Ring Binder RB5010 Machine Code: D519 Service Manual

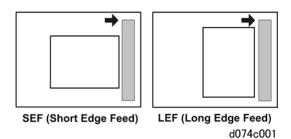
Safety, Conventions, Trademarks

Conventions

Common Terms

This is a list of symbols and abbreviations used in this manual.

Symbol	What it means	
P	Screw	
€¶	Connector	
C	E-ring	
Ѿ	C-ring	
A.	Harness clamp	
FFC	Flexible Film Cable	
JG	Junction Gate	
LE	Leading Edge of paper	
LEF	Long Edge Feed	
SEF	Short Edge Feed	
TE	Trailing Edge of paper	



The notations "SEF" and "LEF" describe the direction of paper feed, with the arrows indicating paper feed direction.

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.

ACAUTION

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

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



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

General Safety Instructions

For your safety, please read this manual carefully before you use this product. Keep this manual handy for future reference.

Safety Information

Always obey the following safety precautions when using this product.

Safety During Operation

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

Switches and Symbols

Where symbols are used on or near switches on machines for Europe and other areas, the meaning of each symbol conforms with IEC60417.



Responsibilities of the Customer Engineer

Reference Material for Maintenance

- Maintenance shall be done using the special tools and procedures prescribed for maintenance of the machine described in the reference materials (service manuals, technical bulletins, operating instructions, and safety guidelines for customer engineers).
- Use only consumable supplies and replacement parts designed for use of the machine.

Before Installation, Maintenance

Installation, Disassembly, and Adjustments

ACAUTION

- After installation, maintenance, or adjustment, always check the operation of the machine to make sure that it is operating normally. This ensures that all shipping materials, protective materials, wires and tags, metal brackets, etc., removed for installation, have been removed and that no tools remain inside the machine. This also ensures that all release interlock switches have been restored to normal operation.
- Never use your fingers to check moving parts causing spurious noise. Never use your fingers to lubricate moving parts while the machine is operating.

Special Tools

ACAUTION

- Use only standard tools approved for machine maintenance.
- For special adjustments, use only the special tools and lubricants described in the service manual.
 Using tools incorrectly, or using tools that could damage parts, could damage the machine or cause injuries.

During Maintenance

General

CAUTION

 Before you begin a maintenance procedure: 1) Switch the machine off, 2) Disconnect the power plug from the power source, 3) Allow the machine to cool for at least 10 minutes. Avoid touching the components inside the machine that are labeled as hot surfaces.

Power

MARNING

- Always disconnect the power plug before doing any maintenance procedure. After switching off
 the machine, power is still supplied to the main machine and other devices. To prevent electrical
 shock, switch the machine off, wait for a few seconds, then unplug the machine from the power
 source.
- Before you do any checks or adjustments after turning the machine off, work carefully to avoid
 injury. After removing covers or opening the machine to do checks or adjustments, never touch
 electrical components or moving parts (gears, timing belts, etc.).
- After turning the machine on with any cover removed, keep your hands away from electrical components and moving parts. Never touch the cover of the fusing unit, gears, timing belts, etc.

Organic Cleaners

ACAUTION

- During preventive maintenance, never use any organic cleaners (alcohol, etc.) other than those
 described in the service manual.
- Make sure the room is well ventilated before using any organic cleaner. Use organic solvents in small amounts to avoid breathing the fumes and becoming nauseous.
- Switch the machine off, unplug it, and allow it to cool before doing preventive maintenance. To avoid fire or explosion, never use an organic cleaner near any part that generates heat.
- Wash your hands thoroughly after cleaning parts with an organic cleaner to contamination of food, drinks, etc. which could cause illness.

Power Plug and Power Cord

WARNING

- Before servicing the machine (especially when responding to a service call), always make sure that
 the power plug has been inserted completely into the power source. A partially inserted plug could
 lead to heat generation (due to a power surge caused by high resistance) and cause a fire or other
 problems.
- Always check the power plug and make sure that it is free of dust and lint. Clean it if necessary. A
 dirty plug can generate heat which could cause a fire.
- Inspect the length of the power cord for cuts or other damage. Replace the power cord if
 necessary. A frayed or otherwise damaged power cord can cause a short circuit which could lead
 to a fire or personal injury from electrical shock.

- Check the length of the power cord between the machine and power supply. Make sure the power
 cord is not coiled or wrapped around any object such as a table leg. Coiling the power cord can
 cause excessive heat to build up and could cause a fire.
- Make sure that the area around the power source is free of obstacles so the power cord can be removed quickly in case of an emergency.
- Make sure that the power cord is grounded (earthed) at the power source with the ground wire on the plug.
- Connect the power cord directly into the power source. Never use an extension cord.
- When you disconnect the power plug from the power source, always pull on the plug, not the cable.

After Installation, Servicing

Disposal of Used Items

CAUTION

 Always dispose of used items in accordance with the local laws and regulations regarding the disposal of such items.

TABLE OF CONTENTS

Safety, Conventions, Trademarks	1
Conventions	1
Warnings, Cautions, Notes	2
General Safety Instructions	2
Responsibilities of the Customer Engineer	3
Before Installation, Maintenance	3
During Maintenance	3
After Installation, Servicing	5
1. Replacement and Adjustment	
Common Procedures	
Before You Begin	9
Ring Cartridge	11
Rear Cover	12
Top Cover	12
Removing the Binder Unit	14
Binder Unit Covers	17
Separating Pre-Bind Jogger from Binder Unit	22
Clamp Unit	24
Pre-Punch Jog Unit	26
Punch Unit	29
SP6504 Adjustment	29
Sensors	33
Pre-Punch Jogger HP Sensor (S301)	33
Chad Box Sensor (S308)	34
Pre-Bind Jogger Sensors	34
Ring Supply Unit Sensors	49
Clamp Unit Sensors	54
Output Belt Sensors	59
Stacker Unit Sensors	67
Motors	80
Pre-Punch Jog Unit Motor	80
Pre-Bind Jogger Motors	81
Clamp Unit Motors	99

Boards	103
Main Control Board	103
Binder Control Board	103
PSU	105

1. Replacement and Adjustment

Common Procedures

Before You Begin

Handling the Binder Unit

Pulling out the Binder Unit





d392r901

- 1. Open the front door.
- 2. Grip handle Mc8 and slowly pull the binder unit out of the finisher until it stops. (There are no wires attached to the binder unit.)

Pushing in the Binder Unit





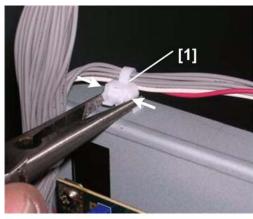
d392r902

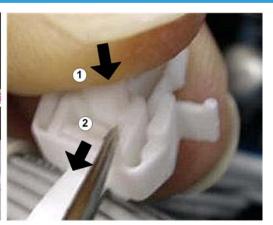
- 1. Check the right side of the binder unit and confirm that all the screws are installed and that the binder unit is squarely mounted on its two rails.
- 2. Grip handle Mc8 and slowly push the binder unit into the finisher until it stops.

ACAUTION

- Always grip handle Mc8 when pulling out or pushing in the binder unit.
- Never touch any other surface of the binder unit when it is moving.
- To avoid injury the fingers, never push on the top of the binder unit to slide it back into the finisher as shown above.

Standoffs on Harnesses





d392r0104

Some harnesses are locked by plastic bands [1] to plastic standoffs that are attached to the frame.

When releasing a harness, do not remove the band:

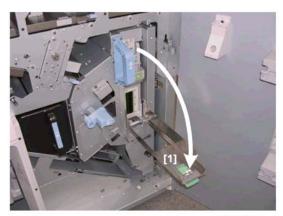
- Use a pair of needle-nose pliers to press in the base of the stand off and lift it out of its hole.
- The base of a removed standoff can be quickly re-inserted into its hole.

If you must remove the band:

- Press the end of the band loop.
- Use a sharp tool to press down the lock band below (or above) the looped band to separate the serrations of the bands and release the loop.

Ring Cartridge

Always remove the ring cartridge before removing the binder unit for servicing.



d392r0901a

- 1. Open the right front door.
- 2. Lower the release [1].

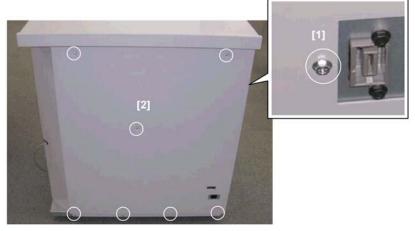




d392r0901b

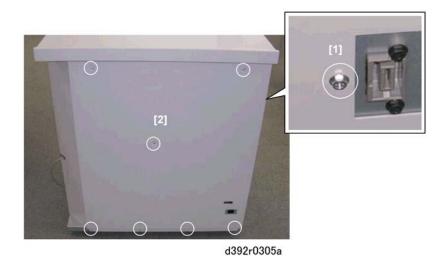
3. Pull out the ring cartridge [1] and lift it out of the frame.

Rear Cover



- d392r0305a
- 1. Remove the rear cover
 - [1] Left, rear edge(Fx1).
 - [2] Rear cover (🗗 x7).

Top Cover



- 1. Remove the rear cover
 - [1] Left, rear edge(🗗 x 1).
 - [2] Rear cover (🗗 x7).





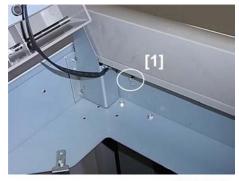
d392r0305f

- 2. Disconnect the top cover at the rear:
 - [1] Right rear corner (Fx1)
 - [2] Left rear corner (Fx1).



d392r0305g

3. Disconnect the top cover at the front right corner [1] (\mathcal{F} x 1)



d392r0305h

4. At the front left corner, disconnect the top cover (Fx1)



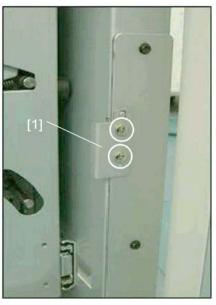
d392r0305i

5. Lift off the top cover [1].

Removing the Binder Unit

It is recommended that the binder unit be removed for all servicing and maintenance.

- Some of the binder unit covers can be removed with the binder unit still mounted on the rails.
- However, the binder unit wobbles on the rails and slips easily back into the machine and does not
 provide a stable platform for removing sensors or motors.

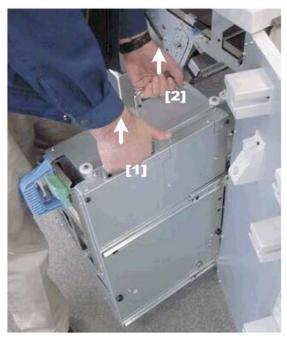




d392r0101a

- 1. Open the right front door.
- 2. Pull out the binder until it stops.
- 3. Remove:

- [1] Stopper (🗗 x2)
- [2] Binder unit screws (Fx6)

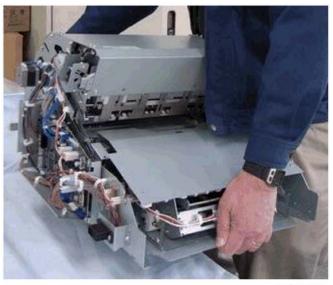


d392r010i

4. Lift the binder unit by its handles [1] and [2], pull it straight up and then slightly to the left to disengage the right side of the unit from the frame and rail.

ACAUTION

• The binder unit is heavy and weighs about 22 kg (50 lb.)



d392r903

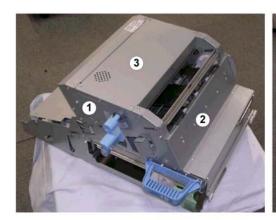
5. Hold the binder unit from the rear with a firm grip under the top and bottom of the unit as shown below.



d392r0101j

6. Lay the binder on its right side with its rubber stoppers down.

Binder Unit Covers





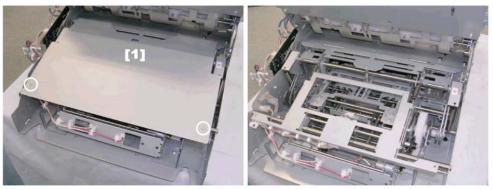


d392r1008

Binder Unit Covers

1		Front Cover
2	Dec Dividio and	Top Cover
3	Pre-Bind Jogger	Left Cover
4		Bottom Cover
(5)	Clamp Unit	Clamp Unit Cover
6	Dia a Comple Hait	Right Cover
7	Ring Supply Unit	Upper Right Cover

Clamp Unit Cover



d392r1001

- 1. Open the right front door.
- 2. Remove the ring cartridge.
- 3. Remove the binder unit from its rails and set it on a flat surface. (**p.103)
- 4. Remove the clamp unit cover [1] (Fx2).

Pre-Bind Jogger Left Cover



d392r1002

- 1. Open the right front door.
- 2. Remove the ring cartridge.
- 3. Remove the binder unit from its rails and set it on a flat surface. (**p.103)
- 4. Remove the pre-bind jogger side cover [1] (** x4).

Pre-Bind Jogger Bottom Cover

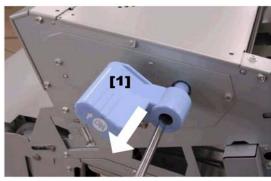


d392r1003

- 1. Open the right front door.
- 2. Remove the ring cartridge.
- 3. Remove the binder unit from its rails and set it on a flat surface. (IPp.103)
- 4. Remove the pre-bind jogger bottom cover [1] (** x4).

Pre-Bind Jogger Front Cover

- 1. Open the right front door.
- 2. Remove the ring cartridge.
- 3. Remove the binder unit from its rails and set it on a flat surface. (IPp.103)



d392r908

4. Remove lever **Mc8** [1] (**₹** x1).



d392r909

5. Remove the pre-bind jogger front cover [1] ($\mbox{\em p} x2$).

Pre-Bind Jogger Top Cover



d392r1005

- 1. Open the right front door.
- 2. Remove the ring cartridge.
- 3. Remove the binder unit from its rails and set it on a flat surface. (IPp.103)
- 4. Remove the pre-bind jogger top cover [1] (** x4).

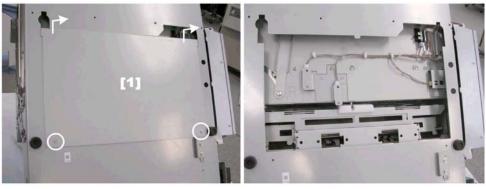
Ring Supply Unit Upper Right Cover



d392r1006

- 1. Open the right front door.
- 2. Remove the ring cartridge.
- 3. Remove the binder unit from its rails. (**p.103)
- 4. Lay the binder unit down on its left side (stoppers up).
- 5. Remove the right upper cover [1] (Fx2).

Ring Supply Unit Right Cover

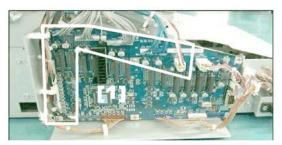


d392r1007

- 1. Open the right front door.
- 2. Remove the ring cartridge.
- 3. Remove the binder unit from its rails. (**p.103)
- 4. Lay the binder unit down on its left side (stoppers up).
- 5. Remove the right cover [1] (*\bar{x} x2).

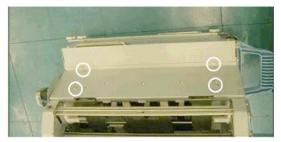
Separating Pre-Bind Jogger from Binder Unit

Follow this procedure to separate the pre-bind jogger from the binder unit.



d392r0101c

- 1. Open the right front door and remove the ring cartridge.
- 2. Remove the binder unit from its rails and set it on a flat surface. (**p.103)
- 3. Disconnect the binder unit control board [1] (🗗 x11, 🖨 x2)



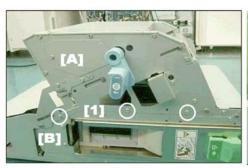
d392r0101d

4. Remove the pre-bind jogger top cover [1] (** x4).



d392r0101e

5. Remove handle **Mc8** [1] (**?** x4).

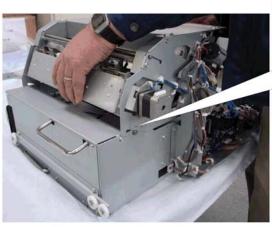


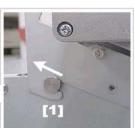


d391r0101f

d392r010g

- 6. To separate the pre-bind jogger [A] from the binder unit [B], remove:
 - [1] Front (**?** x3)
 - [2] Rear (🗗 x 1)





d392r904

7. Slide the hooks [1] of the pre-bind jogger off the studs on both sides, and lift off binder unit.



d392r0101k

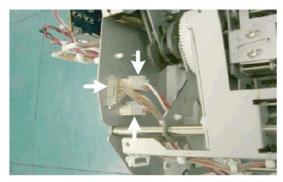
- 8. Set the separated pre-bind jogger [1] on a clean flat surface.
- 9. If you replace the pre-bind jogger, do SP 6505 to 6507.

Clamp Unit



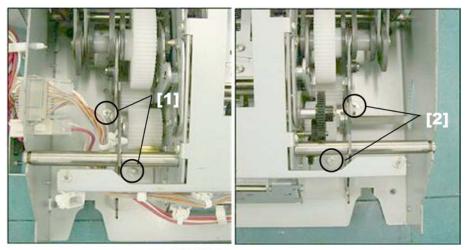
d392r0102a

- 1. Open the right front door and remove the ring cartridge.
- 2. Remove the binder unit from its rails and set it on a flat surface. (IPp.103)
- 3. Separate the pre-bind jogger from the binder unit. (***p.22)
- 4. Remove the clamp unit cover [1] (Fx2).



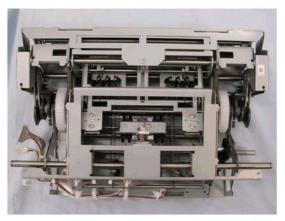
d392r0102b

5. At the lower left corner, disconnect the connectors [1] (x3).



d392r0102c

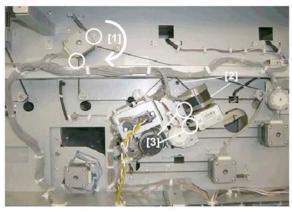
- 6. Disconnect the clamp unit at the bottom.
 - [1] Left (🗗 x2).
 - [2] Right (🗗 x2)



d392r0102e

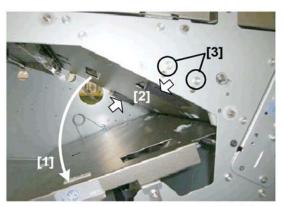
7. Remove the clamp unit from the binder unit and lay it on a flat surface.

Pre-Punch Jog Unit



d392b0305b

- 1. Remove the rear cover. (**p.12)
- 2. Loosen the motor bracket [1] (Fx2).
- 3. While turning the loosened bracket slightly to the right, disconnect the timing belt [2] from the gear.
- 4. Disconnect the motor and sensor [3] (x2).
- 5. Open the right front doors.



d392r0305c

- 6. Lower plate Mc3 [1] so that you can see the side fences [2].
- 7. Push the flaps of the front and rear side fences to the center.
- 8. Remove the screws [3] (** x2).



d392r0305d

9. At the rear, remove the rear screws [1] ($\rat{x2}$).



d392r0305e

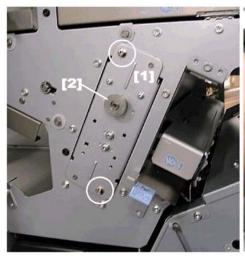
10. Raise the pre-punch jog unit [1] slightly and slowly pull it out of the finisher.



d392r0306a

- 11. Set the pre-punch jogger unit [1] on a flat surface.
- 12. After replacing the pre-punch jog unit, do SP6504. (See "SP6504 Adjustment" in this manual.)

Punch Unit





d392r1101

- 1. Open the left and right front doors.
- 2. Remove the screws of the punch unit [1] (*\beta x2).
- 3. Grasp the knob [2] and pull the punch unit out.

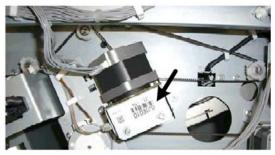


d392r1102

SP6504 Adjustment

These adjustments must be done after one or more of the following items has been replaced:

- Binder unit control board (sub board)
- Ring binder main board
- Pre-punch jogger unit
- Pre-punch jogger HP sensor (S301)



d392r0407a

- 1. The setting for this SP code is written on the white label attached to the plate below the side jogger motor (M302).
- 2. Multiply the value by "0.1". For example, if the value is "-19" then $-19 \times 0.1 = -1.9$
- 3. Make sure the front door of the ring binder unit is closed.
- 4. Go into the SP mode, execute SP6504-1 (A4 LEF) or SP6504-2 (LT LEF) and enter the number.
- 5. With the front door of the unit still close, switch the machine off/on.

Checking the Position of the Punched Holes

1. Close the front door of the Ring Binder.

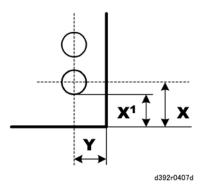


- After the following adjustment, keep the front door of the Ring Binder closed and turn main power switch OFF and ON.
- 1. Do SP6504 and enter the number printed on the label attached to the punch unit.

- Execute SP6504 with the front door of the ring binder unit closed.
- After executing this SP code by sure to cycle the ring binder unit off/on with the front door
- 2. Do a run with the ring binder in the punch only mode (no ring binding).



• Use paper in the weight range 70 to 90 g/m².



 With a punched sheet face-down as shown above, use a micrometer to measure the distances, X, Y, and X¹.

Standard Values

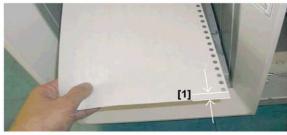
	A4 (mm)	LT (mm)	Note
Х	8.8	12.7	Last hole center to paper edge.
Υ	6	6	Last hole center to paper edge.
X ¹	5.625	9.525	Last hole edge to paper edge.

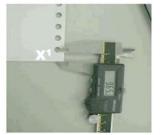


- The distance "Y" is determined by the size of the punch unit (A4 or LT) and cannot be adjusted.
- "Y" is the same distance for both A4 and LT.
- If "Y" is out of adjustment, the punch unit must be replaced.

Hole Position Adjustment

Here is an example of how to adjust X^1 .



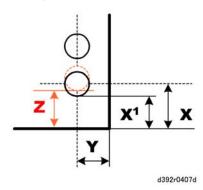


d392r0407b

1. Close the front door of the Ring Binder.



- After the following adjustment, keep the front door of the Ring Binder closed and turn main power switch OFF and ON.
- 2. Use a micrometer to measure X¹ at [1]. If the measurement is not standard, we will call this value Z in the following steps, and the red circle in the following diagram shows the non-standard position of the punch hole.



- 3. In this example, "Z" is measured at "9.65". This does not match the standard for LT ($X^1 = 9.525$).
- 4. Subtract the measured value " \mathbf{Z} " (9.65) from the standard value " \mathbf{X}^1 " (9.525) and multiply it by "2". 9.525 9.65 = -0.125 x 2 = -0.250
- 5. Do SP6504 again and adjust the setting by adding the value derived from the calculation above (in this example "-0.250")
 - The actual adjustment is done by adjusting the movement of the pre-punch jogger fences so
 that the hole-punch position is lowered "-0.125".
 - The firmware does this automatically by dividing the entered value (-0.25) by 2 (-0.125), so 9.65 0.125 = 9.525 mm.
 - If the measured distance "Z" is less than X¹, then the adjustment must raise the hole-punch
 position. In this case, the value of SP6504 must be increased in order to raise the hole
 position.



• Be sure to cycle the ring binder unit off/on with the front door closed after executing SP6504.

Sensors

Pre-Punch Jogger HP Sensor (S301)

- 1. Remove the rear cover. (**p.12)
- 2. Remove the pre-punch jogger unit. (**p.26)



d392r0306a

3. Set the pre-punch jogger unit on a flat surface.



d392r03036f

- 4. Turn over the pre-punch jogger unit
- 5. Remove the pre-punch jogger HP sensor (S301) (€ x1, ▼x1)
- 6. After replacing the pre-punch jogger HP sensor (S301), do SP6504.

Chad Box Sensor (\$308)



d392r0613a

- 1. Remove the rear cover. (**p.12)
- 2. Remove the main control board bracket [1] (\square x 27, \nearrow x8).





d392r0613b

3. Remove the sensor (Fx1, LL x1).

Pre-Bind Jogger Sensors

Side Fence 1 HP Sensor (S601)

- 1. Open the right front door.
- 2. Remove the binder unit from its rails and set it on a flat surface. (IPp.14)

d392r0714a

3. Remove the pre-bind jogger side cover.



d392r0714b

- 4. Disconnect and move aside the harnesses and clamps (🗳 x2, 🞜 x2).
- 5. Remove the screw (🗗 x1).



d392r0714c

- 6. Remove:
 - [1] Sensor bracket (*\bar{x} 1)
 - [2] Sensor (**T** x3, **1** x1)

Paddle Roller HP Sensor (\$602)

- 1. Open the right front door.
- 2. Remove the binder unit from its rails and set it on a flat surface. (IPp.14)
- 3. Separate the pre-bind jogger from the binder unit. (**p.22)





d392r0714d

4. Set the pre-bind jogger unit on its side with the open end up.

5. Remove the screw [1] and sensor bracket (Fx1).



d392r0714e

6. Remove the sensor (▼x3, 🖾 x1)

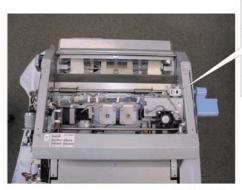
Clamp HP Sensor (S603)

- 1. Open the right front door.
- 2. Remove the binder unit from its rails and set it on a flat surface. (IPp.14)
- 3. Remove the pre-bind jogger left cover. (**p.18)



d392r0714f

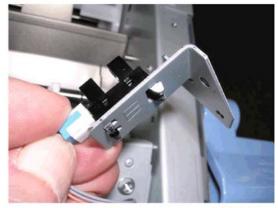
4. Rotate lever Mc7 to lock it.





d392r0714g

5. Remove sensor bracket [1] (*\begin{align*} x \, 1, \ldots x \, 1).



d392r0714h

6. Remove the sensor (□ x1, ¬ x3)

Alignment Pin HP Sensor (S604), Alignment Pin Up Sensor (S610)

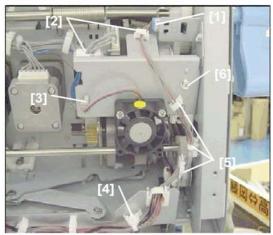
- 1. Open the right front door.
- 2. Remove the binder unit from its rails and set it on a flat surface. (IPp.14)





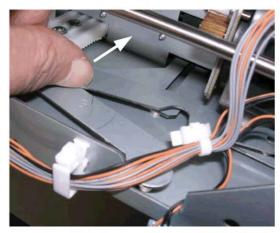
d392r0715a

- 3. Remove the pre-bind jogger left cover.
- 4. Remove the pre-jog binder bottom cover.



d392r0715b

- 5. Remove:
 - [1] 🕰 x1
 - [2] 🖨 x2
 - [3] 🞜 x1
 - [4] 🛱 x2
 - [5] 🖨 x3
 - [6] 🗗 x 1



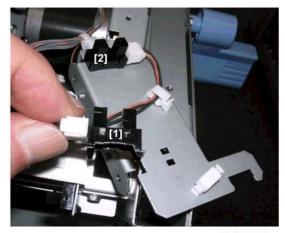
d392r0715d

6. Push up the arms of the scissors lift to raise the actuator away from the sensor on the right.



d392r0715c

7. Under the unit base remove the sensor bracket screws ($\mbox{\ensuremath{\not{p}}} x2\mbox{\ensuremath{)}}.$



d392r0715e

- 8. Remove:
 - [1] Alignment pin HP sensor (S604) (♠x1, ♥x3)
 - [2] Alignment pin up sensor (S610) (♠x1, ♣x1, ▼x3)

Shutter HP Sensor (S605)

- 1. Open the right front door.
- 2. Remove the binder unit from its rails and set it on a flat surface.
- 3. Remove the pre-bind jogger unit bottom cover.





d392r0716a

4. Remove the sensor bracket [1] (Fx1).

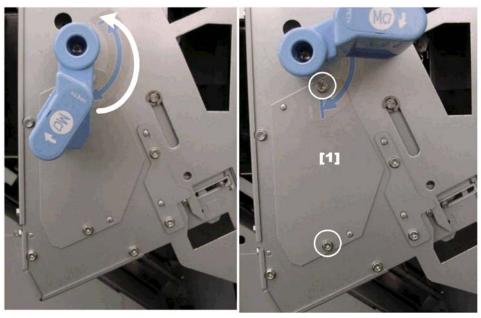


d392r0716b

5. Remove the sensor (▼x3, 📬 x1)

50-Sheet Detection Sensor (S606)

- 1. Open the right front door.
- 2. Pull the binder unit out on its rails.

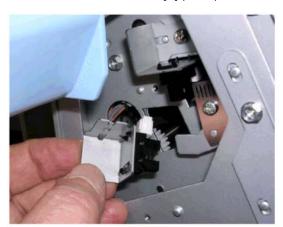


d392r0716c

- 3. Rotate lock lever Mc7 so that you can see the screws of the front cover [1].
- 4. Remove the front cover (Fx2).

d392r0716d

- 5. Lower lever Mc7 [1] to move the actuator [2] away from the sensor.
- 6. Remove sensor bracket screw [3] (Fx1).

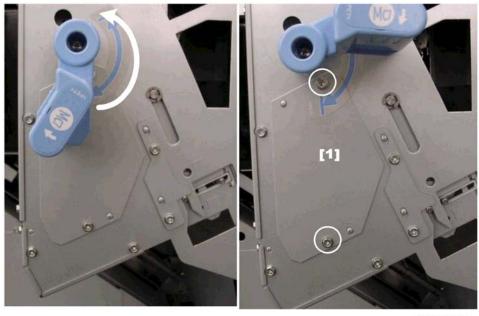


d392r0716e

- 7. Remove the sensor bracket.
- 8. Remove the sensor (x3, x1).

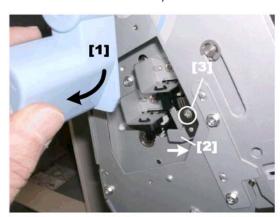
Stack Thickness Sensor (S607)

- 1. Open the right front door.
- 2. Pull the binder unit out on its rails.



d392r0716c

3. Rotate lock lever Mc7 so that you can see the screws of the front cover [1].



d392r0716d

- 4. Lower lever Mc7 [1] to move the actuator [2] away from the sensor.
- 5. Remove sensor bracket screw [3] (\mathcal{F} x1).

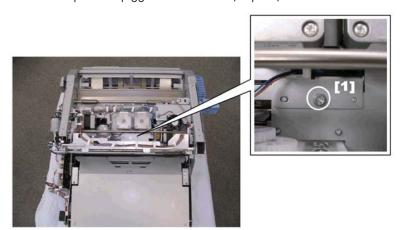


d392r0716f

- 6. Remove the sensor bracket.
- 7. Remove the sensor ($\mathbf{T} \times 3$, $\mathbf{U} \times 1$).

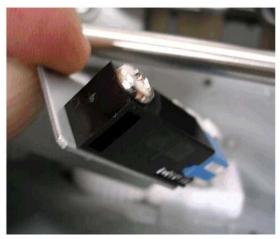
Paper LE Detect Sensor (\$609)

- 1. Open the right front door.
- 2. Remove the binder unit from its rails and set it on a flat surface. (IPp.14)
- 3. Remove the pre-bind jogger left cover. (Pp.18)
- 4. Remove the pre-bind jogger bottom cover. (**p.19)



d392r0717a

5. Remove the sensor bracket [1] (Fx1).



d392r0717b

6. Remove the sensor (₹x1, 🖼 x1)

Stack Tamper HP Sensor (S612)

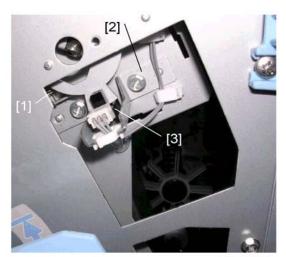
- 1. Open the right front door.
- 2. Pull the binder unit out on its rails.





d392r0717c

3. Remove sensor cover [1] (*\bar{x} x 1).



d392r0717d

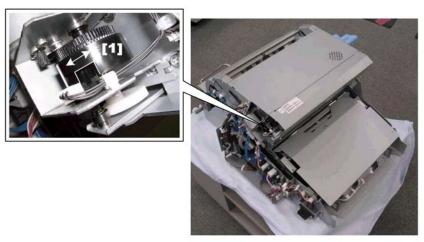
4. Remove:

[1] Spring x1

- [2] Sensor bracket 🗗 x2
- [3] Sensor (♠x1, ☎x1, ▼x3)

Shutter HP Sensor (S613)

- 1. Open the right front door.
- 2. Remove the binder unit from its rails and set it on a flat surface.

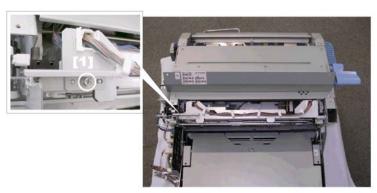


d392r0718a

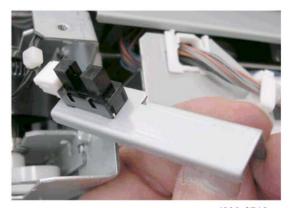
- 3. Turn the actuator [1] to the left or right until the cutout is over the sensor.
- 4. Remove the sensor (♠x1, ♣x1, ▼x3).

Runout Roller HP Sensor (S614)

- 1. Open the right front door.
- 2. Remove the binder unit from its rails and set it on a flat surface.
- 3. Remove the pre-bind jogger bottom cover.



d392r0718b



d392r0718c

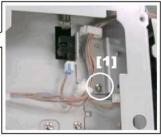
5. Remove the sensor (□ x1, ¬ x3).

Ring Supply Unit Sensors

Ring Cartridge Sensor (\$801)

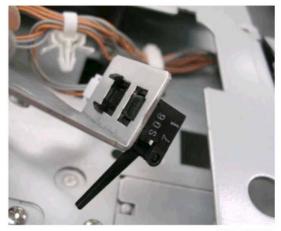
- 1. Open the right front door.
- 2. Remove the binder unit from its rails. (1 p. 14)
- 3. Lay the binder unit on its left side, and remove the ring supply unit right cover. (**p.21)





d392r0719h

Remove the sensor bracket [1] (♠x1, ♠x1).



d392r0719j

5. Remove the sensor (□ x1, ¬ x3).

Ring Cartridge Type Sensor (\$805)

- 1. Open the right front door.
- 2. Remove the binder unit from its rails. (15 p. 14)
- 3. Lay the binder unit on its left side, and remove the ring supply unit right cover. (**p.21)





d392r0719h



d392r0719i

5. Remove the sensor [1] (***** x1, **□** x, **▼** x3).

Rings Reversed Sensor (\$802)

- 1. Open the right front door.
- 2. Remove the binder unit from its rails. (**p.14)
- 3. Lay the binder unit on its left side, and remove the ring supply unit right cover. (**p.21)



d392r0720a

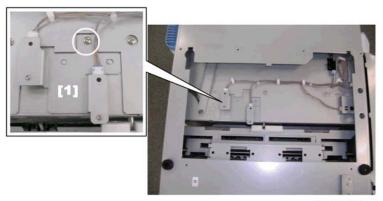


d392r0720b

5. Remove the sensor [1] (\mathfrak{L} x1, \mathfrak{F} x1).

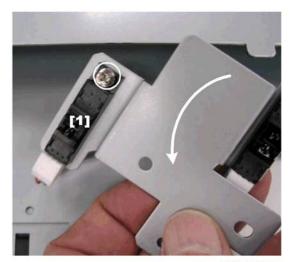
50/100 Ring Detection Sensor (\$804)

- 1. Open the right front door.
- 2. Remove the binder unit from its rails. (15 p. 14)
- 3. Lay the binder unit on its left side, and remove the right cover. (**p.21)



d392r0720c

4. Remove sensor bracket [1] (*\bar{x} x 1).

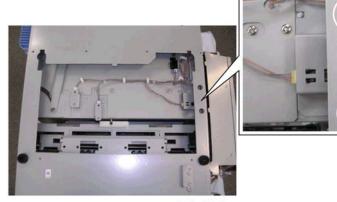


d392r0720d

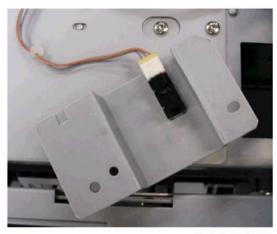
5. Remove the sensor [1] (□ x1, x1).

Ring Near-End Sensor (\$803)

- 1. Open the right front door.
- 2. Remove the binder unit from its rails. (*** p.14)
- 3. Lay the binder unit on its left side and remove the right cover. (IPp.21)



d392r0720e



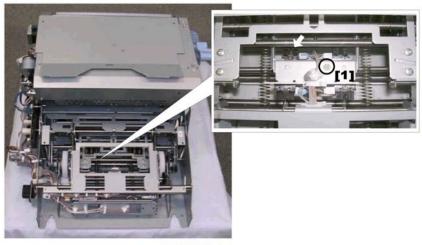
d392r0720f

5. Disconnect the sensor (□ x1, ¬x3).

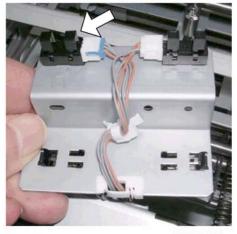
Clamp Unit Sensors

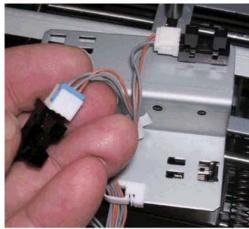
Binder Unit HP Sensor (\$701)

- 1. Open the right front door.
- 2. Remove the binder unit from its rails and set it on a flat surface. (IPp.14)
- 3. Remove the clamp unit cover. (**p.18)



d392r0719a1



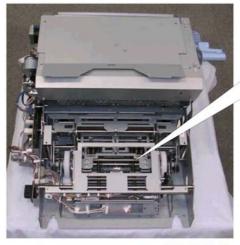


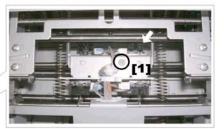
d392r0719b

- 5. Pull the bracket straight out.
- 6. Remove the sensor (€ x1, ▼x3).

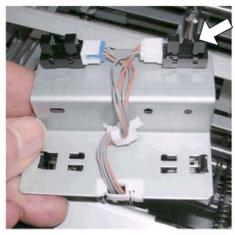
Bind Timing Sensor (S702)

- 1. Open the right front door.
- 2. Remove the binder unit from its rails and set it on a flat surface. (IPp.14)
- 3. Remove the clamp unit cover. (**p.18)





d392r0719a2





d392r0719d

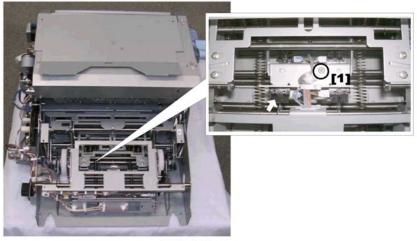
- 5. Pull the bracket straight out.
- 6. Remove the sensor (

 x1,

 x3).

Ring Switch HP Sensor (S706)

- 1. Open the right front door.
- 2. Remove the binder unit from its rails and set it on a flat surface. (IPp. 14)
- 3. Remove the clamp unit cover. (**p.18)



d392r0719a3



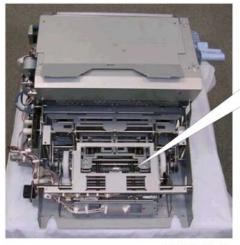


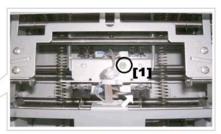
d392r0719e

- 5. Pull the bracket straight out and turn it over.
- 6. Remove the sensor (€ x1, ▼x3).

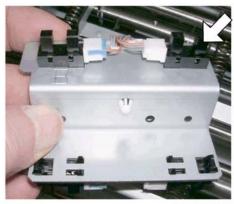
Ring Switch Timing Sensor (\$707)

- 1. Open the right front door.
- 2. Remove the binder unit from its rails and set it on a flat surface. (IPp.14)
- 3. Remove the clamp unit cover. (**p.18)





d392r0719a4



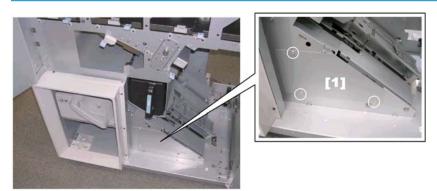


d392r0719f

- 5. Pull the bracket straight out and turn it over.
- 6. Remove the sensor (€ x1, ▼x3).

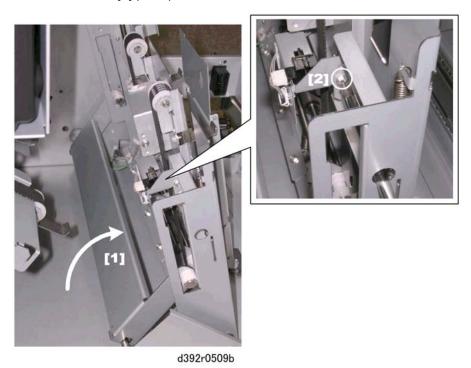
Output Belt Sensors

Output Belt 1 HP Sensor (\$401)



d392r0509a

- 1. Open the right and left front doors.
- 2. Remove base cover [1] (🗗 x3).



- 3. Raise output tray 1 [1] until it stops and remains open.
- 4. Remove the sensor bracket [2] (Fx1).



d392r0509d

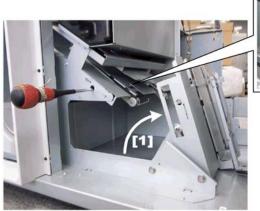
5. Remove the sensor (♠x1, ♣x1, ▼x3).

Output Belt 2 HP Sensor (\$402)



d392r0509a

- 1. Open the right and left front doors.
- 2. Remove base cover [1] (🗗 x3).





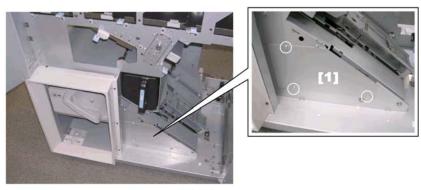
d392r905

- 3. Raise output tray 1 [1] until it stops and remains open.
- 4. Remove the sensor bracket [2] (🎉 x1).



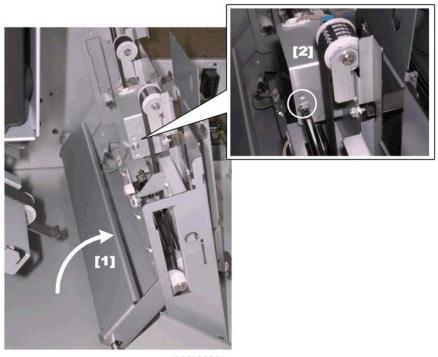
d392r0509f

Output Belt Unit Entrance Sensor (\$404)



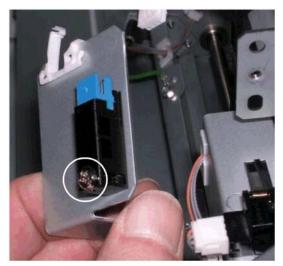
d392r0509a

- 1. Open the right and left front doors.
- 2. Remove base cover [1] (🗗 x3).



d392r0509g

- 3. Raise output tray 1 [1] until it stops and remains open.
- 4. Remove the sensor bracket [2] (🗗 x 1).



d392r0509h

5. Remove the sensor (🖨 x1, 🗗 x1, 🎉 x1).

Output Belt Rotation HP Sensor (\$403)

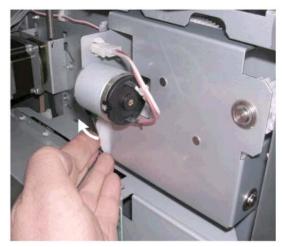


d392r0511a

1. Remove the rear cover. (***p.12)

2. At the front, remove the stacker cover [1].

The screw at [2] has a washer. Do not lose the washer. Be sure to reinstall the screw with the washer at this corner.



d392r0511b

3. Spin the timing belt of the tray lift motor to lower the tray. (This may take about 1 minute.)



d392r0511c

4. Remove the screws of the panel [1] (** x4).



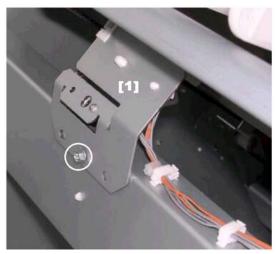
d392r0511d

5. At the back of the finisher, remove the panel rear screw (Fx1).



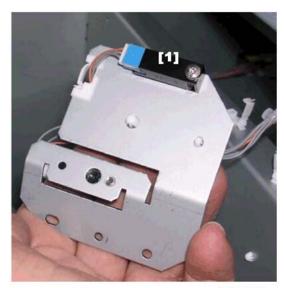
d392r0511e

6. Remove the panel.



d392r0511f

7. Remove the sensor bracket [1] ($\mbox{\it P}$ x1).

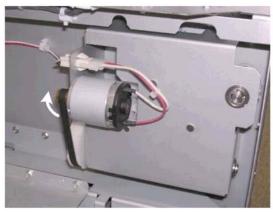


d392r0511g

8. Remove the sensor (x1, \nearrow x1, x1).

Stacker Unit Sensors

Obstacle Detection Switch (\$506)



d392r0512a

- 1. Remove the rear cover. (**p.12)
- 2. Spin the timing belt of the tray lift motor to lower the tray. (This may take about 1 minute.)



d392r0512b

3. Remove the cover (*\bar{x} x2).



d392r0512c1



d392r0512d

5. Remove the micro-switch (Standoff x1, 🗗 x1, 🎉 x2).

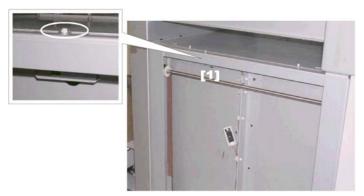
Book Position Sensor Pair (\$507E/\$507R)

Book Position Sensor (S507E)



d392r0508a

1. Remove panel [1] from the left side of the finisher ($\mbox{\ensuremath{\not\sim}} x4$).



d392r0508e

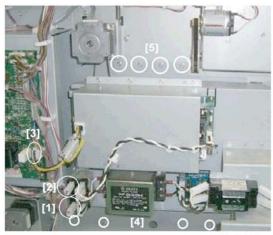
2. Remove the sensor bracket [1] ($\mathscr{F} \times 1$).



d398r0508f

3. Remove the sensor (x1, *x1)

Book Position Sensor (S507R)



d392r0510a

- 1. Remove the rear cover.
- 2. Remove:
 - [1] Red connector (x1)
 - [2] Black connector (🞜 x1)
 - [3] Yellow, black connector (🛍 x1)
 - [4] Lower screws (Fx4)
 - [5] Upper screws (🗗 x4)

d392r0510b

3. Remove the sensor bracket (Fx1).

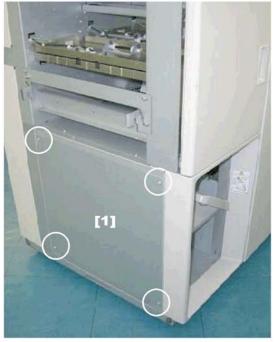


d392r0510c

4. Remove the sensor ($\mathbf{L}^{1} \times 1$, $\mathscr{F} \times 1$).

Stack Height Sensor Pair (S052E/S502R)

Stack Height Sensor (S502E)



d392r0508a

1. Remove panel [1] from the left side of the finisher ($\slash\hspace{-0.6em}P$ x4).



2. Remove the sensor [1] ($\mathfrak{L} \mathfrak{I} \times 1$, $\mathfrak{F} \times 1$).

Stack Height Sensor (S502R)



d392r0511a

- 1. Remove the rear cover. (**p.12)
- 2. At the front, remove the stacker cover [1].

The screw at [2] has a washer. Do not lose the washer. Be sure to reinstall the screw with the washer at this corner.



d392r0511b

3. Spin the timing belt of the tray lift motor to lower the tray. (This may take about 1 minute.)



d392r0511c

4. Remove the screws of the panel [1] (\rat{p} x4).



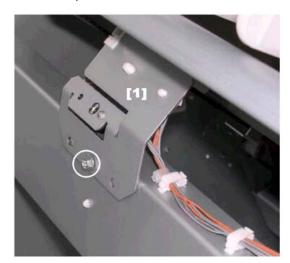
d392r0511d

5. At the back of the finisher, remove the panel rear screw ($\slash\hspace{-0.6em}P x 1$).



d392r0511e

6. Remove the panel.



d392r0511f

7. Remove the sensor bracket [1] (🏲 x1).



d392r0511h

8. Remove the sensor (🖨 x1, 🎉 x1, 📬 x1).

Stacker Detect Sensor (\$504)



d392r0512a

- 1. Remove the rear cover. (**p.12)
- 2. Spin the timing belt of the tray lift motor to lower the tray. (This may take about 1 minute.)



d392r0512b

3. Remove the cover (🗗 x2).



d392r0512c2

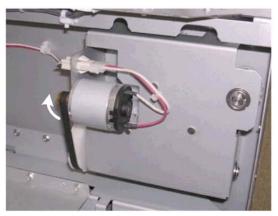
4. Remove the sensor bracket [1] (Fx2).



d392r0512e

5. Remove the sensor (x, x1).

Tray Detection Sensor (\$505)



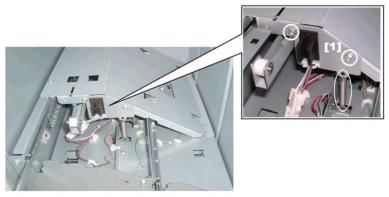
d392r0512a

- 1. Remove the rear cover. (IPp.12)
- 2. Spin the timing belt of the tray lift motor to lower the tray. (This may take about 1 minute.)



d392r0512b

3. Remove the cover (*x2).



d392r0512c3

4. Remove the sensor bracket [1] (🗗 x2, Spring 1).



d392r0512f

5. Remove the sensor (🛱 x1, 📬 x1).

Motors

Pre-Punch Jog Unit Motor

Side Jogger Motor (M302)

- 1. Remove the rear cover. (Pp.12)
- 2. Remove the pre-punch jogger unit. (***p.26)



d392r0306a

3. Set the pre-punch jogger unit on a flat surface.



d392r0306b

4. Turn the pre-punch jog unit over.

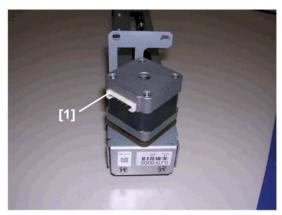




d392r0306c

5. Remove the motor (☐ x1, ♣x1, ♣x2).

Reinstallation



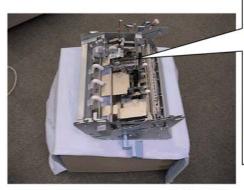
d392r0306e

1. Reattach the motor as shown above, so that the motor connector [1] is positioned properly.

Pre-Bind Jogger Motors

Paddle Roller Motor (M601)

- 1. Open the right front door.
- 2. Remove the binder unit from its rails and set it on a flat surface. (IPp.14)
- 3. Separate the pre-bind jogger unit from the binder unit. (**p.22)





d392r0721a

- 4. Turn the pre-bind jogger unit onto its left side.
- 5. Disconnect the motor (Fx2, Ox1).



d392r0721b

6. Remove the motor (x1).

Alignment Pin Motor (M602)

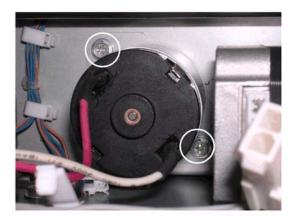
- 1. Open the right front door.
- 2. Remove the binder unit from its rails and set it on a flat surface. (IPp.14)
- 3. Remove the pre-bind jogger left cover. (IPp.18)





d392r0721c

4. Disconnect the motor (♠x2, ♣x1).



d392r0721d

5. Remove the motor bracket and motor ($\mbox{\em psi} x2$).



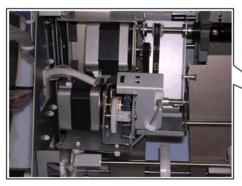


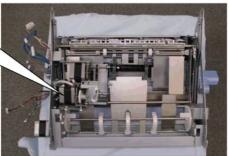
d392r0721e

6. Remove the motor bracket (Fx2).

Paddle Roller Lift Motor (M603)

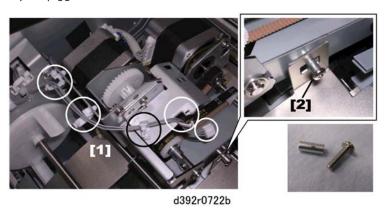
- 1. Open the right front door.
- 2. Remove the binder unit from its rails and set it on a flat surface. (**p.14)
- 3. Separate the pre-bind jogger from the binder unit. (***p.22)



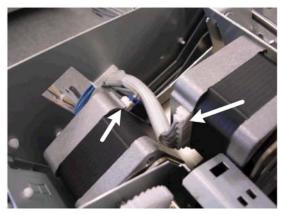


d392r0722a

4. Lay the jogger unit on its left side.



- 6. Remove the screw and sleeve [2] (\mathcal{F} x1).



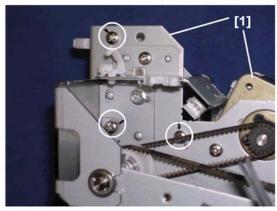
d392r0722c

7. Disconnect both motors (🗗 x2).



d392r0722d

8. Remove the paddle roller lift assembly.



d392r0722e

9. Disconnect the motor and bracket [1] and remove them from the paddle roller lift assembly (\mathcal{F} x3).



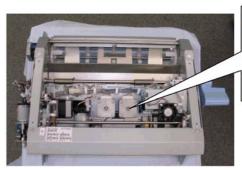


d392r0722f

10. Remove the motor from the bracket (\mathcal{F} x2).

Side Fence 1 Motor (M604)

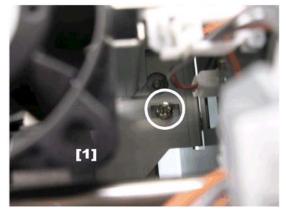
- 1. Open the right front door.
- 2. Remove the binder unit from its rails and set it on a flat surface. (IPp.14)





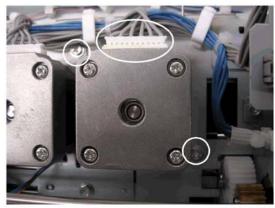
d392r0723a

3. Remove the pre-bind jogger left cover.



d392r0723c

4. Below the left corner of the fan [1], loosen (Do not remove!) the screw to release tension on the timing belt.



d392r0723b

5. Disconnect the motor and remove the screws (\square x1, \nearrow x2).



d392r0723d

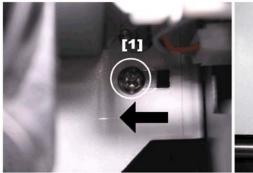
6. Remove the motor.



d392r0723e

7. Separate the bracket and the motor (Fx2).

Re-installation





d392r0723f

- Make sure the tension screw [1] is completely to the left, then tighten it.
 This provides maximum exposure of the belt [2] below the hole, and prevents it from moving when the motor is re-installed.
- 2. Reinstall the motor (x1, x2).
- 3. Loosen the tension screw, push it to the right to apply tension to the belt, then re-tighten the screw.

Side Fence 2 Motor (M606)

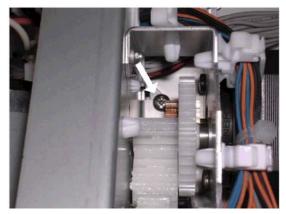
- 1. Open the right front door.
- 2. Remove the binder unit from its rails and set it on a flat surface. (IPp. 14)





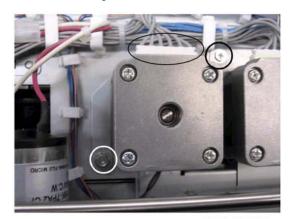
d392r0723g

3. Remove the pre-bind jogger left cover.



d392r0723i

4. Behind the white gears, loosen (Do not remove!) the screw to release tension on the timing belt.



d392r0723h

5. Disconnect the motor and remove the screws (🕮 x1, 🗗 x2).



d392r0723j

6. Remove the motor.

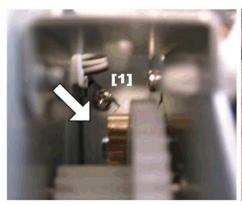


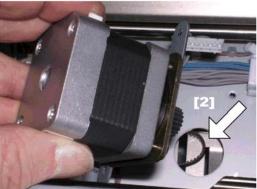


d392r0723k

7. Separate the bracket and the motor (Fx2).

Re-installation





d392r0723l

- Make sure the tension screw [1] is completely to the down, then tighten it.
 This provides maximum exposure of the belt [2] below the hole, and prevents it from moving when the motor is re-installed.
- 2. Reinstall the motor (x1, x2).
- 3. Loosen the tension screw, push it up to apply tension to the belt, then re-tighten the screw.

Spine Clamp Motor (M605)

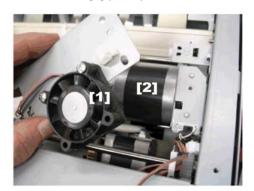
- 1. Open the right front door.
- 2. Remove the binder unit from its rails and set it on a flat surface. (**p.14)
- 3. Remove the pre-bind jogger left cover. (**p.34)





d392r0724a

- 4. Remove the connectors and harness clamps (🗗 x2, 🖨 x6).
- 5. Remove screw [1] (*\bar{x} x 1).



d392r0724b

6. Remove the motor and bracket [1] to expose the motor [2].



d392r0724c

- 7. Turn lever Mc7 to expose the front cover.
- 8. Remove the front cover (Fx2).





d392r0724d

9. Remove the screws [1] and remove the motor bracket [2] (F x2).



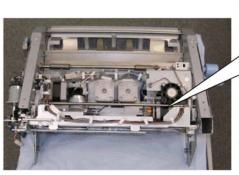


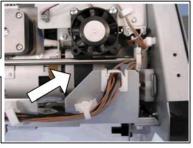
d392r0724e

10. Separate the bracket and the motor (Fx2).

Runout Roller Motor (M609)

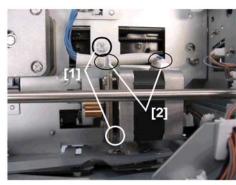
- 1. Open the right front door.
- 2. Remove the binder unit from its rails and set it on a flat surface. (IPp.14)





d392r0726a

- 3. Remove the pre-bind jogger left cover. (**p.18)
- 4. Remove the pre-bind jogger bottom cover. (**p.19)
- 5. Remove the spine clamp motor (M605).





d392r0726b

- 6. Disconnect:
 - [1] Motor bracket (*x2)
 - [2] Motor (🖟 x 1, 🖽 x 1)
- 7. Remove the motor bracket with the motor [3].



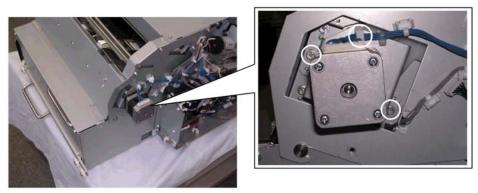


d392r0726c

8. Separate the bracket and the motor (\mathcal{F} x2).

Stack Tamper Motor (M607)

- 1. Open the right front door.
- 2. Remove the binder unit from its rails and set it on a flat surface. (IPp. 14)



d392r0724f

3. Disconnect the motor bracket ($\mbox{\em psi} x2, \mbox{\em psi} x1, \mbox{\em psi} x1).$



d392r0724g

4. Remove the motor bracket.



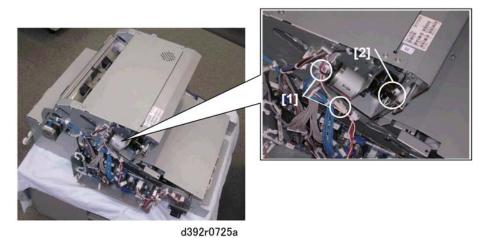
5.00:

d392r0724h

5. Separate the bracket and the motor ($\slash\hspace{-0.4em}P$ x2).

Shutter Motor (M608)

- 1. Open the right front door.
- 2. Remove the binder unit from its rails and set it on a flat surface. (IPp.14)

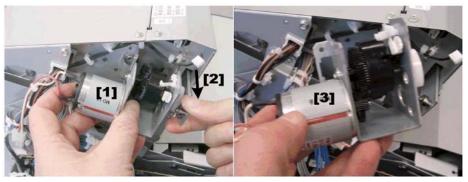


- 3. Disconnect:
 - [1] Motor [1] (🗟 x 1, 📬 x 1)
 - [2] Sensor [2] (🕸 x 1, 🞜 x 1)



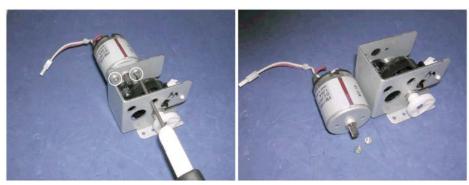
d392r0725b

4. Disconnect the motor bracket (Fx2).



d392r0725c

5. While holding the motor [1] on the left, pull out the spring-loaded cam follower [2] then remove the bracket [3] with the motor.

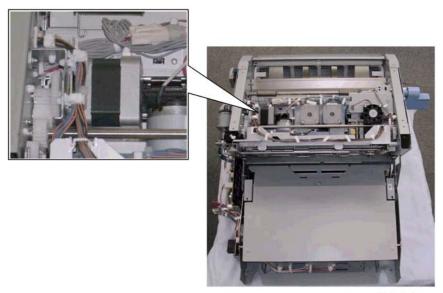


d392r925d

6. Separate the bracket and the motor (*\varphi x2).

Runout Press Roller Motor (M610)

- 1. Open the right front door.
- 2. Remove the binder unit from its rails and set it on a flat surface. (IPp.14)



d392r0727a

3. Remove the pre-bind jogger left cover.



d392r0727b

4. Disconnect the pin alignment motor [1], and the runout press roller motor [2] (□ x2, □ x5, □ x1).



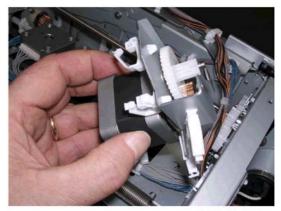
d392r0727c

5. Disconnect the pin alignment motor bracket (** x2).



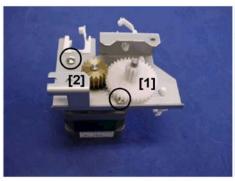
d392r0727d

6. Remove the pin alignment motor.



d392r0727e

7. Remove the runout press roller motor bracket.



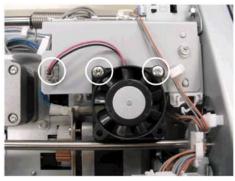


d392r0727f

8. Remove the timing gear [1], then separate the bracket [2] and the motor (\mathcal{F} x2).

Fan Motor (M611)

- 1. Open the right front door and pull out the binder unit.
- 2. Remove the left cover of the pre-bind jogger unit. (***p.18)





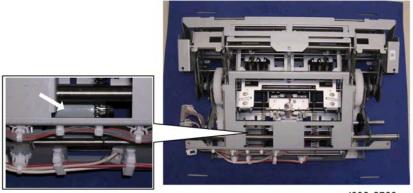
d392r0728a

3. Remove the fan motor (x1, *x2).

Clamp Unit Motors

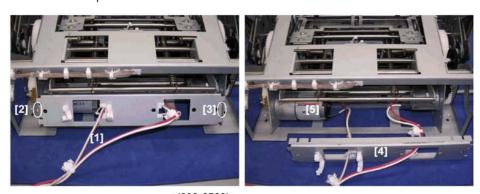
Clamp Unit Motor (M701)

- 1. Open the right front door.
- 2. Remove the binder unit from its rails and set it on a flat surface. (**p.14)



d392r0729a

3. Remove the clamp unit.



d392r0729b

- 4. Release the harnesses [1] (\$\vec{*}\ x2, \lefthat{x2} x4).
- 5. Remove screws [2] and [3] from the left and right ends of the brace.
- 6. Pull off the brace [4] to expose the motor [5].



d392r0729c

7. Mark the shaft and timing gear [1] with a black marker. (This will make it easier to reattach the gear at reinstallation.)

- 8. Remove the e-ring [2] and pull off the gear.
- 9. Remove the motor screws [3].

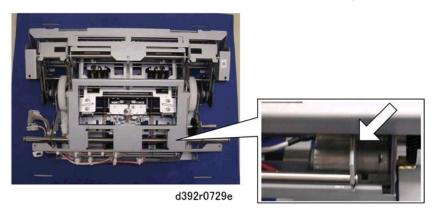


d392r0729d

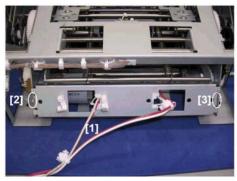
10. Remove the motor.

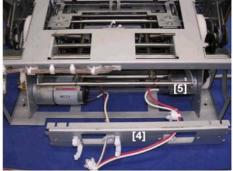
50/100 Clamp Adjust Motor (M702)

- 1. Open the right front door.
- 2. Remove the binder unit from its rails and set it on a flat surface. (IPp.14)



3. Remove the clamp unit. (***p.24)





d392r0729f

- 4. Release the harnesses [1] (\$\overline{\Pi}\$ x2, \$\overline{\Pi}\$ x4).
- 5. Remove screws [2] and [3] from the left and right ends of the brace.
- 6. Pull off the brace [4] to expose the motor [5].





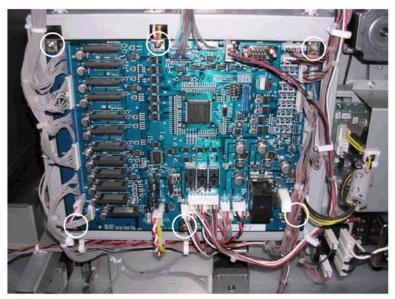
d392r0729g

7. Disconnect the harnesses and remove the motor (Fx2). (Fp.10)

Boards

Main Control Board

1. Remove the rear cover. (Pp.12)



d392r1103

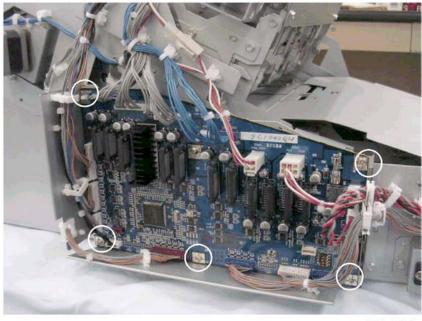
- 2. Remove the main control board (🗟 xAll, 🎉 x5, 🎉 x1 at upper right corner).
- 3. After you install the new board, do SP6504 to SP6507.

- When adjusting SP6504, close the front door of the Ring Binder.
- After SP6504 adjustment, keep the front door of the Ring Binder closed and turn main power switch OFF and ON.

Binder Control Board

Removing the Binder Control Board

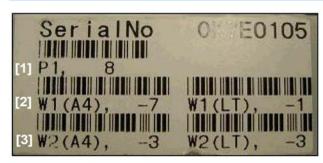
- 1. Open the right front door.
- 2. Remove the binder unit from its rails and set it on a flat surface. (**p. 14)



d392r1104

- 3. Remove the binder control board from the side of the binder unit (🖨 x All, 🎉 x4, 👼 x1 at upper left corner).
- 4. Install the new board.

Doing the SP adjustments



d392r0103b

- 1. Locate the label attached to the bottom cover of the pre-bind jogger unit (shown above).
- 2. Enter the SP mode and enter the values on the label.
 - Do SP6505 and enter the value of the 1st line [1].
 - Do SP6506 and enter the 1st value of the 2nd line [2] for A4 or the 2nd value for LT.
 - Do SP6507 and enter the 1st value of the 3rd line [3] for A4 or the 2nd value for LT.



- The A4 punch unit must be installed for punching and binding A4 sheets; the LT punch unit
 must be installed for punching and binding LT sheets. Also, the proper size rings (A4 or LT)
 must be installed in the ring cartridge.
- 3. Also, input the value of SP6504.

PSU

1. Remove the rear cover. (Pp.12)



d392r1105

2. Remove the protection plate (🖨 x2, 🖨 x1, 🎉 x8).



٦

3. Remove the PSU (♠x1, ♠x5).

MEMO

MEMO

