MODEL 8x

DOCUMENT BINDER

Service Manual

POWIS PARKER

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Notice
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1 SUMMARY

The newly redesigned Fastback Model 8x makes service and repair easier than ever. While in outward appearance it looks very similar to its predecessor, the Model 8 binder, you will find that beneath the covers the binder has been dramatically simplified and improved. This manual will guide you through the various routines needed to service this machine. It will provide you with diagrams of the User Menu, Service Menu, and Electrical Connectivity, as well as a complete list of Service Parts and pictures of the machine partially exploded. This manual will introduce you to the Service Menu and various functions to test Heaters, Sensors, and Mechanisms. It will guide you through the process of upgrading the Firmware using your computer. The manual will provide you with a troubleshooting chart to quickly and accurately diagnose and solve common problems, and it will tell you how to perform routine service procedures, and how to disassemble and reassemble the machine correctly and efficiently. In all, this manual will tell you everything you need to know to keep the machine binding and the customer happy.

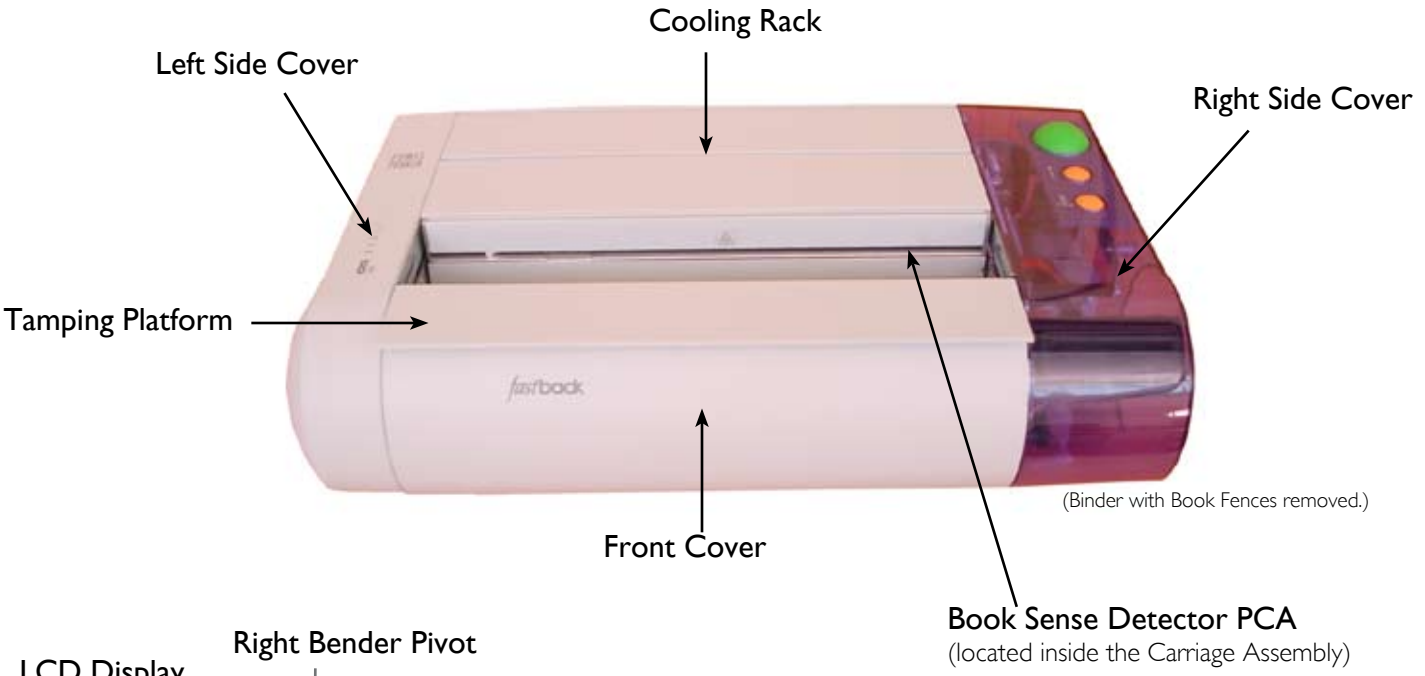
The process by which the Model 8x binds documents has not changed. The Model 8x has three heaters located in the binding recess that heat the adhesive coating on the Lx-Strip or the spine on the Halfback Cover, and adhere it to the spine, front, and back of the document. These three heaters are called the Bender Heater, the Spine Heater, and the Back Heater. They have been upgraded from the previous versions with additional temperature sensing elements that will allow the heaters to better regulate temperature.

The Model 8x binder has two sensors, the Book Sensor and the Strip Sensor, designed to detect the presence of the document and the strip when they are inserted in the binding recess. While the Book Sensor determines only the presence of the book, the Strip Sensor will sense the presence of a strip and determine whether you are using the correct width strip for the document you are binding.

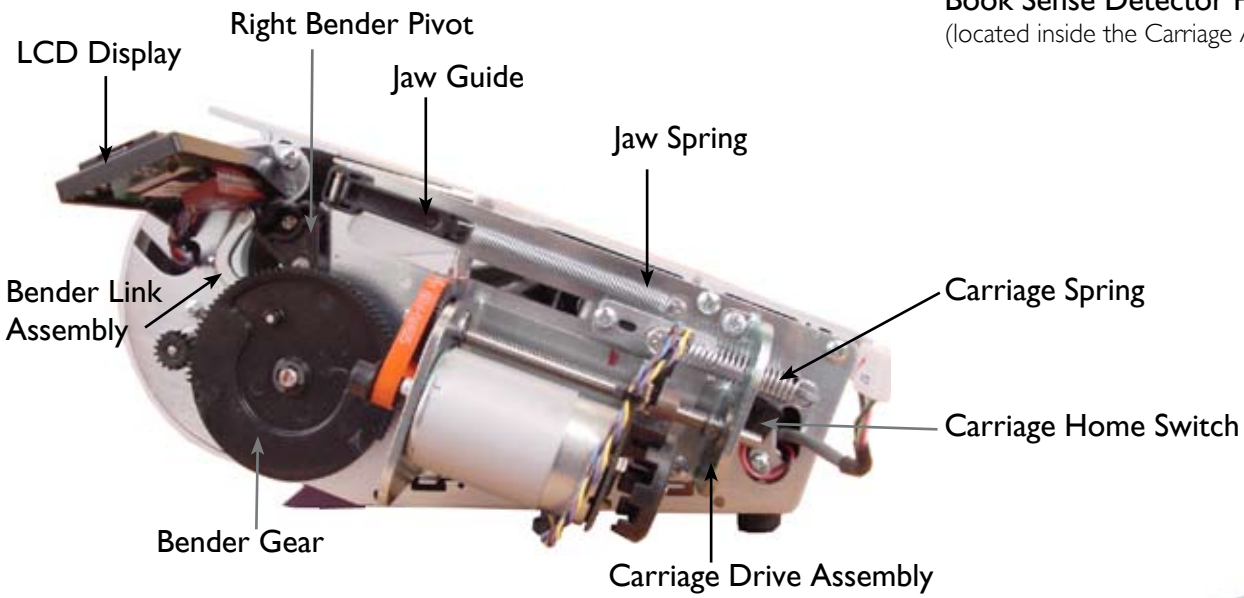
The binder is also equipped with encoders and switches that determine the thickness of the document you are binding and the pressure the Carriage Assembly must clamp the document to achieve the best possible bind without overexerting the motors or any of the other mechanical parts.

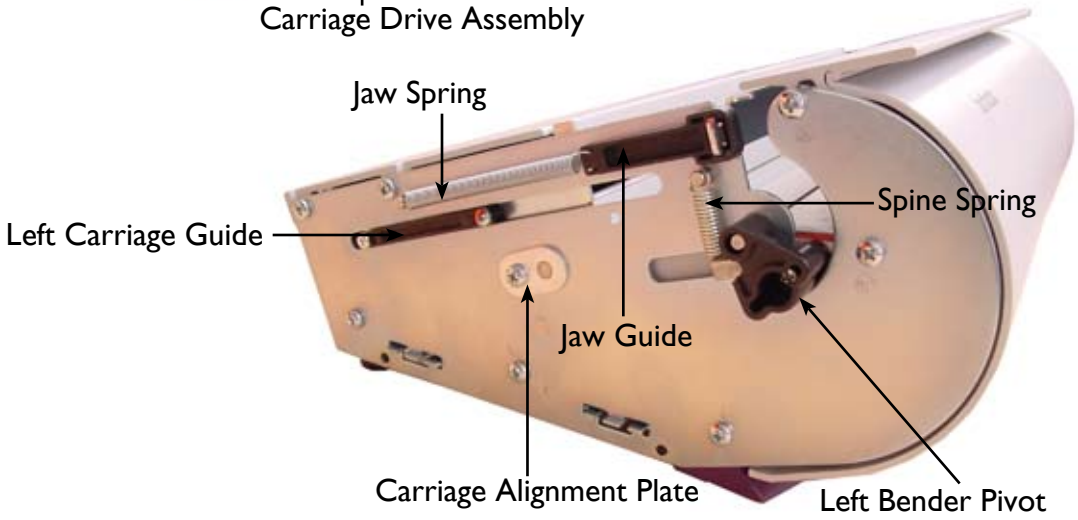
After giving the new Model 8x a few test binds you will find that the improvements made to the binder will provide the customer and the service technician with a machine that is both easy to use and easy to service.

2.1 MAIN COMPONENTS OF THE FB8x

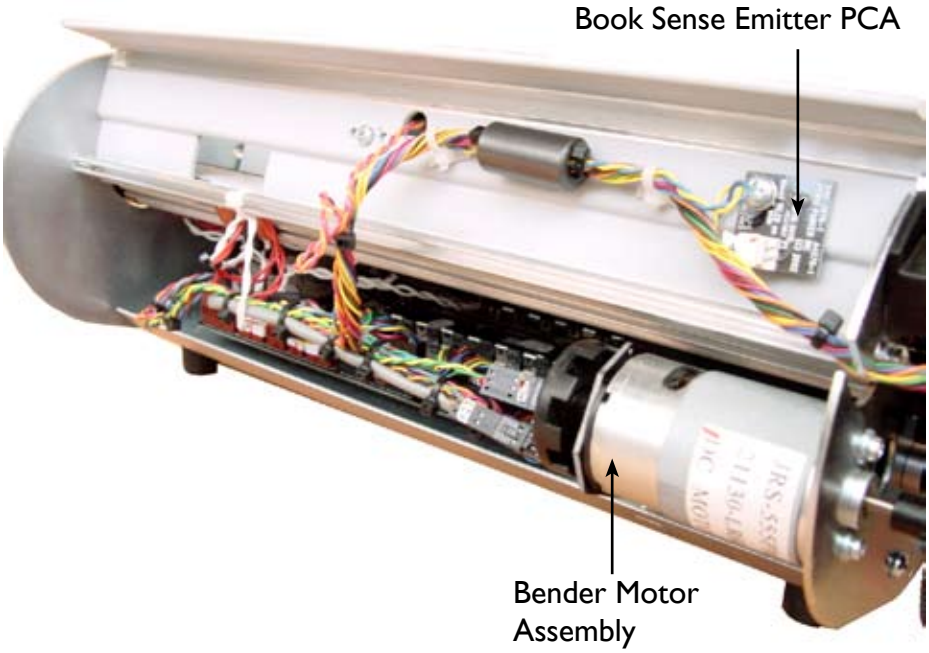


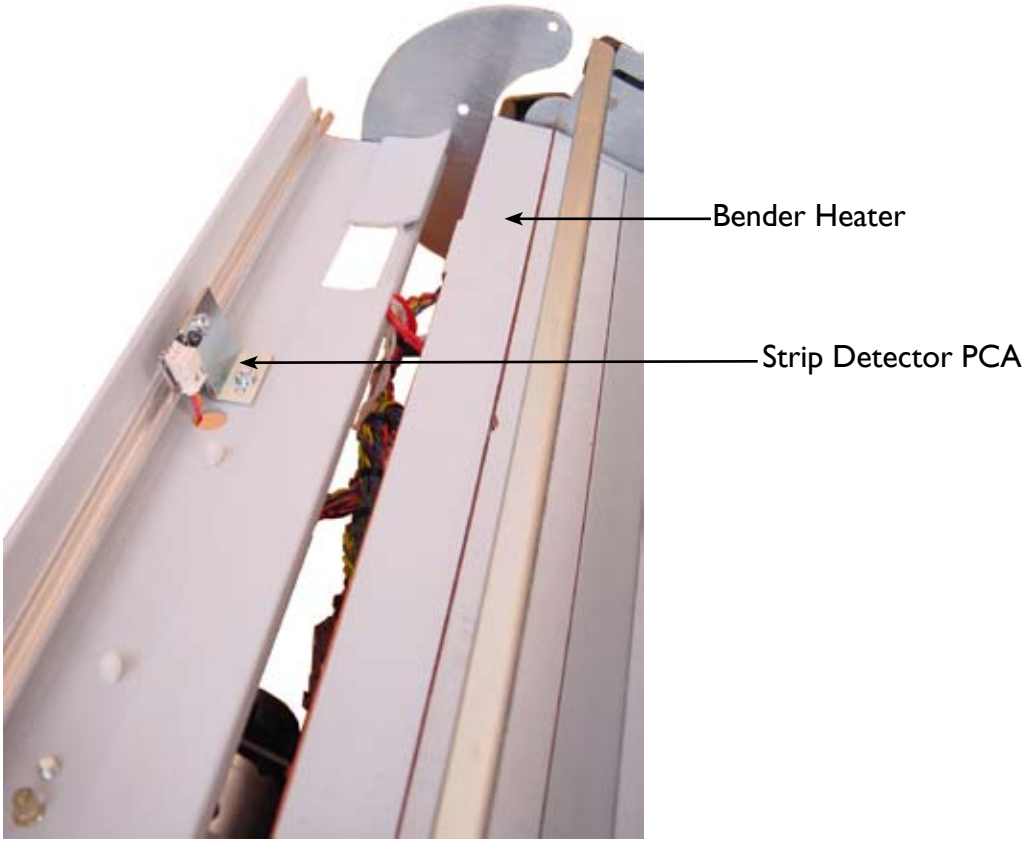
(Binder with Book Fences removed.)





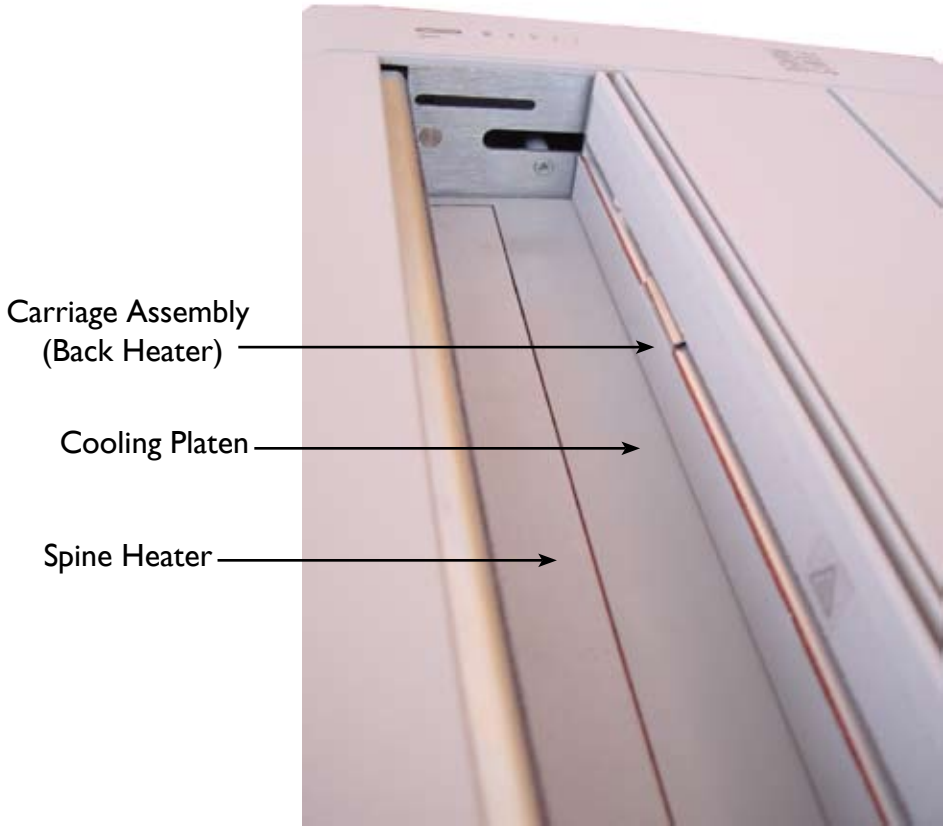
2.1 MAIN COMPONENTS OF THE FB8x

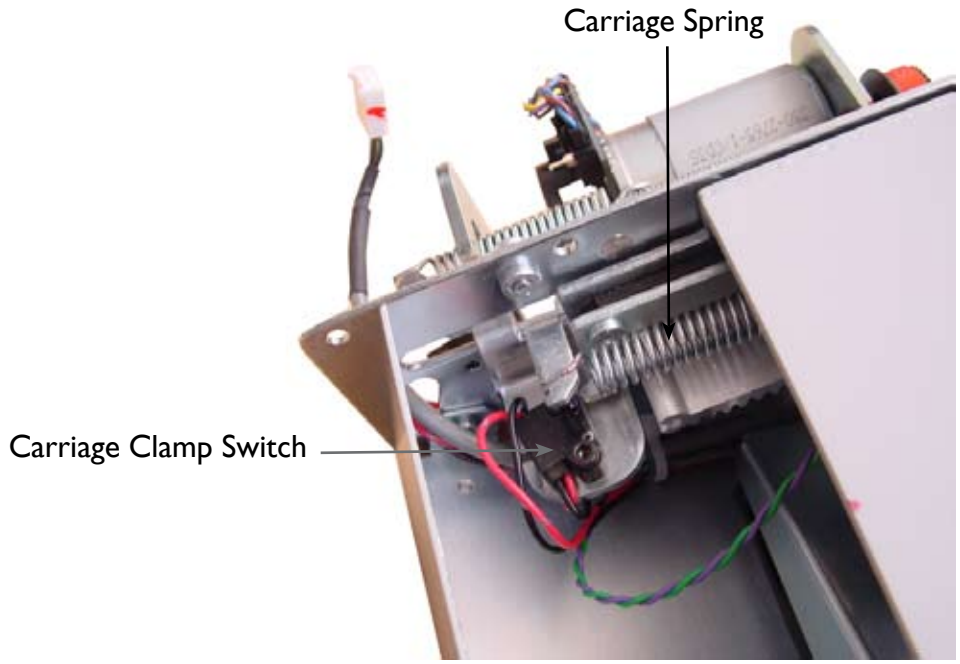




(Picture shows Tamping Platform partially removed.)

2.1 MAIN COMPONENTS OF THE FB8x

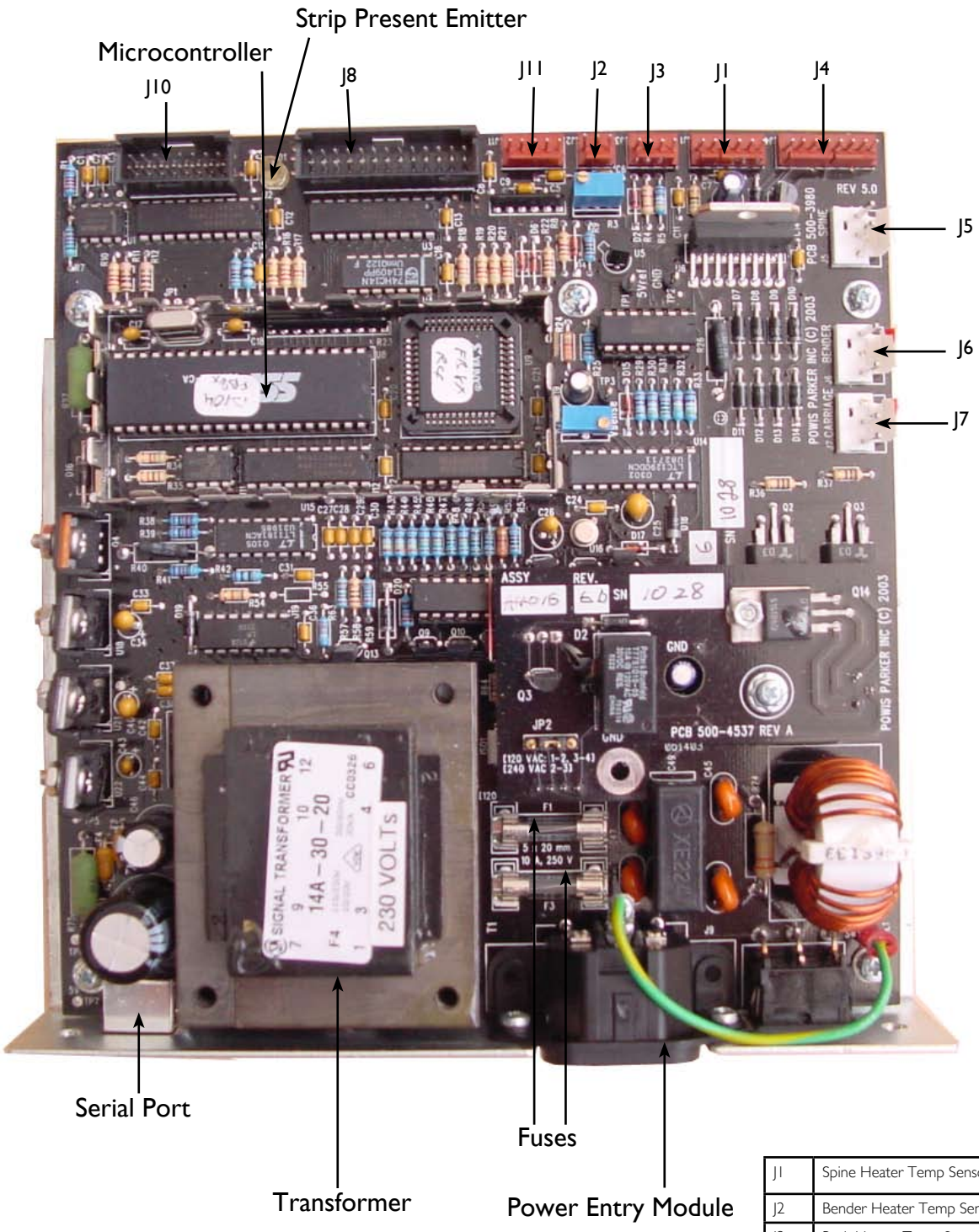




(Picture shows Cooling Rack and Left Cover removed.)

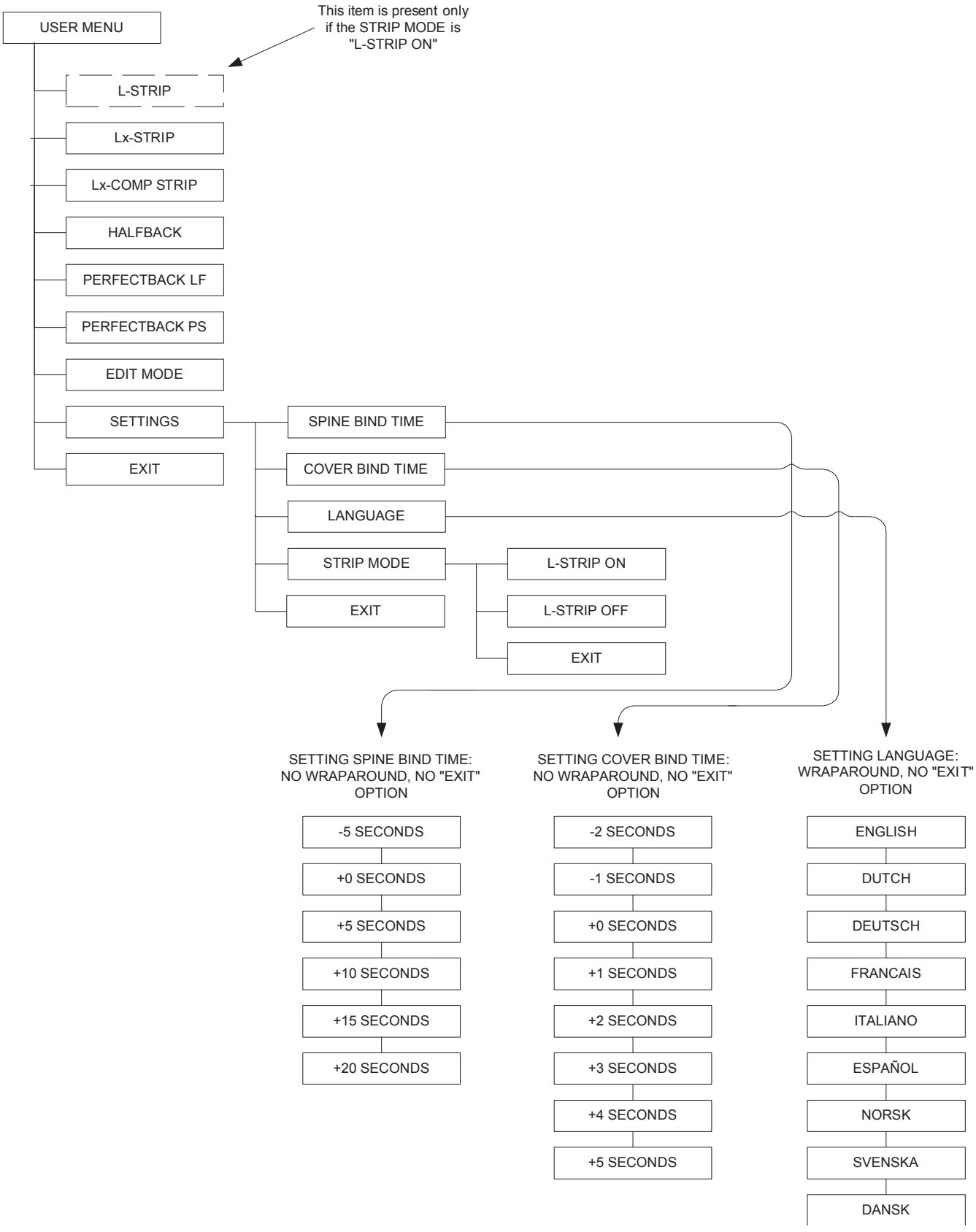
2.1 MAIN COMPONENTS OF THE FB8x

CONTROLLER ASSEMBLY

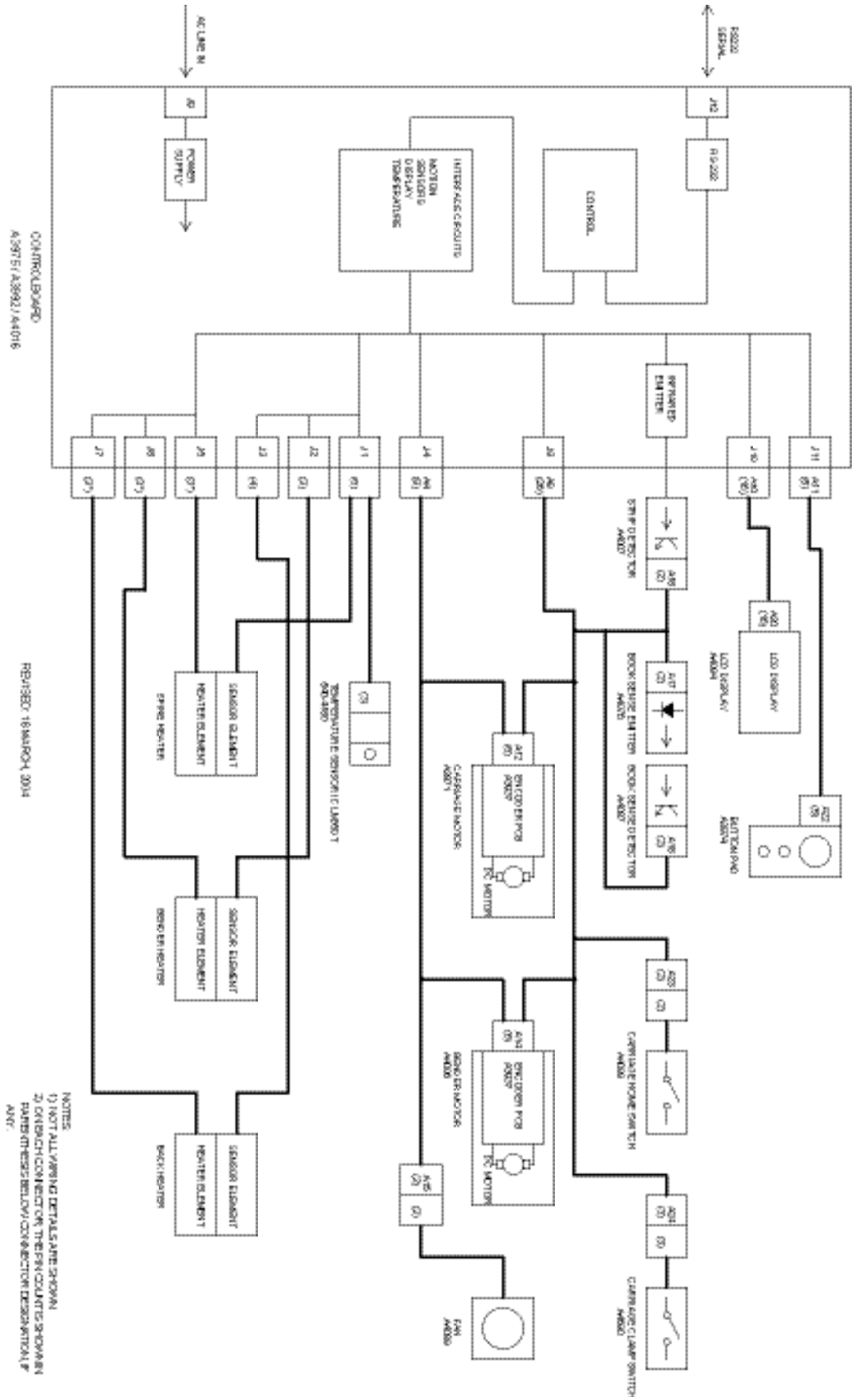


J1	Spine Heater Temp Sensor Connector
J2	Bender Heater Temp Sensor Connector
J3	Back Heater Temp Sensor Connector
J4	Motors Connector
J5	Spine Heater Power Connector
J6	Bender Heater Power Connector
J7	Back Heater Power Connector
J8	Motors and Carriage Sensors Connector
J10	LCD Connector

2.2 User Menu


USER MENU
This item is present only if the STRIP MODE is "L-STRIP ON"
L-STRIP
Lx-STRIP
Lx-COMP STRIP
HALFBACK
PERFECTBACK LF
PERFECTBACK PS
EDIT MODE
SETTINGS
EXIT
SPINE BIND TIME
COVER BIND TIME
LANGUAGE
STRIP MODE
EXIT
L-STRIP ON
L-STRIP OFF
EXIT
SETTING SPINE BIND TIME: NO WRAPAROUND, NO "EXIT" OPTION
-5 SECONDS
+0 SECONDS
+5 SECONDS
+10 SECONDS
+15 SECONDS
+20 SECONDS
SETTING COVER BIND TIME: NO WRAPAROUND, NO "EXIT" OPTION
-2 SECONDS
-1 SECONDS
+0 SECONDS
+1 SECONDS
+2 SECONDS
+3 SECONDS
+4 SECONDS
+5 SECONDS
SETTING LANGUAGE: WRAPAROUND, NO "EXIT" OPTION
ENGLISH
DUTCH
DEUTSCH
FRANCAIS
ITALIANO
ESPAÑOL
NORSK
SVENSKA
DANSK

2.3 System Block Diagram



2.4 Specifications

Power Requirements:	FB8x: 115V (110-125VAC) 50-60 Hz, 8.4 Amps FB8xE & FB8xA: 230V (220-240VAC) 50-60 Hz, 4.2 Amps FB8xJ: 100V (90-110VAC) 50-60 Hz, 9.5 Amps
Power Consumption:	FB8x: 950 Watts while binding, 55 Watts standby FB8xE & FB8xA: 950 Watts while binding, 55 Watts standby FB8xJ: 950 Watts while binding, 55 Watts standby
Recommended Operating Temperature and Humidity:	15 to 35 degrees (C), 59 to 95 degrees (F) Humidity Range: 5 to 80% RH non condensing
Weight:	17 lbs
Dimensions:	With book fences attached: 19.3" W x 11.1" H x 12.5" D Without book fences attached: 19.3" W x 6.0" H x 10.6" D
Bind Capacity:	Lx-Strip .04" to 1.0" (1 mm to 25 mm), about 10-250 sheets. 10-125 sheets = Narrow Lx-Strip 126-250 sheets = Medium Lx-Strip L-Strip .04" to 0.7" (1 mm to 18 mm), about 10-175 sheets. 10-80 sheets = Narrow L-Strip 81-175 sheets = Medium L-Strip Not compatible with Wide L-Strip. Halfback covers .04" to 0.8" (1 mm to 20 mm), about 10-200 sheets. 10-100 sheets = Narrow Halfback 101-200 sheets = Medium Halfback Does not work with Wide Halfback Covers. Perfectback Strips .04" to 1.0" (1 mm to 25 mm), about 10-250 sheets. 10-125 sheets = Narrow Perfectback Lx-Strip 126-250 sheets = Medium Perfectback Lx-Strip
Duty Cycle:	500 binds per month average
Bind Speed:	35-55 seconds
Safety Certifications:	UL60950 IEC60950/EN60950

2.5 Bind Media

The newly redesigned Model 8x Binder is capable of binding the following strips:

Lx-Strip
Lx-Comp Strip
L-Strip (Narrow and Medium only)
Halfback Covers (Narrow and Medium only)
Perfectback® PS Strips
Perfectback® LF Strips

Selecting the Binding Mode

To bind with any of these various binding strips, enter the User Menu and select the binding strip you wish to bind with.

Bind Memory

When the machine is turned off and on, the last bind setting will be retained.

Binding Widths

The Model 8x binder is not compatible with wide L Strips or wide Halfback Covers. (See 2.5 Specifications).

Binding Hard Cover Books

Use Lx-Strip or L-Strip to bind book blocks to be made into Hard Cover Books.

2.6 Getting the Best Bind Quality

- Before binding, make sure the binder is set in the correct binding mode.
- Before placing the strip into the binding recess, fold the strip in 90° angle making sure the adhesive side faces inward.
- Place the strip into the binding recess with the adhesive side facing up. The short side of the bent "L" should be resting against the back wall. Slide the strip all the way to the right of the machine.
- Before binding, tap the pages several times to ensure that they are even when the document is in the binding recess. The right edge of the strip and right edge of the document should line up and be justified against the right side of the binding recess.
- The grain of the paper should run parallel to the binding edge of the document. All paper has a grain — it is a result of the fibers that make up the paper. If the grain runs parallel to the long side of the sheet, the paper is "grain long". When the grain runs parallel to the short side of the paper, it is "grain short".

  A sheet of paper will naturally flex more easily along the direction of its grain. Try it and see. (Hold a piece of paper the long way lightly in your fingertips and gently bow the paper, allowing it to flex. Now try it the other way. See the difference?

  Most copy papers are grain long, so you should not have any problems with the bind. Grain long paper will give you the best bind. Occasionally you may find papers that are grain short, so we recommend you test unfamiliar papers before binding large numbers of documents.
- Coated papers, and papers with heavy ink or toner coverage may also experience problems with binding. If you have documents with heavy ink or toner coverage, always do a test bind first to ensure that your documents will bind properly.
- After the binding cycle, be sure to place your document ***entirely upright***, with the bound side down, against one of the two rear book support fences for five minutes. Improper cooling of your document may result in a crooked spine. Bind strength reaches the maximum strength after 24 hours.
- NOTE: When placing multiple documents on the Cooling Rack, make sure it doesn't get overloaded to where the front document hangs off the metal step.

  MAINTENANCE TIP : Minor glue buildup on the heaters is expected. When cleaning the heaters, turn the machine off and unplug it. Wait for the heaters to cool, and then wipe off any glue using a clean dry lint free cloth. Cleaning solution is not necessary.

  (**Caution:** The heaters are very delicate. Do not use anything sharp to remove glue from the clamps, platen, or interior surfaces of the binder.)

2.7 Contacting Technical Support

If there are any questions not answered in this manual, please contact the Powis Parker Technical Support Dept: 510-848-2463.

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When servicing a Model 8x binder the following tools are required:

3.1 HAND TOOLS

Phillips Screwdrivers #1 and #2
Needle Nosed Pliers
Diagonal Cutters
Fuse Puller
2.5mm Hex Key
Pen
Exacto Knife

3.2 TOOLS TO SERVICE THE HEATERS

Temperature Meter (K-820-011)
Straight Temperature Probe (K-820-012)
Right Angle Temperature Probe (K-820-3436)
Ohmmeter

3.3 TOOLS FOR FLASH UPGRADE OF FIRMWARE

P31 Printer Cable (K-551-1685)
PC with either Windows 98, 2000, XP, or ME, and a 9-pin com port
Internet Access

3.4 TOOLS NEEDED TO INSPECT THE CONTROLLER ASSEMBLY

Ground Strap

3.5 CLEANING SUPPLIES

Citrus Cleaning Solution (K-212-001)
Lint Free Cloth

4.1 Power Problems

• NO POWER	
Possible Cause	**Solution**
Power Cord is not securely plugged in.	Check that the Power Cord is securely plugged into the machine and into the outlet in the wall.
Electrical outlet is not functioning.	Plug the machine into another electrical outlet.
Machine is plugged into the wrong voltage outlet.	Use the correct voltage outlet to power the machine.
Wire Harness connections are loose.	Check that all wire connectors are securely plugged into the Controller Assembly.
Blown Fuse.	Check fuses on the Controller Assembly and replace if any are blown.
Failed Controller Assembly.	Replace the Controller Assembly.

• POWER FLICKERS ON AND OFF	
Possible Cause	**Solution**
A 230v machine in plugged into a 115v outlet.	Plug the machine into a 230v outlet.
Failed Controller Assembly.	Replace the Controller Assembly.

• BACKLIGHT COMES ON, NOTHING ELSE HAPPENS	
Possible Cause	**Solution**
A 230v machine in plugged into a 115v outlet.	Plug the machine into a 230v outlet.
	See the "NO POWER" troubleshooting table above.

• WHEN TURNED ON, THE MOTORS MOVE BUT NOTHING IS ON THE DISPLAY	
Possible Cause	**Solution**
A problem with the display.	See troubleshooting section 4.4 "Display Problems".

• FUSES BLOW REPEATEDLY	
Possible Cause	**Solution**
Short circuit in heaters.	Check the resistance of the Heaters. See Section 5.4.7 "Checking the Resistance of the Heater Power Connectors".
Short in the Controller Assembly.	If none of the heaters have shorted out, the problem lies in the Controller Assembly. Replace the Controller Assembly.

4.2 Error Messages

- Error Message: "INSERT BOOK"

Possible Cause	Solution
The operator pressed the Bind button without inserting a book into the binding recess.	Place a book into the machine and then press the Bind button.
The sheets are not fully justified against the right side of the binding recess.	Tap the edges of the sheets until the book is flush against the right side of the binding recess prior to pressing the BIND button.
The Book Sensor is damaged.	Replace the Book Sensor.
Failed Controller.	Replace the Controller

- Error Message: "USE SMALLER SIZE"

Possible Cause	Solution
The strip is too wide for the amount of sheets placed in the binding recess.	Add more sheets or use a narrower width strip.
The strip is not folded.	Make sure to fully fold the strip into a 90 degree angle.
The strip is not lined up properly.	Make sure the strip and the sheets are justified against the back of the binding recess.
The machine is configured to bind the new Lx-Strip and you tried to bind using the original type L-Strip.	In settings, select the L-STRIP ON menu option in the STRIP MODE Settings menu.

- Error Message: "BOOK TOO THICK"

Possible Cause	Solution
You are trying to bind too many sheets with the medium strip.	Remove some sheets.

- Error Message: "USE MEDIUM SIZE"

Possible Cause	Solution
You are trying to bind too many sheets with a narrow strip.	Remove some sheets or use a medium width strip.
There is no strip in the binding recess.	Insert a medium strip.

- Error Message: "USE NARROW SIZE"

Possible Cause	Solution
You are trying to bind too few sheets with a medium strip.	Add some sheets or use a narrow width strip.
There is no strip in the binding recess.	Insert a narrow strip.

- Error Message: "REVERSE STRIP"

Possible Cause	Solution
The strip is inserted into the machine backwards.	Make sure the short end of the strip is vertical and the long end of the strip is flat.
	Make sure the strip is flat. An over folded or curled strip can cause a "Reverse Strip" error.

4.3 Machine Errors

- **Error Message: MACHINE ERROR 11, 21, or 31**

This error indicates an under-temp error in one of the heaters.

Possible Cause	Solution
Heater sensor leads are not plugged in correctly.	Check that the connectors J1, J2, and J3 are plugged in correctly.
Heater sensor malfunction.	Check the resistance of the Heaters. See Section 5.4.6 "Checking the Resistance of the Heater Sensors".
Machine is extremely cold.	The FB8x is not designed to function below 0°C/32°F.
Failed Controller Assembly.	Replace the Controller Assembly.

- **Error Message: MACHINE ERROR 12, 15, 22, 25, 32, or 35**

This error indicates an over-temp error in one of the heaters.

Possible Cause	Solution
Heater sensor leads are not plugged in correctly.	Check that the connectors J1, J2, and J3 are plugged in correctly.
Heater sensor malfunction.	Check the resistance of the Heaters. See Section 5.4.6 "Checking the Resistance of the Heater Sensors".
Heater calibration is inaccurate.	Recalibrate the heaters. See Section 5.3.2 "Cal Heaters".
Heater A_HI/A_LO INPUT values are incorrect.	Verify the A_HI/A_LO values on the heater tags match the values in the A_HI/A_LO INPUT menu. See section 5.4.4.
Failed Controller Assembly.	Replace the Controller Assembly.

- **Error Message: MACHINE ERROR 13, 14, 23, 24, 33, or 34**

This error indicates a problem with the heater temperature settings.

Possible Cause	Solution
Heater calibration is inaccurate.	Recalibrate the heaters. See Section 5.3.2 "Cal Heaters".
Heater A_HI/A_LO INPUT values are incorrect.	Verify the A_HI/A_LO values on the heater tags match the values in the A_HI/A_LO INPUT menu. See section 5.4.4.
Failed Controller Assembly.	Replace the Controller Assembly.

4.3 Machine Errors

- Error Message: MACHINE ERROR 50

This error occurs when a user tries to bind a book and the carriage does not move.

Possible Cause	Solution
Carriage Motor/Carriage Assembly is jammed or obstructed.	Remove any obstructions that may cause the Carriage Assembly to jam.
Carriage Motor is burnt out.	Replace the Carriage Motor if it is burnt out.
Carriage Home Switch or Carriage Clamp Switch problem.	Check the functionality of the Carriage Home Switch and the Carriage Clamp Switch. See Section 5.4.2 "Checking the Sensors". Replace the Switches if necessary.
Failed Controller Assembly.	Replace the Controller Assembly.

- Error Message: MACHINE ERROR 51

This error indicates a carriage jam.

Possible Cause	Solution
Carriage Clamp Switch or Carriage Home Switch failure.	Check the function of both switches in the CHECK SENSORS menu. Replace any damaged switches.
Obstructions in the binding recess.	Check for obstructions in the binding recess. If necessary remove the Carriage Assembly to check for any obstructions.

- Error Message: MACHINE ERROR 52

This error indicates a problem with the Carriage Home Switch.

Possible Cause	Solution
An obstruction prevents the Carriage Assembly from returning to its home position.	Remove any obstructions.
Carriage Home Switch failure.	Check the functionality of the Carriage Home Switch. See Section 5.4.2 "Checking the Sensors". Replace the Switch if necessary.
Failed Controller Assembly.	Replace the Controller Assembly.

- Error Message: MACHINE ERROR 60 or 61

This error indicates a problem with the line voltage.

Possible Cause	Solution
Electrical supply is not 50 Hz or 60 Hz.	Switch to a regulated power supply.
Failed Controller Assembly.	Replace the Controller Assembly.

4.3 Machine Errors

- **Error Message: MACHINE ERROR 70-75**

This error indicates a problem with the A_HI/A_LO values entered into the machine.

Possible Cause	Solution
Heater A_HI/A_LO values are incorrect.	Verify the A_HI/A_LO values on the heater tags match the values in the A_HI/A_LO INPUT menu. See section 5.4.4.
Failed Controller Assembly.	If the error reoccurs after the A_HI/A_LO values have been reentered, the Controller Assembly has failed. Replace the Controller Assembly.

- **Error Message: MACHINE ERROR 80-82**

This error indicates a problem with the EEPROM.

Possible Cause	Solution
Firmware/EEPROM mismatch.	Upgrade the firmware as shown in Section 7.

- **Error Message: FIRMWARE ERROR**

Possible Cause	Solution
Firmware is corrupted or the firmware transfer was interrupted.	Perform the Flash Upgrade again with the current firmware.
Failed Controller Assembly.	Replace the Controller Assembly.

4.4 Display Problems

• NO CHARACTER DISPLAYED	
Possible Cause	**Solution**
Display is not connected.	Reconnect the Display.
Failed Display	Replace the Display.
Failed Controller Assembly.	Replace the Controller Assembly.

• INCORRECT DISPLAY	
Possible Cause	**Solution**
Failed Display.	Replace the Display.
Failed Controller Assembly.	Replace the Controller Assembly.

• NO BACKLIGHT	
Possible Cause	**Solution**
Failed Display.	Replace the Display.
Failed Controller Assembly.	Replace the Controller Assembly.

4.5 Poor Bind Quality

- SPINE IS NOT SQUARE

Possible Cause	Solution
The Strip is not folded in a 90 degree angle.	Fold the Lx-Strip into a 90 degree angle. The better you fold the strip the more square the spine will be.
The book was not placed in the Cooling Rack after being bound.	After binding, make sure the book is placed in the Cooling Rack to properly cool down.

- PAGES PROTRUDE PAST THE STRIP

Possible Cause	Solution
The edges of the pages are not even.	Tap on the top and left sides of the pages until the edges are even.
The Strip is not flush against the right side of the binding recess.	Make sure the strip is flush against the right side of the binding recess.

- BIND QUALITY IS UNSATISFACTORY
  - Part of the pages separate from the strip
  - There are gaps in the pages where the strip can be seen
  - There is Thermo-plastic adhesive leakage.

Possible Cause	Solution
The machine is not set to the correct binding style.	Verify the machine is set to the correct binding style.

- PAGES DO NOT ADHERE TO THE STRIP VERY WELL

Possible Cause	Solution
Some paper stocks and some heavy cover material can be difficult to bind.	The bind may be improved by increasing the Spine Bind time in the Setting Menu.

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5.1 Accessing the Service Menu

To access the Service Menu press the OPEN and MENU buttons at the same time while turning the machine on. Keep the buttons pressed until SYSTEM CHECK appears on the display. After SYSTEM CHECK appears on the screen, an OK message should appear, followed by the date of the currently installed firmware. After a couple seconds, AUTO-CYCLES will appear.

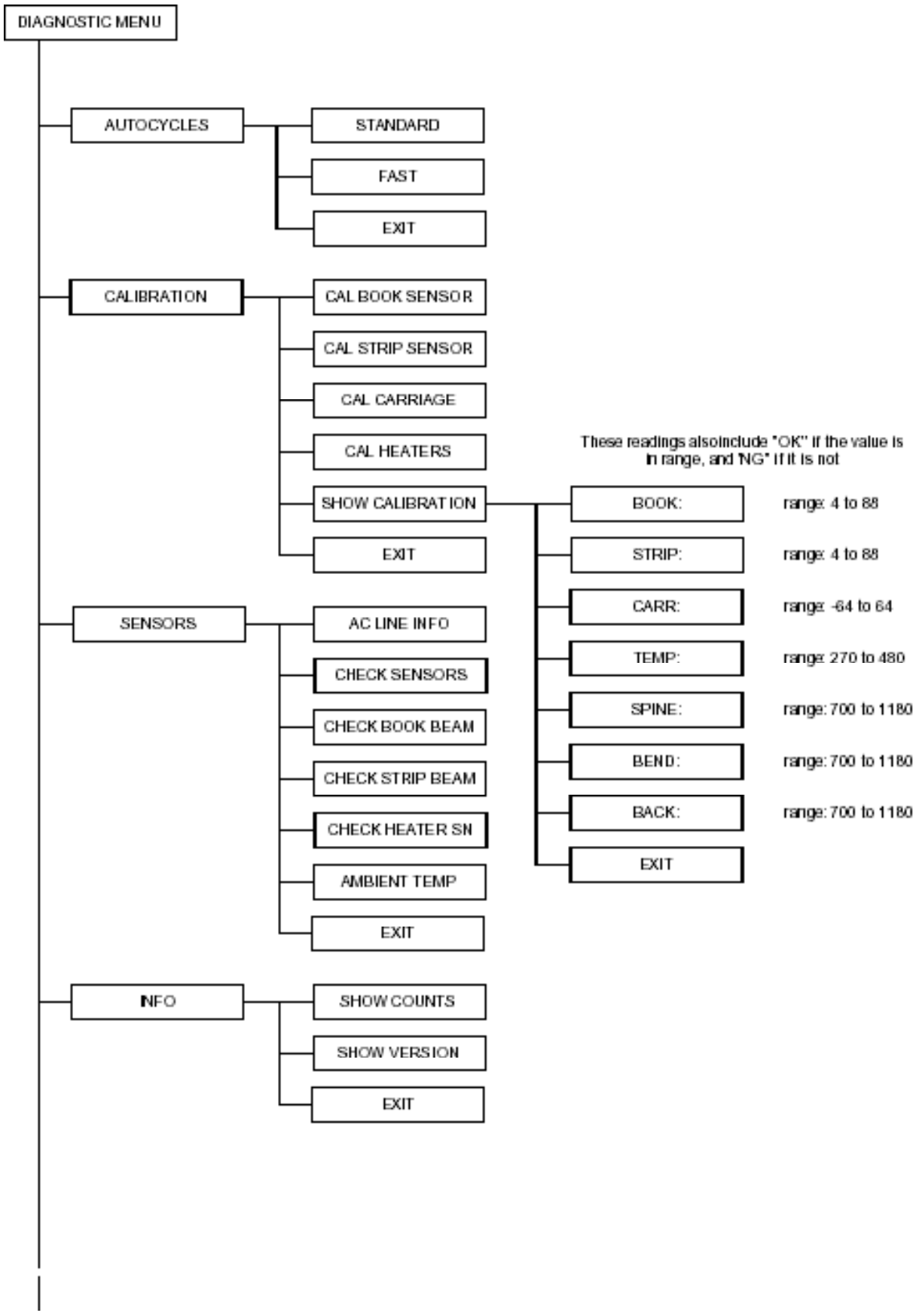
5.1.1 Navigating through the Service Menu.

Use the orange OPEN and MENU buttons to toggle through the menu options.
Use the green BIND button to select the menu option currently displayed.

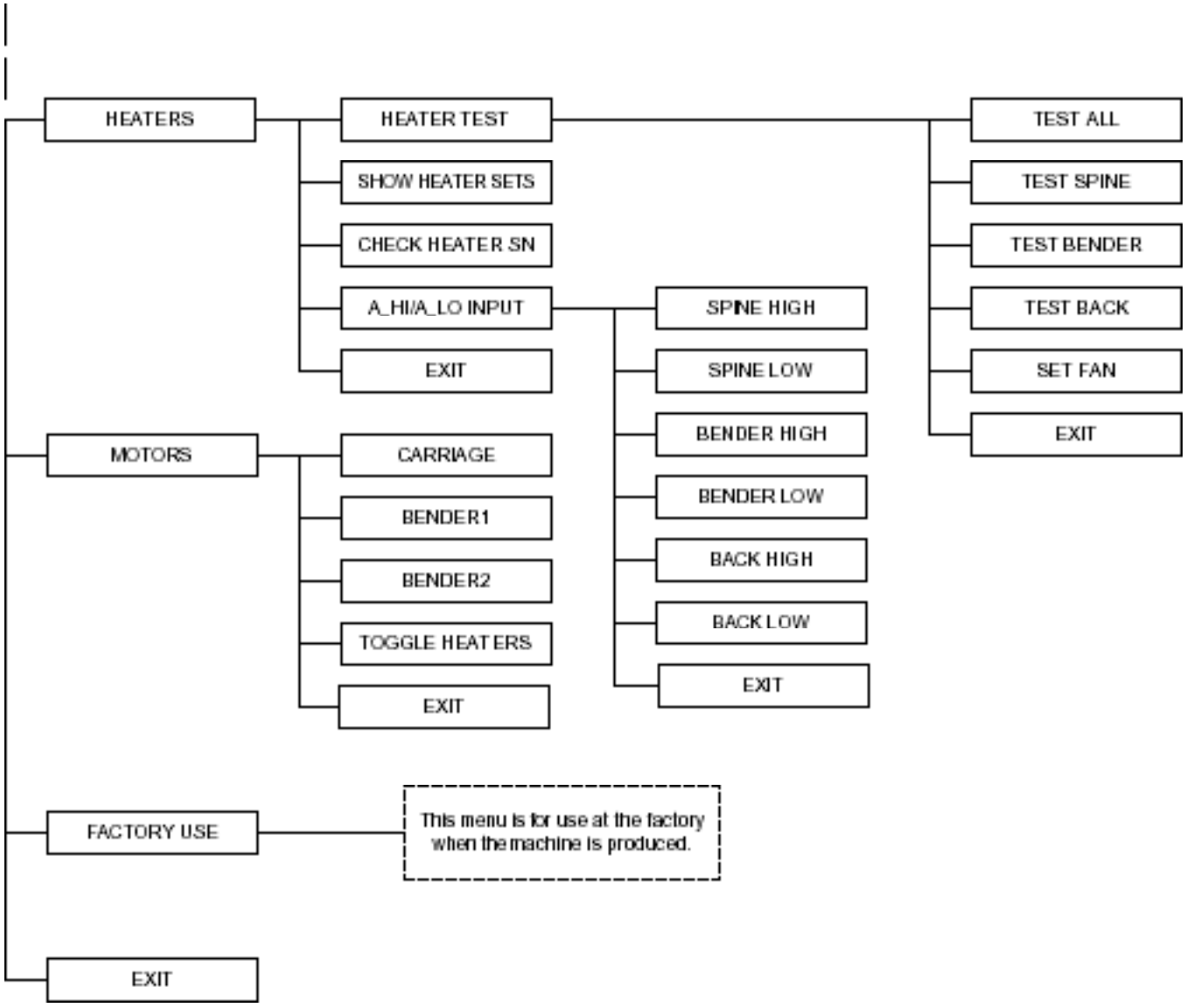
5.1.2 Warnings!

Be very careful when navigating through the Service Menu. Altering any of the settings can greatly affect the performance of the machine.

5.2 Service Menu Diagram



5.2 Service Menu Diagram



5.3 Service Menu Descriptions

5.3.1 AUTOCYCLES

This option offer two choices for continuous cycling of the machine. It is recommended the while running in either Autocycle mode, that a book or pages be inserted into the binding cavity, secured to the Book Fence with tape. Note: Do not use a strip! If you are running continuous cycles, glue will leak out of the ends of the strip, dirtying up the heaters.

STANDARD

Selecting this menu option causes the machine to go through full length binding cycles at normal speed. To stop the binder, press the OPEN button when the Carriage returns to the home position and the display says AUTOCYCLES, otherwise the binder will automatically stop the Autocycling after 500 cycles.

FAST

Selecting this menu option causes the binder to go through continuous, fast-speed cycles. To stop the cycling, press the OPEN button when the Carriage returns to the home position and the display says AUTOCYCLES, otherwise the binder will automatically stop the Autocycling after 500 cycles.

NOTE: To stop Autocycling at any point of the cycle, turn the machine off.

5.3.2 CALIBRATION

This option allows you to calibrate the Book Sensor, the Strip Sensor, the Carriage Assembly, and the Heaters.

CAL BOOK SENSOR

Selecting this menu option will allow you to calibrate the Book Sensor only. When calibrating the Book Sensor make sure there is nothing in the binding recess. If the calibration is successful, a result number will appear followed by the message "SUCCESS". If the calibration is unsuccessful, a failure massage will appear. For more details, see section 5.4.3, Calibrating the Book Sensor.

CAL STRIP SENSOR

Selecting this menu option will allow you to calibrate the Strip Sensor only. When calibrating the Strip Sensor make sure there is nothing obstructing the small crescent shaped hole in the Spine Heater. If the calibration is successful, a result number will appear followed by the message "SUCCESS". If the calibration is unsuccessful, a failure message will appear. For more details, see section 5.4.3, Calibrating the Strip Sensor.

CAL CARRIAGE

Selecting this menu option will allow you to calibrate the Carriage Assembly only. When calibrating the Carriage Assembly make sure there is nothing in the binding recess. If the calibration is successful, a result number will appear followed by the message CAL SAVED!. If the calibration is unsuccessful, a failure message will appear. For more details, see section 5.4.3, Calibrating the Carriage Assembly.

5.3 Service Menu Descriptions

CAL HEATERS

Selecting this menu option will allow you to calibrate all three Heaters. When calibrating the Heaters it is very important that the Heaters are at room temperature. If the calibration is successful, the display will read SUCCESS. If the calibration is unsuccessful, a failure message will appear on the display.

SHOW CALIBRATION

This menu displays the calibration values for the machine. Use the OPEN and MENU button to toggle through the list of values.

BOOK: XX OK/NG

This menu option displays the book calibration value. There will be an OK if the value is in the acceptable range or an NG message if the out of range.

STRIP: XX OK/NG

This menu option displays the strip calibration value. There will be an OK if the value is in the acceptable range or an NG message if the out of range.

CARR: XX OK/NG

This menu option displays the carriage calibration value. There will be an OK if the value is in the acceptable range or an NG message if the out of range.

TEMP: XX OK/NG

This menu option displays the room temperature reading taken during the heater calibration. There will be an OK if the value is in the acceptable range or an NG message if the out of range.

SPINE: XX OK/NG

This menu option displays the Spine Heater calibration reading during heater calibration. There will be an OK if the value is in the acceptable range or an NG message if the out of range.

BEND: XX OK/NG

This menu option displays the Bender Heater calibration reading during heater calibration. There will be an OK if the value is in the acceptable range or an NG message if the out of range.

BACK: XX OK/NG

This menu option displays the Back Heater calibration reading during heater calibration. There will be an OK if the value is in the acceptable range or an NG message if the out of range.

5.3 Service Menu Descriptions

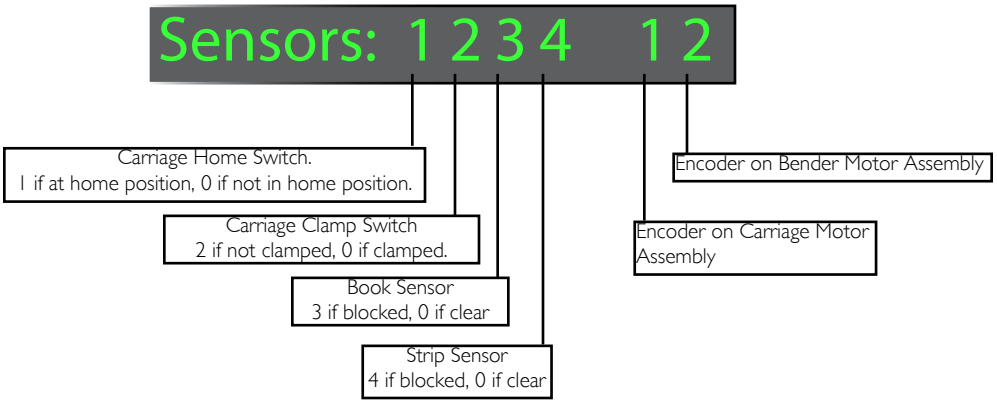
5.3.3 SENSORS

AC LINE INFO

Selecting this menu will display two values: The first value represents the line frequency. This value should be 49/50/51 for a 50 Hz supply or 59/60/61 for a 60 Hz supply. The second value is proportional to the line voltage and should be 3000 +/- 300 for 115/230V machines, and 2600 +/- 300 for 100V machines.

CHECK SENSORS

Selecting this menu will display six numbers, each one either zero or non-zero depending on the state of a binary sensor.



CHECK BOOK BEAM

This menu displays two numeric readings from the Book Sensor. With the beam open (no book present in the binding recess) the first value should be 2750 +/- 150. The second value should be between 100 and 2400. The numbers will change from moment to moment, but should not vary by no more than 100.

CHECK STRIP BEAM

This menu displays two numeric readings from the Strip Sensor. With the beam open (no strip blocking the crescent shaped hole in the Spine Heater) the first value should be 2750 +/- 150. The second value should be between 100 and 2400. The numbers will change from moment to moment, but should not vary by no more than 100.

CHECK HEATER SN

This menu displays three numeric readings from the heater temperature sensors. If the heaters are at room temperature, each value should be 1000 +/- 200.

AMBIENT TEMP

This menu displays the temperature readings of the two temperature sensors inside the machine. These values alternate between the "raw" values, the temperature in Celsius, and the temperature in Fahrenheit.
The first value corresponds to the temperature sensor on the Spine extrusion. This value can fall between the room temperature and the target temperature of the Spine Heater (330°F/166°C).
The second value corresponds to the temperature sensor on the Controller Assembly. This value should be between room temperature and 20°C/36°F.

5.3.4 INFO

SHOW COUNTS

This menu displays two alternating values for the number of binds the machine has performed and the number of cycles. Binding a book counts for 1 bind + 1 cycle. Running an autocycle in either Standard or Fast mode, counts for only 1 cycle.

SHOW VERSION

This menu displays the version of firmware installed in the binder.

5.3.5 HEATERS

HEATER TEST

TEST ALL

Selecting this menu will allow you to turn on and test all three heaters at the same time. Press the BIND button to turn the heaters on and off. During the heater test, internal diagnostic values will appear on the display. The diagnostic values are for use by Powis Parker technicians only.

TEST SPINE

Selecting this menu will allow you to turn on the Spine Heater only. Press the BIND button to turn the heater on and off. During the heater test, internal diagnostic values will appear on the display.
The diagnostic values are for use by Powis Parker technicians only.

TEST BENDER

Selecting this menu will allow you to turn on the Bender Heater only. Press the BIND button to turn the heater on and off. During the heater test, internal diagnostic values will appear on the display.
The diagnostic values are for use by Powis Parker technicians only.

TEST BACK

Selecting this menu will allow you to turn on the Back Heater only. Press the BIND button to turn the heater on and off. During the heater test, internal diagnostic values will appear on the display.
The diagnostic values are for use by Powis Parker technicians only.

SET FAN

This menu sets the fan function during heater tests. This menu is for Powis Parker Technicians only.

SHOW HEATER SETS

This menu displays the thermostat values for the three heaters. The first value is for the Spine Heater. This value should be between 1550 and 2150 . The second value represents the Bender Heater. This value should be between 1200 and 1700. The third value represents the Back Heater. This value should be between 1200 and 1700.

5.3 Service Menu Descriptions

CHECK HEATER SN

This menu displays three numeric readings from the heater temperature sensors. If the heaters are at room temperature, each value should be 1000 +/- 200.

A_HI/A_LO INPUT

In this menu, the A_HI and A_LO values for each of the heaters can be entered. The A_HI and A_LO values are located on the heater tags. See section 5.4.4 "Entering A_HI/A_LO Values" for more details.

SPINE HIGH

This menu allows for viewing and editing of the A_HI value of the Spine Heater.

SPINE LOW

This menu allows for viewing and editing of the A_LO value of the Spine Heater.

BENDER HIGH

This menu allows for viewing and editing of the A_HI value of the Bender Heater.

BENDER LOW

This menu allows for viewing and editing of the A_LO value of the Bender Heater.

BACK HIGH

This menu allows for viewing and editing of the A HI value of the Back Heater.

BACK LOW

This menu allows for viewing and editing of the A_LO value of the Back Heater.

5.3 Service Menu Descriptions

5.3.6 MOTORS

CARRIAGE

In this menu, you can test the function of the Carriage Assembly. Press the MENU button to move the Carriage Assembly forward, and press the BIND button to move the Carriage Assembly backward and into the home position. When the Carriage Assembly is all the way back in its home position, a home offset value (+/- 25) will appear on the display. When the Carriage Assembly is moved all the way forward (with the binding cavity empty), three values will appear on the display. The first value must be 2000 +/-64.

BENDER1

In this menu, you can test the function of the Bender mechanism. Press the BIND button to move the Bender Heater up, and the MENU button to move the Bender Heater down. After moving the Bender Heater up, the display will read UP and a value will appear. This value should be 50 +/- 5. After moving the Bender Heater down, the display will read DOWN and a value will appear. This value should be 0 +/- 5.

BENDER2

In this menu, you can test the function of the Bender mechanism. Pressing either the BIND or MENU buttons will move the Bender Heater in either the up position, the down position, or the middle position.

TOGGLE HEATERS

In this menu, you can turn on all three heaters while performing one of the other motor tests. After turning the heaters on, toggle back through the menu by pressing the MENU or OPEN button and select the Motor test you want to perform. After testing the motor, go back to the TOGGLE HEATERS menu and turn the heaters off. The heaters do not turn off on their own. Leaving the heaters on for extended periods of time is not recommended for safety reasons.

5.3.7 FACTORY USE

This menu is for use at the factory when the machine is manufactured.

5.4 TESTING AND CALIBRATION

5.4.1 MEASURING HEATER TEMPERATURE

To measure the temperature of the heaters you will need a Thermocouple Meter (K-820-011), a straight Temperature Probe (K-820-012), and a Right Angled Temperature Probe (K-820-3436).

When measuring the heater temperature, it is necessary to keep the Temperature Probe on the heater for at least 90 seconds.

Take the temperature in the middle of the heater, as shown in each of the pictures. Use the crescent shaped hole in the Spine Heater and the Hot Symbol Label as reference points.

CHECKING THE SPINE HEATER TEMPERATURE

1. Enter HEATERS menu.
2. Select HEATER TEST.
3. Select TEST SPINE by pressing the green BIND button. The fan will turn on and the heater will begin to heat up.
4. Place the straight Temperature Probe right below the crescent shaped hole in the Spine Heater. Keep the probe on the heater for at least 90 seconds, until the temperature stabilizes.

To turn off the Spine Heater, press the orange OPEN button.

Turn off the machine if the temperature exceeds 350°F (177°C). Then contact Powis Parker Technical Service.

Spine Heater Temperature Range

300°F- 330°F

149°C-166°C

5.4 TESTING AND CALIBRATION

5.4.1 MEASURING HEATER TEMPERATURE

Bender Heater Temperature Range

225°F- 245°F

107°C-118°C

CHECKING THE BENDER HEATER TEMPERATURE

1. Enter HEATERS menu.
2. Select HEATER TEST.
3. Select TEST BENDER by pressing the green BIN button. The Bender Heater will then rotate up into the upright position.
4. Press the BIND button again and the fan will turn on and the heater will start to heat up.
5. Place the Right Angled Probe in the middle of the heater, in line with the crescent shaped hole in the Spine Heater. Keep the probe on the heater for at least 90 seconds until the temperature stabilizes.

To turn off the Bender Heater, press the orange OPEN button.

Turn off the machine if the temperature exceeds 260° F (127°C). Then contact Powis Parker Technical Service.

Back Heater Temperature Range

205°F- 225°F

96°C-107°C

CHECKING THE BACK HEATER TEMPERATURE

1. Enter HEATERS menu.
2. Select HEATER TEST.
3. Select TEST BACK by pressing the green BIND button. The fan will turn on and the heater will begin to heat up.
4. Place the Right Angled Probe in the middle of the heater in line with the Hot Symbol Label. Keep the probe on the heater for at least 90 seconds until the temperature stabilizes.

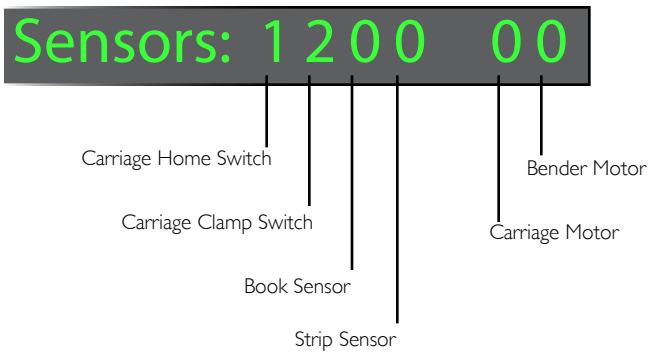
To turn off the Back Heater, press the orange OPEN button.

Turn off the machine if the temperature exceeds 260° F (127°C). Then contact Powis Parker Technical Service.

5.4 TESTING AND CALIBRATION

5.4.2 CHECKING THE SENSORS

To check the sensors, select CHECK SENSORS in the SENSORS menu. A series of numbers will appear representing each of the sensors and switches.



Checking the Book Sensor

To activate the Book Sensor, insert a piece of paper into the binding recess as shown. The third number will turn to 3 when the Book Sensor is blocked.

Checking the Strip Sensor

To activate the Strip Sensor, block the crescent shaped hole in the Spine Heater. The fourth number will change to 4 when the Strip Sensor is blocked.

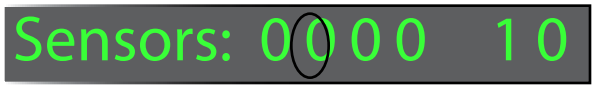
5.4 TESTING AND CALIBRATION

Checking the Carriage Motor and the Carriage Home Switch

Remove the screws attaching the Right Cover but keep the cover plugged into the Wire Harness, taking care the cover does not interfere with the mechanism or encoder.
To check if the Carriage Motor sensor and the Carriage Home Switch function properly, rotate the Carriage Drive Belt and move the Carriage Assembly from its home position.
When the Carriage Assembly moves forward from it's home position, the first number will change to 0.
As you rotate the Drive Belt, the fifth number will alternate between 0 and 1.

Checking the Carriage Clamp Switch

To check the Carriage Clamp Switch, the Carriage Assembly must be moved forward out of it's home position.
Remove the Right Cover making sure to keep the cover plugged into the Wire Harness. Rotate the Carriage Drive Belt and move the Carriage a little bit forward.
To check the Carriage Clamp Switch, squeeze the Carriage Assembly so that it goes back as shown. If the Carriage Clamp Switch is functioning properly, the second number will change to 0.



Checking the Bender Motor

To check the Bender Motor, remove the Right Cover making sure to keep it plugged into the Wire Harness. Rotate the Bender Motor Gear as shown. If the Bender Motor sensor is working properly, the sixth number will alternate between 0 and 2 when the gear is rotated.

5.4 TESTING AND CALIBRATION

5.4.3 Calibrating the Sensors, Switches, and Carriage

Calibrating the Book Sensor

1. To calibrate the Book Sensor enter the service menu and select CALIBRATION.
2. Select CAL BOOK SENSOR.
3. Make sure there is nothing in the binding recess that can block the Book Sensor. Press the BIND button to calibrate the sensor.

If the calibration is successful, a result number will appear followed by the message "SUCCESS".

If the calibration is unsuccessful, a failure message will appear. If a failure message appears double check and make sure there is nothing blocking the Book Sensor and calibrate again. If you continue to get a failure message, contact Powis Parker technical support.

Calibrating the Strip Sensor

1. To calibrate the Strip Sensor enter the service menu and select CALIBRATION.
2. Select CAL STRIP SENSOR.
3. Make sure there is nothing in the binding recess that can block the crescent shaped hole in the Spine heater. Press the BIND button to calibrate the sensor.

If the calibration is successful, a result number will appear followed by the message "SUCCESS".

If the calibration is unsuccessful, a failure message will appear. If a failure message appears double check and make sure there is nothing blocking the crescent shaped hole and calibrate again. If you continue to get a failure message, contact Powis Parker technical support.

Calibrating the Carriage

1. To calibrate the Carriage Assembly enter the service menu and select CALIBRATION.
2. Select CAL CARRIAGE.
3. Make sure there is nothing in the binding recess. Press the BIND button.
4. A confirmation message "CAL NOW?" will appear on the display. Press the BIND button to calibrate. The Carriage Assembly will move forward twice. A value will briefly appear on the display each time. If the calibration is successful, the display will say CAL SAVED! followed by a value. This value must be between -64 and +64.

If the calibration is unsuccessful, a failure message will appear. If a failure message appears double check and make sure there is nothing binding recess and calibrate again. If you continue to get a failure message, contact Powis Parker technical support.

Calibrating the Heaters

NOTE: The heaters must be at room temperature to be calibrated. The binder must be turned off for 1/2 hour- 1 hour for the heaters to return to room temperature. Directing a fan onto the heaters can speed up the cool down process.

1. To calibrate the Heaters enter the service menu and select CALIBRATION.
2. Select CAL HEATERS.
3. The fan will turn on for 30 seconds and then the machine will take heater temperature readings for 16 seconds. If the calibration is successful, the display will say SUCCESS. Press the MENU button to turn off the heaters and stop the calibration.

If the calibration is unsuccessful, a failure message will appear. If a failure message appears, check that each of the heaters are plugged in and that the heaters are at room temperature. Calibrate the heaters again. If the failure message appears again, call Powis Parker technical support.

5.4 TESTING AND CALIBRATION

Fig 1

The A HI and A LO values are located on the heater tags. Disregard any negative (-) symbol in front of the A LOW and A HIGH value if present.

5.4.4 Entering A_HI/A_LO values

CAUTION: Entering the wrong values can damage the unit and lead to bind problems.

1. Enter the Service Menu and select the HEATERS menu.
2. Select the A_HI/A_LO INPUT menu.

   The A_HI/A_LO INPUT menu consists of these six submenus:

   SPINE HIGH
   SPINE LOW
   BENDER HIGH
   BENDER LOW
   BACK HIGH
   BACK LOW

3. Select the appropriate menu for the heater you are inputting the value. For example, if you are entering the A_HI value for the Spine Heater, select the SPINE HIGH menu.
4. A_HI/LO: XXX.X will appear on the display. Press the Bind button.
5. "EDIT? bind = yes" will appear on the display. Press the Bind button to confirm that you want to edit the value.
6. A_HI: XXX.X will appear on the display with the last value blinking. Enter the A_HI or A_LO value starting with the last value first. The A_HI and A_LO values are located on the heater tags (fig 1).

Use the orange Menu and Open buttons to toggle through numbers and press the green Bind button save the number. When you press the Bind button you will be forwarded to the next number.
When you enter the final value, the display will say "SAVING..." and then you will be taken out of this submenu and returned to the A_HI/A_LO INPUT menu.

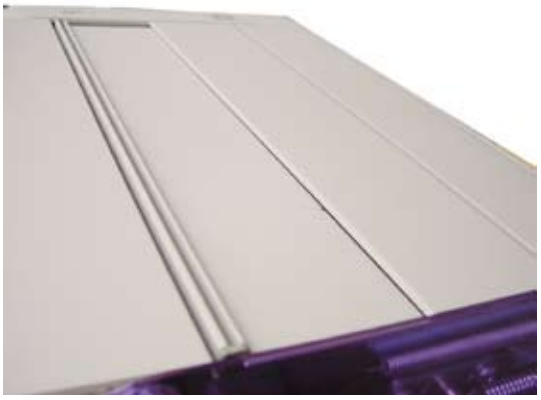
7. After entering the A_HI or A_LO values for the heater, it is recommended you go back into those menus and verify the correct values have been inputted.

5.4 TESTING AND CALIBRATION

5.4.5 Checking motor functions

Checking the Carriage Motor

1. Enter the MOTORS menu.
2. Select CARRIAGE.
3. Press the orange MENU button to move the Carriage Assembly forward and the green BIND button to move the Carriage Assembly backward.



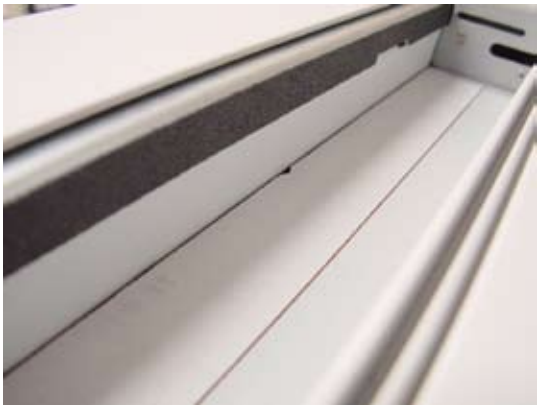
When the Carriage Assembly closes three numbers will be displayed. If the binding recess was empty, the first number should be 2000 +/- 64.

When the Carriage Assembly is all the way back and in the home position a home offset value (+/- 25) appears on the display.

Checking the Bender Motor

1. Enter the MOTORS menu.
2. Select BENDER1.
3. Press the orange MENU button to rotate the Bender Heater down and the green BIND button to rotate the Bender Heater up.

When the Bender Heater is in the down position, a value (0 +/- 5) will appear on the display.



When the Bender Heater is in the up position, a value (50 +/- 5) will appear on the display.

5.4 TESTING AND CALIBRATION

Checking the Bender Motor in the BENDER2 menu.

1. Enter the MOTORS menu.
2. Select BENDER2.
3. Press the orange MENU button or the green BIND button to rotate the Bender Heater in the down position, the halfway position, or the up position.

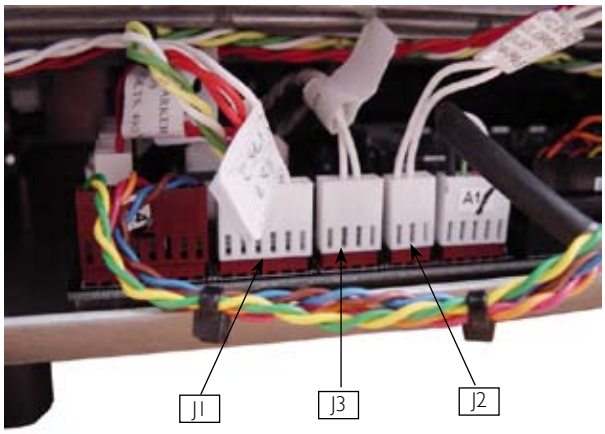


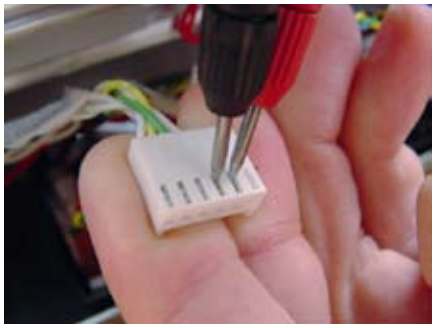
5.4 TESTING AND CALIBRATION

TOOLS REQUIRED: #1 Phillips Screwdriver, Ohmmeter

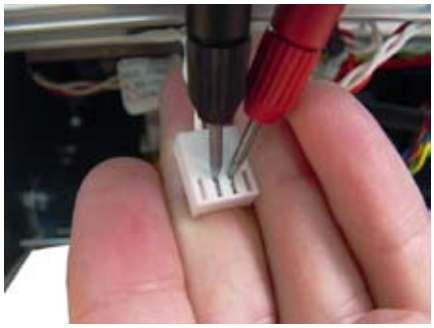
5.4.6 Checking the Resistance of the Heater Sensors

1. Turn off the machine. Make sure the machine is unplugged.
2. Remove the Front Cover.
3. Disconnect the Heater Sensor connections (J1/J2/J3).
4. Touch the red and black probes to each connector as shown.
5. Verify all Heater sensor connectors have a reading of 120 ohm +/- 15% at 20°C/68°F.





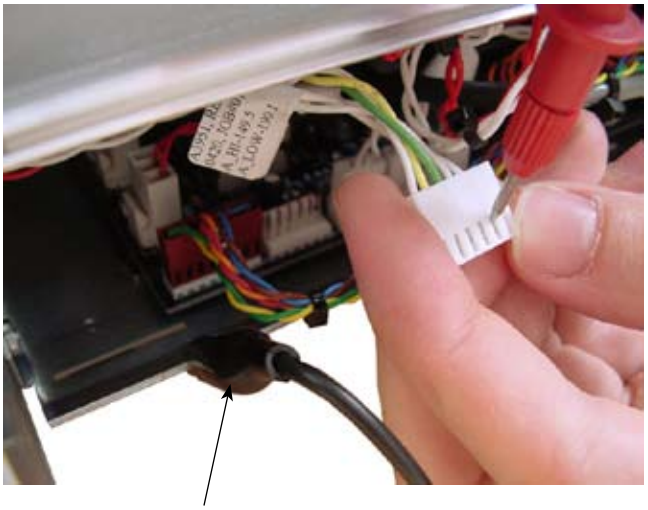
(J1) Spine Heater Connector



(J3) Back Heater Connector

(J2) Bender Heater Connector

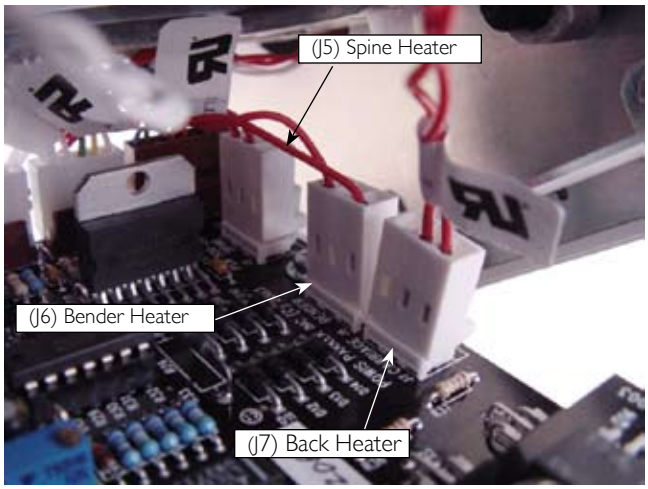
6. Attach a ground connector to the chassis of the machine as shown. Touch the red probe to each sensor connector. Each heater should have a reading greater than 100,000 ohm. Reconnect the heaters.



Ground Connector

5.4 TESTING AND CALIBRATION

TOOLS REQUIRED: #1 Phillips Screwdriver, Ohmmeter

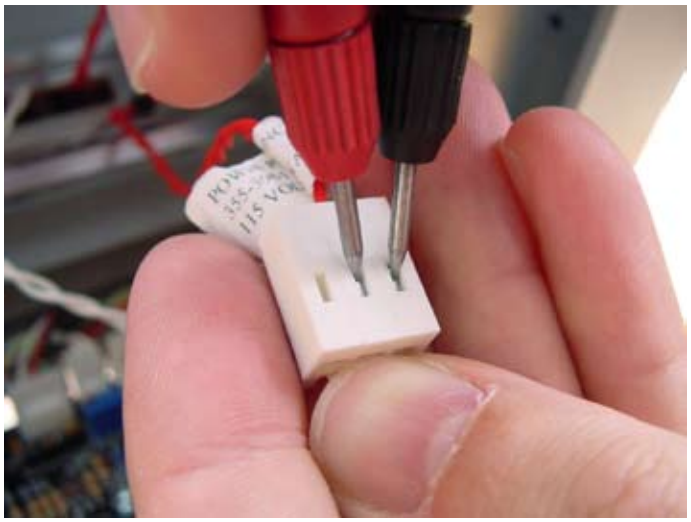


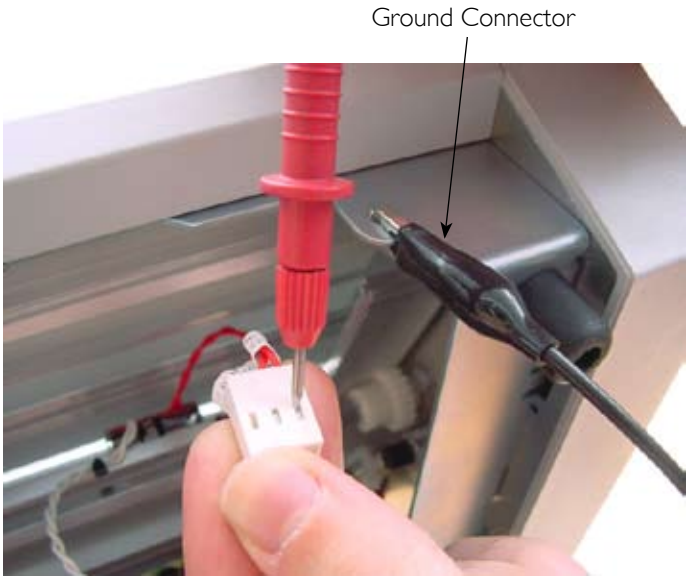
5.4.7 Checking the Resistance of the Heater Power Connectors

1. Turn off the machine. Make sure the machine is unplugged.
2. Drop the Controller Assembly down.
2. Disconnect the Heater Power Connectors (J5/J6/J7).
3. Touch the two probes to the Heater Power connector.
4. Verify the readings on the Ohmmeter are as follows:

HEATER	RESISTANCE
(J5) SPINE HEATER 115v/100v	27 ohm +/- 15%
(J5) SPINE HEATER 230v	108 ohm +/- 15%
(J6) BENDER HEATER 115v/100v	46 ohm +/- 15%
(J6) BENDER HEATER 230v	186 ohm +/- 15%
(J7) BACK HEATER 115v/100v	68 ohm +/- 15%
(J7) BACK HEATER 230v	273 ohm +/- 15%

5. Attach a ground connector to the chassis of the machine as shown. Touch the red probe to the heater connector. Each heater should have a reading greater than 100,000 ohm. Reconnect the heaters.





The focus of these service procedures is to explain how to safely and efficiently remove and replace components of the binder. Each part of this section deals with a specific component.
Following each of the procedures, may be a list of tasks that must be performed for the procedure to be completed. The tasks must be completed in the order in which they appear.

6.1 Covers

TOOLS REQUIRED: #1 Phillips Screwdriver

6.1.1 Left Cover

The Left Cover is attached by one M3x6 LG Flat Head Screw in the Binding Recess (fig 1) and two M3x10 PAN Head Plastite Screws on the underside of the machine (fig 2).

To remove the two screws on the underside of the machine, flip the binder on its back end (fig 2) to prevent scratching the top surface of the binder.

Fig 1

Fig 2

TOOLS REQUIRED: #1 Phillips Screwdriver

6.1.2 Right Cover

The Right Cover is attached by one M3x6 LG Flat Head Screw in the Binding Recess (fig 1) and two M3x10 SEM PAN Head Plastite Screws on the underside of the machine.

To remove the two screws on the underside of the machine, flip the binder on its back end to prevent scratching the top surface of the binder.

To fully remove the Right Cover, remove the three screws and then unplug the wire harness connector (fig 2).

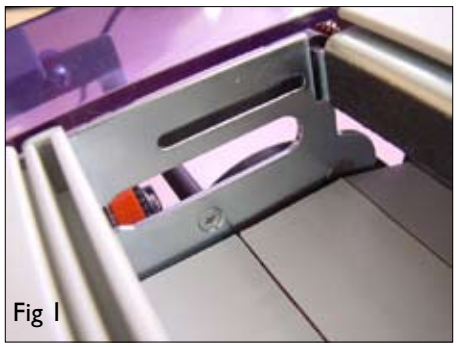


Fig 1

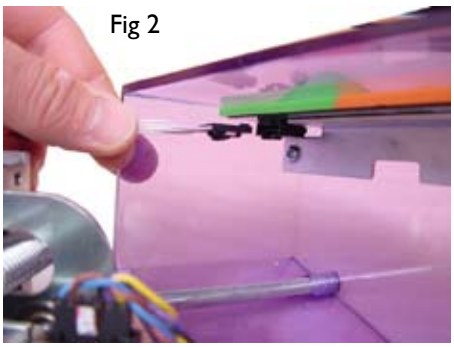


Fig 2

After reinstalling the Right Cover, perform the following task:	
TASK 1	Turn the binder on and make sure the buttons on the Right Cover function properly.

TOOLS REQUIRED: #1 Phillips Screwdriver

6.1.3 Front Cover

Removing the Front Cover

1. Remove the Skirt The Skirt is attached by two M3x6 SEM PH PHIL Screws (fig 1).
2. Use your hands and pry off the bottom of the Front Cover as shown. Rotate the Cover upwards until it can be removed from the Tamping Platform (fig 2).

Fig 1

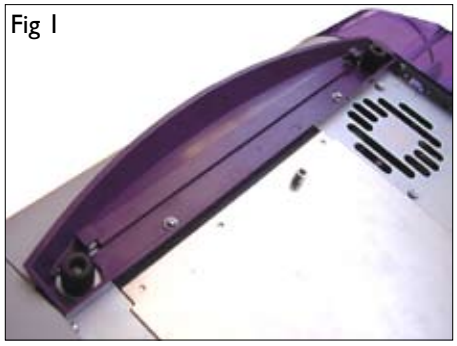


Fig 2

Attaching the Front Cover

1. Insert the lip of the Front Cover into the crevice on the Tamping Platform (fig 3) and then snap the bottom of the Front Cover into each of the locking places in the base (fig 4).
2. Reattach the Skirt.

Fig 3

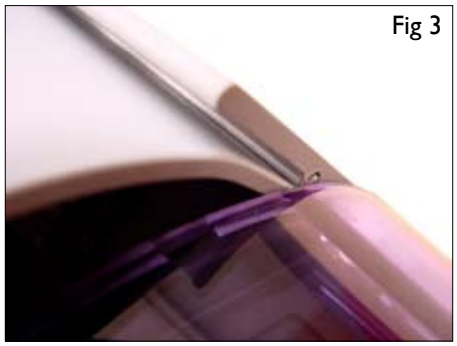
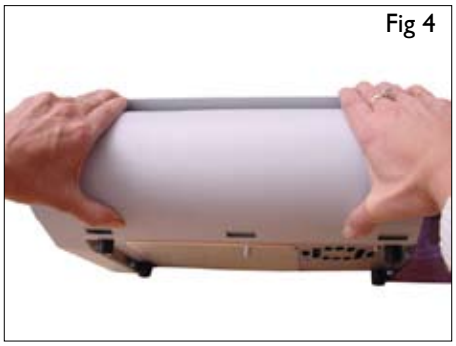


Fig 4



6.2 Cooling Rack

TOOLS REQUIRED: #1 & #2 Phillips Screwdrivers

Fig 5

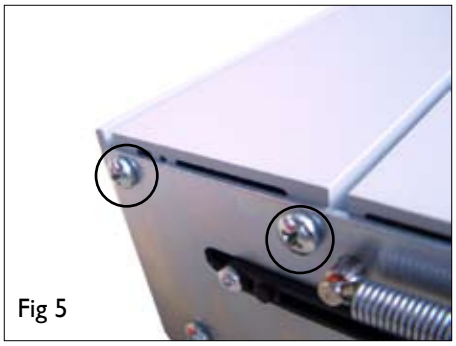
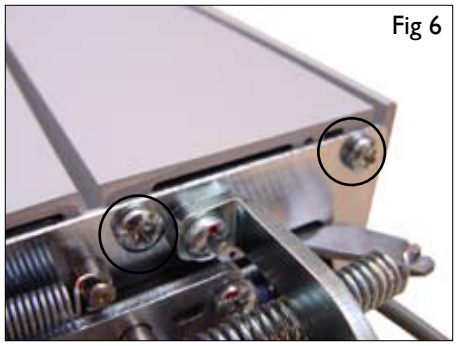


Fig 6



Removing the Cooling Rack

1. Remove the Right and Left Covers.
2. Remove the Cooling Rack. The Cooling Rack is attached by four M4x10 PH PHIL Screws (fig 5 & 6).

Fig 7

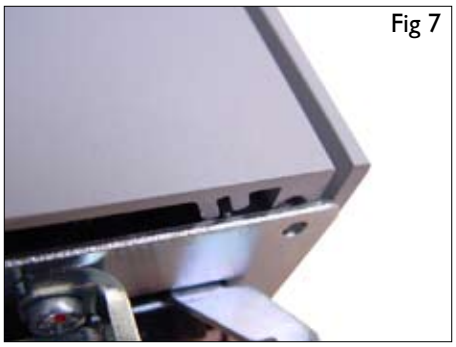
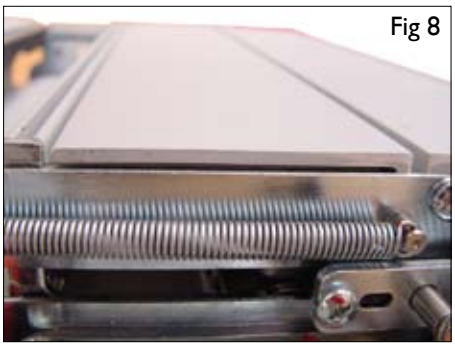


Fig 8



Attaching the Cooling Rack

1. Insert the slot on the underside of the Cooling Rack into the edge of the Backside Plate (fig 7).
2. Use the four M4x10 Screws to reattach the Cooling Rack, making sure the edge of the Cooling Rack is even with the top edge of the side plates (fig 8).

6.3 Controller Assembly

TOOLS REQUIRED: #2 Phillips Screwdriver, Ground Strap

6.3.1 Inspecting the Controller Assembly

The Controller Assembly can be accessed by either removing the Front Cover (fig 1) or by propping the machine up and then dropping it down by removing the two screws attaching it the back of the Base Plate (fig 2 & 3). The Controller Assembly is attached with two M4x6 PH PHIL Screws.

SAFETY NOTE: When working with the Controller Assembly, always disconnect the Power Cord and always wear a Ground Strap to protect the board from ESD.

NOTE: Removing the Front Cover provides the best access to all the Wire Harness connections.

Fig 1

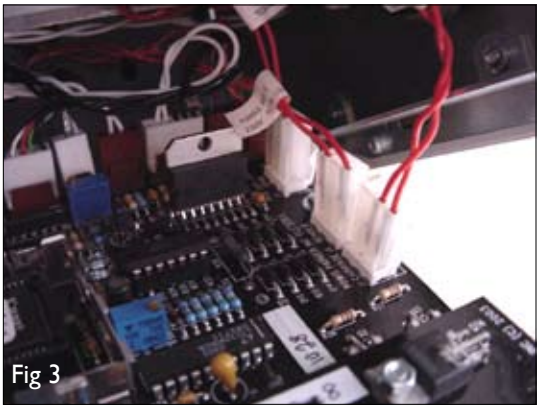


Fig 3

NOTE: Dropping the Controller Assembly down provides the best access to the Heater Connections.

Fig 2

CONTROLLER NOTE: Please be aware that there is two types of FB8X Controllers. One is a NON-RoHS and the other RoHS. They can be identified by their part numbers and colors. Please refer to pages 71 & 72.

*** Please note that the controllers are not interchangable.**

6.3.2 Removing the Controller Assembly

1. Disconnect the power cord from the machine.
2. Remove the Front Cover.
3. Disconnect all the Wire Harness connections from the Controller Assembly (fig 4).
4. Prop the back of the machine up and remove the two M4x6 Screws attaching the Controller Assembly to the back of the Base Plate.
5. Gently lower the Controller Assembly down and disconnect the three heater connectors.
6. Remove the Controller Assembly (fig 5).

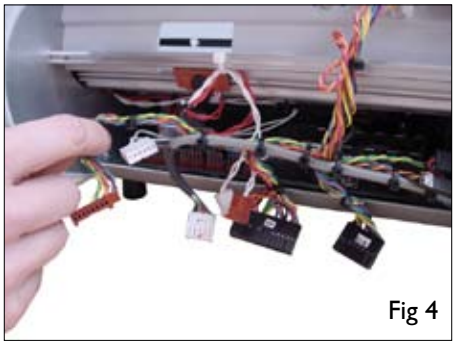


Fig 4

Fig 5

6.3 Controller Assembly


Fig 1

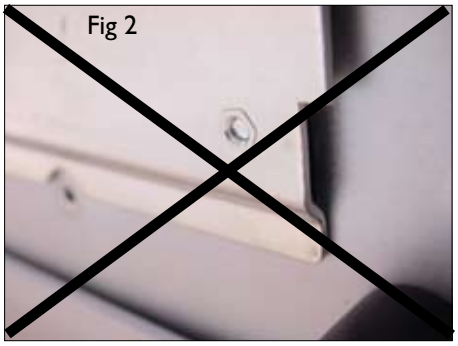


Fig 2


Fig 3

6.3.2 Installing the Controller Assembly

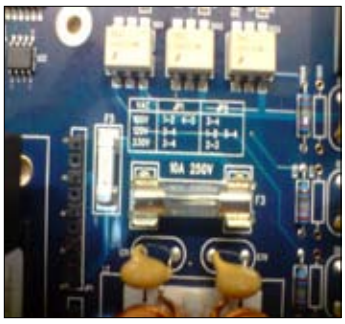
1. Prop the back end of the machine up and place the Controller Assembly underneath.
2. Connect the three Heater connections.
3. Connect the Wire Harness connections in the front of the of the Controller Assembly
4. Insert the Controller Assembly bracket into the Base Plate (fig 1). Verify the bracket is not placed outside the base plate as shown (fig 2).
5. Lift up on the Controller Assembly and attach to the back of the Base Plate using the two M4x6 Screws (fig 3).

If the same Controller Assembly is removed and then reinstalled, perform the following tasks:

TASK 1	Check the Sensors.
TASK 2	Verify heaters are plugged in by selecting the CHECK HEATER SN menu.
TASK 3	Test the heaters.

If a new Controller Assembly is installed, perform the following tasks:

TASK 1	Calibrate the Book Sensor, the Strip Sensor, the Carriage, and the Heaters in CALIBRATION menu.
TASK 2	Input new A_HI/A_LO INPUT values for each of the heaters. The A HI/ A LO values are located on each of the heater tags.



Left photo: NON-RoHS / Right Photo: RoHS

6.3.3 Changing the Fuses

1. Disconnect the Power Cord.
2. Prop the machine up and drop the Controller Assembly down.
3. Use a fuse puller to remove the Fuses.
4. Insert the new fuse(s) by snapping them in place by hand.

ESD PROTECTION: Wear a Ground Strap while working with the Controller Assembly.

If any fuses are replaced, perform the following task:

TASK 1	Test the heaters.

6.4 Carriage Drive

TOOLS REQUIRED: #2 Phillips Screwdriver, Needle Nosed Pliers, Diagonal Cutters

Removing the Carriage Drive

1. Remove the Right and Left Covers.
2. Remove the Cooling Rack.
3. Cut the cable tie attaching the Wire Harness to the Carriage Motor sensor board using Diagonal Cutters.
4. Disconnect the Wire Harness connector from the Carriage Motor.
5. Remove the two Carriage Springs using Needle Nosed Pliers (fig 1 & 2).
6. Move the Carriage Assembly forward so that the two screws attaching the Drive Nut Bracket are accessible (fig 3). This will ensure that no damage is done to the sensor board on the Carriage Drive Motor.
6. Remove the two M4x20 PH PHIL Screws attaching the Drive Nut Bracket, the Right Carriage Guide, and the Carriage Guide Back together (fig 3).
7. Remove the Carriage Guide Back.
8. Flip the Drive Nut Bracket down and remove (fig 4).
9. Remove the three M4x8 PH PHIL Screws attaching the Carriage Drive Plate to the Right Side Plate (fig 5).
10. Remove the Carriage Drive Assembly.

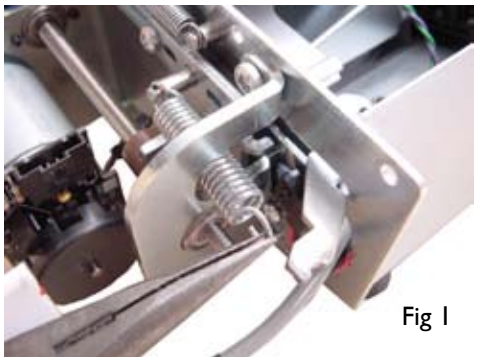


Fig 1

Fig 2

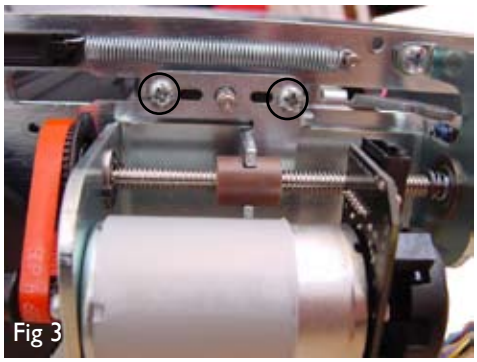


Fig 3

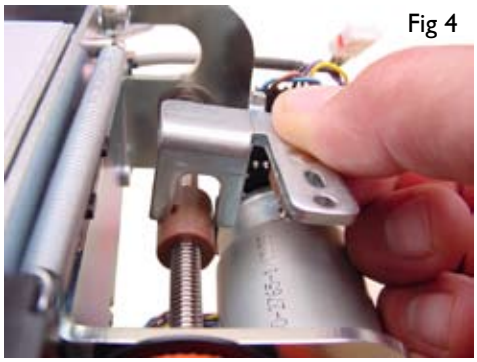


Fig 4

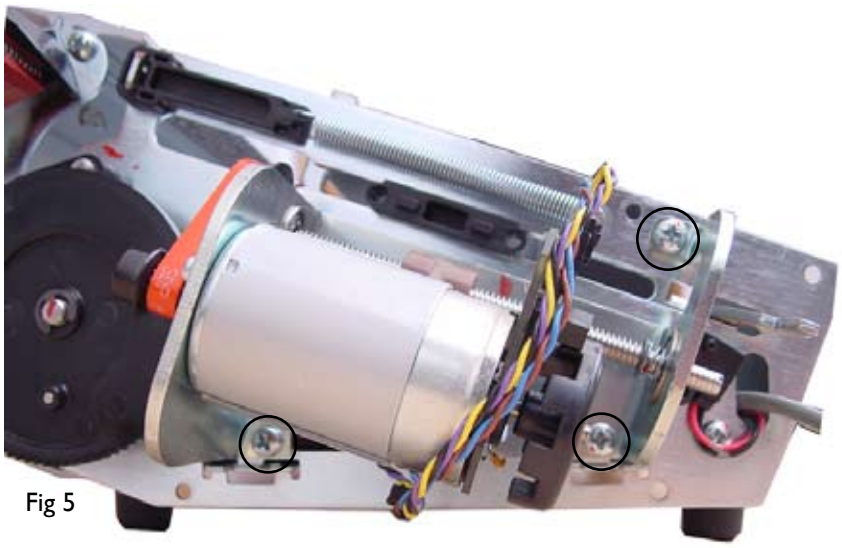


Fig 5

6.4 Carriage Drive

TOOLS REQUIRED: #2 Phillips Screwdriver, Needle Nosed Pliers, Diagonal Cutters


Fig 1

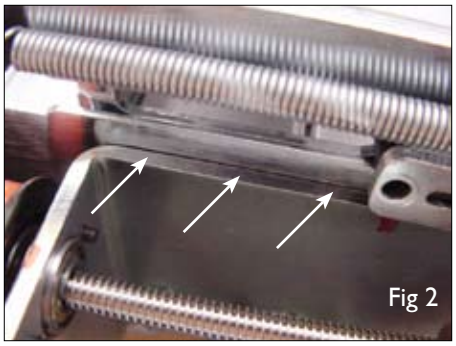


Fig 2


Fig 3

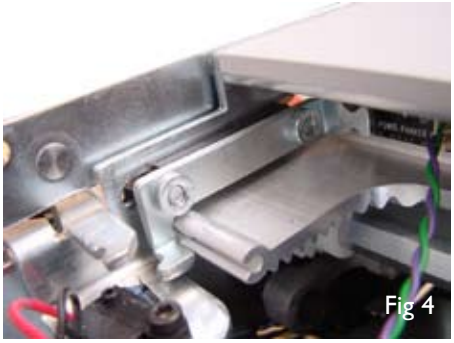


Fig 4

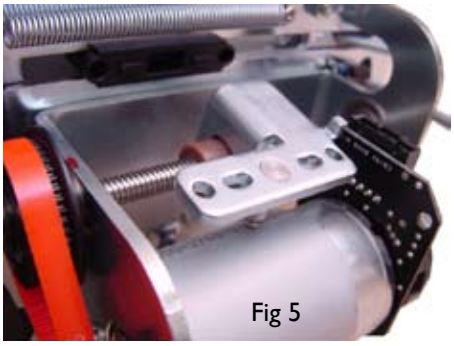


Fig 5

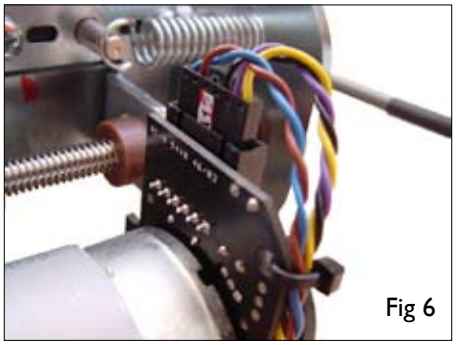


Fig 6

Installing the Carriage Drive

1. Insert the half shears on the Carriage Drive Plate into the hole and slot in the Right Side Plate (fig 1).
2. Attach the Carriage Drive to the Right Side Plate using the three M4x8 PH PHIL Screws. Ensure the Carriage Drive Plate is flush against the Right Side Plate (fig 2). Ensure the Carriage Drive does not pinch the Carriage Home Switch (fig 3).
2. Place the Carriage Back Guide against the Right Carriage Guide in the orientation shown (fig 4).
3. Attach the Drive Nut Bracket to the Drive Nut as shown (fig 5).
4. Flip the Drive Nut Bracket up and use the two M4x20 Screws to attach the Drive Nut Bracket, the Right Carriage Guide, and the Carriage Guide Back together.
5. Attach the two Carriage Springs using Needle Nosed Pliers.
6. Connect the Wire Harness connector to the Carriage Motor.
7. Cable Tie the wire to the Carriage Motor sensor board (fig 6). The wires must be routed to the motor side of the circuit board.
8. Reinstall the Cooling Rack.
9. Reinstall the Right and Left Covers.

After replacing the Carriage Drive, perform the following tasks:

TASK 1	Test the Carriage Motor
TASK 2	Recalibrate the Carriage Assembly in the CAL CARRIAGE menu.

6.5 Bender Drive

TOOLS REQUIRED: #1 & #2 Phillips Screwdrivers

Removing the Bender Drive

1. Remove the Right Cover.
2. Remove the Front Cover.
3. Remove the two M3x6 SEM PH PHIL Screws attaching the Bender Drive to the Right Side Plate (fig 1).
4. Disconnect the Wire Harness connector from the Bender Drive.

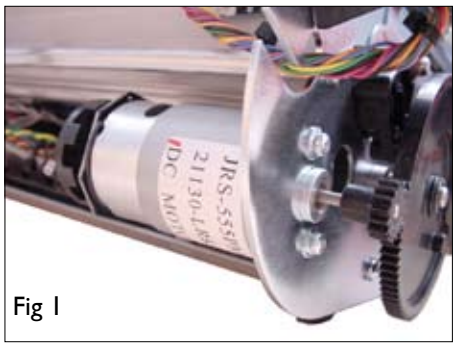


Fig 1

Installing the Bender Drive

1. Connect the Wire Harness connector to the Bender Drive.
2. Insert the Bender Drive through the hole in the Right Side Plate, making sure the sensor board is pointing towards the inside of the machine and that the teeth of the Bender Drive gear and the Bender Gear engage each other (fig 2).
3. Attach the Bender Drive to the Right Side Plate using two M3x6 SEM PH PHIL Screws.


Fig 2

After replacing the Bender Motor, perform the following tasks:

TASK 1	Test the Bender Motor in the BENDER1 menu.

6.6 Sensors

TOOLS REQUIRED: #1 & #2 Phillips Screwdrivers

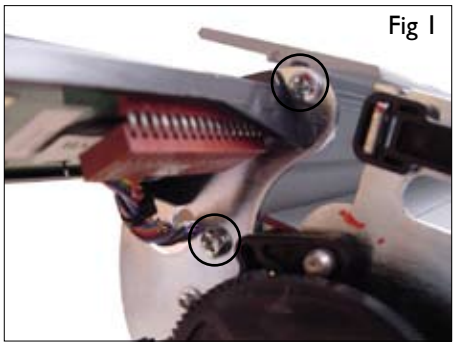


Fig 1

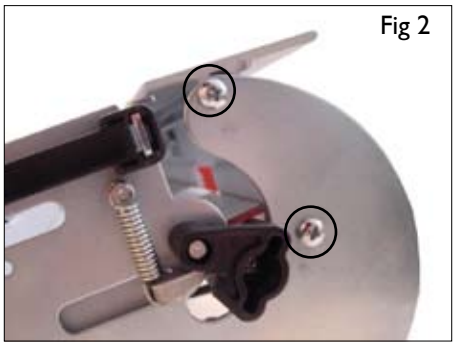


Fig 2

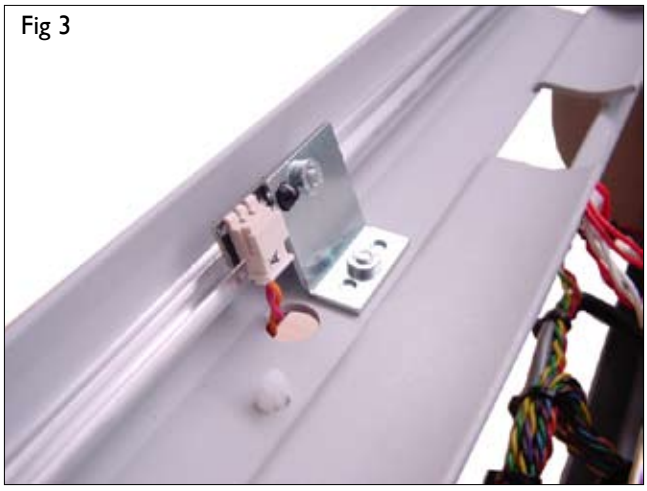


Fig 3

6.6.1 Removing the Strip Present PCA

1. Remove the Right and Left Covers.
2. Remove the Front Cover.
3. Remove the four M4x10 PH PHIL Screws attaching the Tamping Platform to the Right and Left Side Plates (fig 1 & 2).
4. Disconnect the Wire Harness connector from the Strip Sensor.
5. Remove the M3x6 PH PHIL Screw attaching the Strip Sensor bracket to the Tamping Platform.
6. Remove the M3x6 LG PH PHIL Screw attaching the Strip Sensor to the Bracket.

Installing the Strip Present PCA

1. Attach the Strip Sensor to the Strip Sensor Bracket using one M3x6 LG PH PHIL Screw.
2. Attach the Strip Sensor bracket to the Tamping Platform using the M3x6 Screw.
3. Insert the Wire Harness connector through the hole on the other side and connect to the Strip Sensor (fig 3).
4. Reattach the Tamping Platform using the four M4x10 Screws.
5. Reattach the Right and Left Covers.
6. Reattach the Front Cover.

After replacing the Strip Present PCA, perform the following tasks:

TASK 1	Recalibrate Strip Sensor in the CAL STRIP SENSOR menu.
TASK 2	Check Strip Sensor in the CHECK SENSORS menu.

6.6 Sensors

TOOLS REQUIRED: #1 & #2 Phillips Screwdrivers

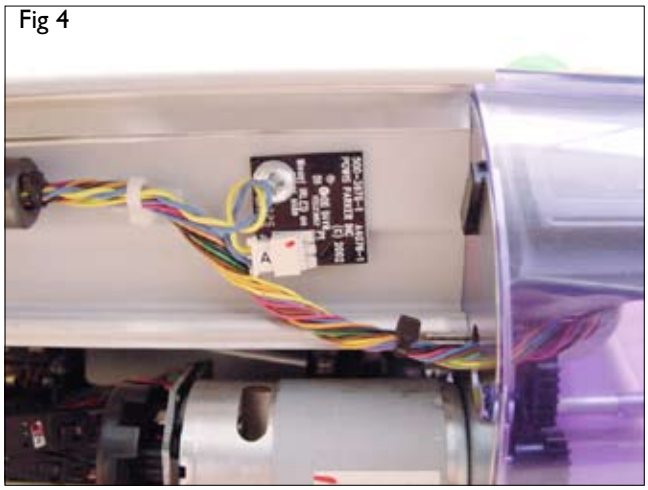
6.6.2 Removing the Book Sense Emitter PCA

1. Remove the Front Cover.
2. Remove the M4x8 PH PHIL Screw attaching the Book Emitter PCA to the Tamping Platform.
3. Disconnect the Wire Harness connector from the Book Emitter PCA.

Installing the Book Sense Emitter PCA

1. Attach the Book Emitter PCA to the Tamping Platform using one M4x8 PH PHIL Screw.
2. Connect the Wire Harness connector (fig 4).
3. Reinstall the Front Cover.

Fig 4



After replacing the Book Sense Emitter PCA, perform the following tasks:

TASK 1	Recalibrate Book Sensor in the CAL BOOK SENSOR menu.
TASK 2	Check Book Sensor in the CHECK SENSORS menu.

6.6 Sensors

Replacing the Book Detector requires you to partially disassemble the Carriage Assembly. It is recommend that before you replace the Book Detector, you first replace the Book Emitter only, and then check the sensors in the CHECK SENSORS menu. If the sensor test fails, follow the instructions to replace the Book Detector.

TOOLS REQUIRED: #1 & #2 Phillips Screwdrivers

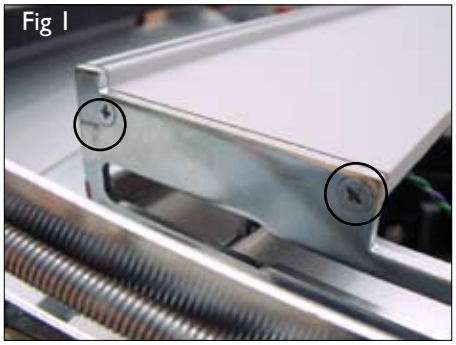


Fig 1

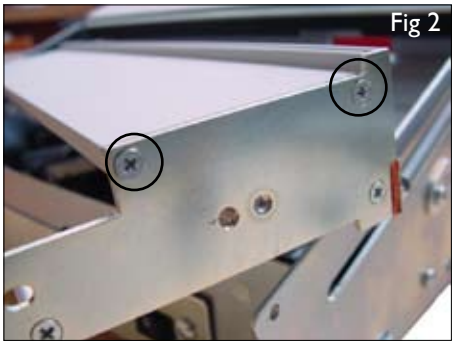


Fig 2

6.6.3 Removing the Book Sense Detector PCA

1. Remove the Right and Left Covers.
2. Remove the Cooling Rack.
3. Remove the Carriage Assembly but do not disconnect it from the Controller Assembly.
4. Remove the four M3x12 FH PHIL Screws attaching the Carriage Top (fig 1 & 2).
5. Disconnect the Wire Harness connector from the Book Detector PCA.
6. Pull the Book Sense Detector PCA from the pinched slot.

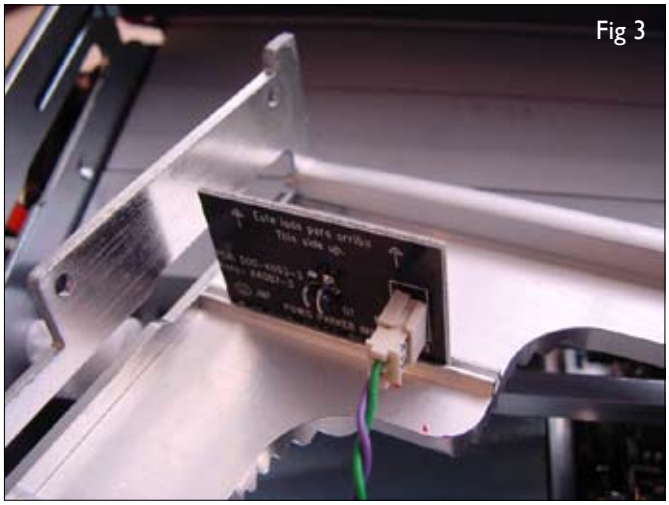


Fig 3

Installing the Book Sense Detector PCA

1. Insert the Book Sense Detector PCA into the pinched slot making sure that it is firmly seated inside the slot.
2. Connect the Wire Harness connector (fig 3).
3. Reattach the Carriage Top using the four M3x12 FH PHIL Screws and making sure the top edge of the PCA fits into the slot on the underside of the plate.
4. Reinstall the Carriage Assembly.
5. Reinstall the Cooling Rack.
6. Reinstall the Right and Left Covers.
7. Reinstall the Front Cover.

After replacing the Book Detector, perform the following tasks:

TASK 1	Recalibrate Book Sensor in the CAL BOOK SENSOR menu.
TASK 2	Check Book Sensor in the CHECK SENSORS menu.
TASK 3	Recalibrate the Carriage Assembly in the CAL CARRIAGE menu.

6.7 Switches

TOOLS REQUIRED: #1 & #2 Phillips Screwdrivers, 2.5 Hex Key

6.7.1 Removing the Carriage Home Switch

1. Remove the Right and Left Covers.
2. Remove the Cooling Rack.
3. Remove the M3x10 SH CAP Screw using a 2.5mm Hex Key (fig 1).
4. Unplug the Carriage Home Switch from the Wire Harness from inside the machine.

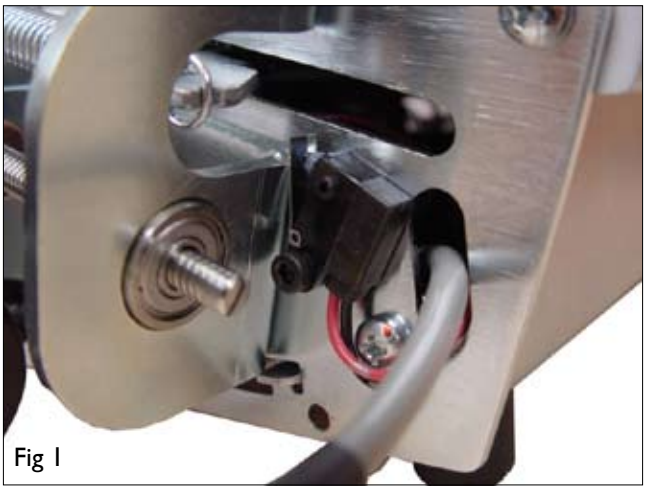


Fig 1

Installing the Carriage Home Switch

1. Insert the Carriage Home Switch wire through the hole in the Right Side Plate and connect it to the Wire Harness (fig 2).
2. Attach the Switch to the Right Side Plate using a M3x10 SH CAP Screw and a 2.5mm Hex Key.
3. Reinstall the Cooling Rack.
4. Reinstall the Right and Left Covers.

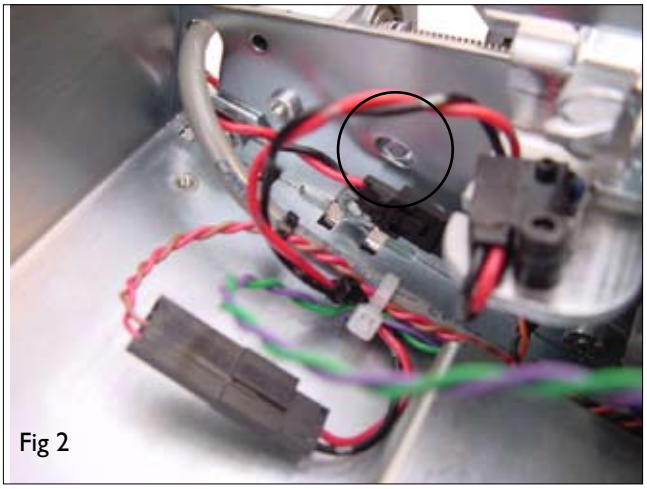


Fig 2

After replacing the Carriage Home Switch, perform the following tasks:

TASK 1	Check the switch in the CHECK SENSORS menu.
TASK 2	Recalibrate the Carriage.

6.7 Switches

TOOLS REQUIRED: #1 & #2 Phillips Screwdrivers, Diagonal Cutters

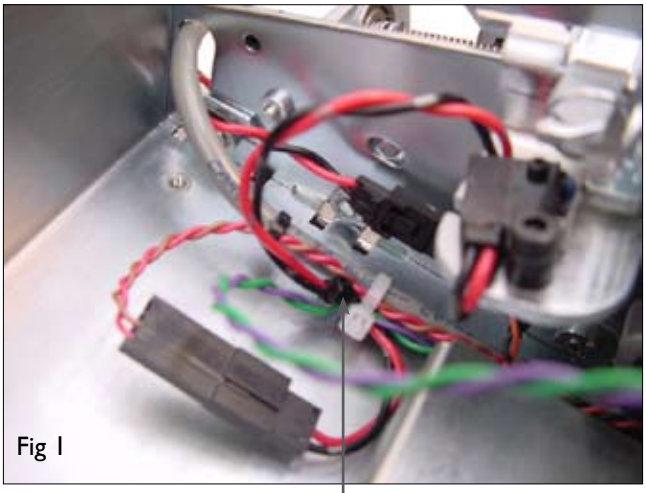


Fig 1

The little black cable tie on the Switches wire must be next to the 1/8" wide cable tie.

6.7.2 Removing the Carriage Clamp Switch

1. Remove the Right and Left Covers.
2. Remove the Cooling Rack.
3. Remove the M3x10 SH CAP Screw using a 2.5mm Hex Key.
4. Cut the head of the cable tie attaching the Switch's wire to the Wire Harness bundle.
5. Unplug the Carriage Clamp Switch connector from the Wire Harness (fig 1).

Installing the Carriage Clamp Switch

1. Connect the Carriage Clamp Switch connector to the Wire Harness.
2. Attach the Carriage Clamp Switch to the bracket on the Carriage Assembly using the M3x10 SH CAP Screw. The Switch is positioned by a round tab that engages a hole in the bracket. Make sure the wire is routed as shown in the picture.
3. Cable tie the Switch's wire and the Wire Harness bundle to the Base Plate using a 1/8" wide cable tie.
4. Verify the little black cable tie on the Switch's wire is next to the 1/8" Cable tie. Trim excess on 1/8" cable tie.

After replacing the Carriage Clamp Switch, perform the following tasks:

TASK 1	Check the switch in the CHECK SENSORS menu.
TASK 2	Recalibrate the Carriage.

6.8 Display

TOOLS REQUIRED: #1 Phillips Screwdriver

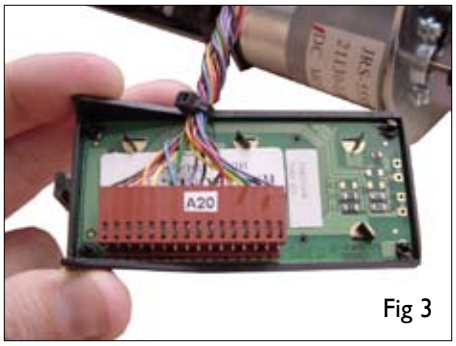


Fig 3

Fig 4

Removing the Display

1. Remove the Right Cover.
2. Remove the Front Cover.
3. Pull the Display up out of the slot in the Right Side Plate.
4. Disconnect the Wire Harness connector.

Installing the Display

1. Connect the Wire Harness to the Display (fig 3).
2. Insert the Display into the slot in the Right Side Plate (fig 4).
3. Reinstall the Right Cover.
4. Reinstall the Front Cover.

After replacing the Carriage Home Switch, perform the following tasks:

TASK 1	Turn the binder on and make sure characters appear on the display.

6.9 Heater Assemblies

TOOLS REQUIRED: #1 & #2 Phillips Screwdrivers, Diagonal Cutters

6.9. 1 Removing the Bender Assembly

1. Remove the Right and Left Covers.
2. Remove the Front Cover.
3. Cut the cable tie attaching the Bender Heater wires to the Tamping Platform.
4. Remove the four M4x10 PH PHIL Screws attaching the Tamping Platform to the Right and Left Side Plates.
5. Do not remove the Tamping Platform completely. Keep the Strip Present PCA attached to the Wire Harness and just flip the Tamping Platform out of the way so as to gain better access to the Bender Heater (fig 1).
5. Remove the two M4x16 PH PHIL Screws attaching the Bender Heater to the Right and Left Bender Pivots (fig 2 & 3).
6, Disconnect the Bender Heater connections from the Controller Assembly.


Fig 1

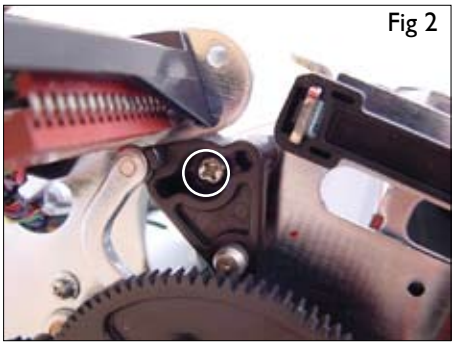


Fig 2


Fig 3

Installing the Bender Assembly

1. Insert the tabs on the Bender Pivots into the holes on the ends of the Bender Heater (fig 4).
2. Attach the heater to the Bender Pivots using the two M4x16 PH PHIL Screws.
3. Reattach the Tamping Platform using the four M4x10 Screws.
4. Connect the two Bender Heater connections to the Controller Assembly.
5. Cable tie the wires to the Tamping Platform (fig 5). Ensure there is proper slack in the wires for the Bender Heater to rotate up and down.

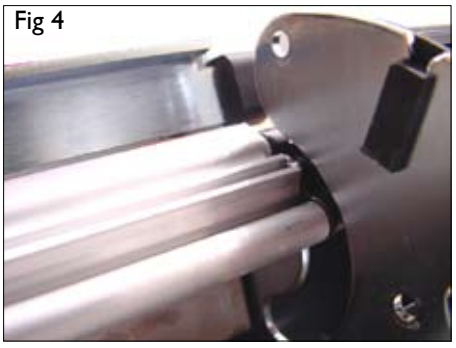


Fig 4

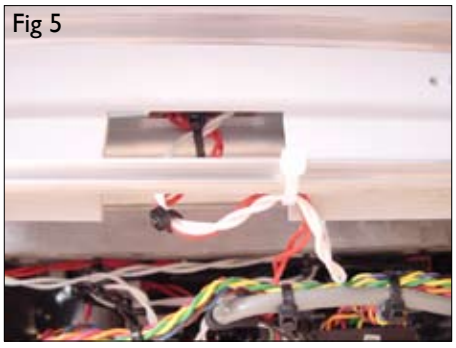


Fig 5

After replacing the Bender Heater, perform the following tasks:

TASK 1	Input A_HI/A_LO INPUT values. A_HI/ A_LO values are located on the heater tags. **NOTE: This is only necessary if a new Bender Heater has been installed.**
TASK 2	Calibrate the Bender Heater in CAL HEATERS menu.
TASK 3	Test the heater and measure the temperature.

6.9 Heater Assemblies

TOOLS REQUIRED: #1 & #2 Phillips Screwdrivers, Needle Nosed Pliers, 2.5mm Hex Key

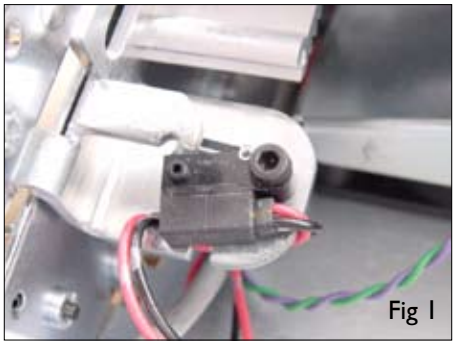


Fig 1


Fig 2

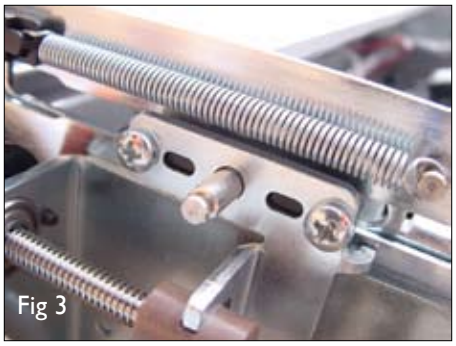


Fig 3

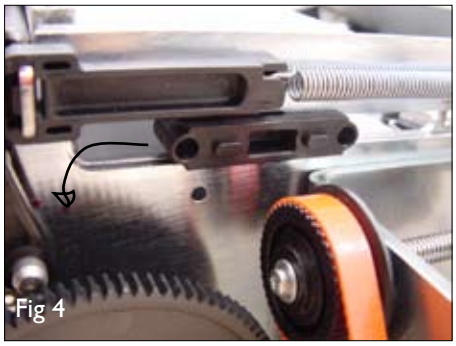


Fig 4

6.9.2 Removing the Carriage Assembly (Back Heater)

1. Remove the Right and Left Covers.
2. Remove the Front Cover.
3. Remove the Cooling Rack.
4. Remove the M3x10 SH CAP Screw attaching the Carriage Clamp Switch using a 2.5mm Hex Key (fig 1).
5. Remove the Carriage Springs.
6. Remove the Left Carriage Guide by unscrewing the two M3x10 PH PHIL Screws (fig 2).
7. Remove the two M4x20 PH PHIL Screws attaching the Drive Nut Plate, the Right Carriage Guide, and the Carriage Back Guide (fig 3).
8. Remove the Right Carriage Guide by moving the Carriage Assembly towards the front of the machine and sliding the guide all the way forward and out of the slot (fig 4).
9. Disconnect the Wire Harness from the Book Detector PCA.
10. Disconnect the Back Heater wires from the Controller Assembly.
11. Remove the Carriage Assembly.

6.9 Heater Assemblies

TOOLS REQUIRED: #1 & #2 Phillips Screwdrivers, Needle Nosed Pliers

6.9.2 Installing the Carriage Assembly (Back Heater)

1. Connect the Heater connections to the Controller Assembly.
2. Install the Carriage Assembly by feeding the tab on the right side of the Carriage Assembly into the long slot in the Right Side Plate (fig 1). When installed, the Carriage will be sitting on the Carriage Alignment Gears.
3. Move the Carriage Assembly forward and check the alignment to the Spine Heater. The left side of the Carriage should be ever so slightly more forward than the right side (fig 2 & 3). If it is not, lift one side of the Carriage off the gears and re-align.
4. Connect the Wire Harness connector to the Book Detector PCA (fig 4).
5. Attach the Left Carriage Guide using two M3x10 PH PHIL Screws. Ensure the tabs in the Left Carriage Guide fit into the hole and slot in the Left Carriage Plate.
6. Move the Carriage Assembly all the way forward until the slot aligns with the slot in the Right Side Plate. Insert the Right Carriage Guide into the slot making sure the tabs are facing outward. Push the Carriage Guide all the way back (fig 5).
7. Move the Carriage Assembly back. Flip the Drive Nut Bracket up so that the holes engage the two tabs in the Right Carriage Guide.
8. Place the Carriage Guide Back against the Right Carriage Guide in the orientation shown (fig 6).
9. Use the two M4x20 Screws to attach the Drive Nut Bracket, the Right Carriage Guide, and the Carriage Guide Back together (fig 7). Verify these screws are very tight.
10. Reattach the Carriage Clamp Switch.
11. Reattach the Carriage Springs
12. Reattach the Covers and the Cooling Rack.

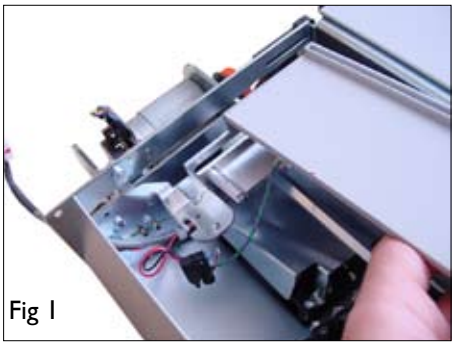


Fig 1

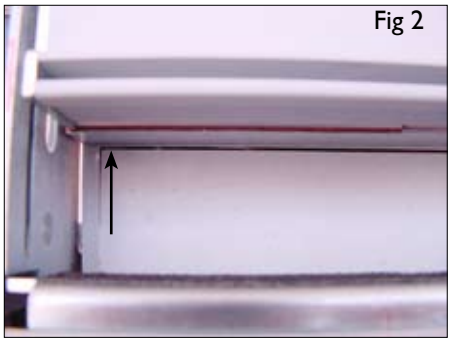


Fig 2

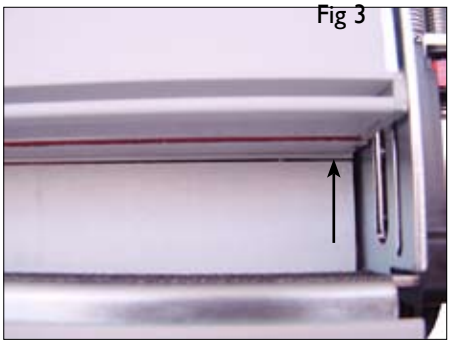


Fig 3

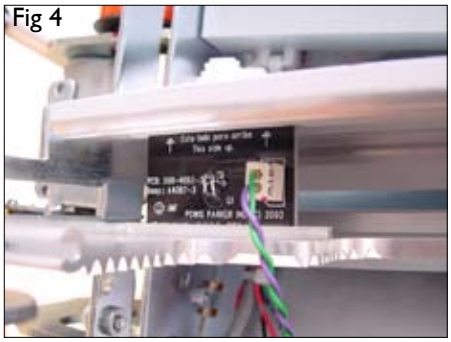


Fig 4


Fig 5

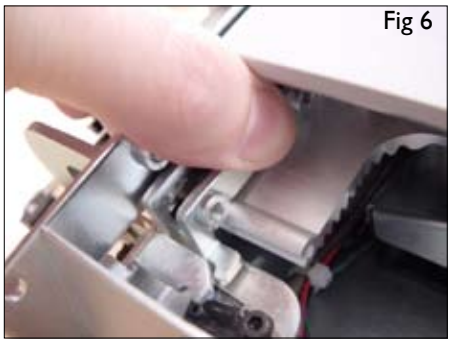


Fig 6

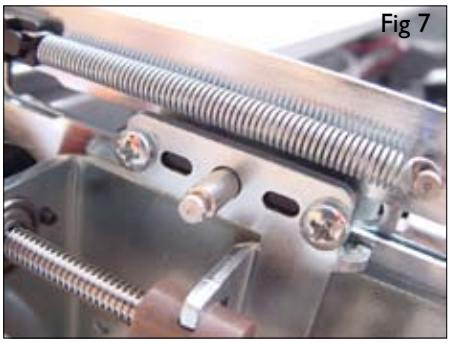


Fig 7

After replacing the Carriage Assembly, perform the following tasks:

TASK 1	Input A_HI/A_LO INPUT values. A_HI/A_LO values are located on the heater tags. **NOTE: This is only necessary if a new Carriage Assembly has been installed.**
TASK 2	Calibrate the Back Heater in CAL HEATERS menu.
TASK 3	Test the heater and measure the temperature.
TASK 4	Recalibrate Carriage Assembly in the CAL CARRIAGE menu.

6.9 Heater Assemblies

TOOLS REQUIRED: #1 & #2 Phillips Screwdrivers, Needle Nosed Pliers, 2.5mm Hex Key


Fig 1


Fig 2


Fig 3


Fig 4

6.9.3 Removing the Spine Assembly

1. Remove the Right and Left Covers.
2. Remove the Cooling Rack.
3. Remove the Carriage Assembly.
4. Remove the M4x6 PH PHIL Screw attaching the Carriage Alignment Plate to the Left Side Plate (fig 1). Remove the Plate.
5. Remove the Carriage Alignment Shaft by swinging it in an arc so that the other end detaches from the pivot pin in the side plate (fig 2).
6. Remove the Spine Spring (fig 3).
7. Remove the two 7mm Retaining Rings from the Spine Pivot Pins using Needle Nosed Pliers (fig 4).
8. Remove the Spine Pivot Pins.
9. Disconnect the heater connections from the Controller Assembly.
10. Remove the Spine Heater.

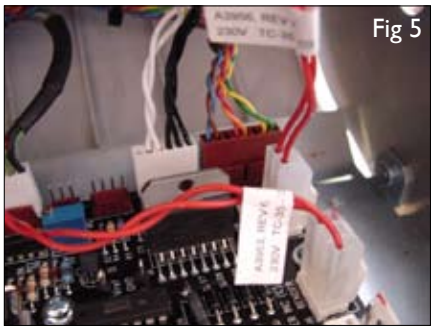


Fig 5

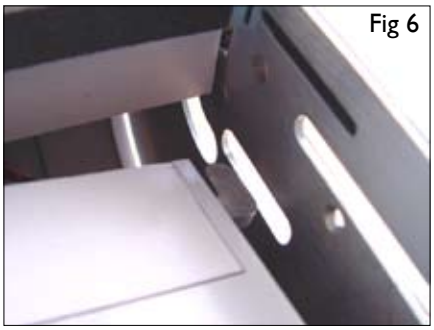


Fig 6

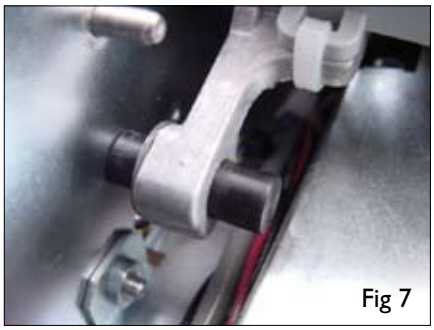


Fig 7


Fig 8

Installing the Spine Assembly

1. Connect the two heater connectors to the Controller Assembly (fig 5).
2. Insert the tab on the Spine Heater through the slot in the Left Side Plate (fig 6).
3. Attach the two Spine Pivot Pins making sure the groove is near the side plates.
4. Attach the two 7mm Retaining Rings into the Spine Pivot Pins (fig 7 & 8).
5. Install the Carriage Alignment Shaft Assy by inserting the right side into the pivot pin on the Right Side plate.
6. Attach the left side of the shaft by inserting the Carriage Alignment Plate through the Left Side Plate and into the Carriage Alignment Gear.
7. Attach the Carriage Alignment Plate using the M4x6 PH PHIL Screw.
8. Attach the Spine Spring.
9. Reinstall the Carriage Assembly.
10. Reinstall the Cooling Rack and the Covers.

After replacing the Spine Heater, perform the following tasks:

TASK 1	Input A_HI/A_LO INPUT values. A_HI/A_LO values are located on the heater tags. **NOTE: This is only necessary if a new Spine Heater has been installed.**
TASK 2	Calibrate the Spine Heater in CAL HEATERS menu.
TASK 3	Test all heaters.
TASK 4	Measure the Spine Heater temperature
TASK 5	Recalibrate the Carriage Assembly in the CAL CARRIAGE menu.

6.10 Fan

TOOLS REQUIRED: #1 & #2 Phillips Screwdrivers, Needle Nosed Pliers, 2.5mm Hex Key, Diagonal Cutters

Removing the Fan

1. Remove the Right and Left Covers.
2. Remove the Cooling Rack.
3. Remove the Carriage Assembly.
4. Remove the Carriage Alignment Shaft.
5. Remove the Spine Heater.
6. Remove the two M4x20 PH PHIL Screws attaching the Fan Shroud and the Fan to the Base Plate (fig 1).
7. Cut the cable tie that secures the Fan wire to the Wire Harness wire bundle.
8. Disconnect the Fan connector from the Wire Harness connector.

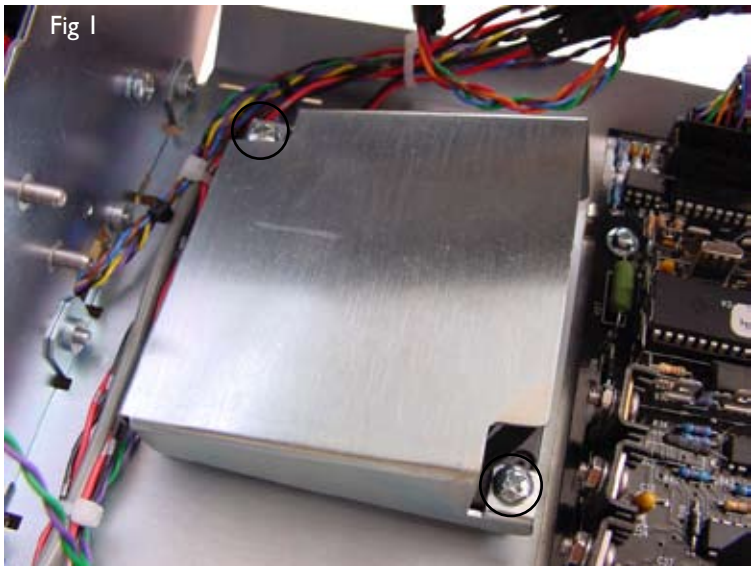


Fig 1

Installing the Fan

1. Place the Fan on Base Plate so that label is facing up and the fan wires come out towards the front of the machine.
2. Place the Fan Shroud over the Fan and attach using M4x20 Pan Head Screws making sure that no wires are being pinched under the Fan or Shroud. Ensure the Fan Shroud is oriented so that the open end is facing the Controller Assembly (fig 1)
3. Connect the Fan connector to the Wire Harness connector.
4. Use a cable tie and secure the Fan wire and the Wire harness bundle to the Base Plate (fig 2). Trim off excess cable tie.
5. Reinstall the Spine Heater.
6. Reinstall the Carriage Alignment Shaft.
7. Reinstall the Carriage Assembly.
8. Reinstall the Cooling Rack.
9. Reinstall the Right and Left Covers.

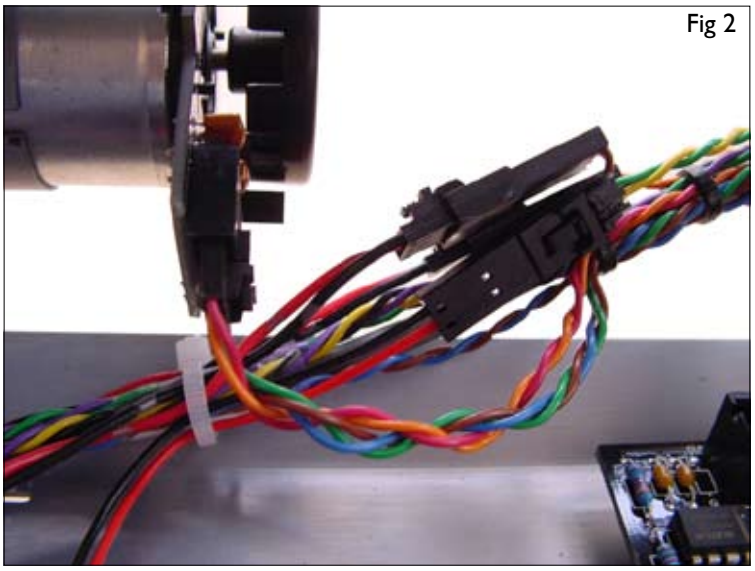


Fig 2

After replacing the Fan, perform the following tasks:

TASK 1	Test the heaters. Make sure the fan turns on during this test.
TASK 2	Calibrate the Carriage Assembly in the CAL CARRIAGE menu.

6.11 Jaw

TOOLS REQUIRED: #1 & #2 Phillips Screwdrivers

Fig 1

Fig 2

Removing the Jaw Assembly

1. Remove the Right and Left Covers.
2. Remove the Front Cover.
3. Remove the four M4x10 PH PHIL Screws attaching the Tamping Platform to the Right and Left Side Plates.
4. Do not remove the Tamping Platform completely. Just flip the Tamping Platform out of the way so as to gain better access to the Jaw Assembly.
5. Remove the two Jaw Springs.
6. Remove the Jaw Assembly.
7. Remove the two Jaw Guides from the Jaw Assembly.

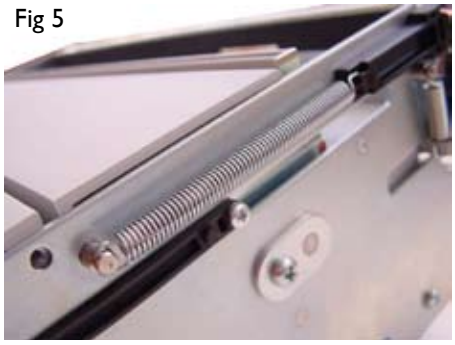
Fig 3

Installing the Jaw Assembly

1. Attach the Jaw Guide to the right side of the Jaw Assembly (fig 1). After you hear the jaw guide click into place pull back on the guide as shown until it can't go any further.
2. Place the right Jaw Guide on the Jaw Assy. into the slot in the Right Side Plate as shown (fig 2). Attach a Jaw Guide to the other side of the jaw and into the slot of the Left Side Plate making sure to pull back on the guide after you hear an audible click. (fig 3).
3. Attach the Jaw Springs where shown. The open end of the spring goes into the Jaw Guide (fig 4 & 5).
4. Reattach the Tamping Platform using the four M4x10 PH PHIL Screws.
5. Reattach the Covers.

Fig 4

Fig 5



6.12 Grip Tape

TOOLS REQUIRED: #1 & #2 Phillips Screwdrivers, Exacto Knife

Replacing the Grip Tape on the Jaw Assembly

1. Follow the instructions to remove the Jaw Assembly as outlined in Section 6.11.
2. Carefully peal off the existing Grip Tape.
3. After removing the Grip Tape, clean the Jaw with Denatured Alcohol.
4. Line up the edge of the Grip Tape with the edge of the Jaw as shown (fig 1)
5. Carefully apply the Grip Tape to the Jaw making sure the bottom edge is flush with the bottom edge of the Jaw.
6. Cut out the excess Grip Tape from the recess using an Exacto Knife (fig 2 & 3).
7 Reattach the Jaw Assembly as outlined in Section 6.11.

Fig 1

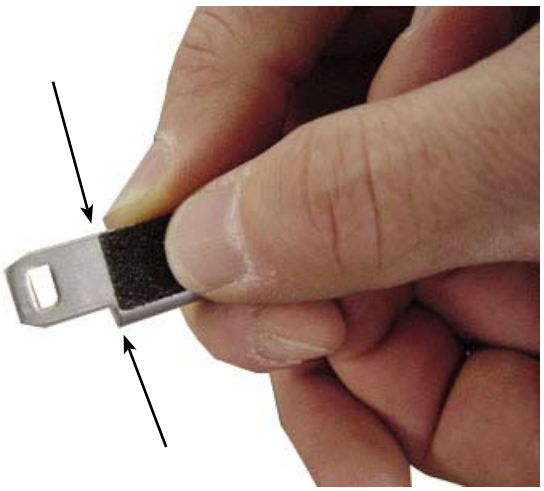


Fig 2

Fig 3

Replacing the Grip Tape on the Carriage Assembly

1. Remove the Carriage Assembly as outlined in Section 6.9.2.
2. Carefully peal off the existing Grip Tape.
3. Remove the Hot Symbol Label.
4. Clean the Carriage Assembly with Denatured Alcohol.
5. Apply the Hot Symbol Label to the middle of the Carriage Top using an exacto knife as shown (fig 4).
6. Apply the Carriage Grip Tape to the Carriage Top making sure to line up the edge of the grip tape with the right edge of the Carriage Top (fig 5). Slowly separate the grip tape from the release liner as you apply it across the Carriage Top making sure to press out any air bubbles.
7. Verify the top edge of the Grip Tape is flush with the edge of the Carriage Assembly (fig 6).
8. Reinstall the Carriage Assemby as outlined in Section 6.9.2.

Fig 4

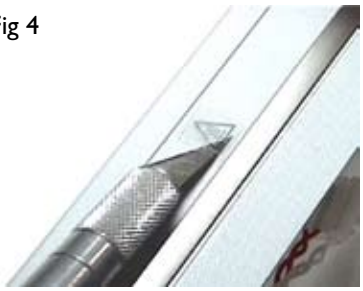


Fig 5

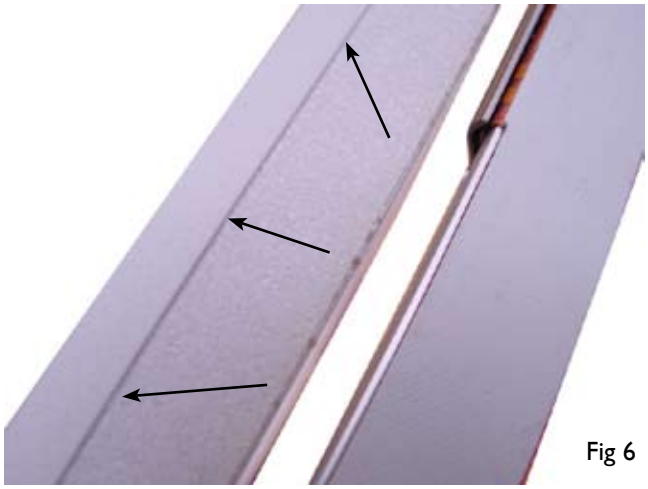


Fig 6

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7.1 Tools Required

FB8x

P31 Printer Cable (K-551-1685)

PC with either Windows 98, 2000, XP, ME, or Vista and a 9-pin com port.

FB8x Flash Updater V 1.0 (see step 1)

Hex file for new firmware (see step 1)

P31 Printer Cable (K-551-1685)

7.2 Upgrading Firmware Procedure

This procedure applies to Version 1.0 of the FB8x Flash Updater. Future versions of the FB8x Flash Updater may require a different procedure. If necessary, future versions of the software will be supplied with its own updated procedure instructions.

Ensure you have the FB8x Flash Updater V1.0 loaded onto your computer. This software is available for download from the Powis Parker website. The software in located on the Dealer Side, in Technical Support, under Manuals and Software. No installation procedure is required for this software. Just save the .exe file in an easy to find location.

1. Download the latest FB8x firmware from the Powis Parker website. The hex file that will contain the new firmware is located on the Dealer Side, in Technical Support, under Manuals and Software.

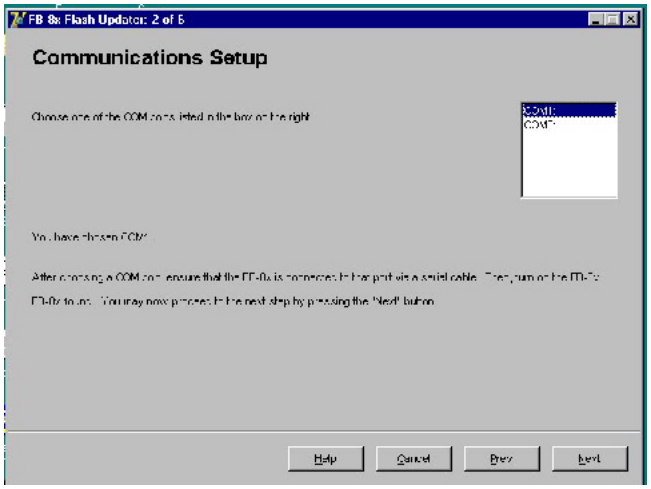
Firmware Notes: There is a NON-RoHs and a RoHS version on the website. Make sure you download the correct version according to your controller version. (See pages 71 & 72.)

2. **Verify the FB8x is turned OFF.** Connect the PC to the FB8x using the P31 Printer Cable.

3. Start the Flash Upgrade program by double clicking the icon.

7.2 Upgrading Firmware Procedure

4. When you open the Flash Upgrade software, an introductory screen will pop up containing the title and some introductory information. Click the NEXT button.



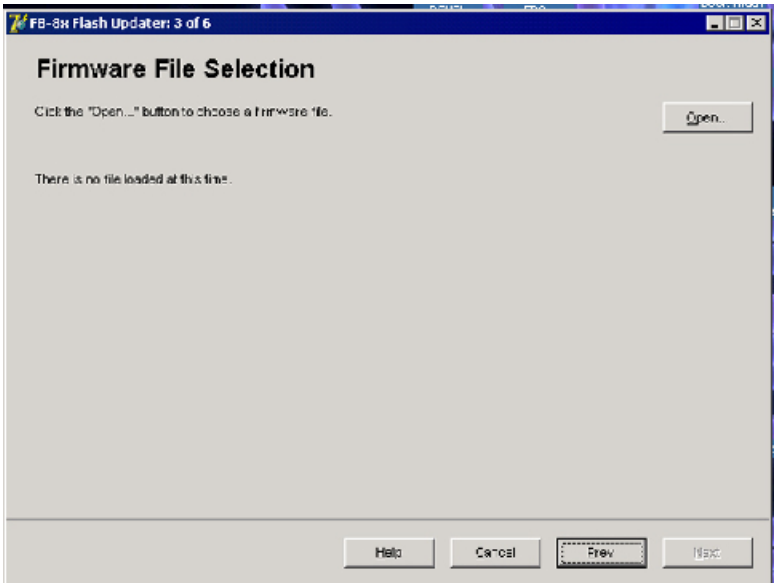
5. The Communications Setup window will appear. Select the com port to which the FB8x is connected.

NOTE: If the port to which the FB8x is connected is not available, it might be in use by another program. If you are sure that there aren't any other programs using the com port, use the Windows Control Panel to check if the port is working.

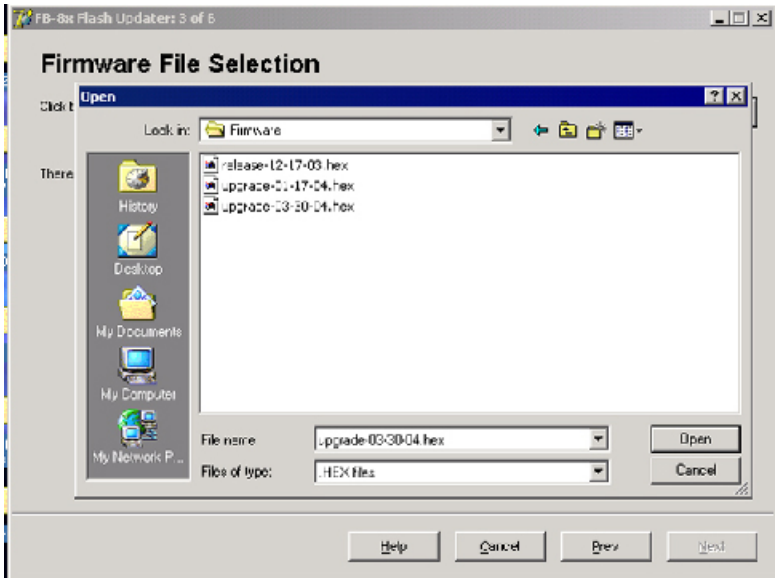
6. After selecting the com port, turn the FB8x ON. After 0-10 seconds the FB8x LCD should say LOADER RUNNING and the NEXT button in the Flash Upgrade window should darken and become available. Click the NEXT button.

NOTE: If LOADER RUNNING does not appear on the FB8x LCD and the NEXT button does not become available, the incorrect com port has been selected. If this happens, turn the FB8x off, select the correct com port, and turn the FB8x back on.

7.2 Upgrading Firmware Procedure



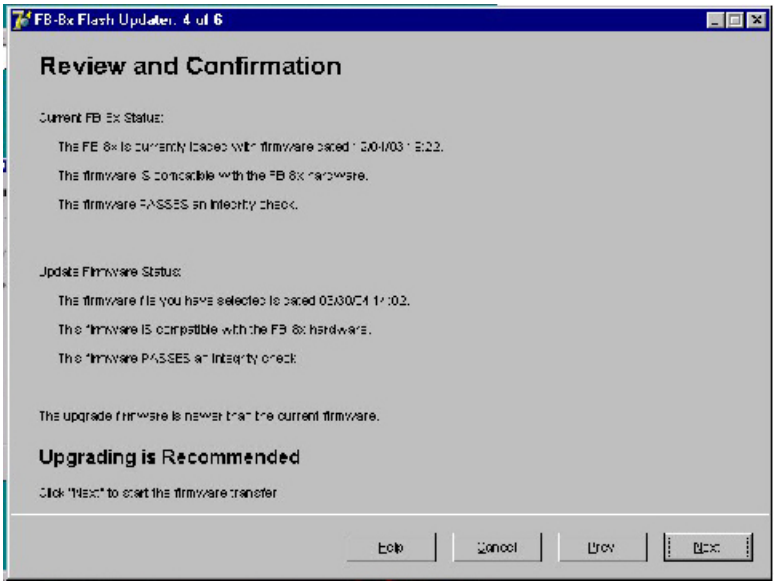
7. The Firmware File Selection window will appear. Click the OPEN button in the top right corner of the window.



8. A file selection dialog window will appear. Find and select the hex file that contains the new firmware. Click NEXT.

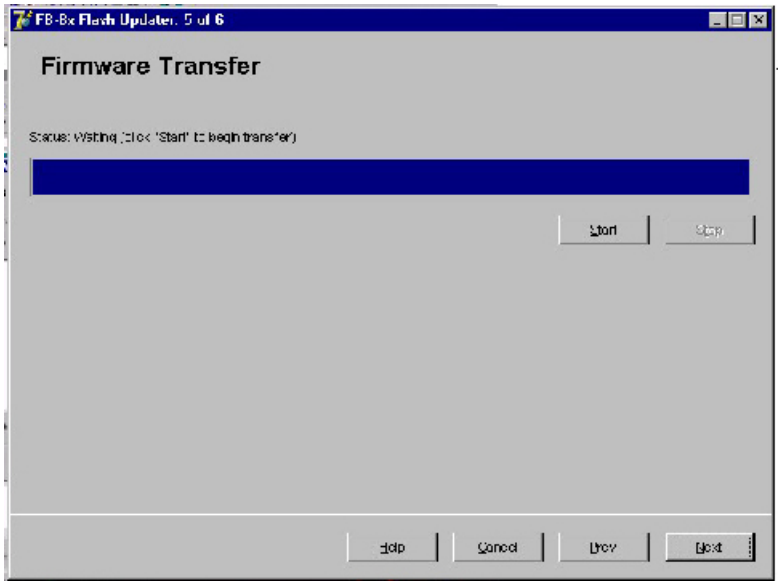
NOTE: If you choose an incorrect or corrupt file, you will get an error message. The NEXT button will be unavailable until an appropriate hex file is chosen.

7.2 Upgrading Firmware Procedure

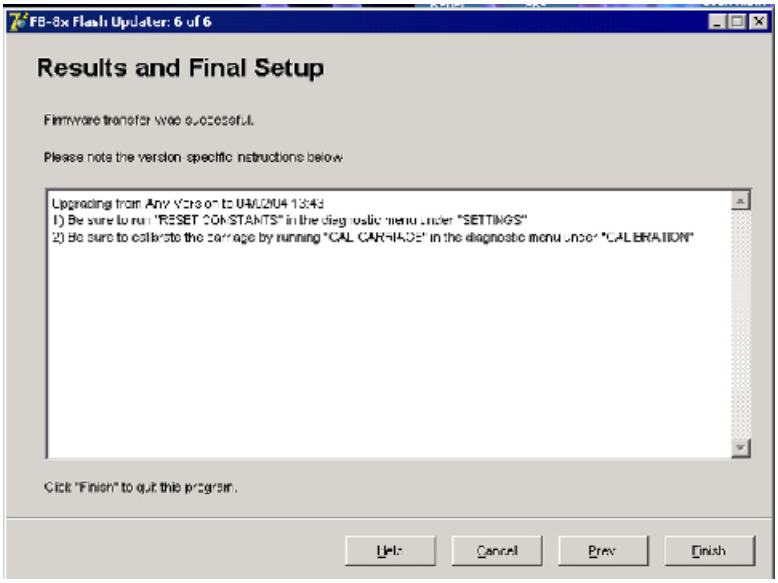


9. A Review and Conformation window will appear. This window contains summary information about the firmware that is currently on the FB8x and the firmware you are about to install. The Flash-Upgrade program will use the firmware dates and hardware compatibility information to make a recommendation about installing the firmware.
To install the new firmware, click the NEXT button.

NOTE: This is the last chance to keep the old firmware; once you start the transfer process, the old firmware will be gone.



10. The Firmware Transfer window will appear showing the progress of the firmware transfer. When the transfer is over the Flash Upgrade program will go automatically to the final screen.



11. The Results and Final Setup window appears. This window contains an information message about the success of the firmware transfer and a space for additional information about the setup process. Any additional steps needed for this upgrade will appear in this window.
Click the FINISH button to exit the Flash Upgrade program.
The Flash upgrade is now complete.

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Service Kit Listing of FB8x Parts

K-311-4069	Service Kit, Rubber Feet
K-410-3996	Service Kit, Cooling Rack
K-425-4100	Service Kit, Book Support Fence
K-A3926-02	Service Kit, Right Cover Assembly
K-A3931	Service Kit, Display Assembly
K-A3933	Service Kit, Carriage Drive Assembly
K-A3976	Service Kit, Jaw Assembly
K-A4006	Service Kit, Bender Motor Assembly
K-A4008	Service Kit, Carriage Alignment Shaft Assembly
K-A4013D	Service Kit, Spine Assembly (D & J)
K-A4013E	Service Kit, Spine Assembly (E)
K-A4089	Service Kit, Fan Assembly
K-A4092D	Service Kit, Controller Assembly (D)
K-A4092E	Service Kit, Controller Assembly (E)
K-A4092J	Service Kit, Controller Assembly (J)
K-A4102D	Service Kit, Bender Assembly (D & J)
K-A4102E	Service Kit, Bender Assembly (E)
K-A4104D	Service Kit, Carriage Assembly (D & J)
K-A4104E	Service Kit, Carriage Assembly (E)
K-A4641	Service Kit, Fuse Kit
K-A4687	Service Kit, Spring Kit
K-A4708	Service Kit, Grip Tape Kit
K-A4709	Service Kit, Fastener Kit
K-A4710	Service Kit, Plastic Part Kit
K-A4711	Service Kit, Small Metal Parts Kit
K-A4730	Service Kit, Sensor Kit
K-A4731-02	Service Kit, Switch Kit
K-A4732-02	Service Kit, Plastic Cover Kit
K-L3997	Service Kit, User Manual (D,E, & A)
K-L4703	Service Kit, User Manual (J)

Service Kit Listing of Tools Needed

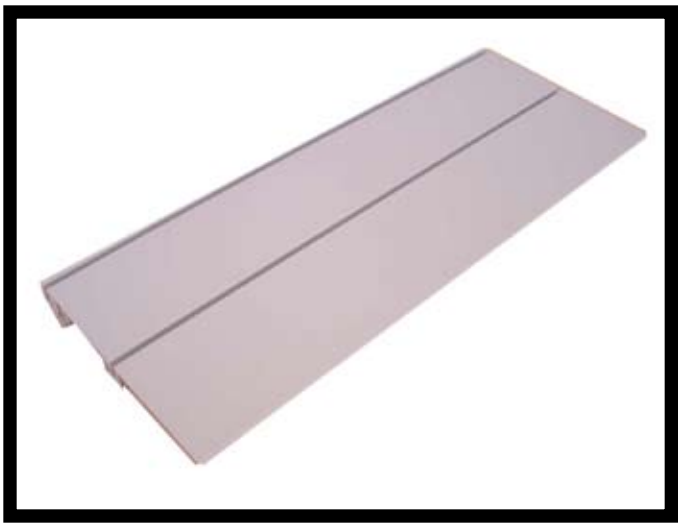
K-820-011	Service Kit, Temperature Meter
K-820-012	Service Kit, Straight Temperature Probe
K-820-3436	Service Kit, Right Angle Temperature Probe
K-551-1685	Service Kit, P31 Printer Cable
K-212-001	Service Kit, Citrus Cleaning Solution

D= Domestic, 115v
J= Japan, 100v
E= European, 230v
A= Australian, 230v

Covers

K-A4732-02 Service Kit, Plastic Cover Kit

Item	Qty.
Left Cover	1
Front Cover	1
Skirt	1
Pull Out Instruction Card	1
Screw,FH Phl, M3x.5x6mm Zi	1
Screw, PH, Phil, M3x10 Lg Plastite	2



K-410-3996 Service Kit, Cooling Rack

Item	Qty.
Cooling Rack	1

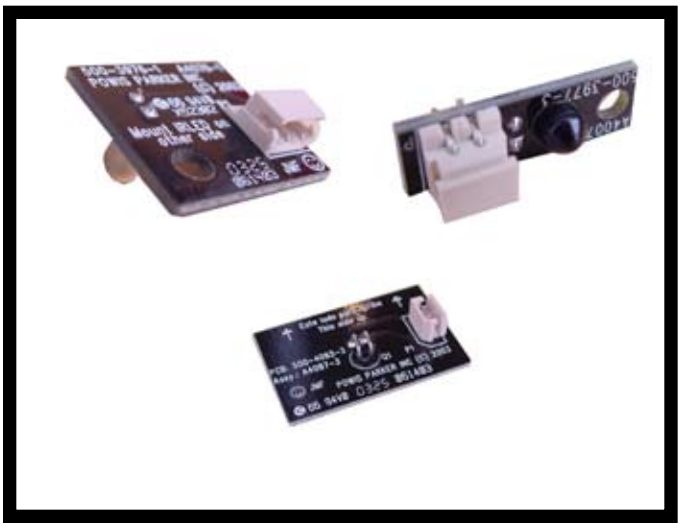
K-A3926-02 Service Kit, Right Cover Assembly

Item	Qty.
Right Cover Assembly	1
Screw,Fh Phl, M3x.5x6mm Zi	1
Screw, PH, Phil, M3x10 Lg Plastite	2

K-425-4100 Service Kit, Book Support Fence

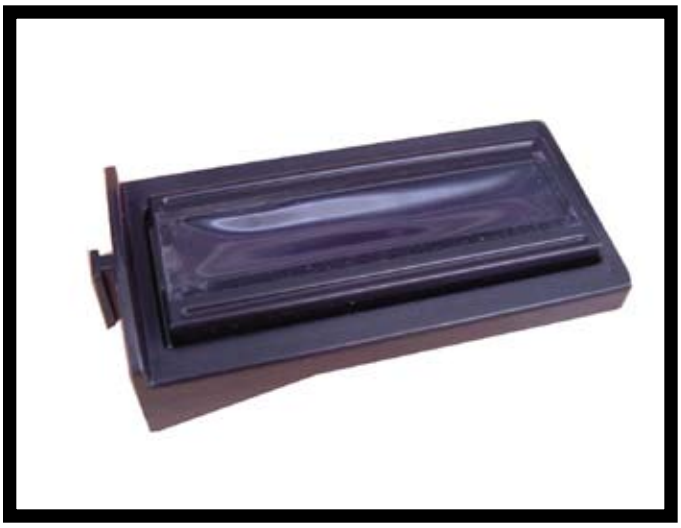
Item	Qty.
Book Support Fence	3

Electronics



K-A4730 Service Kit, Sensor Kit

Item	Qty.
Strip Detector PCA	1
Book Sense Emitter PCA	1
Book Sense Detector PCA	1

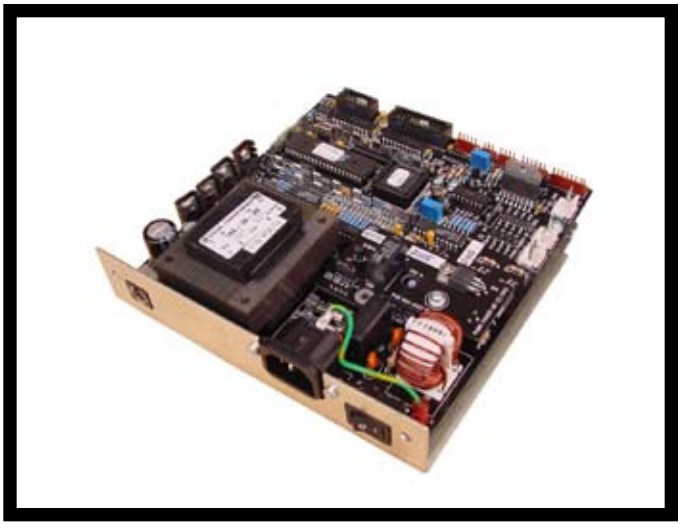


K-A3931 Service Kit, Display Assembly

Item	Qty.
Display Assembly	1

K-A4731-02 Service Kit, Switch Kit

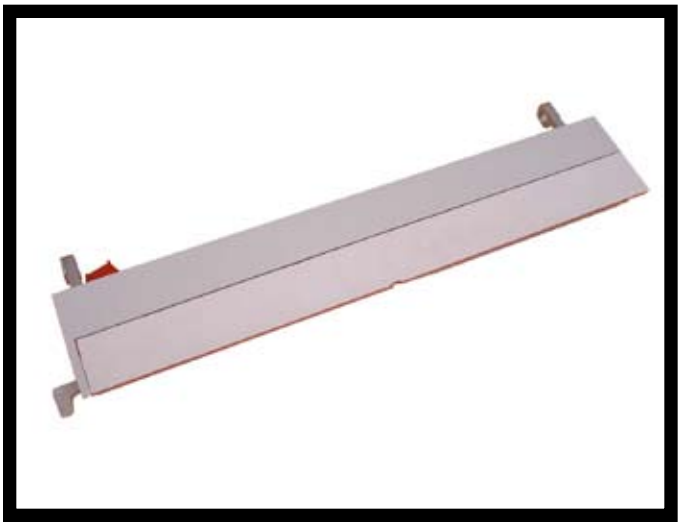
Item	Qty.
Carriage Clamp Switch	1
Carriage Home Switch	1



K-A4092D Controller Assembly (D) - NON-RoHS
K-A4092E Controller Assembly (E) - NON-RoHS
K-A4092J Controller Assembly (J) - NON-RoHS

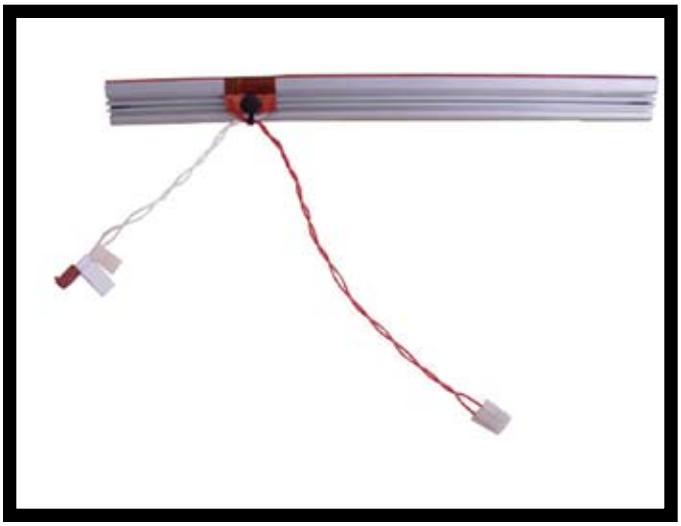
Item	Qty.
Controller Assembly	1

Heater Assemblies



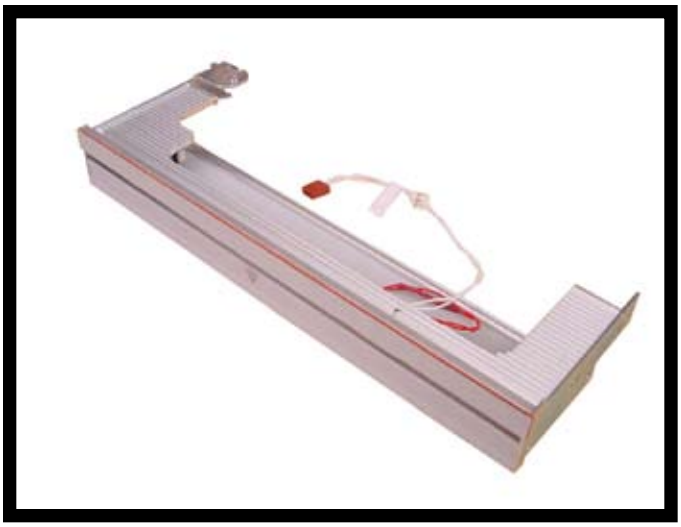
K-A4013D Service Kit, Spine Assembly (D & J)
K-A4013E Service Kit, Spine Assembly (E)

Item	Qty.
Spine Assembly	1



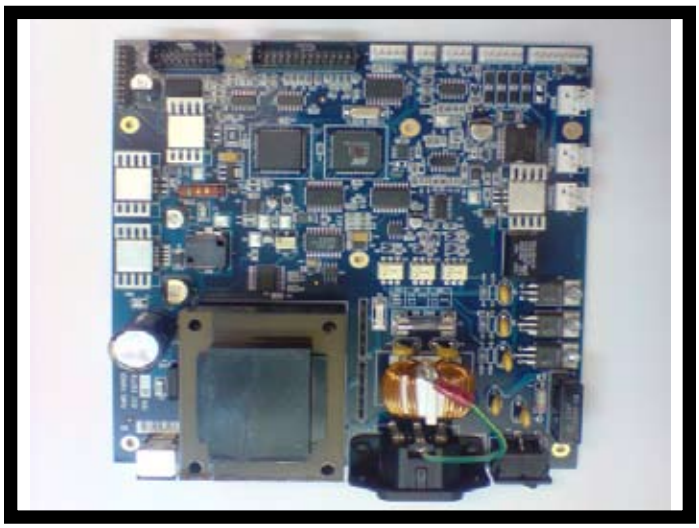
K-A4102D Service Kit, Bender Assembly (D & J)
K-A4102E Service Kit, Bender Assembly (E)

Item	Qty.
Bender Assembly	1



K-A4104D Service Kit, Carriage Assembly (D & J)
K-A4104E Service Kit, Carriage Assembly (E)

Item	Qty.
Carriage Assembly	1



K-A4092D-RoHS Controller Assembly (D) - RoHS
K-A4092E-RoHS Controller Assembly (E) - RoHS
K-A4092J-RoHS Controller Assembly (J) - RoHS

Item	Qty.
Controller Assembly	1

Motors

K-A4006 Service Kit, Bender Motor Assembly

Item	Qty.
Bender Motor Assembly	1

K-A3933 Service Kit, Carriage Drive Assembly

Item	Qty.
Carriage Drive Assembly	1

Misc.

K-A4008 Carriage Shaft Alignment Assembly

Item	Qty.
Carriage Shaft Alignment Assembly	1

K-A3976 Jaw Assembly

Item	Qty.
Jaw Assembly	1

K-A4089 Fan Assembly

Item	Qty.
Fan Assembly	1

Kits

K-311-4069 Service Kit, Rubber Feet

Item	Qty.
Rubber Feet	4

K-A4687 Service Kit, Spring Kit

Item	Qty.
Spine Spring	1
Jaw Spring	2
Carriage Spring	2

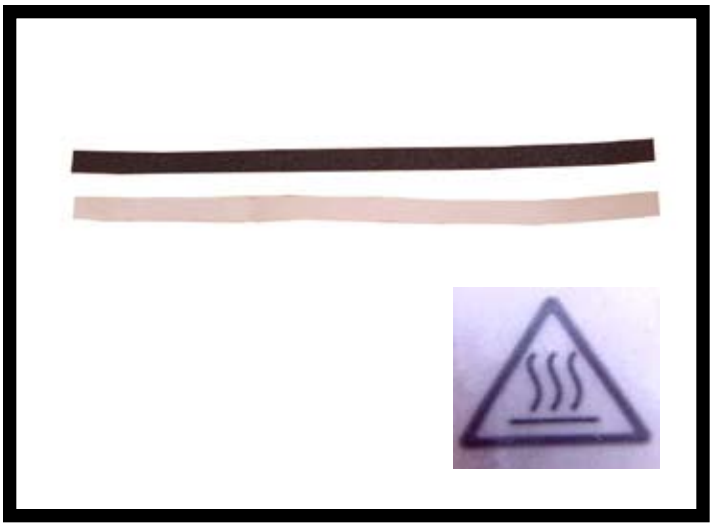
K-A4710 Service Kit, Plastic Part Kit

Item	Qty.
Bender Gear	1
Jaw Guides	2
Right Bender Pivot	1
Left Bender Pivot	1
Spine Pivot Pin	2
Left Carriage Guide	1
Right Carriage Guide	1

K-A4711 Service Kit, Small Metal Parts Kit

Item	Qty.
Drive Nut Bracket	1
Bender Link Assembly	1
Carriage Alignment Plate	1
Strip Present Sensor Bracket	1
Carriage Guide Back	1
Bender Gear Stop w/ O-Ring	1
Bender Gear Pivot	1

Kits



K-A4708 Service Kit, Grip Tape Kit

Item	Qty.
Jaw Grip Tape	1
Carriage Grip Tape	1
Hot Symbol Label	1

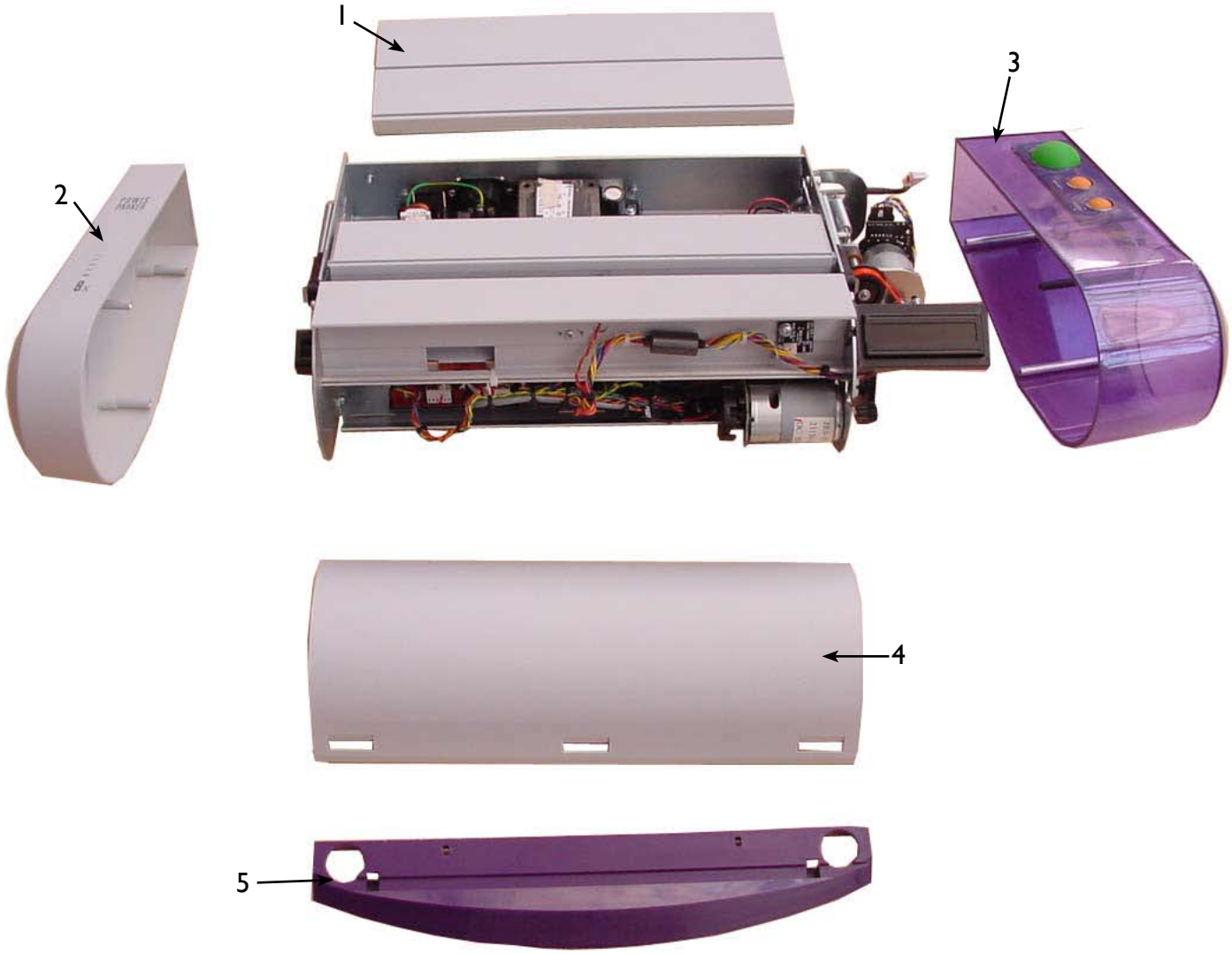
K-A4709 Service Kit, Fastener Kit

Item	Qty.
SCREW 3mm X .5 X 6mm PPH	12
Washer,Fender,#6x1" OD	2
Washer, Flat, 2.5 x 8mm OD	2
Screw, Ph Phil, M2.5X6 LG	2
Screw, Ph Phil, M3.5x5x6 LG	8
Screw, Bh Soc, M3x.5x6 LG	4
Screw, Fh Phil, M3x.5x12 LG	16
Screw, Sem, Ph Phl, M3x.5x6 LG	28
Screw,Sem,Ph Phl, M3x.5x12 LG	16
Screw,Ph Phl, M3x.5x10mm Zi	4
Screw,Ph Phl, M3x.5x6mm Zi	4
Screw,SH Cap, M3x.5 Lg Blk	4
Screw,Sem,IntSt,PhPhl, M3x12Zi	2
Screw, Sem, Ph Phl, M3x.5x6 LG	18
Screw, Ph Phl, M4x.7x6 LG	22
Screw, Ph Phl, M4x.7x20 LG	8
Screw, Ph Phl, M4x.7x16 LG	4
Screw,Sem,Ph Phl, M4x.7x8 LG	6
Screw.PH,Phil,M4x.7x8 Lg	6
Washer,Flat,5.3mmx11mm OD	2
Cable Tie 3/32 wide	10
CABLE TIE 1/8 WIDE	6
Cable Tie Wrap	4

K-A4641 Service Kit, Fuse Kit

Item	Qty.
10A 5x20mm Fast Blow Fuse	6

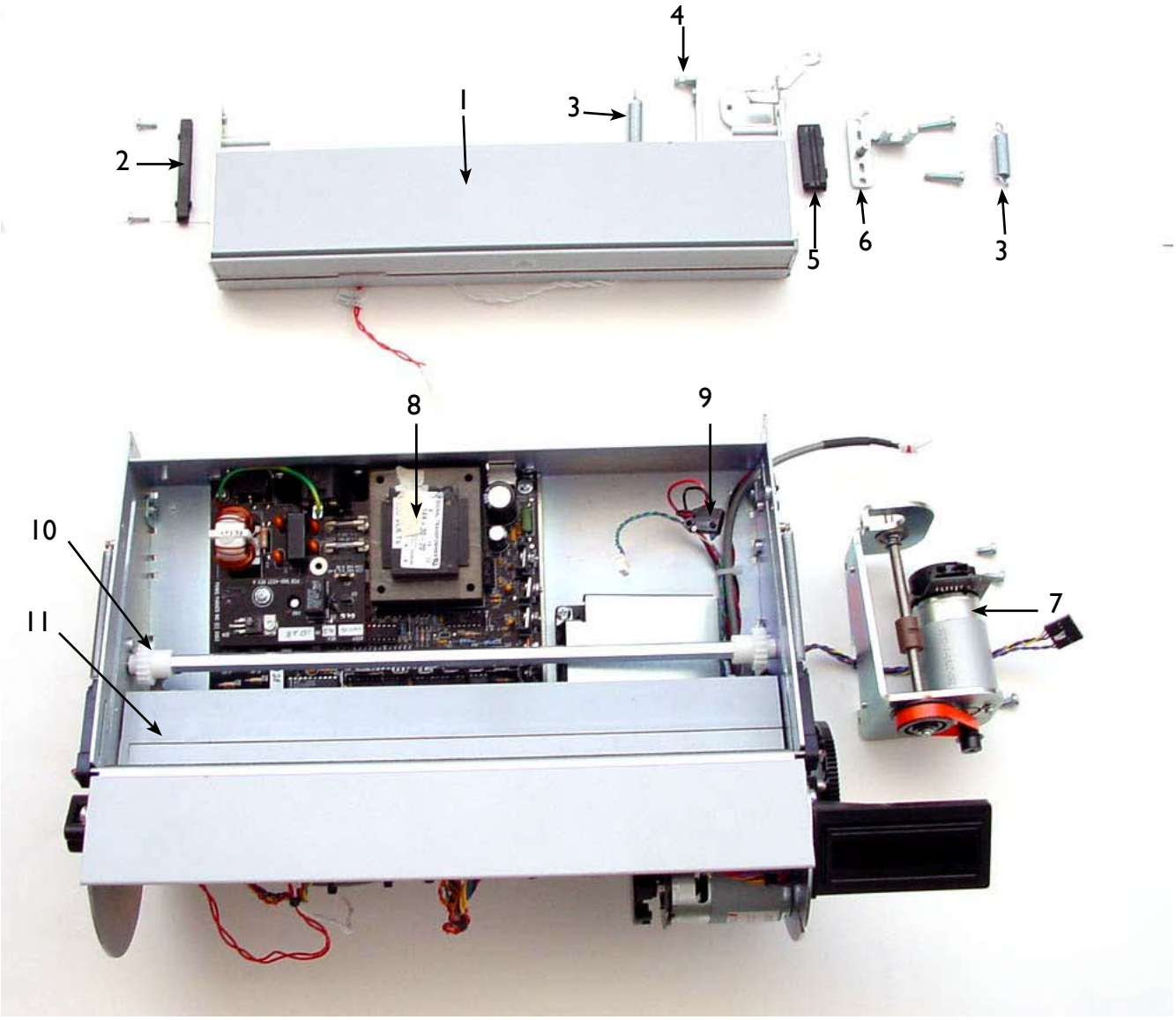
Exploded View 1



ITEM #	DESCRIPTION
1	Cooling Rack
2	Left Cover
3	Right Cover Assembly
4	Front Cover
5	Skirt

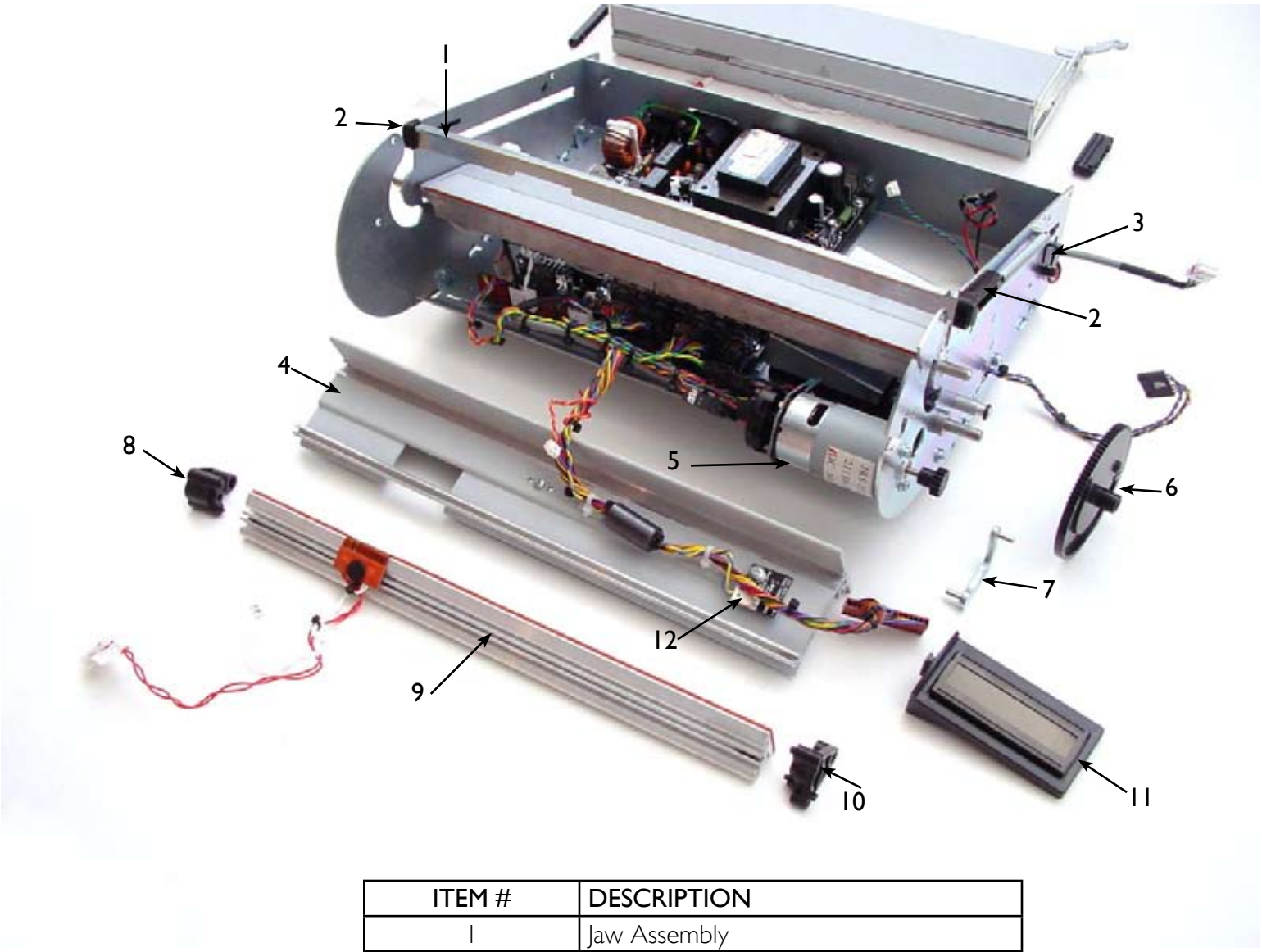
Note: The Pull Out Instructions Card and the Book Support Fences are not shown in this picture.

Exploded View 2



ITEM #	DESCRIPTION
1	Carriage Assembly (Back Heater)
2	Left Carriage Guide
3	Carriage Spring
4	Carriage Guide Back
5	Right Carriage Guide
6	Drive Nut Bracket
7	Carriage Drive Assembly
8	Controller Assembly
9	Carriage Clamp Switch
10	Carriage Alignment Shaft Assembly
11	Spine Assembly

Exploded View 3



ITEM #	DESCRIPTION
1	Jaw Assembly
2	Jaw Guide
3	Carriage Home Switch
4	Tamping Platform
5	Bender Motor Assembly
6	Bender Gear
7	Bender Link
8	Left Bender Pivot
9	Bender Assembly
10	Right Bender Pivot
11	Display Assembly
12	Book Sense Emitter PCA

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