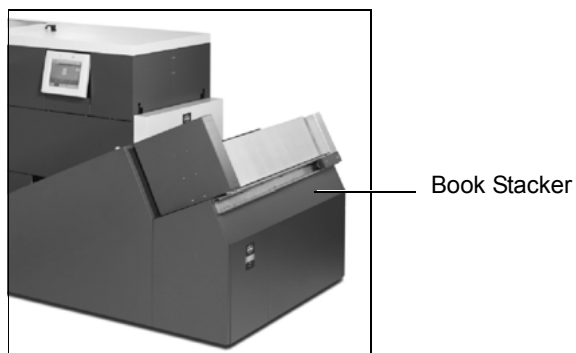


FIGURE 2. Book Stacker (optional)

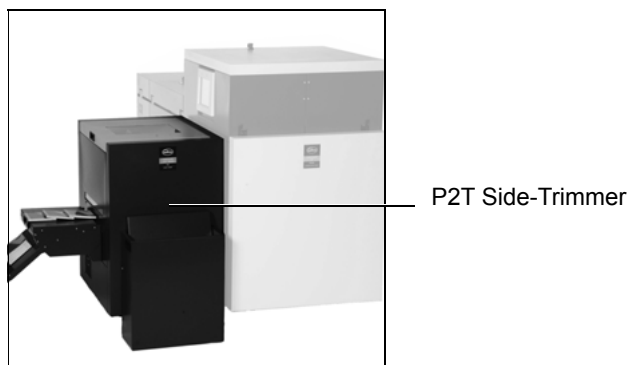




FIGURE 3. Side-Trimmer (optional)

### Component - Function Table

Component	Function
The user interface	The user interface has a colour touch screen, a start button  and a stop button  .
The PowerSquare	The PowerSquare stitches, folds, spine-forms and trims the sheets to make a finished book.

Component	Function
The light guard	A light guard protects the gathering area while the shuttle moves. If you put your hands, or the next book, into the gathering area while the shuttle moves, the light guard stops the machine.
The stacker	The stacker collects the finished books.(See Figure 1).
The book stacker	The book stacker is optional. It is a high-capacity stacker for the finished books (See Figure 2).
The P2T side-trimmer	The side-trimmer is optional. It trims the top and bottom edge of the books (See Figure 3).

### Right Hand Side of the PowerSquare

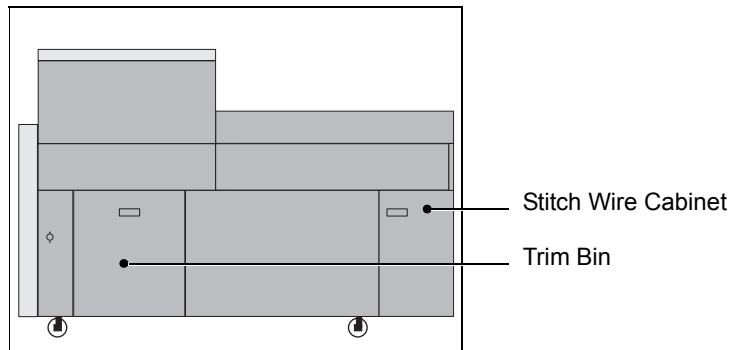


FIGURE 4. Right hand side of the PowerSquare.

### Component - Function Table

Component	Function
The stitch wire cabinet	The stitch-wire cabinet holds the spool of stitch-wire.
The trim bin	The trim bin collects the paper that is trimmed from the edge of the book.



## The Rear Panel of the PowerSquare

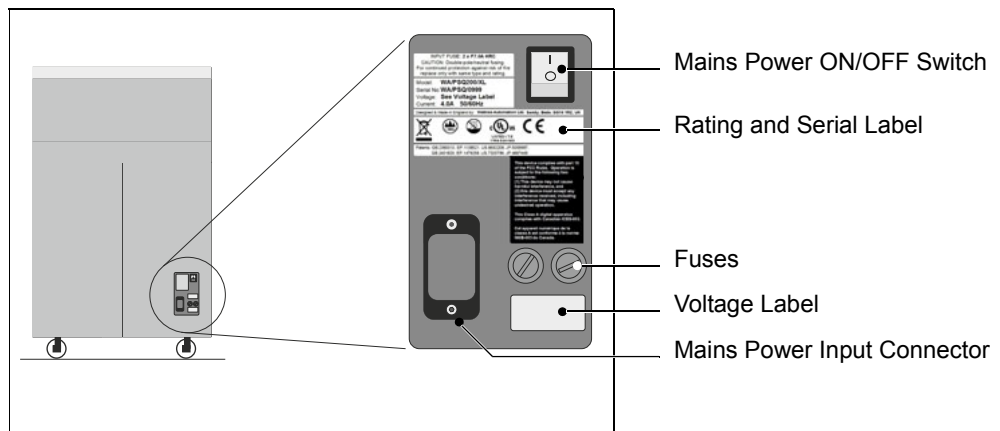


FIGURE 5. The Rear Panel of the PowerSquare.

## Component - Function Table

Component	Function
Rating and serial label	The rating label displays the type of machine, serial number, power use and fuse information.
Mains power ON/OFF switch	The mains power ON/OFF switch turns ON or turns OFF the PowerSquare. When you turn OFF the PowerSquare, the current settings are stored.
Fuses	The fuses make sure the operator and the machine are protected if there is an electrical problem or short circuit.
Voltage label	The voltage label is fitted to the PowerSquare during the installation procedure. The voltage label displays the selected voltage.
Mains power input connector	The mains power input connector is used to connect the PowerSquare to mains electrical power.

## The Input Panel of the Book Stacker

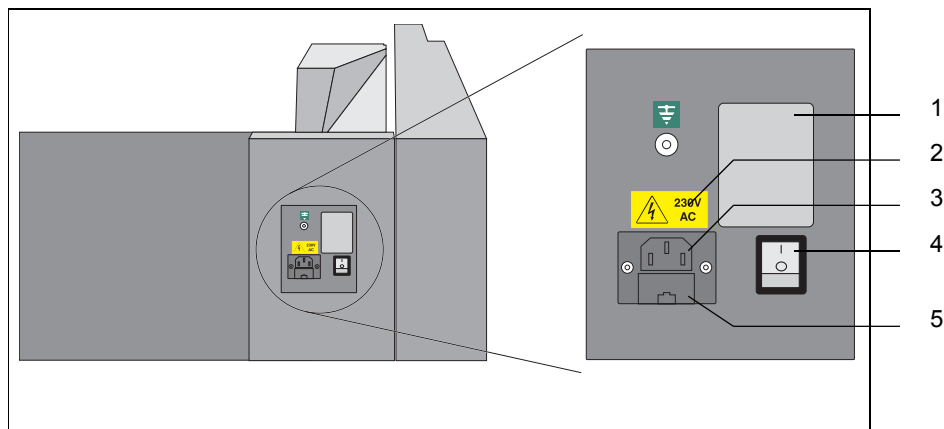


FIGURE 6. The Input Panel of the Book Stacker.

### Component - Function Table

No.	Component	Function
1	Rating and serial label	The rating label displays the type of machine, serial number, power use and fuse information.
2	Voltage advisory label	The voltage advisory label shows that the input voltage is 230V AC. The 230V power is supplied by the PowerSquare.
3	Power input connector	The power input connector is used to connect the power supply from the PowerSquare to the Book Stacker.
4	Mains power ON/OFF switch	The mains power ON/OFF switch turns ON the Book Stacker or turns OFF the Book Stacker.
5	Fuses	The fuses make sure the operator and the machine are protected if there is an electrical problem or short circuit.

## The Side-Trimmer

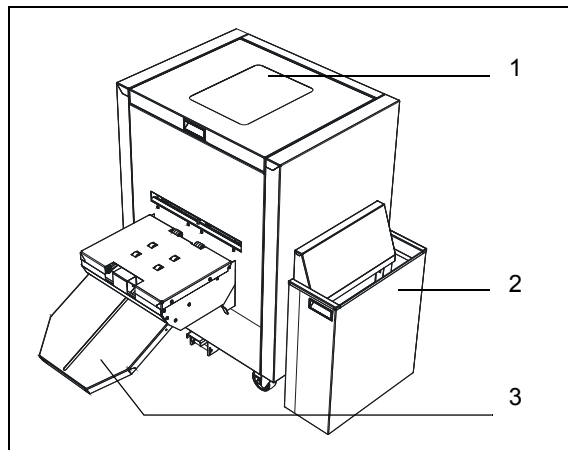
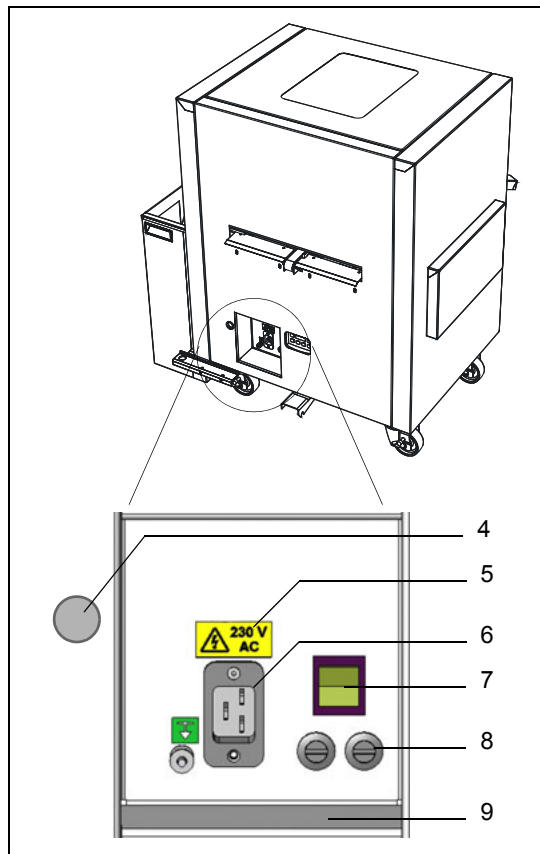


FIGURE 7. Side-Trimmer Components



## Component - Function Table

No.	Component	Function
1	The Top Cover	The top cover opens to allow error recovery.
2	The Trim Bin	The trim bin collects the paper that is trimmed from the top and bottom of the book.  If the PowerSquare is configured with a Book Stacker and a P2T Side-Trimmer, the P2T trim bin is located in the Book Stacker.
3	The Stacker	The stacker collects the finished books.
4	Communications cable	The communications cable connects the Side-Trimmer to the PowerSquare.
5	Voltage label	The voltage label displays the machine voltage.
6	Mains power input connector	The mains power input connector is used to connect the Side-Trimmer to mains electrical power.
7	Mains power ON/OFF switch	The mains power ON/OFF switch turns ON the Side-Trimmer or turns OFF the Side-Trimmer.

<b>No.</b>	<b>Component</b>	<b>Function</b>
8	Fuses	The fuses make sure the operator and the machine are protected if there is an electrical problem or short circuit.
9	Rating and serial label	The rating label displays the type of machine, serial number, power use and fuse information.

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## CHAPTER 2 **How to Run the PowerSquare**

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### **Introduction**

This chapter gives information on how to run a job on the PowerSquare.

Information about the user interface is included in “The User Interface” on page 15.

Information about standard procedures, for example opening covers to clear a paper jam, is included in “Standard Tasks” on page 29.

## Before You Begin

### Paper and Book Quality Instructions

- The size of paper and the thickness of the set must be measured.
- Measure the size of the *printed* paper. The paper dimension changes when the paper is printed.
- Measure the set thickness as accurately as possible. Use the measuring tool supplied with the machine.
- To get best accuracy, use millimetres to measure the set. See page 11.
- Enter accurate dimensions into the touch screen.
- If the book is made from several different types of paper, make sure the different paper types are all the same size.

See “Book Quality Problems” on page 55 for further information.

## Turn On the PowerSquare

### Procedure


1. Connect the PowerSquare and any accessories to the mains power supply.
2. Use the mains ON/OFF switches to turn ON the PowerSquare and accessories.

The PowerSquare makes this sequence of beeps:  
'beep\_\_beep beep beep beep\_\_\_\_\_beep \_\_ beep'.

The touch screen illuminates and the machine calibrates.  
When 036**READY** is displayed on the screen, the machine is ready for use.

## Enter the Job Settings

### Introduction


Make the settings for a new job in the **BASIC**  window on the touch screen.  
See “The User Interface” on page 15 for more information.

The **PAPER SIZE** and **PAGE DIRECTION** settings are entered on the touch screen.  
These dimensions refer to the format of the paper when you put it in the gathering area.




**CAUTION:** *Do not operate the touch screen with a sharp object or with too much force. These actions can damage the touch screen.*

## Before You Begin


Step	Action	Information
1	Take a complete set, that is to be made into a book.	
2	Measure the sheet size and the set thickness.	<p>Measure the set accurately. To make an accurate book you must enter accurate paper dimensions into the touch screen.</p> <p>To get best accuracy, use millimetres to measure the set.</p> <p>If needed, set the PowerSquare to use millimetres.</p> <ul style="list-style-type: none"> <li>• Touch <b>MENU</b>.</li> <li>• Select <b>Supervisor</b> access level.</li> <li>• Touch <b>MENU &gt; CONFIGURE</b>  <b>&gt; MACHINE OPTIONS</b>.</li> <li>• Touch <b>mm &gt; CLOSE</b>.</li> </ul>
3	Use these dimensions for the job setting.	

## Procedure for a New Job

Step	Action	Information
1	Touch <b>BASIC</b>  .	
2	Enter the paper size.	<p>Touch <b>PAPER SIZE</b>. Enter the dimensions of the paper.</p> <p>The job setting is easier if you first select a preset paper size, then adjust the settings as necessary.</p> <p>Touch <b>PAPER SIZE &gt; PRESETS &gt; A3</b> or <b>A4</b>. (USA: 11x17, 8.5x11 or 8.5x14)</p>
3	Enter the page direction.	<p>Touch <b>PAGE DIRECTION &gt; LANDSCAPE</b> or <b>PORTRAIT</b>.</p> <p>If the <b>PAGE DIRECTION</b> option is not available, the <b>PAGE DIRECTION</b> cannot be changed.</p>
4	Enter the set thickness.	Touch <b>SET THICKNESS</b> . Enter the measured value.
5	Enter the number of stitches.	Touch <b>STITCHES</b> and enter the number of stitches. If needed, the stitch pitch can be changed. See "STITCH PITCH" on page 20.

Step	Action	Information
6	Enter the spine form setting.	The spine form setting is automatic, according to the <b>SET THICKNESS</b> setting. If needed, the setting can be changed. See "FORM" on page 20
7	Enter the trim setting.	The trim setting is automatic, according to the <b>PAGE SIZE</b> and <b>SET THICKNESS</b> settings. To change the setting, touch <b>TRIM</b> . See "TRIM" on page 21
8	Enter the side-trim setting.	The side trim dimension is calculated automatically according to the <b>PAGE SIZE</b> . To change the size and trim position, touch <b>SIDE TRIM</b> . See "SIDE TRIM" on page 21. If the side-trim size is 190mm or less, remove the book supports. See "Remove and re-fit the Side-Trimmer Book Supports" on page 47.
9	Touch <b>CLOSE</b> .	
10	If needed, save the job settings to memory.	If the same job settings are used frequently, then save the job settings to memory. See "Save a job" on page 30.

### Procedure for a Saved Job

1. Touch **LOAD & SAVE** .
2. Touch the job name or use the Up arrow and the Down arrow to select the job.
3. Touch **LOAD**.
4. Wait until the PowerSquare is ready.

## Adjust the Stacker

### Side-Trimmer Stacker

Adjust the stacker according to the size and thickness of the finished book. See "Adjust the Side-Trimmer Stacker" on page 44.

### Book Stacker

Check the Book Stacker is ready to accept books. See "Adjust the Book Stacker" on page 40.




## Run the Job

### Note

A light guard protects the gathering area while the shuttle moves. If you put your hands, or the next book, into the gathering area while the shuttle moves, the light guard stops the machine. The error message '**SHUTTLE MOTOR ERROR**' is displayed in the message list. See "Light Guard Interruption" on page 53.

### Procedure

1. Touch START .
2. Put the set in the gathering area, with the middle pages of the book face up.
3. Remove your hands from the gathering area.  
The shuttle moves the set to the stitching area and the book is made.  
Do not put your hands, or the next set, into the gathering area while the shuttle moves. The green button illuminates when the machine is ready for the next set.
4. Check the quality of the first book.
5. If the quality is not acceptable, make adjustments. See "Book Quality Problems" on page 55 for further information.

### During the job

- Unload books from the stacker before the stacker is full. The PowerSquare stops and displays a message if the stacker is full.
- If the optional Book Stacker is fitted, see "Unload the Book Stacker" on page 41.
- Empty the trim bin from time to time. The PowerSquare displays a message if the trim bin is full. See "Empty the Trim Bin" on page 37.
- Empty the side-trim bin from time to time. The PowerSquare displays a message if the side-trim bin is full. See "Empty the Side-Trim Bin" on page 43.



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The user interface includes a colour touch screen and START/STOP buttons.

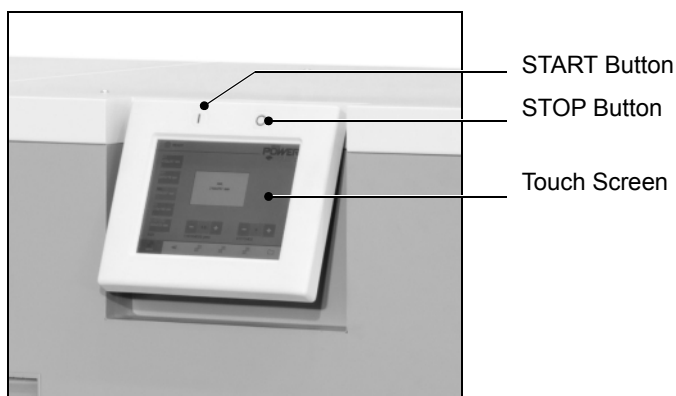


FIGURE 8. The User Interface

## The Touch Screen

### Introduction

Operate the touch screen with a fingertip. You can touch the screen with a blunt item, for example a palm-top 'wand' or the blunt end of a pen. Do not use too much force. A light touch is all that is needed.



**CAUTION:** *Do not operate the touch screen with a sharp object or with too much force. These actions can damage the touch screen.*

If you hear a 'beep' when you operate the touch screen, the selected function is not available. Some functions are not available when the machine is in operation.

Some functions and buttons are only available at certain access levels. See “ACCESS LEVEL” on page 27.

### Power save

The touch screen has a power-save function. After several minutes without use, the brightness of the touch screen decreases. After several hours, the touch screen turns off.

Touch the screen to restore the normal brightness. The touch screen takes two or three minutes to reach full brightness.

### Illustration

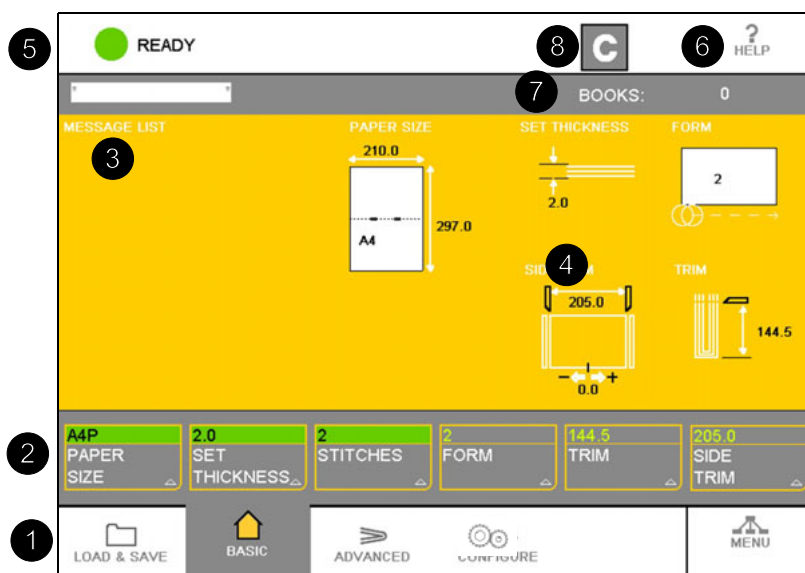







FIGURE 9. The Touch Screen

## Component - Function Table

No.	Component	Function
1	Window Tabs	<p>The touch screen buttons are divided into groups that have connected functions. Each group of buttons has a separate window. Touch the correct tab to select the window.</p> <p> <b>LOAD &amp; SAVE</b></p> <p> <b>BASIC</b></p> <p> <b>ADVANCED</b></p> <p> <b>CONFIGURE</b></p> <p> <b>MENU</b></p>
2	Window Buttons	Each window contains a group of buttons. Touch the button to select the function.
3	Message List	<p>Information and error messages are shown in the <b>MESSAGE LIST</b>.</p> <p>To display the information about a message, touch <b>HELP</b> then touch the message list. Use the right-arrow and left-arrow to see the help text for each message.</p>
4	Job Mimic	The job mimic shows the current machine settings.
5	Status	The <b>STATUS</b> line shows the machine status.
	- GREEN	The PowerSquare is <b>READY</b> or <b>RUNNING</b> .
	- ORANGE	<b>PLEASE WAIT</b> - wait until the PowerSquare is ready. <b>ATTENTION</b> - the PowerSquare needs an action by the operator.
	- RED	The PowerSquare is in an <b>ERROR</b> condition.
6	Help	<p>Help text is available on the touch screen.</p> <ul style="list-style-type: none"> <li>• Touch <b>HELP</b> then touch any button or tab on the screen. Information about that button or tab is displayed.</li> <li>• To display the information about a message, touch <b>HELP</b> then touch the message list.</li> <li>• Use the Up arrow and the Down arrow to scroll-up and scroll-down the screen.</li> <li>• Some text has more than one screen. Use the right-arrow and left-arrow to see the other screens.</li> </ul> <p>To leave the help-text, touch <b>HELP</b> or touch <b>X</b>.</p>
7 & 8	Book Counter	The book counter shows the number of books made. The counter is reset to zero when the PowerSquare is turned off. Touch 'C' to reset the book counter to zero.

## The Job Mimic

The job mimic shows the current machine status.

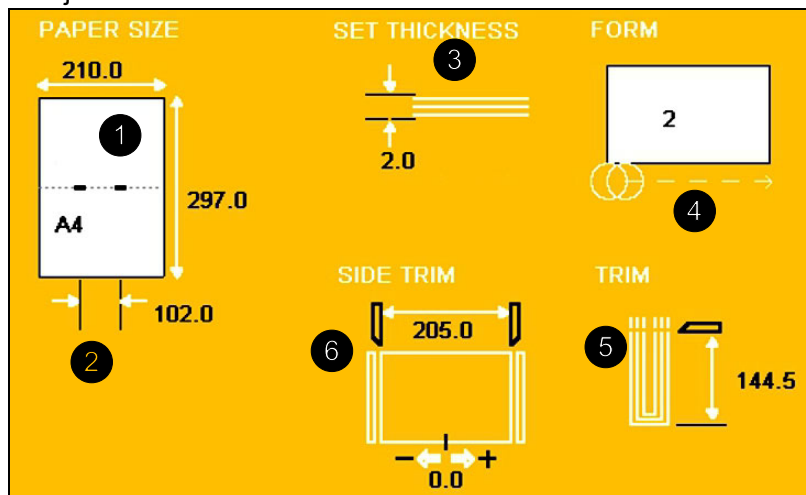
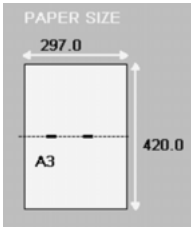


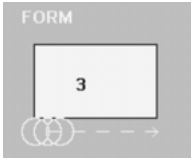
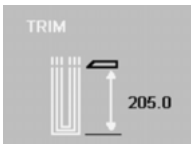
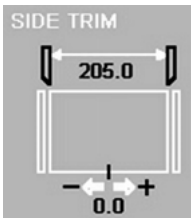



FIGURE 10. The Job Mimic

No.	Icon	Information
1		<p>The following items are shown</p> <ul style="list-style-type: none"> <li>the size of paper</li> <li>the format of the paper in the gathering area</li> <li>the broken line shows the fold line</li> <li>the small thick lines show the stitches</li> </ul>
2		<p>The stitch pitch is shown only when a non-standard setting is selected.</p>
3		<p>The set thickness, in mm, is shown.</p>
4		<p>The number of forms is shown.</p> <p>If the pressure is adjusted, the setting is shown in brackets.</p> <p>A red X shows that the form function is not active.</p>

No.	Icon	Information
5		<p>The trim setting is displayed.</p> <p>A red X shows that the trim function is not active.</p>
6		<p>The side-trim setting is displayed.</p> <p>The number at the top shows the trim size.</p> <p>The number at the bottom shows if the trim is offset from the centre-line.</p> <p>A red X shows that the side-trim function is not active.</p>

## The BASIC Window

The **BASIC**  window gives you access to frequently-changed machine settings.

### The BASIC Window Buttons


Button	Information
<b>PAPER SIZE</b>	<p>Measure the accurate size of the printed paper before you make a book.</p> <p>Touch <b>PAPER SIZE</b> to enter the paper size.</p> <p>When the machine is in operation, you can adjust the <b>PAPER SIZE</b> by a maximum of +/- 1mm.</p>
<b>- PAGE DIRECTION</b>	Touch <b>PAGE DIRECTION</b> to change the direction of the paper to Landscape or Portrait.
<b>- PRESETS</b>	Touch <b>PRESET</b> to select a standard paper size.
<b>SET THICKNESS</b>	<p>Use the <b>SET THICKNESS</b> window to define the thickness of the set.</p> <p>Measure the thickness of the set before you make a book.</p> <p>Touch <b>SET THICKNESS</b> and enter the value.</p>
<b>STITCHES</b>	Touch <b>STITCHES</b> to select the number of stitches. Available options are 1 - 6. The machine automatically calculates the position of the stitches according to the size of the paper. Select 0 to turn off the stitch function.
<b>- STITCH PITCH</b>	<p>The stitch pitch is the space between the stitches. The machine automatically calculates the stitch pitch according to the size of the paper.</p> <p>If a non-standard stitch pitch is needed, use <b>STITCH PITCH</b> to make the adjustment.</p>
<b>- AUTO</b>	Touch <b>AUTO</b> to select the default stitch pitch.
<b>FORM</b>	<p>To make the square spine of the book, pressure is applied to the spine. This process is called forming.</p> <p>Touch <b>FORM</b> to specify the amount of spine form.</p> <p>To make a good spine on different paper types, the amount of spine form can be changed.</p> <p>To change the amount of spine form</p> <ul style="list-style-type: none"> <li>• Touch <b>NUMBER</b> to change how many times the spine is processed</li> <li>• Touch <b>PRESSURE</b> to change the pressure</li> </ul>
<b>- AUTO</b>	Touch <b>AUTO</b> to select the optimum amount of spine form, according to the set thickness.



Button	Information
- <b>NUMBER</b>	<p>Touch <b>NUMBER</b> to select how many times the form roller processes the spine. The available options are 1, 2, 3 or 4.</p> <p>An increase in <b>NUMBER</b> increases the time taken to form the spine and can decrease the production rate for thin books.</p> <p>Alternatively, increase the <b>PRESSURE</b>.</p>
- <b>PRESSURE</b>	<p>Touch <b>PRESSURE</b> to increase or decrease the pressure used to form the spine.</p> <p>Touch <b>+</b> to increase the amount of spine form. Touch <b>-</b> to decrease the amount of spine form. The range is -9 to +9. The default setting is 0.</p>
- <b>THRESHOLD</b>	<p>Use <b>THRESHOLD</b> to choose if a square spine is formed.</p> <p>If the <b>SET THICKNESS</b> value is thinner than the <b>THRESHOLD</b> value, a square spine is not formed.</p> <p>If the <b>SET THICKNESS</b> value is thicker than the <b>THRESHOLD</b> value, a square spine is formed.</p> <p>If the <b>SET THICKNESS</b> value is 1.5mm or thicker, a square spine is always formed.</p> <p>The default value is 0.8mm. The allowed range is 0.1mm to 1.5mm</p>
<b>TRIM</b>	<p>The trim dimension is calculated automatically according to the <b>PAPER SIZE</b> and <b>SET THICKNESS</b>.</p> <p>If needed, the trim dimension can be changed. Touch <b>TRIM</b> to adjust the size of the finished book after the fore-edge is trimmed. The maximum trim is 28 mm.</p> <p>The trim function can be turned off.</p>
- <b>AUTO</b>	Touch <b>AUTO</b> to select the default trim position.
<b>SIDE TRIM</b>	<p>The side-trim dimension is calculated automatically according to the <b>PAGE SIZE</b>.</p> <p>If needed, the side-trim dimension can be changed. Touch <b>SIDE TRIM</b> to adjust the size of the finished book.</p> <p>The default setting is 2.5mm from each side.</p> <p>The maximum side-trim is 40mm from each side.</p> <p>The minimum side-trim is 1mm from each side.</p> <p>The machine will not permit a setting that conflicts with the stitch position. Change the stitch pitch if necessary.</p> <p>The side-trim function can be turned off.</p>
- <b>AUTO</b>	Touch <b>AUTO</b> to select the default side-trim position.

Button	Information
- TRIM SIZE	Touch '+' or '-' to adjust the side-trim dimension.
- TRIM OFFSET	By default, the book is trimmed equally on both sides. Touch '+' or '-' to move the trim position away from the centre line. The range is -40mm to +40mm, dependent on how much is to be trimmed. The default setting is 0mm.

## The LOAD & SAVE Window

The **LOAD & SAVE**  window lets you save and reload job settings. Each job is given a name. The jobs are displayed in a list on the screen.

Touch the job name or use the Up arrow or Down arrow to make the selection.

### The LOAD & SAVE Window Buttons



Button	Information
<b>SAVE</b>	Touch <b>SAVE</b> to save the current settings. An on-screen keyboard is displayed. Enter the job name. Touch <b>OK</b> or <b>CLOSE</b> . The new job appears in the list of saved jobs. You can reload a saved job to decrease set-up time in the future.
<b>- REPLACE</b>	If you change the settings of a saved job, touch <b>REPLACE</b> to save the new settings.
<b>- CANCEL</b>	Touch <b>CANCEL</b> if you do not need to save a job that you have changed.
<b>- SAVE NEW</b>	If you change the settings of a saved job, touch <b>SAVE NEW</b> to save the new settings as a new job. An on-screen keyboard is displayed. Enter the new job name. Touch <b>OK</b> or <b>CLOSE</b> . The original job is not changed.  If the job name is not changed before <b>OK</b> or <b>CLOSE</b> is touched, the job will be saved with the current name followed by an asterisk *.
<b>JOB DETAILS</b>	<b>JOB DETAILS</b> shows the settings for each saved job. Select the job that you need to view from the job list. Touch <b>JOB DETAILS</b> to see a summary of the job settings.
<b>LOAD</b>	Touch the job name or use the Up arrow or the Down arrow to make the selection. Touch the <b>LOAD</b> button
<b>PADLOCK SYMBOL</b>	The padlock symbol shows when a saved job is locked or unlocked. There is a small padlock symbol next to each locked job. To lock or unlock a job  1. select the job from the job list 2. touch the large key symbol.  A padlock symbol displayed in light grey shows that a job has been locked by a supervisor to prevent changes to the settings.
<b>DELETE</b>	To delete a particular job it must be unlocked. Touch the job name or use the Up arrow or Down arrow to make the selection from the job list.  Touch and hold <b>DELETE</b> . A red line appears. The red line fills from left to right. Hold <b>DELETE</b> until the red line reaches the right-hand side.

Button	Information
<b>VIEW OF JOB LIST</b>	<b>VIEW OF JOB LIST</b> changes the order that saved jobs are listed.  There is a line between Factory Template jobs and jobs saved by the operator. The Factory Template jobs are at the top of the list
<b>- A-&gt;Z</b>	Touch <b>A-&gt;Z</b> to list the jobs in alphabetical order.
<b>- BY USE</b>	Touch <b>BY USE</b> to list jobs in the order they were last used. The most recently-run job is at the top of the list.
<b>- BY INDEX</b>	Touch <b>BY INDEX</b> to list jobs in numerical order. the machine gives a number to all jobs that are saved.


## The ADVANCED Window

The **ADVANCED** ➤ window gives you access to special machine functions.

### The ADVANCED Window Buttons

Button	Information
<b>RE-REF</b>	<p>If the machine calibration appears incorrect or if an 'axis moving' error message remains on the screen, touch <b>RE-REF</b> to re-reference the adjustment axes. The adjustment axes return to the current settings.</p> <p>At intervals, the machine will re-reference the axes during the set-up procedure.</p>
<b>STITCHER UP</b>	<p>Touch <b>STITCHER UP</b> before you lubricate the stitch head. This action moves the stitch head to the correct position for lubrication.</p>
<b>PURGE SET</b>	<p>If the print job has been cancelled, a set or part of a set can remain in the gathering area. Touch <b>START</b> , then touch <b>PURGE SET</b> to clear the set from the machine. The book is not stitched or trimmed.</p> <p>According to the type of error that occurred, there can be a pause of 7 seconds before the <b>PURGE SET</b> button will operate.</p> <p>For safety reasons, this function is disabled when the gathering area cover is open.</p>
<b>- MAKE BOOK</b>	<p>If there is a set in the gathering area, you can make it into a book.</p> <p>Touch <b>START</b> , then touch <b>MAKE BOOK</b> to clear the set from the machine. The book is stitched and trimmed.</p> <p>According to the type of error that occurred, there can be a pause of 7 seconds before the <b>MAKE BOOK</b> button will operate.</p> <p>For safety reasons, this function is disabled when the gathering area cover is open.</p>

## The CONFIGURE Window


The **CONFIGURE**  window lets you make changes to the configuration of the machine.

Some functions and buttons are only available at certain access levels, see “ACCESS LEVEL” on page 27.

### The CONFIGURE Window Buttons

Button	Information	Operator	Supervisor
○ Hidden      ● Active      ◐ Visible			
<b>MACHINE OPTIONS</b>	Touch <b>MACHINE OPTIONS</b> to view the general machine set-up. Some of the settings can be changed, depending on the current access level.	○	●
- <b>MEASURE-MENT</b>	Select ‘mm’ or ‘inch’ as the unit of measurement. To get best accuracy, use millimetres to measure the set.	○	●
- <b>STITCH SENSOR</b>	There is a sensor that checks for stitches. Touch <b>STITCH SENSOR</b> to turn the stitch sensor on or off. The default setting is ON.	○	●
- <b>PRESET PAPER SIZES</b>	The preset paper sizes can be either ISO A sizes or US paper sizes. To select which preset paper sizes are available, touch the relevant button.	○	●
- <b>SIDE TRIM (P2T)</b>	Touch <b>SIDE TRIM (P2T)</b> to switch off communication to the Side-Trimmer. Only do this if the Side-Trimmer is disconnected.	○	●
- <b>PBS INSTALLED</b>	Touch <b>BOOK STACKER</b> to switch off communication to the Book Stacker. Only do this if the Book Stacker is disconnected.	○	●
<b>SHUTTLE</b>	This button is used by the service engineer.	○	●
<b>FORM SETUP</b>	This button is used by the service engineer.	◐	◐

## The MENU Window

**MENU**  shows the settings that are not changed during day-to-day operation. These settings include

- Change the Access Level
- Change the display language
- Advanced machine settings that are accessed by a person who has the correct access-code.

### The MENU Window Buttons

Button	Information
<b>ACCESS LEVEL</b>	<p>The Touch Screen has five different access levels</p> <ul style="list-style-type: none"> <li>• Operator</li> <li>• Supervisor</li> <li>• Service</li> <li>• Distributor</li> <li>• Factory</li> </ul> <p>Touch <b>ACCESS LEVEL</b> and select the correct level from the list. The last three levels are protected by access codes.</p> <p>To protect the job settings, the supervisor level allows jobs to be locked.</p>
<b>CURRENT LANGUAGE</b>	Touch one of the flags to select the language you need.
<b>AXES</b>	<p>Touch <b>AXES</b> to re-reference individual axes. Supervisor access level is needed for this function.</p> <p>Other functions on this button are used by the service engineer.</p>
<b>BRIDGE</b>	<p>Touch <b>BRIDGE</b> to re-reference the bridge axes. Supervisor access level is needed for this function.</p> <p>Other functions on this button are used by the service engineer.</p>
<b>SERVICE OPTIONS</b>	This button is used by the service engineer.
<b>TEST</b>	This button is used by the service engineer.
<b>COUNTERS</b>	<p>The counters display the</p> <ul style="list-style-type: none"> <li>• number of books that have been made</li> <li>• number of sheets that have been processed</li> <li>• number of stitches that have been used</li> </ul>
<b>- RESET</b>	<p>Touch <b>RESET</b> to zero the book, sheet and stitch counter. Use <b>RESET</b> after operator maintenance to the stitch head.</p> <p>Touch and hold <b>RESET</b>. A red line appears. The red line fills from left to right. Hold <b>RESET</b> until the red line reaches the right-hand side.</p>





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## CHAPTER 4 **Standard Tasks**

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### **Introduction**


This chapter describes the standard tasks that are needed in the day-to-day operation of your PowerSquare.

## Load and Save the Job Settings


### Introduction

The current job settings can be saved to the memory and reloaded for use again at a later date. Load the 'Default Job Template' to reset the PowerSquare to normal settings.

### Save a job

1. Touch **LOAD & SAVE**  > **SAVE**.
2. If these options appear, select one.  
**REPLACE** to over-write the previous job with the current job settings.  
**SAVE NEW** to save the current job with a new name.  
**CANCEL** to cancel the job save.
3. Enter the name for the job on the keyboard
4. Touch **OK** or **CLOSE**.

### Load a job

1. Touch **LOAD & SAVE** .
2. Touch the job name or use the Up arrow and the Down arrow to select the job.
3. Touch **LOAD**.
4. Wait until the PowerSquare has made the adjustments.

### Reset the PowerSquare to default settings

1. Touch **LOAD & SAVE** .
2. Select the **Default Job Template** from the list of jobs.
3. Touch **LOAD**.
4. Touch **YES**.

## Adjust the Stitch Pitch

### Introduction

The stitch pitch is the space between the stitches. The machine automatically calculates the stitch pitch according to the size of the paper and the number of stitches. The stitches are inserted symmetrically on the spine of the book.

If a non-standard stitch pitch is needed, use **STITCH PITCH** to make the adjustment.

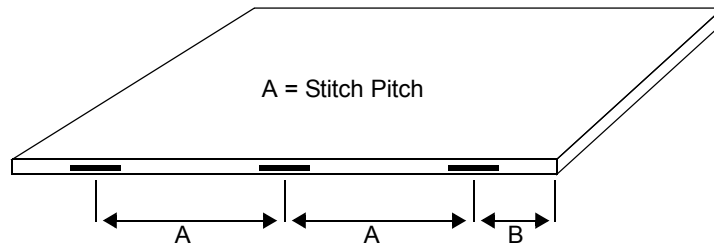


FIGURE 11. Stitch Pitch

### Limitations:

- The minimum stitch pitch 'A' is 25mm.
- The minimum distance from the centre of the stitch to the edge of the sheet 'B' is 15mm.

### When to do

If you need the PowerSquare to insert the stitches in a non-standard position. For example, to keep the stitches away from the text on the spine of the book.

### Select a non-standard stitch pitch

1. Touch **BASIC** > **STITCHES**
2. Touch **AUTO**. The **STITCH PITCH** value goes green.
3. Change the stitch pitch value.  
Either use the '+' and '-' or touch the green stitch pitch value to open a numeric keypad.
4. Touch **STITCHES** to close the window.

The stitch pitch value is displayed in the job mimic and on the **STITCHES** button.

### Select a standard stitch pitch

1. Touch **BASIC** > **STITCHES**
2. Touch **AUTO** to select **ON**.
3. Touch **STITCHES** to close the window.

The stitch pitch value is not displayed in the job mimic or on the **STITCHES** button.

## Adjust the Side-Trim Offset

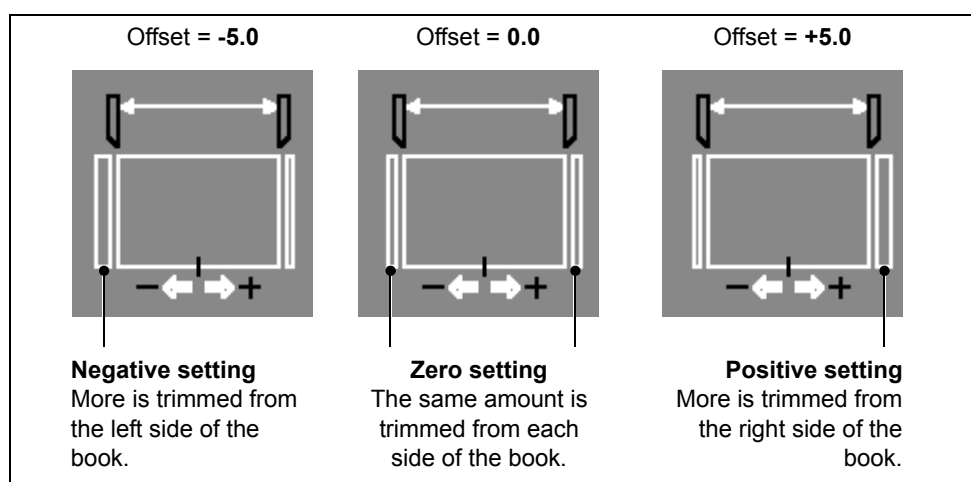
### Introduction

By default, the book is side-trimmed by an equal amount on each side. The side-trim dimension is automatically calculated to trim 2.5mm from each side. For example, if the book is 210mm wide, the default trim is 205mm. This side-trim dimension can be changed. Touch **BASIC > SIDE TRIM** and then touch '+' or '-' to adjust the **TRIM SIZE**.

The side-trim can be offset from the centre line by a maximum of 40mm, dependent on how much is to be trimmed. The machine will not permit a setting that conflicts with the stitch position. Change the stitch pitch if necessary (see "Adjust the Stitch Pitch" on page 31).

Maximum side-trim offset																					
Trim (x2)	0	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40
Max offset	40	38	36	34	32	30	28	26	24	22	20	18	16	14	12	10	8	6	4	2	0

If the **TRIM OFFSET** is changed, the icon changes to show the setting. The icon is the same orientation as the book delivery out of the Side-Trimmer.



### Select a non-standard side-trim offset

1. Touch **BASIC > SIDE TRIM** and then touch '+' or '-' to adjust the **TRIM OFFSET**.
2. Touch **CLOSE** to close the window.

### Select the default side-trim offset

1. Touch **BASIC > SIDE TRIM** and then touch **AUTO**.
2. Touch **CLOSE** to close the window.



## Open and Close the Folder Cover

### When to do

If a machine error occurs, or for maintenance.

- To access the stitch area
- To access the folder area

### Note

The folder cover has an interlock switch. The PowerSquare stops if you open the folder cover.

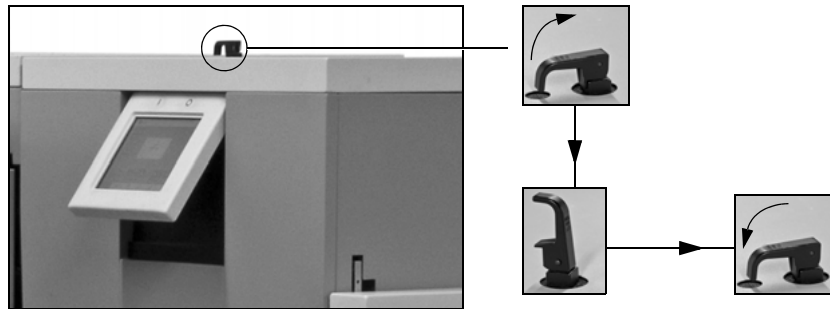


FIGURE 12. Unlock and Lock the Folder Cover

### Open the Folder Cover

1. Lift the black locking handle against the spring pressure.
2. Turn the handle through 90° to unlock.
3. Lift the folder cover carefully to the vertical.

### Close the Folder Cover



**CAUTION:** Check that the folder cover will not hit the clincher frame locking-handle when you close the folder cover. If necessary, lift and rotate the clincher frame locking-handle to a new position (See Figure 14).

1. Lower the folder cover.
2. Turn the handle through 90° to lock.
3. Close the locking handle to lock the folder cover.

## Lift and Lower the Clincher Frame

### When to do

If a machine error occurs, or for maintenance.

- To clear a paper jam in the stitch area
- To unlock the PowerSquare main deck

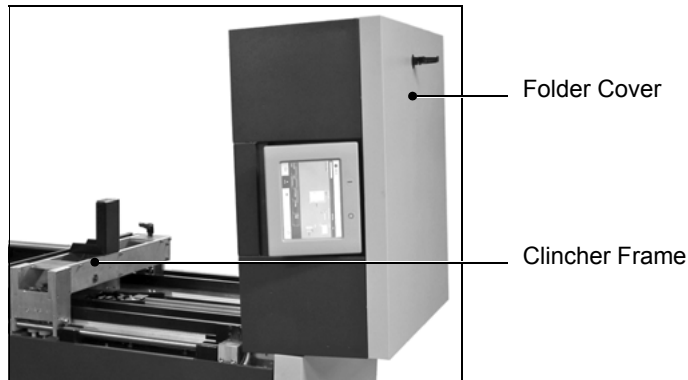


FIGURE 13. Folder Cover in the vertical position.

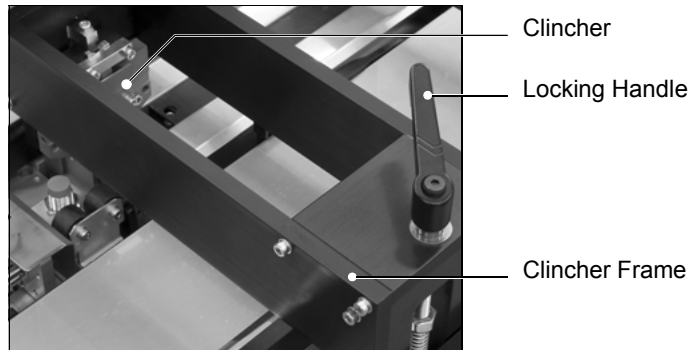


FIGURE 14. Clincher Frame Components

### Lift the Clincher Frame

1. Open the folder cover.
2. Turn the locking handle to the left ↶, until the thread is disengaged.
3. Lift the clincher frame to the vertical position.

### Lower the Clincher Frame

1. Lower the clincher frame.
2. Turn the locking handle to the right ↷, until the handle is tight.
3. Check that the locking handle will not be hit by the folder cover when you close the folder cover. The locking handle should point towards the middle of the machine. If necessary, lift and rotate the locking-handle to a new position.
4. Close the folder cover.

## Lift the PowerSquare Main Deck

### When to do

If a machine error occurs, or for maintenance.

- To access the stitch head
- To access the former area
- To access the trim area



**CAUTION:** *Do not lift the main deck if the error message **FOLD BLADE NOT PARKED** is shown on the screen.*

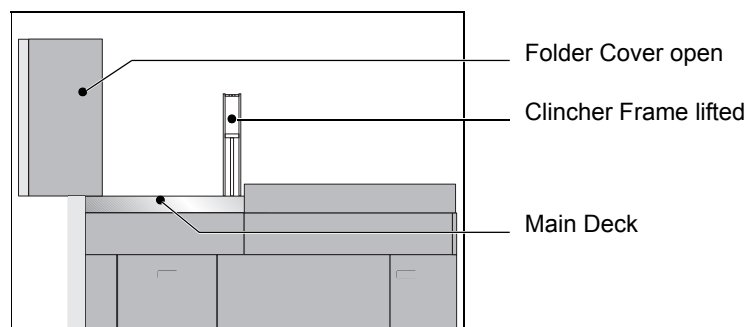


FIGURE 15. Lift the PowerSquare Main Deck

### Before you begin

Check the touch screen for the error message **FOLD BLADE NOT PARKED**.

If the error message is displayed:	<p>Open the folder cover, remove any paper, close the folder cover. Touch <b>START</b>, then follow the instructions on the screen.</p> <p>Wait for the message to clear. Then continue with the procedure below.</p>
If the error message is not displayed:	Continue with the procedure below.

### Procedure

Step	Action	Information
1	Open the folder cover.	See "Open and Close the Folder Cover" on page 33.

<b>Step</b>	<b>Action</b>	<b>Information</b>
2	Lift the clincher frame.	See “Lift the Clincher Frame” on page 34.
3	Lift the PowerSquare main deck.	The main deck lifts to approximately 60°. The weight of the main deck is supported by a gas strut. Let the gas strut control the movement of the main deck.



## Empty the Trim Bin

### When to do

- An error message **CHECK THE TRIM BIN** is displayed on the touch screen when the trim bin is full.
- You can empty the trim bin when you choose. For example, before you start a new job.

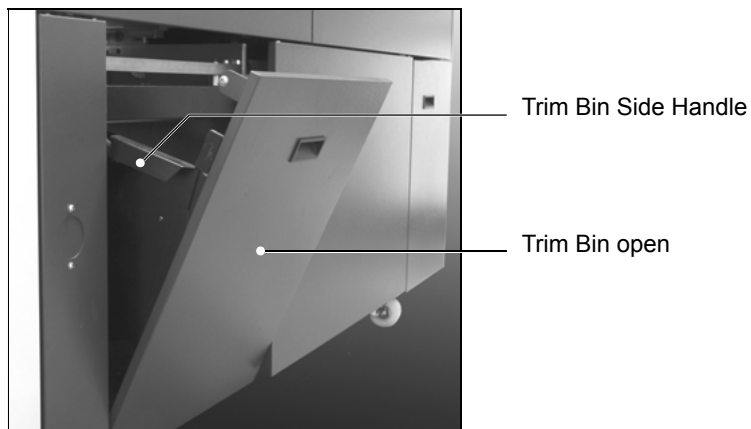


FIGURE 16. Trim Bin Open

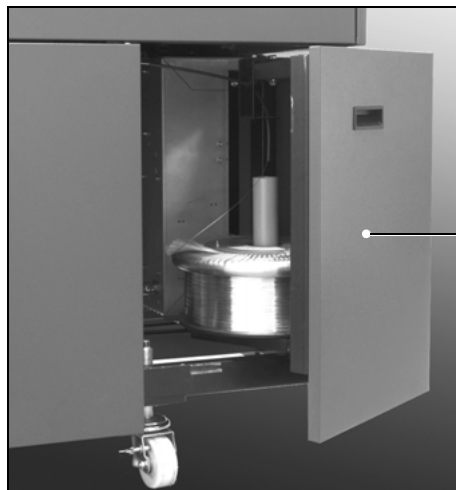
### Procedure

1. Use the handle to open the trim bin.
2. Use the side handles to lift and remove the trim bin.
3. Empty the trim bin
4. Fit the bottom of the trim bin over the mounting rail.
5. Push the trim bin closed at the top.

## Open the Stitch-Wire Cabinet

### When to do

- To see if the stitch-wire is jammed or finished. An error message is displayed on the touch screen when the stitch-wire is jammed or finished.
- To install a new stitch-wire spool. See “Install New Stitch-wire” on page 108.



Stitch-wire Cabinet open

FIGURE 17. Stitch-wire Cabinet

### Procedure

1. Open the stitch-wire cabinet cover. The cover is held closed by a magnetic catch.

## Adjust the Stacker

The stacker must be adjusted according to book thickness and book size.

### When to do

- When you start a new job
- If the books do not stack correctly

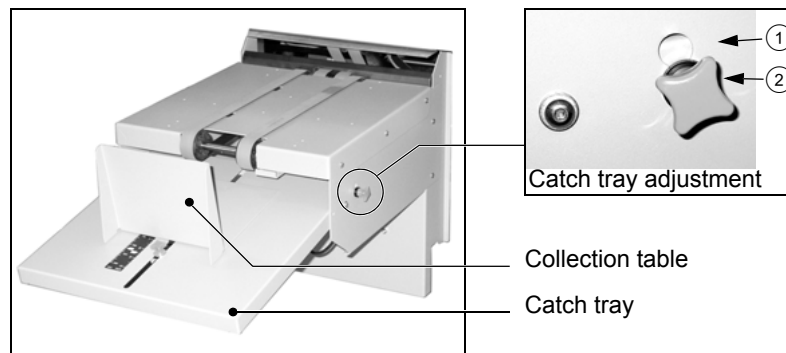


FIGURE 18. The stacker

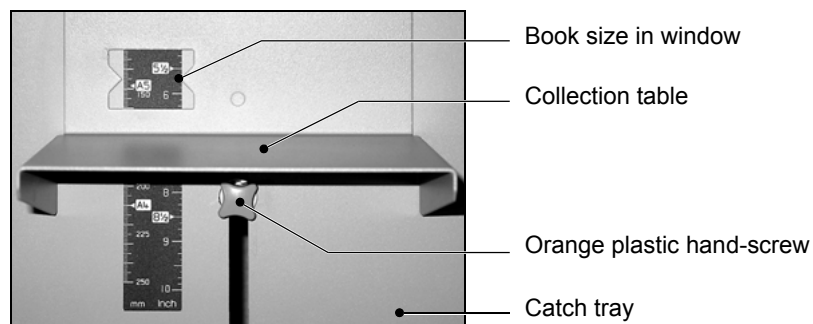


FIGURE 19. Collection table position

### Procedure

Step	Action	Information
1	Set the catch tray angle according to the thickness of the book.	For books that are 1.5mm thick or less, use position 1. For books that are more than 1.5mm thick, use position 2. (See Figure 18)
2	Set the collection table position according to the size of the book.	Read the setting through the window. (See Figure 19)

These settings are recommendations. The settings can change with the size, thickness and material of book. Make further adjustment if necessary.

## Adjust the Book Stacker

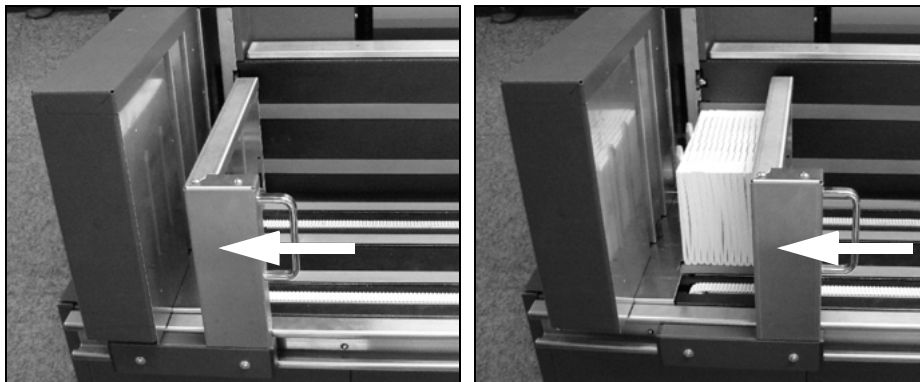
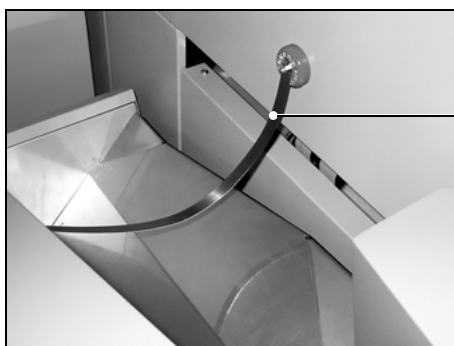


FIGURE 20. The Book Stacker - push the book support to the left



Magnetic paper guide

FIGURE 21. The magnetic paper guide for thin books

### Procedure

1. Before you use the Book Stacker, make sure the book support is pushed completely to the left. There is no need to empty the Book Stacker until the stacker is full.
2. If you are making thin books, attach the magnetic paper guide above the book outfeed on the PowerSquare. Insert the loose end of the magnetic paper guide into the slot opposite (See Figure 21).

## Unload the Book Stacker

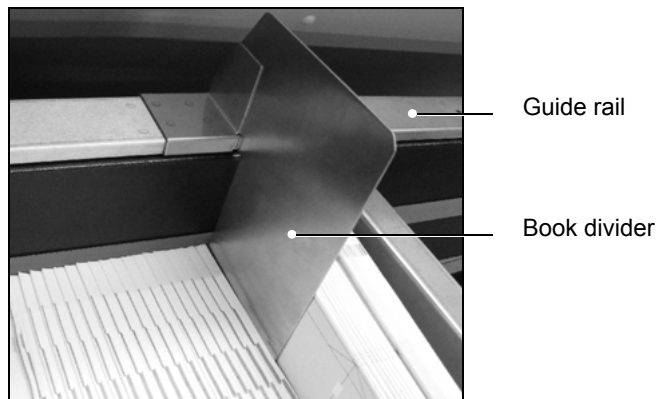


FIGURE 22. The book divider

### Procedure

1. If required, insert the book divider so that the stack does not slip while you unload the books.
2. Remove the books.
3. Push the book support completely to the left (See Figure 20).
4. Remove the book divider until it is needed. Store the book divider on the right-hand end of the guide rail of the stacker.

## Move the Book Stacker

The Book Stacker locks in position onto the PowerSquare. If a Side-Trimmer is fitted, the Book Stacker locks onto the Side-Trimmer. The docking latch is released by a foot pedal.

### When to do

- to access the mains ON/OFF switch
- to replace the mains input fuses
- to access the Side-Trimmer

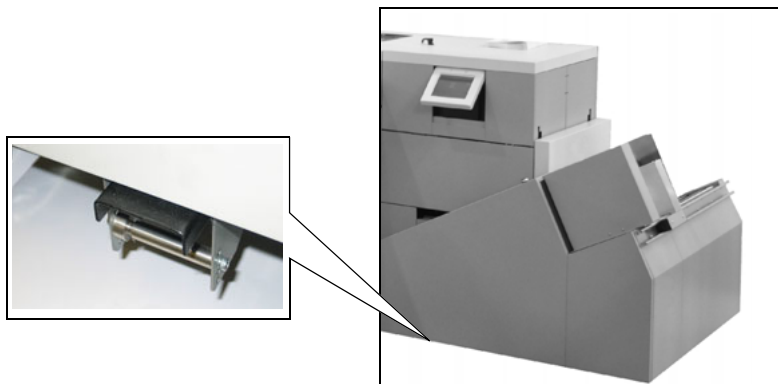


FIGURE 23. The Book Stacker docking latch

### Procedure

1. Use your foot to release the docking latch.
2. Rotate the Book Stacker away from the PowerSquare as far as the safety chain allows.

**Note:** *The safety chain prevents damage to the power and communication cables.*

3. When needed, rotate the Book Stacker back to the docked position, the latch will click closed.

## Empty the Side-Trim Bin

### When to do

- An error message **CHECK THE SIDE TRIM BIN** is displayed on the touch screen when the trim bin is full.
- You can empty the side-trim bin when you choose. For example, before you start a new job.

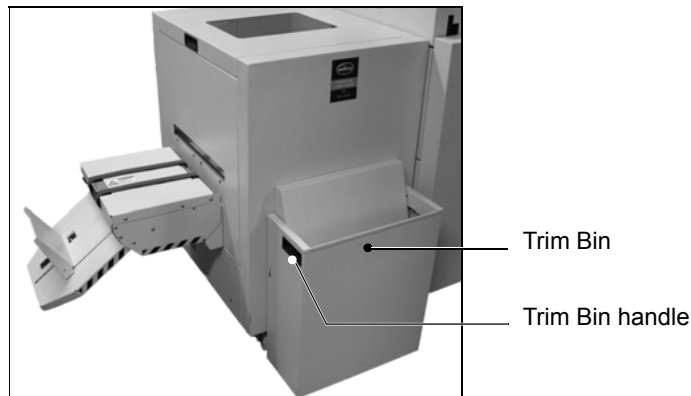


FIGURE 24. Side-Trim Bin

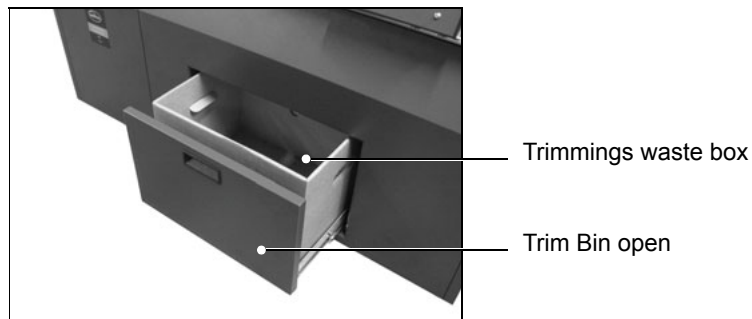


FIGURE 25. Side-Trim Bin with optional Book Stacker

### Procedure

(See Figure 24)

1. Use the handles to move the side-trim bin away from the machine.
2. Empty the side-trim bin.
3. Return the side-trim bin under the chute. Check the bin is positioned close to the machine. Magnets hold the bin in position.

### Procedure - with the optional Book Stacker

(See Figure 25)

1. Open the side-trim bin waste drawer.
2. Remove the trimmings waste box.
3. Empty the trimmings waste box and replace it in the waste drawer.
4. Close the side-trim bin waste drawer.

## Adjust the Side-Trimmer Stacker

The stacker must be adjusted according to the book size.

### When to do

- When you start a new job.

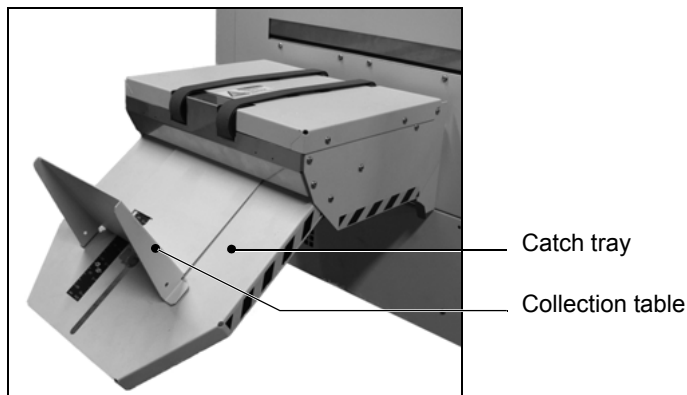


FIGURE 26. The stacker

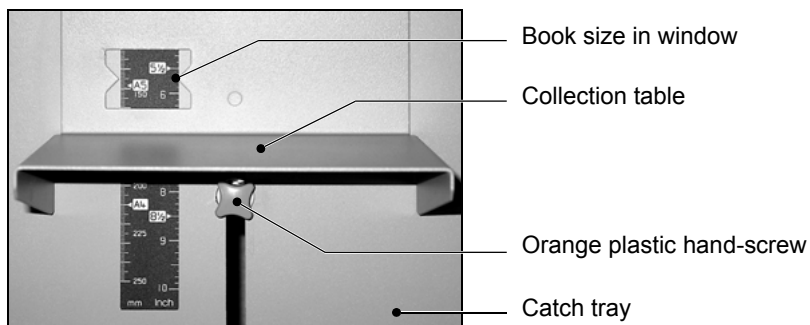


FIGURE 27. Collection table position

### Procedure

Set the collection table position according to the size of the book. Read the setting through the window.



## Raise and Lower the Side-Trimmer Stacker

The stacker can be raised to allow access to other parts of the machine.



**WARNING:** Take care to keep your hands clear of the folding part of the stacker.

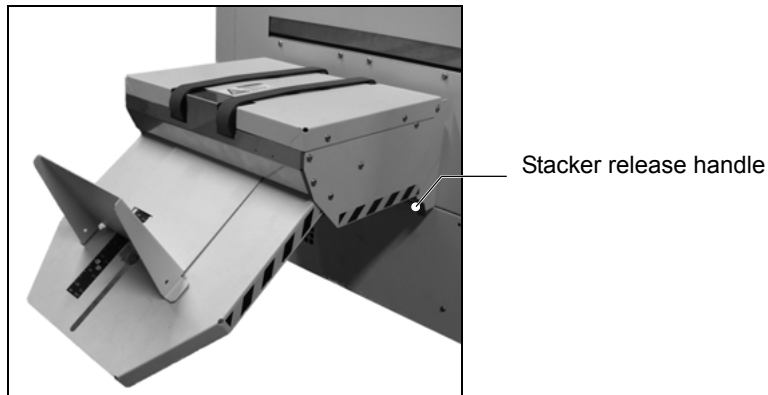


FIGURE 28. The stacker



FIGURE 29. The stacker in raised position

### Procedure - Raise the stacker

1. Press down on the top of the stacker, beside the green belts.
2. At the same time, push down on the stacker release handle.
3. Release pressure from the top of the stacker, the stacker will raise to a folded position.

### Procedure - Lower the stacker

1. Push down on the top of the stacker until it clicks into position.

## Move the Side-Trimmer

The Side-Trimmer locks in position onto the PowerSquare. The docking latch is released by a foot pedal.

### When to do

- to access the mains ON/OFF switch
- to replace the mains input fuses

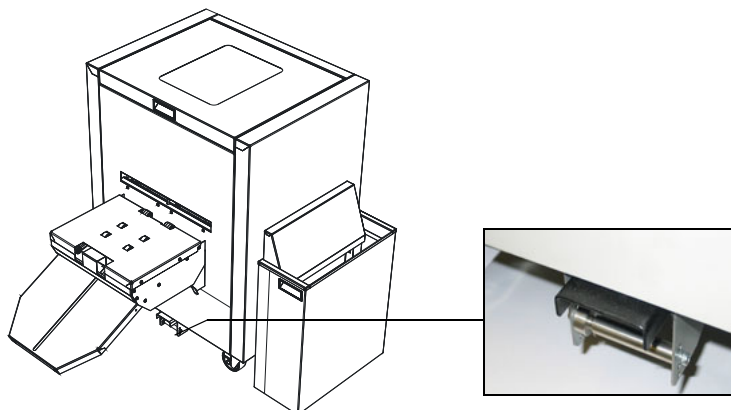


FIGURE 30. The Side-Trimmer docking latch

### Procedure

**Note:** If a Book Stacker is fitted, first move the Book Stacker, then start at step 3. See “Move the Book Stacker” on page 42.

Step	Action	Information
1	Remove the trim bin.	See “The Side-Trimmer” on page 7
2	Raise the Side-Trimmer stacker.	See “Raise and Lower the Side-Trimmer Stacker” on page 45.
3	Use your foot to release the docking latch.	See Figure 30 on page 46.
4	Rotate the Side-Trimmer away from the PowerSquare as far as the safety chain allows.	The safety chain prevents damage to the power and communication cables.

When needed, rotate the Side-Trimmer back to the docked position, the latch will click closed.

## Remove and re-fit the Side-Trimmer Book Supports

There are five removable metal book supports in the side-trimmer. They must be removed when small books are made and re-fitted for normal applications.

### When to do

- Remove the book supports when the side-trim dimension is 190mm or less.
- Ensure the book supports are fitted when the side-trim dimension is over 190mm

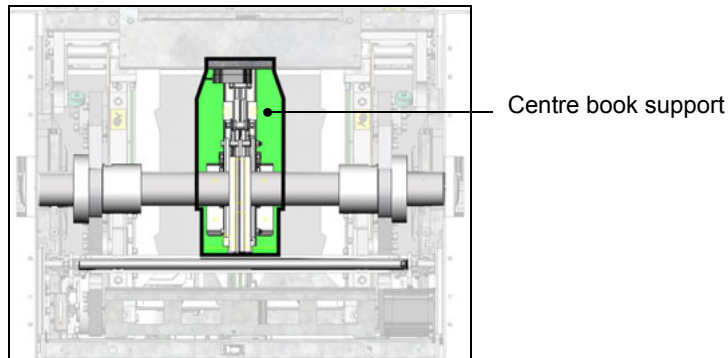


FIGURE 31. Top view of Side-Trimmer - centre book support

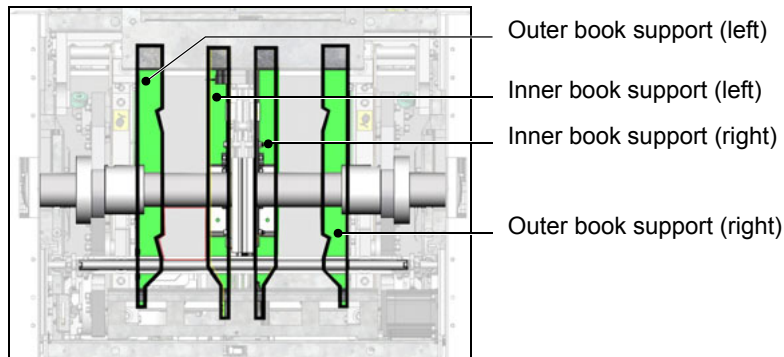


FIGURE 32. Top view of Side-Trimmer - Inner and out book supports (centre book support removed)

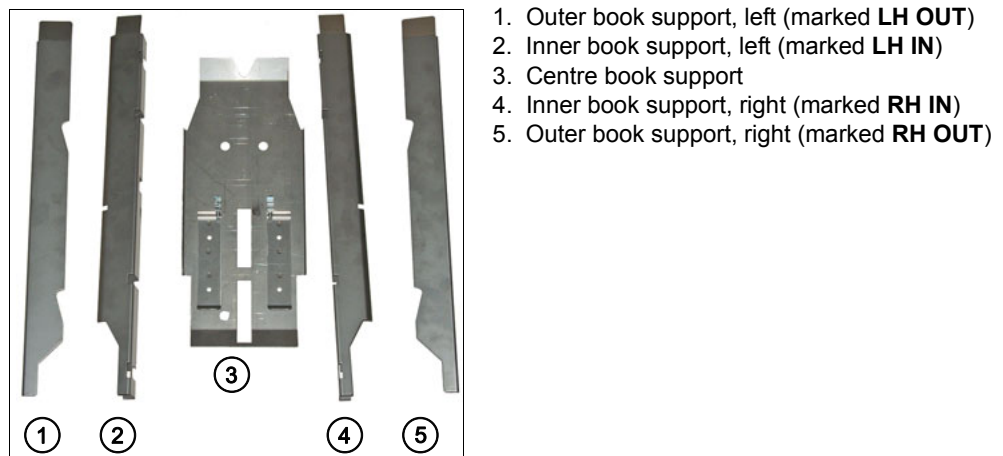


FIGURE 33. Side-Trimmer book supports

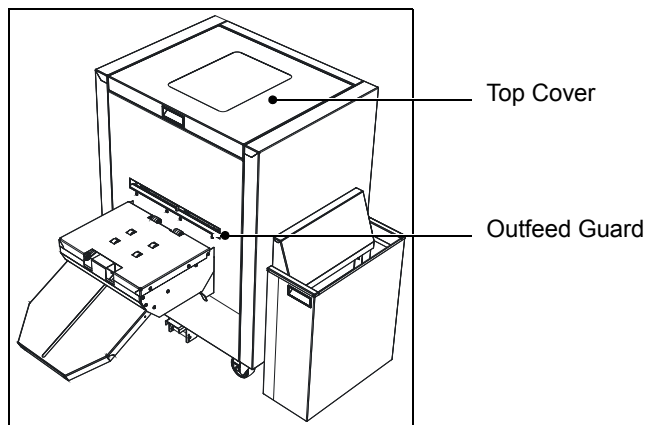


FIGURE 34. The side-trimmer

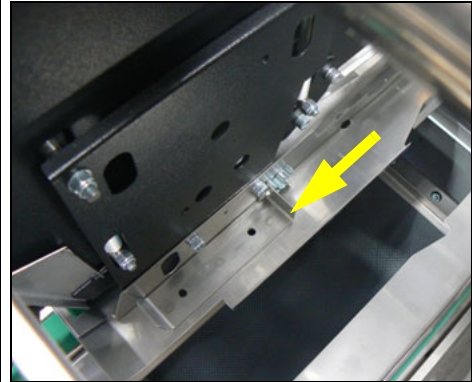
### Procedure - Removal

Step 1 - preparation	
Use <b>PAPER SIZE</b> to set the paper width to 365mm.	See "PAPER SIZE" on page 20.
Then use <b>SIDE TRIM</b> to set the side-trim dimension to 365mm.	See "SIDE TRIM" on page 21.
Open the top cover of the Side-Trimmer.	See Figure 34 on page 48.

### Step 2 - remove the centre book support

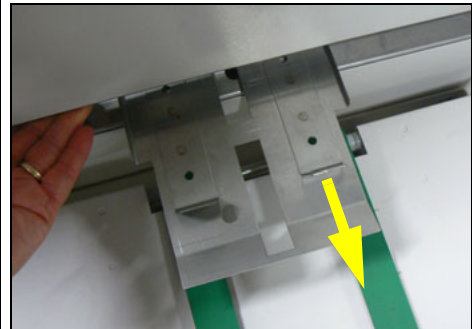
The centre book support is secured with spring clips.

Hold the the centre book support with two hands and pull in the direction shown by the arrow, until it unclips from the fixings.



Hold the outfeed guard open with one hand and remove the centre book support through the opening.

See Figure 34 on page 48.



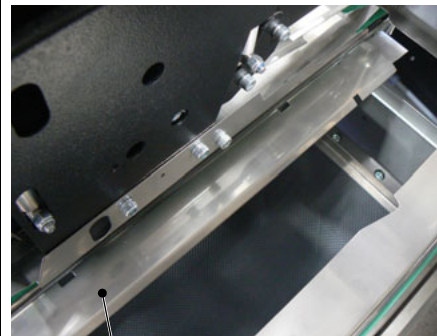
### Step 3 - remove the inner book supports

There are two inner book supports. Remove one at a time.

Hold each end of the inner book support and lift upwards.

Remove the inner book support through the top of the machine.

Repeat with the other inner book support.



Inner book support (right)

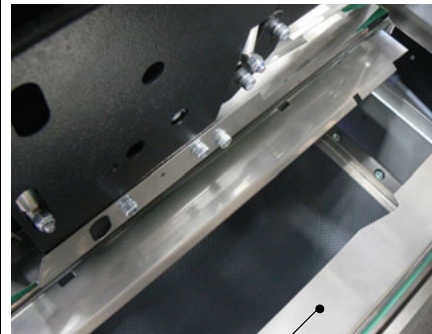
#### Step 4 - remove the outer book supports

There are two outer book supports.  
Remove one at a time.

Hold each end of the outer book support and lift upwards.

Remove the outer book support through the top of the machine.

Repeat with the other outer book support.



Outer book support

### Procedure - Refitting

#### Step 1 - preparation

Use **PAPER SIZE** to set the paper width to 365mm.

Then use **SIDE TRIM** to set the side-trim dimension to 365mm.

See "PAPER SIZE" on page 20.

See "SIDE TRIM" on page 21.

Open the top cover of the Side-Trimmer.

See Figure 34 on page 48.

#### Step 2 - fit the inner and outer book supports

There are two outer book supports and two inner book supports.  
Re-fit one at a time.

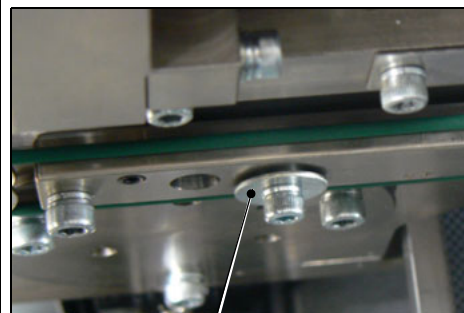
Refer to the illustrations on page 47.

On each book support, there are semi-circular cut outs at each end.

Position the cut-outs over the fixing points.

Press down on the book support so that it fits onto the fixing points.

Repeat with the other book supports.



Fixing



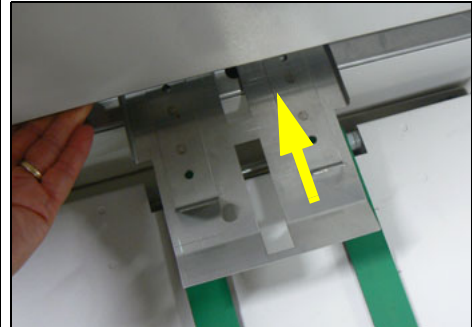
Cut-out

### Step 3 - fit the centre book support

Hold the outfeed guard open with one hand and slide the centre book support in through the opening.

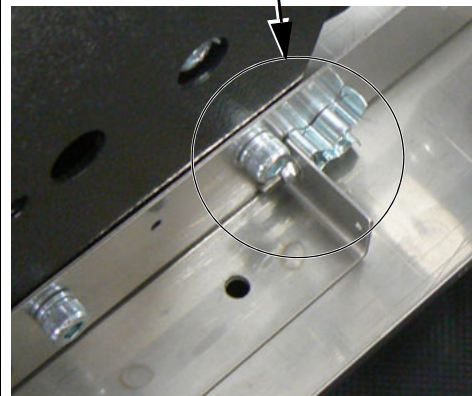
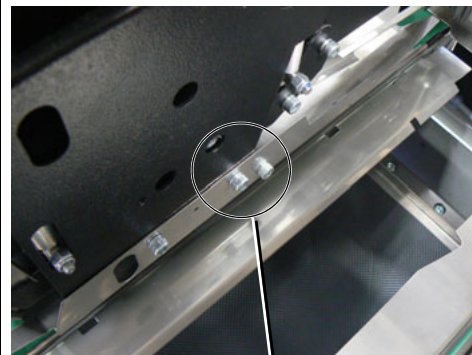
Keep the book support central.

See Figure 34 on page 48



The centre book support is secured with spring clips.

Hold the the centre book support with two hands. Lift and slide forwards until it clips onto the fixings.







# **Error Conditions, Problems and Solutions**

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This chapter describes how to correct problems that can occur on your PowerSquare. If a problem continues, contact your Watkiss service engineer.

## **PowerSquare Error**

If a paper jam or other error occurs in the PowerSquare, the PowerSquare stops. The type of PowerSquare error is displayed on the touch screen. See “Message List” on page 69.



### **Procedure**

1. Clear the PowerSquare error. The error message on the touch screen tells you about the error.
2. Remove all sheets from the PowerSquare.

## **Light Guard Interruption**

A light guard protects the gathering area while the shuttle moves. If you put your hands, or the next book, into the gathering area while the shuttle moves, the light guard stops the machine. The error message ‘**SHUTTLE MOTOR ERROR**’ is displayed in the message list.

### **Procedure**

1. Press STOP .
2. Open the folder cover and remove the book.
3. Close the folder cover.
4. Press START .
5. Continue operation.

## General Problems

### The PowerSquare does not start

Is the touch screen illuminated?

**No    Yes**

| Are error messages displayed on the touch screen?

**No    Yes**

| See "Message List" on page 69

| Turn OFF and turn ON the PSQ.

| If the problem continues, then call your service engineer.

Is the touch screen in power-save mode?

See "Power save" on page 16. Touch the screen to restore the normal brightness.

**No    Yes**

| Go back to the start of this fault-finding table.

Is the mains-power ON/OFF switch illuminated?

**No    Yes**

| Call your service engineer.

Is the PowerSquare turned ON and connected to the mains power supply of the correct type and voltage?

**No    Yes**

| Replace the fuse at the mains input. See "Change the Fuses - PowerSquare" on page 90

| If the problem continues, then call your service engineer.

Connect the PowerSquare to the mains supply of the correct type and voltage and then turn the machine ON.

### The touch screen does not work

Is the touch screen in power-save mode?

See "Power save" on page 16. Touch the screen to restore the normal brightness.

**No    Yes**

| No further action is needed.

Calibrate the touch screen.

See "Calibrate the Touch Screen" on page 90.

## Book Quality Problems

### Paper Size and Book Quality Instructions

- Careful measurement of the paper size and set thickness is important.
- To make an accurate book you must enter accurate paper dimensions into the touch screen.
- To get best accuracy, use millimetres to measure the set. See page 11.
- Measure the size of the printed paper. The paper dimension changes when the paper is printed.
- If the book is made from several different types of paper, make sure the different paper types are all the same size. If the size of the paper is different, an accurate book cannot be made.
- The paper must be cut accurately. If the sheets are not cut squarely, an accurate book cannot be made.
- Adjustments to the **FORM** settings can be necessary for some types of paper.

### Machine Adjustments

Machine adjustments can be made while the machine is in operation.

The **PAPER SIZE** adjustment is limited to a maximum of +/- 1mm when the machine is in operation.

**Untidy book problem**

- The finished book is not tidy
- The sheets are not aligned
- The book is not folded squarely.

Are the covers of the books and the insides of the books made from the same paper-weight and paper-type?

**Yes No**

Accurately measure the different papers. Are the different types of paper exactly the same size?

**Yes No**

You must use paper that is the same size.

Is the paper within specification?

See "Specifications" on page 113.

**Yes No**

Do not use paper that is outside the specification.

Have you accurately measured the paper-size after printing?

**Yes No**

Measure the printed paper accurately.  
Accurate measurement will improve book quality.

Have you entered the measured **PAPER SIZE** into the touch screen?

**Yes No**

Enter the correct, measured **PAPER SIZE** into the touch screen.

Have you accurately measured the set thickness?

**Yes No**

Measure the set thickness and enter the correct **SET THICKNESS** into the touch screen.

Have you entered the measured set thickness into the touch screen?

**Yes No**

Enter the correct **SET THICKNESS** into the touch screen.

Touch **ADVANCED > RE-REF > RE-REF** to re-reference the machine.

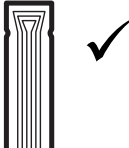
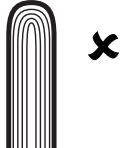
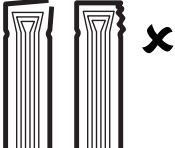
Does the problem continue?

**Yes No**

Further action is not needed.

Call your service engineer

## Spine form problems

Correct spine-form	Incorrect spine-form. The square spine is part formed or not formed.	Incorrect spine-form. The spine is over-formed and the book is damaged.
		

Is the spine-form different at each end of the spine?

**Yes No**

The spine is incorrect along the full length. Is the folder cover closed fully?

**Yes No**

Lock the folder cover. See “Close the Folder Cover” on page 33.

Is the **SET THICKNESS** correct?

**Yes No**

Measure the **SET THICKNESS** and enter the value in the touch screen. Does the problem continue?

**Yes No**

Further action is not needed.

Check the **THRESHOLD** setting. If the **SET THICKNESS** is less than the **THRESHOLD**, a square spine is not formed. See “THRESHOLD” on page 21. Adjust **THRESHOLD** if needed. Does the problem continue?

**Yes No**

Further action is not needed.

Adjust the **PRESSURE** setting. Increase the **PRESSURE** to give more spine-form and decrease the **PRESSURE** to give less spine-form.

Does the problem continue?

**Yes No**

Further action is not needed.

Adjust the **NUMBER** of forms setting. Increase the **NUMBER** of forms to give more spine-form and decrease the **NUMBER** of forms to give less spine-form. Does the problem continue?

**Yes No**

Further action is not needed.

Load a Default Job. This will reset the **FORM** settings, including **PRESSURE**, **NUMBER** and **THRESHOLD**. See “Reset the PowerSquare to default settings” on page 30.

Does the problem continue?

**Yes No**

(A)

(B)

(C)

- A** Further action is not needed.  
Run a standard job using 80gsm/20# bond paper.  
Does the problem continue?  
**Yes No**  
The problem is caused by the cover material or the finish on the cover. Change the cover material.  
Re-reference the machine.  
Touch **ADVANCED > RE-REF > RE-REF** to re-reference the machine.  
Does the problem continue?  
**Yes No**  
Further action is not needed.  
Call your service engineer.

## Stitching problems - the book is not stitched

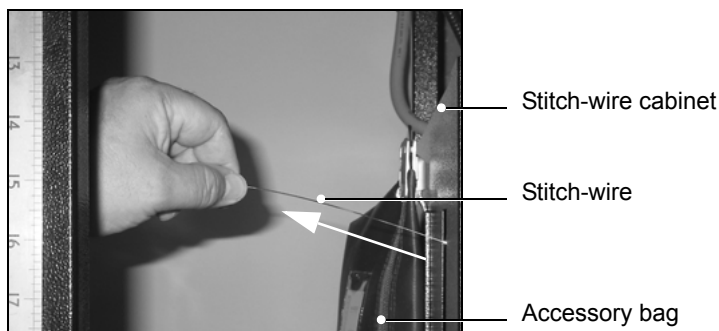


FIGURE 35. Pulling stitch-wire

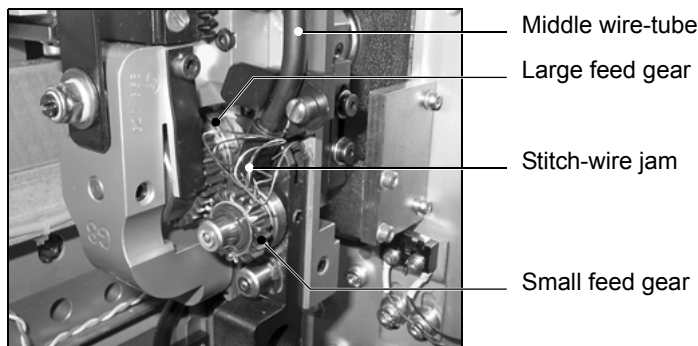


FIGURE 36. Stitch-wire jam

Is the number of **STITCHES** set between 1 and 6?

**Yes No**

| Select **STITCHES** 1 - 6. See "STITCHES" on page 20.

Check the stitch-wire spool. Is there stitch-wire present?

**Yes No**

| Load a new stitch-wire spool. See "Install New Stitch-wire" on page 108.

Open the PSQ main deck. See "Lift the PowerSquare Main Deck" on page 35.

Pull approximately 100-150mm of stitch-wire from the stitch wire spool. See Figure 35 on p.58.

Does the wire move freely?

**Yes No**

| Open the stitch-wire cabinet.

| Discard any tangled wire and reload the stitch-wire spool. See "Install New Stitch-wire" on page 108.

Check the stitch head for stitch-wire jams. See Figure 36 on p.58.

Is the stitch head clear of stitch-wire jams?

**Yes No**

| Clear the stitch-wire jam. See "Clear a Stitch-wire Jam" on page 85.

Lubricate the stitch head. See "Lubricate the Stitch Head" on page 103.


Does the problem continue?

**Yes No**

| Further action is not needed.

Call your service engineer

## Stitching problems - the book is badly stitched

A correctly formed stitch: 

- has equal leg length
- has straight legs
- the distance between the ends of the stitch legs is approximately 1mm, the distance can vary by +/- 0.5mm
- has a flat crown

Is the stitch formed correctly?

**Yes No**

Call your service engineer

The stitches should be aligned centrally on the spine.

Are the stitches positioned correctly?

**Yes No**

Are the covers of the books and the insides of the books made from the same paper-weight and paper-type?

**Yes No**

Accurately measure the different papers. Are the different types of paper exactly the same size?

**Yes No**

You must use paper that is the same size.

Is the paper within specification?

See "Specifications" on page 113.

**Yes No**

Do not use paper that is outside the specification.

Have you accurately measured the paper-size after printing?

**Yes No**

Measure the printed paper accurately.  
Accurate measurement will improve book quality.

Have you entered the measured **PAPER SIZE** into the touch screen?

**Yes No**

Enter the correct, measured **PAPER SIZE** into the touch screen.

Touch **ADVANCED > RE-REF > RE-REF** to re-reference the machine.

Does the problem continue?

**Yes No**

Further action is not needed.

Call your service engineer

Further action is not needed.



## Trimming problems

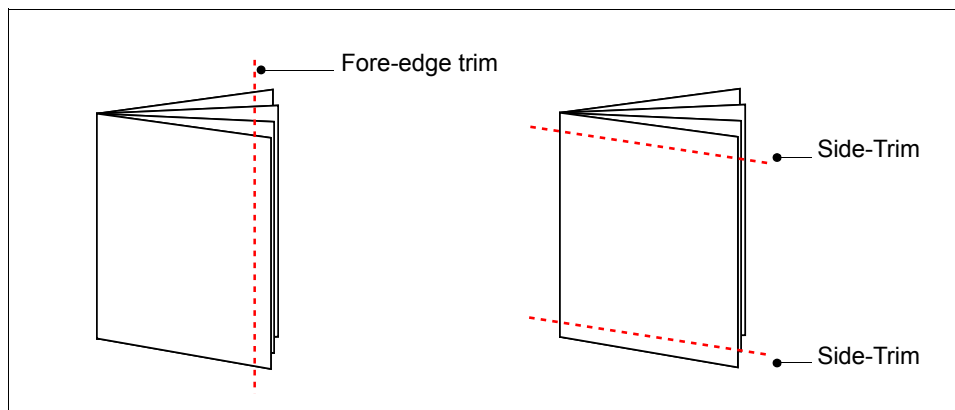


FIGURE 37. Fore-edge trimming and side-trimming

Trimming problems can affect the fore-edge trim or the side-trim. Make sure you follow the correct fault-finding routine.

### Fore-edge Trimming problem - the book is not trimmed

Is the **TRIM** option turned off?

**No Yes**

Turn on the **TRIM** option.

Is **AUTO** turned off in the **TRIM** window?

**No Yes**

Set **TRIM** to **AUTO**.

Does the problem continue?

**Yes No**

Further action is not needed.

If you need to use a custom trim size, enter the trim dimension in the **TRIM** window. Make sure the size is not larger than the book size, or the book will not be trimmed.

Touch **ADVANCED > RE-REF > RE-REF** to re-reference the machine.

Does the problem continue?

**Yes No**

Further action is not needed.

Call your service engineer.

### Fore-edge Trimming problem - the book is not trimmed to the correct size

Is **TRIM** turned on?

**Yes No**

| Turn on the **TRIM**.

Make sure the size is not larger than the book size, or the book will not be trimmed.

Is the correct trim size entered in the touch screen?

**Yes No**

| Enter the correct size in the touch screen.

Re-reference the machine.

Touch **ADVANCED > RE-REF > RE-REF** to re-reference the machine.

Does the problem continue?

**Yes No**

| Further action is not needed.

Call your service engineer

### Fore-edge Trimming problem - the book is not trimmed square

Open the trim stop guard and check for paper trimmings. See "Clear paper from the trim stop" on page 112.

Is the trim stop clear of paper trimmings?

**Yes No**

| Clear paper from the trim stop.

Does the problem continue?

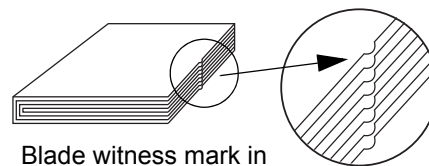
**Yes No**

| No further action is needed.

Call your service engineer

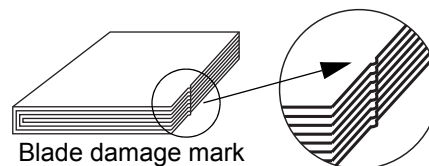
**Fore-edge Trimming problem - poor trim quality**

The trim process uses a double-edge blade to cut thick books. This can leave a small mark in the centre of the trimmed edge. The visibility of this mark will depend on the paper quality and characteristics.



Blade witness mark in the centre of the book

Are there marks on the trimmed edge other than the blade witness mark?



Blade damage mark

**No Yes**

Call your service engineer  
No further action is needed

**Side-Trimming problem - the book is not trimmed**

Check the user interface.

Is the **SIDE TRIM** option turned off?

**No Yes**

Turn on the **SIDE TRIM** option.

Is **AUTO** turned off in the **SIDE TRIM** window?

**No Yes**

Set **SIDE TRIM** to **AUTO**.

Does the problem continue?

**Yes No**

Further action is not needed.

If you need to use a custom trim size, enter the trim dimension in the **SIDE TRIM** window. Make sure the size is at least 2mm less than the book size.

Open and then close the top cover of the side-trimmer. Wait for the side-trimmer to reset. Does the problem continue?

**Yes No**

Further action is not needed.

Turn off the Side-Trimmer at the mains ON/OFF switch. Wait for 5 seconds and then turn on the Side-Trimmer. Does the problem continue?

**Yes No**

Further action is not needed.

Call your service engineer.

### Side-Trimming problem - the book is not trimmed to the correct size

Is **SIDE TRIM** turned on?

**Yes No**

| Turn on the **SIDE TRIM**.

Is the correct trim size entered in the touch screen? Make sure the size is at least 2mm less than the book size.

**Yes No**

| Enter the correct size in the touch screen.

Open and then close the top cover of the side-trimmer. Wait for the side-trimmer to reset. Does the problem continue?

**Yes No**

| Further action is not needed.

Turn off the Side-Trimmer at the mains ON/OFF switch. Wait for 5 seconds and then turn on the Side-Trimmer. Does the problem continue?

**Yes No**

| Further action is not needed.

Call your service engineer.

### Side-Trimming problem - the book is only trimmed on one side

This problem is normally caused by incorrect set-up. If the side-trim offset is slightly too large, only one side is trimmed.

Is **AUTO** turned off in the **SIDE TRIM** window?

**No Yes**

| Set **SIDE TRIM** to **AUTO**.

Does the problem continue?

**Yes No**

| Further action is not needed.

| If you need to use a custom trim size, enter the trim dimension in the **SIDE TRIM** window. Make sure the size is at least 2mm less than the book size.

Open and then close the top cover of the side-trimmer. Wait for the side-trimmer to reset. Does the problem continue?

**Yes No**

| Further action is not needed.

Turn off the Side-Trimmer at the mains ON/OFF switch. Wait for 5 seconds and then turn on the Side-Trimmer. Does the problem continue?

**Yes No**

| Further action is not needed.

Call your service engineer.

### Side-Trimming problem - the book is not trimmed square

Open and then close the top cover of the side-trimmer. Wait for the side-trimmer to reset. Does the problem continue?

**Yes No**

| Further action is not needed.

Open the top cover of the Side-Trimmer. There will be paper trimmings on the large black waste conveyor belt - this is normal. Are there paper trimmings or a book in other places?

**No Yes**

| Clear the paper trimmings or book.

Does the problem continue?

**Yes No**

| No further action is needed.

Is the side-trim dimension more than 190mm?

**No Yes**

| Are the book supports fitted?

**Yes No**

| Fit the book supports. See "Remove and re-fit the Side-Trimmer Book Supports" on page 47.

Does the problem continue?

**Yes No**

| No further action is needed.

Turn off the Side-Trimmer at the mains ON/OFF switch. Wait for 5 seconds and then turn on the Side-Trimmer. Does the problem continue?

**Yes No**

| Further action is not needed.

Call your service engineer.

### Side-Trimming problem - poor trim quality

The book is trimmed to the correct size and offset, but the trim quality is bad.

Note. Certain book thicknesses or material can result in a small witness mark on the bottom corner of the spine, this is normal.

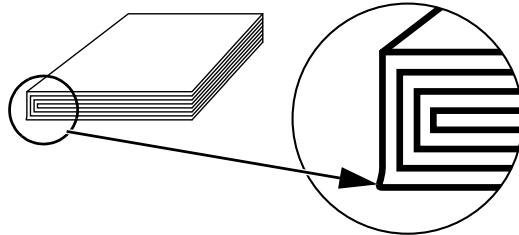


FIGURE 38. Normal side-trim blade witness mark

If the side-trim dimension is over 190mm, check that the book supports are fitted. See “Remove and re-fit the Side-Trimmer Book Supports” on page 47.

Call your service engineer if there are marks on the trimmed edge different to a normal witness mark or if the edge is badly trimmed.

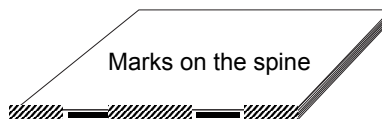
### Side-Trimming problem - cannot enter settings

If the user interface will not accept the required settings, this can be due to the following conditions:

- The **SIDE TRIM** window needs to refresh. Touch **CLOSE** and then re-open the **SIDE TRIM** window.
- The side-trim setting will conflict with the stitch position. Reduce the **STITCH PITCH** to move the stitch position away from the trim edge.
- The side-trim setting is larger than the book size.
- The side-trim offset is too big relative to the book size and/or the amount of trim.

## Dirty marks on book

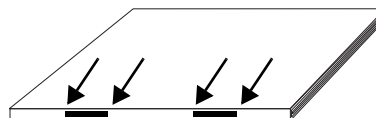
Are there dirty marks on the spine?



**No**   **Yes**

Clean the former roller.  
See "Clean the Former Roller" on page 97.

Are there grease or oil spots on the spine of the book?

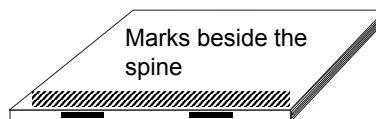


Grease marks near the stitches

**No**   **Yes**

Clean grease from the top of the stitch head.  
See "Clean excess grease from the Stitch Head" on page 102.

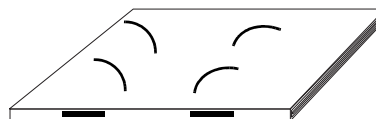
Are there dirty marks on the cover of the book near to the spine?



**No**   **Yes**

Clean the polyurethane form strips.  
See "Clean the Polyurethane Strips in the Form Clamp" on page 98.

Are there curved dirty marks on either the front or rear cover of the book?



Curved marks on the book

**No**   **Yes**

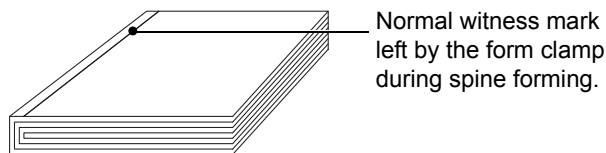
Clean the trimmings removal fingers.  
See "Clean the Trimmings-removal Fingers" on page 100.

Are there dirty marks on the book, that are not described above?

**No**   **Yes**

Call your service engineer.  
No further action is needed.

## Damaged book



Normal witness mark  
left by the form clamp  
during spine forming.

Are there damage marks on the cover of the book near to the spine, from the form clamp, that are worse than the normal witness mark?

**No Yes**

Run a standard job using 80gsm/20# bond paper.  
Does the problem continue?

**Yes No**

The problem is caused by the cover material or the finish.  
Change the cover material.

Call your service engineer.

Is the spine torn or creased?

**No Yes**

The spine is over-formed.  
See "Spine form problems" on page 57.

Is there damage to the spine at the stitch positions or is the cover falling off?

**No Yes**

Run a standard job using 80gsm/20# bond paper.  
Does the problem continue?

**Yes No**

The problem is caused by the cover material or the finish.  
Change the cover material.

Call your service engineer.

Is there damage on the book, that is not described above?

**No Yes**

Call your service engineer.

No further action is needed.




## Message List


Information and error messages are shown in the message list.





The error messages are shown in order of priority. Follow the action needed for the messages, starting with the message at the top of the list.

To display the information about a message:

- Touch **HELP** then touch the message list.
- Use the right-arrow and left-arrow to see the help text for each message.

Message	Information	Reference
AXES MOVING	Some of the machine axes are moving. This message clears when the adjustment is complete.  If the message does not clear, touch <b>ADVANCED &gt; RE-REF</b> .	
BOOK DELIVERY TOO FAST	Books are being delivered to the stacker too fast. This error can happen when you insert books into the stacker by hand. Press the reset button on the stacker. If the problem continues, then call your service engineer.	
CHECK PAPER SIZE	Remember to check the paper size.  To make an accurate book you must enter accurate paper dimensions into the touch screen.  Measure the size of the printed paper. The paper dimension changes when the paper is printed.	
CHECK THE SIDE TRIM BIN	The side-trim bin is either open or full. Check the side-trim bin. Empty the side-trim bin if necessary.	See "Empty the Side-Trim Bin" on page 43.
CHECK THE TRIM BIN	The trim bin is either open or full. Check the trim bin. Empty the trim bin if necessary.	See "Empty the Trim Bin" on page 37.
COVER OPEN	A safety cover is open. The machine will not operate until the cover is closed.	
DRIVE MOTOR STALL	There is a paper jam. Check the machine and correct the error.  Touch <b>STOP</b>  to clear the message from the screen.	See "Paper Jams" on page 79.

Message	Information	Reference
Endlay axis moving	The endlay axis (size adjustment) is moving. This message clears when the adjustment is complete.  If the message does not clear, touch <b>ADVANCED &gt; RE-REF.</b>	
ENDLAY - No comms	Use the mains ON/OFF switch. Turn the machine OFF, then turn the machine ON. If the problem continues, then call your service engineer.	
ERROR IN TRIM AREA	There is an error at the trimmer. Check the trimmer for a paper or book jam.  Touch STOP  to clear the message from the screen.	See "Jam in the Trim Area" on page 82.
ERROR - No Comms	Use the mains ON/OFF switch. Turn the machine OFF, then turn the machine ON. If the problem continues, then call your service engineer.	
FLOW ERROR - FORMER	There is an error at the former. Open the folder cover and remove the book. If necessary, open the main deck to remove the book.	See "Jam in the Folder or Former Area" on page 79.
FLOW ERROR - OUT-FEED	There is an error at the outfeed. Remove the trim bin and open the trim stop guard to remove the book.  If necessary, open the main deck to remove the book.	See "Jam in the Trim Area" on page 82.
FLOW ERROR - STITCHER	There is an error at the stitcher. Open the folder cover and remove the book.  If the problem continues, then call your service engineer.	See "Jam in the Stitch Area" on page 79.
Fold blade axis moving	The fold blade axis (book thickness adjustment) is moving. This message clears when the adjustment is complete.  If the message does not clear, touch <b>ADVANCED &gt; RE-REF.</b>	


Message	Information	Reference
FOLD BLADE NOT PARKED	Open the folder cover, remove the paper, close the folder cover. Touch START  , then follow the instructions on the screen.	
FOLD - No comms	Use the mains ON/OFF switch. Turn the machine OFF, then turn the machine ON. If the problem continues, then call your service engineer.	
FORM CLAMP CLOSED	The form clamp is in the wrong position. Touch START  to reset the position. Follow the instructions on the screen.	
FORM ROLLER ERROR	Open the folder cover, remove the paper, close the folder cover.	See "Jam in the Folder or Former Area" on page 79.
FORM ROLLER NOT PARKED	The form roller is in the wrong position. Touch START  to reset the position. Follow the instructions on the screen.	
FORM CLAMP ERROR	There is an error at the former. Open the folder cover and remove the book. If necessary, open the main deck to remove the book.	See "Jam in the Folder or Former Area" on page 79.
INVERTER ERROR	Check for a paper jam and clear if necessary.  Touch STOP  to clear the message from the screen.  If the problem continues, contact your Watkiss service engineer.	See "Paper Jams" on page 79
JAM AT FORM ROLLER	Open the folder cover, remove the paper, close the folder cover.	See "Jam in the Folder or Former Area" on page 79.

Message	Information	Reference
JAM AT SIDE TRIM INFEED	<p>Open and then close the top cover of the side-trimmer.</p> <p>Then, if necessary, open the top cover of the side-trimmer and check for paper trimmings or obstructions. Close the top cover of the side-trimmer.</p> <p>If the message still does not clear, use the side-trimmer mains ON/OFF switch. Turn the side-trimmer OFF, wait at least 5 seconds and then turn the side-trimmer ON.</p> <p>If the problem continues, then call your service engineer.</p>	
JAM AT SIDE TRIM OUTFEED	<p>Open and then close the top cover of the side-trimmer.</p> <p>Then, if necessary, open the top cover of the side-trimmer and check for paper trimmings or obstructions. Close the top cover of the side-trimmer.</p> <p>If the message still does not clear, use the side-trimmer mains ON/OFF switch. Turn the side-trimmer OFF, wait at least 5 seconds and then turn the side-trimmer ON.</p> <p>If the problem continues, then call your service engineer.</p>	
JAM AT STACKER INFEED	There is a jam in the stacker infeed. Remove the books from the stacker infeed. Press the reset button on the stacker.	See "Jam at stacker infeed (Book Stacker)" on page 83.
JAM AT STACKER OUTFEED	There is a jam in the stacker outfeed or there are paper-trimmings in the stacker outfeed. Remove the books from the stacker outfeed. Check for paper-trimmings and remove them if present. Press the reset button on the stacker.	See "Jam at stacker outfeed (Book Stacker)" on page 84.
JAM BEFORE TRIMMER	There is a book jammed before the trimmer. Open the main deck to remove the book.	See "Jam before the Trimmer" on page 80.



Message	Information	Reference
JAM IN SIDE TRIM	<p>Open and then close the top cover of the side-trimmer.</p> <p>Then, if necessary, open the top cover of the side-trimmer and check for paper trimmings or obstructions. Close the top cover of the side-trimmer.</p> <p>If the message still does not clear, use the side-trimmer mains ON/OFF switch. Turn the side-trimmer OFF, wait at least 5 seconds and then turn the side-trimmer ON.</p> <p>If the problem continues, then call your service engineer.</p>	
JAM IN STACKER AREA	There is a paper jam at the outfeed of the machine. Remove the jammed books and continue.	
JAM IN STITCHER AREA	There is a paper jam in the stitch area. Open the folder cover, remove the paper jam and continue.	See "Jam in the Stitch Area" on page 79.
JAM IN STITCH HEAD	There is a jam in the stitch head.	See "Clear a Stitch Head Jam" on page 87.
JAM IN TRIMMER	There is a book jammed in the trimmer. Clear the jam and continue.	See "Jam in the Trim Area" on page 82.
MAIN CONTROL - No comms	Use the mains ON/OFF switch. Turn the machine OFF, then turn the machine ON. If the problem continues, then call your service engineer.	
MANUALLY PARK SHUTTLE	<p>The shuttle is not parked correctly. Open the folder cover and move the shuttle to the park position. Close the folder cover. The shuttle will reset. When the message list is clear, continue operation.</p>	See "Manually park the Shuttle" on page 92.
MISSING STITCHES	<p>The machine has detected missed stitches.</p> <p>Check if the stitch-wire is jammed or if the stitch-wire spool is empty.</p>	See "Clear a Stitch-wire Jam" on page 85 or see "Install New Stitch-wire" on page 108.


Message	Information	Reference
MOTOR CONTROLLER NOT READY	The drive motor controller is not ready. If the problem continues, contact your service engineer.	
OPERATOR MAINTENANCE	The machine needs routine maintenance by the operator.	See "Operator Maintenance" on page 95.
REBOOT THE MACHINE	Use the mains ON/OFF switch. Turn the machine OFF, then turn the machine ON. If the problem continues, then call your service engineer.	
REMOVE SET FROM FOLD AREA	Open the folder cover and remove the set.	See "Jam in the Folder or Former Area" on page 79.
REMOVE SET - STITCH AREA	Open the folder cover and remove the set.	See "Jam in the Stitch Area" on page 79.
SHUTTLE MOTOR ERROR	The light guard in the gathering area has been interrupted. Touch STOP. Open the folder cover and remove the paper. Close the folder cover and touch START to continue operation.	See "Light Guard Interruption" on page 53
SHUTTLE MOTOR COMMS FAIL	Use the mains ON/OFF switch. Turn the machine OFF, then turn the machine ON. If the problem continues, then call your service engineer.	
Sidelay axis moving	The sidelay axis (size adjustment) is adjusting. This message clears when the adjustment is complete.  If the message does not clear, touch <b>ADVANCED &gt; RE-REF.</b>	
SIDELAY - No comms	Use the mains ON/OFF switch. Turn the machine OFF, then turn the machine ON. If the problem continues, then call your service engineer.	

Message	Information	Reference
Side trim axis moving	<p>The side-trim axis is moving. This message clears when the adjustment is complete. If the message does not clear:</p> <p>Open and then close the top cover of the side-trimmer.</p> <p>Then, if necessary, open the top cover of the side-trimmer and check for paper trimmings or obstructions. Close the top cover of the side-trimmer.</p> <p>If the message still does not clear, use the side-trimmer mains ON/OFF switch. Turn the side-trimmer OFF, wait at least 5 seconds and then turn the side-trimmer ON.</p> <p>If the problem continues, then call your service engineer.</p>	
SIDE TRIM COVER OPEN	<p>The top cover of the side-trimmer is open.</p> <p>Close the top cover of the side-trimmer.</p> <p>If the message does not clear, open and then close the top cover of the side-trimmer.</p> <p>If the message still does not clear, use the side-trimmer mains ON/OFF switch. Turn the side-trimmer OFF, wait at least 5 seconds and then turn the side-trimmer ON.</p> <p>If the problem continues, then call your service engineer.</p>	
SIDE TRIM - no comms	<p>Check that the mains power input cable and the communications cable are connected.</p> <p>Use the side-trimmer mains ON/OFF switch. Turn the side-trimmer OFF, wait at least 5 seconds and then turn the side-trimmer ON.</p> <p>If the problem continues, then call your service engineer.</p>	See "The Side-Trimmer" on page 7.
STACKER FULL	<p>The stacker is full. Unload the books from the stacker.</p>	

Message	Information	Reference
STACKER - No comms	<p>Check that the stacker power input is connected.</p> <p>Check that the stacker mains ON/OFF switch is ON. If the problem continues, then call your service engineer.</p>	
Stitch axis moving	<p>The stitch axis is moving. This message clears when the adjustment is complete.</p> <p>If the message does not clear, touch <b>ADVANCED &gt; RE-REF</b>.</p>	
Stitch length will change soon	<p>The stitch length cannot adjust at the moment. The stitch leg length will adjust after the next book.</p>	
STITCH - No comms	<p>Use the mains ON/OFF switch. Turn the machine OFF, then turn the machine ON. If the problem continues, then call your service engineer.</p>	
Stitch position adjusting	<p>The stitch position is adjusting. This message clears when the adjustment is complete.</p> <p>If the message does not clear, touch <b>ADVANCED &gt; RE-REF</b>.</p>	
STITCH TIMEOUT	<p>Press STOP . Open the folder cover, remove the paper, close the folder cover.</p>	
SYSTEM ERROR 00.20 40.21 40.22	<p>Touch STOP to clear the message from the screen. If the message does not clear, use the mains ON/OFF switch. Turn the machine OFF, then turn the machine ON. If the problem continues, then call your service engineer.</p>	
SYSTEM ERROR 39.xx	<p>Press the reset button on the stacker. If the message does not clear, use the stacker mains ON/OFF switch. Turn the stacker OFF, then turn the stacker ON. If the problem continues, then call your service engineer.</p>	



Message	Information	Reference
SYSTEM ERROR 41.39	If the side-trimmer setting is 190mm or less, check that the book supports are removed. Otherwise, follow the instructions below for other 41.xx system errors.	See "Remove and re-fit the Side-Trimmer Book Supports" on page 47.
SYSTEM ERROR 41.xx	<p>Open the top cover of the side-trimmer and check for paper trimmings or obstructions. Close the top cover of the side-trimmer.</p> <p>If the message still does not clear, use the side-trimmer mains ON/OFF switch. Turn the side-trimmer OFF, wait at least 5 seconds and then turn the side-trimmer ON.</p> <p>If the problem continues, then call your service engineer.</p>	
TOUCH PAD ERROR	There is a fault with the START and STOP touch pads. If the problem continues, then call your Watkiss service engineer.	
Touch START to clear machine	There may be some paper in the machine. Touch START  to clear the machine before you start a new job.	
Trim axis moving	<p>The trim axis (size adjustment) is moving. This message clears when the adjustment is complete.</p> <p>If the message does not clear, touch <b>ADVANCED &gt; RE-REF.</b></p>	
TRIM BIN OPEN	The trim bin is not fitted or is not contacting the safety switch. Fit the trim bin.	See "Empty the Trim Bin" on page 37.
TRIM BLADE NOT PARKED	<p>The trim blade is in the wrong position. Touch START  to reset the position.</p> <p>Follow the instructions on the screen.</p>	

<b>Message</b>	<b>Information</b>	<b>Reference</b>
TRIM - No comms	Use the mains ON/OFF switch. Turn the machine OFF, then turn the machine ON. If the problem continues, then call your service engineer.	
USER STOP	The user has touched the STOP button while the machine is in operation. Touch START  to restart the machine.	

## Paper Jams

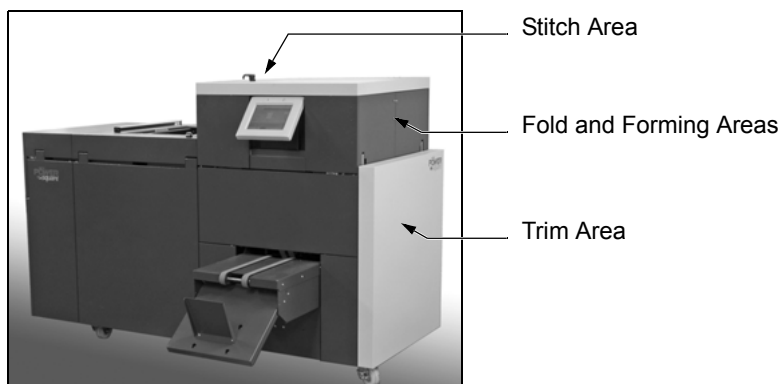
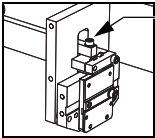


FIGURE 39. Paper Jam Locations

### Jam in the Stitch Area

Step	Action	Information
1	Open the folder cover.	See "Open and Close the Folder Cover" on page 33.
2	Lift the clincher frame.	See "Lift and Lower the Clincher Frame" on page 34.
3	Remove the jammed paper.	
4	Check for broken or damaged stitches in the clincher area. Manually operate the clincher to clear any stitches that are jammed.	 Press to manually operate the clincher.
5	Lower the clincher frame.	See "Lift and Lower the Clincher Frame" on page 34.
6	Close the folder cover.	

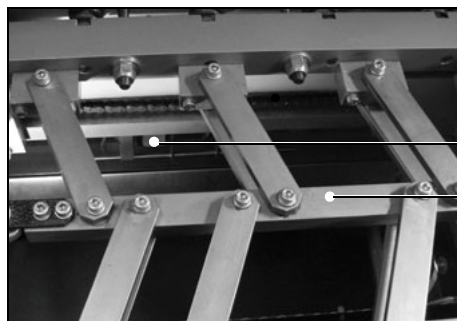
### Jam in the Folder or Former Area

1. Open the folder cover.
2. Remove the jammed paper.  
If you cannot see the paper in the former area, see "Jam in the Trim Area" on page 82.
3. Close the folder cover.

### Jam before the Trimmer

The error message **JAM BEFORE TRIMMER** is displayed. This error can be

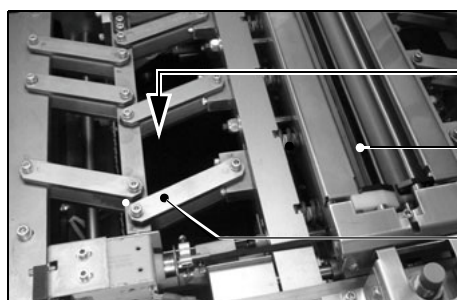
- a book jammed before the trimmer
- a piece of paper trimming has covered the jam sensor



Trimmer Infeed Conveyor

Former-clamp mechanism

FIGURE 40. Trimmer Infeed Conveyor viewed from above



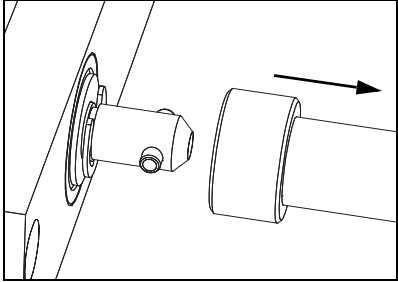
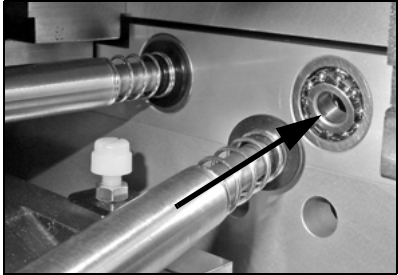
Reach in here to access the trim-infeed conveyor

Former clamp - look in here for paper trimmings

Former clamp mechanism.

FIGURE 41. Access to the Trimmer Infeed Conveyor

Step	Action	Information
1	Open the PowerSquare main deck.	See "Lift the PowerSquare Main Deck" on page 35
2	Remove the trim bin.	

Step	Action	Information
3	Loosen the trimmer infeed conveyor.	<p>The procedure can be seen from the top of the machine. See Figure 40.</p> <p>Access to the parts is through the former clamp mechanism. See Figure 41.</p> <p>Hold the shaft and push to the right, against spring pressure to disengage the shaft from the drive pin.</p>  <p>Lift the left hand end clear.</p>
4	Remove the book, if one is found.	
5	Remove any paper offcuts from the trimmer infeed conveyor.	<p>Look down through the former clamp. See Figure 41.</p> <p>Small pieces of paper trimmings can cover the jam sensor and cause an error message.</p>
6	Fit the trimmer infeed conveyor.	<p>Look down through the former clamp.</p> <ul style="list-style-type: none"> <li>Insert the right hand end of the shaft into the bearing, against the spring pressure.</li> </ul>  <ul style="list-style-type: none"> <li>Rotate the trimmer infeed conveyor, so that the green belts are vertical.</li> <li>Insert the left hand end, so that the shaft engages with the drive pin.</li> </ul>
7	Fit the trim bin.	
8	Close the PowerSquare main deck and covers.	

## Jam in the Trim Area

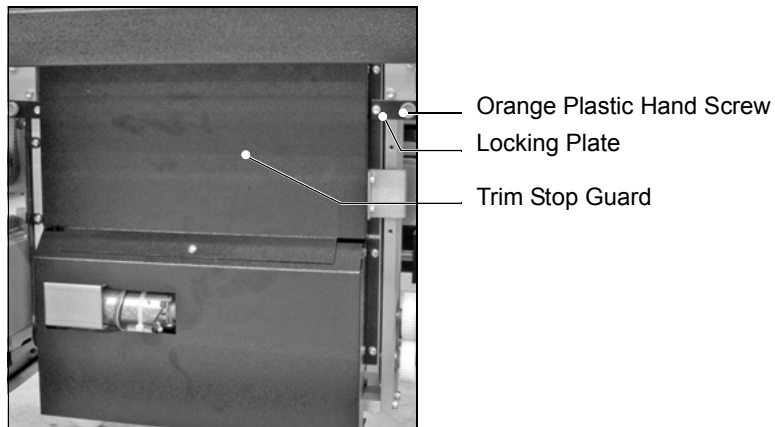


FIGURE 42. Trim Stop Guard

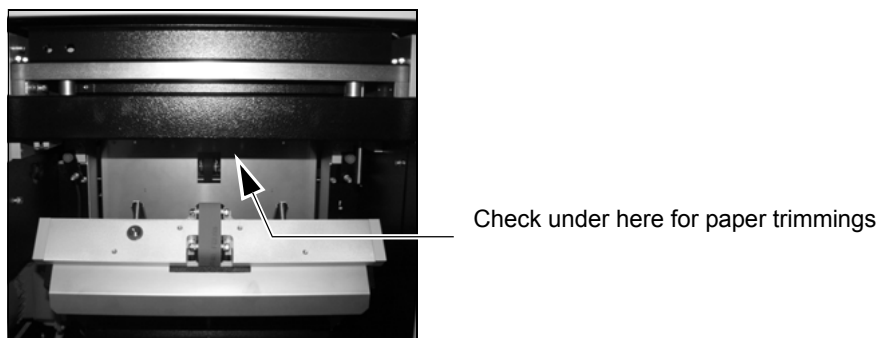


FIGURE 43. Location of the sensor

Step	Action	Information
1	Remove the trim bin.	
2	Open the trim stop guard.	See Figure 42. Loosen the 2 orange plastic hand screws to release the locking plates. The locking plates can rotate to release the trim stop guard. Pull the trim stop guard towards you.
3	Remove the jammed book.	
4	Check the trim stop and remove any pieces of trimmed paper.	In particular, check around the sensor. The sensor is where you can see a red and a green light. See Figure 43. Small pieces of paper trimmings can cover the sensor and cause an error message.

Step	Action	Information
5	Close the trim stop guard.	Push the trim stop guard into position. Hold the locking plates in position and tighten the orange hand screws.
6	Attach the trim bin.	

### Jam at stacker infeed (Book Stacker)

The error message **JAM AT STACKER INFEED** is displayed. This means a book is covering the sensor at the Book Stacker infeed.

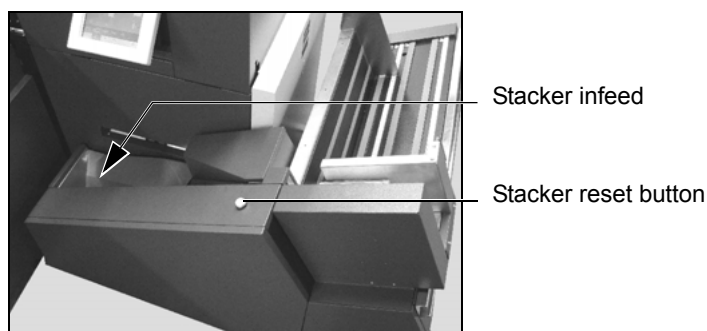


FIGURE 44. Book Stacker infeed

1. Remove the book.
2. If you are making thin books, attach the magnetic paper guide. See “Adjust the Book Stacker” on page 40.
3. Press the reset button on the stacker.

### Jam at stacker outfeed (Book Stacker)

The error message **JAM AT STACKER OUTFEED** is displayed. This means a book or some paper-trimmings are covering the sensor at the Book Stacker outfeed.

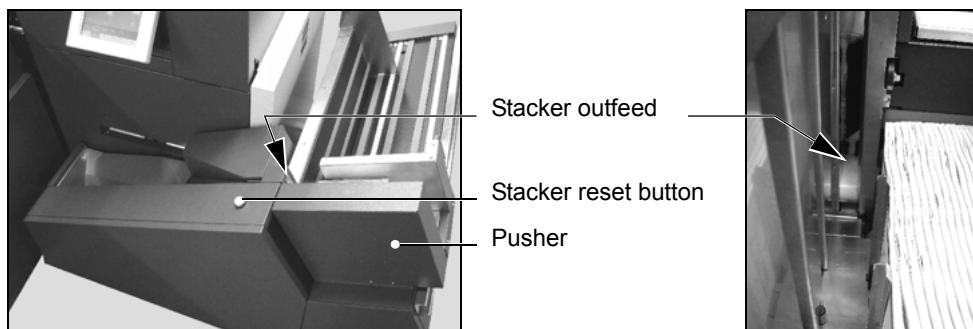


FIGURE 45. Book Stacker outfeed

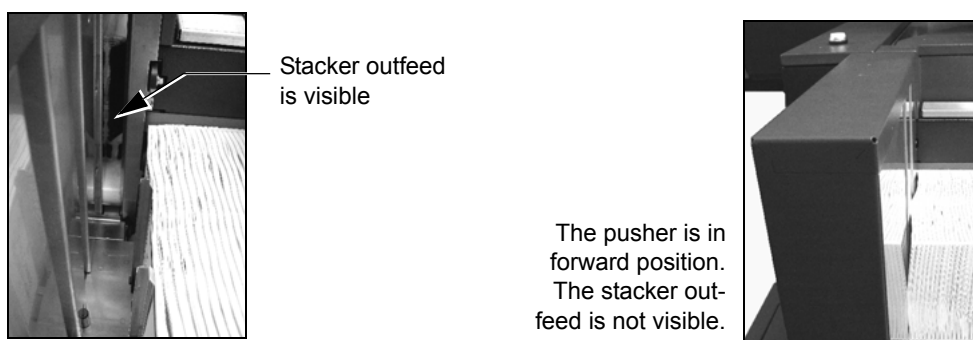


FIGURE 46. Stacker outfeed

If the stacker outfeed is visible:

1. Remove the book, if present.
2. Check for paper-trimmings and remove them, if present.
3. Press the reset button on the stacker.

If the pusher is in the forward position so that the stacker outfeed is not visible:

1. Use your hand to move the pusher to the left, against the spring pressure.
2. Remove the book, if present.
3. Check for paper-trimmings and remove them, if present.
4. Press the reset button on the stacker.



## Clear a Stitch-wire Jam

### Before You Begin

Lift the PowerSquare main deck. See “Lift the PowerSquare Main Deck” on page 25.

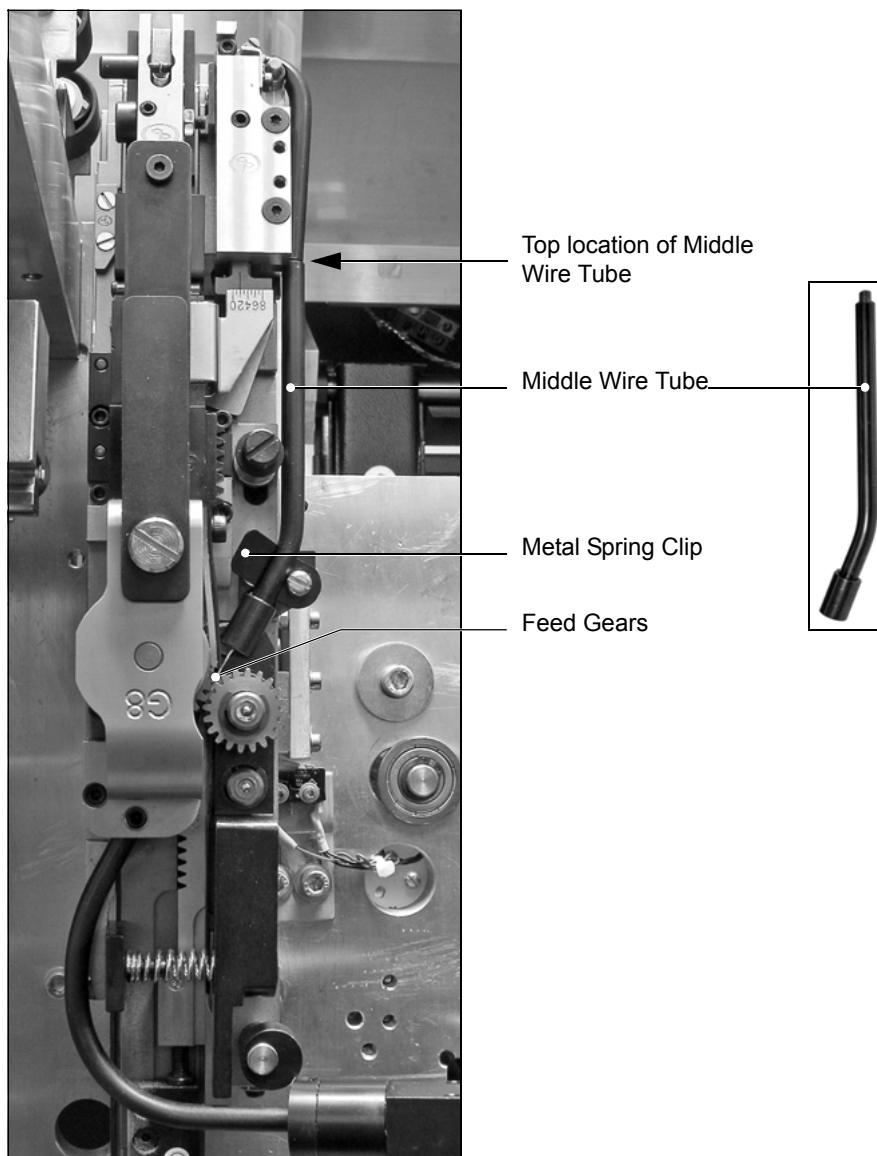
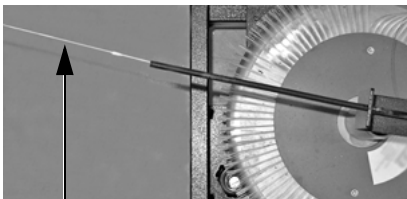

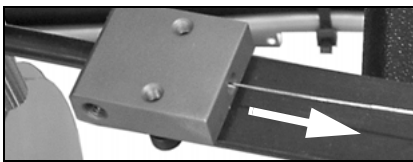


FIGURE 47. Stitch Head

## Clear the Jammed Wire

Step	Action	Information
1	Cut the stitch-wire at position 'A', approximately 50mm (2-inches) from where the stitch-wire leaves the stitch-wire guide.	 <p>'A'. Cut stitch-wire here.</p>
2	Cut the stitch-wire at position 'B', between the feed gears and the middle wire tube.	 <p>'B'. Cut stitch-wire here.</p>
3	Pull the stitch-wire from the stitch-wire guide block.	 <p>Pull stitch-wire in direction of arrow</p>
4	Remove the middle wire tube.	See Figure 47 on page 85.
5	Pull the wire from the stitch head.	
6	Install the stitch-wire into the stitch head.	See "Install the Stitch-wire into the Stitch Head" on page 110.

## Clear a Stitch Head Jam

### When to do

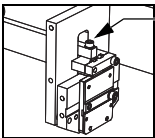

The error message **JAM IN STITCH HEAD** is displayed.

This may be caused by

- the **SET THICKNESS** setting is incorrect
- the stitch head is jammed by broken wire
- the stitch head needs lubrication

Do Procedure 1. If the error message continues, do Procedure 2.

### Procedure 1

Step	Action	Information
1	Open the folder cover.	See "Open and Close the Folder Cover" on page 33.
2	Lift the clincher frame.	See "Lift and Lower the Clincher Frame" on page 34.
3	Remove the jammed paper.	
4	Check for broken or damaged stitches in the clincher area. Manually operate the clincher to clear any stitches that are jammed.	 Press to manually operate the clincher.
5	Lower the clincher frame.	See "Lift and Lower the Clincher Frame" on page 34.
6	Close the folder cover.	
7	Press the START button  . Follow the on-screen instructions.	

## Procedure 2

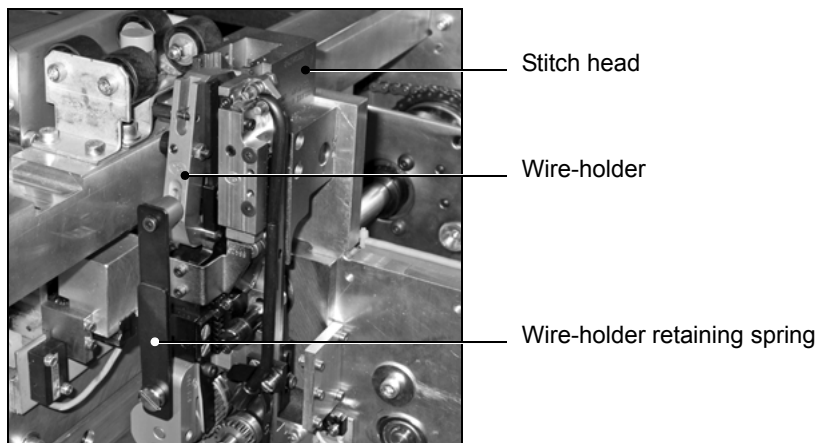


FIGURE 48. Remove the stitch head wire-holder

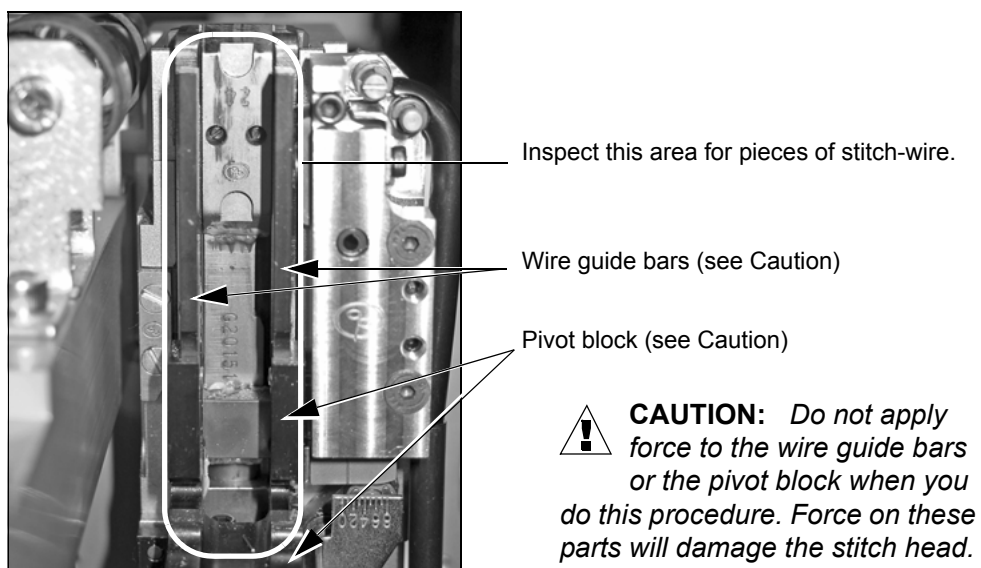
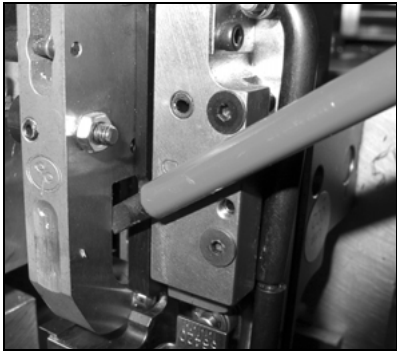


FIGURE 49. Inspect for stitch-wire



### Tools and Materials:

- Klüber Isoflex NBU15 Grease, 50g. Part number 951-095
- Air duster. Supplied with the machine.
- Wire cutters. Supplied with the machine.
- Flat blade screwdriver

Step	Action	Information
1	Lift the PowerSquare main deck.	See "Lift the PowerSquare Main Deck" on page 35.
2	Remove the wire-holder from the stitch head.	<ul style="list-style-type: none"> <li>Move the wire-holder retaining spring to the right. See Figure 48 on page 88.</li> <li>Remove the wire-holder.</li> </ul> <p>If the wire-holder is held in position, use a screw driver to help the removal of the wire-holder from the stitch head.</p> <p><b>CAUTION</b> - Do not apply force to the wire guide bars or the pivot block. See Figure 49.</p> 
3	Inspect the area behind the wire-holder for pieces of stitch-wire.	See Figure 49 on page 88.
4	Remove any stitches or pieces of stitch-wire and clean the area with the air-duster.	Use the wire-cutters to remove any jammed stitches or pieces of stitch-wire.
5	Lubricate the stitch-head.	See "Lubricate the Stitch Head" on page 103.
6	Fit the wire-holder.	Remember to put the wire-holder retaining spring in position.
7	Close the PowerSquare.	
8	Start the PowerSquare.	<p>If the head operates normally and returns to the parked position, then further action is not needed.</p> <p>If the stitch head remains jammed, then repeat the procedure one time.</p> <p>If the problem continues, then contact your Watkiss service engineer.</p>

## Calibrate the Touch Screen


### When to do

Calibrate the touch screen if the buttons do not operate or the buttons do not operate correctly



**CAUTION:** Use a pencil, the blunt end of a pen or a palm top wand for this procedure. Do not use a sharp object. Sharp objects damage the screen.

### Procedure

1. Touch the STOP button  5 times.
2. Follow the instructions on the touch screen.  
You must touch the screen, where shown, as accurately as possible.
3. Touch **DONE** in the centre of the screen.

## Change the Fuses - PowerSquare

### Introduction

The PowerSquare has two fuses at the mains power input. See Figure 5 on page 5.

If either fuse is broken, the PowerSquare will not operate.



**WARNING:** Turn OFF the machine and remove the mains power supply cable before you change the fuses. This machine uses two fuses in parallel.



**WARNING:** To avoid the risk of fire, replace fuses using only the same type and rating.

### Fuse Description

- 7A, HRC Quick acting, F
- Part Number 730-018

### Procedure

1. Turn OFF the PowerSquare.
2. Disconnect the PowerSquare from the mains power supply.
3. Turn one fuse-holder to the left and remove the fuse-holder from the PowerSquare
4. Check the fuse.
5. If the fuse is broken then replace with a fuse of the correct specification.
6. Repeat the procedure for the other fuse.

### Result

If the fuse breaks again, then call your Watkiss service engineer.

## Change the Fuses - Book Stacker

### Introduction

The Book Stacker has two fuses at the power input connector. See Figure 6 on page 6.

If either fuse is broken, the Book Stacker will not operate.



**WARNING:** *Turn OFF the machine and remove the mains power supply cable before you change the fuses. This machine uses two fuses in parallel.*



**WARNING:** *To avoid the risk of fire, replace fuses using only the same type and rating.*

### Fuse Description

- 3A, HRC Quick acting, F
- Part Number 730-017

### Procedure

1. Turn OFF the Book Stacker.
2. Disconnect the Book Stacker from the power supply.
3. Check each fuse.
4. If the fuse is broken then replace with a fuse of the correct specification.

### Result

If the fuse breaks again, then call your Watkiss service engineer.

## Change the Fuses - Side-Trimmer

### Introduction

The Side-Trimmer has two fuses at the power input connector. See Figure 7 on page 7.

If either fuse is broken, the Side-Trimmer will not operate.



**WARNING:** *Turn OFF the machine and remove the mains power supply cable before you change the fuses. This machine uses two fuses in parallel.*



**WARNING:** *To avoid the risk of fire, replace fuses using only the same type and rating.*

### Fuse Description

- 7A, HRC Quick acting, F
- Part Number 730-018

### Procedure

1. Turn OFF the Side-Trimmer.

2. Disconnect the Side-Trimmer from the power supply.
3. Check each fuse.
4. If the fuse is broken then replace with a fuse of the correct specification.

## Result

If the fuse breaks again, then call your Watkiss service engineer.

## Manually park the Shuttle

### When to do

The error messages **MANUALLY PARK SHUTTLE** and **SHUTTLE NOT PARKED** are displayed.

### Illustrations

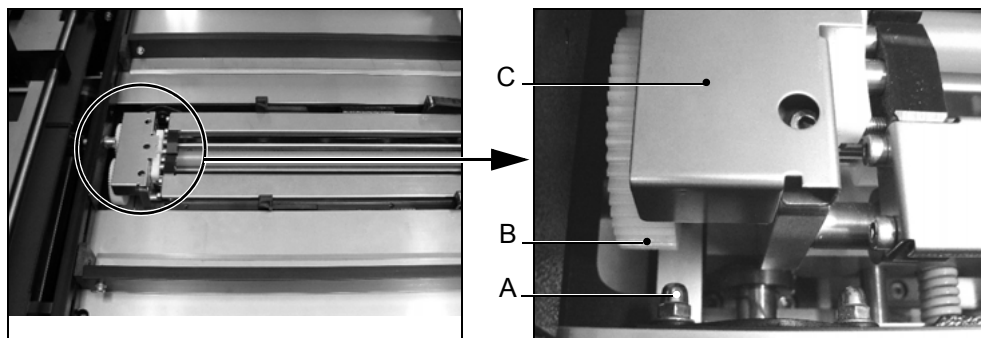


FIGURE 55. Shuttle Assembly Position - CORRECT

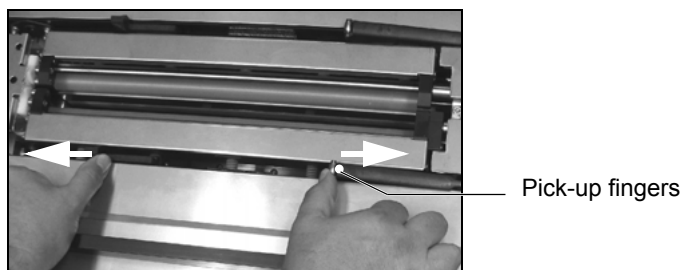


FIGURE 56. Pick-up fingers



## Procedure

Step	Action	Information
1	Open the folder cover.	See "Open and Close the Folder Cover" on page 33.
2	Push the shuttle-assembly to the end.	Figure 50 on page 92 shows the correct position for the shuttle assembly. The screw 'A' must align with the white gear 'B'.  If the shuttle assembly does not move to the correct position, push the pick-up fingers away from each other by 2-3mm and try again. Repeat if necessary.  See Figure 51.
3	Wait until the error message <b>SHUTTLE NOT PARKED</b> is cleared from the screen.	If the message does not clear, check that the shuttle assembly is in the correct position. Repeat Step 2 if necessary.
4	Close the folder cover.	

## Result

The error message **MANUALLY PARK SHUTTLE** is cleared from the screen. The shuttle axis re-references and the message **Shuttle axis moving** is displayed.

When the message list is clear, you can continue operation.



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## CHAPTER 6 **Maintenance**

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### **Service Interval**

- The PowerSquare needs service every four months.
- After every one-million stitches, the stitch head needs service. This interval is every 3rd spool of stitch-wire.

Only a Watkiss service engineer can service the PowerSquare. Contact your supplier for further information.

### **Operator Maintenance**

Correct maintenance by the operator makes sure that

- The machine operates correctly
- The machine makes high quality books
- The machine is safe to use
- Small problems can be identified early

## Operator Maintenance Plan

Interval	Task	Reference
• Every week	Clean the machine.	See page 96.
• When the message <b>OPERATOR MAINTENANCE</b> is displayed on the screen.	Lubricate the stitch head.	See page 103.
	Clean the former roller.	See page 97.
	Clean the polyurethane strips in the form clamp.	See page 98.
	Clean the trimmings-removal fingers.	See page 100.
	Clean excess grease from the stitch head	See page 102.

## Clean the PowerSquare

### Introduction

Clean the PowerSquare every week to remove surface dust.



**CAUTION:** *Only clean the machine with materials that are recommended in this manual. Do not use other chemicals or abrasive material.*

### Outside of the PowerSquare

Use a moist cloth to clean the outside of the PowerSquare.

### Touch screen

Clean the touch screen with a clean, dry cloth. Never use an abrasive material or chemical to clean the touch screen. Light pressure with a clean, dry cloth is enough to remove fingerprints. Do not use too much force.

## Clean the Former Roller

### When to do

- When the message **OPERATOR MAINTENANCE** is displayed on the screen.
- Clean the former roller if the spines of the books are dirty. Ink and toner can collect on the former roller.



FIGURE 52. Dirty marks on the spine

### Materials needed

Clean, plain paper that is not printed. A3 size (USA: 11 x 17") is recommended. 4mm thickness is needed for each cycle. More than one cycle can be needed.

### Procedure

Step	Action	Information
1	Enter the correct settings on the touch screen.	<ul style="list-style-type: none"> <li>• Set the touch screen to the correct <b>PAPER SIZE</b>.</li> <li>• Set the <b>SET THICKNESS</b> to <b>4.0</b>.</li> <li>• Set the number of <b>STITCHES</b> to <b>0</b>.</li> <li>• Set the number of <b>FORMS</b> to <b>4</b>.</li> </ul>
2	Touch START	
3	Put 4mm of clean paper in the gathering area.	
4	Wait while the book is made.	

### Check

The book is delivered to the stacker. Check the book. Repeat the procedure until the book spine is clean.

## Clean the Polyurethane Strips in the Form Clamp

### When to do

- When the message **OPERATOR MAINTENANCE** is displayed on the screen.
- Clean the polyurethane strips in the form clamp if there are dirty marks near the spine on the front and back cover of the book. Ink and toner can collect on these parts, especially when you make thin books.

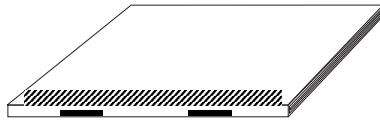


FIGURE 53. Dirty marks beside the spine

### Materials description

- Alcohol wipe,
- or a lint free cloth and alcohol (isopropanol)



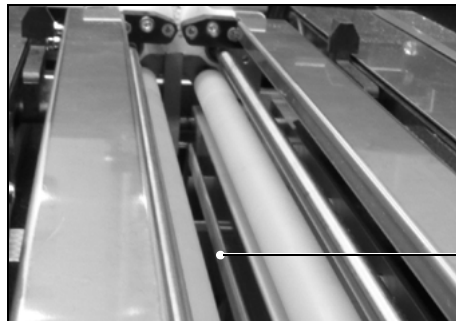
**CAUTION:** *Only use alcohol to clean this part of the machine. Other chemicals can damage the machine.*

**CAUTION:** *Wear protective gloves when you use the alcohol wipe.*

### Note

If you push the eject rollers, the rollers can move together against your hand. This movement can alarm you, but is not dangerous.

### Illustration



Polyurethane Strip

FIGURE 54. Polyurethane strips

**Procedure**

Step	Action	Information
1	Open the folder cover	
2	Use an alcohol wipe, or apply a small amount of alcohol to a lint free cloth.	Wear protective gloves when you use the alcohol wipe.
3	Reach into the form clamp and clean each of the polyurethane strips.	There is a polyurethane strip on the face of each side of the clamp.  Repeat this step until the polyurethane strips are clean.
4	Close the folder cover	

## Clean the Trimmings-removal Fingers

### When to do

- When the message **OPERATOR MAINTENANCE** is displayed on the screen.
- Clean the trimmings-removal fingers if there are small, dirty marks on the book. Ink and toner can collect on the trimmings-removal fingers and cause marks on the book.

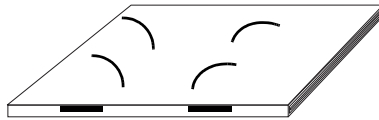


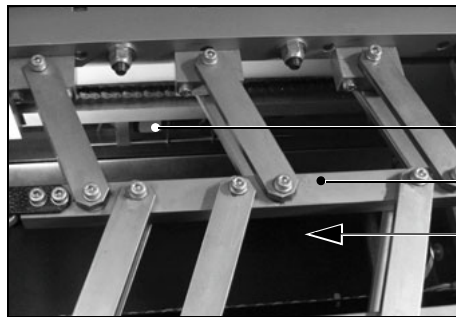
FIGURE 55. Curved marks on the book

### Materials needed

- Alcohol wipe



**CAUTION:** *Wear protective gloves when you use the alcohol wipe.*

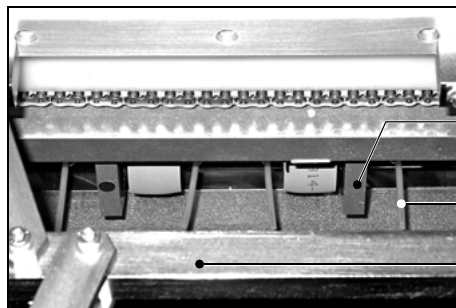


Trimmer infeed conveyor

Former-clamp mechanism

Reach in here to access the trim-  
infeed conveyor

FIGURE 56. Trimmer infeed conveyor viewed from above\_1



Trimmer infeed conveyor

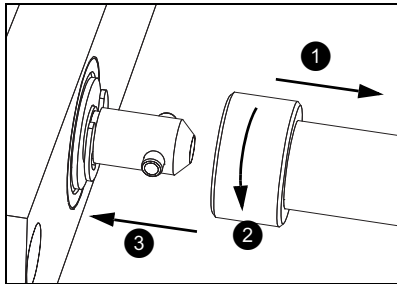
Trimmings-removal fingers

Former-clamp mechanism

FIGURE 57. Trimmer infeed conveyor viewed from above\_2



## Procedure

Step	Action	Information
1	Lift the PowerSquare main deck.	See "Lift the PowerSquare Main Deck" on page 35.
2	Remove the trim bin.	
3	Clean the four visible trimmings-removal fingers with an alcohol wipe.	<p>The procedure can be seen from the top of the machine.</p> <p>Access to the parts is through the former-clamp mechanism. See Figure 56.</p> <p>Wear protective gloves when you use the alcohol wipe.</p>
4	Rotate the conveyor shaft by half a turn.	<p>1. Hold the shaft and push to the right, against spring pressure, to disengage the shaft from the drive pin.</p>  <p>2. Rotate the shaft by half a turn.</p> <p>3. Align the shaft with the drive pin and release.</p>
5	Clean the four visible trimmings-removal fingers with an alcohol wipe.	Wear protective gloves when you use the alcohol wipe.
6	Fit the trim bin.	
7	Close the PowerSquare.	

## Clean excess grease from the Stitch Head

### When to do

- When the message **OPERATOR MAINTENANCE** is displayed on the screen.
- Clean excess grease from the stitch head if there are grease marks around the stitches on the book.

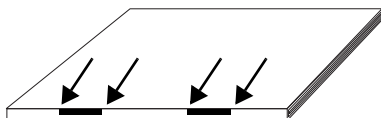
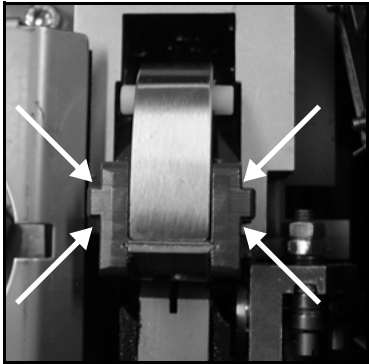


FIGURE 58. Grease marks around the stitches

### Materials needed

- Lint free cloth

### Procedure

Step	Action	Information
1	On the user interface, touch <b>➤ ADVANCED &gt; STITCHER UP &gt; STITCHER UP</b>	The folder cover must be closed. This action moves the stitch head to the correct position for lubrication.
2	Open the folder cover.	See “Open and Close the Folder Cover” on page 33.
3	Lift the clincher frame.	See “Lift and Lower the Clincher Frame” on page 34.
4	Clean grease from the sides of the stitch head.	
5	Lower the clincher frame.	
6	Close the folder cover.	

## Lubricate the Stitch Head

### When to do

- When the message **OPERATOR MAINTENANCE** is displayed on the screen.
- When a new stitch-wire is installed if this interval is shorter.

### Materials needed

- Klüber Isoflex NBU15 Grease, 50g
- Air duster



**CAUTION :** *Only use the grease shown in this manual. Correct lubrication extends the performance and service life of the stitch head. Other types of grease do not protect the stitch head. Only apply the grease as shown. If you apply additional grease, the paper gets marked.*

### Initial Procedure

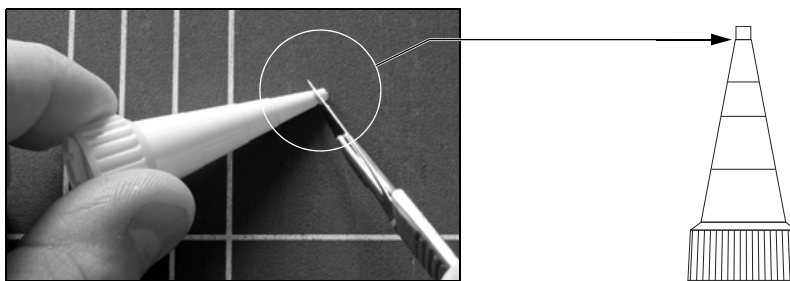
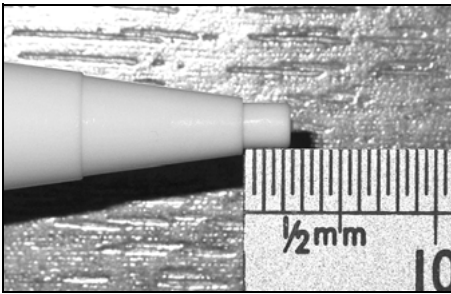
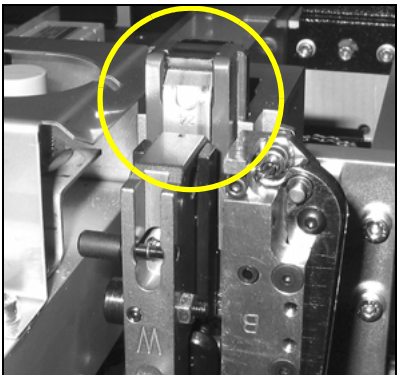

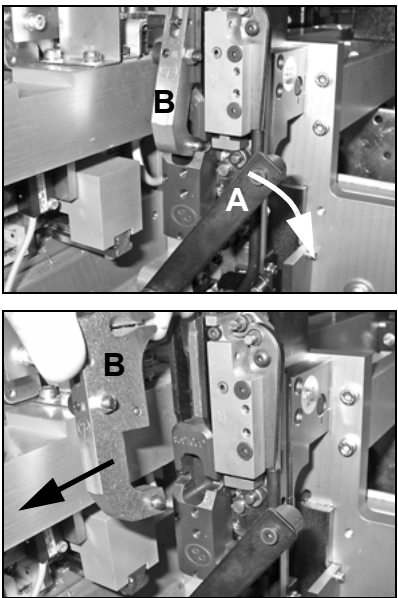


FIGURE 59. Trim the nozzle of the tube of grease

Step	Action	Information
1	Trim the first 2.5mm from the nozzle.	See Figure 59 on page 103 
2	Remove the cap from the tube of grease.	
3	Fit the nozzle to the tube of grease.	

Step	Action	Information
4	On the user interface, touch ➤ <b>ADVANCED &gt; STITCHER UP &gt; STITCHER UP</b>	The folder cover must be closed. This action moves the stitch head to the correct position for lubrication.
5	Lift the PowerSquare main deck.	See "Lift the PowerSquare Main Deck" on page 35. You will see that the stitch head in the 'STITCHER UP' position. 
6	Use the supplied air duster to remove dust from the stitch head.	
7	Remove the wire holder from the stitch head: Move the wire holder retaining spring 'A' to the right. Remove the wire holder 'B'.	

### Apply the Grease to the Driver Bar

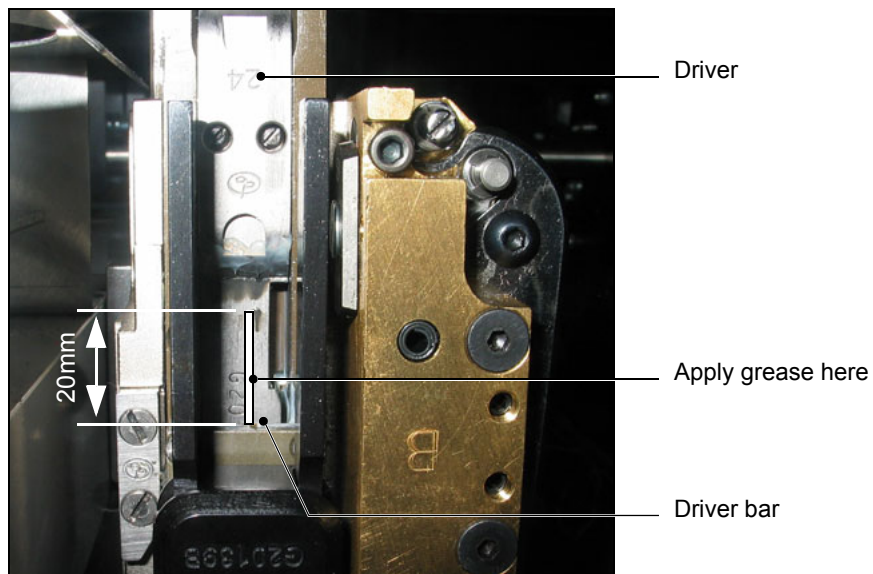


FIGURE 60. Driver bar

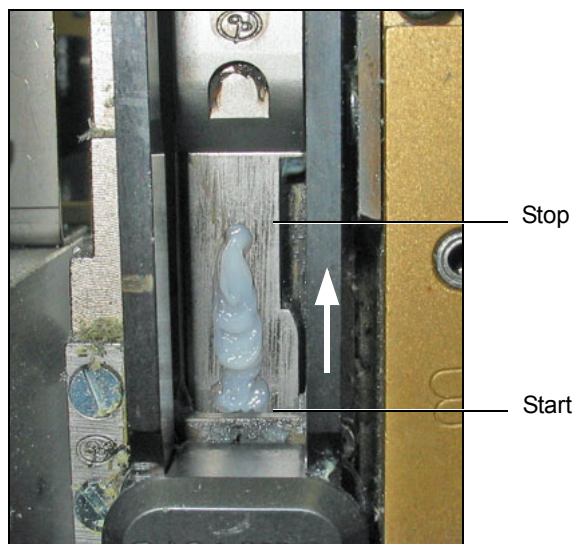
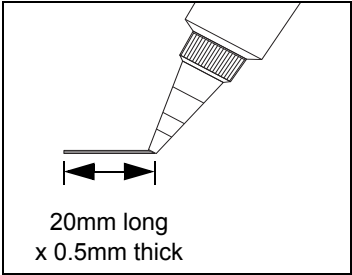


FIGURE 61. Apply the Grease to the Driver Bar

Step	Action	Information
1	<p>Apply a thin line of grease from the tube, 20mm long, to the visible surface of the driver bar.</p> <p>The line of grease must be a maximum of 0.5mm thick and as shown in FIGURE 60.</p> <p><b>Note:</b> Apply the grease in an upward direction, from the bottom of the driver bar.</p> <p><b>Note:</b> Only apply the grease as shown. If you apply additional grease, the paper gets marked.</p>	<p>See FIGURE 60.</p>  <p>20mm long x 0.5mm thick</p>
2	Fit the wire holder.	

### Lubricate the Wire-feed Cam

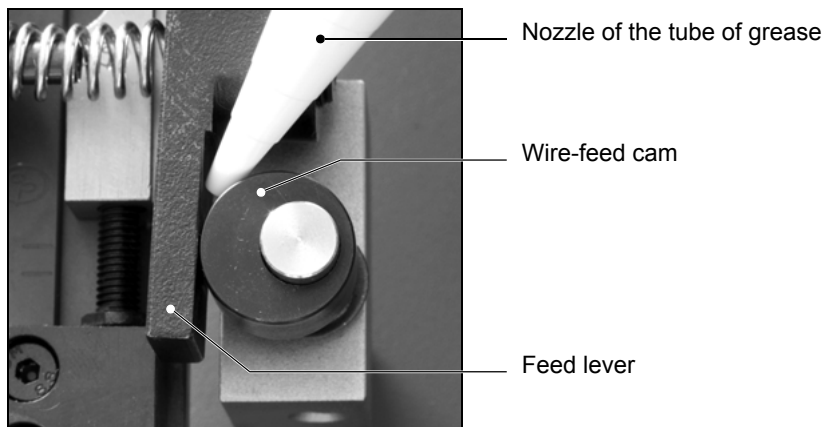
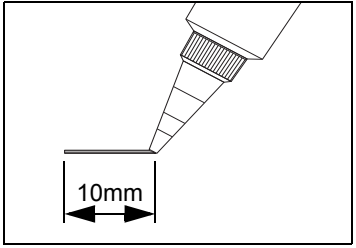


FIGURE 62. Lubricate the wire-feed cam

Step	Action	Information
1	Apply 10mm of grease from the tube between the bearing surface of the wire-feed cam and the feed lever.	See FIGURE 62. 
2	Lower the PowerSquare main deck.	
3	Lower the clincher frame.	See "Lower the Clincher Frame" on page 34.
4	Close all of the covers.	
5	Make some test books.	
6	Clean excess grease from the top of the stitch head.	See "Clean excess grease from the Stitch Head" on page 102.

### Reset the Operator Maintenance Counter

1. Touch **MENU**.
2. Touch and hold **RESET**. A red line appears. The red line fills from left to right. Hold **RESET** until the red line reaches the right-hand side.
3. Touch **MENU**.

## Install New Stitch-wire

### Introduction

Only use stitch-wire that is approved by your supplier. Stitch-wire that is not approved by your supplier can cause bad performance and cancels the warranty.

### Stitch-wire Description

- 
- 

### Before You Begin

Lift the PowerSquare main deck. See “Lift the PowerSquare Main Deck” on page 25.

### Remove the Stitch-wire from the Stitch Head

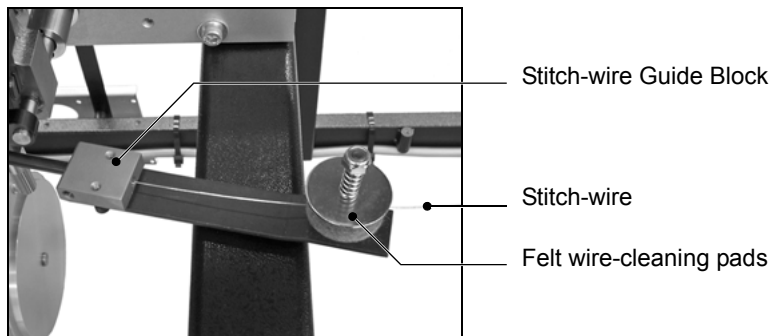
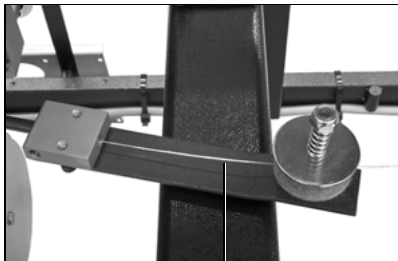
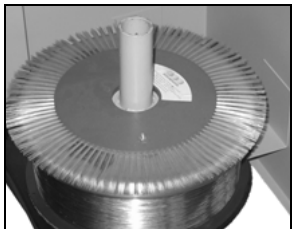
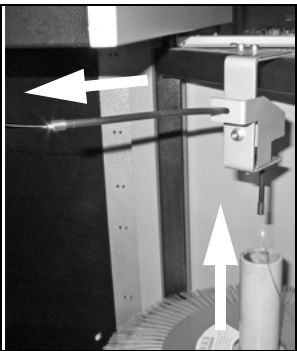


FIGURE 63. Stitch-wire Guide Block

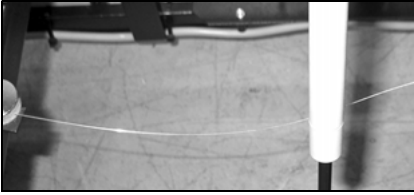
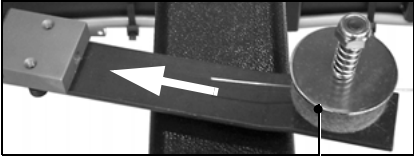
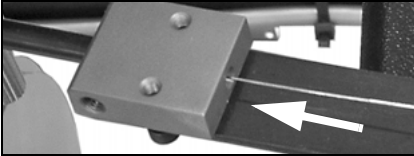
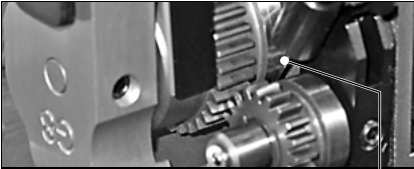
Step	Action	Information
1	Cut the stitch-wire to the right of the stitch-wire guide block.	 <p>Cut here</p>
2	Pull the stitch-wire from the stitch-wire guide block.	
3	Fit a new stitch-wire spool.	See “Fit a New Stitch-wire Spool” on page 109.



**Fit a New Stitch-wire Spool**

Step	Action	Information
1	Open the stitch-wire cabinet.	
2	Remove the stitch-wire cap and finished stitch-wire spool.	
3	Fit a new stitch-wire spool.	
4	Fit the stitch-wire cap.	
5	Loosen the end of the stitch-wire from the edge of the stitch-wire spool.	
6	Use wire-cutters to remove the damaged end of the stitch-wire.	Remove enough stitch-wire to leave the end of the stitch-wire clean and straight.
7	Feed the stitch-wire through the stitch-wire guide.	
8	Install the stitch-wire.	See "Install the Stitch-wire into the Stitch Head" on page 110.

**Install the Stitch-wire into the Stitch Head**

Step	Action	Information
1	Pull the stitch-wire from the end of the stitch-wire guide.	
2	Make sure the stitch-wire runs behind the gas-strut.	
3	Feed the end of the stitch-wire between the felt wire-cleaning pads.	 <p>Felt Wire-Cleaning Pads</p>
4	Push the stitch-wire into the stitch-wire guide block.	 <p>Push stitch-wire in direction of arrow</p>
5	Push the stitch-wire as far as possible.	 <p>Make sure the stitch-wire runs between the wire feed rollers and into the middle wire tube.</p>

**Close the PowerSquare**

Step	Action	Information
1	Close the stitch wire cabinet.	
2	Lower the PowerSquare main deck.	
3	Lower the clincher frame.	See “Lower the Clincher Frame” on page 34.
4	Close the folder cover.	

**Feed the Stitch-wire**

Step	Action	Information
1	Touch START	
2	Set the number of stitches to 6.	Touch <b>BASIC &gt; STITCHES</b> .
3	Hand-feed an A4 or larger size test job.	Enter the correct settings on the touch screen, according to the size and thickness of the job.  The stitch-wire loads automatically during the stitch head cycle.
4	Check the stitch-wire is loaded.	Check that a stitch is made.  If needed, repeat the previous step.  If a stitch is still not made, repeat the procedure “Install the Stitch-wire into the Stitch Head” on page 110.
5	Reset the number of stitches on the touch screen.	

## Clear paper from the trim stop

### When to do

- Clear paper from the trim stop if the books are not trimmed square.  
If paper trimmings collect on the trim stop, the books are not trimmed square.

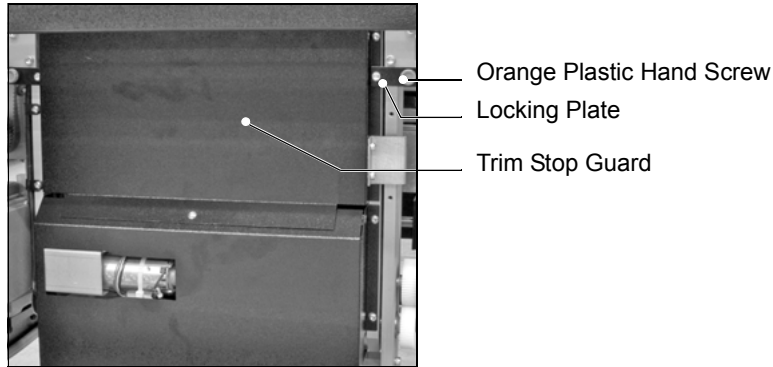


FIGURE 64. Trim Stop Guard

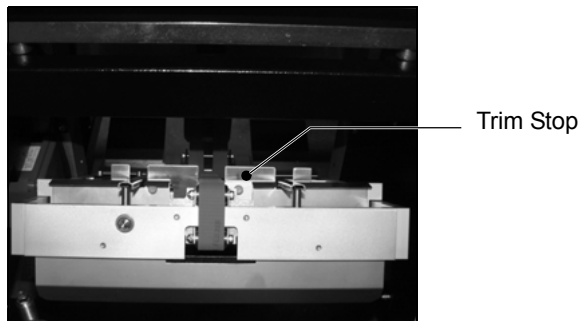
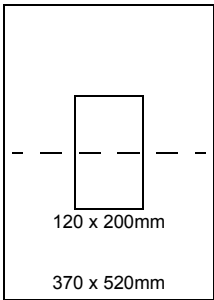
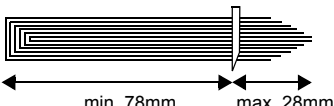


FIGURE 65. Trim Stop

Step	Action	Information
1	Remove the trim bin.	
2	Open the trim stop guard.	See Figure 64. Loosen the 2 orange plastic hand screws to release the locking plates. The locking plates can rotate to release the trim stop guard. Pull the trim stop guard towards you.
3	Check the trim stop and remove any pieces of trimmed paper.	See Figure 65
4	Close the trim stop guard.	Push the trim stop guard into position. Hold the locking plates in position and tighten the orange hand screws.
5	Attach the trim bin.	

<b>Operating Conditions</b>	10-35°C 35-85% relative humidity up to 2000m above mean sea level
<b>Production</b>	Minimum set time: 4.2 seconds Maximum set time: 12.5 seconds
<b>Stock Sizes</b>	Minimum input size: 120 x 200mm Maximum input size: 370 x 520mm  <p>The diagram shows a large rectangle representing a sheet of paper with dimensions 370 x 520mm. Inside this rectangle, there is a smaller rectangle with dimensions 120 x 200mm. A horizontal dashed line runs across the middle of the 120 x 200mm rectangle, labeled 'Stitch &amp; fold line'.</p>
<b>Stock Range</b>	60 - 250gsm dependent on paper type and quality
<b>Book Thickness</b>	Maximum finished book thickness: up to 10.4mm (approximately 208 pages 80gsm; 224 pages 70gsm) dependent on paper type and quality  Maximum set thickness: up to 5.2mm (approximately 52 sheets 80gsm; 56 sheets 70gsm) dependent on paper type and quality
<b>Stitching</b>	1 - 6 stitches, evenly spaced on the spine of the book Stitches/spool: up to 291,500 Books*/spool: approximately 127,000

<b>Fore-Edge Trimming</b>	<p>Maximum fore-edge trim: 28mm Minimum trimmed book size: 78mm</p> 
<b>Side-Trimming</b>	<p>Minimum side-trim width: 120mm Maximum side-trim width: 380mm (no trim); 378mm (trimmed)</p> <p>Maximum side-trim: 40mm each side Minimum side-trim: 1mm each side</p>
<b>Stacker Capacity</b>	<p>Standard stacker: 35 books*</p> <p>Book Stacker (optional): 930mm</p>
<b>Paper Input Requirements</b>	<p>Input sheets must be of consistent size and cut square.</p> <p>Machine setting must match paper size <i>at the input to the PowerSquare</i>.</p> <p>Book quality is dependent upon quality of input sheets.</p>
<b>Dimensions</b>	<p><b>Footprint</b></p> <p>With standard stacker: 1870 x 1300mm With Book Stacker: 2420 x 1250mm</p> <p><b>Height</b></p> <p>1330mm</p>
<b>Weight</b>	<p>PowerSquare including stitching wire: 542kg Book Stacker: 150kg Side-Trimmer: 300kg</p>
<b>Power Supply</b>	<p>Adjustable to 200, 208, 220, 230 and 240V 50/60Hz, single phase</p> <p>Side-Trimmer: 220-240V 50/60Hz, single phase</p>
<b>Power Consumption</b>	<p>PowerSquare stand-by: 92VA (75W) in operation: 700VA (500W)</p> <p>Book Stacker stand-by: 35VA (16W) in operation: 75VA (53W)</p> <p>Side-Trimmer stand-by: 40VA (10W) in operation: 1200VA (750W) during trimming (1 second of cycle)</p>
<b>Noise Emission</b>	<p>stand-by: ambient in operation: 66 dB (A), peak 87 dB (A)</p>

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<b>Approvals</b>	Complies with CE and UL. Conforms to FCC rules Part 15 Class A and VCCI Class A.
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\* Standard book is made from 20 sheets of 80gsm paper, with 2 stitches.

Production may vary according to operating conditions. In line with a policy of continual product improvement, the manufacturer reserves the right to alter the materials or specification of this product at any time without notice.

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## CHAPTER 8 Declaration of Conformity

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(According to ISO/IEC 17050-1)

**Name of Manufacturer:** Watkiss Automation Limited

**Address of Manufacturer:** Watkiss House  
Blaydon Road  
Sandy, Bedfordshire  
SG19 1RZ  
United Kingdom

*Declares that the product:*

- Name of Product:**
- Watkiss PowerSquare  
Serial No. WA/PSQ/---/0010 onwards
  - Watkiss PowerSquare Book Stacker  
Serial No. WA/PBS/0001 onwards
  - Watkiss P2T Two Knife Trimmer  
Serial No. WA/P2T/0001 onwards

*Conforms to the following Directives:*

**Safety:** 2006/95/EC Council Directive 'on the approximation of laws of Member States relating to electrical equipment designed for use within certain voltage limits'.  
EN 60950-1:2006 (ed.2) + A11:2009 + A1:2010 + A12:2011

**EMC:** 2004/108/EC Council Directive 'on the approximation of laws of Member States relating to electromagnetic compatibility'.  
EN55022:2010 Class A  
EN55024:2010  
EN61000-3-2:2006 +A1:2009 + A2:2009  
EN61000-3-3:2008

**RoHS:** 2011/65/EC Council Directive

**WEEE:** 2002/96/EC Council Directive amended by 2008/34/EC and 2008/35/EC

**Reach:** REGULATION (EC) No. 1907/2006

M C Watkiss  
Technical Director, Watkiss Automation Ltd.  
21 May 2013

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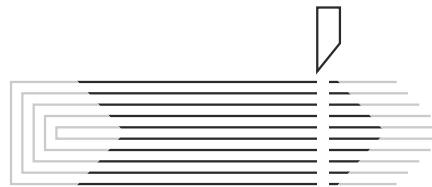
# Appendix

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## Image Creep

### About Image Creep

When a stack of paper is folded to make a booklet, the thickness of the paper causes a progressive image movement between the inner-most and outer-most pages. This is called creep.



To keep the image in the same place on each page, an adjustment for creep can be made.

Some print machines can automatically compensate when they print in 'booklet mode'.

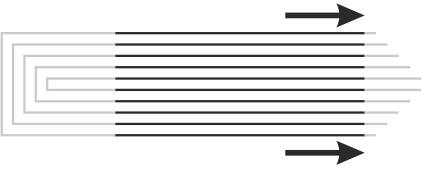
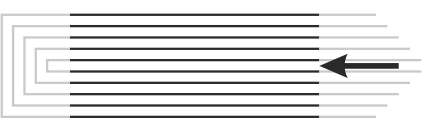
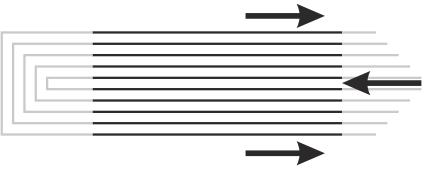
Alternatively, adjustment can be made in origination software (such as InDesign); or PDF pages can be adjusted before they are printed using imposition software (such as Quite Imposing).

The amount of creep adjustment needed depends on the number of pages and the thickness of the paper. A booklet with only a few pages and wide margins may not need adjustment because the difference, after the book is trimmed, is not noticeable. With more pages, smaller margins, or bulkier paper, the creep becomes more noticeable and can result in loss of image if no adjustment is made.

## Calculating Creep Adjustment

1. Measure the thickness of the set, before booklet-making.  
(i.e. the number of sheets of paper multiplied by the thickness of the paper)
2. The spine thickness of the finished booklet is two times the set thickness
3. The pages need to be incrementally adjusted by the spine thickness.

Depending on the job, this can be achieved by:

<p><b>Positive creep adjustment</b></p> <p>Move the pages on the outermost sheet <i>away from the spine</i>.</p> <p>The innermost sheet is not adjusted.</p> <p>This is sometimes called a positive creep, or pull-out.</p>	
<p><b>Negative creep adjustment</b></p> <p>The outermost sheet is not adjusted.</p> <p>Move the pages on the inner sheets <i>towards the spine</i>.</p> <p>This is sometimes called a negative creep, or push-in.</p>	
<p><b>Balanced creep adjustment</b></p> <p>The adjustment is balanced between the inside and outside pages.</p>	

## Example

- The book is 40 sheets of 80gsm paper.
- The set thickness is measured at 4mm.
- The spine thickness is therefore 8mm.

**Positive creep.** Adjust the pages *incrementally* so that the front page and back page are both moved 8mm away from the spine.

**Negative creep.** Adjust the pages *incrementally* so that the inside pages are both moved 8mm towards the spine.

**Balanced adjustment.** Adjust the pages *incrementally* so that the inside pages are both moved 4mm towards the spine and the front and back page are both moved 4mm away from the spine.





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