## Perfect Binder GB5010 Machine Code: D736

# Field Service Manual

March 2015

## **Revision History**

This is the Revision History for the Perfect Binder GB5010 service manual.

Version	Date	Changes
Ver. 1.1	31 Mar 2015	<b>Text, Illustrations</b> . In procedures the order of the text and illustrations has been reversed. For each step, the text description (action) is followed by the relevant illustration. The callouts [A], [B], [C] in text refer to the illustration below, not above.

## Symbols, Abbreviations and Trademarks

### Conventions

Symbol	What it means
\$	Binding screw (shoulder hexagonal head)
æ	Binding screw (round flathead)
*	Black screw (heavy, fusing unit, TCRU)
•	Bushing
Ô	C-ring
Ŵ	Clip
SF.	Connector
B	E-ring
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	FFC (Flat Film Connector)
	FFC (Flat Film Connector)
	FFC (Flat Film Connector)
۲	Gear
ş	Harness clamp
40	Harness clamp: metal: fusing unit
-	Hook (or tab release: sensors)
*	Knob screw (black)
<b>1</b> 2	Knob screw (sliver)
A	Pivot screw
0)°	Screw: most common: silver
Ð	Shoulder screw

Symbol	What it means
*	Shoulder screw (black)
- COD	Spring
¢0	Standoff
ø	Stud screw
P	Tapping screw (for plastic)
0	Timing belt
Ø	Washer



The notations "SEF" and "LEF" describe the direction of paper feed. The arrows indicate the direction of paper feed.



In this manual "Main Scan" means "Horizontal" and "Sub Scan" means "Vertical", both relative to the direction of paper feed.

#### Warnings, Cautions, Notes

In this manual, the following important symbols and notations are used.

### **WARNING**

• A Warning indicates a potentially hazardous situation. Failure to obey a Warning could result in death or serious injury.

### 

• A Caution indicates a potentially hazardous situation. Failure to obey a Caution could result in minor or moderate injury or damage to the machine or other property.

#### Coloritant 🔁

• Obey these guidelines to avoid problems such as misfeeds, damage to originals, loss of valuable data and to prevent damage to the machine.

Vote

• This information provides tips and advice about how to best service the machine.

#### **Commonly Used Terms and Abbreviations**

Here is a list of commonly used terms and abbreviations that are used throughout the Field Service Manual and Appendices.

Terms	Meaning
(ccw)	Counter-clockwise rotation of a drum, roller, gear, etc.
(cw)	Clockwise rotation of a drum, roller, gear, etc.
BF	Booklet Finisher SR5060 (D734)* <sup>1</sup>
BW	Black and white (monochrome) copying or printing
Bank	Paper Bank (1st, 2nd, 3rd Tray of the main machine)
CIT	Cover Interposer Tray CI5030 (D738)*1
CIT-PB	Cover Interposer Tray for Perfect Binder Type S1 (D736-2)*1
FIN	Finisher SR5050 (D735) (corner staple only, no booklets)*1
ITB	Image Transfer Belt
JG	Junction Gate

Terms	Meaning
LCIT	Large Capacity Input Tray.
	LCIT RT5080 (D732) or LCIT RT5070 (D733)*1
LD	Laser Diode (Laser Unit)
LE	Leading Edge
LSDB	Laser Synchronization Detection Board (Laser Unit)
MFU	Multi Folding Unit FD5020 (D740)* <sup>1</sup>
PCDU	Photoconductor Development Unit
РВ	Perfect Binder GB5010 (D736)* <sup>1</sup>
PFU	Paper Feed Unit (Tray 1, Tray 2, Tray 3)
РТВ	Paper Transport Belt (between PTR and fusing unit)
PTR	Paper Transfer Roller
RB	Ring Binder RB5020 (D737)
TCRU	Trained Customer Replacement Units
TE	Trailing Edge
TM/P	ID sensor. "ID sensor" is used in this manual. However, you may see "TM/P" in the SP codes on the operation panel.
TPU	Transit Path Unit for Perfect Binder Type S1 (D736)* <sup>1</sup>
TRM	Trimmer Unit 5040 (D520)* <sup>1</sup>
VTU	Vertical Transport Unit
*1	Optional peripheral devices.

#### Perfect Binder GB5010



1	To avoid personal injury, keep your hand and fingers away from the lower left tray when removing bound booklets.
2	Never reach inside the unit where large moving parts could cause serious injury.

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## **Basics**

#### Parts Dangerous to Touch

This section points out some areas inside the machine where you should exercise extra precaution when working around the machine with the covers off.

#### **Covers Off**

#### Rear



d391t8027a

[1]	Gluing Unit
-----	-------------

#### Тор



d391t8027b

[1]	Sub Grip Area (Front)
[2]	Sub Grip Area (Rear)

#### Front



d391t8028a

[1]	Main Grip Unit
[2]	Spine Plates
[3]	Gripper
[4]	Blade

#### **Gluing Unit**

The gluing unit becomes extremely hot to keep the glue melted and ready for use. The glue and gluing unit remain hot for several minutes after the bookbinder is turned off.

• Always allow the gluing unit to cool for a few minutes before removing the cover.

• After removing the covers, touch the gluing unit only when necessary and only after it has cooled completely.

#### Gluing Unit



d391t8029a

[1]	Gluing Unit
-----	-------------

The illustration shows the glue vat with the top cover removed.

#### Sub Grip Unit: Front and Back



d391t8029b

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• Never put your fingers or a tool in or near the exposed areas of the sub grip unit at the front [1] or at the rear [2] while the bookbinder is powered on.

#### Main Grip Unit at Signature Turnover (from Sub Grip Unit)



d391t8030a

## 

• Never put your fingers or a tool in or near the exposed areas of the main grip unit at [1] while the bookbinder is powered on.

#### Main Grip Unit at Turnover to Trimming Unit After Gluing



d391t8030b

## 

• Never put your fingers or a tool in or near the exposed areas of the main grip unit at [1] while the bookbinder is powered on.

#### Spine Fold Plate



d391t8030c

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• Never put your fingers or a tool in or near the exposed areas of the spine plates at [1] while the bookbinder is powered on.

#### **Trimming Unit**

#### **Gripper and Press Plate**



d391t8031a

## 

• Never put your fingers or a tool in or near the exposed areas of the press plates at [1] or gripper at [2] while the bookbinder is powered on.

#### **Blade at Retracted Position**



d391t8031b

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• The blade is extremely sharp. Never touch the edge of the blade [1]. Always work carefully where the blade is exposed.

#### Using the Dials

#### **Gluing Unit**

The gluing unit is equipped with two dials that are used to raise and lower the stacking tray and the main grip unit.

#### Stacking Tray Lift Dial



#### d391t8032b

The photo above shows the stacking tray lift dial [1] viewed from the rear of the bookbinder.

- Turn this dial clockwise to lower the stacking tray.
- Turn this dial counter-clockwise to raise the stacking tray.

#### Main Grip Unit Lift Dial



#### d391t8032c

The photo above shows the main grip lift dial [1] viewed from the rear of the bookbinder.

- Turn this dial clockwise to raise the grip unit
- Turn this dial counter-clockwise to lower the grip unit.

#### **Trimming Unit**

The trimming unit is equipped with four dials that:

- Raise the slide
- Open and close the grip
- Open and close the press plates
- Move the blade from side to side

There are also two pulleys where you can use a plus (+) screwdriver to raise and lower the book lift tray and move the trimmings buffer from side to side.

#### Slide Lift Dial



d391t8033a

The photo above shows the slide lift dial [1] viewed from the front:

- Turn clockwise to lift the slide.
- Turn counter-clockwise to lower the slide.

#### Main Grip/Press Plate Dials



d391t8033b

The photo above shows the main grip unit pulled out and viewed from the front.

[1]	Main Grip Dial
[2]	Press Plate Dial

Main Grip Dial

- Turn clockwise to close the main grip.
- Turn counter-clockwise to open the main grip.

Press Plate Dial

- Turn clockwise to open the press plates.
- Turn counter-clockwise to close the press plates.

#### Blade Dial



#### d391t8034b

The photo above shows the blade dial [1] with the trimming unit pulled out of the front of the bookbinder:

- Turn the dial clockwise to push the blade toward the cutting position.
- Turn the dial counter-clockwise to pull the blade away from the cutting position.



#### Book Lift Tray/Trimmings Buffer Pulleys

The photo above shows the book tray lift pulley [1] and the trimmings buffer [2] viewed from the front. Book tray lift pulley

• Turn the pulley clockwise to lower the tray.

d391t8034c

• Turn the pulley counter-clockwise to raise the tray.

#### Trimmings buffer pulley

- Turn the pulley clockwise to move the trimmings buffer to the left.
- Turn the pulley counter-clockwise to move the trimmings buffer to the right.

## **Common Procedures**

#### Setting and Releasing Low Performance Mode

The bookbinder automatically enters the low performance mode if a bookbinding component malfunctions and binding is no longer possible.

- In low performance mode the bookbinder can continue to operate, but only for straight-through downstream delivery.
- The machine can be released from the low performance mode by the service technician only.
- Set the bookbinder in low service mode if a replacement part is not immediately available so the operator can continue to use the host machine.

To set the machine in low performance mode, do SP6536-001.

#### Inserter Unit

1. Remove inserter rear cover [1] (@ x2).



d391r505

- 2. Remove:
  - [1] Plate [1] (SP x1)
  - [2] Limiter brace [2] (@ x2)



- 3. Remove the bookbinder rear upper cover.
- 4. Disconnect the inserter I/F cable [1] (@ x2, & x3).



d391r503

- 5. Raise the inserter [1].
- 6. Disconnect the inserter [2] from the bookbinder and remove it (  ${}^{\scriptsize \mbox{\scriptsize CP}} x2).$



#### 03911004

#### **Front Doors**

- 1. Open the right front door and left front door.
- 2. On the left door [1] remove the top hinge [2] and bottom hinge [3].
  - While holding the left front door with one hand, behind the top hinge push the black lever [4] in the direction of the arrow to release the top hinge.
  - Swing the top hinge out slightly.
  - While still supporting the left door with one hand, repeat the procedure to remove the bottom hinge.
  - Remove the left door.



Repeat Step 2 to remove the top hinge [1] and bottom hinge [2] then remove the right front door
[3]. (You may have to lower Mk11 so you can remove the right door.)



d391i315a

#### Covers

#### **Rear Cover**

1. Rear cover [1] (@ x8)



#### Rear Upper Cover

1. Rear upper cover [1] (@ x5)



#### Left Upper Cover

- 1. Open the inserter and upper cover.
- 2. Remove the front bar [1] of the stacking tray unit ( ${\romega}^{\infty}$  x3).



3. Remove the left upper cover [1] (  ${\mathfrak W}^{{\mathfrak w}} x4).$


d391r013

#### Front Inner Cover: Upper

- 1. Remove both the left and right front door.
- 2. Raise jam lever Mk12 [1].
- 3. Remove the front inner cover (upper) [2] (🕉 x6).



#### Front Inner Cover: Lower

1. At the right rear corner, unlock the book stack door.



- 2. Pull out the book stacking tray [1] and trimmings box [2] together.
- 3. Pull off jam clear knob Mk10 [3].

#### Comportant 2

- Mk10 must be reattached.
- 4. Remove the screws of the lower inner cover [4] ( $\mathfrak{O}^{*}x7$ ).
- 5. Raise the jam clear levers Mk8 [5] and Mk9 [6] as you remove the cover.



6. Return the jam clear levers to their original positions.

# Signature Path Exit Unit

1. Remove the inserter.



d391p040

3. Remove the top cover [1] ( $\mathfrak{O}^{\mathfrak{P}} x3$ ).





4. Remove the harness cover [1] (@ x2).



d391p042

- 5. Remove the covers around the back and the rear upper cover.
- 6. Remove:
  - [1] ®x1
  - [2] Flange x1
  - [3] Belt x 1
  - [4] Gear x 1
  - [5] Lock pin x 1
  - [6] 🕅 x 1
  - [7] Bearing x1



7. Disconnect connectors [1] (\$\$x2).



8. At the front, remove the signature exit roller [1] (Lock pin x1,  $\Re$ x1, Bearing x1).



#### Before Removing the Signature Path Exit Unit:

- 1. Remove the signature path exit unit carefully and avoid dropping the belt [1] of the drive motor into the bookbinder.
- 2. The belt must be reattached to its gear [2] at reinstallation.
- 3. Removing the TE press lever motor (M3) first will make it easier to remove and reinstall the signature path exit unit.



d391r048

- 4. Open the transport guide [1].
- 5. Remove the signature path exit unit [2] (SX 2 Left, SX 2 Right)



Cover Transport Unit

- 1. Remove:
  - Rear cover (page 33)
  - Both doors (page 31)
  - Front inner lower cover (page 35)
  - Front inner upper cover (page 35)
- 2. Remove screw (@ x1).



d391p141a

3. Disconnect connectors at [1] (\$\$x5) and [2] (\$\$x6).



- 4. Remove:
  - [1] Left brace (@x4)
  - [2] Right brace (🕅 x4)
  - [3] Lock plate (@°x2)



hpr02

5. Pull out the cover transport unit [1] on its rails.



### **Trimming Unit**

- 1. Insert the tip of a small screwdriver into the small hole [1] near the left rear corner of the bookbinder.
- 2. Gently move the screwdriver in the direction of the arrow to release the stacking tray lock.



- 3. At the front pull open the book tray door and the trimmings box drawer.
- 4. Remove the front lower cover.
- 5. Confirm that all devices have been switched off and disconnected.
- 6. Remove:
  - [1] Left brace (🕅 x2)
  - [2] Right brace (@ x2)
  - [3] Lock plate (SP x2)



7. Pull out the trimming unit [1] on its rails.



d391r903

#### Before Closing the Trimming Unit Drawer

1. Check the area around the edge press plate motor (M36) [1].



d391r954

- 2. Turning the motor knob [1] away from you releases the pressure exerted by the press plate but also moves the small plate [2] to the right. (You may have done this during the procedure.)
- Check the position of the small plate [3] and confirm that it is not near the press limit sensor (S89)
  [4] as shown in the illustration on the right.
  - If the small plate is blocking the sensor, turn the knob [1] toward you to move the small plate [3] away from the sensor [4].
  - If the small plate is blocking the sensor this will prevent the motor from operating and cause an error (SC750-54) when the system is turned on.



d391r955

#### 🚼 Important

- To prevent SC750-54 always check the position of the small plate [3] before closing the trimming unit drawer.
- Check the area around the cutter motor (M35) [1] and PCB [2] where the trimmer limit sensor (S86) is mounted.

1



d391r956

The illustration on the left (below) shows the blade cradle at the rear, and the illustration on the right shows the blade cradle at the front.

5. If the edge of the plate [1] is not even with the left edge of the PCB, turn the motor knob [2] away from you to move the plate to the rear until the plate edge reaches the left edge of the PCB [3].

-or-

If the edge of the plate [4] is not even with the left edge of the PCB, turn the motor knob toward you to move the plate to the front until the plate edge reaches the left edge of the PCB [5].

If the edge of the plate is not aligned correctly with the left edge of the PCB, the this will prevent the motor from operating and cause an error (SC750-67) when the system is turned on.



d391r957

#### 🔁 Important

 To prevent SC750-67 always check the position of the plate before closing the trimming unit drawer.

#### **Opening Locked Doors Manually**

#### **Front Doors**

If the front doors remain locked after the power was turned off while the bookbinder was operating, cycling the bookbinder off/on will usually unlock the doors. However, if the front doors remain locked after cycling the machine off/on (or if you cannot switch the machine off/on), follow the procedure below to manually unlock the front doors.

1. Insert the tip of a small screwdriver into the hole [1] and press in on the manual lock to release the doors.



2. The manual release [1] is located behind a cutout on the left edge of the left front door.

1



d391t8022b

#### **Book Stack Door**

- 1. Insert the tip of a small screwdriver into the small hole near the left rear corner of the bookbinder.
- 2. Move the screwdriver in the direction of the arrow to release the stacking tray lock.

#### Note

• If the rear cover has been removed, just push the lever [2] to the right to unlock the book stack door.



d391t8023c

## Signature Thickness Sensor (S50) Recalibration

The signature thickness sensor must be recalibrated after these components have been replaced:

- Master control board
- EEPROM on the master control board

• Signature thickness sensor (S50)

The sensor is calibrated with SP mode on the main machine:

- 1. Do SP6521-001 to input the factory setting data of STK-VRO.
- 2. Do SP6521-002 to input the factory setting data of STK-VR25.

#### Cover Skew Adjustment

**Problem**: Cover and signature not aligned correctly. (The cover & signature in the illustration below has not been trimmed.)



#### d391t8005a

**Cause**: Cover was not aligned correctly in the cover transport path before the signature and cover were jointed.

Solution: Adjust the position of the cover horizontal registration unit.

- 1. Remove the right and left front door.
- 2. Remove the lower inner cover (@x6).
- 3. Loosen the screw on the scale indicator.
- 4. Move the scale to the right [2] or to the left [3] and then tighten the screw.

The illustration below shows the effect of moving the scale.



d391t8005d

5. Do some test prints and then repeat the adjustment until the cover and signature are correctly aligned.



# **Path Entrance Motors**

# Vertical Transport Motor (M5)

- 1. Remove the rear cover. (page 33)
- 2. Remove the vertical transport motor (M5 (INS)) [1] (@ x2, @ x1)





#### **Re-installation**

1. Be sure to reattach the timing belt [1] with the belt hung on the motor drive gear as shown below



# Entrance Motor (M10)

1. Remove the rear cover (@x8). (page 33)

- 2. Remove the entrance motor (M10) [1] (  $\mathfrak{O} x2, \mathfrak{V} x1)$

#### Reinstallation

1. Be sure to reattach the timing belt [1] with the belt hung on the motor drive gear as shown above.



d391r029

51

# Signature Path Exit Unit

# **Ripple Idle Rollers**

- 1. Remove the signature path exit unit. (page 52)
- 2. Remove the **5** ripple idle rollers (<sup>®</sup>x1 ea.)



# **TE Press Roller Unit**

- 1. Remove the signature path exit unit. (page 52)
- 2. Release harness [1] (🖗x11)
- 3. Disconnect sensors [2] and [3] (Strain x2).



d391r050

4. Remove sensor plate [1] (@\*x1).





5. Remove:

[1] ®x1

[2] Bearing x1



d391r052

6. Slide the pressure roller [1] in the direction of the arrow, release it from the ring [2], and then remove the roller.



d391r053

7. Remove the TE press plate unit [1] (\$\$\mathbb{O}^{\mathbb{C}}x4).



d391r055

- 8. Remove the TE press roller unit [1].
  - [2] 🔊x 1
  - [3] Gear x 1
  - [4] Lock pin x1
  - [5] ®x1
  - [6] Bearing x1
  - [7] Ripple idle rollers x2 (@<sup>2</sup>x1 ea.)
  - [8] <sup>®</sup>x1

[9] Bearing x1



#### Reinstallation

1. Pressure levers [1] must be positioned between the shaft of the TE pressure plate [2] and the rib [3].



d391r054

# Anti-Static Brush

- 1. Remove:
  - Inserter unit (page 29)
  - Top cover (page 52)
- 2. Open the transport guide [1].
- 3. Remove the upper anti-static brush [2] (🕅 x2)
- 4. Remove the lower anti-static brushes.
  - [3] Front (@ x2)
  - [4] Rear (@ x2)



# **Stacking Tray**

# Switchback Roller

- 1. Remove:
  - Inserter (page 29)
  - Top cover (page 52)
- 2. Remove control plates [1] and [2] (@x2 ea.)



d391r060

- 3. At the front and rear, remove:
  - [1] Collar x 1
  - [2] Collar x 1
- 4. Remove the switchback rollers [3] and [4].



d391r061

# Anti-Static Brush

- 1. Remove:
  - Inserter (page 29)
  - Top cover (page 52)
- 2. Remove the top cover of the jogging unit [1] (@x4)



- 3. Disconnect the stacking weight motor [1] (M6) (@x2).
- 4. Slide the motor to the side and disconnect the timing belt.



d391r063

5. Remove the plate screws [1] (@x2).



- 6. Shift the weight [1] to the left in the direction of the arrow as far as it will go.
- 7. Slowly rotate the anti-static brush [2] to the front and remove it.





# Jogger Motors (Front/Back) (M4/M5)

- 1. Remove:
  - Inserter (page 29)
  - Top cover (page 52)
- 2. Remove the top cover of the jogging unit [1] (🕅 x4)



d391r062

- 3. Remove:
  - [1] Front jogger motor (M4) (@\*x2, @\*x1)
  - [2] Rear jogger motor (M5) (@x2, &x1)



# **Main Grip Unit**

# Signature Thickness Sensor (S50)

- 1. Do SP6538-003 to set the machine in grip release mode.
- 2. Shut the system down to cut off power to the main machine and perfect binder.
- 3. Disconnect all power cords.

# **WARNING**

- Never service the Perfect Binder until all power to the system has been turned off.
- 4. Remove the filter case bracket [1] (\$\$\vec{1}\$x3).



d391r128b

- 5. Remove the rear cover of the bookbinder.
- 6. Remove the sensor plate [1] (@x1).



#### Coloritant 🔁

• Work carefully with the protective plate removed to avoid hitting and damaging the exposed sensor [1] and actuator [2].



d391r112

- 7. Remove the signature thickness sensor (S50)
  - [1] Band x1
  - [2] 🐨 x2
  - [3] 🖓 x 1



#### Reinstallation

1. When reattaching the sensor plate confirm that the sensor pin [1] is positioned between the sides of the cutout [2] as shown above.



2. After replacement, the signature thickness sensor must be recalibrated. (See "Recalibrating Sensors".)

# Grip Motor: Front (M23)

1. Do SP6538-003 to set the machine in grip release mode.

- 2. Shut the system down to cut off power to the main machine and perfect binder.
- 3. Disconnect all power cords.

# **WARNING**

- Never service the Perfect Binder until all power to the system has been turned off.
- 4. Remove the bracket screws [1] (@x3).
- 5. Disconnect the connector [2] (Stat).





#### 🔁 Important

• Work carefully during removal to avoid damaging the encoder wheel [2] and sensor [1].



d391r119

- 6. To free the motor [1], remove:
  - [2] Band x1
  - [3] 🖗x1

[4] 🎯 x1



7. Remove the sensor bracket [1] (@x2).





8. Remove the motor [1] from the bracket [2] ( $\mathfrak{O}^{p}x2$ ).



#### Reinstallation

1. Before reinstalling the motor confirm that the harness [1] and gear [2] are positioned as shown above.



#### Grip Motor (Rear) (M24)

- 1. Do SP6538-003 to set the machine in grip release mode.
- 2. Shut the system down to cut off power to the main machine and perfect binder.
- 3. Disconnect all power cords.

# **WARNING**

- Never service the Perfect Binder until all power to the system has been turned off.
- 4. Remove the rear cover.
- 5. Remove the rear upper cover.

- 6. Remove the deodorization filter bracket [1] (@\*x4).



- 7. Remove the relay board:
  - [1] Plate (@ x1)
  - [2] Flexible press plates x2
  - [3] FFC x1
  - [4] <sup>©</sup>x3, <sup>©</sup>x3
  - [5] @<sup>®</sup>x1



8. Disconnect the motor bracket [1] (@x3).





Colored Important

• Work carefully during removal to avoid damaging the encoder wheel [1] and sensor [2].



d391r130

9. Remove the sensor plate [1] ( $\mathfrak{O}^{*}x1$ ).

П



d391p131

#### Reinstallation

1. Before reinstalling the motor confirm that the harness [1] and gear [2] are positioned as shown.



d391p132

# Grip Unit Rotation Motor (M21)

- 1. Open the inserter.
- 2. Remove:
  - Top cover (page 52)
  - Rear upper cover (page 33)
  - Rear cover (page 33)
- 3. Remove the harness cover [1] (🕅 x4).



d391p133

4. Remove the top cover switch [1] ( $\mathfrak{O}x2$ ).



d391p134

5. Remove the top cover frame [1] ( $\mathfrak{O} x5$ ).



d391p135a

d391p135b

6. Remove the protection plate [1] ( $\mathfrak{Sr}_{x1}, \mathfrak{K}_{x1}, \mathfrak{Sr}_{x3}$ ).


7. While holding the main gripper steady with one hand, remove the grip unit rotation motor.





Comportant 🗋

• Holding the main gripper steady prevents it from wobbling and disturbing the position of the main gripper.

# Main Grip Lift Motor (M22)

- 1. Remove the rear cover. (page 33)
- 2. Remove the main gripper lift motor [1] (STx1, SX2).



### Reinstallation

1. When you reinstall the main grip lift motor, do not forget to attach the belt [1].



d391r139

# **Gluing Unit**

# Filters

### **Deodorization Filter: Gluing Unit**

- 1. Remove the rear cover. (page 33)
- 2. Remove the rear upper cover. (page 33)
- 3. Remove the filter case [1] (@<sup>\*</sup>x4).



d391r128a

- 4. Remove the filter case [1] (@\*x3).
- 5. Remove the filters [2].



d391b141

### **Deodorization Filter: Rear Upper Cover**

- 1. Remove rear upper cover [1] of the bookbinder (@x5). (page 33)
- 2. Remove the deodorization filters (x3).



### **Glue Heater**

- 1. Do SP6538-003 to set the machine in grip release mode.
- 2. Shut the system down to cut off power to the main machine and perfect binder.
- 3. Disconnect all power cords.

## **WARNING**

- Never service the Perfect Binder until all power to the system has been turned off.
- 4. Remove:
  - Rear cover (page 33)
  - Rear upper cover (page 33)
- 5. Remove the glue unit transport stay [1] (\$\$\vert x4)\$.



d391r942

6. Disconnect the harnesses (x8, ☞x5).



d391r943

7. Remove:



8. Release the thermistor harness [1] at the front side of the glue heater unit ( $\Re x4$ ).



9. Remove sensor bracket [1] (@\*x1).



d391r946

10. Remove sensor bracket and sensor [1] (🕸 x1, 🎯 x1).



11. Remove the screw from the bottom of the glue heater unit [1] ( $\mathfrak{O}^{p}x1$ ).



d391r948

12. Remove the glue heater unit [1] ( $\mathfrak{O}^{p}x3$ ).



### Reinstallation

1. Reconnect the timing belt [1] to the motor drive gear [2] and shaft gear [3].



# **Cover Transport Unit**

# Switchback Rollers: Cover Transport

- 1. Open the right and left door.
- 2. Remove the switchback rollers [1] (\$x2).



d391r174

## Torque Limiter

- 1. Pull out the cover transport unit drawer. (page 80)
- 2. Remove the roller release lever shaft [1] (Bx1, Bushing x1).



1. Remove the torque limiter [1] ( $\Re x$ 1, Gear x1).



d391p179

#### Reinstallation

1. When you reinstall the roller release lever shaft, make sure that the pawls [1] of the shaft are below the roller holders [2].





# Anti-Static Brushes: Upper and Lower Right

- 1. Pull out the cover transport unit.
- 2. Disconnect the roller [1] (<sup>®</sup>x1, Bearing x1).



d391p181

3. Push the shaft of roller [1] to the rear.



d391p182

4. Remove bearing, free the timing belt, and remove the roller.

### Anti-Static Brush: Upper Right

5. Remove the anti-static brush [1] (@\*x2).



d391p183

### Anti-Static Brush: Lower Right

6. Remove the idle roller unit of transport roller 1 [1] ( $\mathfrak{O}^{*}x2$ ).



d391r0529

7. Remove the anti-static brush [1].



d391p187

# Anti-Static Brush: Left

- 1. Pull out the cover transport unit. (page 80)
- 2. Open cover [1].
- 3. Remove anti-static brushes [2] and [3].



d391p188

# Exit Rollers 1/2 Unit

- 1. Pull out the cover transport unit. (page 80)
- 2. Open cover [1].
- 3. Remove guide plate [2] (@<sup>2</sup>x1).



d391p199

- 4. Remove exit idle roller unit.
- 5. Open cover [1].



d391p200

6. Remove exit roller unit [1] (@x6, @x1).



d391p201

#### Reinstallation

- 1. Confirm that the pressure arms [1] on the rear of the exit roller unit are inserted into the holes [2] of the spine fold unit.
- 2. If the fit is difficult, manually turn the gear [3] of the motor to move the spine fold unit.



d391r202

# **Trimming Unit**

# Torque Diode: Signature Rotation Unit

- 1. Pull out the trimming unit drawer. (page 87)
- 2. Remove left stay [1] (<sup>®</sup>x4).





3. Remove harness plate [1] (𝒱 x4, ≪x9, 𝒱 x1)



4. Rotate knob [1] counter-clockwise until sensor plate [2] separates from sensor [3].



- 5. Rotate wheel [1] to raise the rotation unit [2] then remove sensor plate [3] ( $\mathfrak{Gr}x1$ )
- 6. Disconnect sensor [4].



d391r264

- 7. Release connector [1].
- 8. While gently pressing down on the rotation unit [2], remove harness guide [3] ( $\mathfrak{O} x2$ ).



- 9. Turn wheel [1] to move rotation unit until you can see the screw.
- 10. Remove the sensor plate [2] (\$\$\vert^x1\$).



d391r267

- 11. Remove:
  - [1] ®x1
  - [2] Shaft x 1
  - [3] Gear x 1



12. Move the rotation unit to a position where it is easy to work and remove the torque diode [1] ( x3).



#### d391p269

# Blade Cradle

- 1. Insert the tip of a small screwdriver into the small hole [1] near the left rear corner of the bookbinder.
- 2. Move the screwdriver in the direction of the arrow to release the stacking tray lock.



- 3. At the front open the book tray door and the trimmings box drawer.
- 4. Remove the front lower cover. (page 35)
- 5. Do SP6538-005 to set the machine in the blade replace mode.
- 6. Remove:
  - [1] Left brace (@x2)
  - [2] Right brace (@x2)
  - [3] Lock plate (@x2)



- 7. Pull out the trimming unit [4] on its rails.
- 8. At the front and rear [1] insert a screwdriver at [2] and [3], press in the direction of the arrows to release the pawls of the blade cradle, then remove the blade cradle [4].



#### Reinstallation

1. When reinstalling the blade cradle confirm that the three pawls [1] of the cradle are inserted in the holes of the trimming unit [2] and locked in the groove [3].



1. After the blade cradle has been reinstalled, at the front and rear confirm that blade cradle is aligned correctly [A] and not floating away [B] from or misaligned with the trimming unit.

1



#### C Important

 Always replace the trimming blade and trimmings catcher after replacing the cradle. (The trimming blade, trimmings catcher, and blade cradle should always be replaced together.)

## Trimming Blade, Trimmings Catcher

#### 🔁 Important

• The trimming blade and trimmings catcher are always replaced together.

#### Removing the Trimming Blade

- 1. Do SP6538-006 to set the machine in blade replace mode.
- 2. Shut the system down to cut off power to the main machine and perfect binder.
- 3. Disconnect all power cords.

### **WARNING**

- Never service the Perfect Binder until all power to the system has been turned off.
- 1. Insert the tip of a small screwdriver into the small hole [1] near the left rear corner of the bookbinder.
- 2. Move the screwdriver in the direction of the arrow to release the stacking tray lock.



- 3. At the front open the book tray door and the trimmings box drawer.
- 4. Remove the front lower cover.
- 5. Remove:
  - [1] Left brace (@x2)
  - [2] Right brace (@x2)
  - [3] Lock plate (@x2)
- 6. Pull out the trimming unit on its rails.



7. While pushing the lever [1] to the left with a screwdriver, insert the sheath [2] provided with the new blade along the edge of the old blade inside the bookbinder.





8. Make sure that the edge of the blade [1] slides into the groove [2] of the sheath.



- 9. Press in the direction of the arrow so the home position of the sheath [1] lines up with the cutout of the blade [2].
- 10. Use the accessory screw (provided with the sheath) to fasten the sheath at [3] ( $\mathfrak{W}x1$ ).



### 🔿 Important

- Do not apply excessive force to this screw. Turn the screw until it is snug against the side of the sheath.
- 11. While holding the sheath press the blade slightly to the rear, and remove the blade screws (🕸 x4).



12. Hold the sheath by its grip and slowly pull the blade out.



# 

- To avoid serious injury, you must pull on the blade by the attached sheath. The edge of the blade can cause a serious cut if the sheath becomes separated.
- Always hold the sheath and blade with two hands, one on the handle and one hand on the end near the screw. Never hold the blade and sheath by only the handle.

### **Replacing the Trimmings Catcher**

1. Remove cover [1] (@x4).



d391r936

- 2. Remove:
  - [1]*\\$*x1
  - [2] Bracket (@<sup>®</sup>x1)



3. Underneath the trimming unit remove the trimmings catcher unit [1].



d391r938

4. Remove the slider plate [1].

[1] Springs x 2 [2]<sup>®</sup>x 2



#### Installing the New Blade

1. Pick up the new blade with the sheath attached.

# 

- Never remove the sheath of the new blade until the blade and sheath have been set in the trimmer unit.
- The sheath is removed only after the blade and attached sheath have been inserted in the trimmer unit.
- 2. While pushing the lever [1] to the left, push the new blade and sheath [2] into the bookbinder.



3. While pressing the blade to the rear, attach the blade with the accessory screws (🖾 x4).

#### 🚼 Important

• You must use the lock screws to fasten the blade. They are lock screws specially designed for use with the blade.



- 4. Press in the direction of the arrow so the home position of the sheath [1] lines up with the cutout of the blade [2].
- 5. Remove the screw [3] to release the sheath from the blade ( $\mathfrak{W}x1$ ).



- 6. Remove the sheath.
- 7. Make sure all the screws on the blade are tight.

1



#### Reinstallation

- 1. To prevent SC750-54 always check the position of the plate to the right of the edge press plate motor (M36) before you close the trimming unit drawer. (page 87)
- 2. To prevent SC750-67 always check to make sure that the blade cradle plate is aligned with the left edge of the PCB where the trimmer limit sensor (S86) is mounted. (page 87)

## **Ball Screw**

- 1. Pull out the trimming unit drawer. (page 87)
- 2. Remove the springs to relieve the tension on the chain.



d391r325

- 3. Release harness [1] (🖗x1).
- 4. After removing the screws, move the chain guide [2] in the direction of the arrow (🕅 x3).



d391r326

- 5. Remove e-ring [1] and bearing [2]. (If the bearing is too difficult to remove now, you can remove it later when the ball screw is removed.)
- 6. Remove the sensor frame [3] (🕅 x1).



7. Turn knob [1] to raise the rotation unit [2] to its maximum height.



d391r328



 If a book is jammed at the edge press plate, rotate the knob [1] on the edge press plate motor clockwise about 10 times to relieve the pressure on the jam site before you attempt to remove the motor.



# 

• The edge press plate exerts about 640 kg (1408b lb.) of pressure on a book caught and jammed in the trimming unit. Removing the edge press plate motor with this much pressure on the edge press plate could cause injury.

The reference line toward the rear tells whether to add pressure or reduce pressure:

- If the line is off as shown at [A] above this indicates too much pressure.
- If the line is off as shown at [B] above this indicates too little pressure.
- Disconnect the edge press plate motor (M36) [1] and chain [2] (@x4, @x1).
- Mark the positions of the four harness clamps before you remove them.
- Disconnect harness [3] (🖗 x8)



d391r329

1. Remove the screws from the motor frame [1] (@ x6).



 Move the motor frame [1] in the direction the arrow then remove the shaft [2] (<sup>®</sup>x1, Sprocket x1, Lock pin x1, <sup>®</sup>x1, Bearing x1)



3. Remove the motor frame [1] (<sup>®</sup>x2).



4. Pull out the shafts [1] and [2].



5. Remove the rings [1], bearing [2], and bushing [3] from the end of the ball screw.



d391r336

6. Remove the ball screw [1] ( $\mathfrak{W}x4$ ). If it is difficult to remove, rotate the shaft.



🔁 Important

- The screw shaft and ball screw are always replaced together as one unit. Never attempt to separate the ball screw and shaft (you will not be able to reassemble them).
- 7. Reset the counter after replacing the ball screw unit.

# Trimmings Buffer Motor (M37)

- 1. Open the book stack door. (page 47)
- 2. Pull out the book output tray.
- 3. Pull out the trimmings box drawer and remove the box from the drawer.
- 4. On the right loosen screw [1] and remove screw [2] (@x2).
- 5. On the left remove the screw [3] and lower the trimmings buffer drive unit [4] ( $\Im$  x2).



d391p346b

d391p346a
Disconnect the timing belt [1] and connectors [2] to disconnect the drive unit (Timing belt x1, \$\$\$ x5).



d391p347

7. Remove the trimmings buffer motor (M37) ( $\mathfrak{G}^{*}x2, \mathfrak{G}^{*}x1$ ).



d391p348

## **Horizontal Path Rollers**

## Exit Idle Roller Unit

- 1. Pull out the cover transport unit. (page 80)
- 2. Raise lever **Mk8** to open the exit roller cover [1].
- 3. Remove the guide plates:
  - [2] Front (@ x1)
  - [3] Rear (@ x1)
- 4. Remove the exit roller cover [1].



d391r0485

- 5. To remove the rollers, release and remove spring [1].
- 6. Rotate and pull out roller shaft [2] and remove the rollers (<sup>®</sup>)x2 ea.).



d391r0488

## Exit Roller, Horizontal Transport Roller 5

- 1. Pull out the cover transport unit. (page 80)
- 2. Remove the exit idle roller unit. (page 108)
- 3. Raise lever **Mk8** to open the left horizontal path transport guide [1].
- 4. Remove:
  - [2] Front (@ x3)
  - [3] Rear (@ x3)



- 5. Remove the connector protection plate [1] (\$\$\mathbf{Y}\$x1).
- 6. Disconnect the connector [2] (Stat).
- 7. Remove the guide plate [3], turn it over, and lay it on a flat surface.



d391r0495

- 8. To replace the rollers: .
  - [1] Springs x2
  - [2] Rollers (🕅 x2)



d391r0498

- 9. Remove the exit roller and horizontal transport roller 5.
  - [1] Front (® x1, Bushing x2)
  - [2] Rear (<sup>®</sup>x2, <sup>©</sup>x3, Gears x2, Bushings x2).



d391r0499

## Reinstallation

- 1. Make sure that the pressure arms [1] behind the exit unit [2] go through the holes of the left spine fold unit [3].
- 2. If this is difficult to do, turn the pulley [4] of the spine fold motor manually to move the left spine fold unit.



d391r0500

## Horizontal Transport Roller 4

- 1. Pull out the cover transport unit. (page 80)
- 2. Remove the exit idle roller unit. (page 108)

- 3. Remove the exit roller unit. (page 109)
- 4. Disconnect harness:
  - 🖗 x4 (1), (4), (5), (6)
  - 🐺 x2 (2), (3)
  - 🐨 x1 (7)



d391r0502

5. Manually rotate the spine fold drive gear [1] to move the left spine fold unit [2] to the left.



d391r0507

- 6. Remove the screws:
  - [1] Front (@ x2)
  - [2] Rear (@ x2)
- 7. Remove the left spine fold unit [3].



d391r0508

8. Remove the screws [1] ( $\Im x2$ ) then remove the brace [2] from the side of the left spine fold unit.



d391r0510

- 9. Remove the screws [1] (@x3) and remove the roller bracket [2].
- 10. Turn over the roller bracket and lay it on a flat surface.



d391r0513

- 11. Remove the roller shafts [1] (Springs x1 ea.)
- 12. Remove the rollers [2] (<sup>®</sup>x2 ea)



## Left Cover Transport Path Guide Roller

- 1. Pull out the cover transport unit. (page 80)
- 2. Raise lever Mk7 to open the cover [1].
- 3. Replace the guide rollers:
  - [2] Front (🕅 x2, 🔍 x1, Gears x2, Bushings x2)
  - [3] Rear (🕅 x4, 🔍 x1, Gears x2, Bushings x2)





d391r0522

## Horizontal Transport Roller 1 and Idle Rollers

- 1. Pull out the cover transport unit. (page 80)
- 2. At the front disconnect the roller [1] ( $\Re x$ 1, Bearing x1)
- 3. Push the roller [2] slightly to the rear.
- 4. At the rear disconnect the roller [3] (🛇 x1, Gear x1, Bearing x1)



- 5. Remove the horizontal transport roller 1 idle roller unit [1] ( $\mathfrak{O}^{p}x2$ ).
- 6. Replace the rollers [2].



d391r0524

П

## Horizontal Transport Roller 2

- 1. Pull out the cover transport unit. (page 80)
- 2. Raise lever **Mk9** [1] to see the rollers.



d391r0526

3. Remove the harness protection plate [1] (@\*x1).



d391r0527

- 4. Disconnect the harness:
  - [1] 🖏x1
  - [2] 🐨 x2



d392r0528

5. Remove the screws at the front [1] and rear [2] (@x4).



- 6. As you slowly remove the plate [1] guide the connectors [2] under the plate.
- 7. Turn over the plate and lay it on a flat surface.



d391r0534

- 8. Remove the roller shaft springs [1] (Springs x2 ea.)
- 9. Remove the rollers [2] (<sup>®</sup>x2 ea.)



#### Reinstallation

- 1. Make sure that the pressure arms [1] behind the exit unit [2] go through the holes [3] of the spine fold unit.
- 2. If this is difficult to do, turn the pulley [4] of the spine fold motor manually to move the spine fold unit.



d391r0536

## Horizontal Transport Roller 3

- 1. Remove:
  - Horizontal transport roller 1 and idle rollers (page 115)
  - Horizontal transport roller 2 idle roller unit (page 116)
- 2. At the front disconnect the shaft [1].



d391r920

3. Pull the guide plate shaft forward and out of the hole at [1].



d391r921

- 4. Push the guide plate to the rear and through the hole at [1].
- 5. Pull the guide plate forward again to remove it from the shaft.



d391r922

- 6. Remove:
  - [1] Front door interlock unit [1] (@x3)
  - [2] Guide standard plate [2] (@x1)



d391r923

7. Remove plate [1] (@<sup>2</sup>x1)





8. Use a pen or pencil to mark the current position of the notch on the graduated scale.

## 

## • The notch must be realigned at this mark when it is reattached.

9. Remove the notch plate [1] (@x1).



d391r925

10. Disconnect the harness [1] (💱 x2, 🞯 x3).



d391r926

- 11. Disconnect the harness:
  - [1] 🖏 x 1
  - [2] 🖏 1
  - [3] 🐨 x3



d391r927

12. Disconnect harness [1] (Band x1, 🖏 x2, 🎯 x4)



d391r928

- 13. Move the left transport path guide [1] to the left.
- 14. Remove the right spine fold plate [2] (@x2).



d391r929

- 15. Open the right cover transport path guide [1].
- 16. Manually turn the pulley [2] to move the right spine fold plate unit completely to the right.
- 17. Remove the right spine fold plate [3] (\$\$\vert x2)\$.

#### Important

• At reinstallation the right spine fold plate [3] must be parallel to the right cover transport path guide [1].



d391r930

- 18. Remove plates [1], [2] (@<sup>2</sup>x4 ea.)
- 19. Remove the roller assembly screws [3] (\$\$\vec{W}\$x2).



d391r931

- 20. Remove the screws [1] (Srx4).
- 21. Replace the old roller set [2] with the new one.



d391r932

# **Perfect Binder Boards**



d391r904

1	Master Control Board (PCB1)					
2	Slave Control Board (PCB2)					
3	Cutter Control Board (PCB3)					
4	Relay Board (PCB12)					
5	Power Supply Unit 1 (PCB20)					
6	Power Supply Unit 2 (PCB21)					

## Master Control Board

- 1. Remove the rear cover. (page 33)
- 2. Remove the master control board [1] (ST x all, Standoffs x5).
- 3. Remove the EEPROM [2] from the old board and install it on the new board.



## When installing a new EEPROM in Master Control Board

New EEPROM has no setting data in itself. The factory setting data (41 settings) for each machine must be input when installing a new EEPROM in the master control board.

- Refer to the factory setting data sheet which has been kept in the right front door for details about necessary settings to be input in the EEPROM.
- Refer to "Troubleshooting > Service Mode > Critical Adjustments" of this manual for details about how to input the factory setting data in the EEPROM on the master controller board.

## 1. CV-REG-L

Cover Horizontal Registration Position Adjustment (Large size control; 298mm or more)



1. Set the SW1 bank as shown above.

SW2								
1	2	3	4	5	6	7	8	
*	*	*	*	*	Up	*	*	

- 3. Push [PSW1] then look at LED1, LED2, LED3 to read the current setting.
  - The LED1 count indicates the sign of the value, plus (+) or minus (-). When LED1 is OFF, this
    indicates plus (+). When LED1 is ON, this indicates minus (-).
  - The LED2 count indicates the left digit (10's) of the 2-digit decimal value, the LED3 count indicates the right digit (1 to 9) of the 2-digit decimal value. Flash duration: 300 ms
  - For example, if LED2 flashes twice and the LED3 flashes 4 times, this is read as "24". To adjust
    this value to the actual reading: 24 x 0.1 mm = 2.4 mm where "2.4 mm" is the actual value.
  - The LEDs remain OFF for 2 sec. if the current value is "0".
  - The LED2 and LED3 displays automatically alternate
- Input a value for the "CV-REG-L" on the factory setting data sheet by pushing [PSW2] to add 0.1 mm to the current value or [PSW3] to subtract 0.1 mm from the current value.

### 2. CV-REG-S

Cover Horizontal Registration Position Adjustment (Small size control; 297 mm or less)



1. Set the SW1 bank as shown above.

SW2								
1	2	3	4	5	6	7	8	
Up	*	*	*	*	Up	*	*	

- 1. Set the SW2 bank as shown above.
- 2. Push [PSW1] then look at LED1, LED2, LED3 to read the current setting.
- Input a value for the "CV-REG-S" on the factory setting data sheet by pushing [PSW2] to add 0.1 mm to the current value or [PSW3] to subtract 0.1 mm from the current value.

#### 3. CV-CENT

Cover Center Adjustment

SW1							
1 2 3 4							
Up	*	*	*				

1. Set the SW1 bank as shown above.

	SW2							
1	2	3	4	5	6	7	8	
*	Up	*	*	*	Up	*	*	

- 2. Set the SW2 bank as shown above.
- 3. Push [PSW1] then look at LED1, LED2, LED3 to read the current setting.
- 4. Input a value for the "CV-CENT" on the factory setting data sheet by pushing [PSW2] to add 0.1 mm to the current value or [PSW3] to subtract 0.1 mm from the current value.

## 4. CLCT-SB

Stacking Tray Switchback Roller Adjustment

SW1							
1	1 2 3 4						
Up	*	*	*				

SW2							
1	2	3	4	5	6	7	8
Up	Up	*	*	*	Up	*	*

- 2. Set the SW2 bank as shown above.
- 3. Push [PSW1] then look at LED1, LED2, LED3 to read the current setting.
- Input a value for the "CLCT-SB" on the factory setting data sheet by pushing [PSW2] to add 0.1 mm to the current value or [PSW3] to subtract 0.1 mm from the current value.

## 5. ALG-F-A4

1

Jogger Motor Adjustment (Front jogger motor; Small size; less than 298 mm)

SW1							
1	1 2 3 4						
Up	*	*	*				

1. Set the SW1 bank as shown above.

SW2							
1	2	3	4	5	6	7	8
*	*	Up	*	*	Up	*	*

- 2. Set the SW2 bank as shown above.
- 3. Push [PSW1] then look at LED1, LED2, LED3 to read the current setting.
- 4. Input a value for the "ALG-F-A4" on the factory setting data sheet by pushing [PSW2] to add 0.1 mm to the current value or [PSW3] to subtract 0.1 mm from the current value.

## 6. ALG-R-A4

Jogger Motor Adjustment (Rear jogger motor; Small size less; than 298 mm)

SW1							
1	2	3	4				
Up	*	*	*				

SW2							
1	2	3	4	5	6	7	8
Up	*	Up	*	*	Up	*	*

- 2. Set the SW2 bank as shown above.
- 3. Push [PSW1] then look at LED1, LED2, LED3 to read the current setting.
- Input a value for the "ALG-R-A4" on the factory setting data sheet by pushing [PSW2] to add 0.1 mm to the current value or [PSW3] to subtract 0.1 mm from the current value.

## 7. ALG-F-L

Jogger Motor Adjustment (Front jogger motor; Large size; 298 mm or more)

SW1							
1	2 3 4						
Up	*	*	*				

1. Set the SW1 bank as shown above.

	SW2							
1	1 2 3 4 5 6 7 8							
*	* Up Up * * Up * *							

- 2. Set the SW2 bank as shown above.
- 3. Push [PSW1] then look at LED1, LED2, LED3 to read the current setting.
- 4. Input a value for the "ALG-F-L" on the factory setting data sheet by pushing [PSW2] to add 0.1 mm to the current value or [PSW3] to subtract 0.1 mm from the current value.

## 8. ALG-R-L

Jogger Motor Adjustment (Rear jogger motor; Large size; 298 mm or more)

SW1							
1	1 2 3 4						
Up * * *							

	SW2							
1	1 2 3 4 5 6 7 8						8	
Up	Up	Up	*	*	Up	*	*	

- 2. Set the SW2 bank as shown above.
- 3. Push [PSW1] then look at LED1, LED2, LED3 to read the current setting.
- Input a value for the "ALG-F-L" on the factory setting data sheet by pushing [PSW2] to add 0.1 mm to the current value or [PSW3] to subtract 0.1 mm from the current value.

## 9. GLUING



1. Set the SW1 bank as shown above.

	SW2								
1	1 2 3 4 5 6 7 8						8		
*	* * * Up * Up * *								

- 2. Set the SW2 bank as shown above.
- 3. Push [PSW1] then look at LED1, LED2, LED3 to read the current setting.
- 4. Input a value for the "GLUING" on the factory setting data sheet by pushing [PSW2] to add 0.05 mm to the current value or [PSW3] to subtract 0.05 mm from the current value.
  - To lower the main grip unit to increase the pressure between the spine and gluing vat roller below, adjust in the plus (+) direction. The amount of glue will increase.
  - To raise the main grip unit to reduce the pressure between the spine and gluing vat roller below, adjust in the minus (-) direction. The amount of glue will decrease.

## 10. STK-DLV

Exit Motor Adjustment



1. Set the SW1 bank as shown above.

	SW2							
1	1 2 3 4 5 6 7 8						8	
Up	Up * * Up * Up * *							

- 3. Push [PSW1] then look at LED1, LED2, LED3 to read the current setting.
- 4. Input a value for the "GLUING" on the factory setting data sheet by pushing [PSW2] to add 0.1 mm to the current value or [PSW3] to subtract 0.1 mm from the current value.

## 11. GRP-CHNG

Main Grip Position Adjustment

SW1							
1	1 2 3 4						
Up * * *							

1. Set the SW1 bank as shown above.

	SW2							
1	1 2 3 4 5 6 7 8							
* Up * Up * Up * *								

2. Set the SW2 bank as shown above.

- 3. Push [PSW1] then look at LED1, LED2, LED3 to read the current setting.
- 4. Input a value for the "GRP-CHNG" on the factory setting data sheet by pushing [PSW2] to add 0.1 mm to the current value or [PSW3] to subtract 0.1 mm from the current value.

## 12. SIZE-H

Trimming Position Adjustment, Fore edge cut adjust

SW1							
1	1 2 3 4						
Up * * *							

1. Set the SW1 bank as shown above.

	SW2							
1	1 2 3 4 5 6 7 8							
* * * * Up Up * *								

- 2. Set the SW2 bank as shown above.
- 3. Push [PSW1] then look at LED1, LED2, LED3 to read the current setting.
- 4. Input a value for the "SIZE-H" on the factory setting data sheet by pushing [PSW2] to add 0.1 mm to the current value or [PSW3] to subtract 0.1 mm from the current value.

#### **13. SIZE-W**

Trimming Position Adjustment, Bottom/Edge cut adjust

SW1						
1 2 3 4						
Up	*	*	*			

1. Set the SW1 bank as shown above.

	SW2							
1	1 2 3 4 5 6 7 8							
Up	Up * * * Up Up * *							

- 2. Set the SW2 bank as shown above.
- 3. Push [PSW1] then look at LED1, LED2, LED3 to read the current setting.
- 4. Input a value for the "SIZE-W" on the factory setting data sheet by pushing [PSW2] to add 0.1 mm to the current value or [PSW3] to subtract 0.1 mm from the current value.

## 14. CV-LNG

Trimming Position Adjustment, Fixed area shift between top/bottom edge

SW1							
1	1 2 3 4						
Up * * *							

	SW2								
1	2	3	4	5	6	7	8		
*	Up	*	*	Up	Up	*	*		

- 2. Set the SW2 bank as shown above.
- 3. Push [PSW1] then look at LED1, LED2, LED3 to read the current setting.
- Input a value for the "CV-LNG" on the factory setting data sheet by pushing [PSW2] to add 0.1 mm to the current value or [PSW3] to subtract 0.1 mm from the current value.

## 15. 10RGT-1

Square Cut Adjustment, L1:Square Adj. For 10-Sheet Signature 1

SW1						
1 2 3 4						
Up	*	*	*			

1. Set the SW1 bank as shown above.

	SW2							
1	2	3	4	5	6	7	8	
Up	Up	*	*	Up	Up	*	*	

- 2. Set the SW2 bank as shown above.
- 3. Push [PSW1] then look at LED1, LED2, LED3 to read the current setting.
- 4. Input a value for the "10RGT-1" on the factory setting data sheet by pushing [PSW2] to add 0.1 mm to the current value or [PSW3] to subtract 0.1 mm from the current value.

## 16. 10RGT-2

Square Cut Adjustment, L2:Square Adj. For 10-Sheet Signature 2



1. Set the SW1 bank as shown above.

SW2							
1 2 3 4 5 6 7 8							8
*	*	Up	*	Up	Up	*	*

- 2. Set the SW2 bank as shown above.
- 3. Push [PSW1] then look at LED1, LED2, LED3 to read the current setting.
- 4. Input a value for the "10RGT-2" on the factory setting data sheet by pushing [PSW2] to add 0.1 mm to the current value or [PSW3] to subtract 0.1 mm from the current value.

#### 17. 10RGT-3

Square Cut Adjustment, L3:Square Adj. For 10-Sheet Signature 3

SW1					
1 2 3 4					
Up	*	*	*		

1. Set the SW1 bank as shown above.

	SW2						
1 2 3 4 5 6 7 8							8
Up	*	Up	*	Up	Up	*	*

- 2. Set the SW2 bank as shown above.
- 3. Push [PSW1] then look at LED1, LED2, LED3 to read the current setting.
- Input a value for the "10RGT-3" on the factory setting data sheet by pushing [PSW2] to add 0.1 mm to the current value or [PSW3] to subtract 0.1 mm from the current value.

## 18. 200RGT-1

Square Cut Adjustment, L1:Square Adj. For 200-Sheet Signature 1

SW1					
1 2 3 4					
Up	*	*	*		

1. Set the SW1 bank as shown above.

	SW2							
1	2	3	4	5	6	7	8	
*	Up	Up	*	Up	Up	*	*	

- 2. Set the SW2 bank as shown above.
- 3. Push [PSW1] then look at LED1, LED2, LED3 to read the current setting.
- 4. Input a value for the "200RGT-1" on the factory setting data sheet by pushing [PSW2] to add 0.1 mm to the current value or [PSW3] to subtract 0.1 mm from the current value.

## 19.200RGT-2

Square Cut Adjustment, L2:Square Adj. For 200-Sheet Signature 2

SW1						
1 2 3 4						
Up	*	*	*			

SW2							
1	2	3	4	5	6	7	8
Up	Up	Up	*	Up	Up	*	*

- 2. Set the SW2 bank as shown above.
- 3. Push [PSW1] then look at LED1, LED2, LED3 to read the current setting.
- Input a value for the "200RGT-2" on the factory setting data sheet by pushing [PSW2] to add 0.1 mm to the current value or [PSW3] to subtract 0.1 mm from the current value.

## 20. 200RGT-3

Square Cut Adjustment, L3:Square Adj. For 200-Sheet Signature 3

SW1					
1 2 3 4					
Up	*	*	*		

1. Set the SW1 bank as shown above.

SW2							
1 2 3 4 5 6 7 8							8
*	*	*	Up	Up	Up	*	*

- 2. Set the SW2 bank as shown above.
- 3. Push [PSW1] then look at LED1, LED2, LED3 to read the current setting.
- 4. Input a value for the "200RGT-3" on the factory setting data sheet by pushing [PSW2] to add 0.1 mm to the current value or [PSW3] to subtract 0.1 mm from the current value.

#### 21. SLD-MTR

Slide Motor HP Adjustment

SW1								
1	1 2 3 4							
Up	*	*	*					

SW2								
1 2 3 4 5 6 7 8						8		
Up	*	*	Up	Up	Up	*	*	

- 2. Set the SW2 bank as shown above.
- 3. Push [PSW1] then look at LED1, LED2, LED3 to read the current setting.
- Input a value for the "SLD-MTR" on the factory setting data sheet by pushing [PSW2] to add 0.1 mm to the current value or [PSW3] to subtract 0.1 mm from the current value.

1

## 22. STK-VR0

Stack Thickness Volume Adjustment: 0 mm

- 1. Enter the SP mode of the mainframe.
- 2. Do SP6521-001 to input the factory setting data of the STK-VRO.

## 23. STK-VR25

Stack Thickness Volume Adjustment: 25 mm

- 1. Enter the SP mode of the mainframe.
- 2. Do SP6521-002 to input the factory setting data of the STK-VR25.

## 24. GLU-LOW

Glue Remain Thermistor: Lower Limit

- 1. Enter the SP mode of the mainframe.
- 2. Do SP6522-001 to input the factory setting data of the GLU-LOW.

## 25. GLU-UP

Glue Remain Thermistor: Upper Limit

- 1. Enter the SP mode of the mainframe.
- 2. Do SP6522-002 to input the factory setting data of the GLU-UP.

## 26. GLU-TEMP

Glue Temperature Setting

- 1. Enter the SP mode of the mainframe.
- 2. Do SP6534-001 to input the factory setting data of the GLU-UP.

#### 27. GLU-MOVE

Gluing Unit Movement Adjustment



1. Set the SW1 bank as shown above.

SW2									
1 2 3 4 5 6 7 8							8		
Up	Up	*	Up	*	Up	*	*		

- 2. Set the SW2 bank as shown above.
- 3. Push [PSW1] then look at LED1, LED2, LED3 to read the current setting.
- 4. Input a value for the "GLU-MOVE" on the factory setting data sheet by pushing [PSW2] to add 0.1 mm to the current value or [PSW3] to subtract 0.1 mm from the current value.

#### 28. GLU-EDG1

Glue Application at Corners Adjustment, Top Edge Corner: 3 Cuts

SW1							
1 2 3 4							
Up	*	*	*				

1. Set the SW1 bank as shown above.

SW2								
1 2 3 4 5 6 7 8							8	
Up	Up	Up	*	*	Up	Up	*	

- 2. Set the SW2 bank as shown above.
- 3. Push [PSW1] then look at LED1, LED2, LED3 to read the current setting.
- Input a value for the "GLU-EDG1" on the factory setting data sheet by pushing [PSW2] to add 1
  mm to the current value or [PSW3] to subtract 1 mm from the current value.

## 29. GLU-EDG2

Glue Application at Corners Adjustment, Bottom Edge: 3 Cuts

SW1							
1 2 3 4							
Up	*	*	*				

1. Set the SW1 bank as shown above.

	SW2									
1	2	3	4	5	6	7	8			
*	*	*	Up	*	Up	Up	*			

- 2. Set the SW2 bank as shown above.
- 3. Push [PSW1] then look at LED1, LED2, LED3 to read the current setting.
- Input a value for the "GLU-EDG2" on the factory setting data sheet by pushing [PSW2] to add 1
  mm to the current value or [PSW3] to subtract 1 mm from the current value.

## 30. GLU-EDG3

Glue Application at Corners Adjustment, Top Edge: No Trimming or Top Only

SW1							
1 2 3 4							
Up	*	*	*				

SW2									
1	2	3	4	5	6	7	8		
Up	*	*	Up	*	Up	Up	*		

- 2. Set the SW2 bank as shown above.
- 3. Push [PSW1] then look at LED1, LED2, LED3 to read the current setting.
- Input a value for the "GLU-EDG3" on the factory setting data sheet by pushing [PSW2] to add 1
  mm to the current value or [PSW3] to subtract 1 mm from the current value.

## 31. GLU-EDG4

Glue Application at Corners Adjustment, Bottom Edge: No Trimming or Top Only

SW1								
1	1 2 3 4							
Up	*	*	*					

1. Set the SW1 bank as shown above.

	SW2									
1 2 3 4 5 6 7 8							8			
*	Up	*	Up	*	Up	Up	*			

- 2. Set the SW2 bank as shown above.
- 3. Push [PSW1] then look at LED1, LED2, LED3 to read the current setting.
- 4. Input a value for the "GLU-EDG4" on the factory setting data sheet by pushing [PSW2] to add 1 mm to the current value or [PSW3] to subtract 1 mm from the current value.

#### 32. GLU-AMT1

Glue Amount Adjustment, 1 (stack thickness 0-1.4mm)

SW1							
1 2 3 4							
Up	*	*	*				

1. Set the SW1 bank as shown above.

SW2							
1	2	3	4	5	6	7	8
*	*	*	*	Up	Up	Up	*

- 2. Set the SW2 bank as shown above.
- 3. Push [PSW1] then look at LED1, LED2, LED3 to read the current setting.
- Input a value for the "GLU-AMT1" on the factory setting data sheet by pushing [PSW2] to add 0.05 mm to the current value or [PSW3] to subtract 0.05 mm from the current value.

1
### 33. GLU-AMT2

Glue Amount Adjustment, 2 (stack thickness 1.5-3.4mm)

SW1							
1 2 3 4							
Up	*	*	*				

1. Set the SW1 bank as shown above.

SW2										
1	2	3	4	5	6	7	8			
Up	*	*	*	Up	Up	Up	*			

- 2. Set the SW2 bank as shown above.
- 3. Push [PSW1] then look at LED1, LED2, LED3 to read the current setting.
- Input a value for the "GLU-AMT2" on the factory setting data sheet by pushing [PSW2] to add 0.05 mm to the current value or [PSW3] to subtract 0.05 mm from the current value.

### 34. GLU-AMT3

Glue Amount Adjustment, 3 (stack thickness 3.5-6.4mm)

SW1							
1 2 3 4							
Up	*	*	*				

1. Set the SW1 bank as shown above.

SW2									
1	2	3	4	5	6	7	8		
*	Up	*	*	Up	Up	Up	*		

- 2. Set the SW2 bank as shown above.
- 3. Push [PSW1] then look at LED1, LED2, LED3 to read the current setting.
- Input a value for the "GLU-AMT3" on the factory setting data sheet by pushing [PSW2] to add 0.05 mm to the current value or [PSW3] to subtract 0.05 mm from the current value.

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### 35. GLU-AMT4

Glue Amount Adjustment, 4 (stack thickness 6.5-11.4mm)

SW1								
1	2	3	4					
Up	*	*	*					

1. Set the SW1 bank as shown above.

SW2									
1	2	3	4	5	6	7	8		
Up	Up	*	*	Up	Up	Up	*		

- 2. Set the SW2 bank as shown above.
- 3. Push [PSW1] then look at LED1, LED2, LED3 to read the current setting.
- 4. Input a value for the "GLU-AMT4" on the factory setting data sheet by pushing [PSW2] to add 0.05 mm to the current value or [PSW3] to subtract 0.05 mm from the current value.

### 36. GLU-AMT5

Glue Amount Adjustment, 5 (stack thickness 11.5-22.4mm)

SW1							
1 2 3 4							
Up	*	*	*				

1. Set the SW1 bank as shown above.

SW2									
1	2	3	4	5	6	7	8		
*	*	Up	*	Up	Up	Up	*		

- 2. Set the SW2 bank as shown above.
- 3. Push [PSW1] then look at LED1, LED2, LED3 to read the current setting.
- Input a value for the "GLU-AMT5" on the factory setting data sheet by pushing [PSW2] to add 0.05 mm to the current value or [PSW3] to subtract 0.05 mm from the current value.

### 37. GLU-AMT6

Glue Amount Adjustment, 6 (stack thickness 22.5-25.0mm)

SW1								
1	2	3	4					
Up	*	*	*					

1. Set the SW1 bank as shown above.

SW2										
1	2	3	4	5	6	7	8			
Up	*	Up	*	Up	Up	Up	*			

- 2. Set the SW2 bank as shown above.
- 3. Push [PSW1] then look at LED1, LED2, LED3 to read the current setting.
- Input a value for the "GLU-AMT6" on the factory setting data sheet by pushing [PSW2] to add 0.05 mm to the current value or [PSW3] to subtract 0.05 mm from the current value.

### **38. TBWRNLVL**

Blade Replacement Alarm Frequency Setting

- 1. Enter the SP mode of the mainframe.
- 2. Do SP6533-001.

### **39. TBPCOUNT**

Setting Threshold Value for Shifting the Cutting Position

- 1. Enter the SP mode of the mainframe.
- 2. Do SP6533-002.

### 40. TBP-POSW

Cutting Position Change Setting for the Blade Cradle

SW1							
1	2	3	4				
Up	*	*	*				

1. Set the SW1 bank as shown above.

	SW2								
	1	2	3	4	5	6	7	8	
ι	Jp	Up	*	Up	*	Up	Up	*	

- 2. Set the SW2 bank as shown above.
- 3. Push [PSW1] then look at LED1, LED2, LED3 to read the current setting.
- 4. Input a value for the "TBPCOUNT" on the factory setting data sheet by pushing [PSW2] to add "1" to the current value or [PSW3] to subtract "1" from the current value.

### 41. TBP-MVSW

Software DIP Switch Setting: 0-15

SW1						
1	2	3	4			
Up	*	*	*			

1. Set the SW1 bank as shown above.

			S١	N2	Status			
1	2	3	4	5	6	7	8	
*	*	*	*	Up	*	Up	Up	DIPO
Up	*	*	*	Up	*	Up	Up	DIP 1
*	Up	*	*	Up	*	Up	Up	DIP 2
Up	Up	*	*	Up	*	Up	Up	DIP 3
*	*	Up	*	Up	*	Up	Up	DIP 4
Up	*	Up	*	Up	*	Up	Up	DIP 5

			S٧	√2	Status			
1	2	3	4	5	6	7	8	
*	Up	Up	*	Up	*	Up	Up	DIP 6
Up	Up	Up	*	Up	*	Up	Up	DIP 7
*	*	*	Up	Up	*	Up	Up	DIP 8
Up	*	*	Up	Up	*	Up	Up	DIP 9
*	Up	*	Up	Up	*	Up	Up	DIP 10
Up	Up	*	Up	Up	*	Up	Up	DIP 11
*	*	Up	Up	Up	*	Up	Up	DIP 12
Up	*	Up	Up	Up	*	Up	Up	DIP 13
*	Up	Up	Up	Up	*	Up	Up	DIP 14
Up	Up	Up	Up	Up	*	Up	Up	DIP 15

2. Set the SW2 bank as shown above.

3. Push [PSW1] then look at LED1, LED2, LED3 to read the current setting.

4. Input a value for the "TBP-MVSW" on the factory setting data sheet by pushing [PSW2] to add "1" to the current value or [PSW3] to subtract "1" from the current value.

### **Slave Control Board**

- 1. Remove the rear cover. page 33
- 2. Remove the slave control board [1] (FFC x all, 🖾 x all, 🖾 x 1, Standoffs x 5).



### Cutter Control Board

- 1. Remove the rear cover. page 33
- 2. Remove the cutter control board [1] (Sx all, Standoffs x3).



d391r907

### **Relay Board**

- 1. Remove the rear cover. (page 33)
- 2. Remove the relay control board [1] (St x all, Sx4).



d391r908

# Power Supply Unit 1

- 1. Remove the rear cover. (page 33)
- 2. Remove power supply unit 1 assembly [1] (🐨 x 3, 🕅 x4).



d391r909

- 3. Remove the protector plate.
  - [1] Top (<sup>@P</sup>x2) [2] Bottom (<sup>@P</sup>x2)



d391r910

4. Remove the power supply unit 1 PCB [1] ( $\mathfrak{O}^{*}x9$ ).



d391r911

# Power Supply Unit 2

1. Remove the rear cover. (page 33)

2. Remove power supply unit 2 assembly [1] (ST x 3, SX x4).

Push the board to the right and pull it out from behind the fan. (It is not necessary to remove the fan.)



d391r912

- 3. Remove the protector plate.
  - [1] Top (ြီ x2)
  - [2] Bottom (@ x2)



d391r913

4. Remove the power supply unit 2 PCB [1] (@x9).



d391r914

# Inserter

### **Common Procedures**

### **Rear Cover**

1. Rear cover [1] (@x2).



### d391r505

### **Releasing Top and Middle Covers**

- 1. Remove rear cover. (page 33)
- 2. Remove the shaft [1] of the limiter brace ( $\mathfrak{O}^{*}x1$ ).
- 3. Open the top cover [2] completely.



- 4. Open the middle cover [1].
- 5. Remove the limiter brace [2] (@x2).
- 6. Open the middle cover completely.



### Front Cover

- 1. Release and open top cover.
- 2. Remove the front cover [1] (🕅 x2).



d391r506

### Feed Rollers

### Feed Roller: Tray A

- 1. Remove the inserter rear cover. (page 33)
- 2. Release and open the top cover completely. (page 153)
- 3. Remove the transport guide [1] (@x2).



d391r525

4. Remove:

[1] Feed roller (🕅x1)

[2] Feed roller (®x1)



### Feed Roller: Tray B

- 1. Remove the inserter rear cover. (page 33)
- 2. Release and open the top and middle cover completely. (page 153)
- 3. Remove:
  - [1] Feed roller (<sup>®</sup>x1)
  - [2] Feed roller (<sup>®</sup>x1)



# Separation Rollers

### Separation Roller and Torque Limiter: Tray A

- 1. Remove the inserter rear cover. (page 33)
- 2. Release and open top cover completely. (page 153)
- 3. Remove transport guide [1] (@\*x5).



d391r528

- 4. Remove the separation roller [1] (🕸 1, Bushing x1)
- 5. Remove the torque limiter [2].
- 6. Reset the counter after replacing the separation roller or torque limiter.



### Separation Roller, Torque Limiter: Tray B

- 1. Remove the inserter rear cover. (page 33)
- 2. Release and open top and middle cover completely. (page 153)
- 3. Remove transport guide [1] (@x5).



- 4. Remove the separation roller [1] ( $\widehat{\mathbb{G}}_{x1}$  , Bushing x1)
- 5. Remove the torque limiter [2].
- 6. Reset the counter after replacing the separation roller or torque limiter.



### **Pickup Rollers**

### Pickup Roller: Tray A

- 1. Remove the inserter rear cover. (page 33)
- 2. Release and open top cover completely. (page 153)
- 3. Remove front transport guide [1] (@\*x2).



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- 4. Remove the pickup roller unit [1]:
  - [2] Front (Spring x1, 🕅 x1, Bushing x1)
  - [3] Rear (🕅 x 1, Bushing x 1)



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5. Remove the pickup roller [1] (<sup>®</sup>x3, Actuator x1)

6. Reset the counter after replacing the pickup roller.



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### Pickup Roller: Tray B

- 1. Remove the inserter rear cover.
- 2. Release and open top and middle cover completely. (page 153)
- 3. Remove the rear transport guide [1] (@x5).



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- 4. Remove the pickup roller unit [1]:
  - [2] Front (Spring x1, <sup>®</sup>x1, Bushing x1)
  - [3] Rear (🕅 x1, Bushing x1)



- 5. Remove the pickup roller [1] (®x3, Actuator x1)
- 6. Reset the counter after replacing the pickup roller.



### d391r534

### **Inserter Control Board**

- 1. Remove the inserter rear cover. (page 33)
- 2. Remove the inserter control board [1] (&x all, &x1, Standoffs x3).

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### When replacing the inserter control board

The adjustment of the paper width sensor output value for the Inserter Trays (upper/lower) is required when replacing the inserter control board. The following SP codes adjust the sensor output values for paper width for both upper and lower trays of the Inserter.

SP	Name				
6-539-001	Interposer Tray VR Adj Upper Tray A4 Width				
6-539-002	Interposer Tray VR Adj Upper Tray A4 Length				
6-539-003	Interposer Tray VR Adj Upper Tray LT Width				
6-539-004	Interposer Tray VR Adj Upper Tray LT Length				
6-539-005	Interposer Tray VR Adj Lower TrayA4 Width				
6-539-006	Interposer Tray VR Adj Lower TrayA4 Length				
6-539-007	Interposer Tray VR Adj Lower TrayLT Width				
6-539-008	Interposer Tray VR Adj Lower TrayLT Length				

### Note

• Once the adjustments for both PORTRAIT and LANDSCAPE are completed successfully, the A/D values (value converted from analog to digital) are saved onto the EEPROM of the Inserter.

1. Replacement and Adjustment

# 2. Troubleshooting

# Service Call Tables

For details about "Service Call Tables" for this peripheral, see the main service manual.

# Jams

### Handling Paper Jams

### What Happens When a Jam Occurs

When a jam occurs open the cover at the jam location, remove the jammed paper and close the cover. However, the operator should be cautioned about opening the top cover of the bookbinder.

- The top cover should be opened when only absolutely necessary.
- Opening the top cover can disturb paper that is already on the stacking tray.

### When a Jam Occurs at Power On

A jam alert will occur at power on if there is paper or a signature in the horizontal paper path, vertical path, signature path, inserter path, or on the stacking tray. Open the cover at the jam location, remove the jam, and close the cover. If the signature jams beyond the stacking tray, recovery processing executes automatically and upstream sheets are output to the stacking tray and stop there. However, if one of the aforementioned jams occurs in the paper path at power on, recovery processing does not execute until after the jam has been removed.

### Power Loss During Glue Application

If the system is turned off while glue is being applied to a signature:

- The gluing unit begins to warm the glue after the power is turned on.
- After the glue has been warmed up, the glue vat returns to its home position.
- The bookbinder enters recovery mode automatically and paper once again starts exiting the signature path to the stacking tray.

### When an Error Occurs

### Low Performance Mode

Cycling the system off/on usually restores the bookbinder to full operation after a jam has been removed.

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- If an error occurs and cycling the machine off/on does not solve the problem, then the service technician must release the grip unit in the service mode, turn the bookbinder off, and then remove the jam.
- If a jam forces the bookbinder to enter the low performance mode, the bookbinder cannot recover from the error automatically. The jam must be removed and the machine reset by the service technician.

For more details about setting and releasing the low performance mode, see Section 3.

### Unlocking the Front Doors Manually

If the front doors remain locked after the power was turned off while the bookbinder was operating, normally cycling the bookbinder off/on will unlock the doors.

However, if the front doors remain locked after cycling the machine off/on (or if you cannot switch machine off/on), follow the procedure below to manually unlock the front doors.

- 1. Confirm that the bookbinder is turned off.
- At [1] insert the tip of a thin metal scale (or a thin screwdriver) and press in on the manual lock to release the doors.



3. The manual release is located behind a cutout [1] on the left edge of the left front door.



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### When the Book Stack Door Cannot Be Opened

Follow the procedure below if an problem occurs that prevents opening the book stacking tray. For example, a strip of trimming stuck to the blade and jammed between the trimming unit and trimming buffer could block these mechanisms and prevent the stacking tray door from opening.

- 1. Turn off the bookbinder and disconnect its power cord.
- 2. Pull out the trimmings drawer.
- 3. Open the trimmings box drawer [1] and remove the trimmings box [2].



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4. Insert the tip of a small screwdriver into hole [1].

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5. Turn the trimmings buffer drive pulley [1] counter-clockwise to move the trimmings buffer [2] to the right.



- 6. Confirm the movement of the trimmings buffer by checking the position of the actuator of the trimmings buffer full sensor.
- 7. Continue to turn the trimmings buffer drive pulley until you see the actuator behind the hole, then stop turning.
- 8. If the trimmings buffer will not move to the right because it is blocked by paper scraps, turn the pulley clockwise to move the buffer left, remove the scrap, then move the buffer to the right.
- 9. Insert the tip of a small screwdriver into the small hole [1] on the rear cover of the bookbinder.



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10. Move the screwdriver in the direction of the arrow to release the stacking tray lock.

- If the rear cover has been removed, just push the lever [2] to the right to unlock the book stack door.
- 11. Open the book stack door.

### Signature, Trimmings Removal

Follow the procedure below if an problem occurs that prevents the removal of a signature or trimmings from the trimming unit. For example, a strip of trimming stuck to the blade and jammed between the trimming unit and trimming buffer could block the removal of the signature or trimmings.

- 1. Turn the bookbinder off.
- 2. Open the left and right door.
- 3. Remove the lower inner cover.
- 4. Remove the braces [1], [2], [3] from the trimming unit frame. (@x3 ea.)

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5. Pull out the trimming unit [1].



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- 6. Retract the grip unit, open the press plates, or retract the blade, trimmings buffer as required.
- 7. Remove the signature and trimmings.

### **Removing Trimmings Jammed at the Blade**

Follow the procedure below if an problem occurs that prevents the removal trimmings at the blade. For example, a strip of trimming stuck to the blade and jammed between the trimming unit and trimming buffer could block the removal of the signature or trimmings.

1. Turn off the bookbinder.

- 2. Remove the right and left door.
- 3. Remove the inner lower cover.
- 4. Open the book stack delivery door.
- 5. Lift the cover [1] and check the area for trimmings. If you see any trimmings remove them.



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- 6. Continue with the procedure below if you cannot pull out the scraps.
- 7. Rotate the trimmings buffer pulley [1] counter-clockwise to move the trimmings buffer to the right.



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- 8. Follow the procedure in the previous section to remove the jammed scraps from the trimming unit.
- 9. Insert your hands from the front of the bookbinder to remove the jammed sheets, pulling them in the direction of paper feed or paper exit.

### Low Performance Mode

### Moving to Low Performance Mode

When an error occurs in a location that is neither located in nor affects paper feed in the horizontal feed path:

- The current settings are written in EEPROM so the horizontal feed path can still operate in lower performance mode. In low performance mode only the horizontal feed path can be used, but only for downstream delivery.
- The machine must be cycled off/on to put the bookbinder in the low performance mode.

### Low Performance Conditions

Here is a summary of the conditions that put the bookbinder in the low performance mode:

- The error must have no effect on the operation of the horizontal transport path.
- If a jam does occur in the horizontal path, the jam can be easily removed.
- When the error occurred all units where in positions that permit horizontal paper transport.

Unit	Position Where Horizontal Transport Possible
Sub Grip	Sub grip HP sensor (S37)
Main Grip	Rotate HP Sensor (S43)
Gluing Unit	Glue Vat HP Sensor (S73)
Cover Path	Closed
Spine Plate	Closed

### **Canceling Low Performance Mode**

See "Replacement and Adjustment > Common Procedures > Setting and Releasing Low Performance Mode".

2

# **Service Board Basics**

This section describes use of the Service Mode for the bookbinder and inserter.

### Service Board Switches

The two banks of DIP switches on the Service Board (SW1, SW2) are used to set modes and do settings.

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- The bookbinder enables a switch change on SW1 only after the system has been cycled off/on. The Service Board is located behind the left door near the front upper corner of the bookbinder (see below).
- The Service Board is located behind a protective cover held in place by one screw.
- The front door switches must be ON to set the machine in the Service Mode. This is done by
  opening the right and left front doors and inserting cardboard shims into the slots of the front door
  switches.
- The SW1 bank [1] is used to switch between Service Mode and Normal Mode. This setting is not recognized until the machine has been cycled off on.
- The SW2 bank [2] is used for detailed Service Mode settings. The system does not need to be cycled off/on after changing the settings of these switches.



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SW1 Settings

SW1				Mode	Comment
1	2	3	4		
*	*	*	*	Normal Mode	Factory setting
Up	*	*	*	Bookbinder Adjustment Mode	
*	Up	*	*	Bookbinder Test Mode 1	With signature trimming
*	Up	*	Up	Bookbinder Test Mode 2	Without signature trimming
Up	*	Up	*	Inserter Adjustment Mode	For inserter

### SW2 Settings: Normal Mode

Refer to the sections below for more details about SW2 settings in the adjustment mode and test mode.

### Service Board LEDs

LED3 indicates status and details. Push [PSW3] to toggle between the **Status** and **Detail** display. For more about alarms, jams, errors, etc. please refer to the appropriate sections.

### **Display Items**

Mode	Status	Detail
Normal Mode	Yes	No
Service Mode	Yes	No
Doors Open	Yes	Yes
Alarm	Yes	Yes
Jam	Yes	Yes
Error	Yes	Yes

Note: "Status" is automatically indicated. Press [PSW3] to indicate "detailed" status.

### **Status Display**

The speed of the flashes at LED1 indicates normal status (medium/slow flashing) or abnormal status (rapid flashing). In the error status the display combinations of LED2 and LED3 give more information about the abnormal condition. When an error occurs in the Normal Mode or Service Mode, the LED1 display switches from Normal Mode to Error Mode.

Status	Mode/ Type of Abnormal Status	LED1	LED2	LED3	Comment
Normal	Normal Mode	FLASH	OFF	OFF	LED1 flash duration: 0.5 sec.
	Service Mode	FLASH	OFF	OFF	LED1 flash duration: 1 sec.
Abnormal	Error	FLASH	ON	ON	LED1 flash duration: 0.1 sec.
	Jam	FLASH	OFF	ON	
	Alarm	FLASH	ON	OFF	
	Open	FLASH	OFF	OFF	

Order of priority for indicating abnormal status:

Error > Jam> Alarm> Open

If multiple abnormal statuses occur, only one of the statuses is indicated according to the above order of priority.

### **Details Display**

Once the status is determined from the above table (normal, error, jam, alarm, or open door), further information can be obtained by pressing [PSW3], which will change the signals displayed by the LEDs.

### (1) Doors Open

LED1, LED2 distinguish between the Bookbinder and Inserter:

(LED1 lights, LED2 (OFF = Bookbinder, ON = Inserter))

• Count the number of times LED3 flashes to identify the location of the opened door/cover.

### Bookbinder

LED1	LED2	LED3	Open Position	Comment
ON	OFF	FLASH	Count the number of flashes – LED3.	Flash duration: 0.3 sec.
			x 1: Front Cover	
			x 2: Top Cover	
			x 3: Book Door	
			x 4: Trim Scrap Box Door	
			x 5: Glue Supply Drawer	
			x 6: Relay Unit Front Door	

### Inserter

LED1	LED2	LED3	Open Position	Comment
ON	ON	FLASH	Count the number of flashes – LED3. x 1: Joint x 2: Top Cover	Flash duration: 0.3 sec.

LED3 Flashes x times> LED3 OFF 1 sec.> LED Flashes x times> LED3 OFF...repeat

### (2) Alarm

To indicate the detailed alarm status, LED1 lights and LED2, LED3 both flash. Flash duration: 0.3 sec. LED2 remains ON for 2 sec. to indicate "0". The LED2 and LED3 display alternate automatically:

Count the number of times LED2 and LED3 flash to identify the problem causing the alarm.

LED2 Flashes > OFF 1 sec.> LED3 Flashes > OFF 1 sec.> repeat

### Example 1: Book Tray Full Display

Sequence	LED1	LED2	LED3	Comment
1	ON	FLASH x3	OFF	Flash duration: 0.3 sec.
2	ON	OFF	OFF	LED2, LED3 OFF 1 sec.
3	ON	OFF	FLASH x2	Flash duration: 0.3 sec.
4	ON	OFF	OFF	LED2, LED3 OFF 1 sec.

Example 2: Glue Vat Empty Display

Sequence	LED1	LED2	LED3	Comment
1	ON	ON	OFF	LED2 ON (2 sec.)
2	ON	OFF	OFF	LED2, LED3 OFF (1 sec.)
3	ON	OFF	FLASH x6	Flash duration: 0.3 sec.
4	ON	OFF	OFF	LED2, LED3 OFF (1 sec.)

### Alarm Codes and LED Flash Equivalents Table (Switching with [PSW3] Presses)

Alarm Name	Alarm Information	
	LED2 Count	LED3 Count
Glue Near End	0	2
Stacking Tray Overflow	0	3
Paper Remains in Stacking Tray	0	5
Glue Out (Vat Empty)	0	6
Replace Gluing Unit	0	8
Bookbinding Malfunction	1	1
Trim Scrap Box Near Full	1	2
Trim Scrap Box Full	1	3
Near Time for Blade Replacement	2	1
Near Time for Blade Cradle Replacement	2	2
Blade Needs Replacement	2	3
Blade Cradle Needs Replacement	2	4
Book Tray Near Full	3	1
Book Tray Full	3	2

**NOTE:** "0" is indicated by the LED2 lighting for 2 sec.

### (3) Error/Jam

For Error/Jam, [PSW3] must be pressed **TWICE** in order to obtain the exact information; obtain total of 4 signals from LED2 and LED3 (by toggling the signals pressing [PSW3]).
To indicate the error/jam status, LED1 lights and LED2, LED3 flash. Flash duration: 0.3 sec.

- The LEDs remain ON for 2 sec. to indicate "0".
- The LED2 and LED3 displays alternate automatically.

### Example 1: Cause: Fan Lock Detection (Signature Fan 1 Lock: Front (FM8))

# Sequence 1-4

Sequence	LED1	LED2	LED3	Comment
1	ON	FLASH x5	OFF	Flash duration: 0.3 sec.
2	ON	OFF	OFF	LED2, LED3 OFF (1 sec.)
3	ON	OFF	FLASH x1	Flash duration: 0.3 sec.
4	ON	OFF	OFF	LED2, LED3 OFF (1 sec.)

# Display Switching with [PSW3] Presses

#### Sequence 5-8

	LED1	LED2	LED3	Comment
5	OFF	ON	OFF	LED2 ON (2 sec.)
6	OFF	OFF	OFF	LED2, LED3 OFF (1 sec.)
7	OFF	OFF	FLASH (x10)	Flash duration: 0.3 sec.
8	OFF	OFF	OFF	LED2, LED3 OFF (1 sec.)

# Jam Code and LED Flash Equivalence Table

	Jam Information					
Jam Name	Sequence	e 1-4	Sequence 5-8			
	LED2	LED3	LED2	LED3		
Bookbinder						
At Power On	1	3	0	0		
Door Open	1	4	0	0		
Paper Lag	1	7	0	0		
Entrance Sensor Late	1	0	1	1		

	Jam Information					
Jam Name	Sequence	e 1-4	Sequ	ence 5-8		
	LED2	LED3	LED2	LED3		
Signature Path Sensor 1 Late	1	0	1	2		
Signature Path Sensor 2 Late Jam	1	0	1	3		
Timing Sensor Late	1	0	1	4		
Stacking Tray Paper Late	1	0	1	5		
Sub Grip Signature Late	1	0	1	6		
Cover Path Sensor 1 Late	1	0	1	7		
Cover Path Sensor 2 Late	1	0	1	8		
Horizontal Path Exit Sensor Late	1	0	1	9		
Cover Registration Sensor Late	1	0	1	10		
Cover Registration Sensor Late (During Cover Switchback)	1	0	1	11		
Cover Horizontal Registration Sensor: Small Sensor Late	1	0	1	12		
Cover Horizontal Registration Sensor: Large Sensor Late	1	0	1	13		
Entrance Sensor Lag	1	1	2	1		
Signature Path Sensor 1 Lag	1	1	2	2		
Signature Path Sensor 2 Lag	1	1	2	3		
Timing Sensor Lag	1	1	2	4		
Stacking Tray Paper Lag	1	1	2	5		
Cover Path Sensor 1 Lag	1	1	2	7		
Cover Path Sensor 2 Lag	1	1	2	8		
Horizontal Path Exit Sensor Lag	1	1	2	9		
Cover Registration Sensor Lag	1	1	2	10		

	Jam Information					
Jam Name	Sequence	e 1-4	Sequence 5-8			
	LED2	LED3	LED2	LED3		
Cover Registration Sensor Lag (During Cover Switchback)	1	1	2	11		
Cover Horizontal Registration Sensor: Small Sensor Lag	1	1	2	12		
Cover Horizontal Registration Sensor: Large Sensor Lag	1	1	2	13		
Paper Size Mismatch	1	15	10	5		
Cover Size Short	1	15	10	4		
Trim Width Over	1	15	10	2		
Finish Size Over	1	15	10	3		
Inserter						
At Power On	1	3	0	0		
Door Open	1	4	0	0		
Separation Sensor: Tray A Late	1	0	6	2		
Separation Sensor: Tray B Late	1	0	6	4		
Vertical Transport Sensor 1 Late	1	0	6	6		
Vertical Transport Sensor 2 Late	1	0	6	8		
Entrance Sensor Late	1	0	6	10		
Separation Sensor: Tray A Lag	1	1	6	3		
Separation Sensor: Tray B Lag	1	1	6	5		
Vertical Transport Sensor 1 Lag	1	1	6	7		
Vertical Transport Sensor 2 Lag	1	1	6	9		
Entrance Sensor Lag	1	1	6	11		
Paper Size Mismatch	1	15	7	2		

	Jam Information					
Jam Name	Sequence	e 1-4	Sequence 5-8			
	LED2	LED3	LED2	LED3		
Relay Unit						
At Power On	2	1	0	0		
Door Open	2	1	0	1		
Paper Lag	2	1	0	2		
Transport Sensor Late	2	1	0	3		
Transport Sensor Lag	2	1	0	4		
Data Error	2	1	0	5		
Front Door Open	2	2	0	0		

# Error and LED Flash Count Equivalency Table

		Error Information				
Error Name	Error Details	Sequence 1-4		Sequence 5-8		
		LED2	LED3	LED2	LED3	
Bookbinder Internal Communication	Master<->Slave Control Board Communication Error 1	0	1	8	0	
Bookbinder Internal Communication	Master<->Slave Control Board Communication Error 1	0	1	8	0	
	Master<->Slave Control Board Communication Error 2			8	1	
	Relay Unit<-> Master Control Board Error			8	2	
	Slave<->Cutter Control Board Communication Error 1			8	3	
	Slave<->Cutter Control Board Communication Error 2			8	4	

		Error Information				
Error Name	Error Details	Sequer	nce 1-4	Seque	nce 5-8	
		LED2	LED3	LED2	LED3	
EEPROM (Bookbinder)	EEPROM read error	0	5	0	1	
	EEPROM write error			0	2	
Inserter	Communication initialization error	0	8	8	2	
Communication	Bookbinder <-> Inserter Communication Error 2			8	3	
Power Supply Check	24V Check Signal Error 1	5	0	0	2	
	24V Check Signal Error 2			0	3	
	24V Check Signal Error 3			0	4	
	24V Check Signal Error 4	•		0	5	
Fan Lock Detection	Power Supply Fan: Right	5	1	0	1	
	Power Supply Fan: Center	•		0	2	
	Power Supply Fan: Left			0	3	
	Spine Plate Fan: Lower Front	•		0	4	
	Spine Plate Fan: Lower Rear	•		0	5	
	Spine Plate Fan: Upper Front	•		0	6	
	Spine Plate Fan: Upper Rear	•		0	7	
	Signature Fan 2: Front	•		0	8	
	Signature Fan 2: Rear	•		0	9	
	Signature Fan 1: Front			0	10	
	Signature Fan 1: Rear			0	11	
	Glue Supply Fan: Upper			0	12	
	Glue Supply Fan: Lower			0	13	

		Error Information			
Error Name	Error Details	Sequence 1-4		Sequence 5-8	
		LED2	LED3	LED2	LED3
Cutter, Signature Grip Motors	Main grip unit did not leave the HP position.	10	1	8	1
	Main grip unit did not arrive at the HP position after signature release.			8	2
	Grip end sensor did not detect operation end.			8	3
	Grip unit did not reach the grip end sensor.			8	4
Cutter, Trimmings Buffer Motors	Trimmings buffer did not leave the HP position on the left.	10	2	8	1
	Trimmings buffer did not reach the HP position on the left.	-		8	2
	Trimmings buffer did not leave the trimmings dump port.			8	3
	Trimmings buffer did not reach the trimmings dump port.			8	4
	The motor is not rotating.			8	5
	Trimmings buffer did not retract from the paper press plate sensor.			8	6
	Trimmings buffer did not reach the paper press plate sensor.			8	7
Book Buffer Tray, Book Tray/Motor	Buffer tray did not move toward the rear.	10	3	8	1
	Buffer tray did not move toward the front.			8	2

		Error Information			
Error Name	Error Details	Sequence 1-4		Sequence 5-8	
		LED2	LED3	LED2	LED3
Cutter, Press Motors	Press plate did not leave the HP position at press.	10	4	8	1
	Press plate did not arrive at the HP position at release.			8	2
	Press plate did not leave END at press.			8	3
	Press plate did not arrive at END at release.			8	4
	Blade reached the limit position.			8	5
Cutter, Signature Slider Motors	Slide motor did not leave HP position.	10	5	8	1
	Rotate motor 2 did not reach home position.			8	2
Cutter, Signature Rotation Motor 1	Rotate motor 2 did not leave home position.	10	8	0	1
	Rotate motor 2 did not reach home position.			0	2
Cutter, Signature Rotation Motor 2	Rotate motor 2 did not leave home position.	10	9	0	1
	Rotate motor 2 did not reach home position.			0	2

		Error Information				
Error Name	Error Details	Sequer	nce 1-4	Sequence 5-8		
		LED2	LED3	LED2	LED3	
Cutter Motor	Cutter blade did not move.	10	10	0	1	
	The blade did not move away from the cutting point on the blade cradle.			0	2	
	The blade did not move for a rear-to- front cut.			0	3	
	The blade did not move away from the blade cradle to the front.			0	4	
	When moving from the front the blade did not reach the blade cradle.			0	5	
	When moving from the rear the blade did not reach the blade cradle.			0	6	
	The blade reached the limit position.			0	7	
Book Stacking	Book lift tray does not raise.	10	11	0	1	
Unit, Book Litt Tray Motors	Book lift tray does not lower.			0	2	
	The motor is not rotating.			0	3	
Book Stacking Unit, Book Tray	Book collection buffer tray did not leave the home position.	10	12	0	1	
Motors	Book collection buffer tray did not reach the home position.			0	2	
Cutter, Blade	Blade cradle did not raise.	10	13	0	1	
Cradle Motors	Blade cradle did not lower.			0	2	
Book Stacking Unit, Door Lock Solenoid	Book stacking tray, book drawer did not lock.	10	14	0	1	

		Error Information				
Error Name	Error Details	Sequer	nce 1-4	Sequence 5-8		
		LED2	LED3	LED2	LED3	
Glue	Heater failed to start: Error 1	11	0	0	1	
Applicator, Glue Heater	Heater short.			0	2	
	Heater wire break or short circuit			0	3	
	Heater failed to start: Error 2			0	4	
	Low temperature detected while regulating glue temperature.			0	5	
	The thermostat inside the gluing unit detected an abnormally high temperature.			0	6	
	Abnormal thermostat detection			0	7	
	Glue level thermistor: Error 1			0	8	
	Glue level thermistor: Error 2			0	9	
	Glue level thermistor broken.			0	12	
Glue Applicator,	The surface of the glue in the vat did not reach the lower limit position.	11	2	0	1	
Glue Level Detection Sensors	The surface of the glue in the vat did not reach the upper limit (full) position.			0	2	
	The glue surface has not dropped below the upper limit mark.			0	3	
	Glue Level Thermistor Adjustment Error.			0	4	

		Error Information				
Error Name	Error Details	Sequer	nce 1-4	Sequence 5-8		
		LED2	LED3	LED2	LED3	
Sensor Automatic Adjustment (1)	The value for the adjustment of the timing sensor exceeded the upper limit.	11	4	0	1	
	The value for the adjustment of the cover registration sensor exceeded the upper limit.			0	2	
	The value for the adjustment of the cover horizontal registration sensor (small) exceeded the upper limit.			0	3	
	The value for the adjustment of the cover horizontal registration sensor (large) exceeded the upper limit.			0	4	
Sensor Automatic Adjustment (2)	The value for the adjustment of the book exit sensor exceeded the upper limit.	11	4	0	5	
	The value for the adjustment of the leading edge sensor exceeded the upper limit.			0	6	
	The value for the adjustment of the entrance path sensor exceeded the upper limit.			0	7	
	The value for the adjustment of the signature registration sensor exceeded the upper limit.			0	8	

		Error Information				
Error Name	Error Details	Sequer	nce 1-4	Sequence 5-8		
		LED2	LED3	LED2	LED3	
Sensor Automatic Adjustment (1)	The value for the adjustment of the timing sensor was lower than the lower limit.	11	4	1	1	
	The value for the adjustment of the cover registration sensor was lower than the lower limit.			1	2	
	The value for the adjustment of the cover horizontal registration sensor (small) was lower than the limit.			1	3	
	The value for the adjustment of the cover horizontal registration sensor (large) was lower than the limit.			1	4	
Sensor Automatic Adjustment (2)	The value for the adjustment of the book exit sensor was lower than the lower limit.	11	4	1	5	
	The value for the adjustment of the leading edge sensor was lower than the lower limit.			1	6	
	The value for the adjustment of the entrance path sensor was lower than the lower limit.			1	7	
	The value for the adjustment of the book registration sensor was lower than the lower limit.			1	8	

Error Name	Error Details	Sequer	nce 1-4	Sequence 5-8	
		LED2	LED3	LED2	LED3
Transport Path Sensors (1)	Trimming unit entrance sensor blocked by paper, cannot detect.	11	5	0	2
	Signature registration sensor could not detect the presence of paper.			0	3
	Could not detect the absence of paper at the book exit sensor.			0	6
	Trimming unit entrance sensor blocked by paper, cannot detect. Detection possible on grip side.			0	7
	Cannot detect presence of paper in main grip.			0	8
	Could not detect the absence of paper at the cutter entrance.			1	2
Transport Path Sensors (2)	Signature registration sensor could not detect the absence of paper.	11	5	1	3
	Could not detect the absence of paper at the book arrival sensor			1	4
	Could not dump trimmed scraps from the trimmings buffer. Or, scraps jammed between trimmings buffer and press plate.			1	6
	Could not detect the absence of paper at the sub grip signature sensor			1	7
	Could not detect the absence of paper at the main grip signature sensor			1	8

		Error Information			
Error Name	Error Details	Sequer	nce 1-4	Sequer	nce 5-8
		LED2	LED3	LED2	LED3
Signature Thickness	Signature thickness reading smaller than allowed minimum size.	11	6	0	1
Sensor	Signature thickness reading larger than allowed maximum size.			0	2
	The signature thickness reading did not change.			0	3
Glue Vat Motor	at Motor The glue vat HP sensor at the rear of 11 the bookbinder failed to go ON.	7	0	1	
	The glue vat HP sensor at the rear of the bookbinder failed to go OFF.			0	2
Glue Vat Roller Motor	The glue vat roller was not rotating.	11	8	0	1
Glue Supply Motor	The glue supply motor did not arrive at its home position.	11	9	0	1
	The glue supply motor did not leave its home position.			0	2
Spine Fold Motor: Left	The spine fold plate did not reach the left HP sensor.	11	10	0	1
	The spine fold plate did not leave the left HP sensor position.			0	2
	The sensor did not turn ON.			0	3
	The sensor did not turn OFF.			0	4
	The spine plate HP sensor left and spine plate close sensor turned ON at the same time.			0	5

			formation	ormation		
Error Name	Error Details	Sequer	nce 1-4	Sequence 5-8		
		LED2	LED3	LED2	LED3	
Spine Fold Motor: Right	The spine fold plate did not reach the right HP sensor.	11	11	0	1	
	The spine fold plate did not leave the right HP sensor position.			0	2	
	The sensor did not turn ON.			0	3	
	The sensor did not turn OFF.			0	4	
	The spine plate HP sensor: right and spine fold close sensor turned ON at the same time.			0	5	
Spine Plate Motor	The spine plate open sensor did not go ON.	11	12	0	1	
	Spine plate open sensor did not go OFF.			0	2	
	Spine plate close sensor did not go ON.			0	3	
	Spine plate close sensor did not go OFF.			0	4	
Front Door Lock	Front door did not close and lock.	11	13	0	1	
	The front door lock did not release.			0	2	
	Front doors detected open even though doors are closed and locked.			0	3	
Switchback Roller Motor	Switchback flapper HP sensor did not go ON.	12	0	0	1	
(Stacking Tray)	Switchback flapper HP sensor did not go OFF.			0	2	

		Error Information				
Error Name	Error Details	Sequer	nce 1-4	Sequence 5-8		
		LED2	LED3	LED2	LED3	
TE Press Lever Motor	The press lever HP sensor did not go ON.	12	1	0	1	
(Stacking Iray)	The press lever HP sensor did not go OFF.			0	2	
Jogger Fence Motor: Front	Jog Fence HP Sensor: Front/Small (S12) did not go ON.	12	2	0	1	
	Jog Fence HP Sensor: Front/Small (S12) did not go OFF.			0	2	
	Jog Fence HP Sensor: Front/Large (S14) did not go ON.			0	3	
	Jog Fence HP Sensor: Front/Large (S14) did not go OFF.			0	4	
Jogger Fence Motor: Rear	Jog Fence HP Sensor: Rear/Small (S13) did not go ON.	12	3	0	1	
	Jog Fence HP Sensor: Rear/Small (S13) did not go OFF.			0	2	
	Jog Fence HP Sensor: Rear/Large (S15) did not go ON.			0	3	
	Jog Fence HP Sensor: Rear/Large (S15) did not go OFF.			0	4	

	Error Details	Error Information				
Error Name		Cause Count		Details Count		
		LED2	LED3	LED2	LED3	
Switchback Roller Lift Motor (Stacking Tray)	Switchback roller HP sensor did not go ON.	12	4	0	1	
	Switchback roller HP sensor did not go OFF.			0	2	

		Error Information				
Error Name	Error Details	Cause Count		Details Count		
		LED2	LED3	LED2	LED3	
Stacking Tray Lift Motor (1)	Stacking tray lower limit sensor did not go ON.	12	5	0	1	
	Stacking tray lower limit sensor did not go OFF.			0	2	
	The paper detection sensor on the front of the stacking tray did not go ON.			0	3	
	The paper detection sensor on the front of the stacking tray did not go OFF.			0	4	
	The paper detection sensor on the rear of the stacking tray did not go ON.			0	5	
Stacking Tray Lift Motor (2)	The paper detection sensor on the rear of the stacking tray did not go OFF.	12	5	0	6	
	Stacking tray over flow sensor did not go ON.			0	7	
	The stacking tray lower limit sensor and its paper overflow sensor went on at the same time.			0	8	
	Stacking tray over flow sensor did not go OFF.			0	9	
	Stacking tray overflow sensor went off with the stacking tray at its highest position.			0	10	
Stacking Tray	Stacking tray HP sensor did not go ON.	12	6	0	1	
Motor	Stacking tray HP sensor did not go OFF.			0	2	
Stacking Weight Motor	Stacking weight HP sensor did not go ON.	12	7	0	1	
	Stacking weight HP sensor did not go OFF.			0	2	

		Error Information			
Error Name	Error Details	Cause Count		Details Count	
		LED2	LED3	LED2	LED3
Cover Guide Motor: Left	The Cover Guide HP Sensor: Left (S27) did not go ON.	12	9	0	1
	Cover guide HP sensor: left and cover guide open sensor: left went ON at the same time.			0	2
	The Cover Guide Open Sensor: Left (S28) did not go ON.			0	5
Cover Guide Motor: Right	The Cover Guide HP Sensor: Right (S22) did not go ON.	12	10	0	1
	Cover guide HP sensor: right and cover guide open sensor: right went ON at the same time.			0	2
	The Cover Guide Open Sensor: Right (S23) did not go ON.			0	5
Cover Horizontal	Cover Registration HP Sensor: Small/ Large (S71, S72) did not go ON.	12	11	0	1
Registration Motor	Cover Registration HP Sensor: Small/ Large (S71, S72) did not go OFF.			0	2
Sub Grip Lift	The sub grip HP sensor did not go ON.	13	0	0	1
Motor	Sub Grip HP Sensor did not go OFF.			0	2
Sub Grip Size	Sub grip size HP sensor did not go ON.	13	1	0	1
Motor	Sub grip size HP sensor did not go OFF.			0	2

2. Troubleshooting

		Error Information				
Error Name	Error Details	Cause	Count	Details Count		
		LED2	LED3	LED2	LED3	
Sub Grip	The sub grip open sensor did not go on.	13	2	0	1	
Open Motor	The sub grip open sensor did not go OFF.			0	2	
	The sub grip close sensor did not go ON.	•		0	3	
	The sub grip close sensor did not go OFF.			0	4	
	The sub grip open sensor and sub grip close sensor went ON at the same time.	•		0	5	
Signature Move Motor	Signature grip HP sensor did not go ON.	13	3	0	1	
	Signature grip HP sensor did not go OFF.			0	2	
	Signature main grip position sensor did not go ON.			0	3	
	Signature main grip position sensor did not go OFF.			0	4	
	Main grip rotate enable sensor did not go ON.			0	5	
	Main grip rotate enable sensor did not go OFF.			0	6	
	The signature HP sensor and signature main grip position sensor went ON at the same time.			0	7	

		Error Information				
Error Name	Error Details	Cause	Count	Details Count		
		LED2	LED3	LED2	LED3	
Main Grip Lift	The main grip HP sensor did not go ON.	13	4	0	1	
Motor	Main grip HP sensor did not go OFF.			0	2	
	The main grip press sensor 1 did not go ON.			0	3	
	The main grip press sensor 1 did not go OFF.			0	4	
	The main grip press sensor 2 did not go ON.	-		0	5	
	The main grip press sensor 2 did not go OFF.			0	6	
	Book Exit Sensor (S64) did not go ON			0	7	
	The main grip HP sensor at the high position did not turn ON.			0	8	
	The main grip HP sensor at the high position did not turn OFF.			0	9	
Grip Unit Rotation	The main grip rotate HP sensor did not go ON.	13	5	0	1	
Motor	Main grip rotate HP sensor did not go OFF.			0	2	
	The main grip rotate to binding position sensor did not go ON.			0	3	
	Main grip rotate to binding position sensor did not go OFF.			0	4	
	Main grip rotate hp sensor and rotate to binding position sensor went ON at the same time.			0	5	

		Error Information					
Error Name	Error Details	Cause	Count	Details Count			
		LED2	LED3	LED2	LED3		
Grip Motor: Rear	The main grip open sensor rear did not go ON.	13	6	0	1		
	The main grip open sensor rear did not go OFF.	-		0	2		
	The main grip close sensor rear did not go ON.	-		0	3		
	The main grip close sensor rear did not go OFF.	-		0	4		
	Main grip encoder sensor: rear defective	-		0	5		
	Main grip open sensor: rear and main grip close sensor: rear went ON at the same time.			0	6		
Grip Motor: Front	The main grip open sensor: front did not go ON.	13	7	0	1		
	The main grip open sensor: front did not go OFF.			0	2		
	The main grip close sensor front did not go ON.	-		0	3		
	The main grip close sensor: front did not go OFF.	-		0	4		
	Main grip encoder: front sensor defective.			0	5		
	Main grip open sensor: front and main grip close sensor: front went ON at the same time.			0	6		

		Error Information					
Error Name	Error Details	Cause	Count	Details Count			
		LED2	LED3	LED2	LED3		
Signature Exit Motor	Signature exit path HP sensor did not go ON.	13	8	0	1		
	Signature exit path HP sensor did not go OFF.	•		0	2		
	Signature exit path press sensor did not go ON.	•		0	3		
	Signature exit path press sensor did not go OFF.			0	4		
Signature Exit Roller Motor	Leading edge sensor did not go ON	13	9	0	1		
EEPROM	EEPROM read error	0	5	1	0		
(Inserter)	EEPROM write error			1	1		
Drive Switching Motor	Drive JG sensor did not go OFF within the prescribed time after the drive switching motor turned on.	14	0	0	1		
(Inserter)	Drive JG sensor did not go ON within the prescribed time after the drive switching motor turned on.			0	2		
Lift Motor: Tray A (Inserter)	Inserter Tray A (upper tray) failed to leave its lower limit sensor within the prescribed time after Tray A lift motor turned on.	14	1	0	1		
	Inserter Tray A (upper tray) failed to arrive at its lower limit sensor within the prescribed time after Tray A lift motor turned on.			0	2		

		Error Information					
Error Name	Error Details	Cause	Count	Details Count			
		LED2	LED3	LED2	LED3		
Lift Motor: Tray B (Inserter)	Inserter Tray B (lower tray) failed to leave its lower limit sensor within the prescribed time after Tray B lift motor turned on.	14	2	0	1		
	Inserter Tray B (lower tray) failed to arrive at its lower limit sensor within the prescribed time after Tray B lift motor turned on.			0	2		
Relay Unit	Relay Unit EEPROM Error.	2	0	0	0		
	ASAP communication error.			0	1		
	Relay Board <-> Master Control Board communication error			0	2		
	Slave <-> Master Control Board communication error			0	3		
	Slave <-> Cutter Control Board communication error			0	4		
	Master <-> Inserter Control Board communication error			0	5		

# Service Mode

# **Before You Begin**

The Service Mode settings can be performed independently on the bookbinder for both bookbinder and the inserter. When the bookbinder is turned on it obeys the settings on the Service Board and enters the mode selected with the settings on the SW1 bank.

### Service Mode Settings

SW1				Mada	Commont		
1	2	3	4	Mode	Comment		
*	*	*	*	Normal Mode	Factory setting		
Up	*	*	*	Service Mode			
*	Up	*	*	Bookbinder Test Mode 1			
*	Up	*	Up	Bookbinder Test Mode 2	Without signature trimming		
Up	*	Up	*	Inserter Adjustment Mode	For inserter		

### Bookbinder Adjustment Mode

Each unit in the bookbinder can be adjusted on the bookbinder itself. However, these adjustments must be done with the bookbinder turned on.

### Sensor Adjustments

The LED strength of the photosensors can be adjusted.

1. Set the SW1 bank as shown below.

SW1							
1	2	3	4				
Up	*	*	*				

1. Set the SW2 bank switches for the item to adjust.

	SW2							A Protocol
1	2	3	4	5	6	7	8	Adjustment
Up	*	*	*	*	*	*	*	Timing Sensor
*	Up	*	*	*	*	*	*	Cover Registration Sensor
Up	Up	*	*	*	*	*	*	Cover Horizontal Registration Sensor: Small
*	*	Up	*	*	*	*	*	Cover Horizontal Registration Sensor: Large
Up	*	Up	*	*	*	*	*	Book Exit Sensor
*	Up	Up	*	*	*	*	*	Cutter Entrance Sensor
Up	Up	Up	*	*	*	*	*	Signature Registration Sensor
*	*	*	Up	*	*	*	*	Trimmings Buffer Full Sensor
Up	*	*	Up	*	*	*	*	Leading Edge Sensor
Up	Up	Up	Up	*	*	*	*	All Sensors

- 1. Push [PSW1] to confirm that there is no paper at the sensor position.
- While doing adjustments LED1, LED2 flash at 1 sec. intervals and LED3 remains off.
- When the adjustment of the D/A output value of an emitter sensor is within range for the receptor sensor A/D input, the D/A output is written to and store in the EEPROM. LED2 goes OFF after the adjustment is completed.
- If the value of the emitter sensor LED D/A output is changed when the value is at its maximum or minimum setting, and if this new setting is out of the acceptable range for the receptor sensor LED A/D input, this causes a sensor adjustment error (LED1 flashes at 0.1 sec. intervals, LED2, LED3 go ON).

#### Note:

- When a sensor adjustment error occurs, push [PSW2] to cancel the EEPROM write operation and shift to adjustment mode standby.
- Adjustment of the cutter entrance sensor, signature registration sensor, and all other sensors must be done with the front doors closed. Before adjusting the cutter entrance and signature registration sensors, for example, the signature grip motor and signature press motor must be moved to their adjustment positions. Doing these adjustments with the front doors open will cause a signature grip motor error or press motor error.

LED1	LED2	LED3	Status
FLASH	OFF	OFF	Adjustment mode standby, or adjustment completed.
FLASH	FLASH	OFF	Adjustment in progress. LED1, LED2 flash at 1 sec. intervals.
FLASH	ON	ON	Adjustment error. LED1 flashes at 0.1 sec. intervals. (Used for errors other than the all-sensor adjustment.)
FLASH	ON	FLASH	All sensor adjustment error (adjustment of all sensors at once failed). LED1 flashes at 0.1 sec. intervals. The LED3 flash count indicates which sensor adjustment failed.LED3 flash duration: 300 ms

LED3 Count	Target Sensor
1	Timing Sensor
2	Cover Registration Sensor
3	Cover Horizontal Registration Sensor: Small
4	Cover Horizontal Registration Sensor: Large
5	Book Exit Sensor
6	Cutter Entrance Sensor
7	Signature Registration Sensor
8	Trimmings Buffer Full Sensor
9	Leading Edge Sensor

LED3 Flashes x times> LED3 OFF 1 sec.> LED3 Flashes x times> LED3 OFF 1 sec.

# How to Read the LEDs

- 1. Set DIP SW1 on the SW1 bank to ON.
- 2. Set the SW2 for the item that you want to check or adjust. For example, for the cover centering adjustment, DIP SW's 1 and 2 are set to ON as shown below.



- 3. Read the LED displays.
  - The three LEDs remain OFF for 2 sec. if the current value is "0".
  - When LED1 is OFF this indicates plus (+).
  - When LED1 is ON this indicates minus (-).
  - The LED2 count indicates the left digit (10's) of the 2-digit decimal value, the LED3 count indicates the right digit (1 to 9) of the 2-digit decimal value. Flash duration: 300 ms

For example, if LED1 is OFF and LED2 flashes twice the left digit is "2. If LED3 flashes 4 times the right digit is "4" and the setting is read as "24". However, the adjustment is done in "0.1 mm" steps so the reading must be adjusted:

24 x 0.1 mm = 2.4 mm

where "2.4 mm" the actual current value. (The value is positive because LED1 is OFF.)

# **Critical Adjustments**

The following 13 adjustments are to be made either when requiring precise adjustment for the optimum performance of the bookbinder or after replacing the EEPROM on the main controller board.

### 🔁 Important

 These adjustments are not required if the EEPROM is removed from the old board and inserted into the new board.

### Adjustment 1: Cover Horizontal Registration Position Adjustment

Do this adjustment when the cover has slipped up or down beyond either end of the signature spine.



- If the cover has slipped toward the front, adjust in the plus (+) direction.
- If the cover has slipped toward the rear, adjust in the minus (-) direction.
- Always check the position of the cover at both ends of the spine.

There are two types of adjustments that can be done for cover horizontal registration, depending on the size of the cover.

- Small Size Adjustment: Cover size 297 mm or less
- Large Size Adjustment: Cover size 298 mm or more



1. Set the SW1 bank as shown below.

SW1						
1	2	3	4			
Up	*	*	*			

2. Set the SW2 bank as shown below.

SW2								Sheeking	
1	2	3	4	5	6	7	8	- Status	
*	*	*	*	*	Up	*	*	Large size adjustment	
Up	*	*	*	*	Up	*	*	Small size adjustment	

- If the cover has slipped toward the front, adjust in the plus (+) direction.
- If the cover has slipped toward the rear, adjust in the minus (-) direction.
- Check the position of the cover at both ends of the spine.
- 1. Push [PSW1] then look at LED1, LED2, LED3 to read the current setting.
- 2. Push [PSW2] to add 0.1 mm to the current value.

Push [PSW3] to subtract 0.1 mm from the current value.

- 3. LED1, LED2, LED3 light for 300 ms.
- 4. Look at LED1, LED2, LED3 to read the new adjusted value.
- 5. Repeat the steps above if you want to change the value again.
- Push [PSW1] to write the new value into the EEPROM and shift to adjustment mode standby. LED1 flashes at 1 sec. intervals, LED2, LED3 go OFF.

Adjustment Range

Adjustment Range	Steps	Default		
±5.0 mm	0.1 mm	0 mm		

#### How Values of the Settings Are Displayed

- The LED1 count indicates the sign of the value, plus (+) or minus (-). When LED1 is OFF this
  indicates plus (+), when LED1 is ON this indicates minus (-).
- The LED2 count indicates the left digit (10's) of the 2-digit decimal value, the LED3 count indicates the right digit (1 to 9) of the 2-digit decimal value. Flash duration: 300 ms
- For example, if LED2 flashes twice the LED3 flashes 4 times, this is read as "24". To adjust this value to the actual reading: 24 x 0.1 mm = 2.4 mm where "2.4 mm" is the actual value.
- The LEDs remain ON for 2 sec. if the current value is "0".
- The LED2 and LED3 displays automatically alternate.

#### Example 1: A Reading of 1.3 mm

	LED1	LED2	LED3	Comment
Left Digit	OFF	FLASH (x1)	OFF	Flash duration: 300 ms
	OFF	OFF	OFF	LED2, LED3 OFF (1 sec.)
Right Digit	OFF	OFF	FLASH (x3)	Flash duration: 300 ms
	OFF	OFF	OFF	LED2, LED3 OFF (1 sec.)

# Example 2: A Reading of –2.5 mm

	LED1	LED2	LED3	Comment
Left Digit	ON	FLASH (x2)	OFF	Flash duration: 300 ms
	ON	OFF	OFF	LED2, LED3 OFF (1 sec.)
Right Digit	ON	OFF	FLASH (x5)	Flash duration: 300 ms
	ON	OFF	OFF	LED2, LED3 OFF (1 sec.)

# Example 3: A Reading of 1.0 mm

	LED1	LED2	LED3	Comment
Left Digit	OFF	FLASH (x2)	OFF	Flash duration: 300 ms
	OFF	OFF	OFF	LED2, LED3 OFF (1 sec.)
Right Digit	OFF	OFF	ON (2 sec.)	LED3 ON (2 sec.)
	OFF	OFF	OFF	LED2, LED3 OFF (1 sec.)

# Example 4: A Reading of –0.7 mm

	LED1	LED2	LED3	Comment
Left Digit	ON	ON (2 sec.)	OFF	LED2 ON (2 sec.)
	ON	OFF	OFF	LED2, LED3 OFF (1 sec.)
Right Digit	ON	OFF	FLASH (x7)	Flash duration: 300 ms
	ON	OFF	OFF	LED2, LED3 OFF (1 sec.)

### **Adjustment 2: Cover Center Adjustment**

Do this adjustment when the fore edges of the signature and cover are not aligned. (The cover/signature in the illustration below have not been trimmed.) The cover slipped out the correct cover stop position before the glued spine of the signature was pressed down onto the cover.



1. Set the SW1 bank as shown below.

SW1						
1	2	3	4			
Up	*	*	*			

2. Set the SW2 bank as shown below.

SW2								
1	2	3	4	5	6	7	8	
*	Up	*	*	*	Up	*	*	

3. Push [PSW1] then look at LED1, LED2, LED3 to read the current setting.



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- If the cover has slipped downstream, adjust in the plus (+) direction.
- If the cover has slipped upstream, adjust in the plus (+) direction.
- Check both sides of the cover at the fore edge to confirm that the cover is centered.
- 4. Push [PSW2] to add 0.1 mm to the current value.

Push [PSW3] to subtract 0.1 mm from the current value.

- 5. LED1, LED2, LED3 light for 300 ms.
- 6. Look at LED1, LED2, LED3 to read the new adjusted value.
- 7. Repeat the steps above if you want to change the value again.
- Push [PSW1] to write the new value into the EEPROM and shift to adjustment mode standby. LED1 flashes at 1 sec. intervals, LED2, LED3 go OFF.

Adjustment Range

Adjustment Range	Steps	Default	
±5.0 mm	0.1 mm	0 mm	

9. Read the current setting from the LED display. (See "How to Read the LEDs".)

### Adjustment 3: Stacking Tray Switchback Roller Adjustment

Do the this adjustment for the switchback roller at the entrance of the stacking tray when you see that the trailing edges of the signature are not being aligned properly. Sheets of the signature are not aligned evenly at the spine (in the direction of paper feed) where the glue will be applied.



The distance set for switchback alignment during signature jogging in the stacking tray is not correct.

1. Set the SW1 bank as shown below.

SW1						
1	2	3	4			
Up	*	*	*			

2. Set the SW2 bank as shown below. R1

SW2								
1 2 3 4 5 6 7 8						8		
Up	Up	*	*	*	Up	*	*	

- 3. Push [PSW1] then look at LED1, LED2, LED3 to read the current setting.
  - If you want to increase the length of time that the switchback roller remains in contact with the paper, adjust in the plus (+) direction.
  - If you want to reduce the length of time that the switchback roller remains in contact with the paper, adjust in the minus (+) direction.
- 4. Push [PSW2] to add 0.1 mm to the current value.

Push [PSW3] to subtract 0.1 mm from the current value.

- 5. LED1, LED2, LED3 light for 300 ms.
- 6. Look at LED1, LED2, LED3 to read the new adjusted value.
- 7. Repeat the steps above if you want to change the value again.
- 8. Push [PSW1] to write the new value into the EEPROM and shift to adjustment mode standby.

LED1 flashes at 1 sec. intervals, LED2, LED3 go OFF.

Adjustment Range

Adjustment Range	Steps	Default		
±5.0 mm	0.1 mm	0 mm		

9. Read the current setting from the LED display. (See "How to Read the LEDs".)

### Adjustment 4: Jogger Motor Adjustment

Do this adjustment to change the amount of pressure applied by the jog fences to the sides of the signature in the stacking tray. The edges of the paper on the fore edge of the signature are not evenly aligned. (The cover/signature in the illustration below have not been trimmed.)



The front and rear jogger fences are not aligning the sheets during the jogging operation in the stacking tray as each sheet arrives in the tray.

There are two types of jogger motor adjustments, depending on the size of the paper being stacked to form the signature.

- Small Size Adjustment: Paper width less than 298 mm
- Large Size Adjustment: Paper size more than 298 mm
- 1. Set the SW1 bank as shown below.



2. Set the SW2 bank for the item to adjust.

SW2						Status		
1	2	3	4	5	6	7	8	
*	*	Up	*	*	Up	*	*	Front Jogger Motor: Small Size
Up	*	Up	*	*	Up	*	*	Rear Jogger Motor: Small Size
*	Up	Up	*	*	Up	*	*	Front Jogger Motor: Large Size
Up	Up	Up	*	*	Up	*	*	Rear Jogger Motor: Large Size

3. Push [PSW1] then look at LED1, LED2, LED3 to read the current setting.

Adjusting the front jogger motor determines how far the front jogger fence moves to the rear when it pushes each sheet toward the rear fence. Adjusting the rear jogger motor determines how far the rear jogger fence moves the rear fence to the front and stops to set the standard position for jogging by the front fence.

- To increase the distance the front jogger motor pushes the front fence toward the rear against the side of the stack, adjust in the plus (+) direction.
- To decrease the distance the front jogger motor pushes the front fence toward the rear against the side of the stack, adjust in the minus (-) direction.
- 4. Push [PSW2] to add 0.1 mm to the current value.

Push [PSW3] to subtract 0.1 mm from the current value.

- 5. LED1, LED2, LED3 light for 300 ms.
- 6. Look at LED1, LED2, LED3 to read the new adjusted value.
- 7. Repeat the steps above if you want to change the value again.
- Push [PSW1] to write the new value into the EEPROM and shift to adjustment mode standby. LED1 flashes at 1 sec. intervals, LED2, LED3 go OFF.

Adjustment Range

Adjustment Range	Steps	Default
±3.0 mm	0.1 mm	0 mm

9. Read the current setting from the LED display. (See "How to Read the LEDs".)

## Adjustment 5: Glue Amount Adjustment (Adj by Glue Removal Rod)

Do this adjustment when you see either excessive or insufficient glue being applied to the spine of the signature. This adjustment changes the gap between the glue removal rod and the surface of the signature when the roller touches the surface during the gluing unit's second pass from front to rear. This operation is done according to the thickness of the spine (see table below).

1. Set the SW1 bank as shown below.



2. Set the SW2 bank as shown below.

SW2								
1	2	3	4	5	6	7	8	Thickness
*	*	*	*	Up	Up	Up	*	0 to 1.4 mm

1	2	3	4	5	6	7	8	Thickness
Up	*	*	*	Up	Up	Up	*	1.5 to 3.4 mm
*	Up	*	*	Up	Up	Up	*	3.5 to 6.4 mm
Up	Up	*	*	Up	Up	Up	*	6.5 to 11.4 mm
*	*	Up	*	Up	Up	Up	*	11.5 to 22.4 mm
Up	*	Up	*	Up	Up	Up	*	22.5 to 25 mm

3. Push [PSW1] then look at LED1, LED2, LED3 to read the current setting.

- Raising the value of the setting increases the distance between the glue removal rod and the spine and increases the amount of glue applied to the spine.
- Lowering the value of the setting decreases the distance between the glue removal rod and the spine and decreases the amount of glue applied to the spine.
- 4. Push [PSW2] to add 0.05 mm to the current value.

#### -or-

Push [PSW3] to subtract 0.05 mm from the current value.

- 5. LED1, LED2, LED3 light for 300 ms.
- 6. Look at LED1, LED2, LED3 to read the new adjusted value.
- 7. Repeat the steps above if you want to change the value again.
- Push [PSW1] to write the new value into the EEPROM and shift to adjustment mode standby. LED1 flashes at 1 sec. intervals, LED2, LED3 go OFF.

### Adjustment Range

Adjustment Range	Steps	Default
±1.0 mm	0.05 mm	0 mm

9. Read the current setting from the LED display. (See "How to Read the LEDs".)

Note: Remember that changing the value by one step changes the actual value by only 0.05 mm.

#### **Checkpoints After Adjustment**

After doing the adjustment print a sample and have it trimmed on its three edges: top, bottom, and fore edge. Confirm that the amount of glue (height) is within the specifications described below. If the measured amount of glue is not within specification, do the adjustment again.



- The measured height of the glue at the top edge and bottom edge should be in the range 2.0 mm to 7.0 mm.
- The differences between the measured heights should be:

|A - C| < 3.0 mm |B - D| < 3.0 mm

# Problems Caused by Excess Glue



If there is an excessive amount of glue present when the signature and cover are joined, or when the three edges are trimmed, glue seepage at the corners could transfer from the signature [A] to the main grip [B] and interfere with operation. For this reason the amount of glue applied to the spine always must be within the ranges described above.


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If you suspect that trimmings are sticking to the blade you can visually check at the points shown above.

## Adjustment 6: Gluing Unit Movement Adjustment

Do this adjustment when you see that the glue vat roller is not covering the edge of the signature completely during application of the glue to the spine.

Glue is applied in two passes by a roller in the glue unit that moves first from rear to front and then front to rear. No glue is being applied to the end of the signature spine at the top edge or the bottom edge. The starting point for the application of glue to the spine is not set correctly.





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1. Set the SW1 bank as shown below.

SW1						
1 2 3 4						
Up	*	*	*			

2. Set the SW2 bank as shown below.

SW2							
1 2 3 4 5 6 7 8							8
Up	Up	*	Up	*	Up	*	*

- 3. Push [PSW1] then look at LED1, LED2, LED3 to read the current setting.
  - To have the gluing unit apply more glue toward the front of the spine, adjust in the plus (+) direction.
  - To have the gluing unit apply more glue toward the rear of the spine, adjust in the minus (-) direction.
- 4. Push [PSW2] to add 0.1 mm to the current value.
  - -or-

Push [PSW3] to subtract 0.1 mm from the current value.

- 5. LED1, LED2, LED3 light for 300 ms.
- 6. Look at LED1, LED2, LED3 to read the new adjusted value.
- 7. Repeat the steps above if you want to change the value again.
- Push [PSW1] to write the new value into the EEPROM and shift to adjustment mode standby. LED1 flashes at 1 sec. intervals, LED2, LED3 go OFF.

Adjustment Range	Steps	Default	
±8.0 mm	0.1 mm	0 mm	

9. Read the current setting from the LED display. (See "How to Read the LEDs".)

## Adjustment 7: Glue Application at Corners Adjustment

Do this procedure to adjust the size of the area at the ends of the spine where glue is applied if there is insufficient glue or an excessive amount of glue at either end the signature.



1. Set the SW1 bank as shown below.

SW1						
1 2 3 4						
Up	*	*	*			

2. Set the SW2 bank as shown below.

SW2								
1	2	3	4	5	6	7	8	Status
Up	Up	Up	*	*	Up	Up	*	Top Edge Corner: 3 Cuts
*	*	*	Up	*	Up	Up	*	Bottom Edge: 3 Cuts
Up	*	*	Up	*	Up	Up	*	Top Edge: No Trimming or Top Only
*	Up	*	Up	*	Up	Up	*	Bottom Edge: No Trimming or Top Only

Note

- "3 cuts" means the signature is trimmed 3 times (bottom, top, fore edge).
- "No Trimming or Top Only" means the signature is not trimmed or is trimmed only once at the top edge.
- 3. Push [PSW1] then look at LED1, LED2, LED3 to read the current setting.
  - To increase the size of the area where glue is not applied at the corner of the spine, adjust in the plus (+) direction.

2

- To decrease the size of the area where glue is not applied at the corner of the spine, adjust in the minus (-) direction.
- 4. Push [PSW2] to raise the current setting by "1".

-or-

Push [PSW3] to lower the current setting by "1".

LED1, LED2, LED3 light for 300 ms.

- 5. Look at LED1, LED2, LED3 to read the new setting.
- 6. Repeat the steps above if you want to change the setting again.
- Push [PSW1] to write the new setting into the EEPROM and shift to adjustment mode standby. LED1 flashes at 1 sec. intervals, LED2, LED3 go OFF.

#### Adjustment Range

Value	Corner Area	Comment
0	0 mm	Bottom Edge (Default): No Trimming or Top Cut Only
1	l mm	
2	2 mm	Top Edge (Default): No Trimming or Top Cut Only
3	3 mm	
4	4 mm	
5	5 mm	

- 8. Read the current setting from the LED display. (See "How to Read the LEDs".)
  - The LED2 count indicates the left digit (10's) of the 2-digit decimal value, the LED3 count indicates the right digit (1's) of the 2-digit decimal value. Flash duration: 300 ms
  - The LEDs remain OFF for 2 sec. if the current value is "0".
  - The LED2 and LED3 displays automatically alternate.

#### Example 1:2 mm Setting Reading

	LED1	LED2	LED3	Comment
Left Digit 10's	OFF	ON (2 sec.)	OFF	LED2 ON (2 sec.)
	OFF	OFF	OFF	LED2, LED3 OFF (1 sec.)
Left Digit 1's	OFF	OFF	FLASH (x2)	Flash duration: 300 ms
	OFF	OFF	OFF	LED2, LED3 OFF (1 sec.)

## **Adjustment 8: Main Grip Position Adjustment**

Do this adjustment when you see that the signature is not being passed properly from the grip unit to the trimming unit below (this adjustment changes the location where the main grip unit grips the signature to pass it to the trimming unit).

1. Set the SW1 bank as shown below.

SW1						
1 2 3 4						
Up	*	*	*			

2. Set the SW2 bank as shown below.

SW2							
1 2 3 4 5 6 7 8							8
*	Up	*	Up	*	Up	*	*

- 3. Push [PSW1] then look at LED1, LED2, LED3 to read the current setting.
  - To make the grip unit grip the signature a lower position, adjust in the minus (-) direction.
  - There is no adjustment in the plus (+) direction.
- 4. Push [PSW3] to subtract 0.1 mm from the current value.
- 5. LED1, LED2, LED3 light for 300 ms.
- 6. Look at LED1, LED2, LED3 to read the new adjusted value.
- 7. Repeat the steps above if you want to change the value again.
- Push [PSW1] to write the new value into the EEPROM and shift to adjustment mode standby. LED1 flashes at 1 sec. intervals, LED2, LED3 go OFF.

#### Adjustment Range

Adjustment Range	Steps	Default	
-5.0 mm to 0 mm	0.1 mm	0 mm	

9. Read the current setting from the LED display. (See "How to Read the LEDs".)

#### Adjustment 9: Trimming Position Adjustment

Do this adjustment to correct the mechanical alignment of the signature and cutting blade if you see that cuts on the trimmed edges of the books are not aligned correctly.





Case [1]	The size of the book is not correct because the trimming position of the 3rd cut (fore edge) was not correct.
Case [2]	The size of the book is not correct because the trimming positions of the 1st (bottom) and 2nd (top) cuts are not correct.
Case [3]	The size of the book is not correct because the trimming position of either the 1st cut (bottom) or 2nd cut (top) is not correct.



## For Case [1] above: Fore Edge Cut Shift

This adjustment elongates or reduces the width of the book by shift the fore edge cutting position toward or away from the fore edge.

- Raising the setting increases the area and the size of the book by shifting the cutting position toward the edge.
- Lowering the setting increases the area and the size of the book by shifting the 3rd cutting position away from the edge.

## For Case [2] above: Top and Bottom Cut Shift

This adjustment elongates or reduces the height of the book by shifting the top and bottom cutting positions toward or away from the top and bottom edges of the book.

- Raising the setting increases the area and the size of the book by shifting the cutting positions toward the bottom and top edges.
- Lowering the setting increases the area and the size of the book by shifting the cutting positions away from the bottom and top edges.

#### For Case [3] above: Area Shift

This adjustment does not change the size of the area "B"; it shifts the area between the top and bottom edges.

- Raising the setting moves the area toward the bottom edge.
- Lowering the setting moves the area toward the top edge.

#### 🔁 Important

- The minimum width of the trimming is 6 mm. Any adjustment that results in setting the trimming smaller than 6 mm will be ignored.
- 1. Setting Up for the Adjustment
- 2. Set the SW1 bank as shown below.

SW1						
1 2 3 4						
Up	*	*	*			

3. Set the SW2 bank as shown below.

SW2								Status
1	2	3	4	5	6	7	8	
*	*	*	*	Up	Up	*	*	Fore edge cut adjust
Up	*	*	*	Up	Up	*	*	Bottom/top edge cut adjust
*	Up	*	*	Up	Up	*	*	Fixed area shift between top/ bottom edge

4. Push [PSW1] then look at LED1, LED2, LED3 to read the current setting.

To adjust the finished size:

- To make the finished book larger, adjust in the plus (+) direction.
- To make the finished book smaller, adjust in the minus (-) direction.

To change the positions of the cuts but keep the same size for the finished book:

- To make the width of the trimmed strip larger, adjust in the plus (+) direction.
- To make the width of the trimmed strip smaller , adjust in the minus (-) direction.

- 5. Do a book binding and check the trimming cuts at the top, bottom, and fore edges.
- 6. Push [PSW2] to add 0.1 mm to the current value.
  - -or-

Push [PSW3] to subtract 0.1 mm from the current value.

- 7. LED1, LED2, LED3 light for 300 ms.
- 8. Look at LED1, LED2, LED3 to read the new adjusted value.
- 9. Repeat the steps above if you want to change the value again.
- Push [PSW1] to write the new value into the EEPROM and shift to adjustment mode standby. LED1 flashes at 1 sec. intervals, LED2, LED3 go OFF.

Adjustment Range	Steps	Default
±5.0 mm	0.1 mm	0 mm

11. Read the current setting from the LED display. (See "How to Read the LEDs".)

## Adjustment 10: Square Cut Adjustment

Do this adjustment to correct the amount of rotation of the signature when you see that cuts are the edges are not straight. These Service Mode settings affect the available settings in the User Tools.



When the signature is rotated three times for the bottom, top, and fore edge trimming the inertia generated from the rotation of a heavy signature could make the signature rotate slightly beyond the optimum position for trimming (prescribed by motor pulse count in the firmware), causing the cuts to skew and giving the finished book a shape more like a trapezoid rather than a rectangle. Thicker and heavier signatures can generate different amounts of inertia so adjustments in the Service Mode can be

done for signatures which can vary in size from 10 to 200 sheets (see table below). It follows then that adjustments will have to be done for each cut position if this problem occurs.

However, if adjustments are done they must be done in very small increments and there is no way do measurements before adjustment, so input for the adjusted values must account for the square angle of the cuts and the differences in the lengths.



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1. Set the SW1 bank as shown below.

SW1							
1	2	3	4				
Up	*	*	*				

2. Set the SW2 bank as shown below.

SW2								Status
1	2	3	4	5	6	7	8	
Up	Up	*	*	Up	Up	*	*	L1: Square Adj. for 10-Sheet Signature 1
*	*	Up	*	Up	Up	*	*	L2: Square Adj. for 10-Sheet Signature 2
Up	*	Up	*	Up	Up	*	*	L3: Square Adj. for 10-Sheet Signature 3

			s۷	√2	Status			
1	2	3	4	5	6	7	8	
*	Up	Up	*	Up	Up	*	*	L1: Square Adj. for 200-Sheet Signature 1
Up	Up	Up	*	Up	Up	*	*	L2: Square Adj. for 200-Sheet Signature 2
*	*	*	Up	Up	Up	*	*	L3: Square Adj. for 200-Sheet Signature 3

L1 (Top Edge Skew), L2 (Bottom Edge Skew), L3 (Fore Edge Skew)

- 3. (1) Push [PSW1] then look at LED1, LED2, LED3 to read the current setting.
  - To increase the amount of rotation, adjust in the plus (+) direction.
  - To decrease the amount of rotation, adjust in the minus (-) direction.
- 4. Push [PSW2] to add 0.1 mm to the current value.

#### -or-

Push [PSW3] to subtract 0.1 mm from the current value.

LED1, LED2, LED3 light for 300 ms.

- 5. Look at LED1, LED2, LED3 to read the new adjusted value.
- 6. Push [PSW1] to write the new value into the EEPROM and shift to adjustment mode standby.
- Print another book with 3-edge trimming and the steps above if you want to change the value again.

LED1 flashes at 1 sec. intervals, LED2, LED3 go OFF.

Adjustment Range

Adjustment Range	Steps	Default
±10.0 mm	0.1 mm	0 mm

8. Read the current setting from the LED display. (See "How to Read the LEDs".)

#### Adjustment 11: Blade Replacement Alarm Frequency Setting

Do this adjustment to change the frequency of the blade replacement alarm if either problem occurs:

 Poor cutting even after the blade cradle has been replaced. (The blade replacement alert did not display even after the blade has exceeded its predicted service life: 40K cuts.)

- The blade replacement alert displays well before the end of the predicted service life of the blade: 40K cuts.
- 1. (1) Set the SW1 bank as shown below.

SW1							
1	2	3	4				
Up	*	*	*				

2. Set the SW2 bank as shown below.

SW2								
1	2	3	4	5	6	7	8	
Up	*	*	*	*	Up	Up	*	

Procedure

- 3. Push [PSW1] then look at LED1, LED2, LED3 to read the value (frequency) of the current setting.
  - To delay the blade replacement alarm, adjust in the plus (+) direction.
  - To advance the blade replacement alarm, adjust in the minus (-) direction.
- 4. Push [PSW2] to add 1000 to the current value.

-or-

Push [PSW3] to subtract 1000 from the current value.

LED1, LED2, LED3 light for 300 ms.

- 5. Look at LED1, LED2, LED3 to read the new adjusted value.
- 6. Repeat the steps above if you want to change the value again.
- Push [PSW1] to write the new value into the EEPROM and shift to adjustment mode standby. LED1 flashes at 1 sec. intervals, LED2, LED3 go OFF.

## Adjustment Range

Adjustment Range	Steps	Default
10,000 to 100,000	1000	40000

- The LED2 count indicates the left digit (10,000's) of the 2-digit decimal value, the LED3 count indicates the right digit (1,000's) of the 2-digit decimal value. Flash duration: 300 ms
- For example, if LED2 flashes 3 times and LED3 flashes 5 times, this means the value is 35,000 ((10,000 x 3)+(1000 x 5)) and the replacement alarm wil go off after the 35,000th cut.

- The LEDs remain OFF for 2 sec. if the current value is "0".
- The LED2 and LED3 displays automatically alternate.

#### Example 1: Alarm Set to Trigger After 35,000 Cuts

Digit	LED1	LED2	LED3	Comment
Left : 10,000's	OFF	FLASH x3	OFF	Flash duration: 300 ms
	OFF	OFF	OFF	LED2, LED3 OFF (1 sec.)
Right 1,000's	OFF	OFF	FLASH x5	Flash duration: 300 ms
	OFF	OFF	OFF	LED2, LED3 OFF (1 sec.)

## Adjustment 12: Setting Threshold Value for Shifting the Cutting Position

Do this adjustment to force the cutting blade to shift to the next cutting position on the blade cradle before the standard number of cuts has been done. Lowering this setting shortens the predicted service life of the blade cradle. If trimming is executing poorly, we suggest doing the "Blade Cradle Cutting Position" adjustment described in the next section.

1. Set the SW1 bank as shown below.



2. Set the SW2 bank as shown below.

SW2									
1	2	3	4	5	6	7	8		
*	*	Up	*	*	Up	Up	*		

- 3. Push [PSW1] then look at LED1, LED2, LED3 to read the current threshold value.
  - To increase the threshold (increase the number of cuts done at each position), adjust in the plus (+) direction.
  - To decrease the threshold (decrease the number of cuts done at each position), adjust in the minus (-) direction.
- 4. Push [PSW2] to add 10 to the current value.

-or-

Push [PSW3] to subtract 10 from the current value.

- 5. LED1, LED2, LED3 light for 300 ms.
- 6. Look at LED1, LED2, LED3 to read the new threshold value.
- 7. Repeat the steps above if you want to change the threshold value again.
- Push [PSW1] to write the new threshold value into the EEPROM and shift to adjustment mode standby.

LED1 flashes at 1 sec. intervals, LED2, LED3 go OFF.

Adjustment Range

Adjustment Range	Steps	Default
100 to 1000	10	550

#### **Threshold Value Display**

- The LED2 count indicates the left digit (100's) of the 2-digit decimal value, the LED3 count indicates the right digit (10's) of the 2-digit decimal value. Flash duration: 300 ms
- For example, if LED2 flashes 5 times and LED3 flashes 5 times, this means the value is 550 ((100 x 5)+(10 x 5)) and the blade cradle will be moved to another cutting position every 550 cuts.
- The LEDs remain OFF for 2 sec. if the current value is "0".
- The LED2 and LED3 displays automatically alternate.

## Example 1: 550 Cut Threshold

	LED1	LED2	LED3	Comment
Right Digit (100)	OFF	F FLASH (x5) OFF Flash duration: 300 m		Flash duration: 300 ms
	OFF OFF OFF		LED2, LED3 OFF (1 sec.)	
Right Digit (10)	OFF	OFF	FLASH (x5)	Flash duration: 300 ms
	OFF	OFF	OFF	LED2, LED3 OFF (1 sec.)

## Adjustment 13: Cutting Position Change Setting for the Blade Cradle

Do this adjustment to change the blade cradle to another cutting position. Changing this setting resets the number of cuts for the present cradle location to "0". This adjustment forces the blade cradle to shift immediately to the next higher cutting position before the standard number of cuts has been done.

- Changing this setting resets the number of cuts at the current cutting position on the cradle to zero so cutting can no longer continue there.
- Raising this setting by "1" will lower the blade cradle by 1 mm to the next higher cutting position.

• The maximum number of cuts at each position is 550. The service life of the blade cradle is 5,500 cuts (550 cuts and each of the 10 positions).



[1]	Blade
[2]	Blade Cradle
[3]	Cutting Positions 1 to 10.

1. Set the SW1 bank as shown below.

SW1						
1	2	3	4			
Up	*	*	*			

2. Set the SW2 bank as shown below.

SW2							
1	2	3	4	5	6	7	8
Up	Up	*	Up	*	Up	Up	*

- 3. Push [PSW1] then look at LED1, LED2, LED3 to read the current setting for the frequency of shifts in the cuttingi position.
  - To shift cutting to a point on the blade cradle that has not yet been used for cutting, adjust in the plus (+) direction.
  - To shift cutting to a point on the blade cradle that has already been for cutting, adjust in the minus (-) direction. (This adjustment is only rarely used.)
- 4. Push [PSW2] to increase the current setting by "1".

-or-

Push [PSW3] to decrease the current setting by "1".

LED1, LED2, LED3 light for 300 ms.

- 5. Look at LED1, LED2, LED3 to read the new value for the frequency of blade cradle shifts.
- 6. Repeat the steps above if you want to change the value again.
- Push [PSW1] to write the new value for the frequency of blade cradle shifts into the EEPROM and shift to adjustment mode standby.

LED1 flashes at 1 sec. intervals, LED2, LED3 go OFF.

## Setting Range

Adjustment Range	Steps	Default		
0 to 5	1	0		

#### Blade Cradle Shift Frequency Display

- The LED2 count indicates the left digit (10's) of the 2-digit decimal value, the LED3 count indicates the right digit (1's) of the 2-digit decimal value. Flash duration: 300 ms
- The LEDs remain OFF for 2 sec. if the current value is "0".
- The LED2 and LED3 displays automatically alternate.

#### Example 1: Blade Shift Frequency Setting of "2"

Digit	LED1 LED2		LED3	Comment	
Left: 10's	OFF ON (2 sec.)		OFF	LED2 ON (2 sec.)	
	OFF	OFF	OFF	LED2, LED3 OFF (1 sec.)	

Digit	LED1	LED2	LED3	Comment
Right: 1's	OFF	OFF	FLASH x2	Flash duration: 300 ms
	OFF	OFF	OFF	LED2, LED3 OFF (1 sec.)

# Other Adjustments

## Signature Exit Motor Adjustment

Do this procedure when you see that the signature is not feeding properly to the trimming unit (this adjustment changes the length of time that the signature exit roller remains in contact with the signature during transport to the trimming).

1. Set the SW1 bank as shown below.

SW1						
1	2	3	4			
Up	*	*	*			

2. Set the SW2 bank as shown below.

SW2							
1	2	3	4	5	6	7	8
Up	*	*	Up	*	Up	*	*

- 3. Push [PSW1] then look at LED1, LED2, LED3 to read the current setting.
- 4. Push [PSW2] to add 0.1 mm to the current value.

-or-

Push [PSW3] to subtract 0.1 mm from the current value.

- To increase the length of time the signature exit roller remains in contact with the signature when it is transported to the trimming unit, adjust in the plus (+) direction.
- To decrease the length of time the signature exit roller remains in contact with the signature when it is transported to the trimming unit, adjust in the minus (-) direction.
- 5. LED1, LED2, LED3 light for 300 ms.
- 6. Look at LED1, LED2, LED3 to read the new adjusted value.
- 7. Repeat the steps above if you want to change the value again.
- 8. Push [PSW1] to write the new value into the EEPROM and shift to adjustment mode standby.

LED1 flashes at 1 sec. intervals, LED2, LED3 go OFF.

## Adjustment Range

Adjustment Range	Steps	Default	
±5.0 mm	0.1 mm	0 mm	

9. Read the current setting from the LED display. (See "How to Read the LEDs".)

## Slide Motor HP Adjustment

Do this adjustment to fine adjust the size of the finished book.

1. Set the SW1 bank as shown below.

SW1						
1 2 3 4						
Up	*	*	*			

2. Set the SW2 bank as shown below.

SW2							
1	2	3	4	5	6	7	8
Up	*	*	Up	Up	Up	*	*

- 3. Push [PSW1] then look at LED1, LED2, LED3 to read the current setting.
- 4. Push [PSW2] to add 0.1 mm to the current value.

-or-

Push [PSW2] to subtract 0.1 mm from the current value.

- 5. LED1, LED2, LED3 light for 300 ms.
- 6. Look at LED1, LED2, LED3 to read the new adjusted value.
- 7. Repeat the steps above if you want to change the value again.
- Push [PSW1] to write the new value into the EEPROM and shift to adjustment mode standby. LED1 flashes at 1 sec. intervals, LED2, LED3 go OFF.

#### Adjustment Range

Adjustment Range	Steps	Default
±2.0 mm	0.1 mm	0 mm

9. Read the current setting from the LED display. (See "How to Read the LEDs".)

## **Glue Temperature Setting**

Do this adjustment to set the temperature of the glue.

1. Set the SW1 bank as shown below.

SW1						
1	2	3	4			
Up	*	*	*			

2. Set the SW2 bank as shown below.

SW2							
1	2	3	4	5	6	7	8
*	Up	Up	*	*	Up	Up	*

- 3. Push [PSW1] then look at LED1, LED2, LED3 to read the current temperature setting.
  - To raise the temperature, adjust in the plus (+) direction.
  - To lower the temperature, adjust in the minus (-) direction.
- 4. Push [PSW2] to raise the current temperature setting by "1".

-or-

Push [PSW3] to lower the current temperature setting by "1".

- 5. LED1, LED2, LED3 light for 300 ms.
- 6. Look at LED1, LED2, LED3 to read the new temperature setting.
- 7. Repeat the steps above if you want to change the value again.
- 8. Push [PSW1] to write the new temperature setting into the EEPROM and shift to adjustment mode standby.

LED1 flashes at 1 sec. intervals, LED2, LED3 go OFF.

#### Adjustment Range

Adjustment Range	Steps	Default
151°C to 155°C	1	150
(303.8°F to 311°F)		155

9. Read the current setting from the LED display. (See "How to Read the LEDs".)

- The LED2 count indicates the left digit (10's) of the 2-digit decimal value, the LED3 count indicates the right digit (1's) of the 2-digit decimal value. Flash duration: 300 ms
- For example, if LED2 flashes 5 times and LED3 flashes 5 times, this means the value is 153°C ((10 x 5)+(1 x 3) +100) and the current temperature is set for 153°C.
- The LEDs remain OFF for 2 sec. if the current value is "0".
- The LED2 and LED3 displays automatically alternate.

#### Example 1: Current Temperature 153C

	LED1	LED2	LED3	Comment
Left Digit 10's	OFF	FLASH (x5)	OFF	Flash duration: 300 ms
	OFF	OFF	OFF	LED2, LED3 OFF (1 sec.)
Left Digit 1's	OFF	OFF	FLASH (x3)	Flash duration: 300 ms
	OFF	OFF	OFF	LED2, LED3 OFF (1 sec.)

## Shift to Energy Mode Setting

Do this adjustment to set the idle time that triggers the independent energy save mode for the bookbinder. One of the following times can be selected. (Default: 30 min.):

0 (No energy save mode), 10, 15, 20, 30, 40, 50, 60, 90 min.; 2, 3, 4 hours

1. Set the SW1 bank as shown below.

SW1							
1	2	3	4				
Up	*	*	*				

2. Set the SW2 bank as shown below.

SW2							
1	2	3	4	5	6	7	8
*	Up	*	*	*	Up	Up	*

- 3. Push [PSW1] then look at LED1, LED2, LED3 to read the current setting.
- 4. Push [PSW2] to increase the current setting by "1".

-or-

Push [PSW3] to decrease the current setting by "1".

- 5. LED1, LED2, LED3 light for 300 ms.
- 6. Look at LED1, LED2, LED3 to read the new adjusted value.
- 7. Repeat the steps above if you want to change the value again.
- Push [PSW1] to write the new value into the EEPROM and shift to adjustment mode standby. LED1 flashes at 1 sec. intervals, LED2, LED3 go OFF.

## Adjustment Range

Value	Idle Time	Value	Idle Time
0	No shift	6	50 min.
1	10 min.	7	60 min.
2	15 min.	8	90 min.
3	20 min.	9	2 hr.
4 (Default)	30 min.	10	3 hr.
5	40 min.	11	4 hr.

## Maintenance Mode

Some of the units inside the bookbinder must be moved and the grippers released before doing maintenance.

1. Set the SW1 bank as shown below.



2. Set the SW2 bank as shown below.

			SM	Sherkus					
1	2	3	4	5	6	7	8	Status	
Up	*	*	*	*	*	Up	*	Grip release 1	
*	Up	*	*	*	*	Up	*	Move main grip to rotation sensor HP	

SW2								<b></b>
1	2	3	4	5	6	7	8	Status
Up	Up	*	*	*	*	Up	*	Move main grip to binding position
*	*	Up	*	*	*	Up	*	Grip release 2
Up	*	Up	*	*	*	Up	*	Not Used
*	Up	Up	*	*	*	Up	*	Move blade cradle to replace position
Up	Up	Up	*	*	*	Up	*	Move blade to replace position
*	*	*	Up	*	*	Up	*	Open cover path
Up	*	*	Up	*	*	Up	*	Close cover path
*	Up	*	Up	*	*	Up	*	Lower stacking tray
Up	Up	*	Up	*	*	Up	*	Position units for shipping
*	*	Up	Up	*	*	Up	*	Move trimmings buffer left
Up	*	Up	Up	*	*	Up	*	Move trimmings buffer right

3. Push [PSW1] to have the bookbinder perform the operation selected with the SW2 bank DIP SWs.

4. To prevent any interference with the moving units, the LEDs indicate that no other operations can be performed.

## **Operation Details**

Operation	What Happens
Grip release 1	Pushing [PSW1] one time: 1) Releases the sub grip, 2) Releases the main grip, 3) Opens the spine fold plate, 4) Retracts the cover guides and opens the signature path, 5) Releases the cutter grip. If the main grip is at the binding position, after it is released it moves to the upper HP grip sensor. If the gluing unit is not in its home position at the rear, the grip cannot release. In this case, move the gluing unit manually to its home position at the rear of the machine so the main grip can release. Always confirm that the gluing unit is not hot before you try to push it to the rear.

Operation	What Happens
Move main grip to rotation sensor HP	Pushing [PSW1] rotates the main grip to its rotate home position. Always do this before you try to draw the cover transport unit out of the machine.
Move main grip to binding position	Pushing [PSW1] rotates the main grip to the binding home position. The main grip raises after it moves to the binding position. Always do this before you try to pull the gluing unit to the front.
Grip release 2	Pushing [PSW1] one time: 1) Opens the spine fold plate, 2) Releases the sub grip, 3) Releases the main grip, 4) Opens the spine fold unit, 5) Retracts the cover guides and opens the signature exit path. If the main grip is at the binding position, after it is released it moves to the upper HP grip sensor. If the gluing unit is not in its home position at the rear, the grip cannot release. In this case, move the gluing unit manually to its home position at the rear of the machine so the main grip can release. Always confirm that the gluing unit is not hot before you try to push it to the rear.
Move blade cradle to replace position	Pushing [PSW1] moves and positions the blade cradle, press, and blade so the blade cradle can be replaced. Do this before blade cradle replacement.
Move blade to replace position	Pushing [PSW1] moves the blade cradle to its initial position 10.5 away from its HP sensor so the blade can be replaced. Do this before blade replacement.
Open cover path	Pushing [PSW1] opens the cover path.
Close cover path	Pushing [PSW1] closes the cover path.
Lower stacking tray	Pushing [PSW1] lowers the stacking tray so the stacking tray switchback roller can be replaced. Do this before stackng tray switchback roller replacement.
Position units for shipping	Every push on [PSW1] moves each unit to its position for shipping. Do this to move each unit to its initial position before moving or shipping the bookbinder to another location.
Move trimmings buffer left	Pushing and holding down [PSW1] moves the trimmings buffer to the left. The trimmings buffer moves to the limit of its movement and stops.

Operation	What Happens
Move trimmings buffer right	Pushing and holding down [PSW1] moves the trimmings buffer to the right. The trimmings buffer moves to the limit of its movement and stops.

LED1	LED2	LED3	Status
FLASH	OFF	OFF	Maintenance Mode Standby, or Maintenace Operation End
ON	FLASH	OFF	Maintenance Mode in progress. LED1 flashes at 1 sec. intervals.
FLASH	ON	ON	Operation not possible. LED1 flashes at 0.1 sec. intervals.

# **Output Checks**

# Perfect Binder Output Check

# Self-Diagnostic Mode

Do this procedure to check the operation of moving parts.

- 1. If the system is on, switch it off.
- 2. Open the right and left front doors.
- 3. Close the right door.
- 4. Insert piece of cardboard or folded piece of paper into the slot [1] of the left door switch.



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5. Remove the service board cover [1] (SP x1).



6. Set the SW1, SW2 banks as shown below.

SW1								
1 2 3 4								
Up	*	*	*					

7. Set the SW2 bank as shown below.

SW2						Status		
1	2	3	4	5	6	7	8	
Up	*	*	*	*	*	Up	Up	Glue Vat Empty Sensor
*	Up	*	*	*	*	Up	Up	Glue Tank Full Sensor
Up	Up	*	*	*	*	Up	p Up Jog Fence HP Sensor: Front	
*	*	Up	*	*	*	Up	Up Jog Fence HP Sensor: Rear	
Up	*	Up	*	*	*	Up	Up Jog Fence HP Sensor: Front Large	
*	Up	Up	*	*	*	Up	p Up Jog Fence HP Sensor: Rear Large	
Up	Up	Up	*	*	*	Up	Up	Glue Tank HP Sensor: Front
*	*	*	Up	*	*	Up	Up Trimmings Buffer Full Sensor	
Up	*	*	Up	*	*	Up	Up Press Limit Sensor (S89)	
*	Up	*	Up	*	*	Up	Up	Blade Limit Sensor: Front

SW2						Status		
1	2	3	4	5	6	7	8	
Up	Up	*	Up	*	*	Up	Up	Blade Limit Sensor: Rear
Up	Up	Up	Up	*	*	Up	Up	Check all, excluding press limit and blade limit sensors

## 8. Push [PSW1] to start self-diagnostic mode.

- While in the self-diagnostic mode LED1, LED2 flash for 1 sec. and LED3 remains off.
- If the self-diagnostic check succeeds (no problems detected), LED2 goes OFF. If the limit sensor self-diagnosis is OK, LED1, LED2, LED3 flash for 1 sec.
- If the self-diagnosis does not succeed, LED1 flashes at 0.1 sec. intervals, and LED2, LED3 light. If the "All Check" fails, LED3 indicates the item where the check failed.

LED1	LED2	LED3	What It Means
FLASH	OFF	OFF	Self-diagnostic check standby, or check OK.
FLASH	FLASH	OFF	Self-diagnosis in progress. LED1, LED2 flash at 1 sec. intervals.
FLASH	FLASH ON		Self-diagnostic check failed. LED1 flashes at 0.1 sec. intervals.
		FLASH	Check All self-diagnosis failed. LED1 flashes at 0.1 sec. intervals. The LED3 flash count indicates which self-diagnostic check failed. LED3 flashes at 300 ms intervals.
FLASH	FLASH	FLASH	Limit sensor self-diagnostic check OK. LED1, LED2, LED3 flash at 1 sec. intervals.
FLASH	FLASH	FLASH	Operation not possible. LED1, LED2, LED3 flash at 0.1 sec. intervals.

## Check All Self-Diagnosis Failure

LED3 Count	Failure Point
1	Glue Vat Empty Sensor
2	Glue Tank Full Sensor
3	Jog Fence HP Sensor: Front

LED3 Count	Failure Point
4	Jog Fence HP Sensor: Rear
5	Jog Fence HP Sensor: Front Large
6	Jog Fence HP Sensor: Rear Large
7	Glue Tank HP Sensor: Front
8	Trimmings Buffer Full Sensor

LED3 Flashes x times>LED3 OFF 1 sec.>LED3 Flashes x times> LED3 OFF 1 sec.

Check Point	Check Method
1. Glue Vat Empty Sensor 2. Glue Tank Full Sensor	<ul> <li>No glue pellets in the glue hopper</li> <li>Confirms whether the A/D input value at the receptor sensor does not detect glue when D/A output value of the emitter sensor is set at standard value.</li> <li>Confirms whether the A/D input value at the receptor sensor does detect glue when D/A output value of the emitter sensor is set at zero.</li> </ul>
<ol> <li>Jog Fence HP Sensor: Front</li> <li>Jog Fence HP Sensor: Rear</li> <li>Jog Fence HP Sensor: Front Large</li> <li>Jog Fence HP Sensor: Rear Large</li> </ol>	<ul> <li>Confirms that the jog fences are moving and that the sensors are going ON/ OFF.</li> </ul>
7. Glue Tank HP Sensor: Front	<ul> <li>Confirms that the gluing unit is moving and that the front sensor is going ON/ OFF. The main grip unit is moved to the binding position before this sensor is checked if it is not already at the binding position.</li> </ul>

# Details About Self-Diagnosis

Check Point	Check Method
8. Trimmings Buffer Full Sensor	<ul> <li>Pulls all trimmings from the trimmings buffer.</li> </ul>
	<ul> <li>Confirms whether the A/D input value at the receptor sensor does not detect trimmed scraps when D/A output value of the emitter sensor is set at standard value.</li> </ul>
	<ul> <li>Confirms whether the A/D input value at the receptor sensor does detect trimmed scraps when D/A output value of the emitter sensor is set at zero.</li> </ul>
Press Limit Sensor	<ul> <li>Confirms that the press unit operates and that there is no limit sensor error.</li> </ul>
	<ul> <li>If the self-diagnostic check succeeds, turn the bookbinder off and move the press unit to the limit position manually so the unit is out of the error position.</li> </ul>
Blade Limit Sensor (Movement to Front/ Rear)	• Confirms that the blade moves and that there is no limit sensor error. If the self- diagnostic check succeeds, turn the bookbinder off and move the cutter blade to the limit position manually so the unit is out of the error position.

## **Bookbinder Test Mode**

Do these procedures to test each operation inside the bookbinder. This test mode enables the detection of jams, errors, door open, etc. and suspends operation of the bookbinder if one occurs. However, no alarms are issued.

#### Note

- Do not use paper longer than 297 mm for testing in no cut or single cut mode because paper longer than this will not stack properly in the stacking tray. Operation cannot be guaranteed with paper longer than 297 mm.
- The finished size of the book may be too large in no-cut mode (depending on the number of sheets in the signature) when the cover and signature are joined if the short edge of the signature is more than 221 mm.
- 1. Set the SW1 bank as shown below.

SW1				Status
1	2	3	4	
*	Up	*	*	Trimming Enabled
*	Up	*	Up	No Trimming

2. Set the SW2 bank as shown below.

SW2								
1 2 3 4 5 6 7 8								
x	x	x	x	x	x	х	Up	

- 3. Push [PSW1] then do the procedures in the order described below.
- 4. Perform the stacking operation: 1) Transport sheets to stacking tray from bookbinder entrance, 2) Start stacking operation,
- 5. Perform cover transport from the inserter unit (or bookbinder entrance): 1) Signature transport, 2) Start cover transport after signature has been stacked.
- 6. Perform book output: 1) Start binding operation, 2) Glue application, 3) Book trimming Once the stacking tray returns to the signature turnover position, stacking in the tray can resume.
- 7. Loop to Step 4 above.
  - On the SW2 bank SW1, SW2, SW3 set the finished sizes of the signature and cover, and SW5 sets the transport speed of the signature and cover.
  - When [PSW1] is pushed to start signature transport and stacking, the size and speed latch.
  - The setting of SW6 on the SW2 bank determines whether the cover is fed from the host machine or the inserter on top of the bookbinder.
  - The cover feed source is enabled at power on and cannot be changed as long as the power remains on.
- 8. Turn off the system.

## Signature, Cover Finished Size Settings (SW1 to 4 on SW2 Bank)

SW2				C'ana akara C'ara	Causa Sina	Finish ad Cine
1	2	3	4	Signature Size	Cover Size	Finished Size
*	*	*	*	A4 LEF	A3 SEF	В5
Up	*	*	*	-	-	-
*	Up	*	*	A4 LEF (Special)	SR A3 (SEF)	A4

SW2				Ciana da ang Ciana		First-hand Circa
1	2	3	4	Signature Size	Cover Size	Finished Size
Up	Up	*	*	Exe LEF	279.4 X 378.3 mm SEF	STMT
*	*	Up	*	B5 LEF	B4 SEF	A5
Up	*	Up	*	9 X 12 in. LEF	13 X 19.2 in. SEF	LTR
*	Up	Up	*	LTR LEF	LTR SEF	СОМ
Up	Up	Up	*	A4 LEF	A3 SEF	СОМ
*	*	*	Up	A4 LEF	A3 SEF	203.0 X 283.0 mm
Up	*	*	Up	LTR LEF	LTR SEF	208.9 X 265.4 mm
*	Up	*	Up	-	-	-
Up	Up	*	Up	Exe LEF	279.4 X 378.3 mm	177.1 X 252.7 mm
*	*	Up	Up	B5 LEF	B4 SEF	175.0 X 243.0 mm
Up	*	Up	Up	-	-	-
*	Up	Up	Up	-	-	-
Up	Up	Up	Up	-	-	-

**Note**: "LEF" in the table above denotes standard size paper longer in main scan direction than sub scan direction.

SW2 Bank SW5: Signature and Cover Size Speeds

SW5	Signature Speed	Cover Speed
*	651mm/s	651mm/s
Up	434mm/s	434mm/s

## SW2 Bank SW6: Cover Feed Source

SW6	Cover Feed Source
*	Mainframe
Up	Inserter (Cover is fed only from the lower tray.)

The cover feed source is enabled at power on and cannot be changed as long as the power remains on.

# Inserter Output Check

The inserter motors and sensors are tested with the DIP switches and LEDs on the inserter control board.



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#### Inserter Control Board (Rear Cover Removed)

1	Inserter control board
2	DIP switches (Default OFF: Standby Mode)
3	LEDs 1, 2, 3
4	SW2 (a push-switch)
5	CPU (IC7)

Stand-by Mode, Service Mode



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	Mode	LED3	LED2	LED1
Standby Mode	Nothing Open	OFF	OFF	
	Top Cover Open	OFF	ON	Flashing: 0.5 sec.
	Inserter Open	ON	OFF	
Service Mode		OFF	OFF	Flashing: 1 sec.

Note: To set the inserter in the Service Mode, set the Perfect Binder in the Service Mode.

# **Error Display**

If a problem is detected in the inserter, the LEDs display changes in the order described below.

(a) > (b) > (c) > (d)

## (a) Jam or error

All LEDS light for 1 sec, all go off for 1 sec.

## (b) Error cause

One or more LED goes ON for 1 sec, then OFF for 1 sec.

The combination of which LEDs go ON/OFF indicate the problem and location.

LED 3	LED 2	LED 1	Problem	Location
OFF	OFF	ON	Late paper jam	Tray A Lift Motor (M3 (INS))

LED 3	LED 2	LED 1	Problem	Location
OFF	ON	OFF	Lag paper jam	Tray A Lift Motor (M3 (INS))
OFF	ON	ON	At power on	Drive Switch Motor (M2 (INS))
ON	OFF	OFF	Firmware error	CPU flash memory
ON	OFF	ON	Cover open jam	Top cover
ON	ON	OFF	Paper size mismatch	Paper tray fences on Tray A, B

## (c) Sensor where jam detected

One or more LED goes ON for 0.5 sec, then OFF for 0.25 sec.

The LEDs that go ON/OFF indicate the affected sensor or component.

LED 3	LED 2	LED 1	Sensor	Component
OFF	OFF	ON	Tray A Registration Sensor (S5 (INS))	Tray A Lift Motor (M3 (INS))
OFF	ON	OFF	Tray B Registration Sensor (S13 (INS))	Tray A Lift Motor (M3 (INS))
OFF	ON	ON	Transport Sensor 1 (S14 (INS))	Drive Switch Motor (M2 (INS))
ON	OFF	OFF		CPU flash memory
ON	OFF	ON	Transport Sensor 2 (S18 (INS))	
ON	ON	OFF	Paper width sensors	

#### (d) Refresh and return to (a9

All LEDS light for 0.75 sec, all go off for 0.75 sec. then the display loops to (a).

## Inserter Motor, Clutch Output Check

## To check start/top operation of each motor

- 1. Open the left door.
- 2. Insert piece of cardboard or folded piece of paper into the slot of the left door switch.

If the right door has been removed, insert piece of cardboard or folded piece of paper into the slot of the left door switch.

- 3. Remove the Service Board cover of the bookbinder.
- 4. On the SW1 bank set DIP SW1 to ON.
- 1. Remove the rear cover of the inserter ( $\mathfrak{O} x2$ ).
- 2. On the inserter control board set the DIP SWs as shown below.



- 3. Turn on the host machine.
- 4. Push and release SW2 to start the operation of each motor.

Press	What Happens
1	Push [SW2]. Starts Drive Switch Motor (M2 (INS)), rotates the pinion gear that moves the rack with the main drive gear of the tray feed motor to the front to engage the drive roller of Tray A and stops.
2	Push [SW2] to run Tray Feed Motor (M1 (INS)) at 250 mm/s for Tray A, press [SW2] to stop.
3	Push [SW2] to run Tray Feed Motor (M1 (INS)) at 500 mm/s for Tray A, press [SW2] to stop.
4	Push [SW2] to run Tray Feed Motor (M1 (INS)) at 1100 mm/s for Tray A, press [SW2] to stop.
5	Push [SW2]. Starts Drive Switch Motor (M2 (INS)), rotates the pinion gear that moves the rack with the main drive gear of the tray feed motor to the rear to engage the drive roller of Tray B and stops.
6	Push [SW2] to run Tray Feed Motor (M1 (INS)) at 250 mm/s for Tray B, press [SW2] to stop.
7	Push [SW2] to run Tray Feed Motor (M1 (INS)) at 500 mm/s for Tray B, press [SW2] to stop.
8	Push [SW2] to run Tray Feed Motor (M1 (INS)) at 1100 mm/s for Tray B, press [SW2] to stop.
9	Push [SW2] to run Vertical Transport Motor (M5 (INS)) at 1100 mm/s, press [SW2] to stop.

Press	What Happens
10	Push [SW2]. Starts Tray A Lift Motor (M3 (INS)), lifts Tray A, then stops.
11	Push [SW2]. Starts Tray A Lift Motor (M3 (INS)), lowers Tray A, then stops.
12	Push [SW2]. Starts Tray B Lift Motor (M4 (INS)), lifts Tray B, then stops.
13	Push [SW2]. Starts Tray B Lift Motor (M4 (INS)), lowers Tray B, then stops.
14	Push [SW2]. Switches ON Tray A Registration Clutch (CL1 (INS)), Tray B Registration Clutch (CL2 (INS)) then both switch OFF.
15	Loops to "1" above.

## To check continuous motor feed

- 1. Open the left door.
- 2. Insert piece of cardboard or folded piece of paper into the slot of the left door switch.

If the right door has been removed, insert piece of cardboard or folded piece of paper into the slot of the left door switch.

- 3. Remove the Service Board cover of the bookbinder.
- 4. On the SW1 bank set DIP SW1 to ON.
- 1. Remove the rear cover of the inserter ( $\mathfrak{O}^{*}x2$ ).
- 2. Set the DIP SWs as shown below.



- 3. Turn on the host machine.
- 4. Push and release SW2 to test continuous operation of a motor.

Press	What Happens
1	Lifts Tray A, positions it for paper feed.
2	Turns on motors for 50-sheet feed.
3	Lowers Tray A.
4	Lifts Tray B, positions it for paper feed.

Press	What Happens
5	Turns on motors for 50-sheet feed.
6	Lowers Tray B.
7	Loops to "1" above.

Note:

- The first execution runs paper separation at 500 mm/s, paper feed at 1100 mm/s.
- The second execution runs paper separation at 250 mm/s, paper feed at 325 mm/s.
- These sequence repeats for the 2nd, 3rd tests, and so on.

#### Sensor Output Check

- 1. Remove the rear cover of the inserter ( $\Im^{p} x2$ ).
- 2. Set the DIP SWs as shown below.



3. Turn on the host machine.

## Sensor Output Check

- 1. Open the left door.
- 2. Insert piece of cardboard or folded piece of paper into the slot of the left door switch.

If the right door has been removed, insert piece of cardboard or folded piece of paper into the slot of the left door switch.

- 3. Remove the Service Board cover of the bookbinder.
- 4. On the SW1 bank set DIP SW1 to ON.
- 5. Remove the rear cover of the inserter ( $\Im^{p} x2$ ).
- 6. Set the DIP SWs as shown below.


- 7. Turn on the host machine.
- 8. Set the DIP SWs and do the procedures as shown in the table below.

DIP SW	Procedure
SW1	Sensor Check 1
	1. Set the DIP SWs as shown on the left.
-	2. Push [SW2] three times.
ON OFF	<ol> <li>After each switch press check the status of each LED in this order: LED1, LED2, LED3.</li> </ol>
	ON: Paper present
	• OFF: No paper
	Each LED displays the status of these sensors:
	<ul> <li>LED1: Tray A Paper Set Sensor (S1 (INS))</li> </ul>
	<ul> <li>LED2: Tray A Paper Feed Sensor (S4 (INS))</li> </ul>
	<ul> <li>LED3: Tray A Registration Sensor (S5 (INS))</li> </ul>
SW1	Sensor Check 2
	1. Set the DIP SWs as shown on the left.
	2. Push [SW2] three times.
ON OFF	<ol> <li>After each switch press check the status of each LED in this order: LED1, LED2, LED3.</li> </ol>
	ON: Paper present
	• OFF: No paper
	Each LED displays the status of these sensors:
	<ul> <li>LED1: Tray A Paper Out Sensor (S3 (INS))</li> </ul>
	<ul> <li>LED2: Tray B Paper Out Sensor 1 (S8 (INS))</li> </ul>
	LED3: Tray B Paper Out Sensor 2 (S9 (INS))

DIP SW	Procedure
SW1	Sensor Check 3
	1. Set the DIP SWs as shown on the left.
	2. Push [SW2] three times.
ON OFF	<ol> <li>After each switch press check the status of each LED in this order: LED1, LED2, LED3.</li> </ol>
	ON: Paper present
	• OFF: No paper
	Each LED displays the status of these sensors:
	<ul> <li>LED1: Tray B Paper Set Sensor (S6 (INS))</li> </ul>
	<ul> <li>LED2: Tray B Paper Feed Sensor (S10 (INS))</li> </ul>
	<ul> <li>LED3: Tray B Registration Sensor (S13 (INS))</li> </ul>
SW1	Sensor Check 4
	1. Set the DIP SWs as shown on the left.
	2. Push [SW2] three times.
ON OFF	<ol> <li>After each switch press check the status of each LED in this order: LED1, LED2, LED3.</li> </ol>
	ON: Paper present
	• OFF: No paper
	Each LED displays the status of these sensors:
	<ul> <li>LED1: Transport Sensor (S14 (INS))</li> </ul>
	• LED2: Not Used
	<ul> <li>LED3: Transport Sensor 2 (S18 (INS))</li> </ul>

DIP SW	Procedure
SW1	Sensor Check 5
	1. Set the DIP SWs as shown on the left.
	2. Push [SW2] three times.
ON OFF	<ol> <li>After each switch press check the status of each LED in this order: LED1, LED2, LED3.</li> </ol>
	ON: Paper present
	• OFF: No paper
	Each LED displays the status of these sensors:
	LED1: Tray A Lower Limit Sensor (S11 (INS))
	<ul> <li>LED2: Tray B Lower Limit Sensor (S12 (INS))</li> </ul>
	LED3: Drive Switch Sensor (S16 (INS))
SW1	Sensor Check 6
	1. Set the DIP SWs as shown on the left.
	2. Push [SW2] three times.
ON OFF	<ol> <li>After each switch press check the status of each LED in this order: LED1, LED2, LED3.</li> </ol>
	ON: Paper present
	• OFF: No paper
	Each LED displays the status of these sensors:
	• LED1: Not Used
	LED2: Top Cover Switch (S17 (INS))
	LED3: Inserter Cover Sensor (S15 (INS))

2. Troubleshooting

## Service Program Mode

For details about "Service Program Mode" for this peripheral, see the main service manual.

MEMO