

# SERVICE MANUAL



## EPSON EPL-N2700 Optional Units

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# PREFACE

This manual describes basic functions, theory of electrical and mechanical operations, maintenance and repair procedures of EPSON EPL-N2700 Optional Units. The instructions and procedures included herein are intended for the experienced repair technicians, and attention should be given to the precautions on the preceding page. The chapters are organized as follows:

## **PCHAPTER 1. DOUBLE CASSETTE UNIT**

*Describes the step-by-step procedures for disassembling and assembling the Double Cassette Unit.*

## **CHAPTER 2. DUPLEX UNIT**

*Describes the step-by-step procedures for disassembling and assembling the Duplex Unit.*

## **CHAPTER 3. LCC UNIT**

*Describes the step-by-step procedures for disassembling and assembling the LCC Unit.*

## **CHAPTER 4. 5-BIN UNIT**

*Describes the step-by-step procedures for disassembling and assembling the 5-Bin Unit.*

## **CHAPTER 5. 10-BIN UNIT**

*Describes the step-by-step procedures for disassembling and assembling the Double Cassette Unit.*

## **CHAPTER 6. Operating Principles for Optional Units**

*Explains the operating principles of each optional unit.*

# Revision Status

Revision	Issued Date	Description
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**CHAPTER**

**1**

**DOUBLE CASSETTE UNIT**



## 1.1 Installing the Double Cassette Unit

This section describes how to install the Double Cassette Unit to the printer main body. Note you are required to remove any optional unit such as the Double Cassette Unit when servicing the printer. The procedure for removing the Double Cassette Unit is not included since you can remove it by reversing the installation procedure.

1. Open the packing carton and get a Double Cassette Unit and the user's manual.

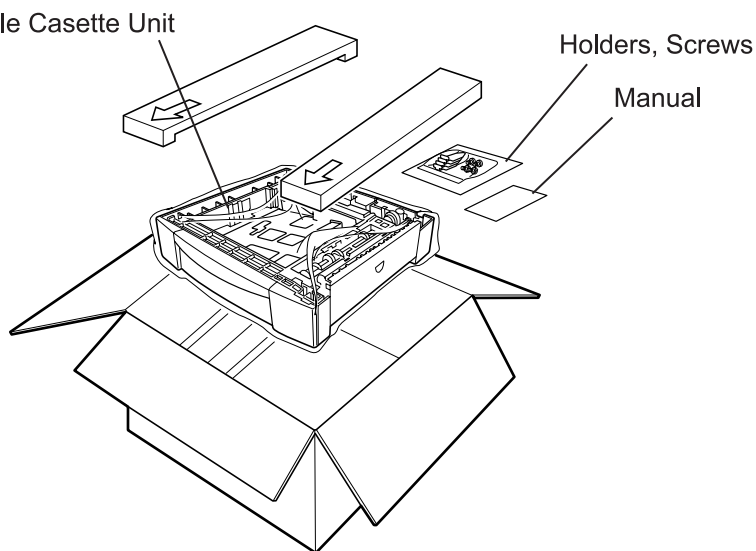


Figure 1-1. Unpacking



After removing the packing materials, please keep them out of children's reach.

2. Pull out the paper cassette and remove the protection materials.

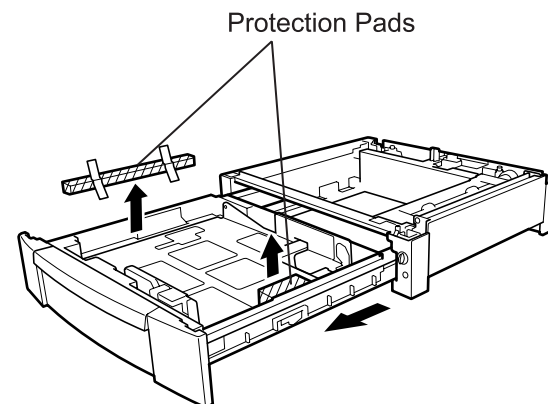


Figure 1-2. Removing the Protection Pads

3. Turn the printer power off and disconnect the AC power cable and interface cable.
4. Remove the bottom cover from the bottom part of the printer.

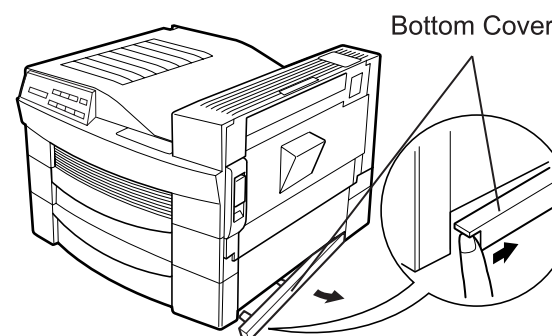


Figure 1-3. Bottom Cover Removal

- Place the printer main body on the Double Cassette Unit.

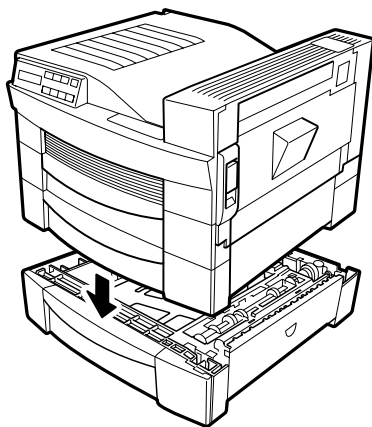


Figure 1-4. Placing the Printer on the Double Cassette Unit

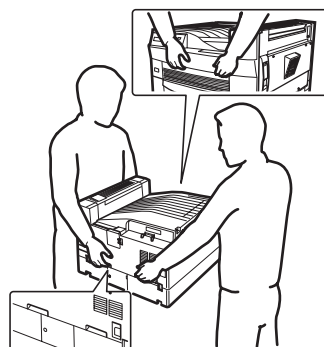


When placing the printer, make sure the following:

- The blue levers on the cassette and the printer are facing in the same direction.
- All corners of the printer are properly aligned with the corresponding ones of the cassette unit.



2 people are required to lift the printer as shown in the figure.



- Attache the bottom cover to the bottom part of the Double Cassette Unit.

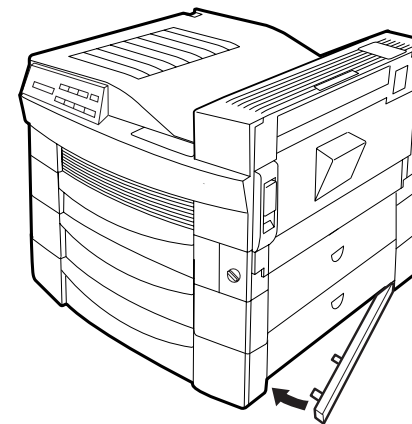


Figure 1-5. Installing the Bottom Cover

- Secure the corners for the printer and the Double Cassette Unit with the holders and screws (1603).

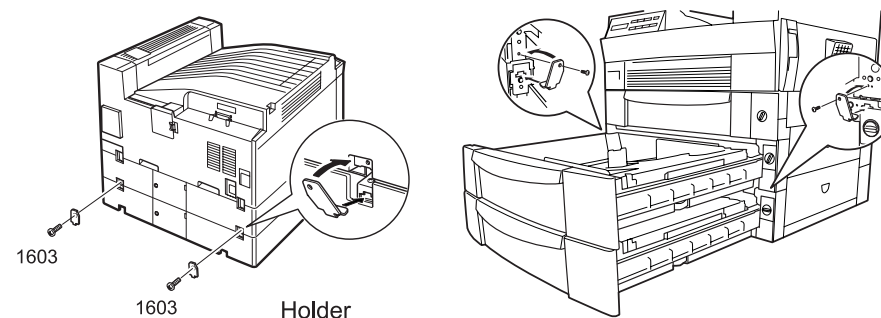


Figure 1-6. Attaching the Holders

- Connect the interface cable and the AC power cable to the printer and turn the printer on.

## 1.2 Disassembly and Assembly of the Double Cassette Unit

This section provides the disassembly procedure for the Double Cassette Unit. Unless otherwise specified, assembly can be performed by following the disassembly procedure in reverse order.

### 1.2.1 Paper Take-up Roller Removal

1. Release the lock on the Paper Take-up Roller and slide the roller along the axle plate to remove the roller.

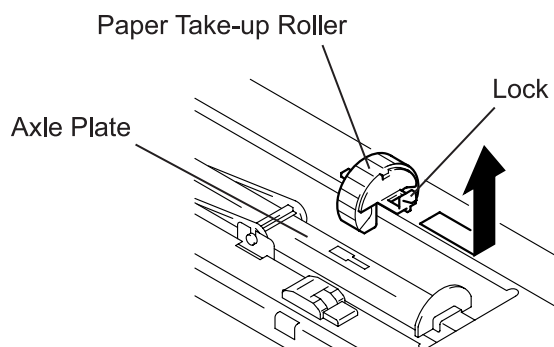
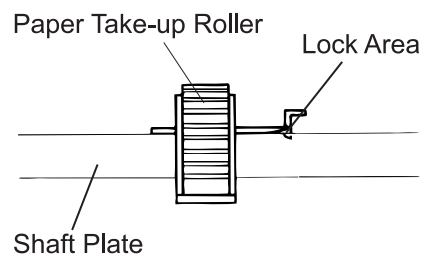


Figure 1-7. Paper Take-up Roller Removal



When installing the Paper Take-up Roller, ensure the roller is securely locked as shown in the figure below.



If you have replaced the Paper Take-up Roller, perform “LC2 Counter Clear” in the maintenance menu. In case 2 Double Cassette Unit are connected, perform “LC3 Counter Clear” as well.

### 1.2.2 Paper Empty Sensor Removal

1. Release three hooks attaching the holder to the guide plate and remove the holder. (See Figure 1-8.)
2. Remove the screw (3501) securing the paper empty sensor bracket to the guide plate. (See Figure 1-8.)
3. Remove the stopper for the Paper Empty Sensor and remove the sensor. (See Figure 1-8.)
4. Disconnect the harness from the Paper Empty Sensor.

### 1.2.3 Paper Near Empty Sensor Removal

1. Release three hooks attaching the holder to the guide plate and remove the holder.
2. Remove the screw (3501) securing the paper near empty sensor bracket to the guide plate.
3. Remove the stopper for the Paper Near Empty Sensor and remove the sensor.
4. Disconnect the harness from the Paper Near Empty Sensor.

### 1.2.4 Paper Feed Sensor Removal

1. Remove the screw (3501) securing the paper feed sensor bracket to the guide plate and remove the bracket.
2. Remove the stopper for the Paper Feed Sensor and remove the sensor.
3. Disconnect the harness from the Paper Feed sensor.

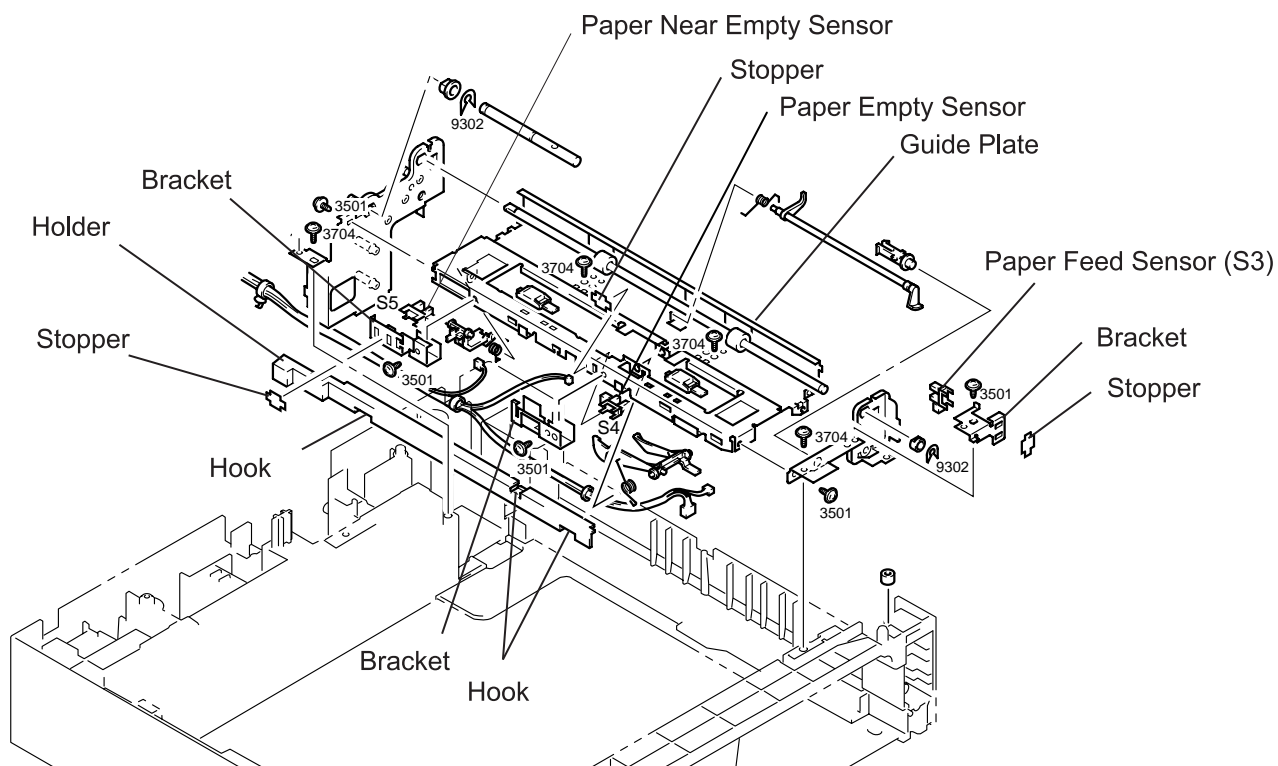


Figure 1-8. Removal of the Paper Empty / Paper Near Empty / Paper Feed Sensors

### 1.2.5 Paper Size Sensor (Paper Size Switch) Removal

1. Remove three screws (3704) securing the paper size sensor bracket to the frame in the Double Cassette Unit, and remove the bracket along with the paper size sensor.
2. Remove the screw (3501) securing the paper size sensor cover to the bracket and remove the cover from the bracket.
3. Release the hook securing the Paper Size Sensor to the inner bracket and remove the sensor from the bracket.
4. Disconnect the harness from the Paper Size Sensor.

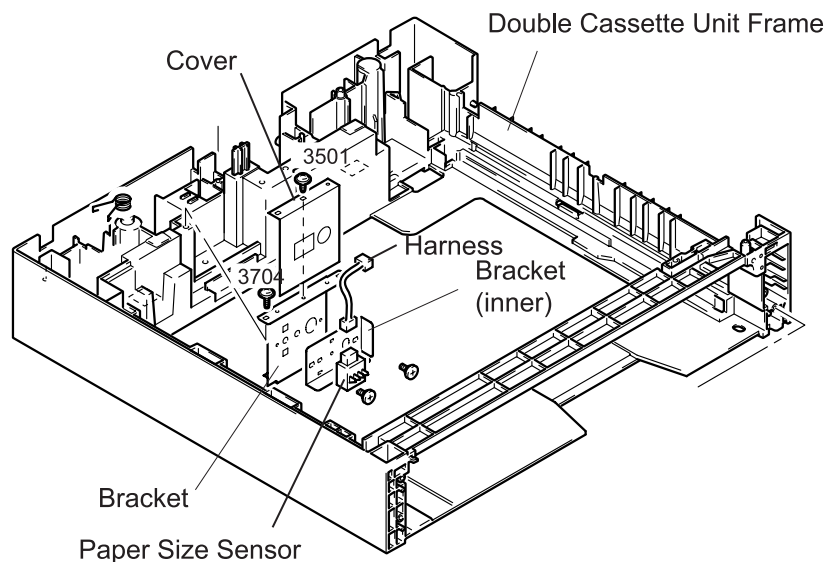


Figure 1-9. Paper Size Sensor Removal

### 1.2.6 Controller Board (PWB-A) Removal

1. Remove the screw (3727) securing the cover and remove the cover.
2. Remove harnesses from the connectors on the PWB-A.
3. Remove two screws (3501) securing the PWB-A to the bracket and the PWB support, and remove the PWB-A.

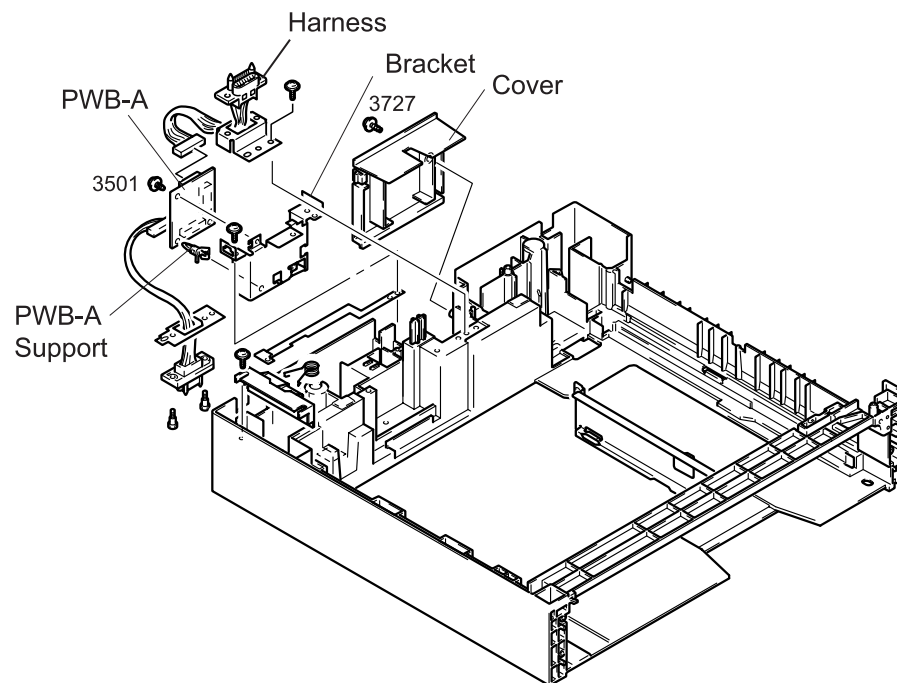


Figure 1-10. PWB-A Removal

## 1.2.7 Paper Take-up Solenoid Removal

1. Remove the tension spring hooked to the gear 31T.
2. Remove the screw (3501) securing the paper take-up solenoid cover to the bracket and remove the cover.
3. Remove the screw (3501) securing the Paper Take-up Solenoid to the bracket and remove the solenoid from the bracket.
4. Disconnect the harness from the connector on the solenoid.

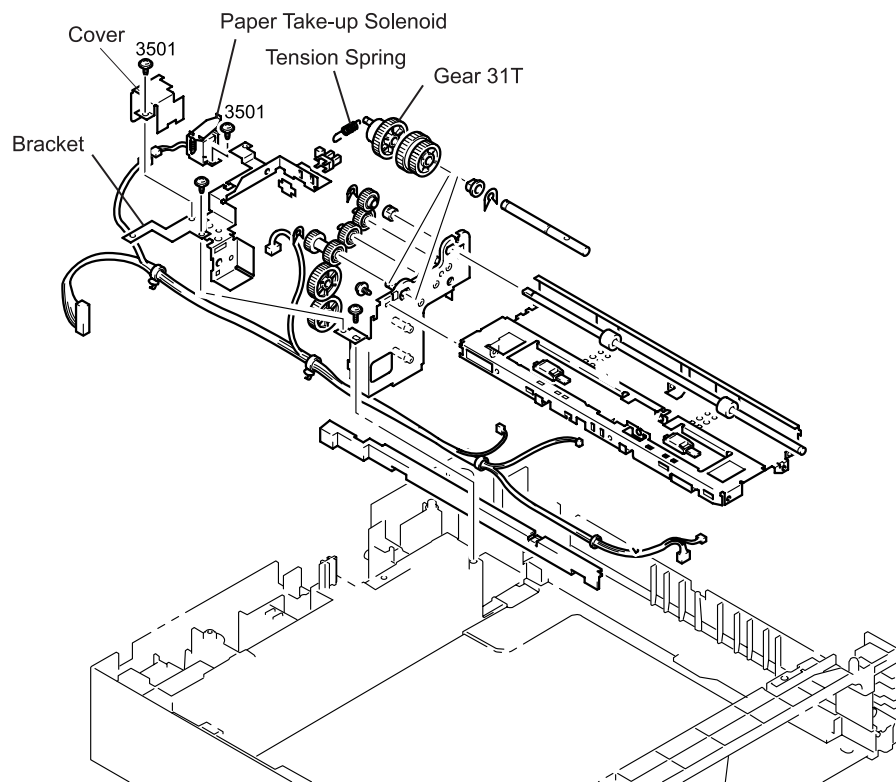
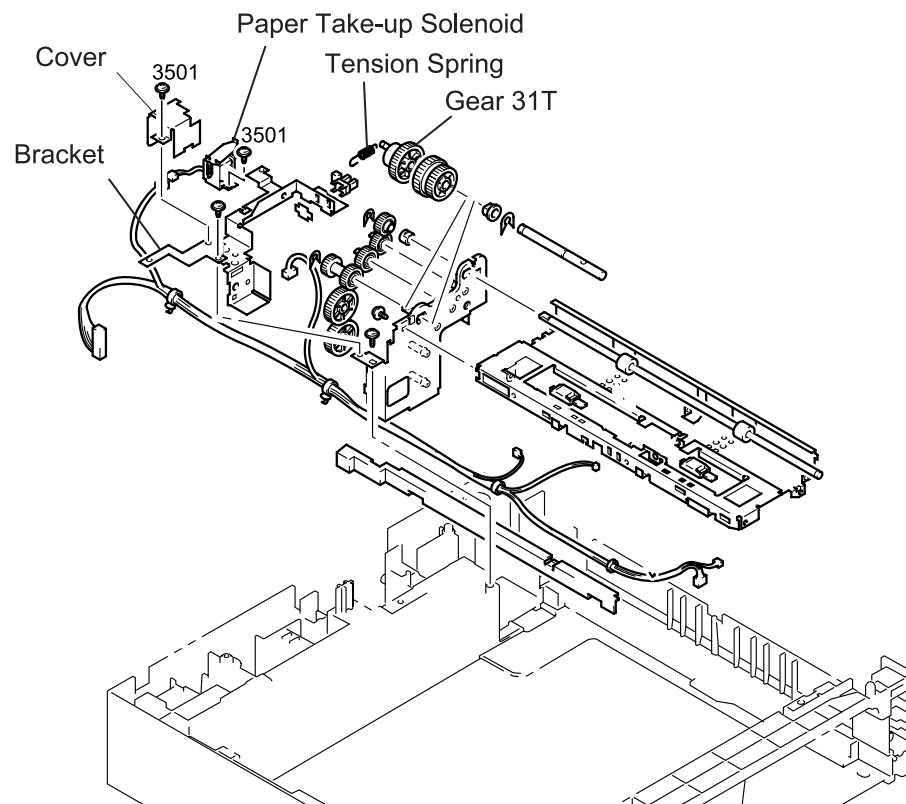


Figure 1-11. Paper Take-up Solenoid Removal

## 1.2.8 Right Door Set Sensor Removal

1. Remove the tension spring hooked to the gear 31T.
2. Remove two screws (3704) securing the PWB-A board bracket to the Double Cassette Unit Frame and remove the bracket. (See Section 1.2.7.)
3. Remove the screw (3501) securing the plate spring to the bracket and remove the plate spring from the bracket.
4. Remove the following screws:
  - Two screws (3704) securing the solenoid bracket to the Double Cassette Unit Frame.
  - Four screws (3704) securing the Paper Take-up Mechanism (including the axle plate, guide plate, and bracket) to the 2nd Cassette Frame.
  - The screw (3501) securing the rail and axle plate.
5. Lift up the Paper Take-up Solenoid and bracket.
6. Remove two screws (3501) securing the solenoid bracket to the Paper Take-up mechanism and remove the solenoid bracket.
7. Remove the stopper securing the Right Door Set Sensor to the solenoid bracket.
8. Release the hook fixing the Right Door Set Sensor to the solenoid bracket and remove the sensor.
9. Disconnect the harness from the connector on the Right Door Set Sensor.



**Figure 1-12. Right Door Set Sensor Removal**

## 1.3 Maintenance of the Double Cassette Unit

The maintenance method of the Double Cassette Unit is mostly the same as for the printer body. Therefore, this section only describes the method specific to the Double Cassette Unit.

**CAUTION** Do not use any solvent, including alcohol.



### 1.3.1 Cleaning the Paper Take-up Roller

1. Remove the Paper Take-up Roller. (Refer to Section 1.2.1.)
2. Wipe the Paper Take-up Roller with a soft cloth moistened with water.

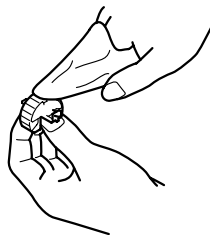


Figure 1-13. Cleaning the Paper Take-up Roller

### 1.3.2 Cleaning the Transport Roller

1. Open the side cover.
2. Wipe the Transport Roller with a soft cloth moistened with water.

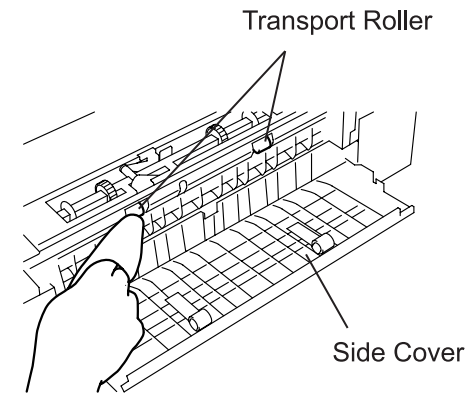


Figure 1-14. Cleaning the Transport Roller

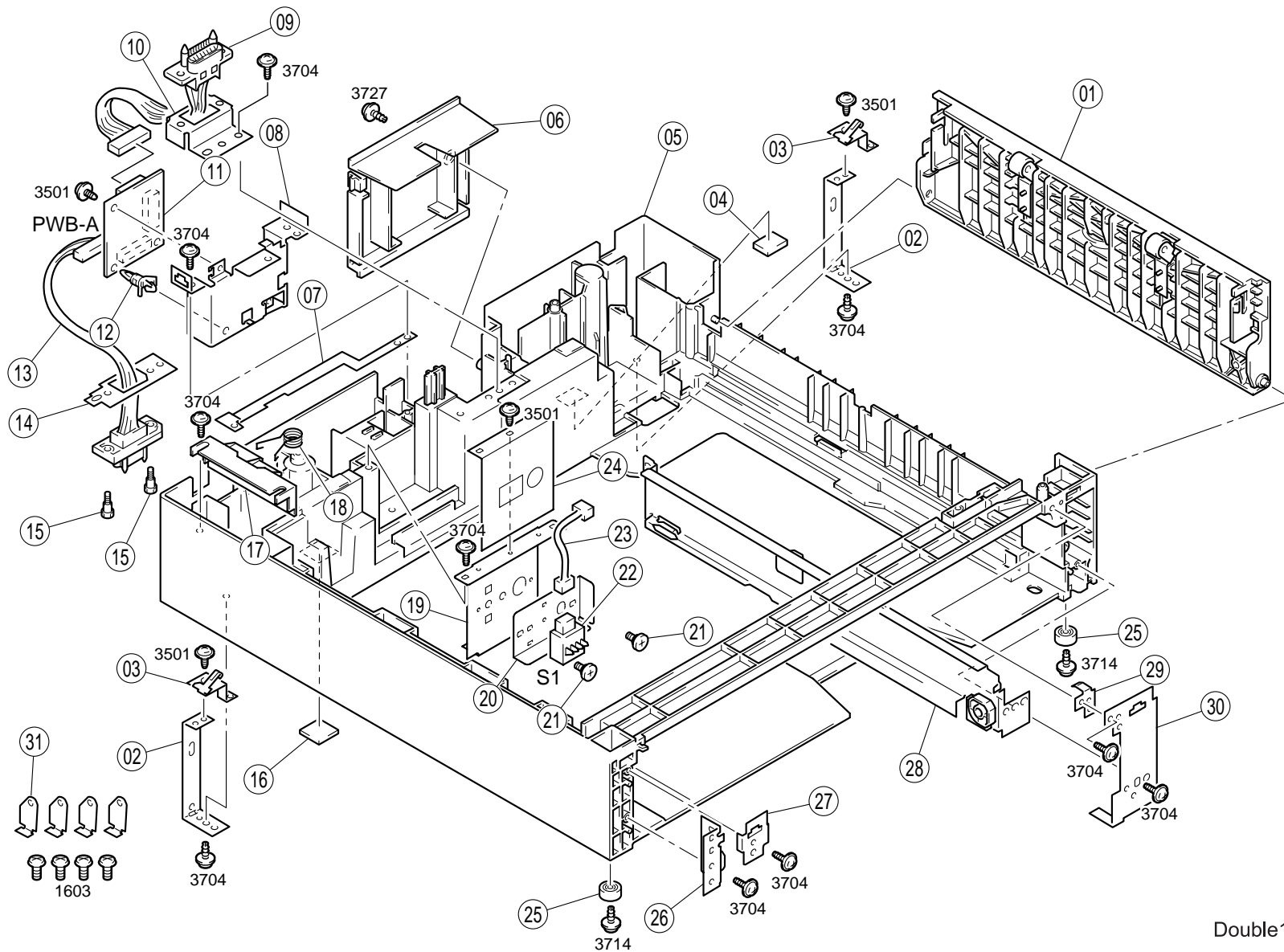


## 1.4 Exploded Diagrams for Double Cassette Unit

### 1.4.1 Housing

Table 1-1. Part List - Housing

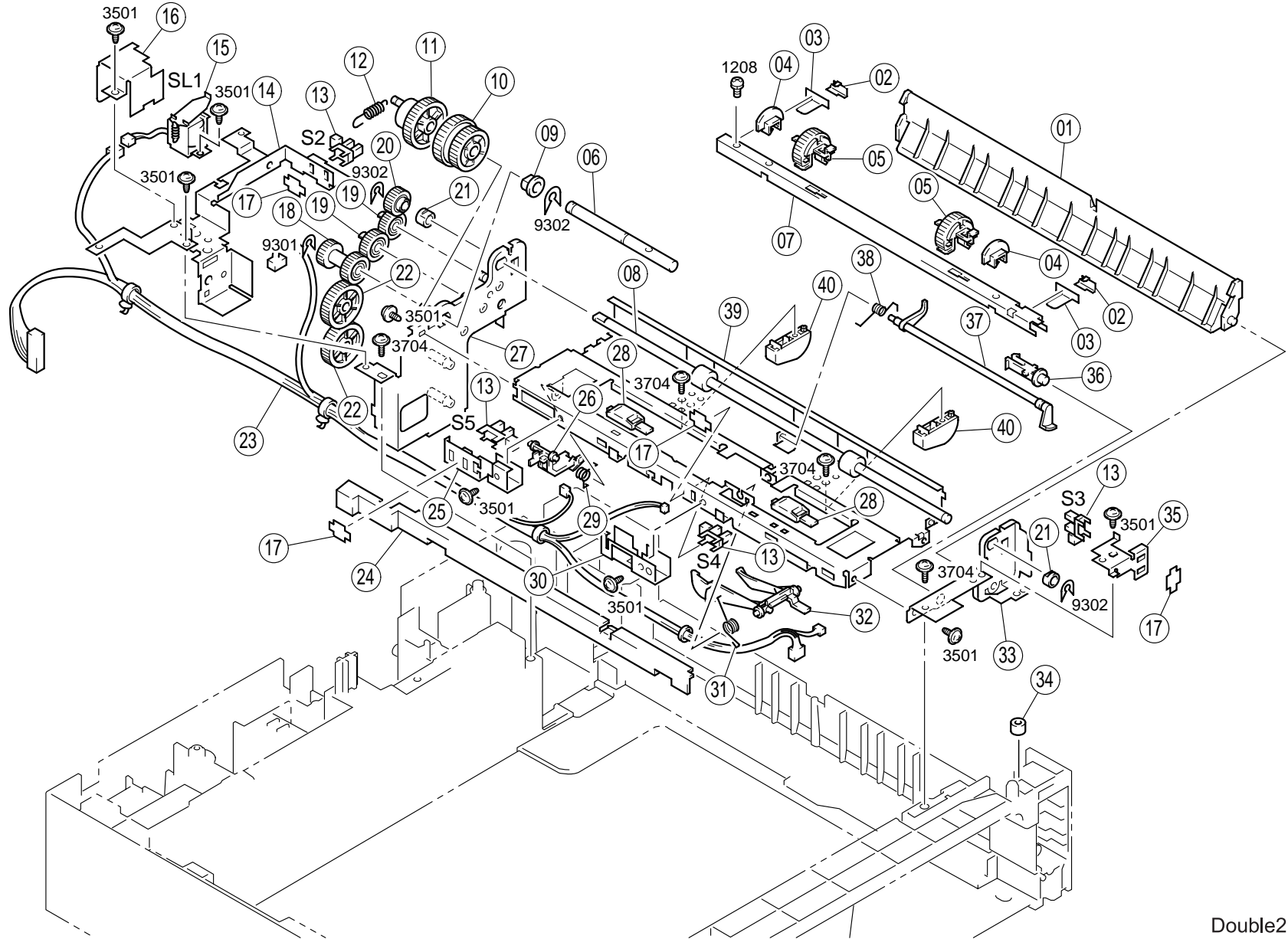
No.	Part Name	No.	Part Name
01	GUIDE	17	HOLDER
02	BRACKET	18	SPRING
03	PLATE SPRING	19	BRACKET
04	RUBBER FOOT	20	BRACKET
05	FRAME	21	SHOULDER SCREW
06	COVER	22	SWITCH, SIZE (S1)
07	GROUND PLATE	23	HARNESS
08	BRACKET	24	COVER
09	HARNESS	25	RUBBER FOOT
10	BRACKET	26	BRACKET
11	PW BOARD-A, MAIN (PWB-A)	27	BRACKET
12	PWB SUPPORT 6.35H	28	RAIL
13	HARNESS	29	PLATE SPRING
14	BRACKET	30	BRACKET
15	SHOULDER SCREW	31	HOLDER
16	RUBBER FOOT	-	-



## 1.4.2 Paper Take-up Section

Table 1-2. Part List - Paper Take-up Section

No.	Part Name	No.	Part Name
01	GUIDE PLATE	21	BUSHING
02	HOLDER	22	GEAR 34T
03	POLYESTER FILM	23	HARNESS
04	COLLAR	24	HOLDER
05	ROLLER	25	BRACKET
06	SHAFT	26	LEVER
07	AXLE PLATE	27	AXLE PLATE
08	ROLLER	28	SPACER
09	BUSHING	29	TORSION SPRING
10	GEAR 30/36T	30	BRACKET
11	GEAR 31T	31	TORSION SPRING
12	TENSION SPRINT	32	ACTUATOR
13	PHOTO INTERRUPTER (2S-5)	33	BRACKET
14	BRACKET	34	COLLAR
15	SOLENOID, TAKE-UP (SL1)	35	BRACKET
16	BRACKET	36	SHAFT
17	STOPPER	37	ACTUATOR
18	GEAR 16/20T	38	TORSION SPRING
19	GEAR 20T	39	GUIDE PLATE
20	GEAR 18T	40	GUIDE

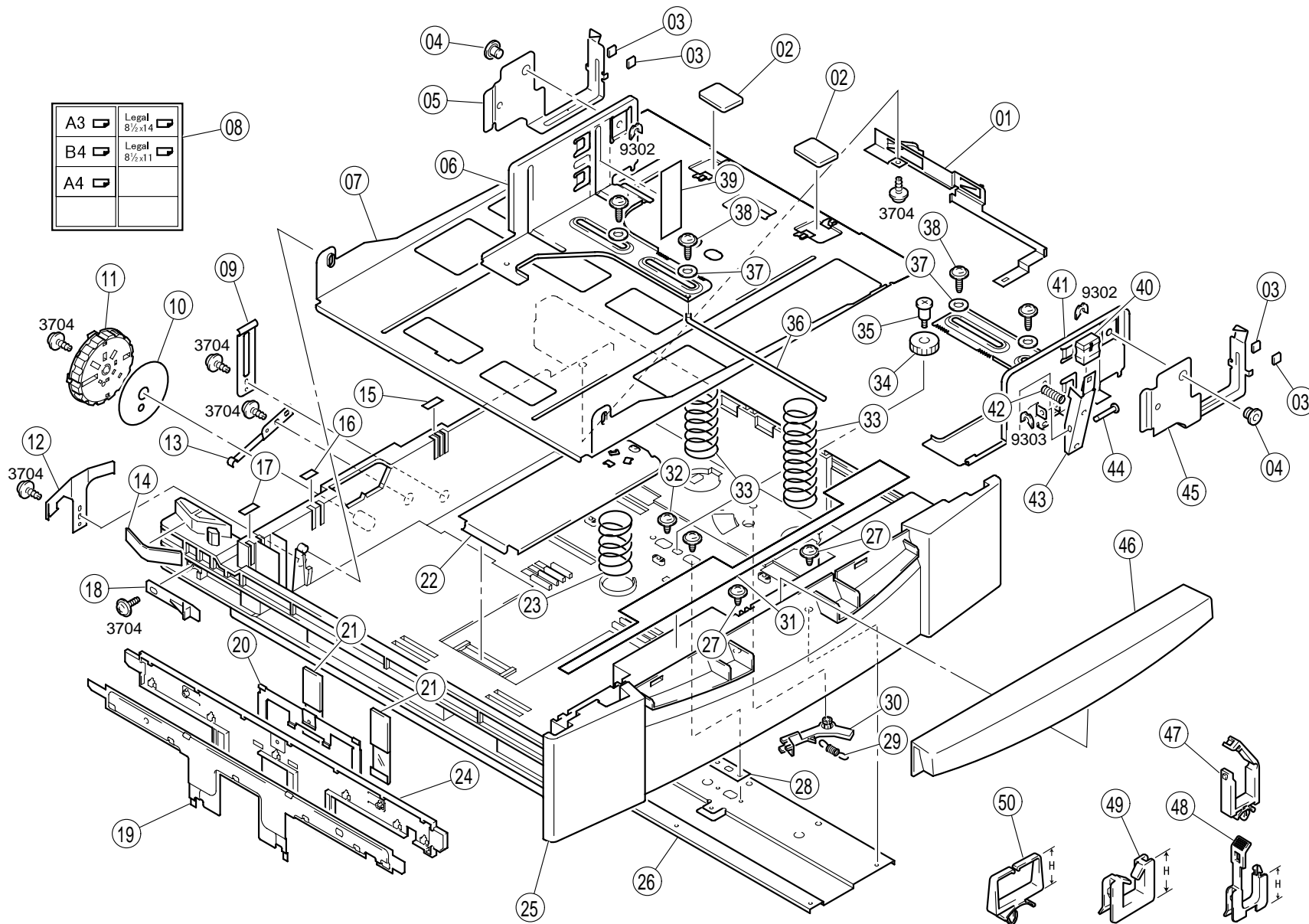


Double2

### 1.4.3 Paper Tray Unit

**Table 1-3. Part List - Paper Tray Unit**

No.	Part Name	No.	Part Name	No.	Part Name
01	GROUND PLATE	18	STOPPER	35	SHOULDER SPRING
02	CORK	19	REINFORCE PLATE	36	SHAFT
03	COLLAR	20	PLATE SPRING	37	WASHER
04	HOLD PLATE	21	SHEET	38	SCREW
05	GUIDE PLATE	22	LIFTING PLATE	39	LABEL MAX LEVEL
06	REGULATING PLATE	23	PRESSURE SPRING	40	KNOB
07	LIFTING PLATE	24	REGULATING PLATE	41	REGULATING PLATE
08	LABEL PAPER SIZE	25	CASSETTE BODY	42	PRESSURE SPRING
09	PLATE SPRING	26	REINFORCE PLATE	43	LAVER
10	LABEL PAPER SIZE	27	SCREW	44	SHAFT
11	LEVER	28	PLATE	45	GUIDE PLATE
12	PLATE SPRING	29	TENSION SPRING	46	HANDLE
13	PLATE SPRING	30	LEVER	47	WIRING SADDLE 5.2H
14	FRICTION SHEET	31	LABEL CASSETTE	48	EDGE COVER 15.4H
15	LABEL	32	SCREW	49	EDGE COVER 8.5H
16	LABEL	33	PRESSURE SPRING	50	WIRE SADDLE 6.4H
17	LABEL	34	GEAR 14T	-	-



Double3

**CHAPTER**

**2**

**DUPLEX UNIT**

## 2.1 Installing the Duplex Unit

This section describes how to install the Duplex Unit to the printer main body. Note you are required to remove optional units such as the Duplex Unit when servicing the printer. The procedure for removing the Duplex Unit is not included since you can remove it by reversing the installation procedure.

1. Open the packing carton and get a Duplex Unit and a user's manual.

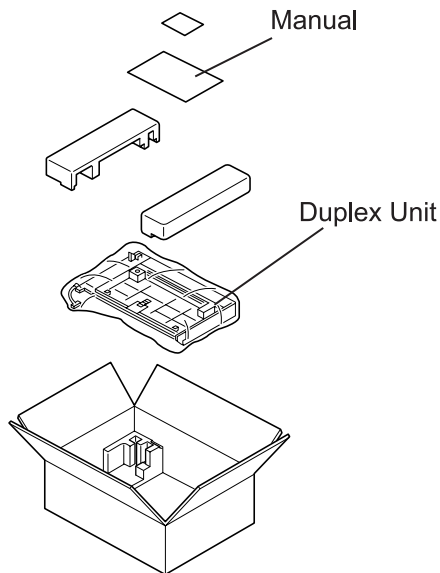


Figure 2-1. Unpacking



After removing the packing materials, please keep them out of children's reach.

2. Remove the protection materials and tapes from the Duplex Unit.
3. Turn the printer power off and disconnect the AC power cable and interface cable.
4. Remove the plastic cover covering the harness connecting the duplex unit to the printer main body.
5. Remove the screw (3541) securing the CN cover to the rear right corner of the printer body and remove the CN cover.

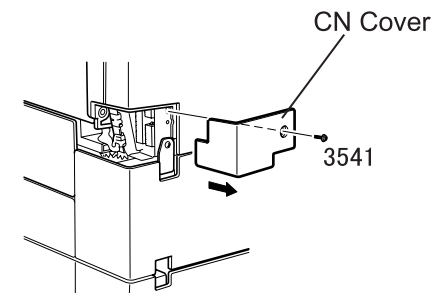


Figure 2-2. CN Cover Removal

6. Remove the screw (3727) securing the gear cover to the fuser cover and remove the gear cover.

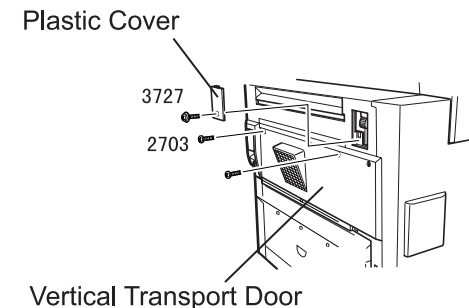


Figure 2-3. Plastic Cover Removal



7. Remove two screws (2703) attached to the vertical transport door.
8. Remove two screws (3727) securing the vertical transport support cover to the bottom part of the printer and remove the vertical transport support cover.

Vertical Transport Support Cover

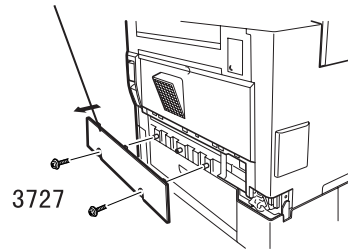


Figure 2-4. Support Cover Removal

9. Using a phillips screw driver, secure the install the Duplex Unit to the vertical transport door using two screws included with the Duplex Unit.

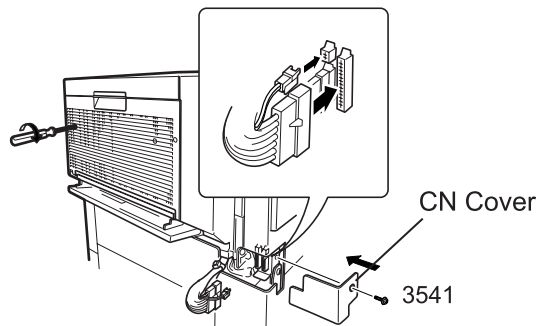
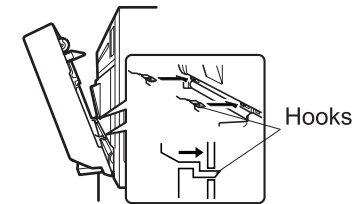


Figure 2-5. Duplex Unit Installation

10. Connect the harness from the Duplex Unit to the connector on the printer main body.
11. Fasten three screws (3727) (attachment of the unit) to secure the new sub cover included with the Duplex Unit to the printer.
12. Fasten the screw (3541) to fix the CN cover to the printer.



- **When placing the Duplex Unit, make sure two hooks securely fit in the installation holes on the printer.**



- **Before attaching the CN cover, make sure printer connection harness is securely connected**

13. Connect the interface cable and the AC power cable to the printer and turn the printer on.

## 2.2 Disassembly and Assembly of the Duplex Unit

---

### 2.2.1 Duplex Unit Door Set Sensor Removal

1. Remove the Duplex Unit. (Refer to Section 2.1.)
2. Open the Duplex Unit Door.
3. Remove the stopper securing the door set sensor to the Duplex Unit Frame and unhook the sensor from the frame.
4. Disconnect the harness from the connector on the sensor.

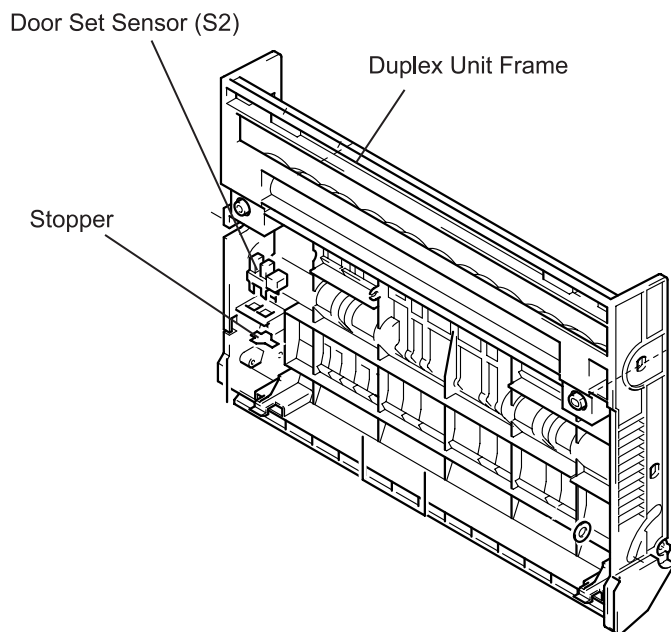


Figure 2-6. Paper Take-up Roller Removal

## 2.2.2 Main Board Removal

1. Remove the Duplex Unit. (Refer to Section 2.1.)
2. Remove two screws securing the cover to the Duplex Unit.
3. Open the Duplex Unit door and release two hooks securing the cover to the Duplex Unit Frame, and remove the cover.
4. Disconnect the harness from the connector on the Main Board.
5. Remove two screws (3504) securing the Main Board to the Duplex Unit and remove the Main Board.

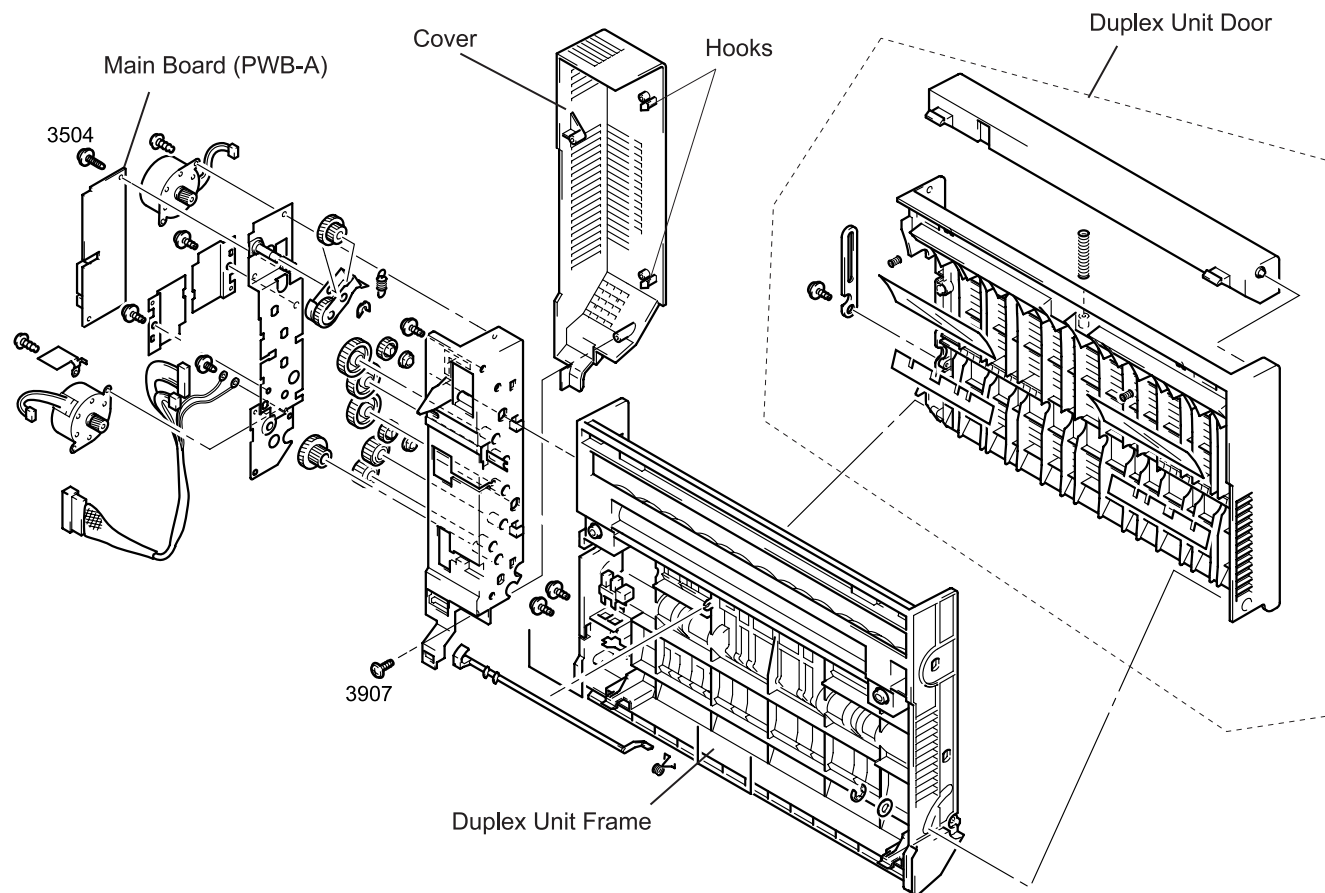


Figure 2-7. Main Board Removal

### 2.2.3 Switch Back Motor Removal

1. Remove the Duplex Unit. (Refer to Section 2.1.)
2. Remove two screws (3907) securing the cover to the Duplex Unit.
3. Open the Duplex Unit door and release two hooks fixing the cover to the Duplex Unit frame. Then remove the cover.
4. Remove the harness for the Switch Back Motor from the connector on the Main Board.
5. Remove two screws (3104) securing the Switch Back Motor to the Duplex Unit and remove the Switch Back Motor.

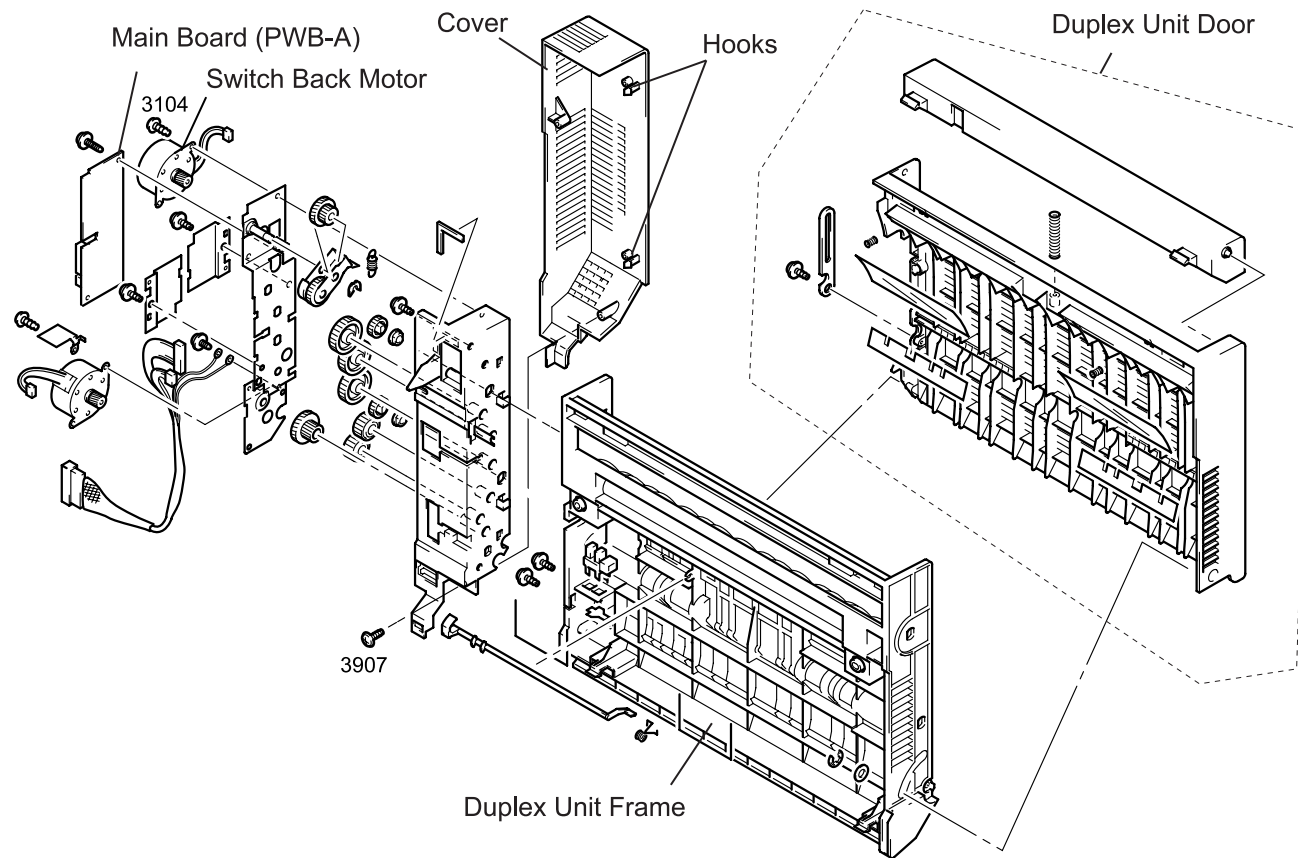


Figure 2-8. Switch Back Motor Removal

## 2.2.4 Transport Motor Removal

1. Remove the Duplex Unit. (Refer to Section 2.1.)
2. Remove two screws (3907) securing the cover to the Duplex Unit.
3. Open the Duplex Unit door and release two hooks fixing the cover to the Duplex Unit frame. Then remove the cover.
4. Remove the harness for the Transport Motor from the connector on the main board.
5. Remove two screws (3104) securing the Transport Motor to the Duplex Unit and remove the Transport Motor and the plate.

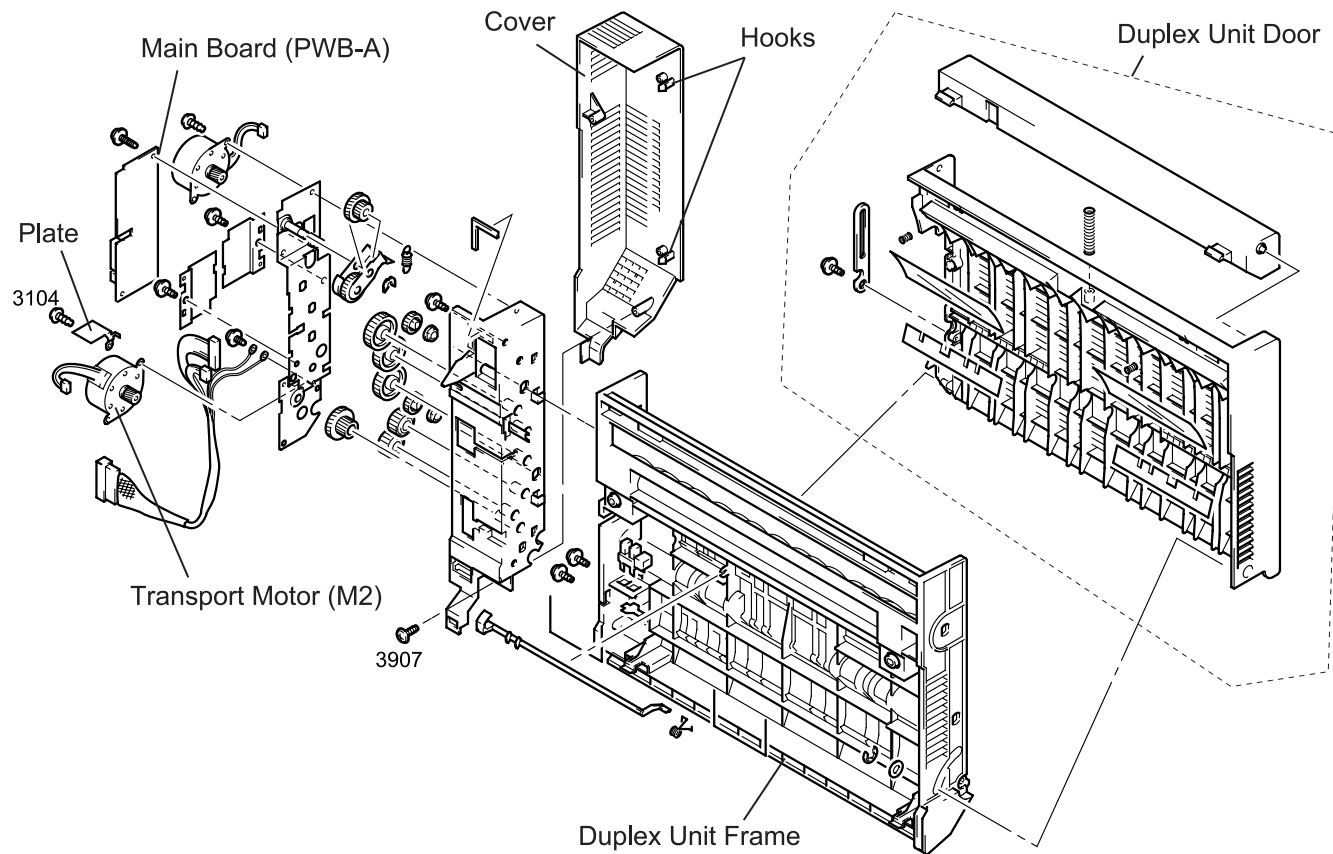
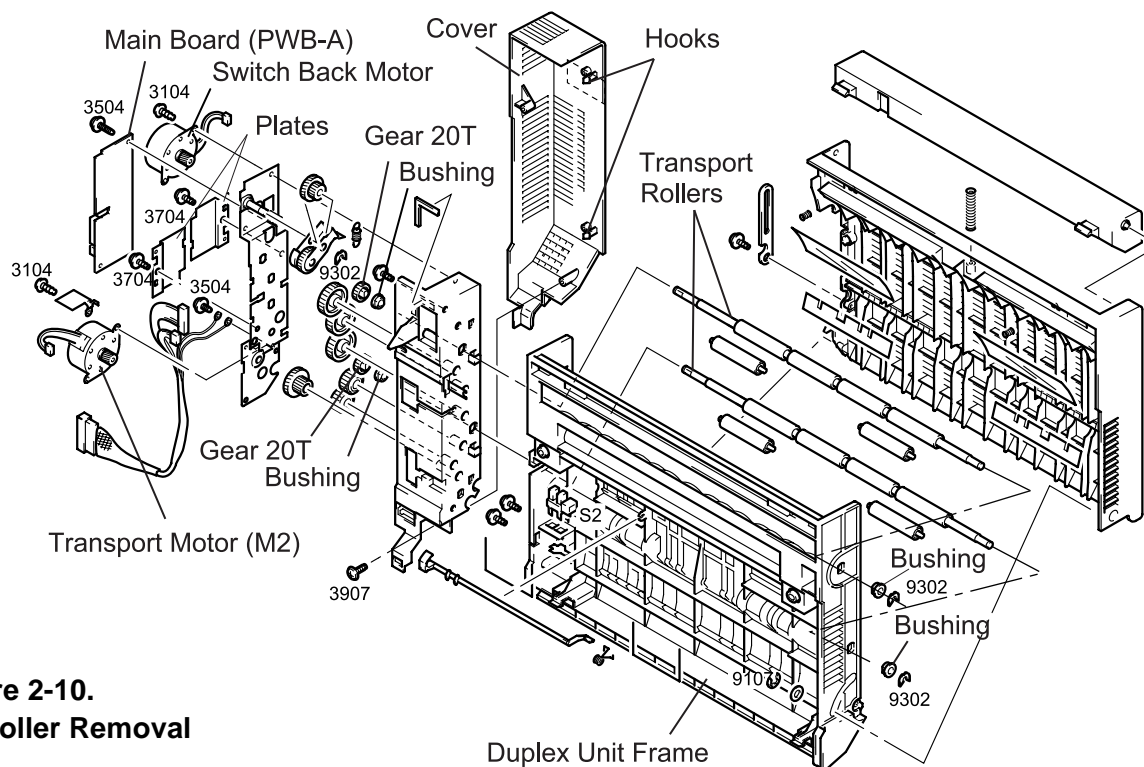


Figure 2-9. Transport Motor Removal

## 2.2.5 Transport Roller Removal

1. Remove the Duplex Unit. (Refer to Section 2.1.)
2. Remove two screws (3907) securing the cover to the Duplex Unit.
3. Open the Duplex Unit door and release two hooks fixing the cover to the Duplex Unit frame. Then remove the cover.
4. Remove the Main Board. (Refer to Section 2.2.2.)
5. Remove the Switch Back Motor. (Refer to Section 2.2.3.)
6. Remove the Transport Motor. (Refer to Section 2.2.4.)
7. Remove the screw (3504) securing the ground cable to the axle plate and remove the ground cable.
8. Remove three screws (3704) securing two plates to the holders through the axel plate and remove the plates and the axel plate.
9. Release the hooks on the gears 20T attached to the Transport Rollers and remove the gears 20T and the bushings.
10. Remove the E-ring (9302) from each transport roller shaft and remove the bushing from the transport roller shaft.
11. Remove the Transport Rollers from the Duplex Unit.



**Figure 2-10.**  
Transport Roller Removal

## 2.3 Maintenance of the Duplex Unit

---

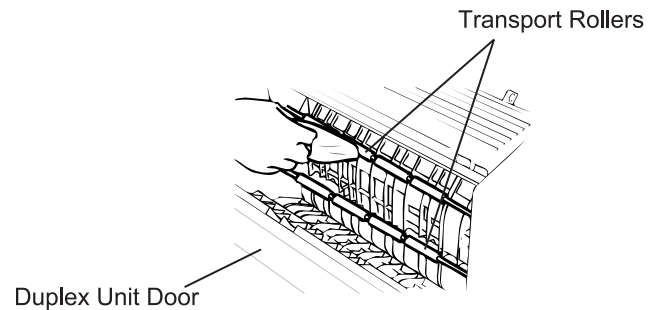
The maintenance method of the Duplex Unit is mostly the same as for the printer body. Therefore, this section only describes the method specific to the Duplex Unit.

### 2.3.1 Cleaning the Transport Roller

1. Open the Duplex Unit door. (Refer to Section 2.2.1.)
2. Wipe the Transport Roller with a soft cloth moistened with water.



**Do not use any solvent, including alcohol.**



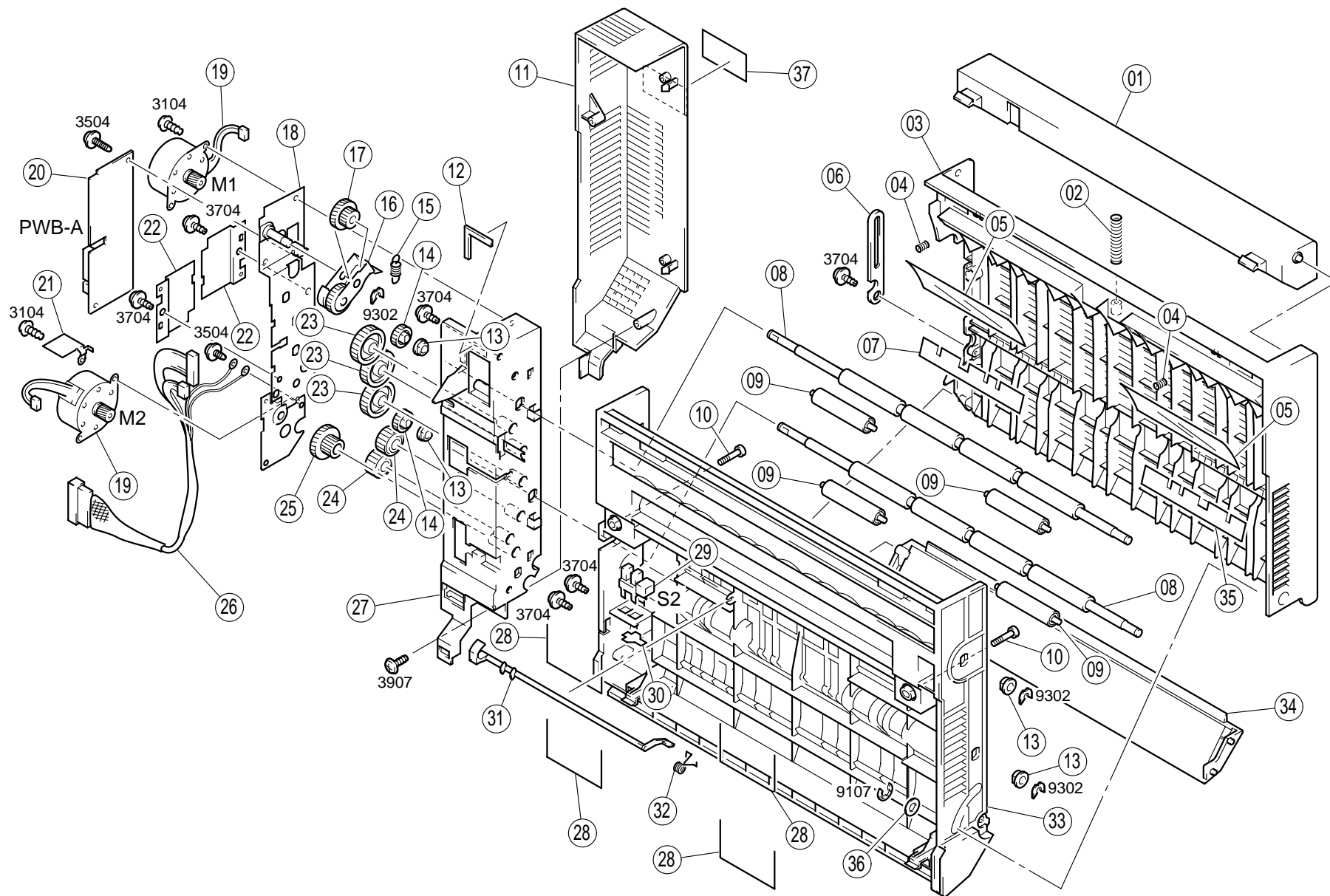
**Figure 2-11. Cleaning the Transport Roller**

## 2.4 Exploded Diagrams for Duplex Unit

Table 2-1. Part List

No.	Part Name	No.	Part Name
01	LEVER	20	PW BOARD-A, MAIN (PWB-A)
02	PRESSURE SPRING	21	PLATE
03	COVER	22	PLATE
04	PRESSURE SPRING	23	GEAR 35T
05	POLYESTER FILM	24	GEAR 24T
06	STOPPER	25	GEAR 17/45T
07	POLYESTER FILM	26	HARNESS
08	ROLLER	27	HOLDER
09	ROLL	28	SPRING
10	SHOULDER SCREW	29	PHOTO INTERRUPTER, DOOR SET (S2)
11	COVER	30	STOPPER
12	SEAL	31	ACTUATOR
13	BUSHING	32	TORSION SPRING
14	GEAR 20T	33	FRAME
15	TENSION SPRING	34	COVER
16	LEVER	35	POLYESTER FILM
17	GEAR 12/40T	36	WASHER
18	AXLE PLATE	37	LABEL
19	MOTOR (M1, 2)	-	-





**CHAPTER**

**3**

**LCC UNIT**

## 3.1 Installing the LCC Unit

This section describes how to install the LCC Unit, or Large Capacity Cassette Unit, to the printer main body. Note you are required to remove optional units such as the LCC Unit when servicing the printer. The procedure for removing the LCC Unit is not included since you can remove it by reversing the installation procedure.

1. Open the packing carton and get a LCC Unit, four pairs of holder and screw, and a user's manual.

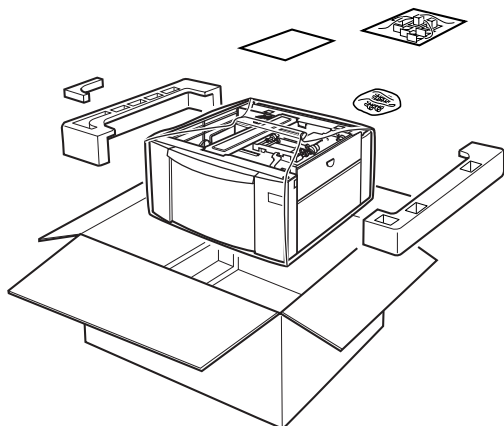


Figure 3-1. Unpacking



After removing the packing materials, please keep them out of children's reach.

2. Remove the protection materials and tapes from the LCC Unit.

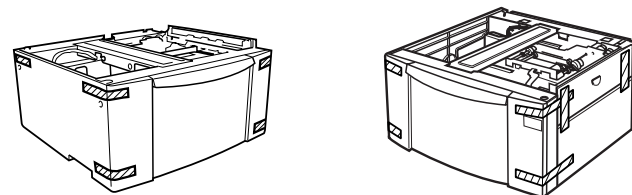


Figure 3-2. Protection Material & Tape Removal

3. Remove the protection pads from the tray.

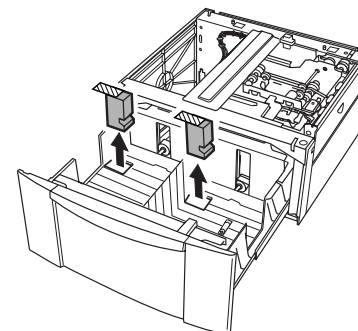


Figure 3-3. Protection Pad Removal

4. Shut the cassette in to the cabinet.
5. Turning the adjuster located at the front right corner of bottom part of the LCC Unit, set the unit on the floor.

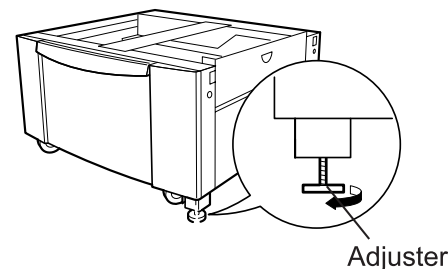


Figure 3-4. Fixing The LCC Unit

6. Remove the bottom cover from the bottom part of the printer.

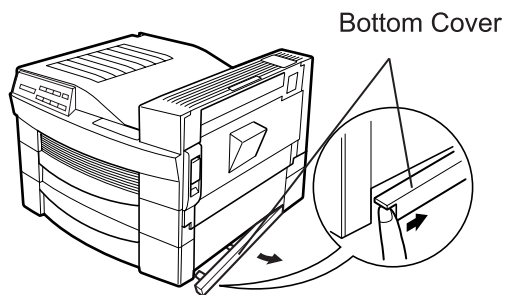


Figure 3-5. Bottom Cover Removal

7. Turn the printer power off and disconnect the AC power cable and a interface cable.
8. Place the printer on the LCC Unit.

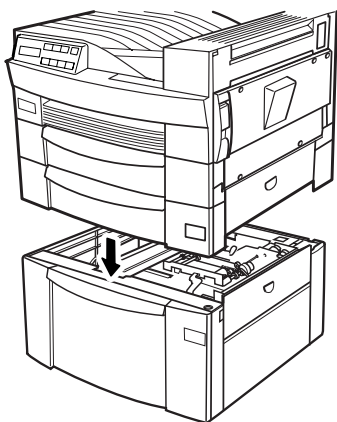


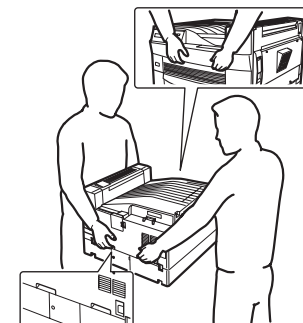
Figure 3-6. Placing the Printer on the LCC Unit



When placing the printer, make sure the blue handouts of the printer and the LCC Unit are all facing the same direction and all corners of the printer and the LCC Unit are aligned.



Two people are required to lift the printer safely.



9. Secure the printer and the LCC Unit by each corner using the holder and the screw (1603).

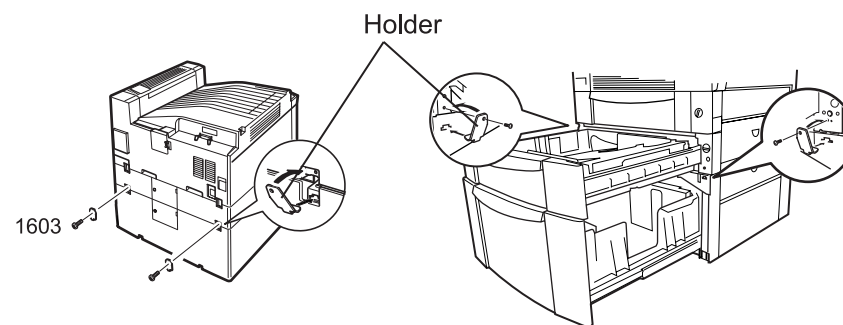


Figure 3-7. Securing the Printer to the LCC Unit

10. Connect the interface cable and the AC power cable to the printer and turn the printer on.

## 3.2 Disassembly and Assembly of the LCC Unit

### 3.2.1 Separate Roller/Torque Limiter Removal

1. Open the side cover of the LCC Unit.
2. Remove the C-Ring from the separate roller shaft and remove the Separate Roller first and then the Torque Limiter.

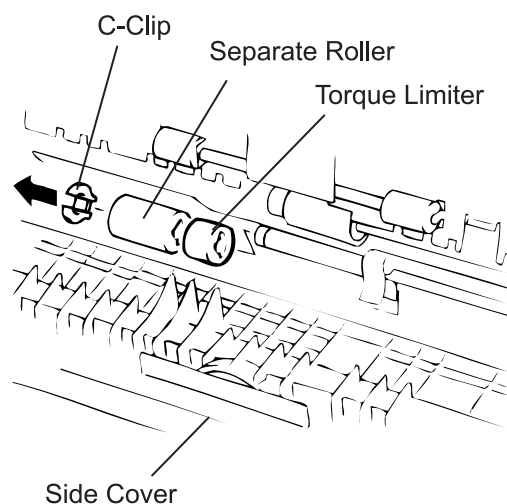


Figure 3-8. Separate Roller / Torque Limiter Removal



Always replace the Feed Roller, Separate Roller, and the Torque Limiter together since they have the same length of life.

### 3.2.2 Feed Roller Removal

1. Open the side cover of the LCC Unit.
2. Remove the C-Ring from the feed roller shaft and remove the Feed Roller.

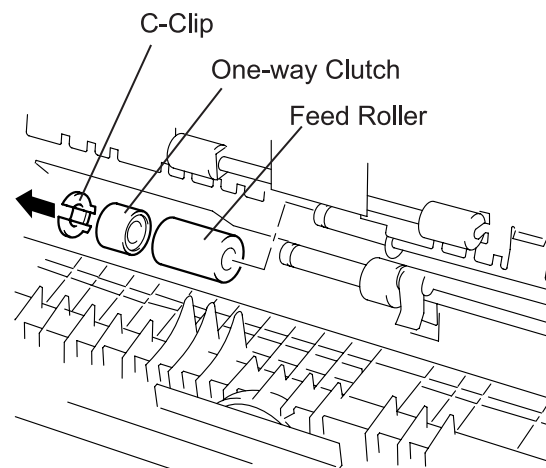


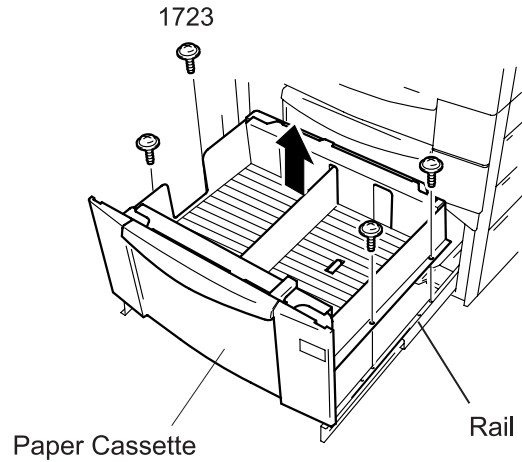
Figure 3-9. Reed Roller Removal



Always replace the Feed Roller, Separate Roller, and the Torque Limiter together since they have the same length of life.

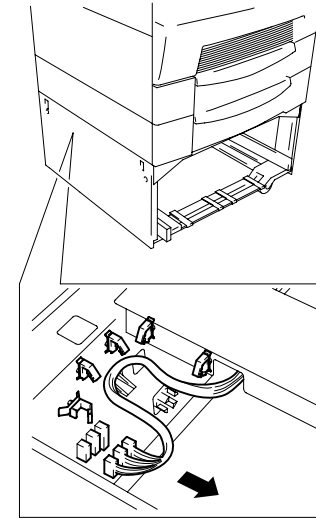
### 3.2.3 Paper Take-up Unit Removal

1. Pull out the paper cassette.
2. Remove four screws (1723) securing the Paper Tray Unit to the LCC Unit and remove the Paper Tray Unit.



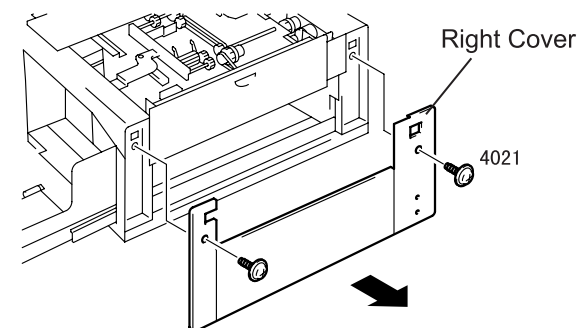
**Figure 3-10. Paper Tray Unit Removal**

3. Release three connectors and code clump inside the unit and remove the harness.



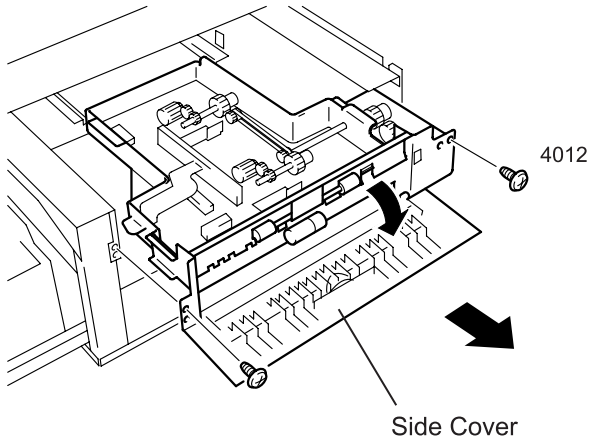
**Figure 3-11. Harness Removal**

4. Remove two screws (4021) securing the right cover to the LCC Unit and remove the right cover.



**Figure 3-12. Right Cover Removal**

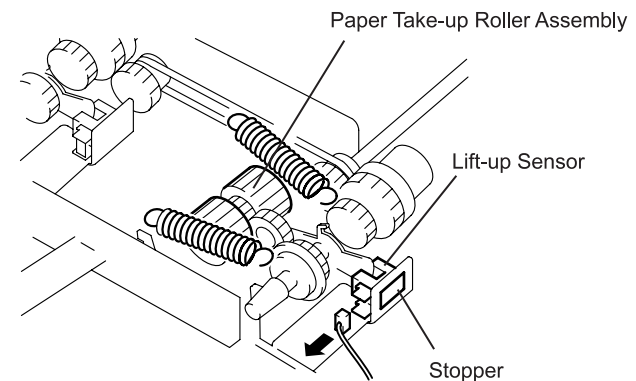
5. Remove the side cover.
6. Remove two screws (4012) securing the Paper Take-up Unit to the LCC Unit and remove the Paper Take-up Unit.



**Figure 3-13. Paper Take-up Unit Removal**

### 3.2.3.1 Lift-up Sensor Removal

1. Remove the Paper Take-up Unit. (Refer to Section 3.2.3.)
2. Remove the stopper fixing the Lift-up Sensor to the Paper Take-up Unit.
3. Push down the Paper Take-up Roller to release the actuator from the sensor and remove the sensor.
4. Remove the harness from the connector on the sensor.



**Figure 3-14. Lift-up Sensor Removal**

### 3.2.3.2 Paper Take-up Roller (Right) Assembly Removal

1. Remove the Paper Take-up Unit. (Refer to Section 3.2.3.)
2. Remove the harness for the Lift-up Sensor. (Refer to Section 3.2.3.1.)
3. Remove the harness for the right paper take-up clutch.
4. Remove two springs on the Paper Take-up Roller Assembly.

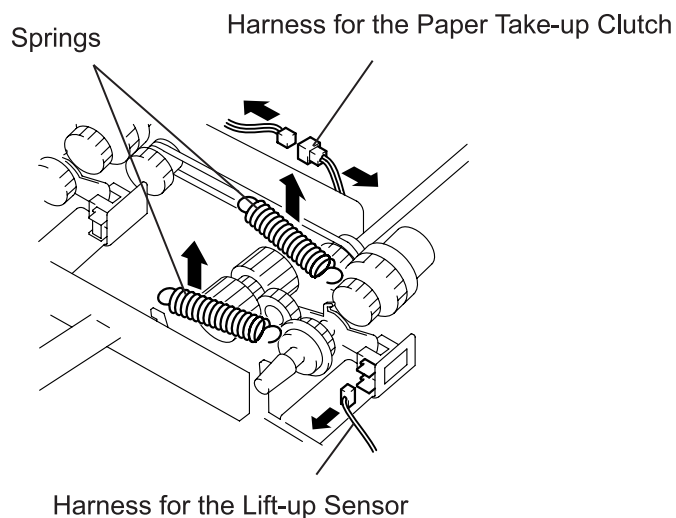


Figure 3-15. Paper Take-up Roller (Right) Assembly Removal (1)

5. Remove the shoulder screw securing the Paper Take-up Roller Assembly to the Paper Take-up Unit.

6. Release the Paper Take-up Roller Assembly from the Paper Take-up Unit to loosen the timing belt, then remove the paper take-up Roller Assembly.

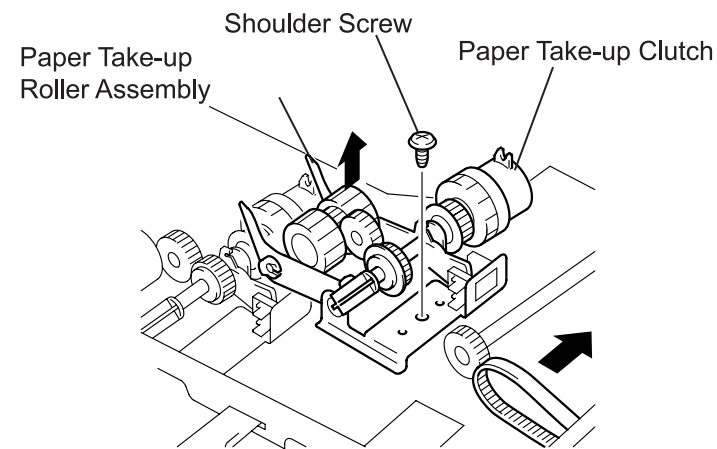
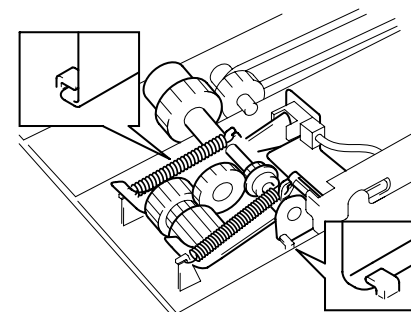


Figure 3-16. Paper Take-up Roller Assembly (Right) Removal (2)



When installing the Paper Take-up Roller Assembly, set the edge of the assembly to the indicated position in the figure below.







- Always replace the Paper Take-up Roller 1 and 2 together since they have the same length of life.
- When the Paper Take-up Roller in the LCC Unit is replaced while 1 optional Double Cassette Unit is connected, perform “LC3 Counter Clear” in the maintenance mode. (See EPL-N2700 Service Manual / Chapter 1.)
- When the Paper Take-up Roller in the LCC Unit is replaced while optional Double Cassette Unit is disconnected, perform “LC2 Counter Clear” in the maintenance mode. (See EPL-N2700 Service Manual / Chapter 1.)

### 3.2.3.3 Right Paper Take-up Clutch Removal

1. Remove the Paper Take-up Unit. (Refer to Section 3.2.3.)
2. Remove the Paper Take-up Roller Assembly. (Refer to Section 3.2.3.2.)
3. Release the hook securing the Paper Take-up Clutch to the Paper Take-up Roller Shaft and remove the clutch to the rear.
4. Disconnect the harness for the Paper Take-up Clutch from the connector.



Be sure to hook the clutch to the arm in the Paper Take-up Unit as shown in the figure below.

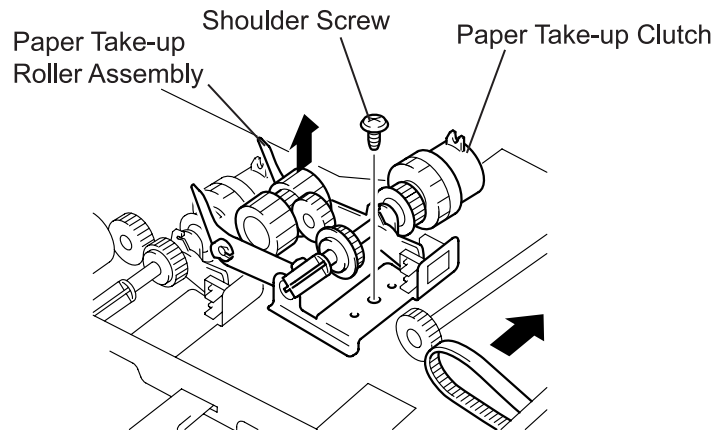
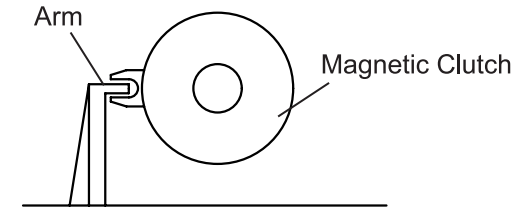
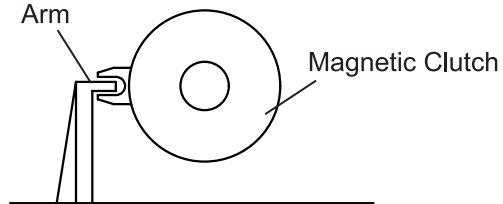


Figure 3-17. Paper Take-up Clutch Removal

### 3.2.3.4 Paper Take-up Roller (Left) Assembly Removal



Be sure to hook the clutch to the arm in the Paper Take-up Unit.



1. Remove the Paper Take-up Unit. (Refer to Section 3.2.3.)
2. Remove the harness for the Lift-up Sensor. (Refer to Section 3.2.3.1.)
3. Remove the harness for the Paper Take-up Clutch (Left).
4. Remove two springs on the Paper Take-up Roller Assembly.

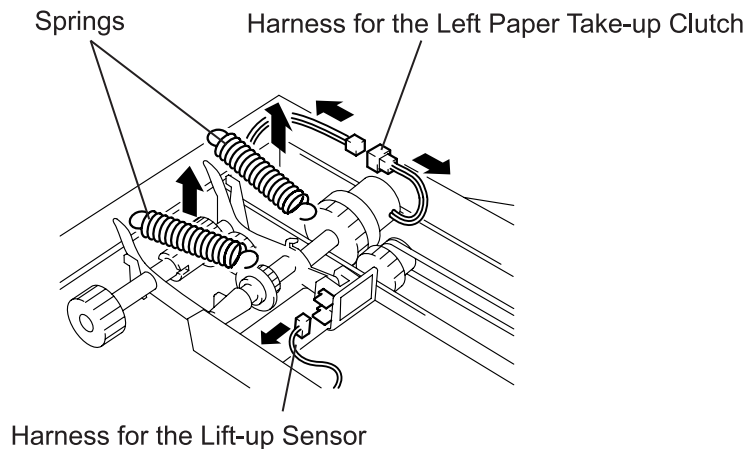


Figure 3-18. Paper Take-up Roller (Left) Assembly Removal (1)

5. Remove the shoulder screw securing the Paper Take-up Roller Assembly to the Paper Take-up Unit.
6. Remove the Paper Take-up Roller Assembly.

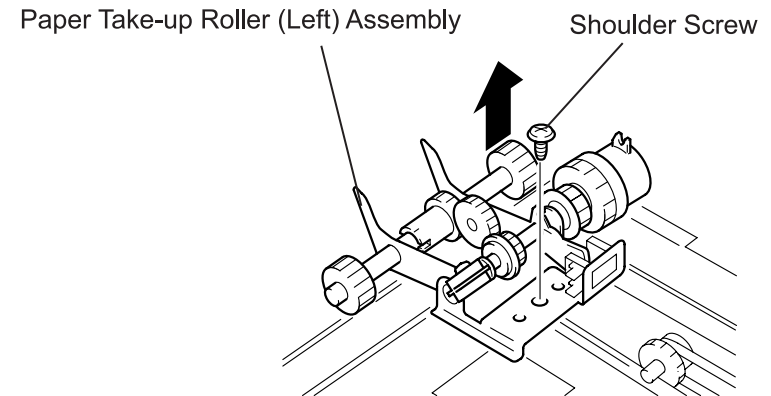
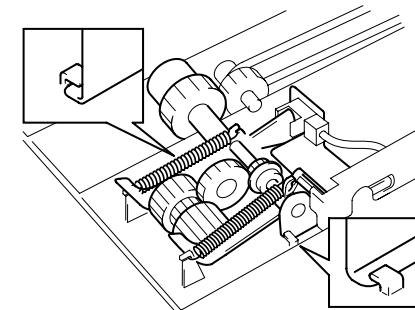


Figure 3-19. Paper Take-up Roller(Left) Assembly Removal (2)



When installing the Paper Take-up Roller Assembly, set the edge of the assembly to the indicated position in the figure below.





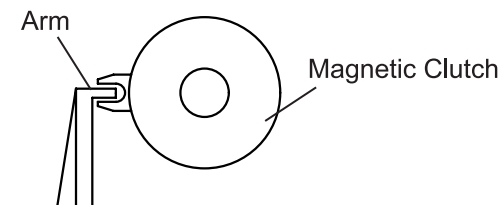
- Always replace the Paper Take-up Roller 1 and 2 together since they have the same length of life.
- When the Paper Take-up Roller in the LCC Unit is replaced while 1 optional Double Cassette Unit is connected, perform “LC3 Counter Clear” in the maintenance mode. (See EPL-N2700 Service Manual / Chapter 1.)
- When the Paper Take-up Roller in the LCC Unit is replaced while optional Double Cassette Unit is disconnected, perform “LC2 Counter Clear” in the maintenance mode. (See EPL-N2700 Service Manual / Chapter 1.)

### 3.2.3.5 Paper Take-up Clutch (Left) Removal

1. Remove the Paper Take-up Unit. (Refer to Section 3.2.3.)
2. Remove the Paper Take-up Roller Assembly. (Refer to Section 3.2.3.4.)
3. Release the hook securing the Paper Take-up Clutch to the Paper Take-up Roller Shaft and remove the clutch to the rear.
4. Disconnect the harness for the Paper Take-up Clutch from the connector.

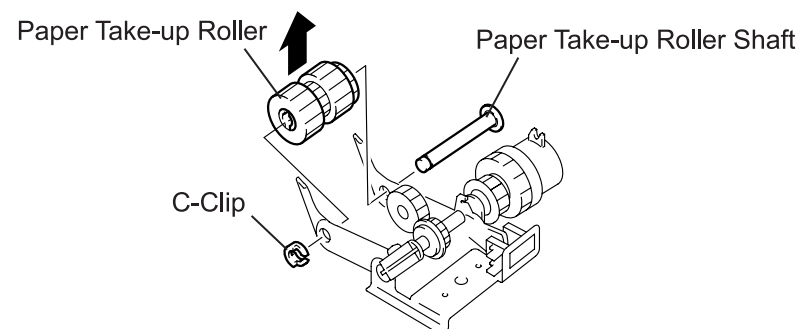


**Be sure to hook the clutch to the arm in the Paper Take-up Unit.**



### 3.2.3.6 Paper Take-up Roller Removal

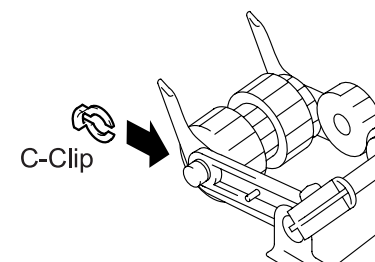
1. Remove the Paper Take-up Unit. (Refer to Section 3.2.3.)
2. Remove the Paper Take-up Roller Assembly. (Refer to Section 3.2.3.2.)
3. Remove the C-Ring from the Paper Take-up Roller Shaft.
4. Pull out the Paper Take-up Roller Shaft to the E-Ring side and remove the Paper Take-up Roller.



**Figure 3-20. Paper Take-up Roller Removal**



**When installing the Paper Take-up Roller, face the C-Ring in the direction indicated in the figure below.**



### 3.2.3.7 LCC Paper Take-up Sensor (PPS0) Removal

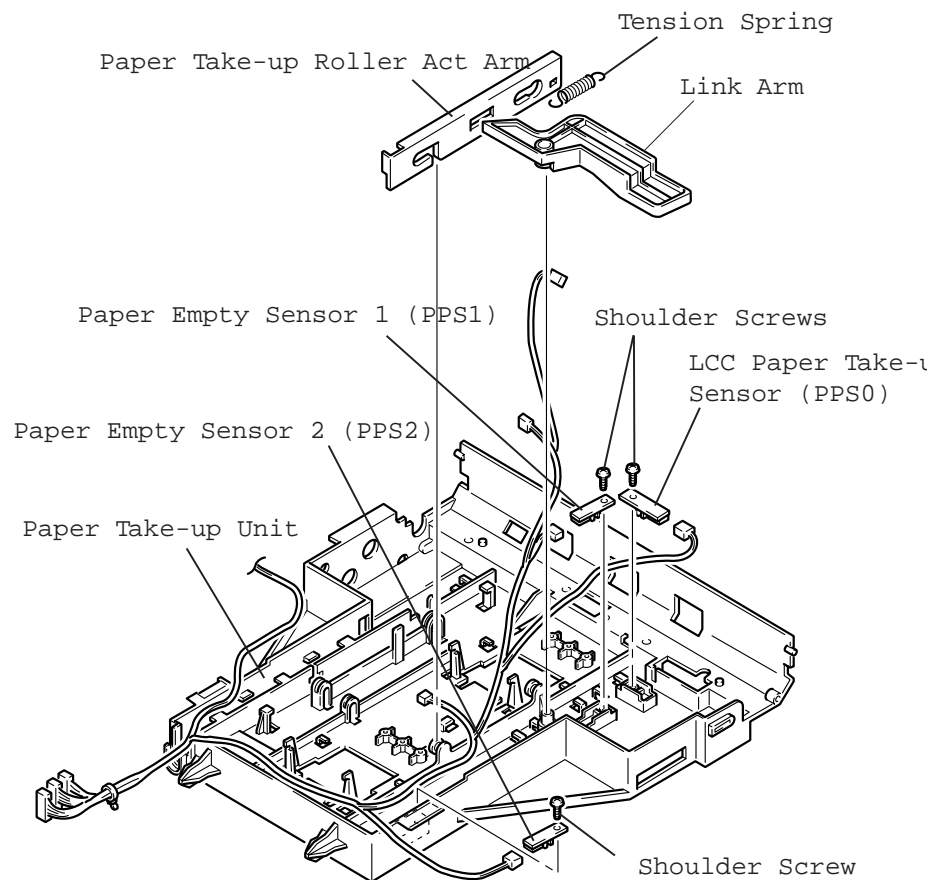
1. Remove the Paper Take-up Unit. (Refer to Section 3.2.3.)
2. Remove the shoulder screw securing the LCC Paper Take-up Sensor to the Paper Take-up Unit and remove the sensor.
3. Disconnect the harness from the connector on the LCC Paper Take-up Sensor.

### 3.2.3.8 Paper Empty Sensor 1 (PPS1) Removal

1. Remove the Paper Take-up Unit. (Refer to Section 3.2.3.)
2. Remove the tension spring set between the paper take-up roller act arm and Paper Take-up Unit.
3. Sliding the paper take-up roller act arm to the left, release the arm from the connection pin on the Paper Take-up Unit, and remove the link arm.
4. Remove the shoulder screw securing the Paper Empty Sensor to the Paper Take-up Unit and remove the sensor.
5. Disconnect the harness from the connector on the Paper Empty Sensor 1.

### 3.2.3.9 Paper Empty Sensor 2 (PPS2) Removal

1. Remove the Paper Take-up Unit. (Refer to Section 3.2.3.)
2. Remove the shoulder screw securing the Paper Empty Sensor 2 to the Paper Take-up Unit and remove the sensor.
3. Disconnect the harness from the connector on the Paper Empty Sensor 2.



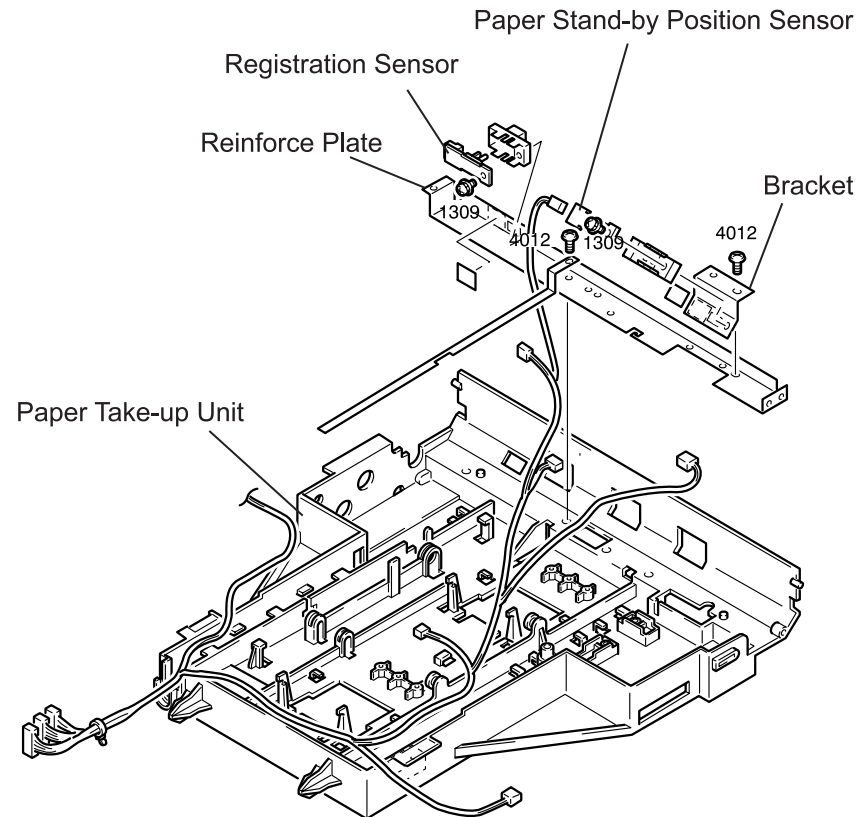
**Figure 3-21. Sensor Removal  
(LCC Paper Take-up Sensor, Paper Empty Sensor 1 and 2)**

### 3.2.3.10 Paper Stand-by Position Sensor Removal

1. Remove the Paper Take-up Unit. (Refer to Section 3.2.3.)
2. Remove the screw (1306) securing the bracket for the Paper Stand-by Position Sensor to the reinforce plate and remove the Paper Stand-by Position Sensor along with the bracket.
3. Remove the screw (1306) securing the Paper Stand-by Position Sensor to the bracket and remove the Paper Stand-by Position Sensor.
4. Disconnect the harness from the connector on the Paper Stand-by Position Sensor.

### 3.2.3.11 Registration Sensor Removal

1. Remove the Paper Take-up Unit. (Refer to Section 3.2.3.)
2. Remove the screw (1306) securing the Registration Sensor to the bracket and remove the Registration Sensor.
3. Disconnect the harness from the connector on the Registration Sensor.



**Figure 3-22. Sensor Removal  
(Paper Stand-by Position Sensor / Registration Sensor)**

### 3.2.3.12 Side Cover Set Sensor Removal

1. Remove the Paper Take-up Unit. (Refer to Section 3.2.3.)
2. Unhook the Side Cover Set Sensor from the axle plate and remove the Side Cover Set Sensor.
3. Disconnect the harness from the connector on the Side Cover Set Sensor.

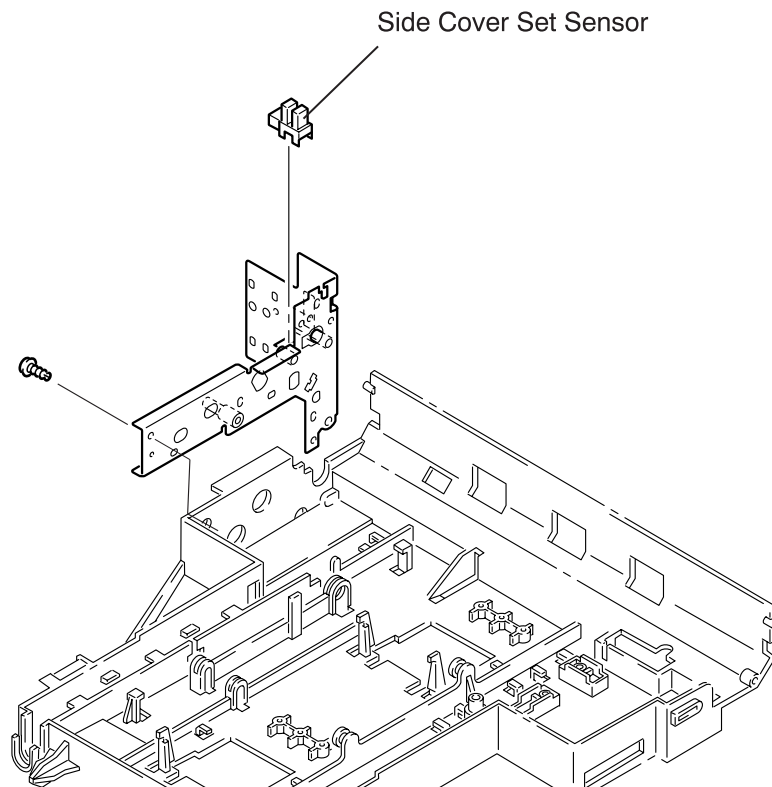


Figure 3-23. Side Cover Set Sensor Removal



### 3.2.3.13 Registration Clutch (RCL) Removal

1. Remove the Paper Take-up Unit. (Refer to Section 3.2.3.)
2. Disconnect the harness for the Side Cover Set Sensor from the sensor. (Refer to Section 3.2.3.12.)
3. Disconnect the harnesses for the Registration Clutch and the Separate Clutch from the relay connectors and release them from the cable clamp on the clutch bracket.
4. Remove two screws (4012) securing the clutch bracket to the axle plate and remove the clutch and the bracket.
5. Remove the registration clutch shaft and then remove the Registration Clutch and the bushing.

### 3.2.3.14 Separate Clutch Removal

1. Remove the Paper Take-up Unit. (Refer to Section 3.2.3.)
2. Disconnect the harness for the Side Cover Set Sensor from the sensor. (Refer to Section 3.2.3.12.)
3. Disconnect the harnesses for the Registration Clutch and the Separate Clutch from the relay connectors and release them from the harness clamp on the clutch bracket.
4. Remove two screws (4012) securing the clutch bracket to the axle plate and remove the clutch, bracket, and the timing belt.
5. Release the hook securing the Separate Clutch to the shaft and the E-Ring (9108), then remove the shaft and the bushing from the Separate Clutch.

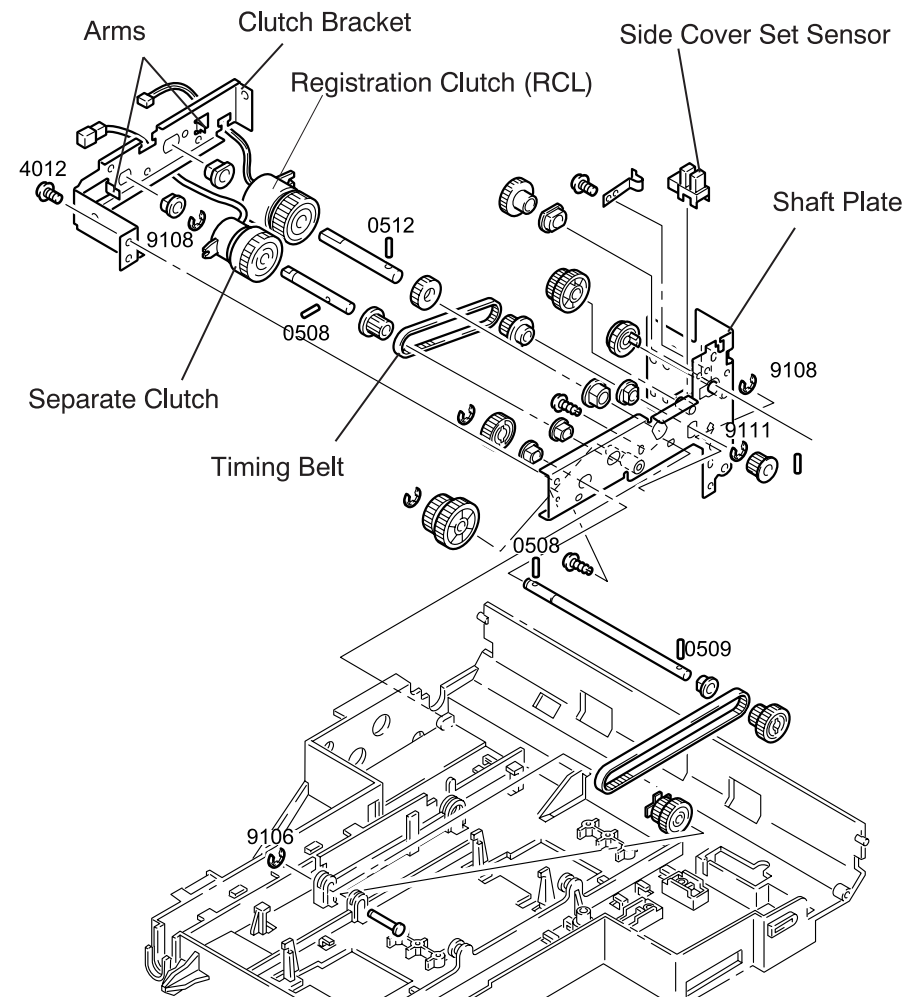
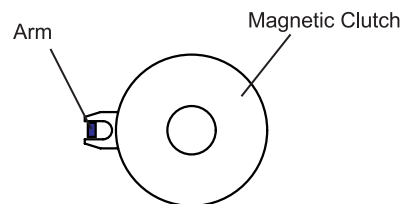


Figure 3-24. Registration/Separate Clutch Removal

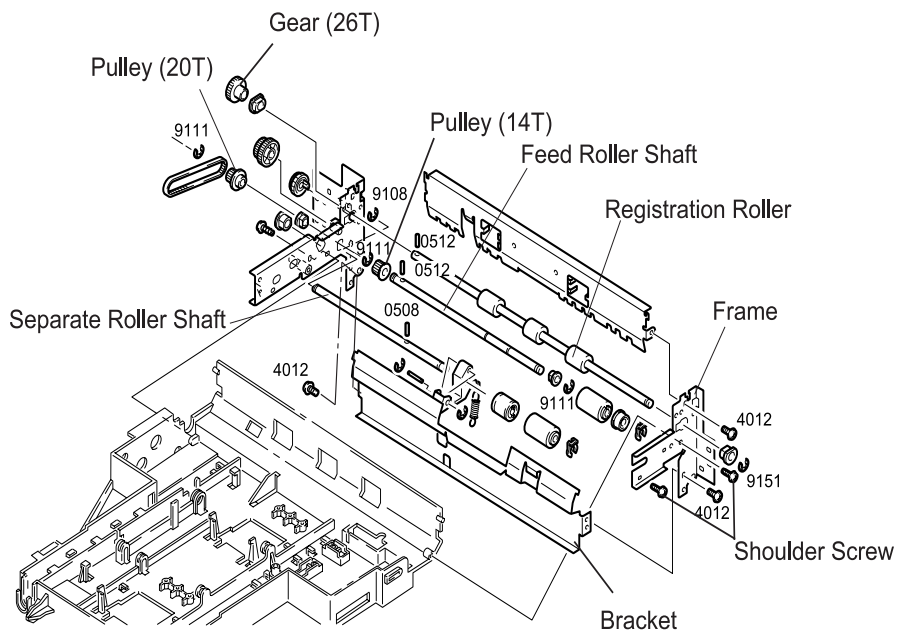


- Since the pins for the clutches can come off easily, be careful when handling the clutches.
- When installing the clutch, be sure to fit the fixing part of the clutch in the arm of the bracket.



### 3.2.3.15 Registration Roller Removal

1. Remove the Paper Take-up Unit. (Refer to Section 3.2.3.)
2. Remove the E-Ring (9151) attached to the front end of the Registration Roller's shaft and remove the Registration Roller and the bushing from the frame.
3. Remove three screws (4012) and two shoulder screws securing the frame to the Paper Take-up Unit.
4. Remove the pin and the gear 26T from the rear part of the Registration Roller.
5. Remove the bushing from the rear end of the Registration Roller and pull the Registration Roller out to the front.



**Figure 3-25.**

### Registration Roller/ Separate Roller/ Feed Roller Shaft Removal

### 3.2.3.16 Separate Roller Shaft Removal

1. Remove the Paper Take-up Unit. (Refer to Section 3.2.3.)
2. Remove the E-Ring (9108) securing the separate roller shaft to the axle plate.
3. Remove the Separate Roller by pulling it forward.

### 3.2.3.17 Feed Roller Shaft Removal

1. Remove the Paper Take-up Unit. (Refer to Section 3.2.3.)
2. Remove the E-Ring (9151) attached to the front end of the Registration Roller's shaft and remove the Registration Roller and the bushing from the frame.
3. Remove the Separate Roller. (Refer to Section 3.2.3.16.)
4. Remove the screw (4012) and two shoulder screws securing the frame to the Paper Take-up Unit.
5. Remove the screw (4012, on the axle plate side) securing the bracket to the axle plate and remove the frame and the bracket.
6. Remove the E-Ring (9111) fixing the Feed Roller Shaft, bushing, and pulley (20T) to the axle plate and release the timing belt from the pulley.
7. Remove the bushing and the pulley (20T) from the Feed Roller Shaft.
8. Remove the E-Ring (9111) fixing the bushing and the pulley (14T) to the Feed Roller Shaft and remove the Feed Roller Shaft from the Paper Take-up Unit.

## 3.2.4 Drive Section Disassembly

### 3.2.4.1 LCC Transport Motor Removal

1. Pull out the paper cassette and remove the Paper Tray Unit. (Refer to Section 3.2.3.)
2. Remove the screw (4020) securing the maintenance cover to the LCC Unit and remove the maintenance cover.

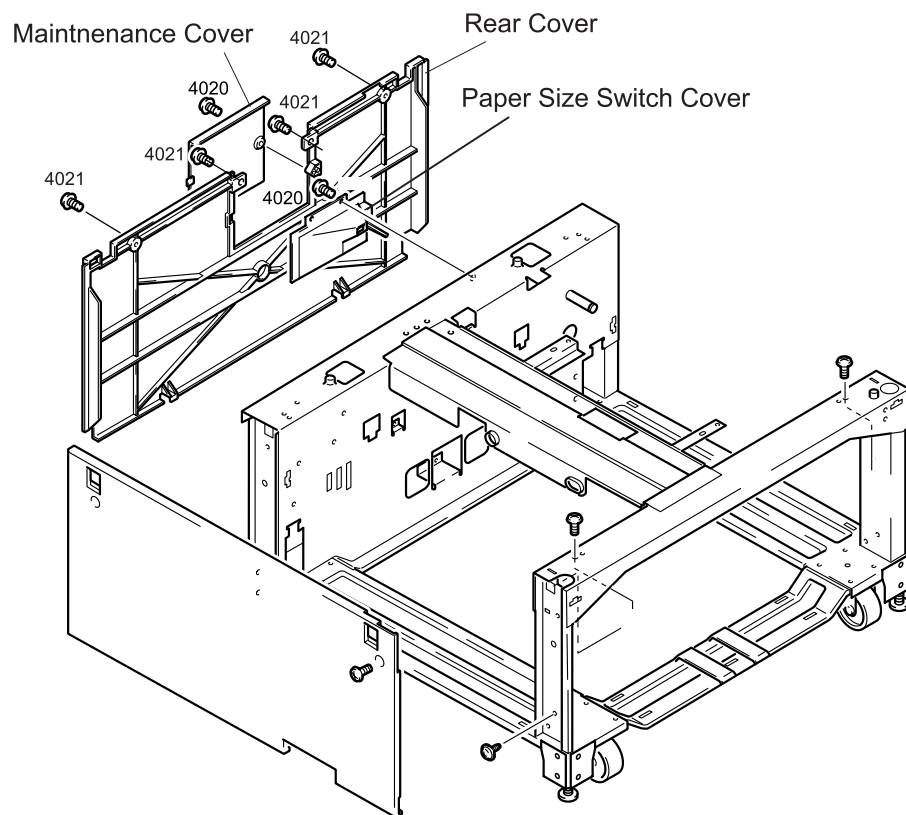


Figure 3-26. Rear Cover Removal (1)

3. Remove four screws (4021) securing the rear cover to the LCC Unit and remove the rear cover.
4. Disconnect the harness from the connector on the LCC transport motor board.
5. Remove two screws (1322) securing the LCC Transport Motor to the LCC Unit.
6. Release the timing belt from the pulley (18T) and remove the LCC Transport Motor.

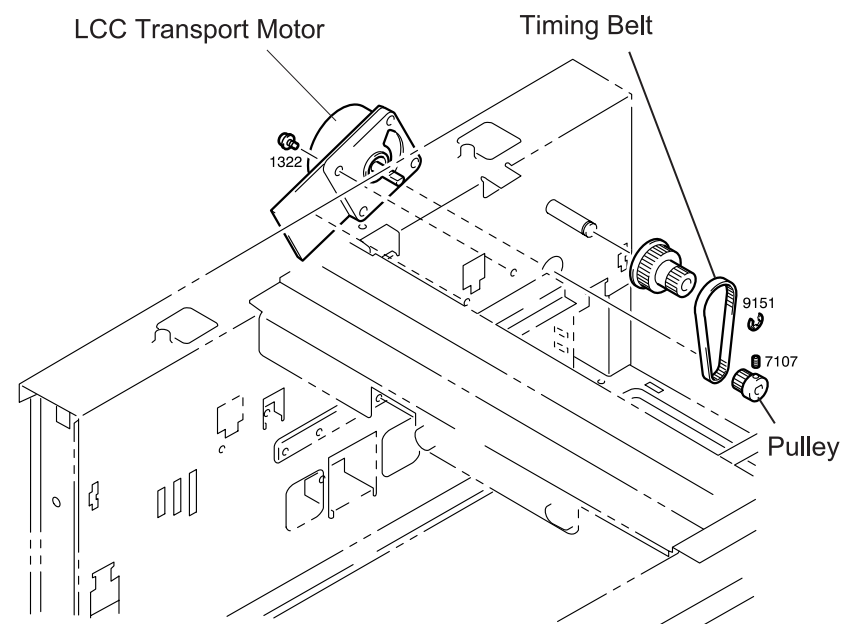


Figure 3-27. LCC Transport Motor Removal

### 3.2.4.2 LCC Set Sensor Removal

1. Pull out the paper cassette and remove the Paper Tray Unit. (Refer to Section 3.2.3.)
2. Remove the rear cover. (Refer to Section 3.2.4.1.)
3. Unhook the LCC Set Sensor from the LCC Unit Frame and remove the sensor.
4. Disconnect the harness from the LCC Set Sensor.

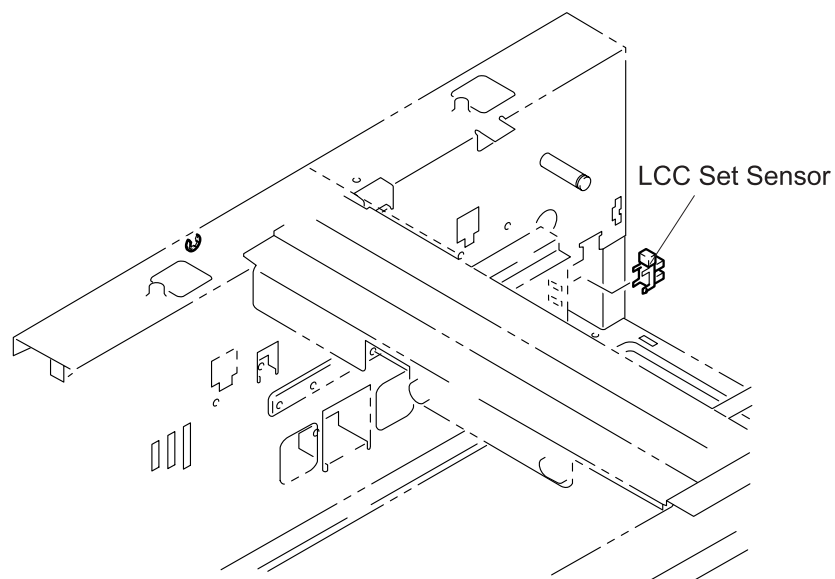


Figure 3-28. LCC Set Sensor Removal

### 3.2.4.3 Paper Near Empty Sensor Removal

1. Pull out the paper cassette and remove the Paper Tray Unit. (Refer to Section 3.2.3.)
2. Remove the rear cover. (Refer to Section 3.2.4.1.)
3. Remove the screw (3501) securing the bracket for the sensor to the LCC Unit Frame and remove the bracket along with the sensor.
4. Remove the E-Ring (9106) fixing the lever for the Paper Near Empty Sensor to the bracket and remove the lever.
5. Unhook the Paper Near Empty Sensor from the bracket and remove the Paper Near Empty Sensor.
6. Disconnect the harness from the Paper Near Empty Sensor.

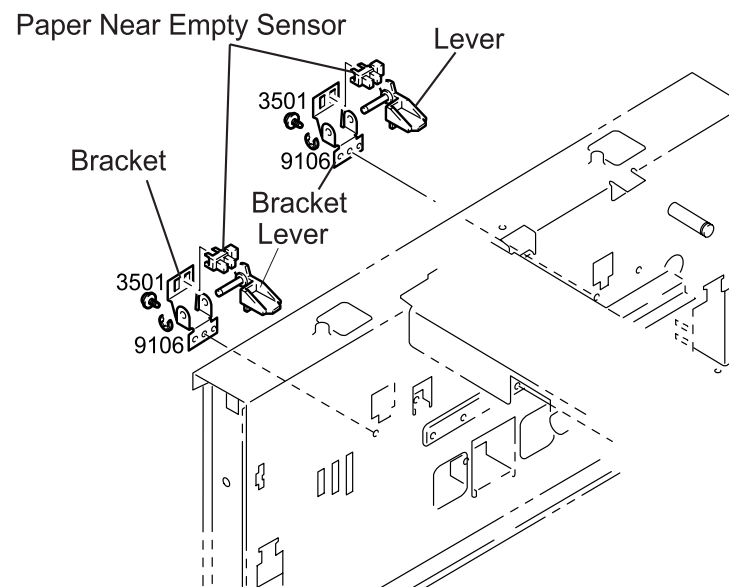


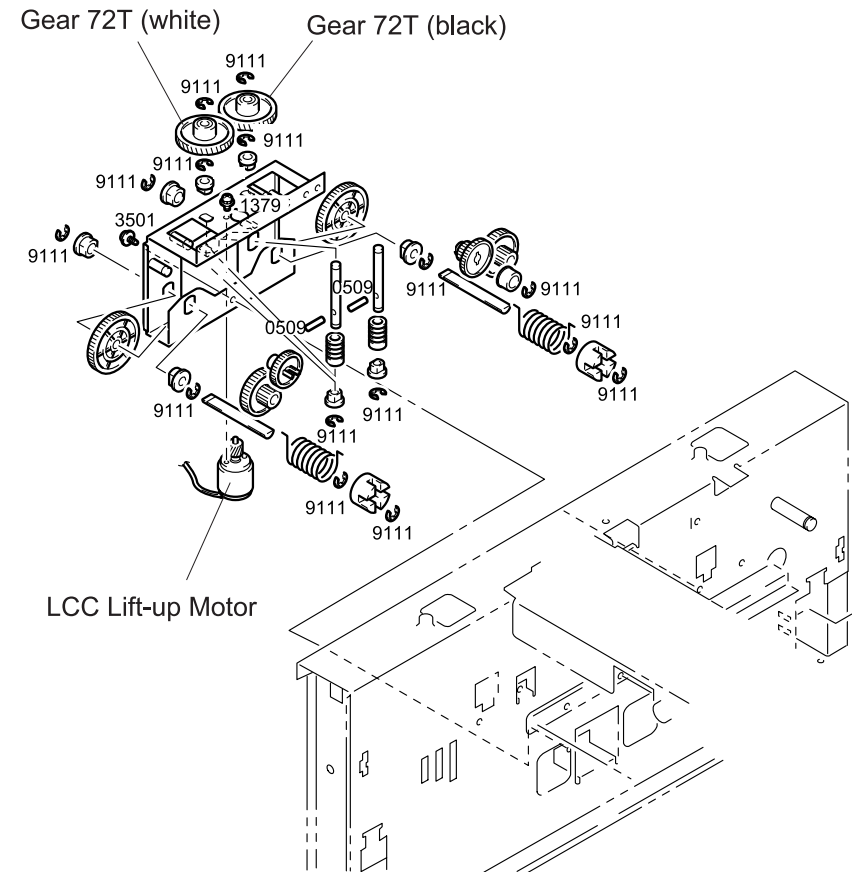
Figure 3-29. Paper Near Empty Sensor Removal

### 3.2.4.4 LCC Lift-up Motor Removal

1. Pull out the paper cassette and remove the Paper Tray Unit. (Refer to Section 3.2.3.)
2. Remove the rear cover. (Refer to Section 3.2.4.1.)
3. Disconnect the LCC Lift-up Motor harness from the relay connector.
4. Remove three screws (3501) securing the axle plate with the LCC Lift-up Motor attached on it to the LCC Unit Frame. Then remove the axle along with the LCC Lift-up Motor.
5. Remove two E-Rings (9111) fixing the gears 72T to the axle plate and remove the gears.
6. Release the harness for the LCC Lift-up Motor from the cable clump in the axle plate.
7. Remove two screws (1379) securing the LCC Lift-up Motor to the axle plate and remove the motor.



**Note the gears 72T integrate the one-way clutches that rotate in the opposite direction from each other. Therefore, be sure to set each gear to the correct position according to the distinguishable color of each gear.**



**Figure 3-30. LCC Lift-up Motor Removal**

### 3.2.4.5 LCC Main Board Removal

1. Pull out the paper cassette and remove the Paper Tray Unit. (Refer to Section 3.2.3.)
2. Remove the rear cover. (Refer to Section 3.2.4.1.)
3. Remove two screws (4020) securing the paper size set switch cover to the LCC Unit Frame and remove the cover.
4. Disconnect the harness from the connector on the LCC Main Board.
5. Remove the screw (3501) securing the LCC Main Board to the LCC Unit Frame.
6. Remove the PWB support and remove the LCC Main Board.

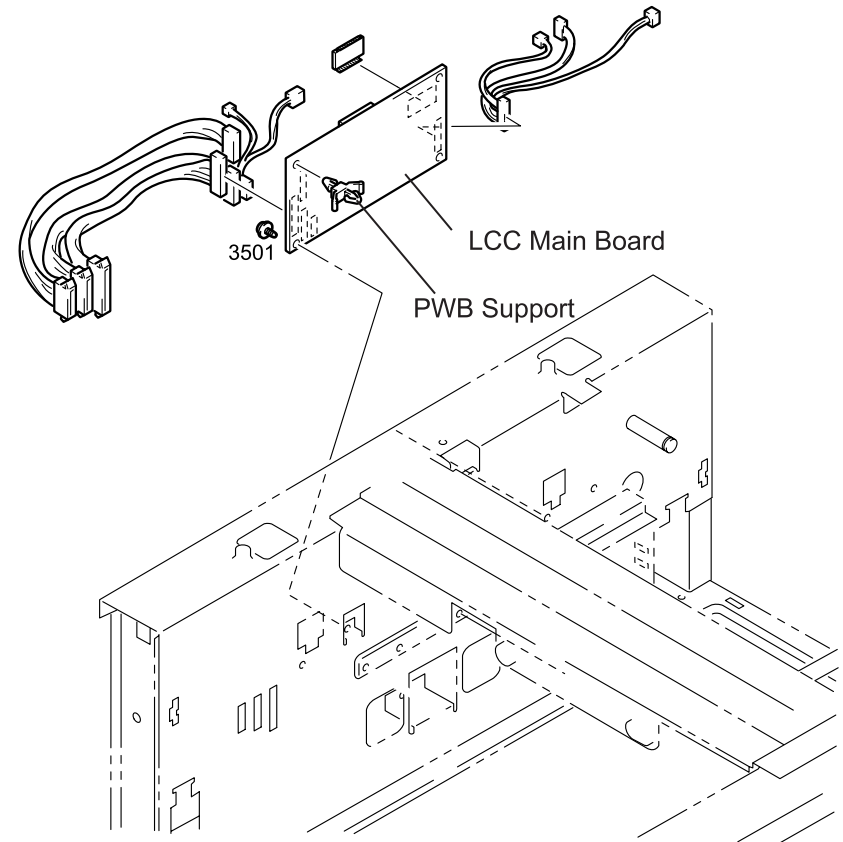
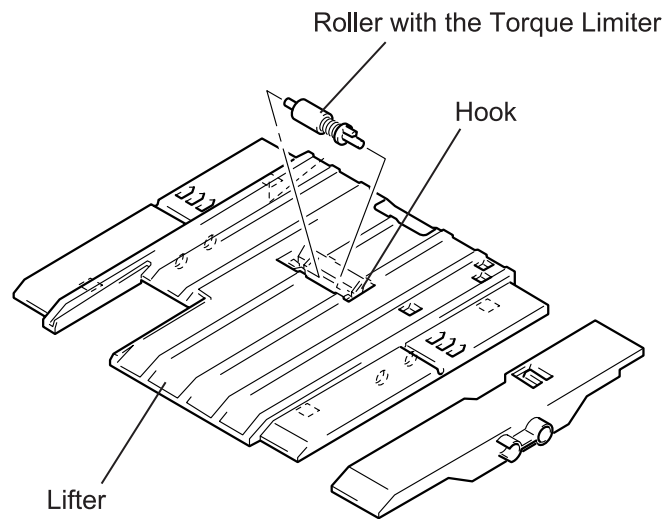


Figure 3-31. LCC Main Board Removal

## 3.2.5 Paper Tray Unit Disassembly

### 3.2.5.1 Roller with the Torque Limiter Removal

1. Pull out the paper cassette and remove the Paper Tray Unit. (Refer to Section 3.2.3.)
2. Release the hook securing the Roller with the Torque Limiter on it to the lifter and remove the roller.



**Figure 3-32. Roller with the Torque Limiter Removal**



### 3.2.5.2 Timing Belt Removal

1. Pull out the paper cassette and remove the Paper Tray Unit. (Refer to Section 3.2.3.)
2. Remove three shoulder screws securing the Front Cover to the Paper Tray Unit.
3. Remove the E-Ring (9111) fixing the cam shaft to the bracket.
4. Remove three screws (3305) securing the bracket to the Paper Tray Unit, then remove the pulley (32T) and the bracket along with the timing belt.
5. Release the hook securing the ground plate for the lifter drive shaft to the pulley (20T) and remove the ground plate from the pulley.
6. Disengage the end of the timing belt from the pulley (20T).
7. Remove the E-Ring (9151) fixing the shaft for the pulley (32T) to the bracket.
8. Sliding the pulley (32T) toward the bracket to remove the pin (0531) and remove the pulley (32T) and the torsion spring from the shaft.
9. Remove the timing belt from the pulley (32T).

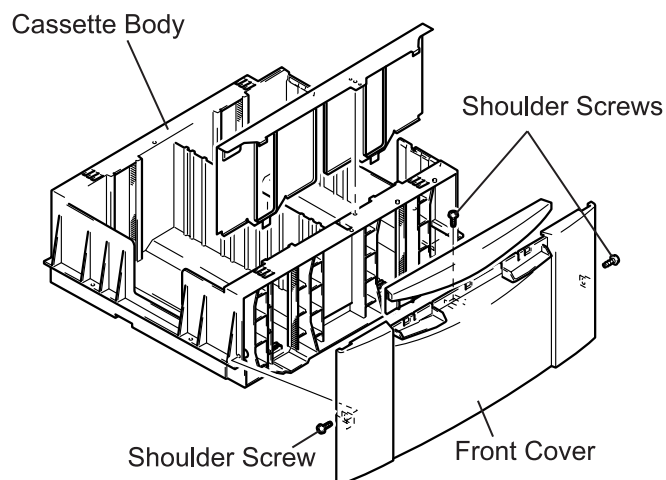


Figure 3-33. Front Cover Removal

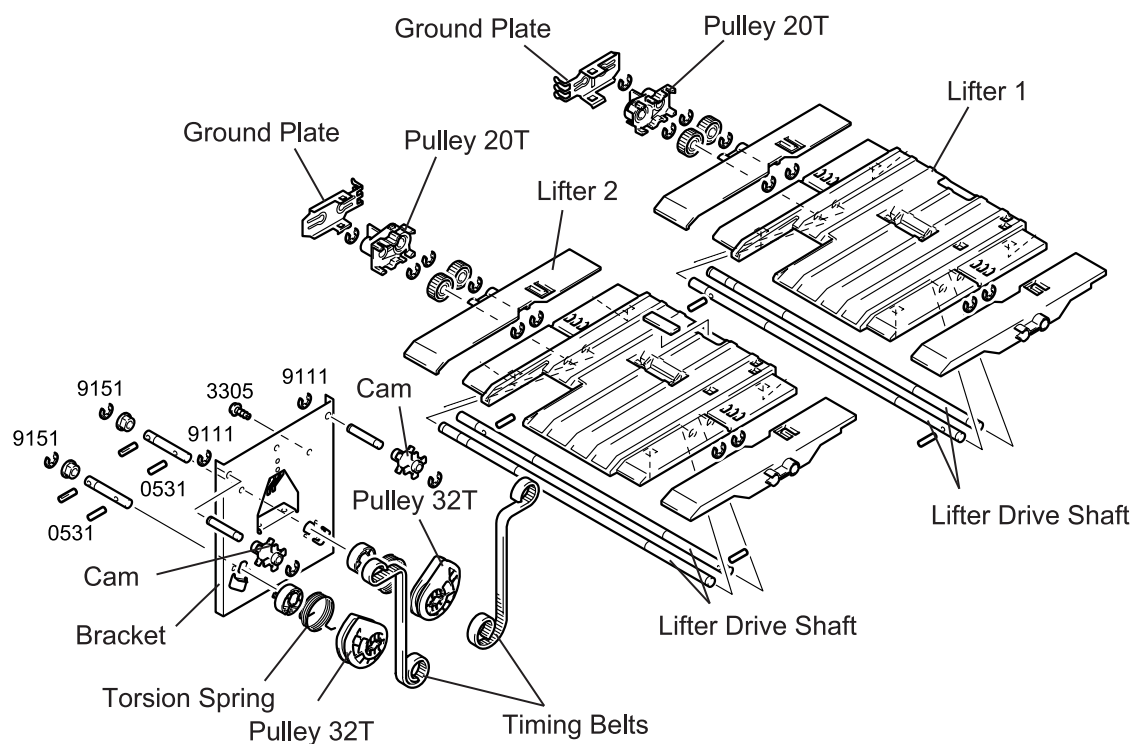
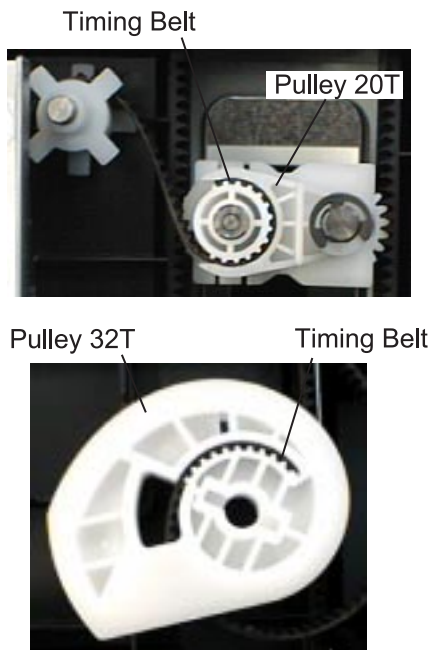


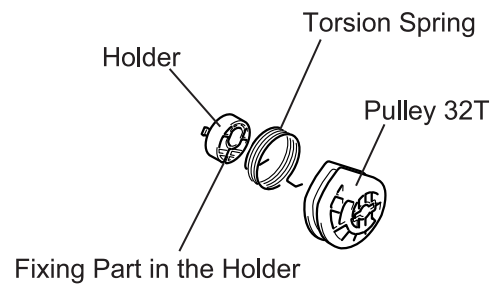
Figure 3-34. Timing Belt Removal



Be sure to install the timing belt to the pulley 20T and pulley 32T correctly as shown below;



When assembling the torsion spring and the pulley 32T, make sure one end of the torsion spring is properly inserted into the fixing part in the holder.



### 3.2.5.3 Lifter Drive Shaft Removal

1. Pull out the paper cassette and remove the Paper Tray Unit. (Refer to Section 3.2.3.)
2. Remove three shoulder screws securing the Front Cover to the Paper Tray Unit. (Refer to Section 3.2.5.2.)
3. Release the hook fixing the ground plate for the Lifter Drive Shaft to the pulley 20T and remove the ground plate from the pulley 20T.
4. Remove the E-Ring (9151) fixing the pulley 20T to the Lifter Drive Shaft and remove the pulley 20T from the Lifter Drive Shaft.
5. Remove two E-Rings (9151) securing two gear 24T beside the pulley 20T to the Lifter Drive Shaft and remove the gears 24T and the pin (0510) from the shaft.
6. Remove two E-Rings (9151) securing two gears 24T located in front of the Paper Tray Unit to the Lifter Drive Shaft, and remove the gears 24T from the shaft.
7. Remove the lifter from the Paper Tray Unit.
8. Remove six E-Rings (9151) securing the Lifter Drive Shaft to the lifter and remove Lifter Drive Shaft.

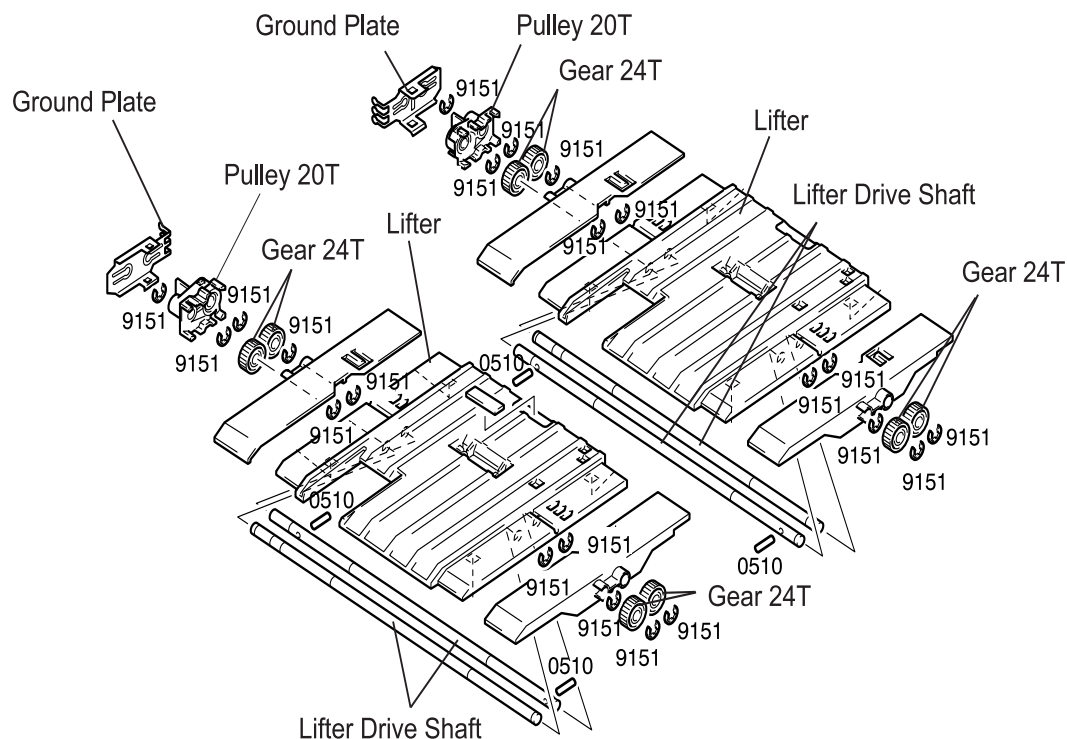


Figure 3-35. Lifter Driver Shaft Removal

### 3.3 Maintenance of the LCC Unit

The maintenance method of the LCC Unit is mostly same as for the printer body. Therefore, this section only describe the method specific to the LCC Unit.

#### 3.3.1 Maintenance Items

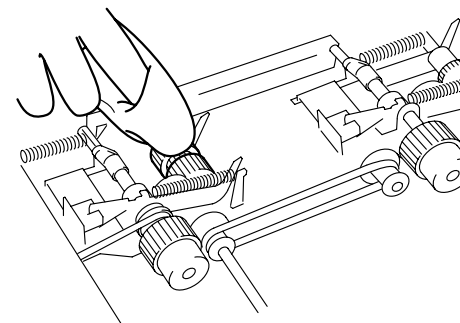
The LCC parts that require maintenance are as listed in the following table.

**Table 3-1. Maintenance Items**

Maintenance Item	Operations required	Replacement Cycle
Paper Take-up Roller 1	Cleaning / Replacement	300,000 sheets
Paper Take-up Roller 2	Cleaning / Replacement	300,000 sheets
Roller with a Torque Limiter	Cleaning / Replacement	300,000 sheets
Feed Roller	Cleaning / Replacement	200,000 sheets
Separate Roller	Cleaning / Replacement	200,000 sheets
Torque Limiter Assembly	Replacement	200,000 sheets
Vertical Transport Roller	Cleaning / Replacement	-
Vertical Transport Roller (driven)	Cleaning / Replacement	300,000 sheets

#### 3.3.2 Cleaning the Paper Take-up Roller

1. Remove the Paper Take-up Unit. (Refer to Section 3.2.3.)
2. Wipe the Paper Take-up Roller with a soft cloth moistened with water.



**Figure 3-36. Cleaning the Paper Take-up Roller**

**CAUTION**



**Do not use any solvent, including alcohol.**

### 3.3.3 Cleaning the Feed/Separate Roller

1. Open the side cover.
2. Wipe the Paper the roller with a soft cloth moistened with water.

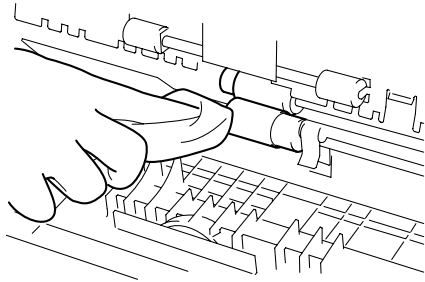


Figure 3-37. Cleaning the Feed/Separate Roller

### 3.3.4 Cleaning the Vertical Transport Roller / Roller (Driven)

1. Remove the Paper Take-up Unit. (Refer to Section 3.2.3.)
2. Wipe the Vertical Transport Roller / Roller (Driven) with a soft cloth moistened with water.

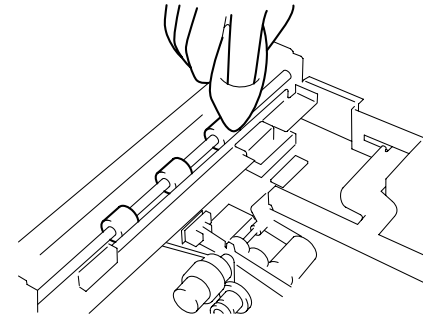


Figure 3-38. Cleaning the Vertical Transport Roller / Roller (Driven)

### 3.3.5 Cleaning the Roller with a Torque Limiter

1. Remove the paper cassette. (Refer to Section 3.2.3.)
2. Wipe the Paper the Roller with a Torque Limiter with a soft cloth moistened with water.

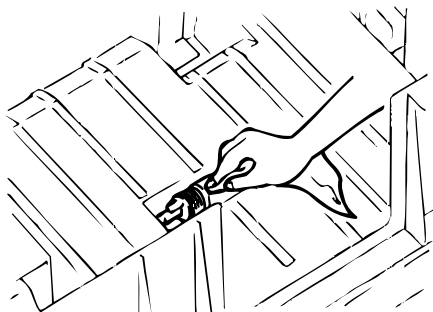


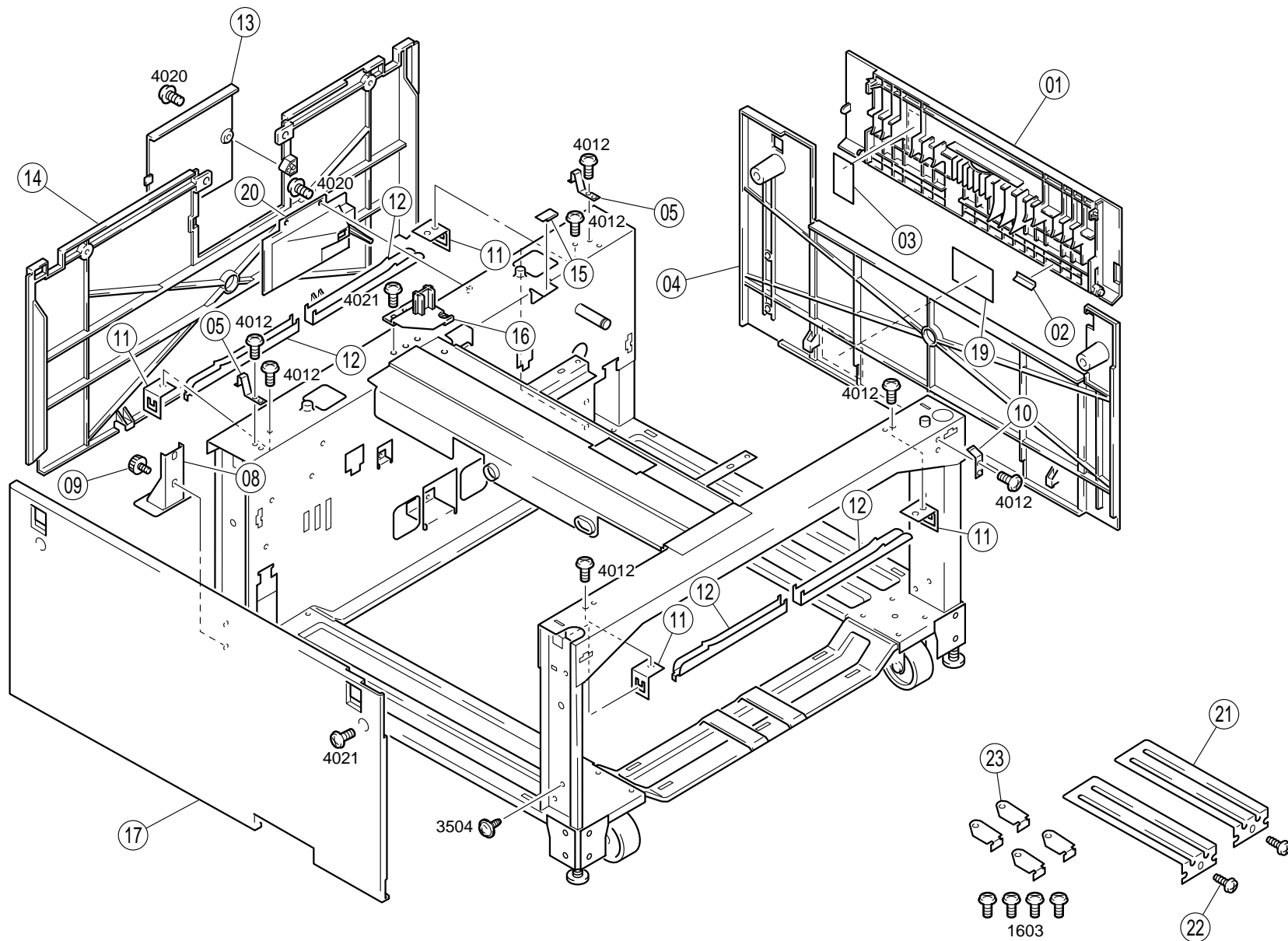
Figure 3-39. Cleaning the Roller with a Torque Limiter

## 3.4 Exploded Diagrams for LCC Unit

### 3.4.1 Housing

Table 3-2. Part List - Housing

No.	Part Name	No.	Part Name
1	COVER	13	COVER
2	SHEET	14	REAR COVER
3	SHEET	15	POLYESTER FILM
4	RIGHT COVER	16	HOLDER
5	GROUND PLATE	17	LEFT COVER
6	SHOULDER SCREW	18	COVER
7	STOPPER	19	LABEL WARNING
8	BRACKET	20	COVER
9	SHOULDER SCREW	21	REGULATING PLATE
10	GROUND PLATE	22	SHOULDER SCREW
11	BRACKET	23	HOLDER
12	HANDLE	-	-



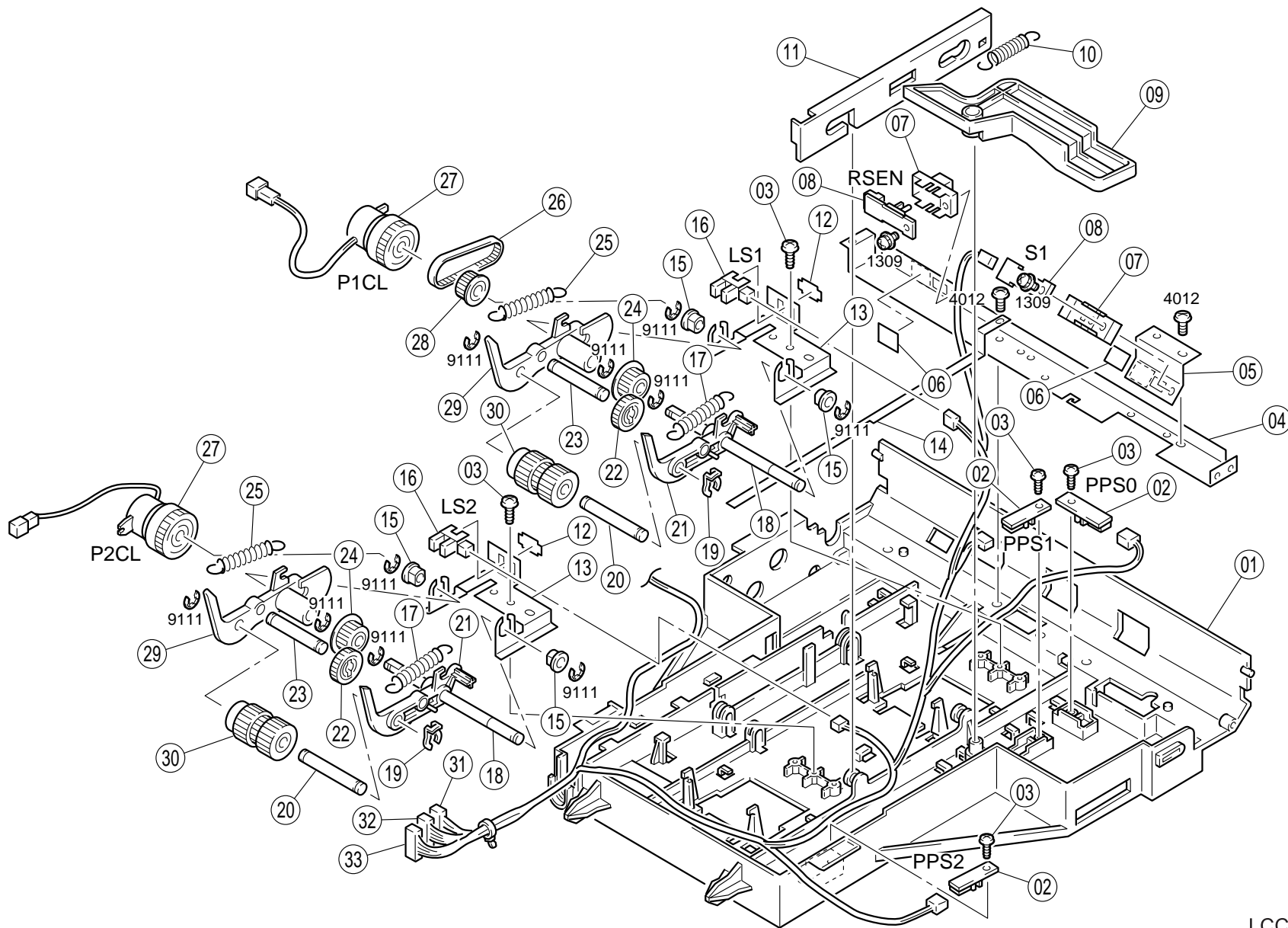
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### 3.4.2 Paper Take-up Section (A)

Table 3-3. Part List - Paper Take-up Section (A)

No.	Part Name	No.	Part Name
1	GUIDE PLATE	18	SHAFT
2	PHOTO INTERRUPTER (PPS0-2)	19	STOPPER RING
3	SHOULDER SCREW	20	SHAFT
4	REINFORCE PLATE	21	ARM
5	BRACKET	22	GEAR 26T
6	POLYESTER FILM	23	SHAFT
7	HOLDER	24	PULLEY 20T
8	PHOTO INTERRUPTER (RSEN, S1)	25	TENSION SPRING
9	ARM	26	TIMING BELT
10	TENSION SPRING	27	CLUTCH (P1CL, PC2L)
11	ARM	28	PULLEY 18T
12	STOPPER	29	ARM
13	BRACKET	30	PULLEY 26T
14	GROUND PLATE	31	HARNESS
15	BUSHING	32	HARNESS
16	PHOTO INTERRUPTER (Is1, 2)	33	HARNESS
17	TENSION SPRING	-	-

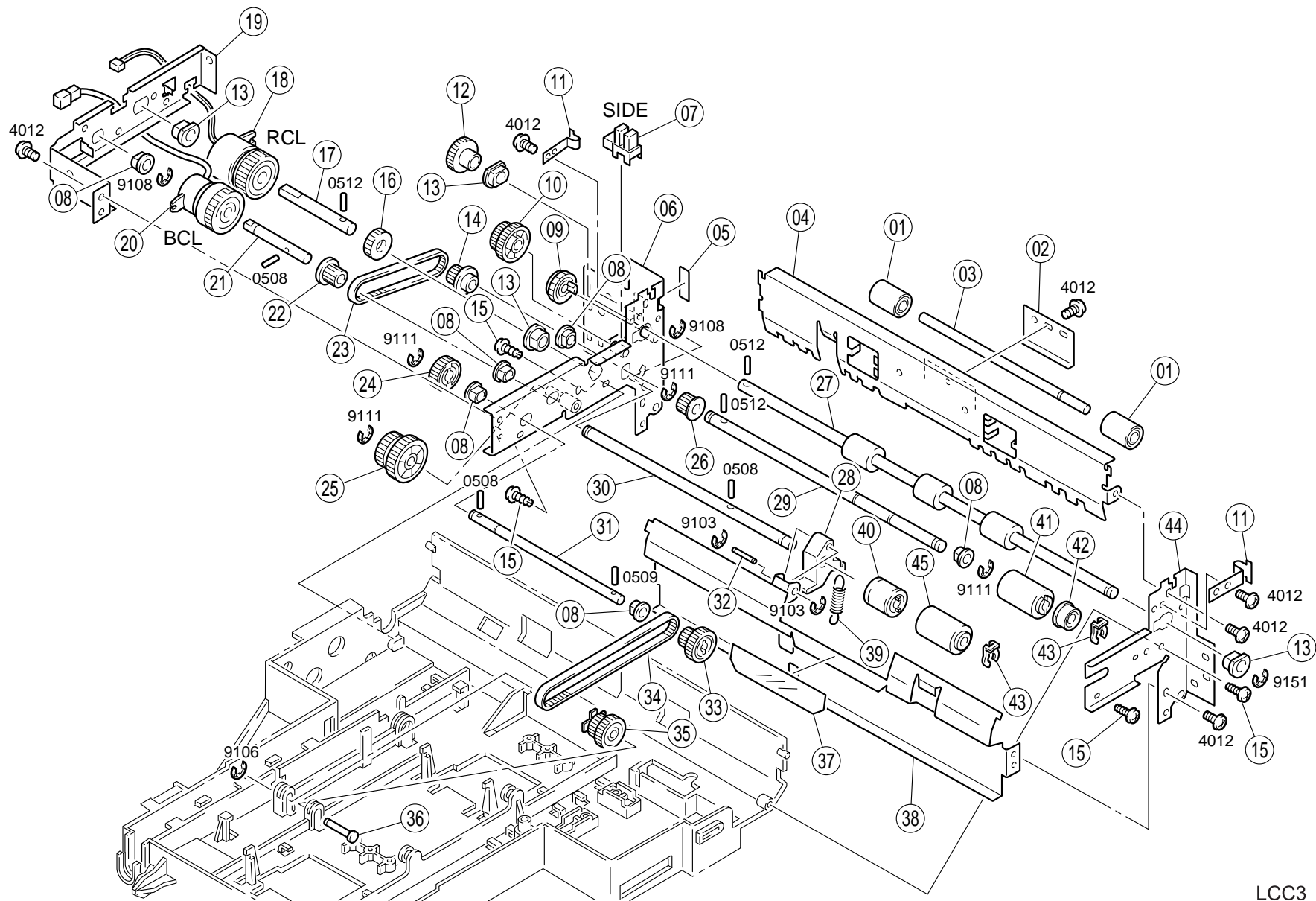


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### 3.4.3 Paper Take-up Section (B)

Table 3-4. Part List - Paper Take-up Section (B)

No.	Part Name	No.	Part Name
1	ROLLER	24	GEAR 24T
2	PLATE SPRING	25	GEAR 20/35T
3	SHAFT	26	PULLEY 14T
4	BRACKET	27	ROLLER
5	LABEL	28	LEVER
6	AXLE PLATE	29	SHAFT
7	PHOTO INTERRUPTER, DOORSET (SIDE)	30	SHAFT
8	BUSHING	31	SHAFT
9	GEAR 18T	32	SHAFT
10	GEAR 22/29T	33	PLY GEAR 14/26T
11	PLATE SPRING	34	TIMING BELT
12	GEAR 26T	35	PLY GEAR 14/26T
13	BUSHING	36	SHAFT
14	PULLEY 20	37	POLYESTER FILM
15	SHOULDER SCREW	38	BRACKET
16	GEAR 20T	39	TENSION SPRING
17	SHAFT	40	ARBOR ASSY
18	CLUTCH, REGIST (RCL)	41	ROLLER
19	BRACKET	42	CLUTCH
20	CLUTCH, SEPARATE (BCL)	43	STOPPER RING
21	SHAFT	44	FRAME
22	PULLEY 18T	45	ROLLER
23	TIMING BELT	--	-

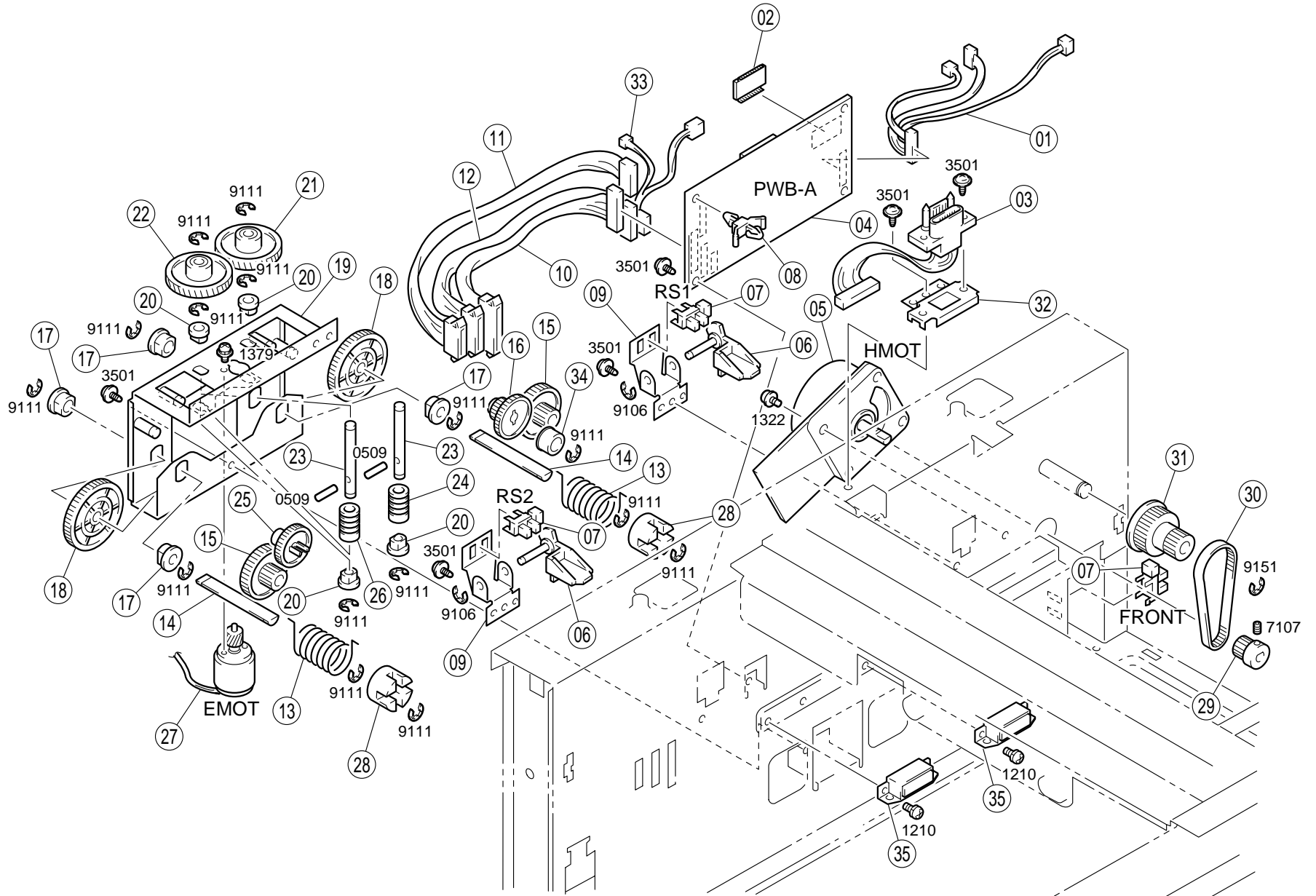


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### 3.4.4 Drive Section

**Table 3-5. Part List - Drive Section**

No.	Part Name	No.	Part Name
1	HARNESS	19	AXLE PLATE
2	IC	20	BUSHING
3	HARNESS	21	GEAR 72T
4	PW BOARD-A, MAIN (PWB-A)	22	GEAR 72T
5	MOTOR, TRANS (HMOT)	23	SHAFT
6	LEVER	24	WORM GEAR
7	PHOTO INTERRUPTER (FRONT, RS1,2)	25	GEAR 16/32T
8	PWB SUPPORT	26	WORM GEAR
9	BRACKET	27	MOTOR, LIFT-UP (EMOT)
10	HARNESS	28	HOLDER
11	HARNESS	29	PULLEY 18T
12	HARNESS	30	TIMING BELT
13	PRESSURE SPRING	31	PLY GEAR 16/50T
14	SHAFT	32	BRACKET
15	GEAR 16/32T	33	HARNESS
16	GEAR 16/32T	34	ARBOR
17	BUSHING	35	MAGNET CATCH
18	GEAR 58T	-	-

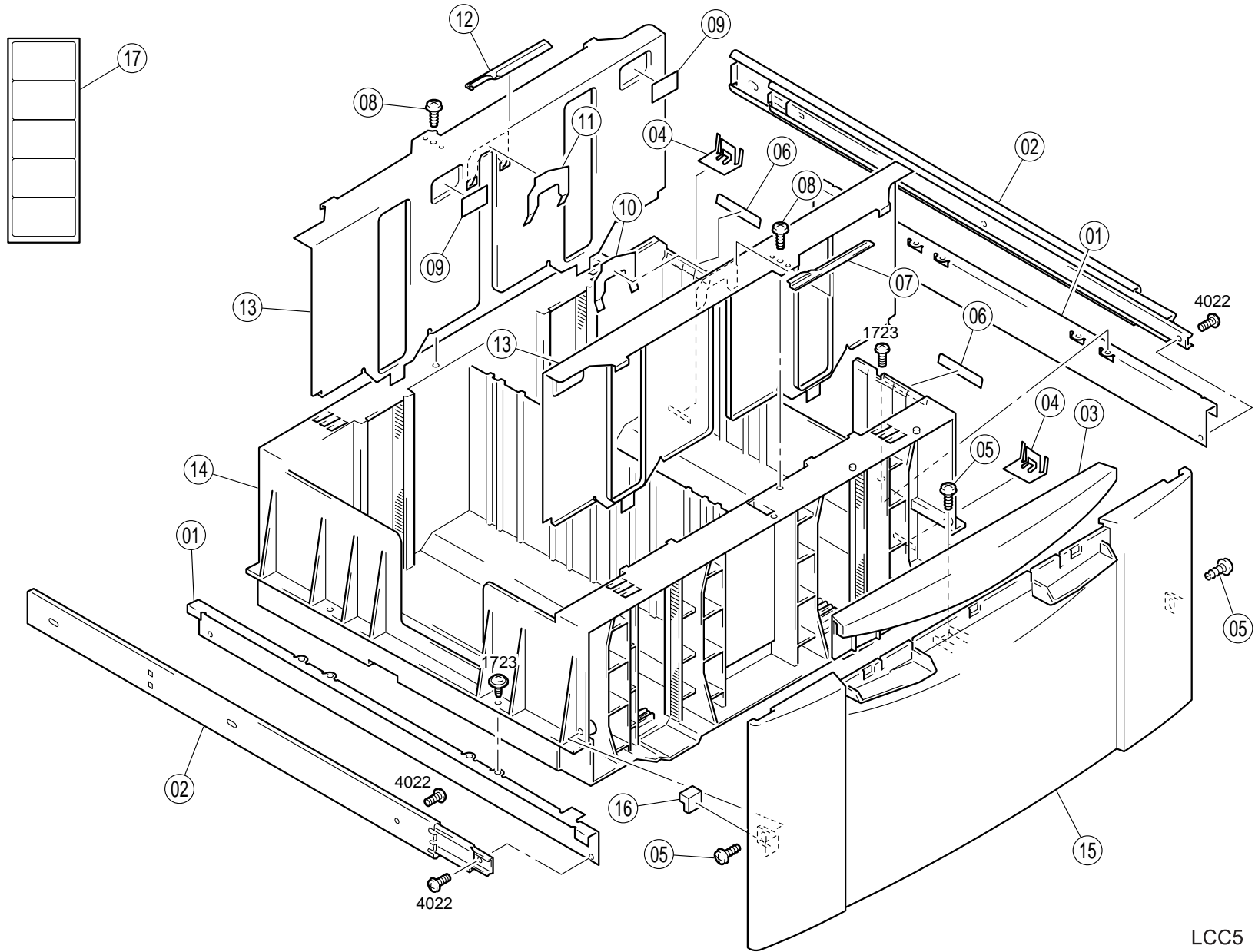


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### 3.4.5 Paper Tray Unit (A)

**Table 3-6. Part List - Paper Tray Unit (A)**

No.	Part Name	No.	Part Name
1	BRACKET	10	POLYESTER FILM
2	RAIL	11	POLYESTER FILM
3	HANDLE	12	HOLDER
4	GROUND PLATE	13	REGULATING PLATE
5	SHOULDER SCREW	14	CASSETTE BODY
6	POLYESTER FILM	15	FRONT COVER
7	HOLDER	16	STOPPER
8	SHOULDER SCREW	17	LABEL SIZE
9	LABEL MAX LEVEL	-	-



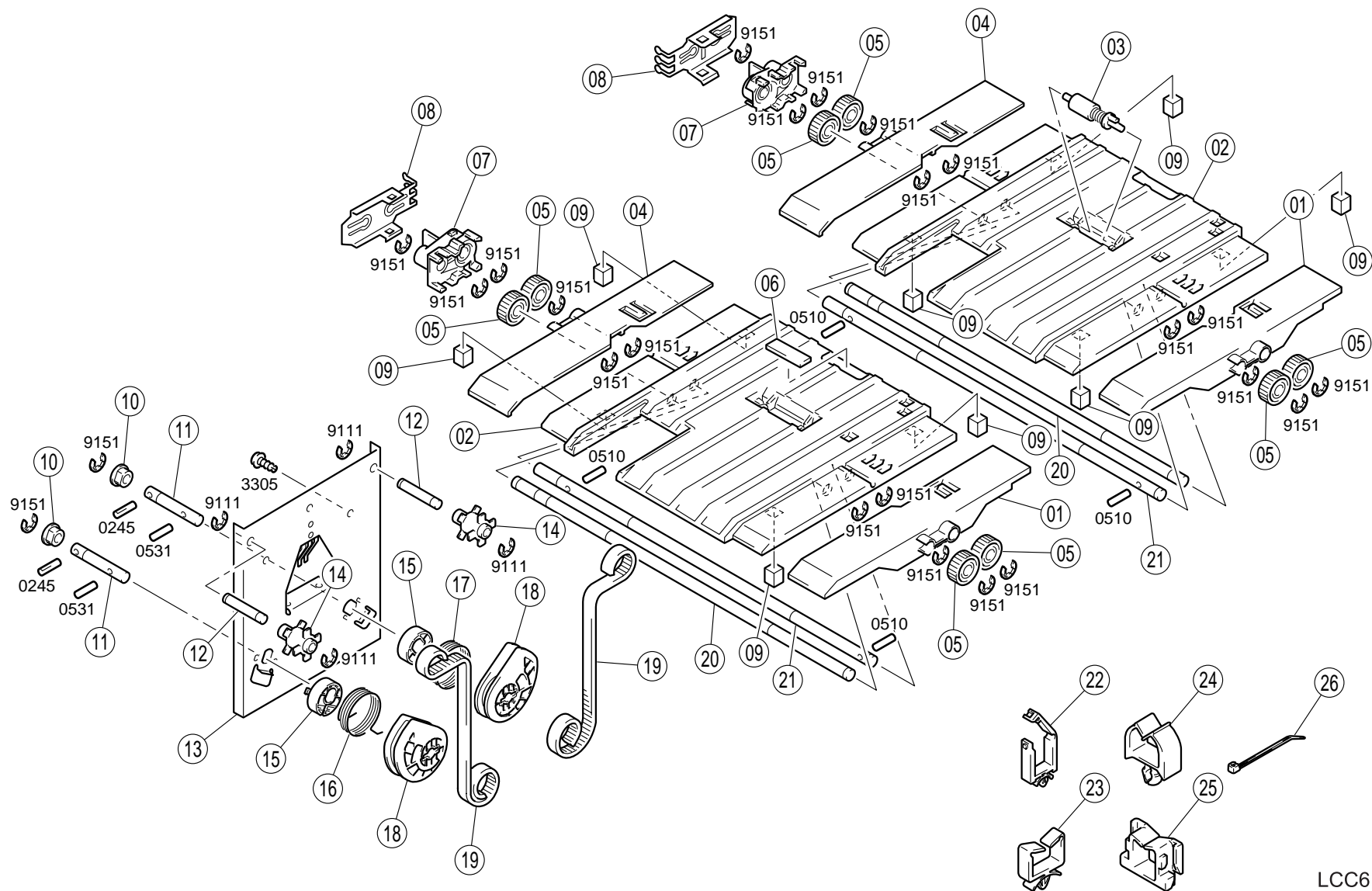
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### 3.4.6 Paper Tray Unit (B)

**Table 3-7. Part List - Paper Tray Unit (B)**

No.	Part Name	No.	Part Name
1	HOLDER	14	CAM
2	GUIDE PLATE	15	HOLDER
3	ROLL ASSY	16	TORSION SPRING
4	HOLDER	17	TORSION SPRING
5	GEAR 24T	18	PULLEY 32T
6	PAD	19	TIMING BELT
7	PULLEY 20T	20	SHAFT
8	GROUND PLATE	21	SHAFT
9	CUSHION	22	WIRING SADDLE
10	BUSHING	23	WIRING SADDLE
11	SHAFT	24	WIRING SADDLE
12	SHAFT	25	EDGE COVER
13	BRACKET	26	CABLE TIE



LCC6

**CHAPTER**

**4**

**5-BIN UNIT**

## 4.1 Installing the 5-Bin Unit

This section describes how to install the 5-Bin Unit to the printer main body. Note you are required to remove optional units such as the 5-Bin Unit when servicing the printer. The procedure for removing the 5-Bin Unit is not included since you can remove it by reversing the installation procedure.



**Note the 5-Bin Unit can not be used with the 10-Bin Unit.**

1. Open the packing carton and get a 5-Bin Unit, two fixing screws, separate cover, and another box containing five trays, and a user's manual.

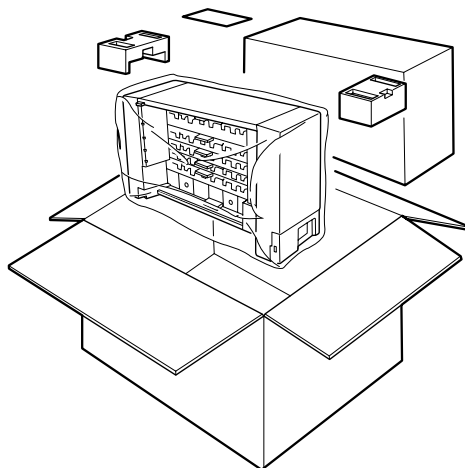


Figure 4-1. Unpacking



**After removing the packing materials, please keep them out of children's reach.**

2. Remove the protection materials and tapes from the 5-Bin Unit.

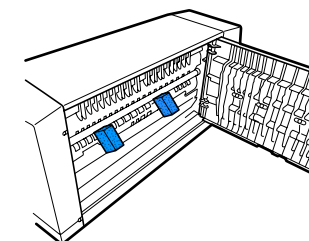
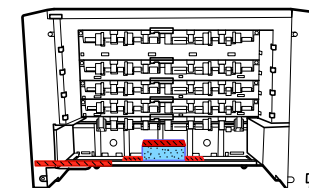
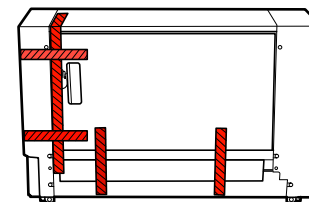
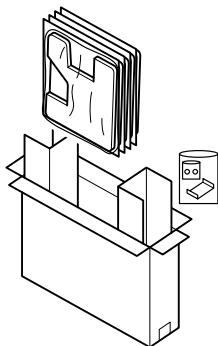


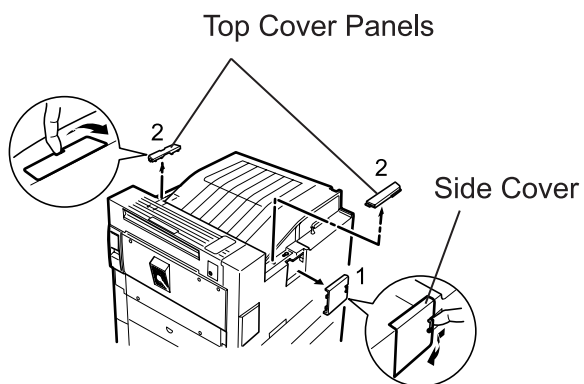
Figure 4-2. Protection Material & Tape Removal

3. Get the five trays out of the box.



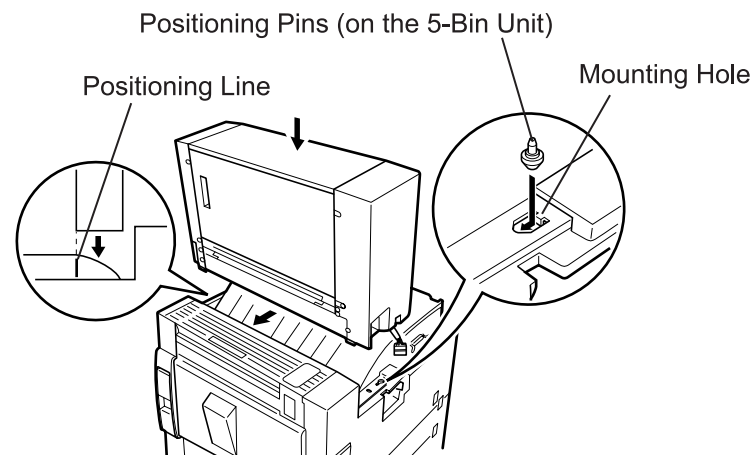
**Figure 4-3. Getting the five Trays**

4. Turn the printer power off and disconnect the AC power cable and interface cable.
5. If a 10-Bin Unit is installed to the printer, remove it. (Refer to Chapter 5.)
6. Remove two top cover panels (front and rear optional covers) from the top of the printer.



**Figure 4-4. Top Cover Panel/Side Cover Removal**

7. Remove the side cover from the back of the printer.
8. Place the 5-Bin Unit on the printer by fitting the positioning pins on the 5-Bin Unit in the holes on the printer and also aligning the front face of the 5-Bin Unit with the positioning line on the printer. Then shift the 5-Bin Unit to the fuser unit side until it does not move any further.



**Figure 4-5. Placing the 5-Bin Unit**

9. Using the included fixing screws, fix the 5-Bin Unit to the printer by the front and back of the printer.

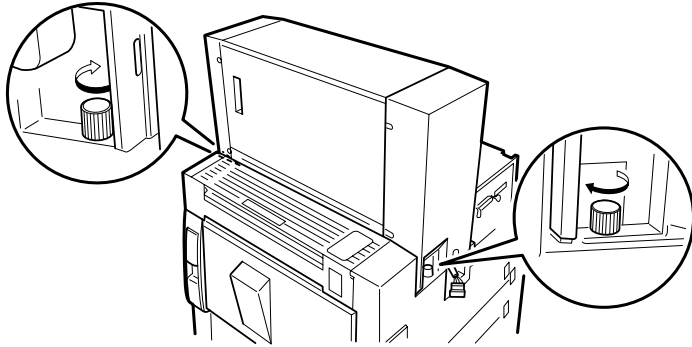


Figure 4-6. Fixing the 5-Bin Unit

10. Connect the cable from the 5-Bin Unit to the connector located at the side cover of the printer.

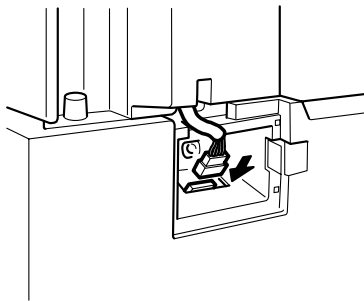


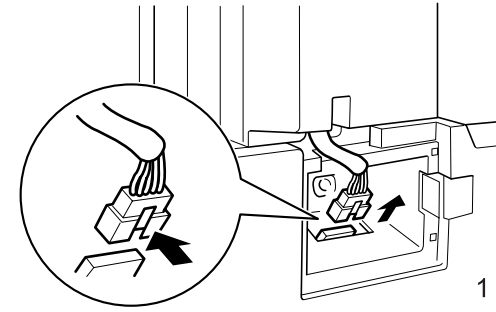
Figure 4-7. Connecting the Cable



**When connecting/disconnecting the cable to/from the connector at the side cover, make sure the printer power is off.**



**When disconnecting the cable for the 5-Bin Unit, unlock the tab on the connector.**



11. Close the side cover.

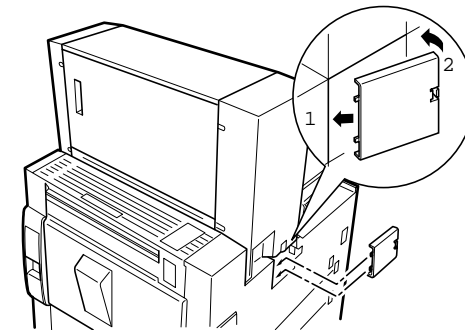


Figure 4-8. Side Cover Installation

12. Install the separate cover to the mounting screw part of the 5-Bin Unit.

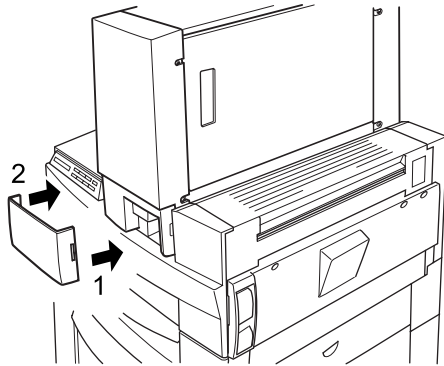


Figure 4-9. Separate Cover Installation

13. Set the 1st tray (bottom tray) by fitting the protrusions on the tray in the sockets. Make sure the tray is stable with its self-weight.

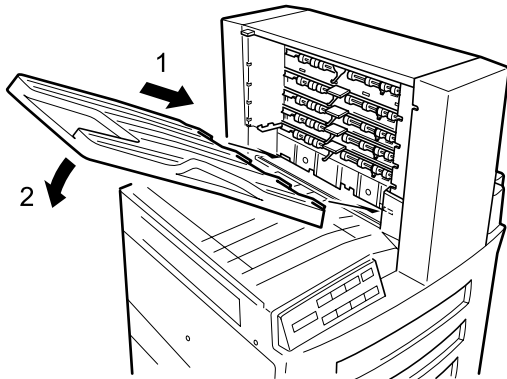
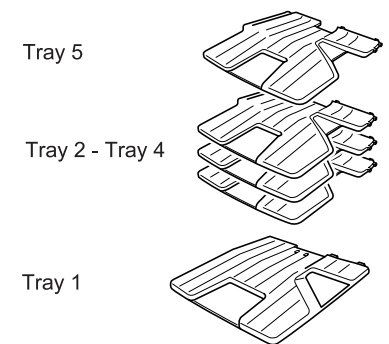


Figure 4-10. Tray Installation - 1st Tray



Note the shape of the tray varies depending on the installation position, as shown on the right. Therefore, be sure to install each tray to the correct position.



14. Insert the other trays by fitting the protrusions on the trays in the mounting holes in the 5-Bin Unit. Then hook each tray to the cutout in the both sides on the 5-Bin Unit.

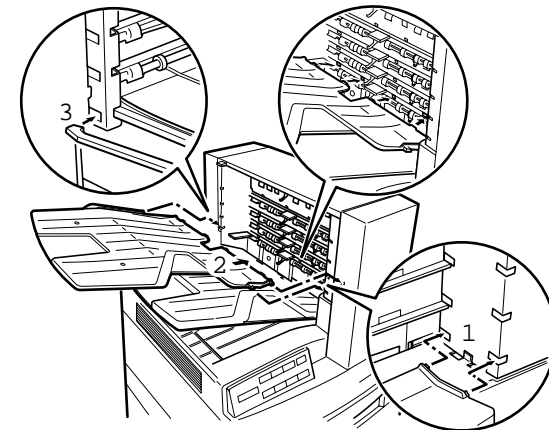


Figure 4-11. Tray Installation - Other Trays

15. When the 5-Bin Unit is installed, connect the I/F cable and the AC Power cable, then turn the printer on.

## 4.2 Disassembly and Assembly of the 5-Bin Unit

### 4.2.1 Front Cover Removal

1. Remove the 5-Bin Unit. (Refer to Section 4.1.)
2. Remove four screws (3541) securing the Front Cover to the 5-Bin Unit, and remove the Front Cover by pulling it forward.

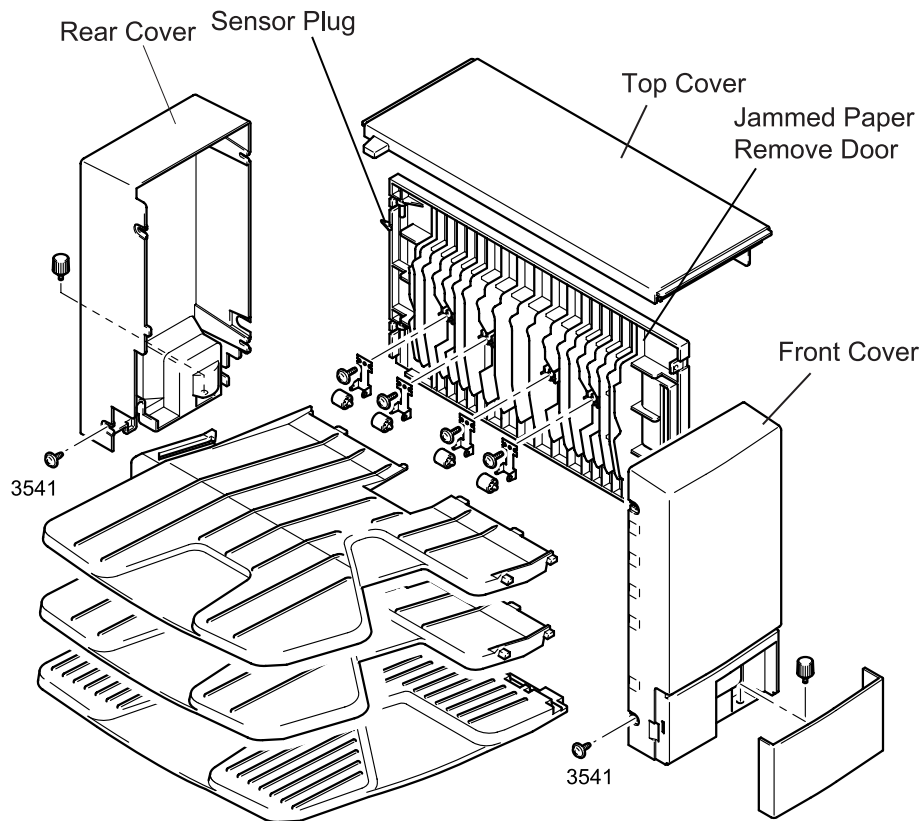


Figure 4-12. Front Cover Removal

### 4.2.2 Rear Cover Removal

1. Remove the 5-Bin Unit. (Refer to Section 4.1.)
2. Remove four screws (3541) securing the Rear Cover to the 5-Bin Unit, and remove the Rear Cover by pulling it to the rear. (See Figure 4-12.)

**NOTE:** If Front/Rear Cover is removed, the Top Cover is also removed together.

### 4.2.3 Jammed Paper Remove Door Removal

1. Remove the Top and Rear Covers. (Refer to Section 4.2.2.)
2. Open the Jammed Paper Removal Door until the sensor flag does not interfere with the unit frame and also the door can be removed from the frame. (viewing from the top, approximately 40° is needed.) Then, remove the door by moving it upward.

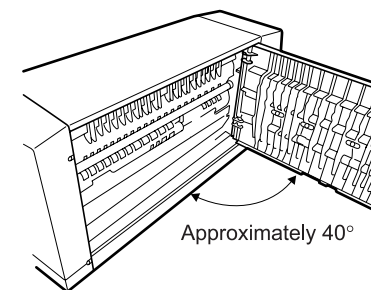


Figure 4-13. Jammed Paper Remove Door Removal



## 4.2.4 Shift Motor (M2) Removal

1. Remove the Front Cover. (Refer to Section 4.2.1.)
2. Remove two screws (3501) securing the bracket for the Shift Motor to the 5-Bin Unit and pull out the Bin 1 shift mechanism.
3. Separate the cam gear 64T from the arm in the Bin 1 shift mechanism.
4. Remove two screws (3402) securing the Shift Motor to the bracket and remove the motor.
5. Disconnect the harness for the motor from the relay connector.

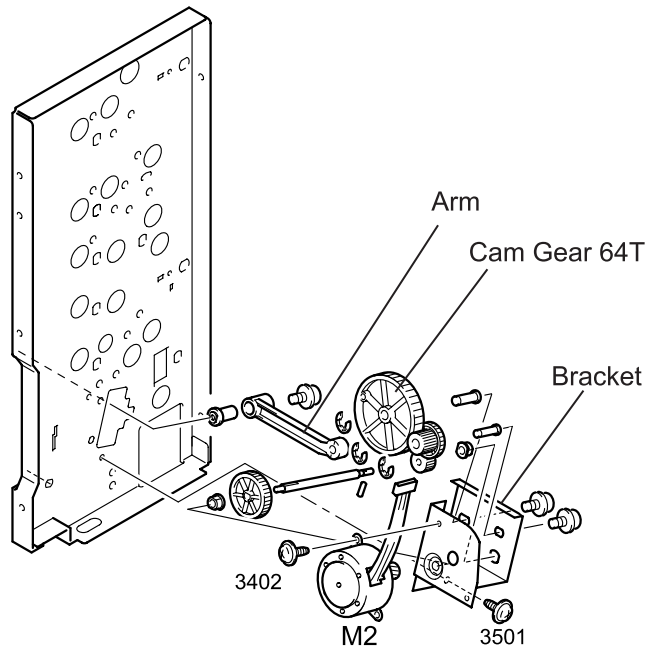


Figure 4-14. Shift Motor (M2) Removal

### 4.2.5 Guide Position Sensor (PC3) Removal

1. Remove the Front Cover, Rear Cover, Top Cover, and the Jammed Paper Remove Door. (Refer to Section 4.2.1, Section 4.2.2, and Section 4.2.3.)
2. Rotating the paper guide drive motor, move the paper guide to the top position (position used at Bin 4/5 feeding).
3. Remove two screws (3704) securing the holder (detection plate) to the frame and remove the holder.
4. Remove the sensor stopper from the paper guide.
5. Unhook the Guide Position Sensor from the paper guide.
6. Disconnect the harness from the connector on the sensor.

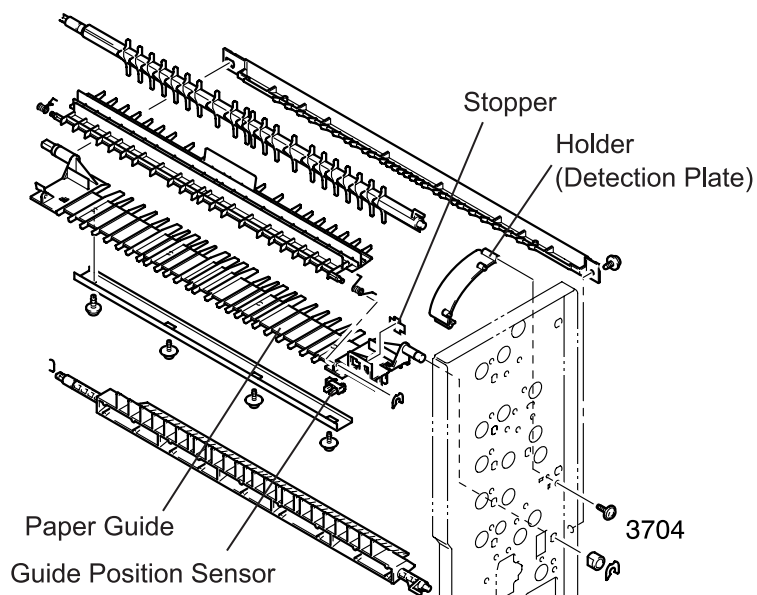


Figure 4-15. Guide Position Sensor Removal

### 4.2.6 Control Board (PWB-A) Removal

1. Remove the Rear Cover. (Refer to Section 4.2.2.)
2. Disconnect the harness from the connector on the Control Board.
3. Remove four PWB support securing the Control Board to the bracket and remove the Control Board.

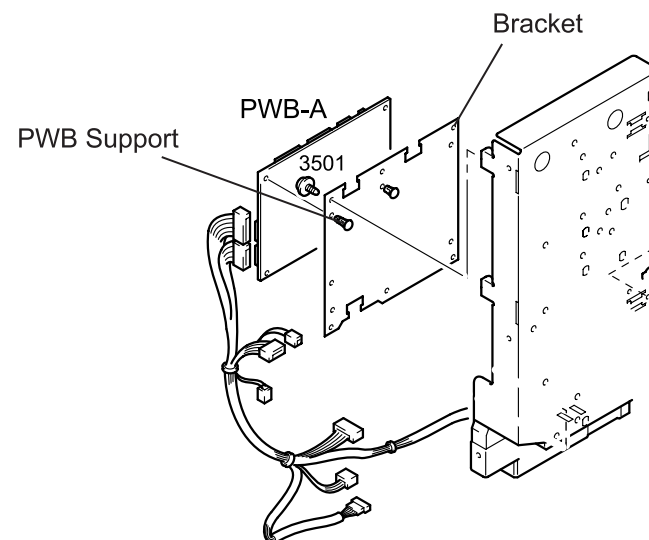


Figure 4-16. Control Board (PWB-A) Removal

## 4.2.7 Bin 4/ Bin 5 Switch Solenoid (SL2) Removal

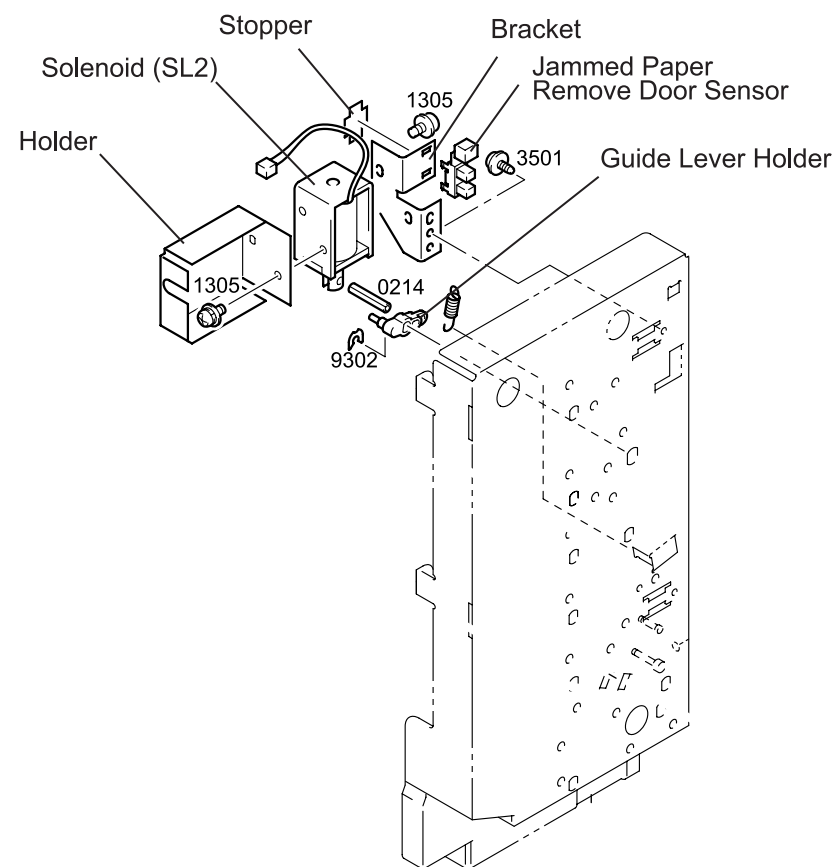
1. Remove the Rear Cover. (Refer to Section 4.2.2.)
2. Remove the Control Board. (Refer to Section 4.2.6.)
3. Release the harness from the cable clamp in the bracket.
4. Remove six screws (3501) securing the bracket to the unit frame and remove the bracket.
5. Remove the screw (3501) securing the bracket for the Bin 4/Bin 5 Switch Solenoid to the unit frame and remove the bracket along with the jammed paper remove door sensor.
6. Remove two screws (1305) securing the Bin 4/Bin 5 Switch Solenoid to the bracket and remove the bracket from the Bin 4/Bin 5 Switch Solenoid.
7. Remove two screws (1305) securing the Bin 4/Bin 5 Switch Solenoid to the holder and remove the holder from the Bin 4/Bin 5 Switch Solenoid.



**When installing the plunger of the solenoid, be sure to join the spring pin (0214) in the plunger with the guide lever holder.**



**When removing the Bin 4/Bin 5 Switch Solenoid, pay attention to the plunger as it will come off easily.**



**Figure 4-17. Bin 4/Bin 5 Switch Solenoid Removal**

### 4.2.8 Jammed Paper Remove Door Sensor (PC1) Removal

1. Remove the Rear Cover. (Refer to Section 4.2.2.)
2. Remove the Control Board. (Refer to Section 4.2.6.)
3. Release the harness from the cable clamp in the bracket.
4. Remove six screws (3501) securing the bracket to the unit frame and remove the bracket.
5. Remove the screw (3501) securing the bracket for the Bin 4/Bin 5 Switch Solenoid to the unit frame and remove the bracket along with the Jammed Paper Remove Door Sensor.
6. Remove the stopper attaching the Jammed Paper Remove Door Sensor to the bracket.
7. Release the hook on the Jammed Paper Remove Door Sensor and remove the sensor from the bracket.
8. Disconnect the harness from the connector on the Jammed Paper Remove Door Sensor.

### 4.2.9 Transport Motor (M1) Removal

1. Remove the Rear Cover. (Refer to Section 4.2.2.)
2. Disconnect the harness for the Transport Motor from the connector on the Control Board.
3. Release the harness from the harness clamp located below the Transport Motor.
4. Remove two screws (3501) securing the Transport Motor to the bracket and remove the motor.

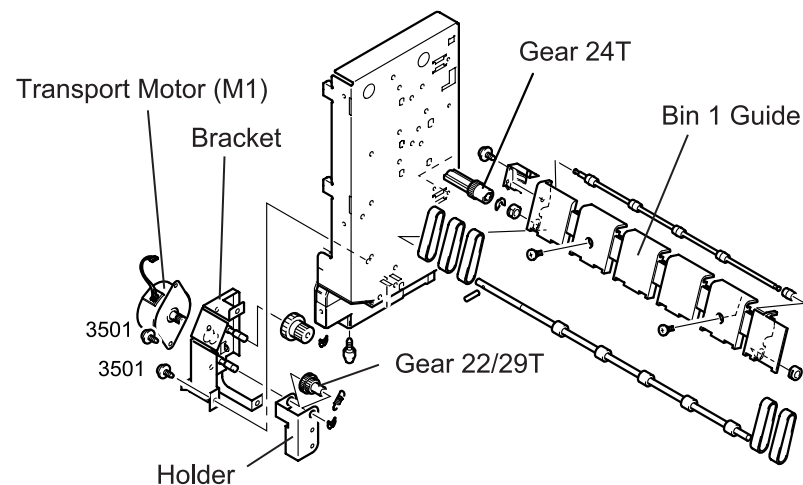


Figure 4-18. Transport Motor Removal



**When installing the bracket for the Transport Motor to the Unit Frame, make sure the gear 24T in the Bin 1 Guide and the gear 22/29T in the Transport Motor Unit are engaged.**

### 4.2.10 Paper Guide Drive Motor (M3) Removal

1. Remove the Rear Cover. (Refer to Section 4.2.2.)
2. Disconnect the harness for the Paper Guide Drive Motor from the relay connector.
3. Remove two screws (3501) securing the Paper Guide Drive Motor to the bracket and remove the Paper Guide Drive Motor.

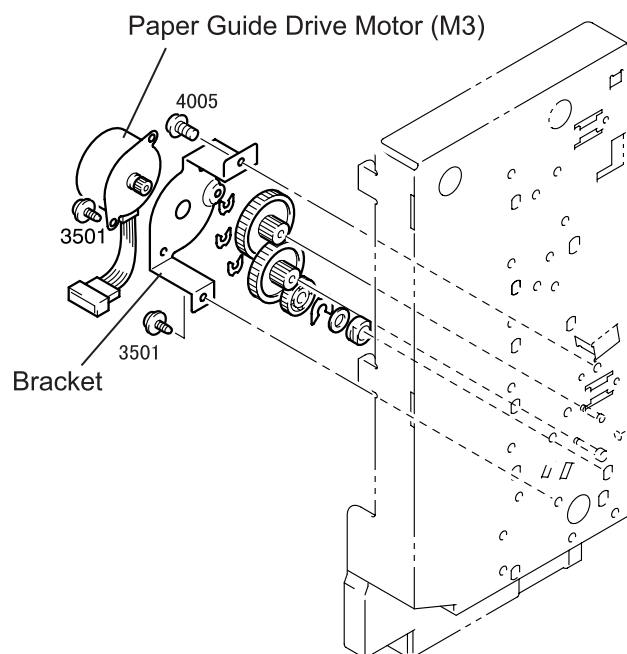


Figure 4-19. Paper Guide Drive Motor Removal

### 4.2.11 Transfer Switch Solenoid (SL1) Removal

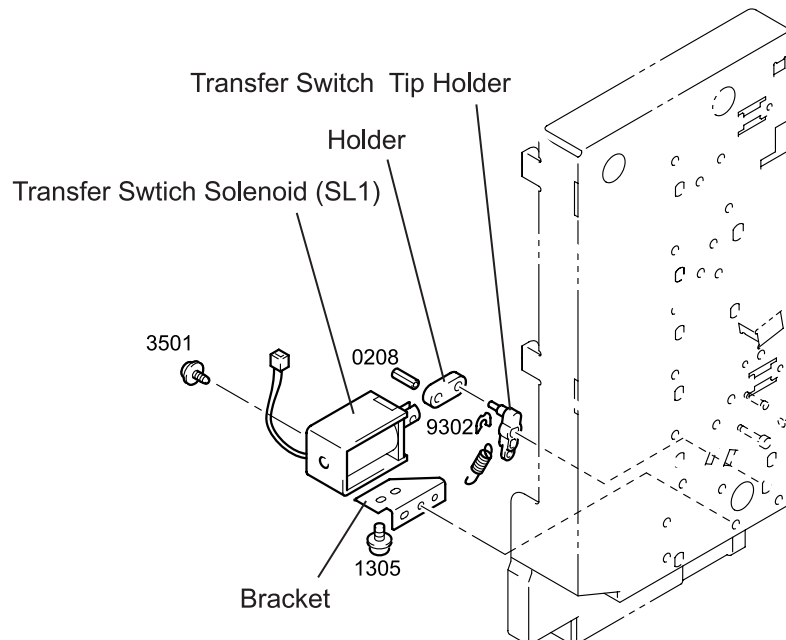
1. Remove the Rear Cover. (Refer to Section 4.2.2.)
2. Release the harness for the solenoid from four cable clamps around the Transport Motor and disconnect the harness from the relay connector.
3. Remove the screw (3501) securing the bracket for the Transfer Switch Solenoid to the Unit Frame and remove the solenoid.
4. Remove two screws (1305) securing the bracket to the Transfer Switch Solenoid and remove the bracket from the solenoid.



**When installing the solenoid plunger, join the pin of the transfer switch tip holder with the installation hole in the holder on the plunger side.**



**When removing the solenoid, pay attention to the plunger as it is breakable.**



**Figure 4-20. Transfer Switch Solenoid Removal**

## 4.2.12 Paper Guide Home Position Sensor (PC2) Removal

1. Remove the Front Cover and the Rear Cover. (Refer to Section 4.2.1 and Section 4.2.2.)
2. Remove the Jammed Paper Remove Door. (Refer to Section 4.2.3.)
3. Remove the Transfer Switch Solenoid. (Refer to Section 4.2.11.)
4. Remove two screws (3501 and 4005) securing the bracket for the Paper Guide Drive Motor to the Unit Frame and remove the motor along with the bracket. (Refer to Section 4.2.10.)
5. Remove five screws (4005 x 2 and 3501 x 3) securing the guide plate located at the bottom of the 5-Bin Unit to the Unit Frame and remove the guide plate.
6. Remove the stopper fixing the Paper Guide Home Position Sensor to the Unit Frame.
7. Unhook the Paper Guide Home Position Sensor from the Unit Frame and remove the sensor.
8. Disconnect the harness from the connector on the Paper Guide Home Position Sensor.

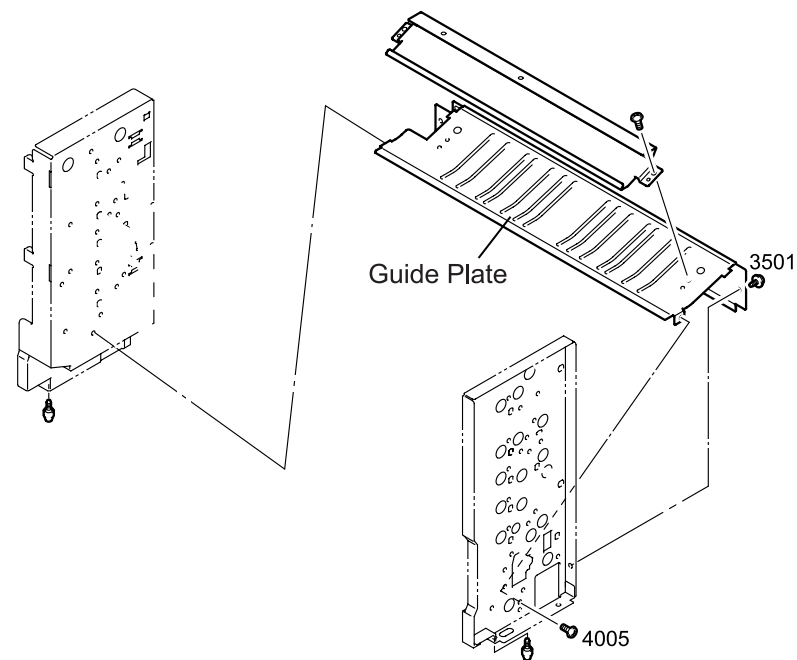


Figure 4-21. Paper Guide Removal

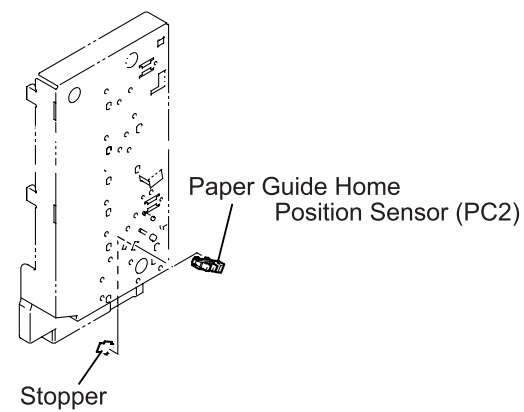
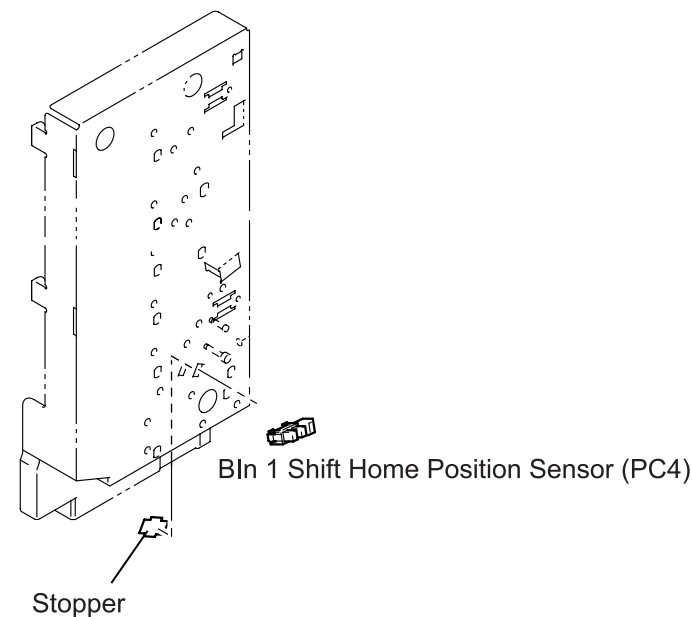


Figure 4-22. Paper Guide Home Position Sensor Removal

### 4.2.13 Bin 1 Shift Home Position Sensor (PC4) Removal

1. Remove the Front Cover and the Rear Cover. (Refer to Section 4.2.1 and Section 4.2.2.)
2. Remove the Jammed Paper Remove Door. (Refer to Section 4.2.3.)
3. Remove the Transfer Switch Solenoid. (Refer to Section 4.2.11.)
4. Remove two screws (3501 and 4005) securing the bracket for the Paper Guide Drive Motor to the Unit Frame and remove the motor along with the bracket. (Refer to Section 4.2.10.)
5. Remove five screws (4005 x 2 and 3501 x 3) securing the guide plate located at the bottom of the 5-Bin Unit to the Unit Frame and remove the guide plate. (Refer to Section 4.2.12.)
6. Remove the stopper attaching the Bin 1 Shift Home Position Sensor to the Unit Frame.
7. Unhook the Bin 1 Shift Home Position Sensor from the Unit Frame.
8. Disconnect the harness from the connector on the Bin 1 Shift Home Position Sensor.



**Figure 4-23. Bin 1 Shift Home Position Sensor Removal**



## 4.2.14 Paper Empty Sensor Board (PWB-B/D1-3/E) Removal

1. Remove the Front Cover and the Rear Cover. (Refer to Section 4.2.1 and Section 4.2.2.)
2. Remove four screws (4025) securing the guide plate to the Unit Frame and remove the guide plate.

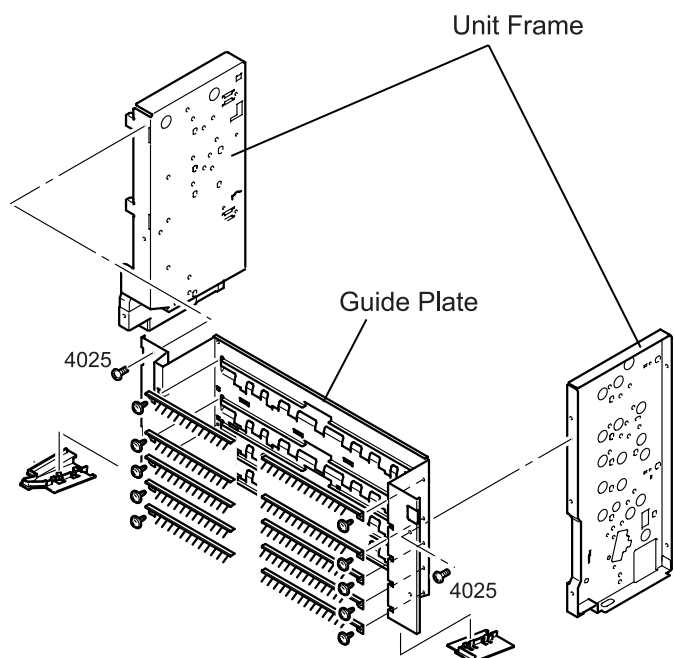


Figure 4-24. Guide Plate Removal

3. Unhook the sensor holder from the guide.
4. Remove the Paper Empty Sensor Board from the guide and disconnect the harness from the connector on the sensor.

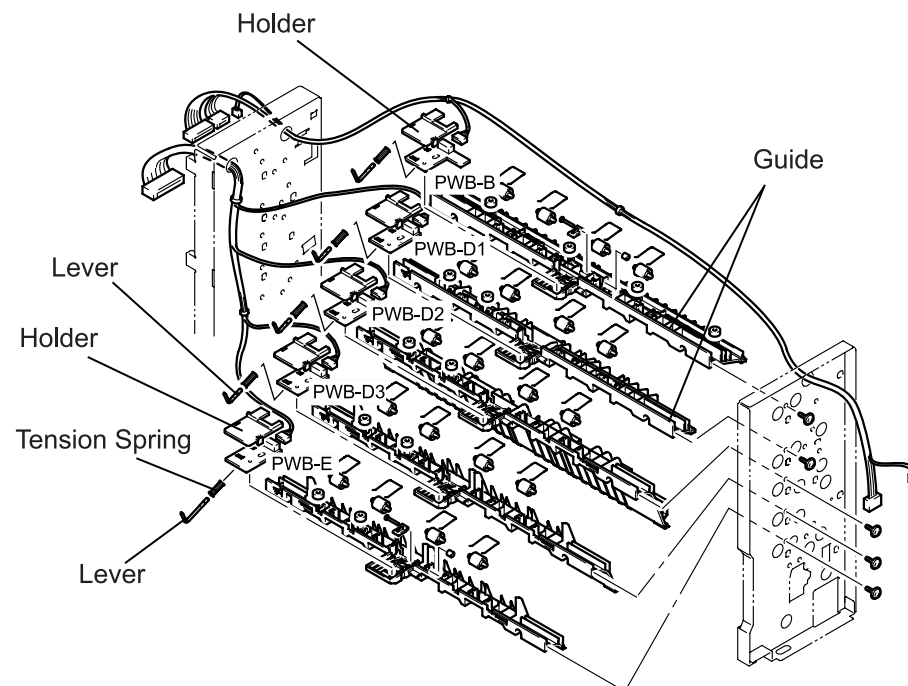


Figure 4-25. Paper Empty Sensor Board Removal



- When installing the guide plate, be careful not to catch the lever for each sensor.
- Since the PWB-E sensor lever is long, it is better to remove the lever and the tension spring before removing the sensor board.

### 4.2.15 Eject Sensor Board (PWB-C) Removal

1. Remove the Front Cover and the Rear Cover. (Refer to Section 4.2.1 and Section 4.2.2.)
2. Remove five screws (4005 x 2 and 3501 x 3) securing the guide plate at the bottom of the 5-Bin Unit to the Unit Frame and remove the guide plate. (Refer to Section 4.2.12.)
3. Disconnect the harness from the connector on the Eject Sensor Board.
4. Remove two shoulder screws securing the Bin 1 guide to the shift mechanism to make room between the guide and the Eject Sensor Board.
5. Release the hook securing the Eject Sensor Board to the guide plate and remove the sensor board.
6. Remove the screw (3501) securing the Eject Sensor Board to the holder and remove the holder from the Eject Sensor Board.

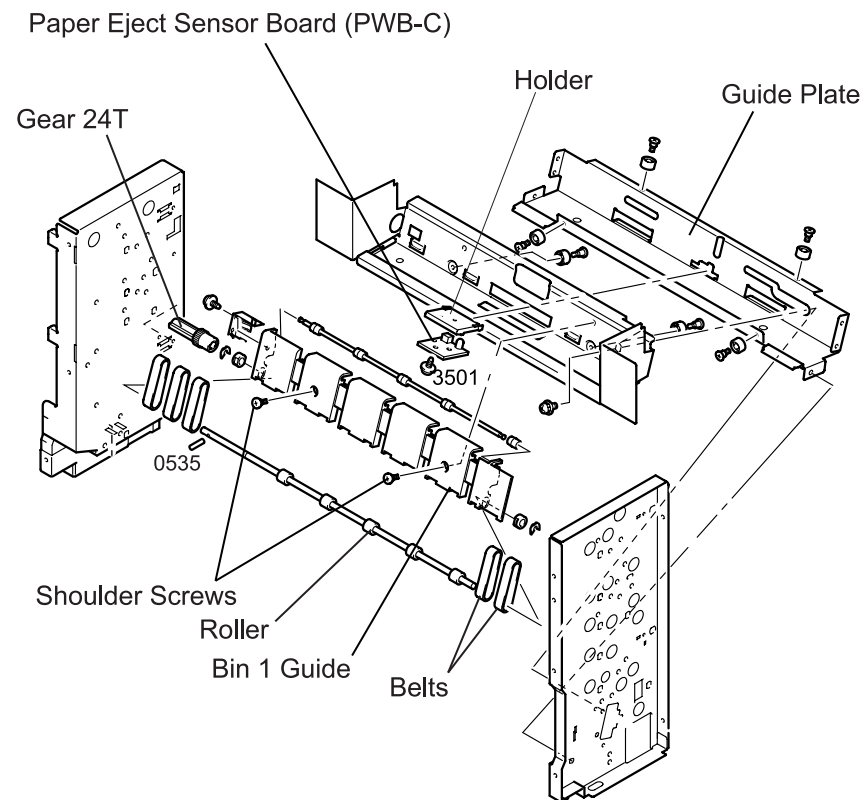
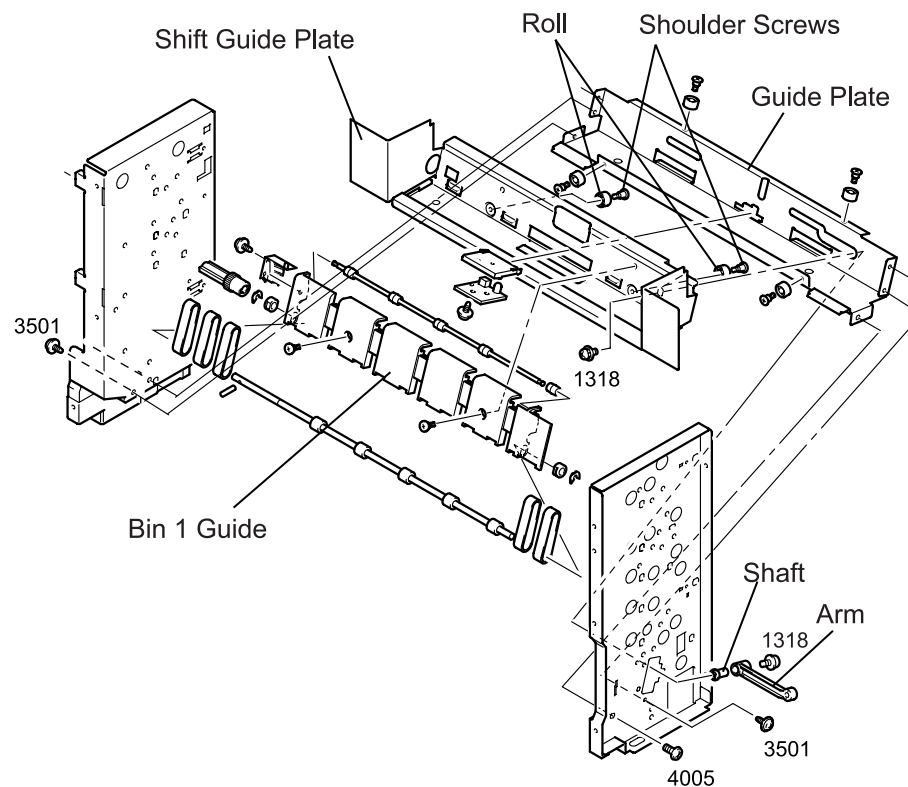


Figure 4-26. Eject Sensor Board Removal

## 4.2.16 Shift Guide Plate Removal

1. Remove the Front Cover and the Rear Cover. (Refer to Section 4.2.1 and Section 4.2.2.)
2. Remove the Shift Motor along with the bracket. (Refer to Section 4.2.4.)
3. Remove the Transport Motor along with the bracket. (Refer to Section 4.2.9.)
4. Remove the Transfer Switch Solenoid along with the bracket. (Refer to Section 4.2.11.)
5. Remove the Bin 1 Guide, gear 24T, pin (0535), and the Eject Sensor Board. (Refer to Section 4.2.15.)
6. Remove the screw (4005) and five screws (3501) securing the Shift Guide Plate to the Unit Frame and remove the shift mechanism from the 5-Bin Unit Frame.
7. Remove two shoulder screws securing the Shift Guide Plate to the guide plate and two rolls. Then remove the Shift Guide Plate from the guide plate.
8. Remove the screw (1318) securing the arm and shaft to the Shift Guide Plate and remove the arm and the shaft.



**Figure 4-27. Shift Guide Plate Removal**

## 4.2.17 Eject Roller Shaft Removal

### 4.2.17.1 Bin 1 Eject Roller Shaft Removal

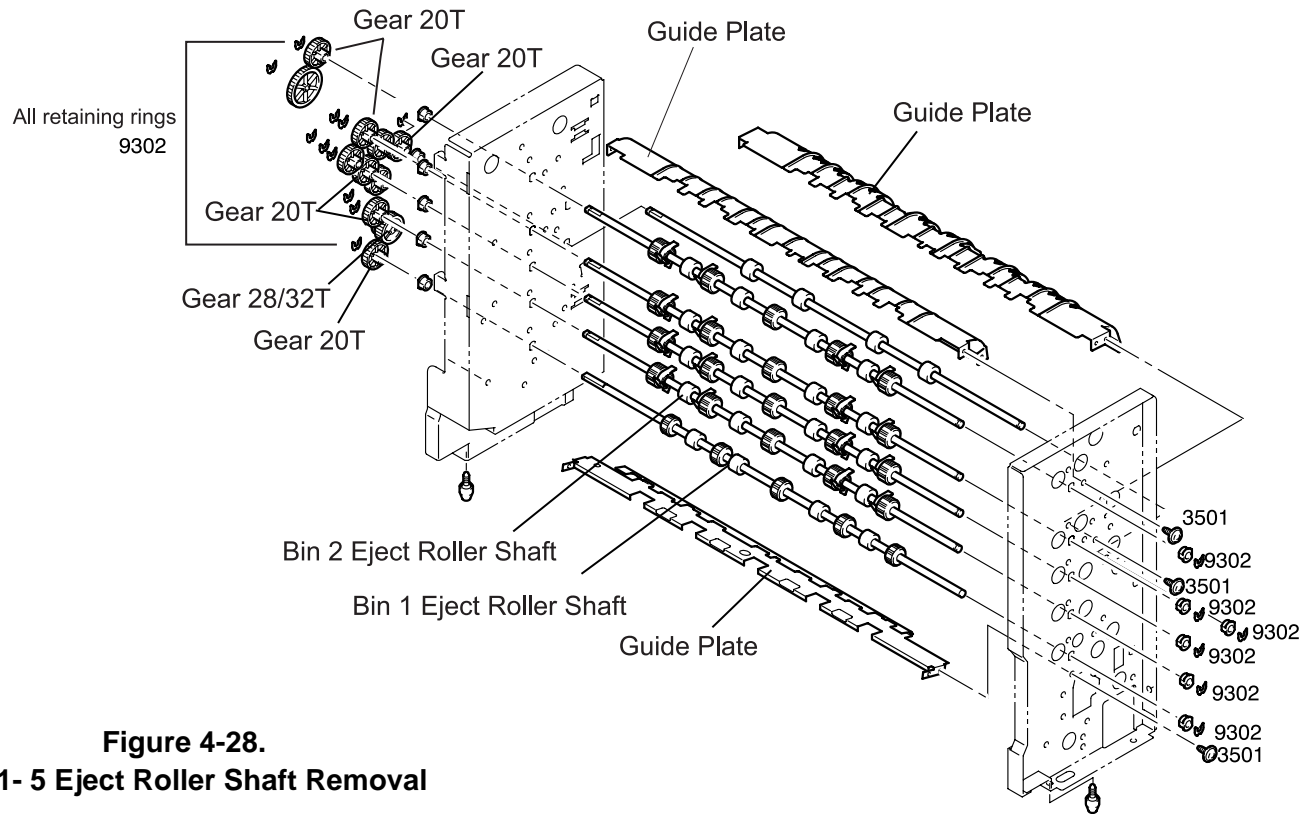
1. Remove the Front Cover and the Rear Cover. (Refer to Section 4.2.1 and Section 4.2.2.)
2. Remove the Transport Motor along with the bracket. (Refer to Section 4.2.9.)
3. Remove five screws (4005 x 2 and 3501 x 3) securing the guide plate at the bottom of the 5-Bin Unit to the Unit Frame and remove the guide plate. (Refer to Section 4.2.12.)
4. Remove four screws (3501) securing the guide plate located under the Bin 1 Eject Roller Shaft to the Unit Frame, and remove the guide plate. (See Figure 4-28.)
5. Remove the retaining ring (9302) fixing the gear 20T to the Bin 1 Eject Roller Shaft, and remove the gear. (See Figure 4-28.)
6. Remove two retaining rings (9302) fixing the bushings for the Bin 1 Eject Roller Shaft to the Unit Frame, and remove the bushings. (See Figure 4-28.)
7. Remove the Bin 1 Eject Roller Shaft.

### 4.2.17.2 Bin 2 Eject Roller Shaft Removal

1. Remove the Front Cover and the Rear Cover. (Refer to Section 4.2.1 and Section 4.2.2.)
2. Remove the Transport Motor along with the bracket. (Refer to Section 4.2.9.)
3. Remove the Paper Guide Drive Motor along with the bracket. (Refer to Section 4.2.10.)
4. Remove four screws (4025) securing the guide plate to the Unit Frame and remove the guide plate. (See Figure 4-28.)
5. Remove the retaining ring (9302) fixing the gear 20T to the Bin 1 Eject Roller Shaft and remove the gear. (See Figure 4-28.)
6. Remove the retaining ring (9302) securing the gear 28/32T to the Unit Frame shaft and remove the gear. (See Figure 4-28.)
7. Remove the retaining ring (9302) fixing the gear 20T to the Bin 2 Eject Roller Shaft and remove the gear. (See Figure 4-28.)
8. Remove the retaining ring (9302) fixing the bushings for the Bin 2 Eject Roller Shaft to the Unit Frame and remove the bushings. (See Figure 4-28.)
9. Remove the Bin 2 Eject Roller Shaft.

### 4.2.17.3 Bin 3 - 5 Eject Roller Shaft Removal

1. Remove the Front Cover and the Rear Cover. (Refer to Section 4.2.1 and Section 4.2.2.)
2. Remove the Bin4/Bin5 Switch Solenoid. (Refer to Section 4.2.7.)
3. Remove four screws (4025) securing the guide plate to the Unit Frame and remove the guide plate. (Refer to Section 4.2.14.)
4. Remove the retaining ring (9302) fixing the gear 20T to Eject Roller Shaft and remove the gear. (See Figure 4-28.)
5. Remove four screws (3501) securing the guide plate located under the Eject Roller Shaft to the Unit Frame and remove the guide plate. (See Figure 4-28.)
6. Remove the retaining ring (9302) fixing the bushings for the Eject Roller Shaft to the Unit Frame and remove the bushings. (See Figure 4-28.)
7. Remove the Eject Roller Shaft.



**Figure 4-28.**  
Bin 1- 5 Eject Roller Shaft Removal

## 4.2.18 Movable Paper Guide Removal

1. Remove the Front Cover and the Rear Cover. (Refer to Section 4.2.1 and Section 4.2.2.)
2. Remove the Jammed Paper Remove Door. (Refer to Section 4.2.3.)
3. Remove the screw (3501) securing the support plate (lower) to the Unit Frame and remove the support plate.
4. Remove the screw (3501) and the shoulder screw securing the guide lever to the Unit Frame and remove the guide lever.
5. Remove the Paper Guide Drive Motor. (Refer to Section 4.2.10.)
6. Remove the retaining ring (9302) fixing the gear 14/70T to the Unit Frame shaft and remove the gear.
7. Remove the retaining ring (9302) fixing the gear 14/42T to the Unit Frame shaft and remove the gear.
8. Remove the retaining ring (9302) fixing the gear 24T to the Unit Frame shaft and remove the gear.
9. Remove the retaining ring (9301) fixing the bushing located under the gear 24T to the Movable Paper Guide and remove the bushing and the washer.
10. Remove the retaining ring (9302) fixing the bushing located in front of the Movable Paper Guide to the Unit Frame and remove the bushing.
11. Remove the harness for the Guide Position Sensor. (Refer to Section 4.2.5.)
12. Remove the Movable Paper Guide from the right and left installation holes in the Unit Frame.

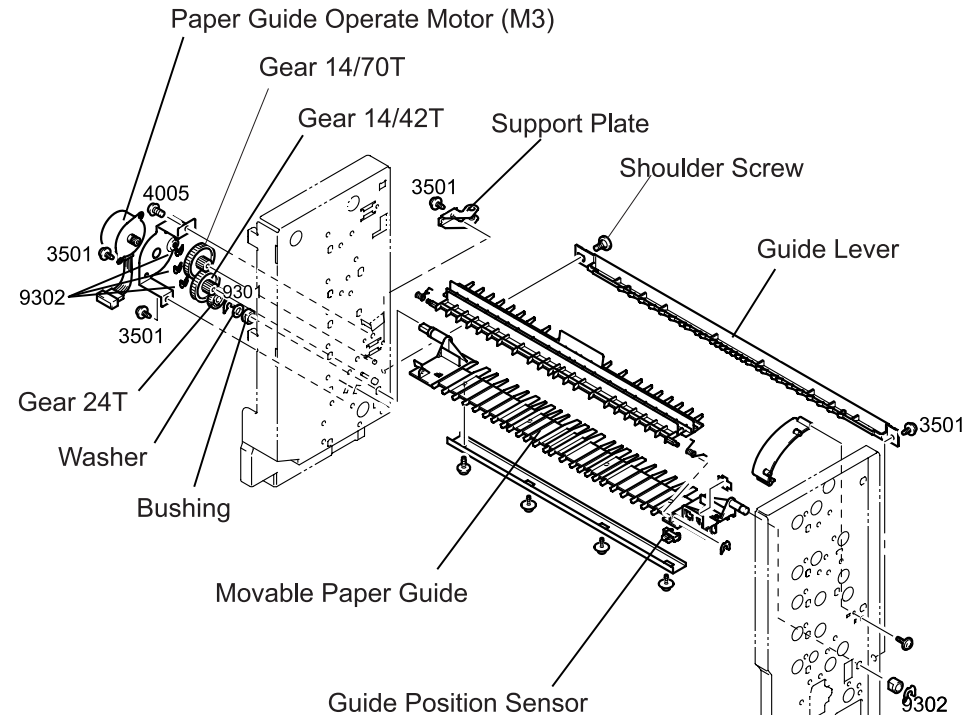


Figure 4-29. Movable Paper Guide Removal

### 4.2.19 Transfer Switch Guide Lever Removal

1. Remove the Front Cover and the Rear Cover. (Refer to Section 4.2.1 and Section 4.2.2.)
2. Remove the Jammed Paper Remove Door. (Refer to Section 4.2.3.)
3. Remove the Movable Paper Guide. (Refer to Section 4.2.18.)
4. Remove the Transfer Switch Solenoid. (Refer to Section 4.2.11.)
5. Remove the retaining ring (9302) securing the arm to the Transfer Switch Guide Lever and remove the arm and the tension spring.
6. Remove the retaining ring (9301) securing the bushing under the arm from the inner side and remove the bushing.
7. Remove the Transfer Switch Guide Lever from the Unit Frame.

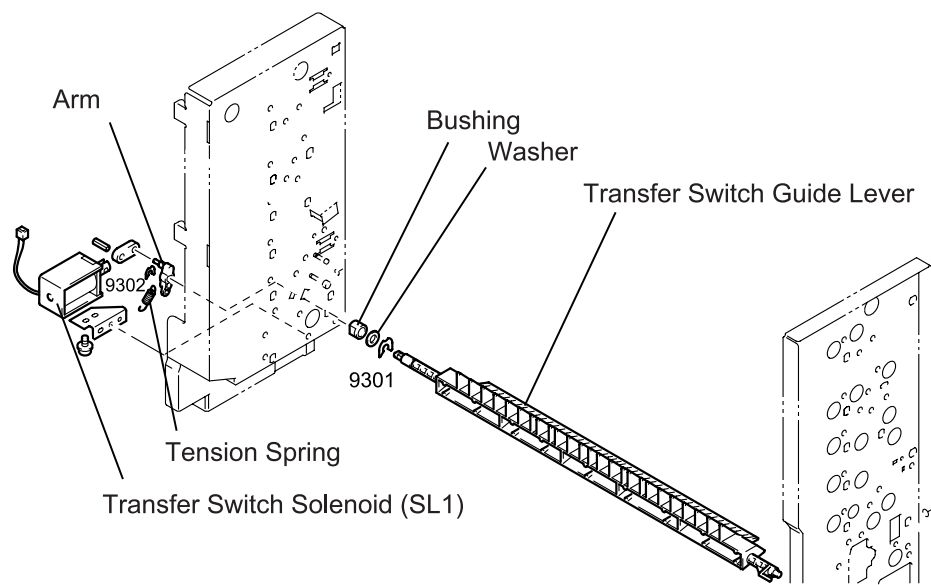


Figure 4-30. Transfer Switch Guide Lever Removal

### 4.2.20 Bin 4 /Bin 5 Switch Guide Lever Removal

1. Remove the Front Cover and the Rear Cover. (Refer to Section 4.2.1 and Section 4.2.2.)
2. Remove the Jammed Paper Remove Door. (Refer to Section 4.2.3.)
3. Remove the Bin 4 /Bin 5 Switch Solenoid. (Refer to Section 4.2.7.)
4. Remove the retaining ring (9302) securing the arm to the Bin 4/Bin 5 Switch Guide Lever and remove the arm and the tension spring.
5. Remove the retaining ring (9301) securing the Bin 4/Bin 5 Switch Guide Lever from the inner side to the Unit Frame and remove the bushing and the Bin 4/Bin 5 Switch Guide Lever.

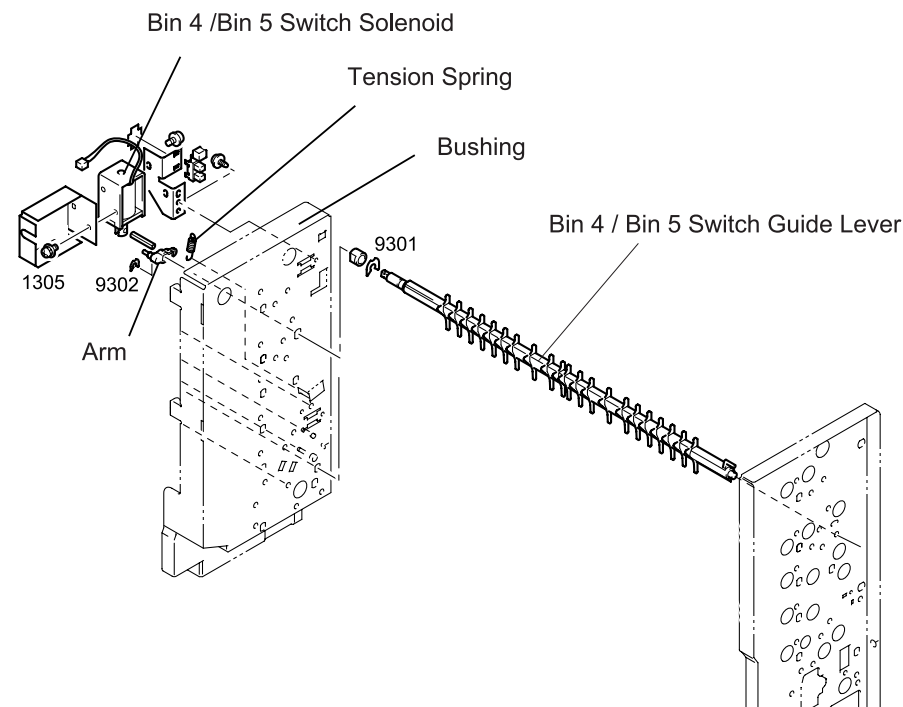


Figure 4-31. Bin 4/Bin 5 Switch Guide Lever Removal

## 4.3 Maintenance of the 5-Bin Unit

The maintenance method of the 5-Bin Unit is mostly same as for the printer body. Therefore, this section only describe the method specific to the 5-Bin Unit.

### 4.3.1 Maintenance Items

The 5-Bin Unit part that requires maintenance is as shown in the following table.

**Table 4-1. Maintenance Items**

Maintenance Item	Operations required	Replacement Cycle
Transport roller (each)	Cleaning / Replacement	300,000 sheets

### 4.3.2 Cleaning the Paper Take-up Roller

1. Remove the Rear Cover. (Refer to Section 4.2.2.)
2. Wipe the Transport Roller with a soft cloth moistened with water.



**Do not use any solvent, including alcohol.**

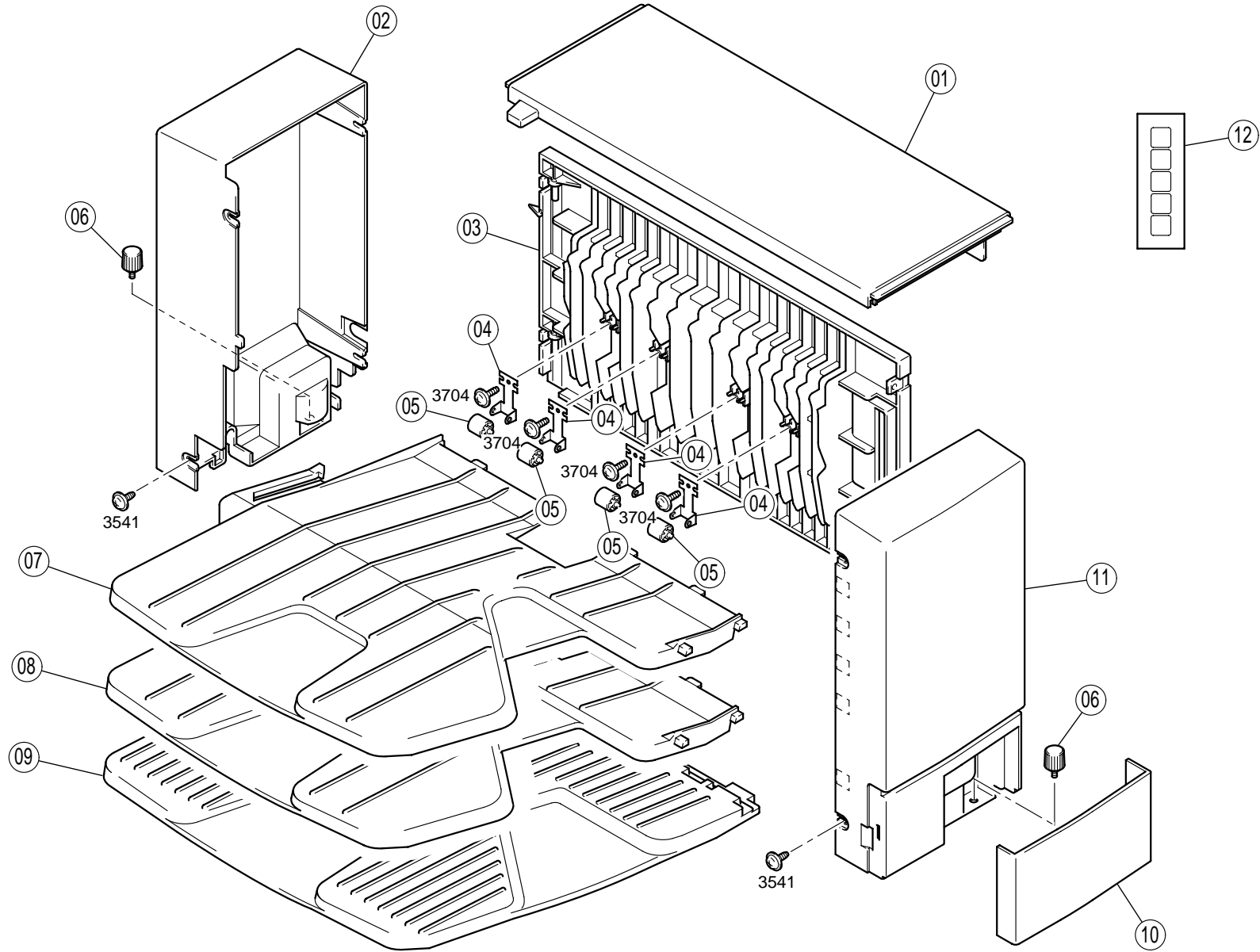
## 4.4 Exploded Diagrams for 5-Bin Unit

### 4.4.1 Housing

**Table 4-2. Part List - Housing**

No.	Part Name	No.	Part Name
1	TOP COVER	7	TRAY
2	REAR COVER	8	TRAY
3	COVER	9	TRAY
4	HOLDER	10	COVER
5	ROLL	11	FRONT COVER
6	SHOULDER SCREW	12	LABEL BIN



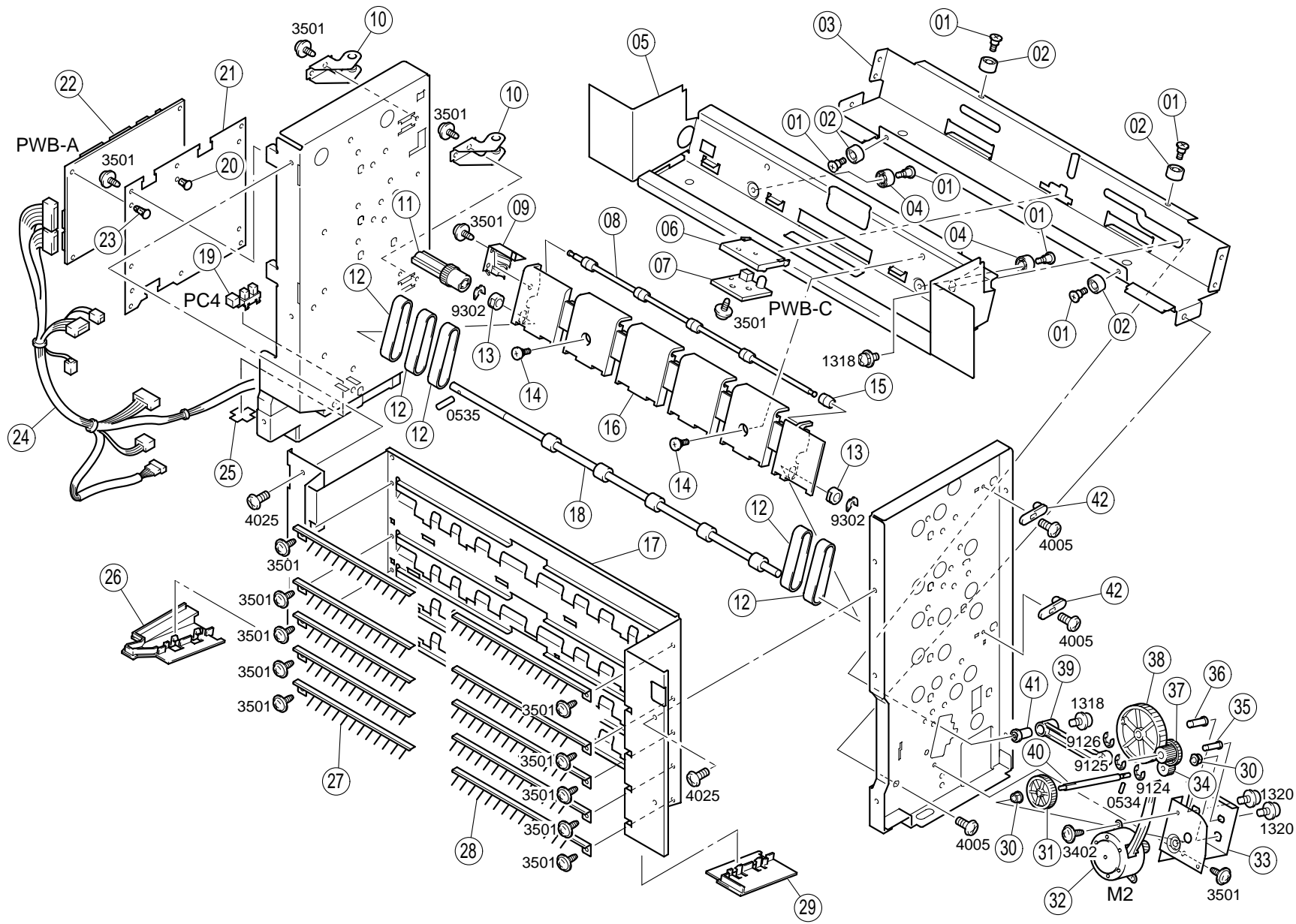


Bin 5\_1

## 4.4.2 Paper Exit Section

**Table 4-3. Part List - Paper Exit Section**

No.	Part Name	No.	Part Name
1	SHOULDER SCREW	22	PW BOARD-A, CONTRO (PWB-A)
2	ROLL	23	PWB SUPPORT
3	GUIDE PLATE	24	HARNESS
4	ROLL	25	STOPPER
5	GUIDE PLATE	26	COVER
6	HOLDER	27	NEUTRALIZING BRUSH
7	PW BOARD-C (PWB-C)	28	NEUTRALIZING BRUSH
8	SHAFT	29	COVER
9	GROUND PLATE	30	BUSHING
10	SUPPORT	31	GEAR 45T
11	GEAR 24T	32	MOTOR, SHIFT (M2)
12	BELT	33	BRACKET
13	BUSHING	34	GEAR 15T
14	SHOULDER SCREW	35	SHAFT
15	ROLL	36	SHAFT
16	GUIDE	37	GEAR 16/28T
17	GUIDE PLATE	38	CAM GEAR 64T
18	ROLLER	39	ARM
19	PHOTO INTERRUPTER, SHIFT (PC4)"	40	SHAFT
20	PWB SUPPORT	41	SHAFT
21	BRACKET	42	HOLDER

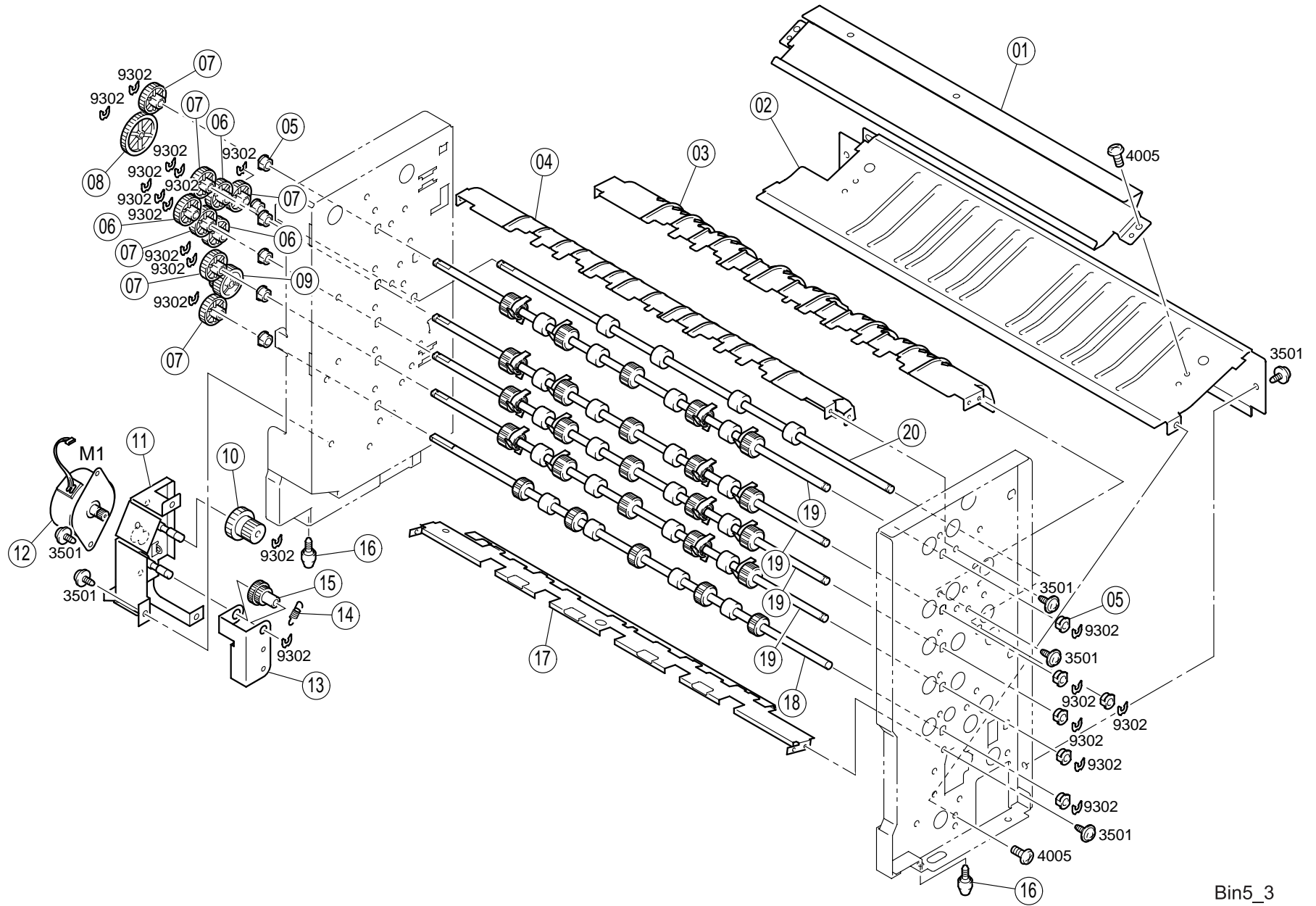


Bin5\_2

### 4.4.3 Paper Transport Section (A)

**Table 4-4. Part List - Paper Transport Section (A)**

No.	Part Name	No.	Part Name
1	GUIDE PLATE	11	BRACKET
2	GUIDE PLATE	12	MOTOR, TRANSPORT (M1)
3	GUIDE PLATE	13	HOLDER
4	GUIDE PLATE	14	TENSION SPRING
5	BUSHING	15	GEAR 22/29T
6	GEAR 28T	16	SHOULDER SCREW
7	GEAR 30T	17	GUIDE PLATE
8	GEAR 46T	18	ROLLER
9	GEAR 28/32T	19	ROLLER
10	GEAR 18/29T	20	ROLLER

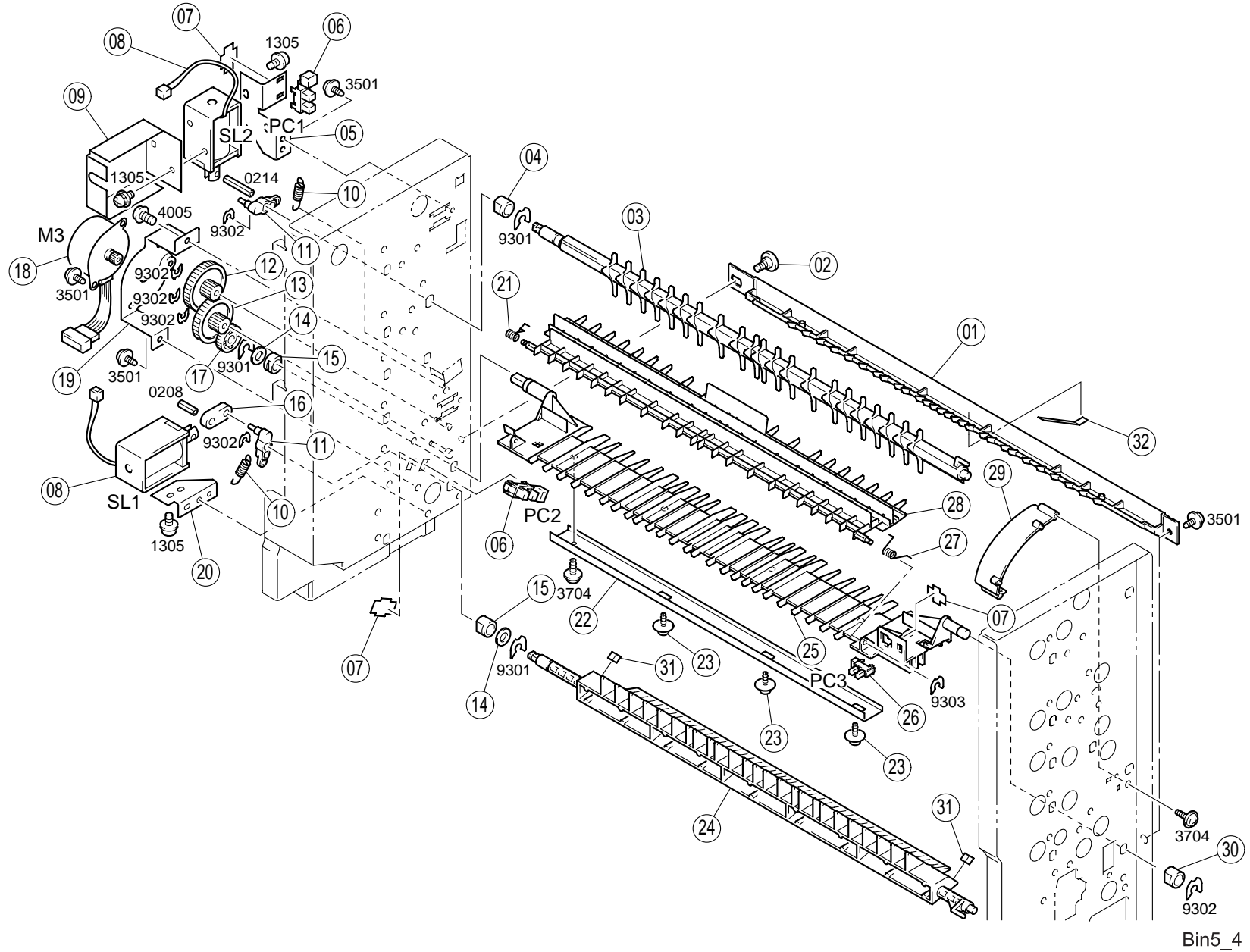


Bin5\_3

#### 4.4.4 Paper Transport Section (B)

**Table 4-5. Part List - Paper Transport Section (B)**

No.	Part Name	No.	Part Name
1	GUIDE LEVER	17	GEAR 24T
2	SHOULDER SCREW	18	MOTOR, GUIDE (M3)
3	GUIDE LEVER	19	BRACKET
4	BUSHING	20	BRACKET
5	BRACKET	21	TORSION SPRING
6	PHOTO INTERRUPTER (PC1, 2)	22	REINFORCE PLATE
7	STOPPER	23	SCREW
8	SOLENOID (SL1, 2)	24	GUIDE LEVER
9	HOLDER	25	GUIDE
10	TENSION SPRING	26	PHOTO INTERRUPTER (PC3)
11	HOLDER	27	TORSION SPRING
12	GEAR 14/70T	28	GUIDE
13	GEAR 14/42T	29	HOLDER
14	WASHER	30	BUSHING
15	BUSHING	31	CUSHION
16	HOLDER	32	POLYESTER FILM

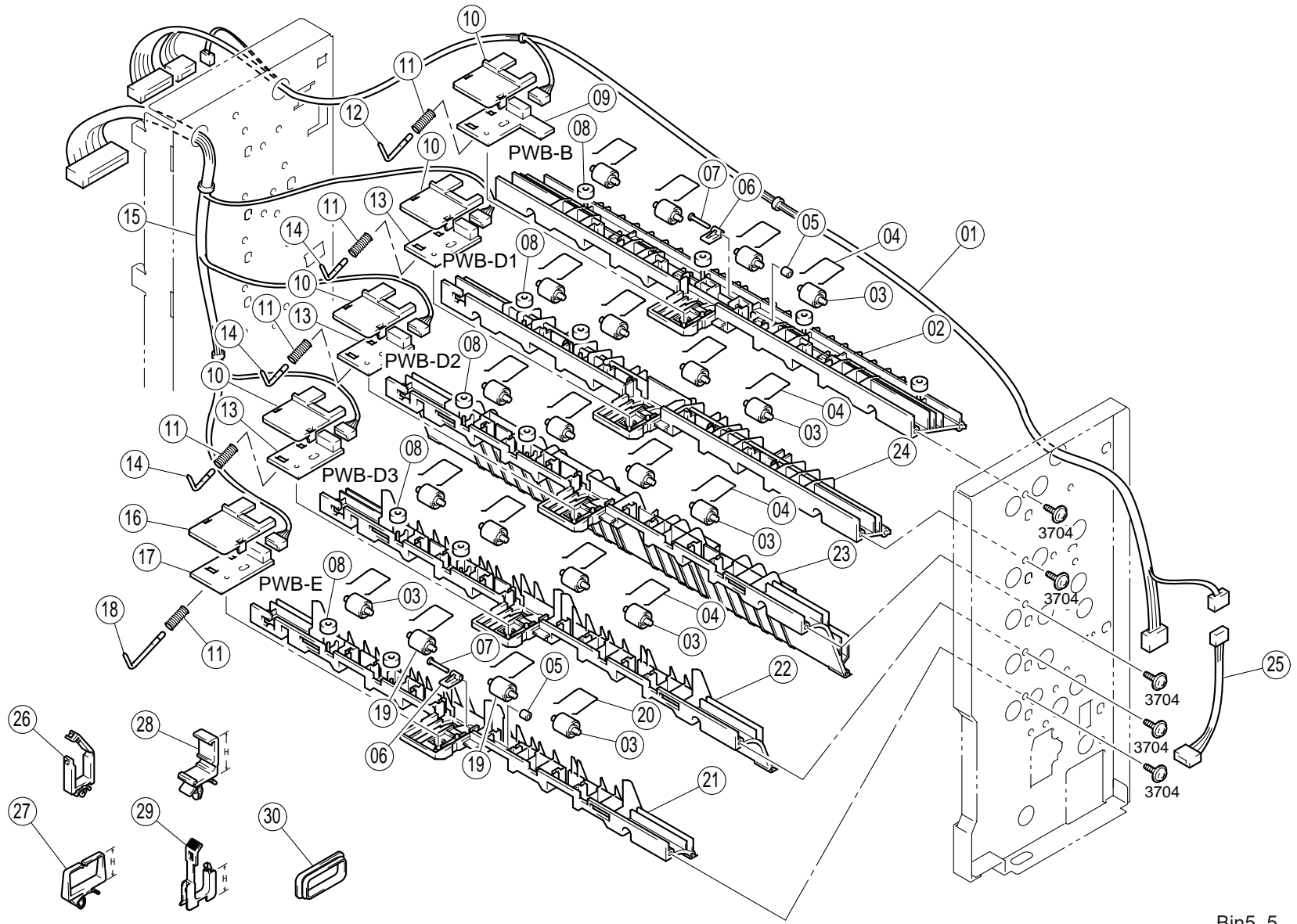


## 4.4.5 Paper Transport Section (C)

**Table 4-6. Part List - Paper Transport Section (C)**

No.	Part Name	No.	Part Name
1	HARNESS	16	COVER
2	GUIDE	17	PW BOARD-E
3	ROLL	18	LEVER
4	SPRING	19	ROLL
5	RETAINING RING	20	SPRING
6	LEVER	21	GUIDE
7	PIN	22	GUIDE
8	COLLAR	23	GUIDE
9	PW BOARD-B (PWB-B)	24	GUIDE
10	COVER	25	HARNESS
11	TENSION SPRING	26	WIRING SADDLE 5.2H
12	LEVER	27	WIRING SADDLE 6.4H
13	PW BOARD-D (PWB-D1, 2, 3)	28	WIRING SADDLE 16.8H
14	LEVER	29	EDGE COVER 15.4H
15	HARNESS	30	EDGE COVER





Bin5\_5

**CHAPTER**

**5**

**10-BIN UNIT**

## 5.1 Installing the 10-Bin Unit

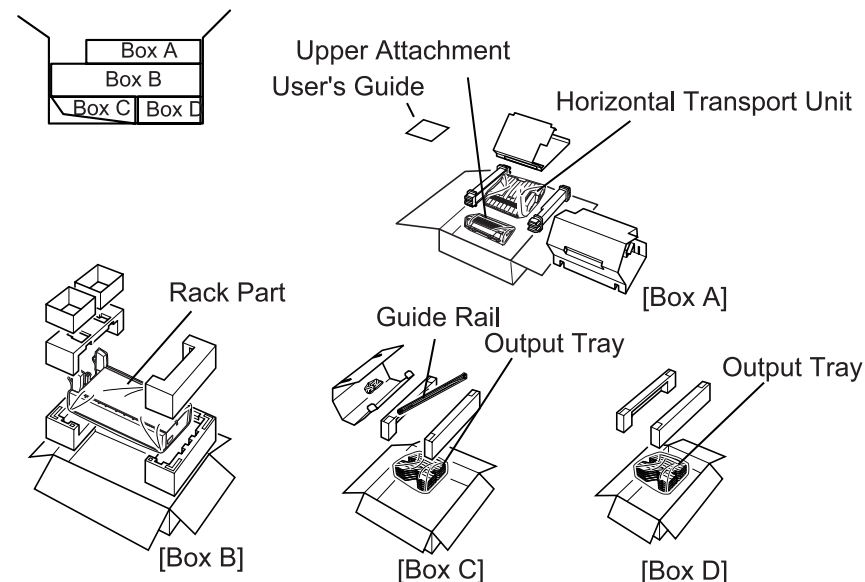
This section describes how to install the 10-Bin Unit to the printer main body. Note you are required to remove optional units such as the 10-Bin Unit when servicing the printer. The procedure for removing the 10-Bin Unit is not included since you can remove it by reversing the installation procedure.



**Unless the optional LCC Unit and the Double Cassette Unit are installed on the printer, the 10-Bin Unit can not be installed.**

### 5.1.1 Installing the 10-Bin Unit

1. Open the packing carton and get all packed parts and a manual.



**Figure 5-1. Packing Condition**



**After removing the packing materials, please keep them out of children's reach.**

2. Turn the printer power off and disconnect the AC power cable and a interface cable.
3. If a 5-Bin Unit is installed to the printer, remove it. (Refer to Chapter 4.)

4. Unpack the Horizontal Transport Unit and remove the transportation tapes from the unit.

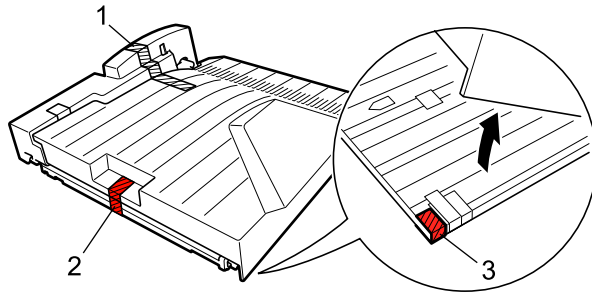


Figure 5-2. Installation - 1

5. Unpack the Tray Section and remove the transportation tapes and protection material from the section.

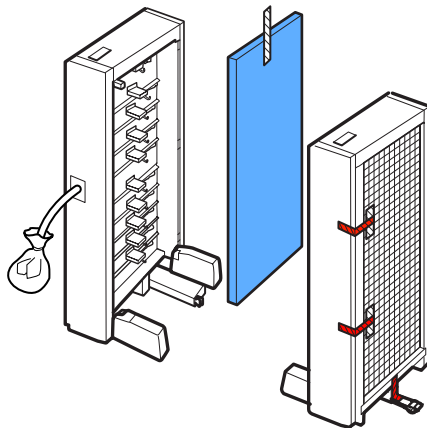


Figure 5-3. Installation - 2

6. Pull out the stabilizing bar from the bottom of the Tray Section.

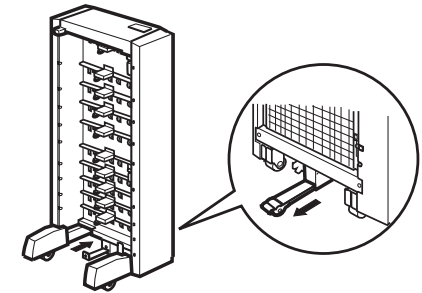


Figure 5-4. Installation - 3

7. Secure the stabilizing bar with a wing bolt.

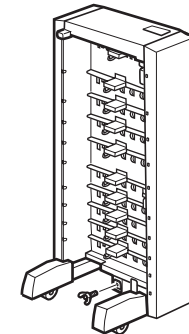


Figure 5-5. Installation - 4

8. Secure 2 fastening brackets to the printer with 2 shoulder screws.

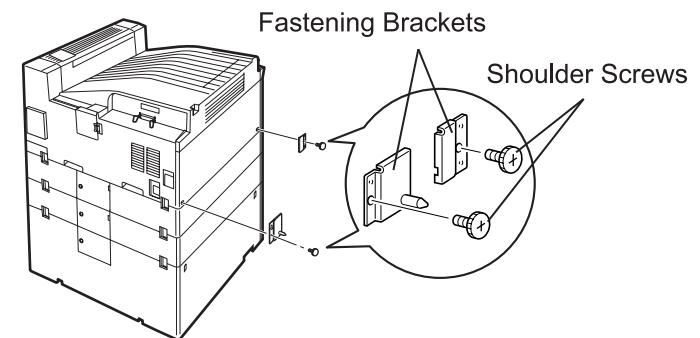
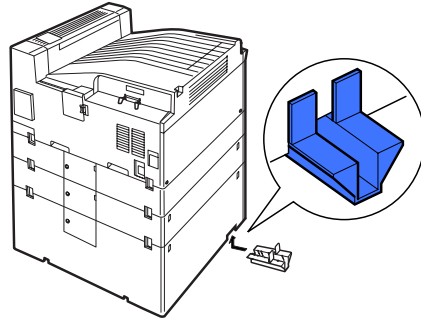


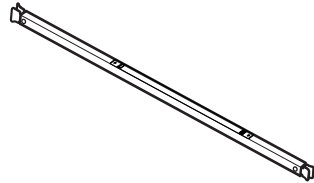
Figure 5-6. Installation - 5

9. Attach the plastic guide rail (holder) to the bottom of the LCC Unit.



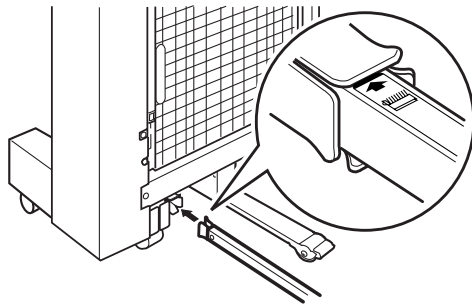
**Figure 5-7. Installation - 6**

10. Make sure the label on the rail guide is facing up.



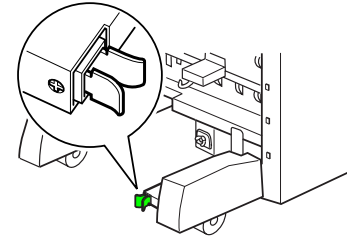
**Figure 5-8. Installation - 7**

11. Insert the rail guide into the bottom part of the Tray Section. Slide the rail guide into the unit up to the mark on the label of the rail guide. Make sure the rail guide makes a click sound when it is securely inserted in the unit. The rail guide should be securely in place and should not slide out of place when pulled.



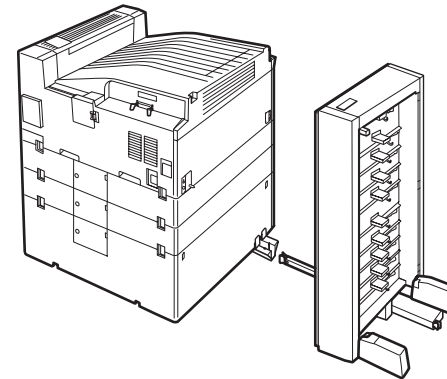
**Figure 5-9. Installation - 8**

12. Make sure that the green tabs on the rail guide appears on the opposite side of the Tray Section.



**Figure 5-10. Installation - 9**

13. Align the Tray Section and the main printer so that they face each other.



**Figure 5-11. Installation - 10**

14. Insert the rail guide into the plastic rail attached to the bottom of the main printer unit.

15. Slide the rail guide up to the mark on the label of the rail guide. Make sure the rail guide makes a click sound when it is securely inserted in the unit. The rail guide should be securely in place and should not slide out of even when you attempt to pull the Tray Section.

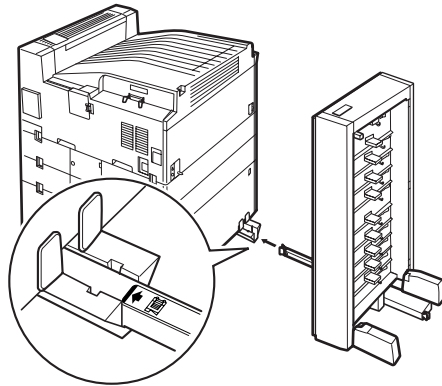


Figure 5-12. Installation - 11

16. Remove the 2 seals that are affixed to the top of the printer and install the upper attachment. Make sure to insert the guide pins of the upper attachment into the 2 holes located under the seals on the top of the printer. Additionally, ensure that the 2 hooks in the side of the upper attachment fit into the installation holes in the cover on the fuser unit side.

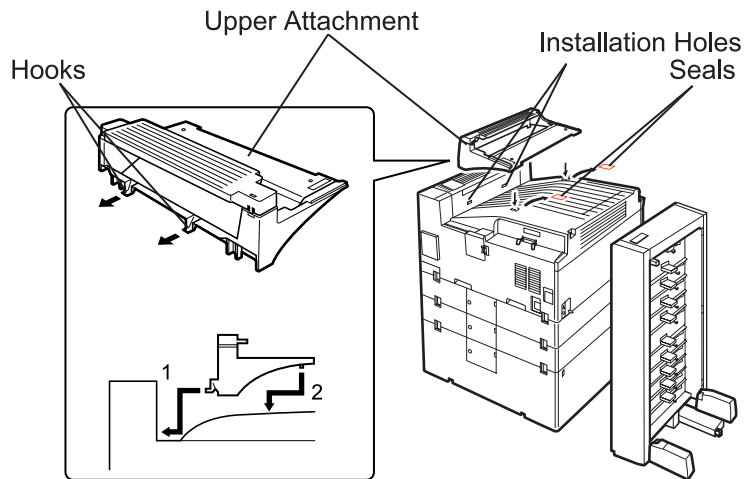


Figure 5-13. Installation - 12

17. Position the Horizontal Transport Unit on top of the printer. Make sure the gear fixture of the unit is placed inside the catch on the Tray Section.

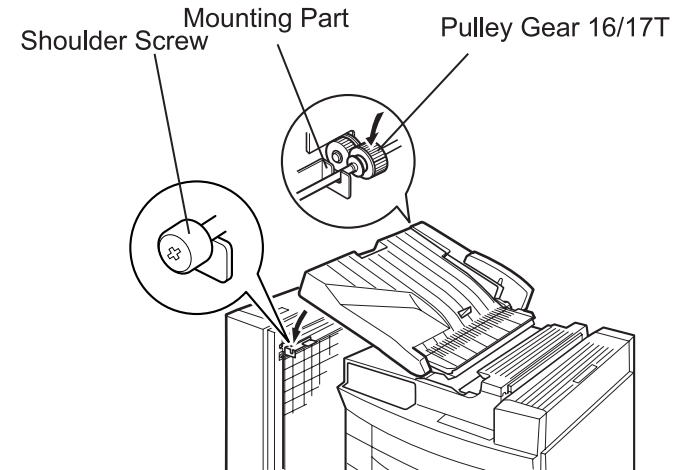
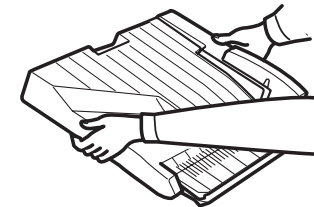


Figure 5-14. Installation - 13



Be sure to use both hands when positioning the Horizontal Transport Unit.



18. Open the cover of the Horizontal Transport Unit and remove the transportation tapes from the magnet catch.

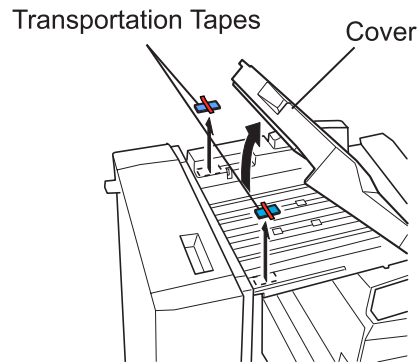


Figure 5-15. Installation - 14

19. Fasten the shoulder screw to secure the Horizontal Transport Unit to the Tray Section.

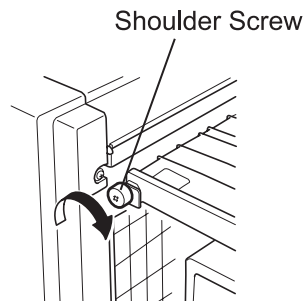


Figure 5-16. Installation - 15



After fastening the shoulder screw, make sure the pulley gear and gear in the Tray Section are meshed.

20. Push the 10-Bin Unit to the printer.

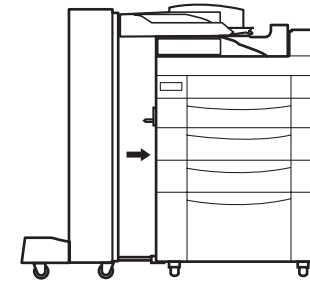


Figure 5-17. Installation - 16

21. Make sure the unit does not lean or tilt to either side. If necessary, adjust the standing position of the 10-Bin Unit. (Refer to Section 5.1.2.)

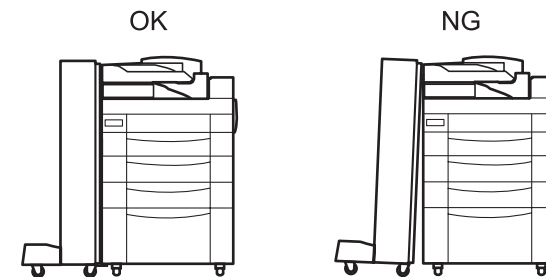


Figure 5-18. Installation - 17



Make sure that the 10-Bin Unit is placed horizontally. Tilt or lean of the unit will cause paper jam.

22. Insert the trays from the bottom to the top. Make sure each tray is hooked to the installation hole on the 10-Bin Unit by the right side. Also the tabs on the left side of the tray also fits in the corresponding hole on the 10-Bin Unit.

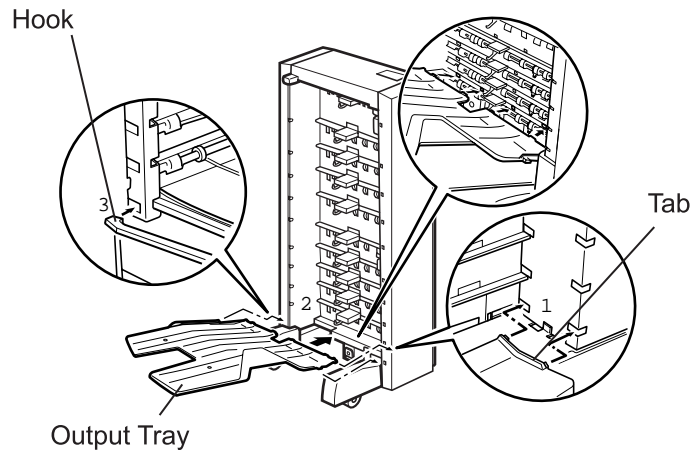


Figure 5-19. Installation - 18

23. Remove the socket cover from the printer and plug the 2 harnesses to their connectors.

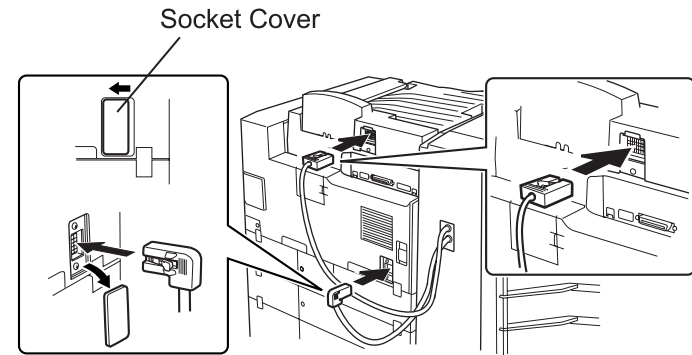


Figure 5-20. Installation - 19



If the socket cover is difficult to remove from the printer, gently push it to the left (or right).

24. After installing the 10-Bin Unit, connect the interface cable and the AC power cable, then turn the printer on.



## 5.1.2 Levelness Adjustment of the 10-Bin Unit

1. Remove the covers from the both legs of the 10-Bin Unit.

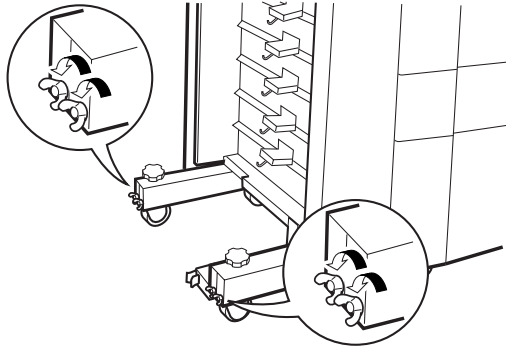


Figure 5-21. Adjustment - 1

2. Loosen the 2 wing bolts.

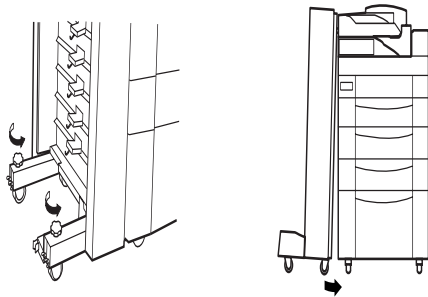


Figure 5-22. Adjustment - 2

3. Turn the knob attached to each leg of the unit to adjust its standing position.

4. If the knob is turned counterclockwise, the 10-Bin Unit moves in the direction shown in the figure below.

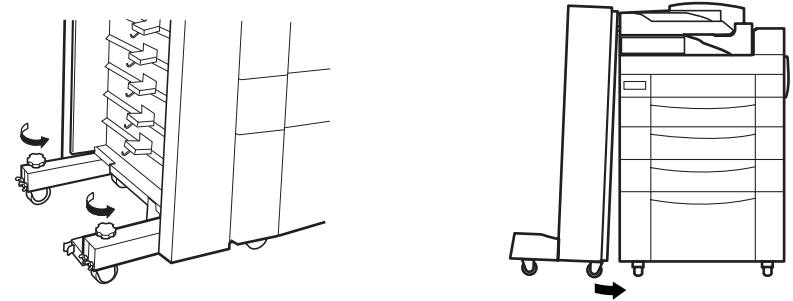


Figure 5-23. Adjustment - 3

5. After the standing position has been adjusted, tighten the wing bolts.
6. Reinstall the covers onto the legs of the 10-Bin Unit.

## 5.2 Disassembly and Assembly of the 10-Bin Unit

### 5.2.1 Outer Cover Removal

1. Remove the 10-Bin Unit. (Refer to Section 5.1.)
2. Remove six screws (3584) securing the rear cover to the 10-bin Frame and remove the rear cover.
3. Remove six screws (3584) securing the front cover to the 10-bin Frame and remove the front cover.
4. Remove the top cover.

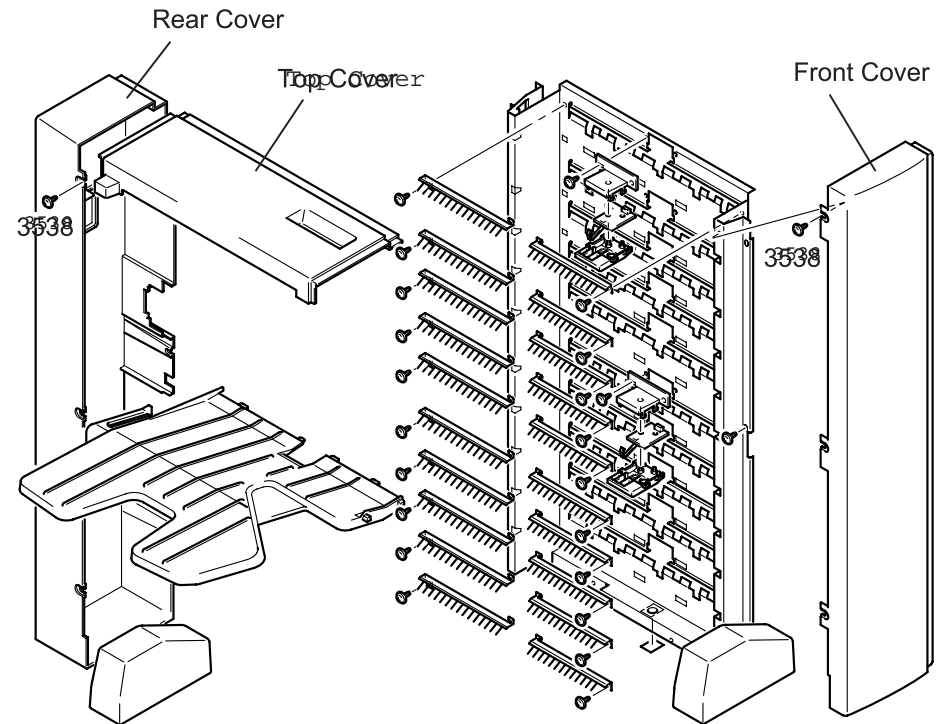


Figure 5-24. Outer Cover Removal

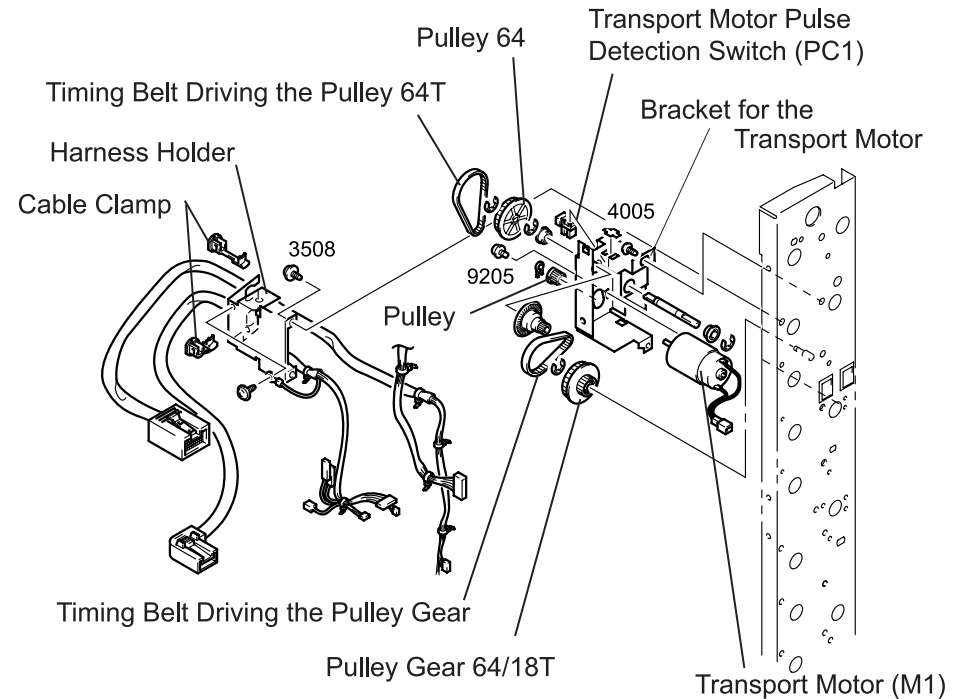
## 5.2.2 Tray Section Disassembly/Assembly

### 5.2.2.1 Transport Motor (M1) Removal

1. Remove the Rear Cover. (See Section 5.2.1.)
2. Open two cable clamps fixing the harnesses to the holder and release the harnesses for the solenoid and sensor from the holder.
3. Remove two screws (3508) securing the harness holder to the 10-Bin Unit Frame and remove the holder.
4. Loosen two screws (4005) securing the bracket for the Transport Motor (M1) to the 10-Bin Unit Frame, and remove the timing belt from the pulley gear 64/18T.
5. Remove the harness for the Transport Motor pulse detection switch attached to the bracket from the connector on the detection switch.
6. Disconnect the harness for the Transport Motor from the relay connector.
7. Remove two screws (4005) securing the bracket for the Transport Motor to the 10-Bin Unit Frame and remove the bracket.
8. Remove the retaining ring (9230) securing the pulley to the transport motor shaft and remove the pulley.
9. Remove two screws (1308) securing the Transport Motor to the bracket and remove the Transport Motor and the timing belt.



**If you have removed the timing belt or loosened/removed the bracket for the Transport Motor, perform the “Timing Belt Tension Adjustment”. (See Section 5.3.1.)**



**Figure 5-25. Transport Motor Removal**

### 5.2.2.2 Transport Motor Pulse Detection Switch (PC1) Removal

1. Remove the Rear Cover. (See Section 5.2.1.)
2. Remove the bracket for the Transport Motor. (See Section 5.2.2.1.)
3. Loosen two screws (1308) securing the Transport Motor to the bracket and loosen the timing belt.
4. Remove the retaining E-ring (9125) fixing the pulley to the shaft and remove the pulley.
5. Remove the E-ring fixing the ball bearing to the shaft and remove the ball bearing.
6. Shifting the ball bearing, release the shaft from the bracket for the Transport Motor.
7. Remove the stopper securing the Transport Motor Pulse Detection Switch to the bracket for the Transport Motor.
8. Unhook the Transport Motor Pulse Detection Switch from the bracket and remove the switch.



If you have removed the timing belt or loosened/remove the bracket for the Transport Motor, perform the “Timing Belt Tension Adjustment”. (See Section 5.3.1.)

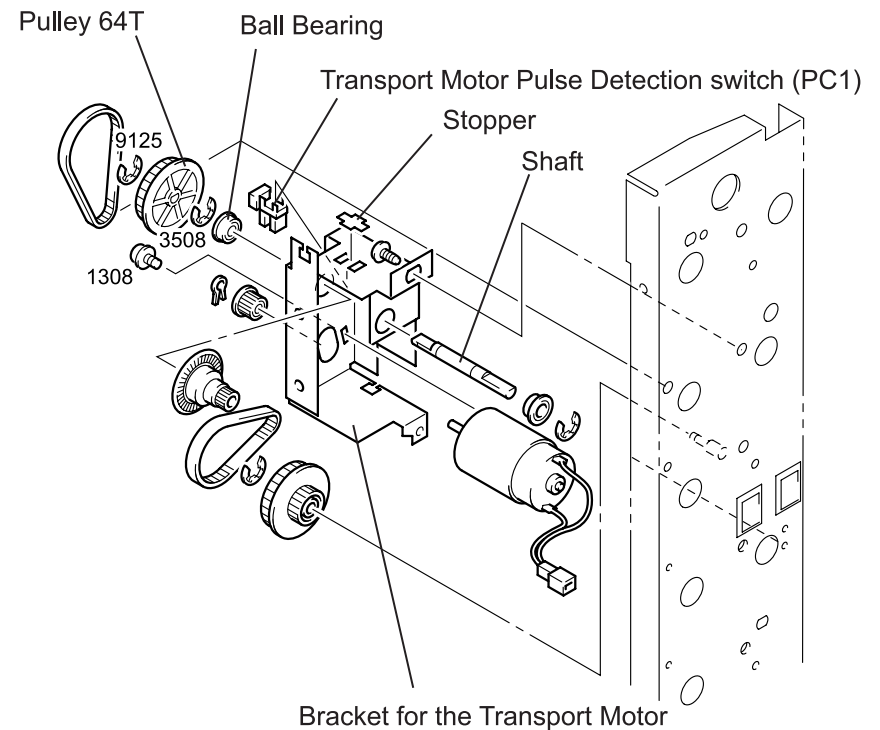


Figure 5-26. Transport Motor Pulse Detection Switch Removal

### 5.2.2.3 Sorter Set Switch (S1) Removal

1. Remove the Rear Cover. (See Section 5.2.1.)
2. Open the cable clamp on the sorter set switch holder and remove the harness.
3. Remove two screws (4005) securing the Sorter Set Switch to the 10-Bin Unit Frame along with the holder and bracket and remove the holder and bracket.
4. Unhook the Sorter Set Switch from the holder and remove the switch.
5. Disconnect the harness for the Sorter Set Switch from the connector on the switch.

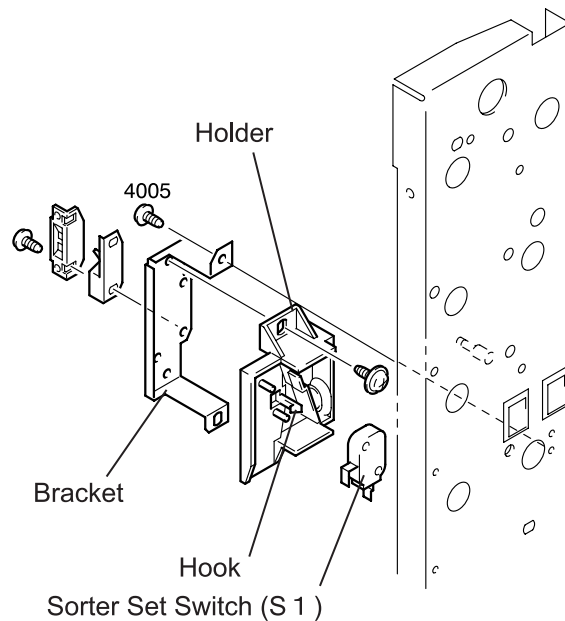


Figure 5-27. Sorter Set Switch (S1) Removal

### 5.2.2.4 Controller Board (PWB-A) Removal

1. Remove the Rear Cover. (See Section 5.2.1.)
2. Remove harnesses from the connectors on the PWB-A.

**NOTE:** When removing the parts such as Vertical Transport Roller, remove four screws (4005) and remove the bracket along with the PWB-A.

3. Unhook four PWB Supports securing the PWB-A to the bracket and remove the PWB-A.

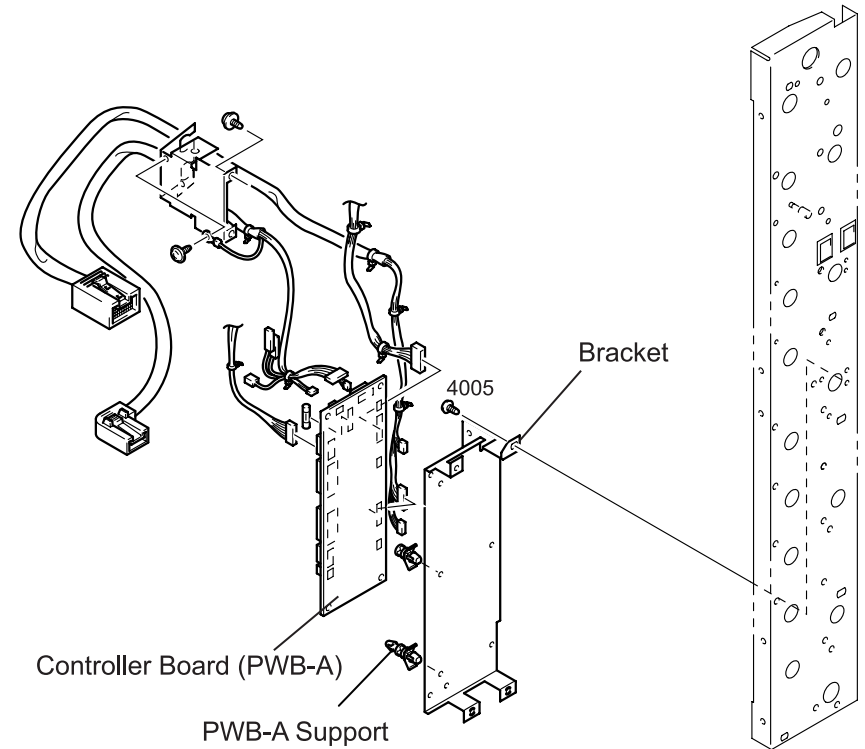


Figure 5-28. PWB-A Removal

### 5.2.2.5 Sort/Non-Sort Switch Solenoid (SL1) Removal

1. Remove the Front Cover. (See Section 5.2.1.)
2. Disconnect the harness for the Sort/Non-Sort Switch Solenoid from the relay connector.
3. Remove the tension spring hooked between the plunger for the Sort/Non-Sort Switch Solenoid and the 10-Bin Unit Frame.
4. Remove two screws (3508) securing the Sort/Non-Sort Switch Solenoid to the 10-Bin Unit Frame and remove the solenoid from the frame.

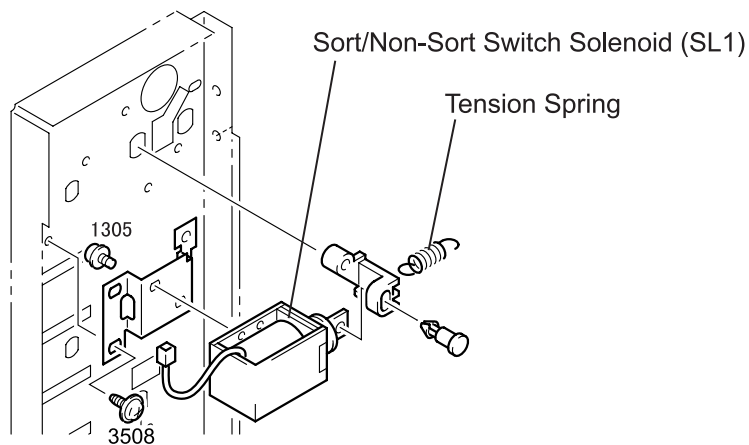


Figure 5-29. Sort/Non-Sort Switch Solenoid Removal

### 5.2.2.6 Solenoid Assembly (SL2, SL3) Removal

1. Remove the Front Cover. (See Section 5.2.1.)
2. Disconnect the harness for the Solenoid Assembly from the relay connector.
3. Remove the tension spring hooked between the plunger for each solenoid and the 10-Bin Unit Frame.
4. Remove two screws (3508) securing the Solenoid Assembly to the 10-Bin Unit Frame and remove the Solenoid Assembly.

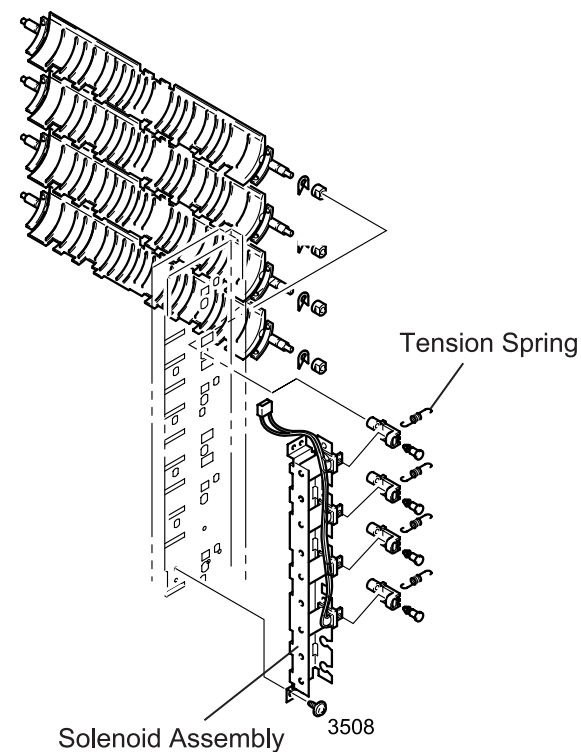


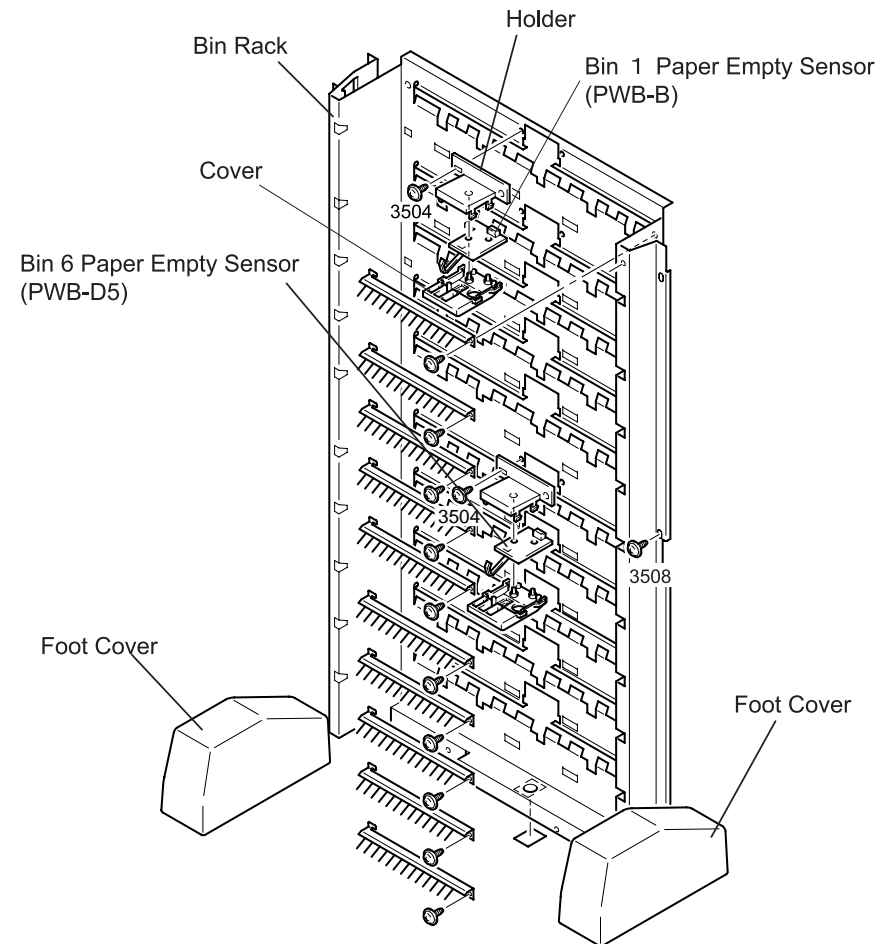
Figure 5-30. Solenoid Assembly Removal

### 5.2.2.7 Bin 1/Bin 6 Paper Empty Sensor Board Removal (PWB-B/D5)

1. Remove the outer covers. (See Section 5.2.1.)
2. Remove two screws (3504) securing the bracket to the bin rack and remove the Paper Empty Sensor Board along with the bracket.
3. Disconnect the harness from the connector on the Paper Empty Sensor Board.
4. Release the hook attaching the sensor cover to the bracket with the Paper Empty Sensor Board in between, and remove the Paper Empty Sensor Board.



**If you have replaced the Bin 1 Paper Empty Sensor Board, perform the Eject Sensor Adjustment. (See Section 5.3.3.)**



**Figure 5-31. Paper Empty Sensor Board Removal**

### 5.2.2.8 Paper Empty Sensor Board (PWB-D1-D4, D6-D9) Removal

1. Remove the outer covers. (See Section 5.2.1.)
2. Remove the foot covers from the 10-Bin Unit. (See Section 5.1.2.)
3. Remove the Bin 1/ Bin 6 Paper Empty Sensor Board. (See Section 5.2.2.7.)
4. Remove six screws (3508) securing the bin rack to the front and rear frames of the 10-Bin Unit.
5. Remove two screws (3538) securing the bin rack to the base frame.
6. Remove the screw (4005) from the stop plate securing the base frame and 10-Bin Unit frame. Then remove the bin rack.
7. Remove the screw (3704) securing the bracket to the guide and remove the Paper Empty Sensor Board along with the bracket.
8. Disconnect the harness from the connector on the Paper Empty Sensor Board.
9. Release the hook attaching the sensor cover to the bracket with the Paper Empty Sensor Board in between, and remove the sensor board.

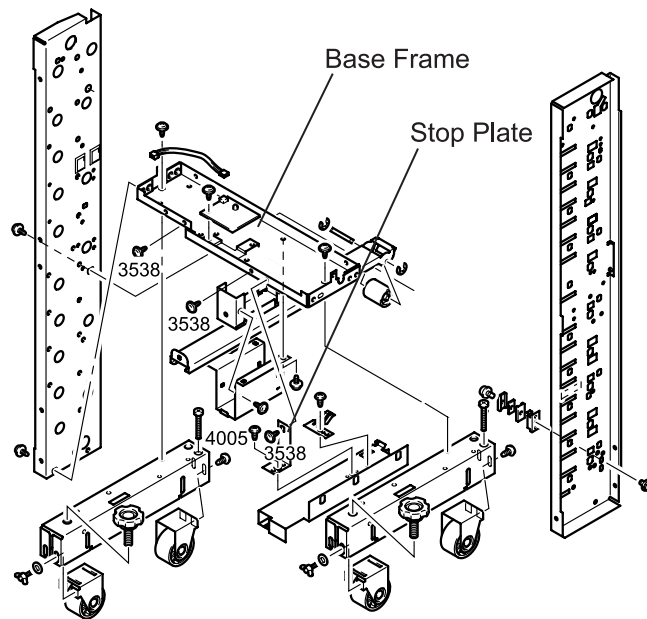


Figure 5-32. Stop Plate Removal

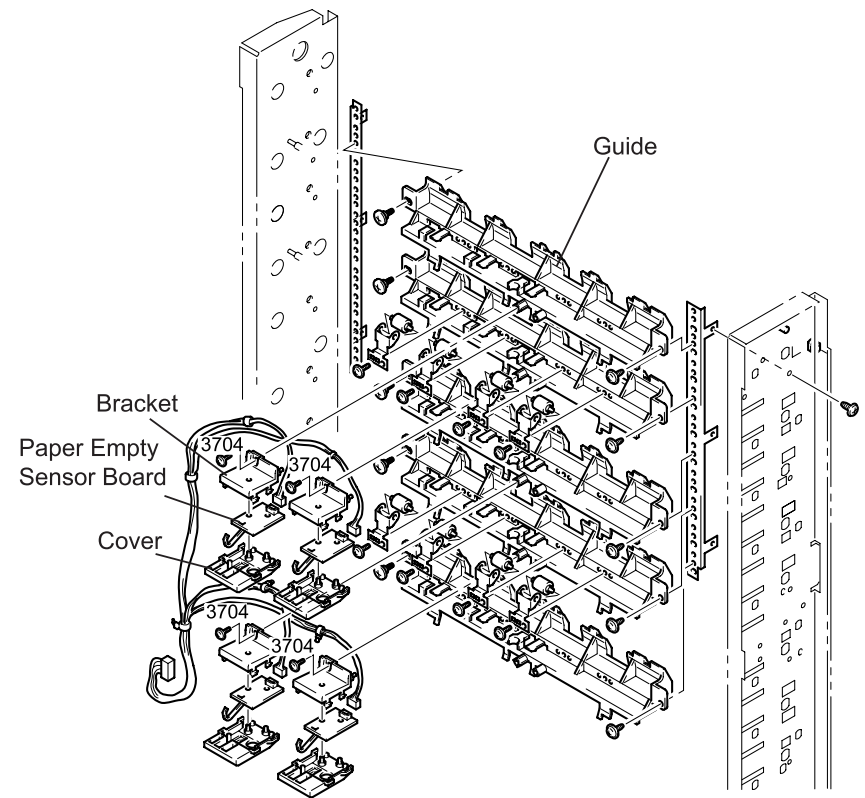


Figure 5-33. Paper Empty Sensor Board Removal



### 5.2.2.9 Eject Sensor Board (PWB-C) Removal

1. Remove the outer covers. (See Section 5.2.1.)
2. Remove the foot covers from the 10-Bin Unit. (See Section 5.1.2.)
3. Remove the bin rack. (See Section 5.2.2.8.)
4. Remove the screw (3501) securing the Eject Sensor Board to the base frame and remove the Eject Sensor Board.
5. Disconnect the harness from the connector on the Eject Sensor Board.



If you have replaced the Eject Sensor Board, perform "Eject Sensor Adjustment". (See Section 5.4.)

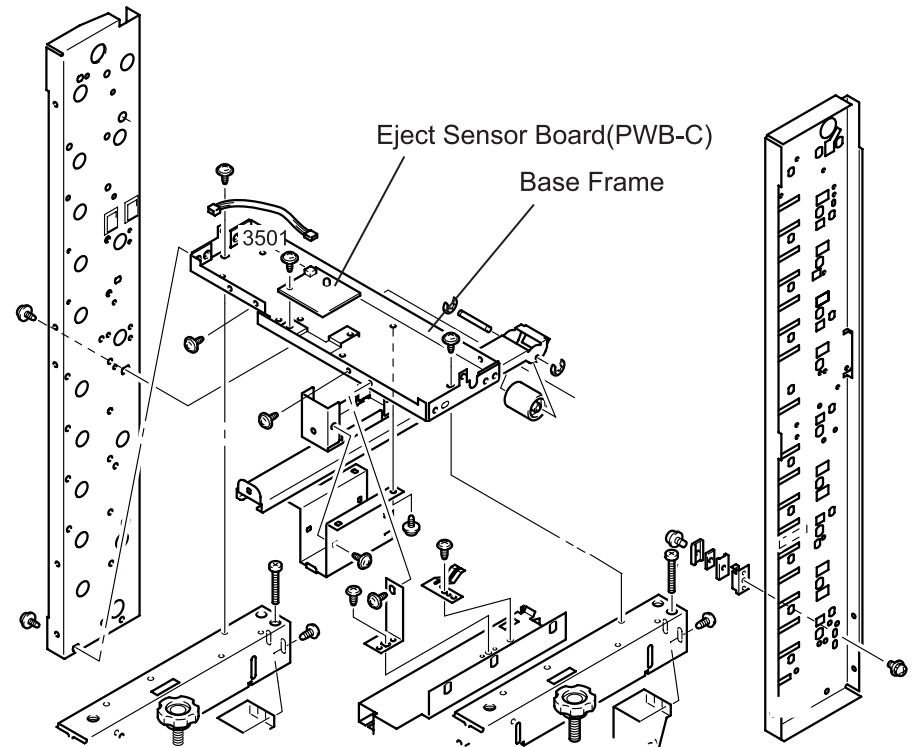


Figure 5-34. Eject Sensor Board Removal

### 5.2.2.10 Vertical Transport Roller Removal

1. Remove the outer covers. (See Section 5.2.1.)
2. If the Vertical Transport Roller gear 17T to be removed is inner side of the following parts, remove that part.
  - Transport Motor (Section 5.2.2.19)
  - Sorter Set Switch (Section 5.2.2.3)
  - Controller board bracket (Section 5.2.2.4.)
3. Remove two screws (3508) securing each support plate to the frame and remove the support plates along with the jammed paper remove guide.

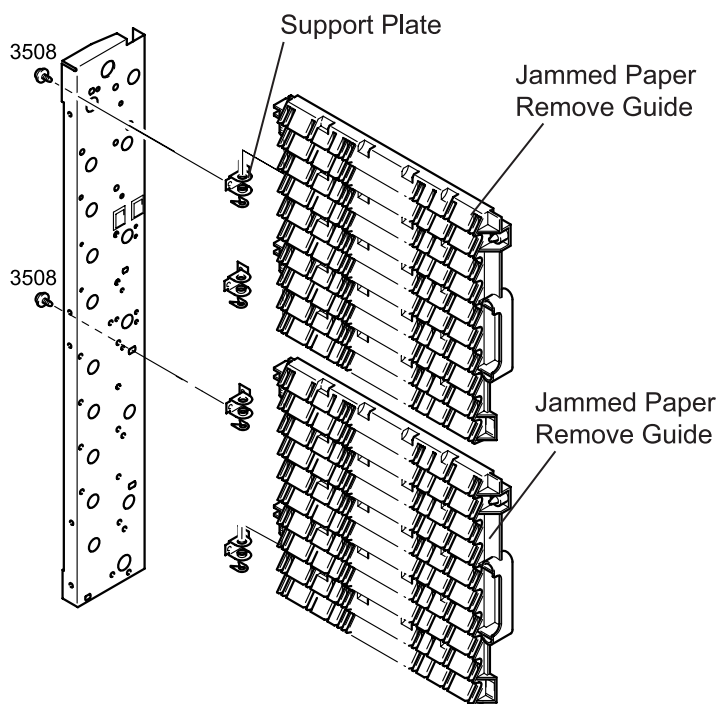


Figure 5-35. Jammed Paper Remove Guide

4. Remove two E-rings (9125) from both edges of the Vertical Transport Roller.
5. Unhook the gear 17T by the inside and remove it from the Vertical Transport Roller.
6. Remove the Vertical Transport Roller along with the ball bearing.
7. Remove the ball bearing from the Vertical Transport Roller.

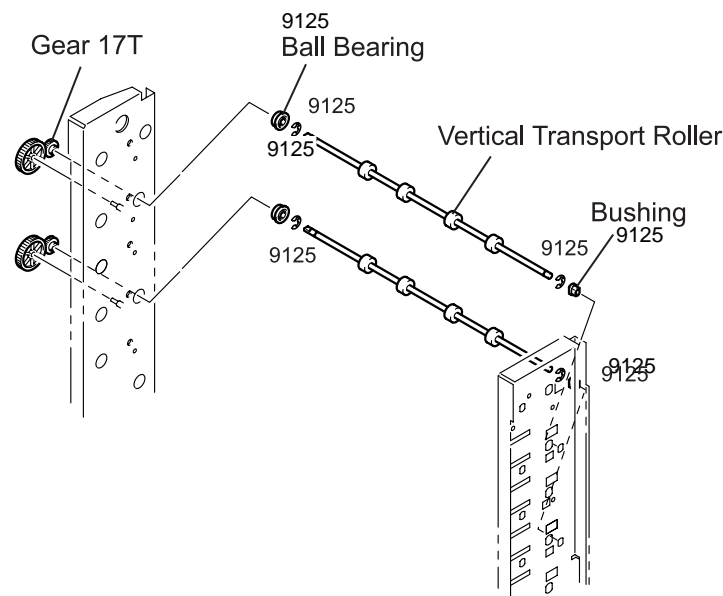


Figure 5-36. Vertical Transport Roller Removal

### 5.2.2.11 Eject Roller Removal

1. Remove the outer covers. (See Section 5.2.1.)
2. Remove the foot covers from the 10-Bin Unit. (See Section 5.1.2.)
3. Remove the bin rack. (See Section 5.2.2.8.)
4. If the Vertical Transport Roller gear 17T to be removed is inner side of the following parts, remove that part.
  - Transport Motor (Section 5.2.2.19)
  - Controller board bracket (Section 5.2.2.4.)
5. Remove two E-rings from both ends of the Eject Roller.
6. Unhook the Eject Roller gear (17T) by the inside and remove the gear from the Eject Roller.
7. Remove the Eject Roller along with the ball bearing.
8. Remove the ball bearing from the Eject Roller.

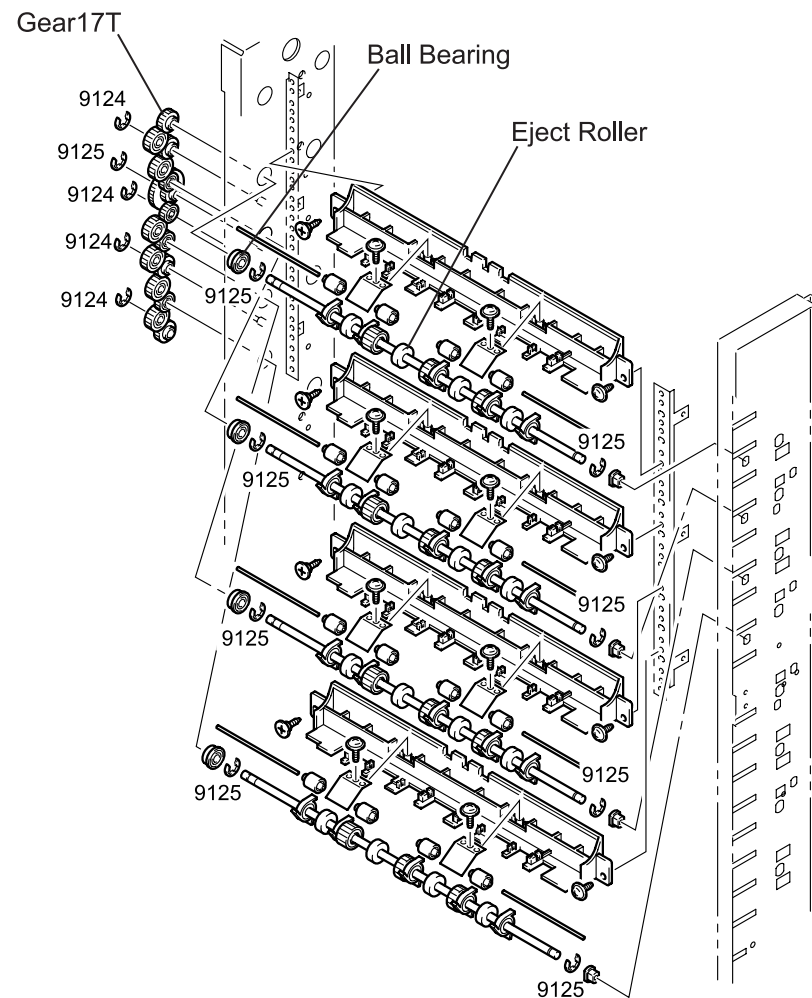


Figure 5-37. Eject Roller Removal

### 5.2.2.12 Bin Switch Guide Removal

1. Remove the outer covers. (See Section 5.2.1.)
2. Remove the solenoid for the Bin Switch Guide to be removed. (See Section 5.2.2.6.)
3. Remove the retaining ring (9301) for the Bin Switch Guide and remove bushing from the 10-Bin Unit frame.
4. Shift the Bin Switch Guide forward (to the solenoid side) to release the rear end from the 10-Bin Unit frame, and pull out the Bin Switch Guide.

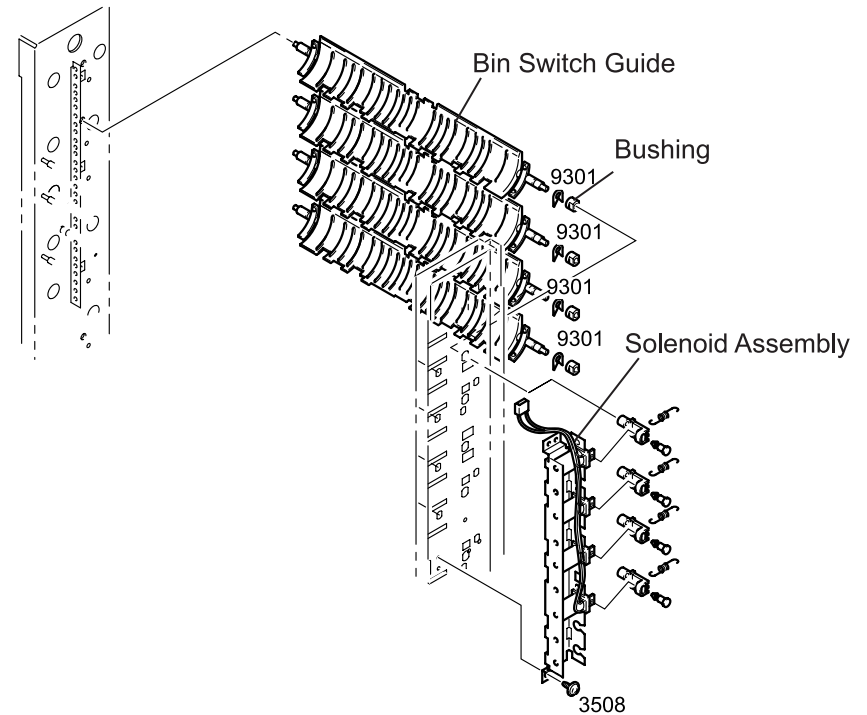


Figure 5-38. Bin Switch Guide Removal

### 5.2.2.13 Eject Guide Removal

1. Remove the outer covers. (See Section 5.2.1.)
2. Remove the covers from the legs of the 10-Bin Unit. (See Section 5.1.2.)
3. Remove the bin rack. (See Section 5.2.2.8.)
4. Remove the screw (3508) and shoulder screw securing the Upper Eject Guide to the 10-Bin Unit frame.
5. Remove the screw (3508) and shoulder screw securing the Lower Eject Guide to the 10-Bin Unit frame.
6. Remove the Upper And Lower Eject Guides from the 10-Bin Unit frame.
7. Release the harness for the paper empty sensor from the cable clamp in the Upper Eject Guide.

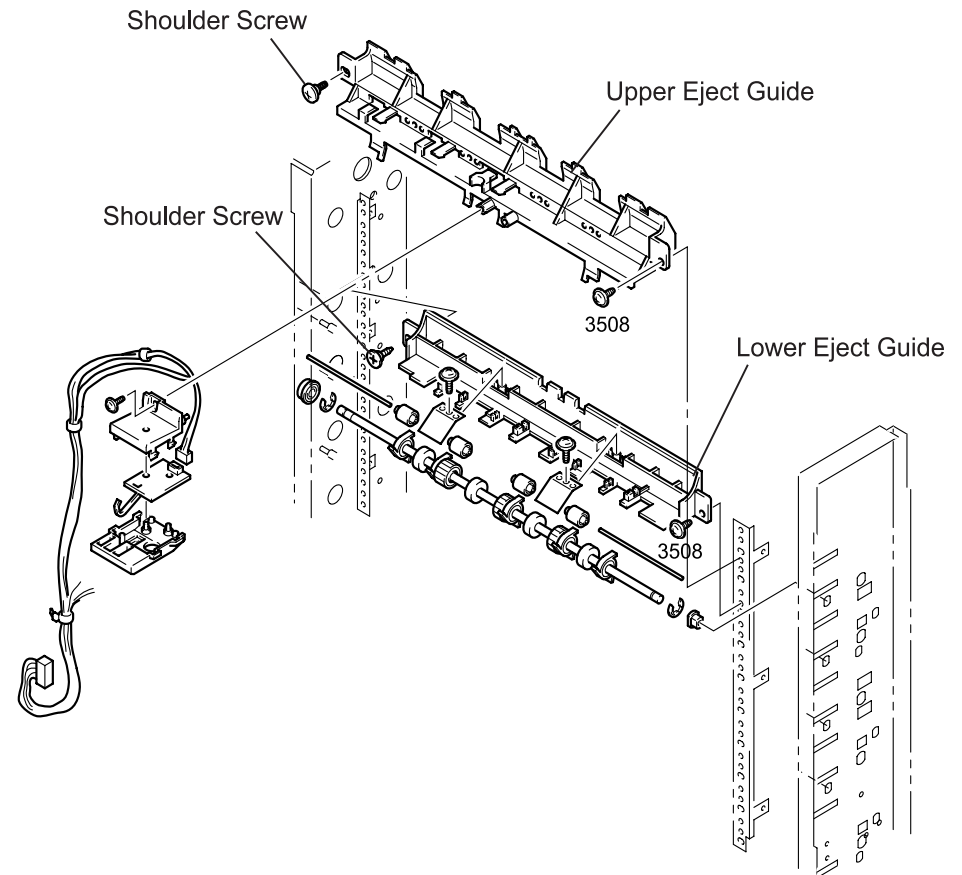


Figure 5-39. Eject Guide Removal

### 5.2.2.14 Sort/Non-Sort Switch Guide Removal

1. Remove the outer covers. (See Section 5.2.1.)
2. Remove the Sort/Non-Sort Switch Solenoid. (See Section 5.2.2.5.)
3. Release the cable from the cable clamp in the guide plate.
4. Disconnect the harness from the connector on the Bin 1 Paper Empty Sensor.
5. Remove four screws (3508) securing the guide plate to the front and rear sides of the 10-Bin Unit frame and remove the guide plate.
6. Remove the retaining ring (9301) securing the Sort/Non-Sort Switch Guide by the front end to the 10-Bin Unit frame through the bushing.
7. Shift the bushing inward to remove the Sort/Non-Sort Switch Guide and the bushing.
8. Remove the bushing from the Sort/Non-Sort Switch Guide.

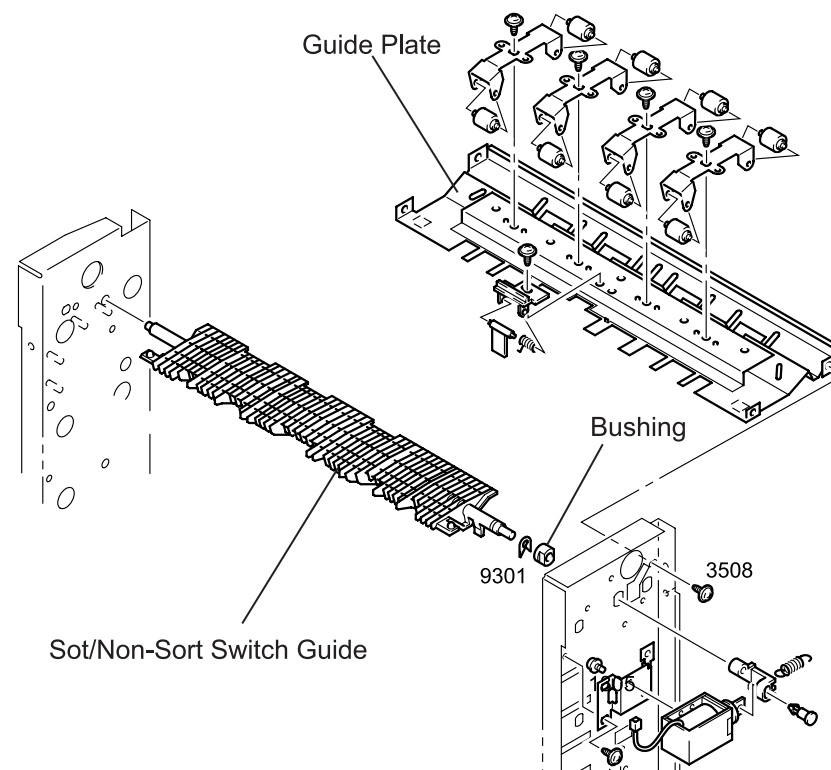
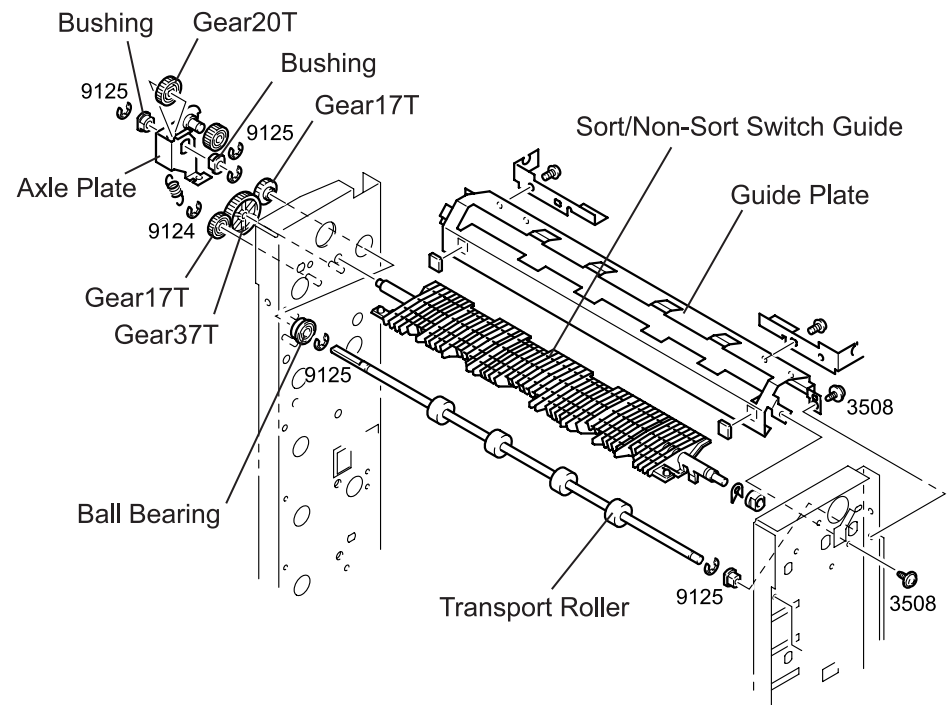


Figure 5-40. Sort/Non-Sort Switch Guide Removal

### 5.2.2.15 Transport Roller Removal

1. Remove the outer covers. (See Section 5.2.1.)
2. Remove the Sort/Non-Sort Switch Solenoid. (See Section 5.2.2.5.)
3. Release the cable from the cable clamp in the guide plate.
4. Remove the Sort/Non-Sort Switch Guide. (See Section 5.2.2.14.)
5. Remove the E-ring (9125) securing the axle plate to the Transport Roller, then remove the axle plate, two bushings, and the gear 20T.
6. Remove the E-ring (9125) securing the gear 17T to the Transport Roller.
7. Unlock the gear 17T by the inside and remove it from the Transport Roller.
8. Remove the E-ring (9124) securing the gear 17T to the 10-Bin Unit frame shaft and remove the gear.
9. Remove the gear 37T from the 10-Bin Unit frame.
10. Remove four screws (3508) securing the guide frame to the front and rear sides of the 10-Bin Unit frame, and remove the Guide Plate.
11. Remove two E-rings (9125) from the both ends of the roller.
12. Remove the Transport Roller along with the ball bearing.
13. Remove the bearing from the Transport Roller.

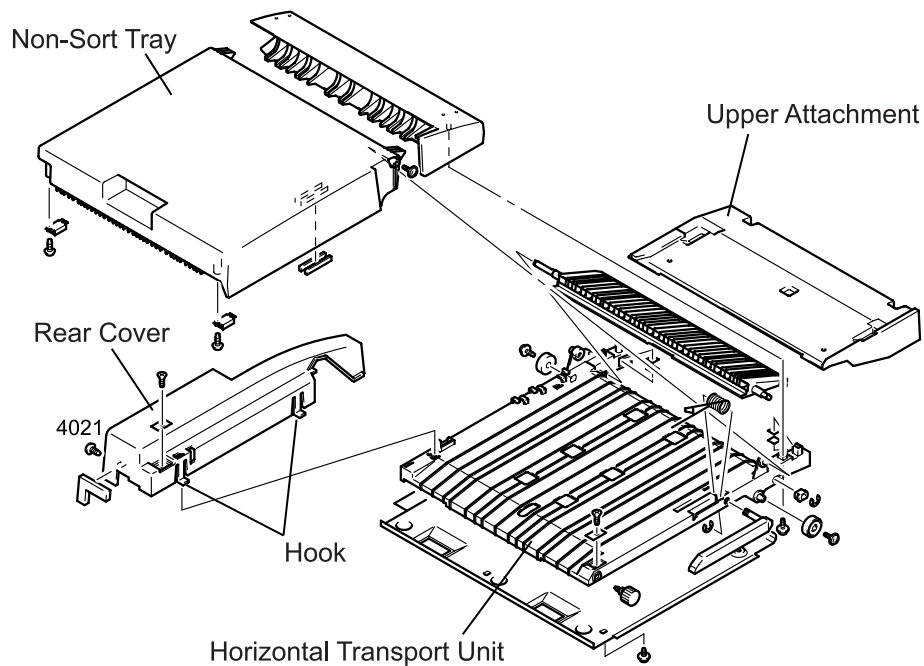


**Figure 5-41. Transport Roller Removal**

## 5.2.3 Horizontal Transport Unit Disassembly/Assembly

### 5.2.3.1 Rear Cover Removal

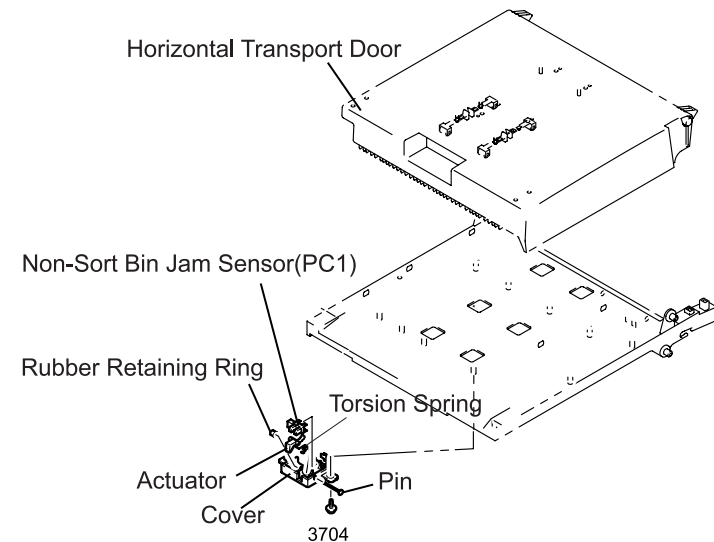
1. Remove the 10-Bin Unit. (See Section 5.1.1.)
2. Remove two screws (4021) securing the Rear Cover to the Horizontal Transport Unit and release the hooks to remove the Rear Cover.



**Figure 5-42. Horizontal Transport Unit Removal**

### 5.2.3.2 Non-Sort Bin Jam Sensor (PC1) Removal

1. Remove the Rear Cover. (See Section 5.2.3.1.)
2. Flip the Horizontal Transport Unit.
3. Remove two screws (3704) securing the Non-Sort Bin Jam Sensor cover to the Horizontal Transport Unit and remove the cover along with the sensor.
4. Remove the harness from the connector on the sensor.
5. Remove the rubber retaining ring from the actuator pin in the Non-Sort Bin Jam Sensor and remove the pin, actuator, and torsion spring.
6. Unhook the Non-Sort Bin Jam Sensor from the cover and remove the sensor.

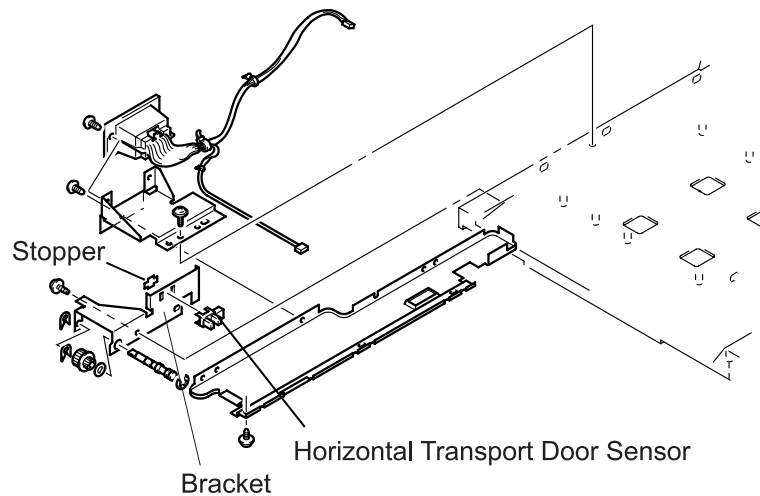


**Figure 5-43. Non-Sort Bin Jam Sensor Removal**



### 5.2.3.3 Horizontal Transport Door Sensor (PC4) Removal

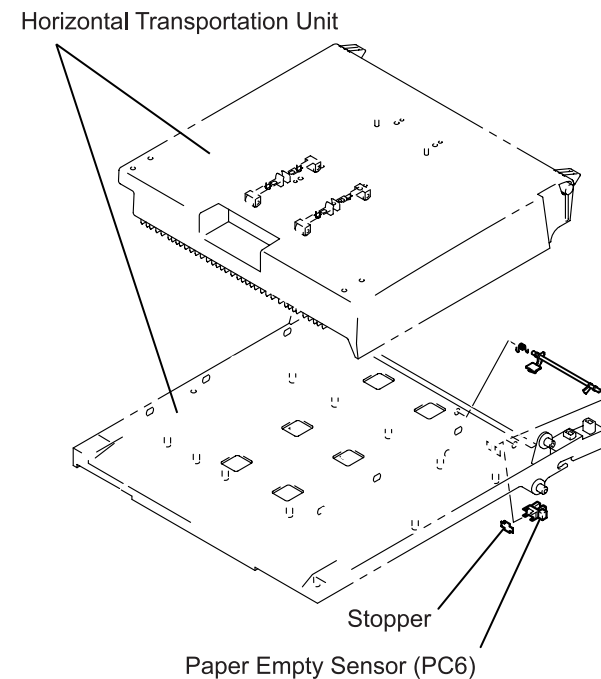
1. Remove the Rear Cover. (See Section 5.2.3.1.)
2. Open the Horizontal Transport Door.
3. Disconnect the harness from the connector on the Horizontal Transport Door Sensor.
4. Remove the stopper fixing the hook on the Horizontal Transport Door Sensor to the bracket.
5. Unhook the Horizontal Transport Door Sensor from the bracket and remove the sensor.



**Figure 5-44. Horizontal Transport Door Sensor Removal**

### 5.2.3.4 Horizontal Transport Unit Paper Empty Sensor (PC6) Removal

1. Remove the Rear Cover. (See Section 5.2.3.1.)
2. Flip the Horizontal Transport Unit.
3. Remove the stopper fixing the hook for the Horizontal Transport Unit Paper Empty Sensor to the Horizontal Transport Unit.
4. Remove the hook securing the Horizontal Transport Unit Paper Empty Sensor to the Horizontal Transport Unit and remove the sensor.



**Figure 5-45.  
Horizontal Transport Unit Paper Empty Sensor Removal**

### 5.2.3.5 Paper Path Switch Solenoid Removal

1. Remove the Rear Cover. (See Section 5.2.3.1.)
2. Remove the screw (1305) securing the Paper Path Switch Solenoid to the bracket and remove the solenoid.

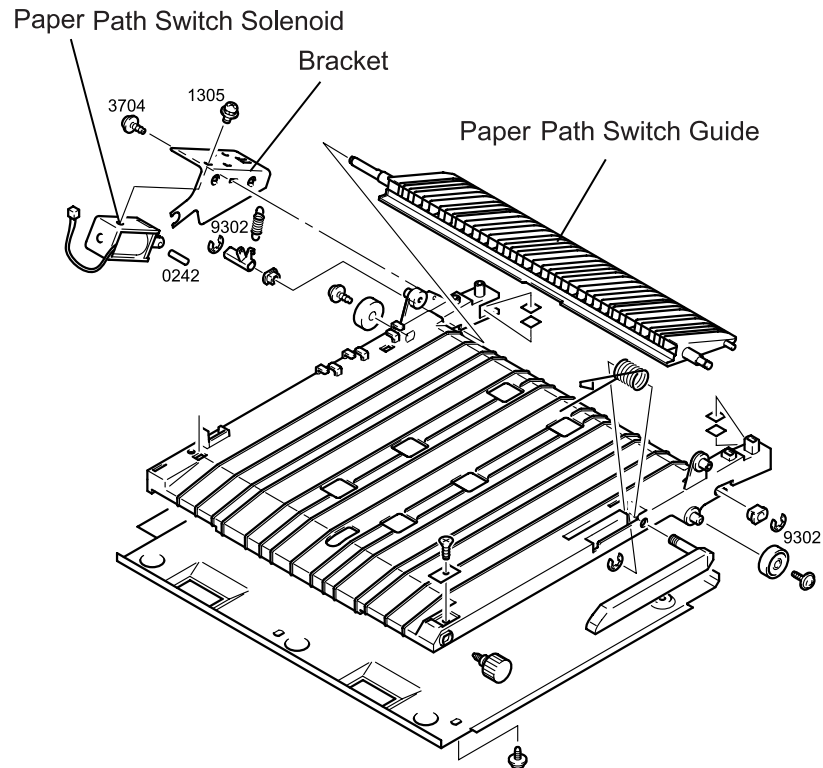


Figure 5-46. Paper Path Switch Solenoid Removal

### 5.2.3.6 Horizontal Transport Roller Removal

1. Remove the Rear Cover. (See Section 5.2.3.1.)
2. Disconnect the harness from the relay connector or the connector on the sensor.
3. Remove the Paper Path Switch Solenoid. (See Section 5.2.3.5.)
4. Remove two screws (1305 and 4021) securing the harness bracket to the Horizontal Transport Unit and remove the bracket.
5. Remove three screws (3504) securing the frame to the Horizontal Transport Unit.
6. Remove the screw (4021) securing the bracket for the Horizontal Transport Door Sensor to the frame.
7. Remove the frame from the Horizontal Transport Unit.
8. Remove the retaining ring (9302) from the Horizontal Transport Roller and then remove the timing belt, washer, pulley 17T, clutch, bushing, and Horizontal Transport Roller.

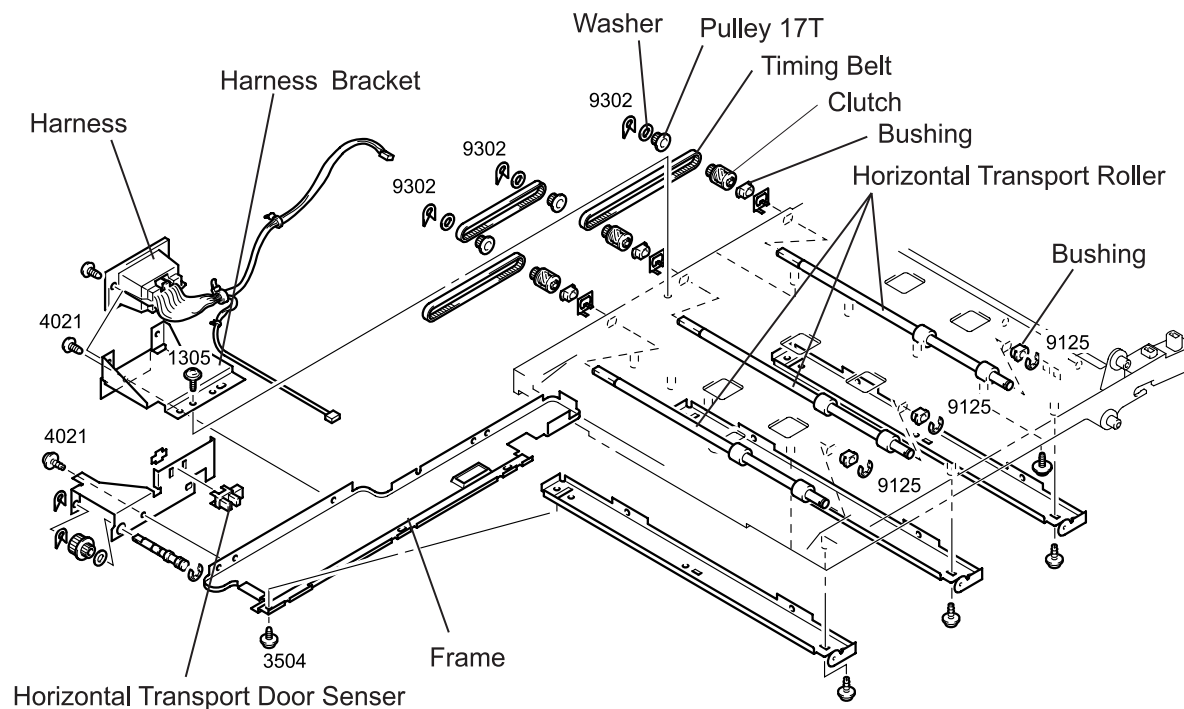


Figure 5-47. Horizontal Transport Roller Removal

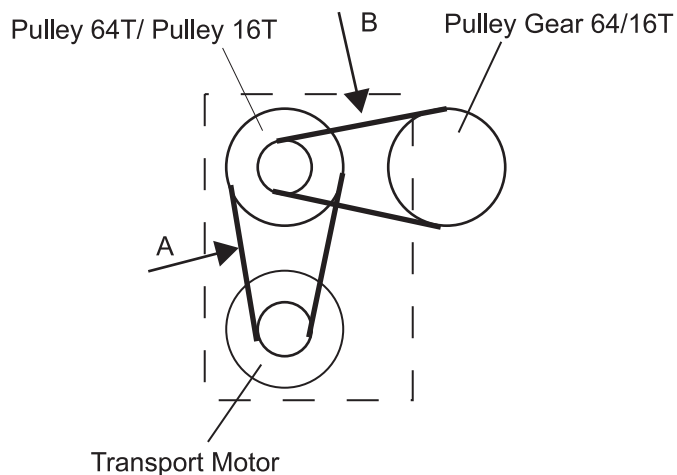
## 5.3 Adjustment

### 5.3.1 Timing Belt Tension Adjustment

Perform Timing Belt Tension Adjustment when the Transport Motor has been removed or the timing belt listed below has been replaced. Make sure the belt lowers the correct amount with the specified load.

**Table 5-1. Timing Belt Tension Adjustment**

Belt to be adjusted	Load	Lowered amount
Timing belt (A) for driving the pulley 64T	100 - 200 gf	2 mm
Timing belt (B) for driving the pulley gear 64/18T	200- 300 gf	2 mm



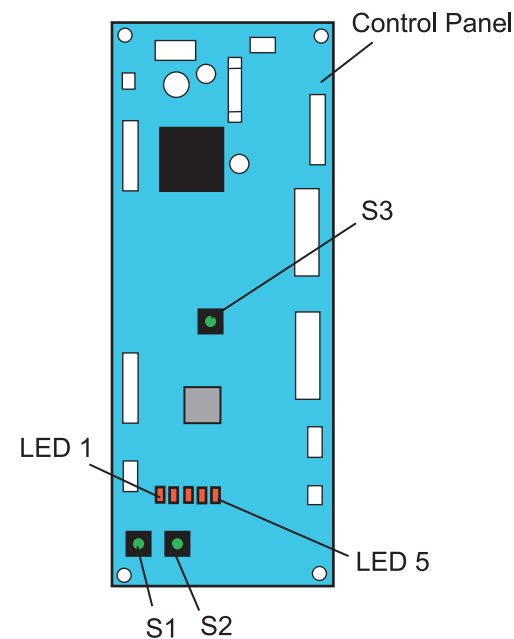
**Figure 5-48. Timing Belt Adjustment Points**

### 5.3.2 Test Mode

Test Mode allows you to perform the units test of the 10-Bin Unit. You can check the operational condition of the parts in the drive system as well as such electrical parts as motors by referring to the LED's on/off condition.

#### 5.3.2.1 Pre-Operation

Turn the unit power off and remove outer covers. (See Section 5.2.3.1) When the rear cover is removed, the control panel shown below is exposed.



**Figure 5-49. Control Board**



- Since the power is supplied through the printer, connect the Tray Section and the printer with the power cable (12-pin).
- Since signals are transferred between the Horizontal Transport Unit and the Tray Section, connect the Tray Section and the printer with a signal cable (28-pin).

### 5.3.2.2 Activating the Test Mode

The activating method varies depending on the power on/off condition:

- When power is off:  
While pressing down the switch S1 on the PWB-A, turn the printer on.
- When power is already on:  
While pressing the switch S1, press the switch S3 shortly.

### 5.3.2.3 Cancelling the Test Mode

Press the switch S3 to cancel the test mode.

### 5.3.2.4 Details of Each Test Mode

The test mode advances to the next mode as the switch S1 is pressed. If the switch S1 is pressed in the Paper Path Switch Check mode, the mode returns to the initial indication. The test modes equipped are as shown in the following table.

Table 5-2. Test Modes

Test Modes	LED Indication *1	Explanation
Initial Indication	⊙⊙⊙⊙⊙	Checks the followings: <ul style="list-style-type: none"> <li>• Bin type</li> <li>• Tray section installation</li> <li>• Horizontal transport uni installation</li> </ul>
Sensor Input Check	⊙●●●●	Checks the operation of each sensor.
Printer Setting	●⊙●●●	Sets the printer model.
Initial Operation Check	⊙⊙●●●	Check the initial operation of the bins.
Paper Size Check	●●⊙●●	Sets the paper size.
Sort Operation Check	⊙●⊙●●	Checks the operation of the sort mechanism.
Solenoid Check	●⊙⊙●●	Checks the condition of each solenoid.
Paper Path Switch Check	⊙⊙⊙●●	Checks the operation of the paper path switch system.

\*1: LED 1 - LED 5 from the left.

⊙: Blinks

●: Off

## INITIAL INDICATION

The test mode begins with the initial indication. In this mode, you can check the following conditions:

- If the bin type is correct
- If the Tray section is properly installed.
- If the Horizontal Transportation Unit is properly installed.

If all conditions are good, all LEDs blink.

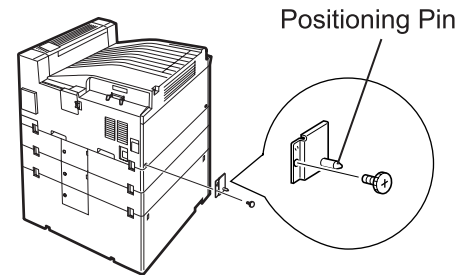
**Table 5-3. Initial Indication**

LED	Sensor Switch	Indications *1
1	---	⊙: 10-Bin Unit
2	---	Not Used.
3	Sorter set switch	⊙: Tray Section installed properly. ●: Tray Section installed improperly.
4	Horizontal transportation door sensor	⊙: Horizontal Transport Unit installed properly. ●: Horizontal Transport Unit installed improperly.
5	---	No used.

\*1: ⊙: LED blinks, ●: LED Off

### [Sorter set switch]

If the positioning pin on the printer fits in the socket in the Tray section securely, the switch is on and the LED 3 blink.



**Figure 5-50. Positioning Pin**

## SENSOR INPUT CHECK

This mode enables you to check each sensor for its proper operation. Since too many sensors are used, the test is performed by dividing them into six groups. As you press the switch S2, the group advances as follows: Mode indication → Group 1 → Group 2 ....→ Group 6 → Sensor Input Mode indication.

**Table 5-4. Sensor Input Check - Group 1**

LED	Sensor	Indications *1
1	Eject sensor (Tray section)	○: Paper present ●: No paper
2	Non-sort bin jam sensor (Horizontal transport unit)	○: Paper present ●: No paper
3	---	---
4	Sorter set switch (Tray section)	○: Tray section set properly ●: Tray section set improperly
5	Horizontal transport door sensor	○: Horizontal transport unit set properly ●: Horizontal transport unit set improperly

\*1: ○: LED On, ●: LED Off

**Table 5-5. Sensor Input Check - Group 2**

LED	Sensor	Indications *1
1	Transport motor pulse detection switch	Blinks when the motor is hand-rotated.
2	Not used.	---
3	Not used.	---
4	Not used.	---
5	Not used.	---

**Table 5-6. Sensor Input Check - Group 3**

LED	Sensor	Indications *1
1	Paper empty sensor (Bin 1)	○: No paper, ●: Paper present
2	Paper empty sensor (Bin 2)	○: No paper, ●: Paper present
3	Paper empty sensor (Bin 3)	○: No paper, ●: Paper present
4	Paper empty sensor (Bin 4)	○: No paper, ●: Paper present
5	Paper empty sensor (Bin 5)	○: No paper, ●: Paper present

\*1: ○: LED On, ●: LED Off

**Table 5-7. Sensor Input Check - Group 4**

LED	Sensor	Indications *1
1	Paper empty sensor (Bin 6)	○: No paper, ●: Paper present
2	Paper empty sensor (Bin 7)	○: No paper, ●: Paper present
3	Paper empty sensor (Bin 8)	○: No paper, ●: Paper present
4	Paper empty sensor (Bin 9)	○: No paper, ●: Paper present
5	Paper empty sensor (Bin 10)	○: No paper, ●: Paper present

\*1: ○: LED On, ●: LED Off

**Table 5-8. Sensor Input Check - Group 5**

LED	Sensor	Indications *1
1	Paper full detection sensor (Bin 1)	○: Paper full
2	Paper full detection sensor (Bin 2)	○: Paper full
3	Paper full detection sensor (Bin 3)	○: Paper full
4	Paper full detection sensor (Bin 4)	○: Paper full
5	Paper full detection sensor (Bin 5)	○: Paper full

\*1: ○: LED On, ●: LED Off

Table 5-9. Sensor Input Check - Group 6

LED	Sensor	Indications *1
1	Paper full detection sensor (Bin 6)	○: Paper full
2	Paper full detection sensor (Bin 7)	○: Paper full
3	Paper full detection sensor (Bin 8)	○: Paper full
4	Paper full detection sensor (Bin 9)	○: Paper full
5	Paper full detection sensor (Bin 10)	○: Paper full

\*1: ○: LED On

## PRINTER SETTING

With this mode, you can check that the printer model name is correctly set. If it is set correctly, bins operate at the system speed of the printer. Set the printer model by pressing the switch S2. As you press the switch, the printer setting is made as shown in the table below. It begins with the initial value DL-1 (160 mm/second)

Table 5-10. Sensor Input Check - Group 6

Order	Sensor	Indications *1
1st push	DL-1	LED1: ○ Others: ●
2nd push	DL-2	LED1: ○ Others: ●
3rd push	---	

\*1: ○: LED On, ●: LED Off

## INITIAL OPERATION

Performs the initial operation of the bins. Pressing the switch S2 drives the Transport Motor (M1). When the test is completed, the LED indication is ○○●●●.

**NOTE:** If the initial operation is not carried out, you can't continue to the next mode.



## PAPER SIZE INPUT

With this mode, you can check that the paper sizes are correctly set. As you press the switch S2, the paper size is set in the order shown in the table below. If the setting is properly done, it means the paper sizes set for the printer are correctly set.

**Table 5-11. Paper Size Input**

Order	Paper Size	LED1	LED2	LED3	LED4	LED5
1	A4 SEF	○	●	●	●	●
2	A4 LEF	●	○	●	●	●
3	B5 SEF	○	○	●	●	●
4	B5 LEF	●	●	○	●	●
5	Letter SEF	○	●	○	●	●
6	Letter LEF	●	○	○	●	●
7	A3	○	○	○	●	●
8	B4	●	●	●	○	●

○: LED On, ●: LED Off

**NOTE:** With the additional push, the indication returns to the initial condition (for A4 SEF).

**NOTE:** SEF: Short Edge First, LEF: Long Edge First

## SORT OPERATION

This mode is used to check the sorter's permission, start, and stop operations. By pressing the switches S1 or S2, check that the indications switches in the following order; 1) **Permission** 2) **Start** 3) **Stop**, as shown in the table below. When the indication is **Start**, all eject rollers and transport rollers in the tray section and horizontal transport unit rotate.

**Table 5-12. Sort Operation Check**

Order	Switch	Sorter action	LED1	LED2	LED3	LED4	LED5
1	S2	Permission	○	●	●	●	●
2	S1	Start	○	○	●	●	●
3	S1	Stop	○	●	●	●	●

○: LED On, ●: LED Off

After the third push, pressing the S1 alternates the indication between **Start** and **Stop**. To exit this mode, press the switch S2 during the **Stop** condition. If the S1 is pressed then, the next mode is activated.

## SOLENOID CHECK

With this mode, you can check for the operation of each solenoid. When the solenoid is turned on (= the solenoid pin retracts), the corresponding bin switch guide opens. Note there is no solenoid for the 10th bin (the bottom tray) because it does not have a switch guide. If you press the switch S1 during the test, the operation stops.

**Table 5-13. Solenoid Check**

Order	Solenoid	LED1	LED2	LED3	LED4	LED5
1	Bin 1	○	●	●	●	●
2	Bin 2	●	○	●	●	●
3	Bin 3	○	○	●	●	●
4	Bin 4	●	●	○	●	●
5	Bin 5	○	●	○	●	●
6	Bin 6	●	○	○	●	●
7	Bin 7	○	○	○	●	●
8	Bin 8	●	●	●	○	●
9	Bin 9	○	●	●	○	●
10	Bin 10	●	●	●	●	●

○: LED On, ●: LED Off

## PAPER PATH SWITCH CHECK

This mode allows you to check that the paper path properly switches as the eject mode alternates between non-sort mode and sort mode. The entrance area in the horizontal transport unit moves down (to the non-sort side), while the entrance area moves up (to the horizontal transport side) in the sort mode. The non-sort mode is the initial setting. As the switch S2 is pressed, the condition switches in the order shown in the following table. To return to the initial indication mode, press the switch S1.

**Table 5-14. Paper Path Switch Check**

Order	Paper path moves to:
1	Horizontal transport side (upward)
2	Non-sort side (downward)
3	Horizontal transport side (upward)
4	(Returns to the initial indication.)

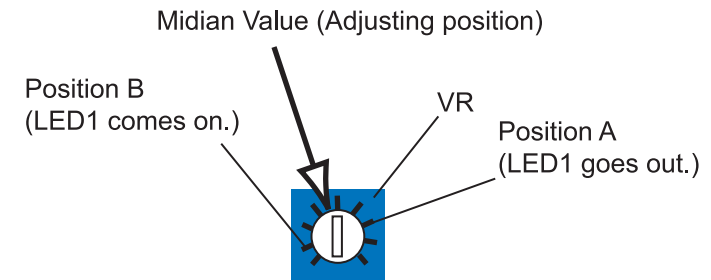
### 5.3.3 Adjusting the Eject Sensor

If the Eject Sensor Board or Bin 1 Paper Empty Sensor is replaced, always adjust the Eject Sensor as described below.

1. Activate the Sensor Input Check in the test mode. (See Section 5.3.2.4.) LED 1 lights up when paper is present and goes off when there is no paper.
2. Check that no paper is present in any bin, turn the VR from the left most position to the right most position and check that LED1 lights up.
3. Turn the VR from the current position back to the left slowly and find the point where the LED goes out. record this position as A. If the light goes off at the right most position, record that position A.
4. Place paper in Bin 1.
5. Insert the paper until it passes through the eject sensor, then check that LED1 lights up.
6. Turn the VR up to the left most position, and check whether LED1 is still lit.
7. If the LED1 goes out, turn the VR from the current position back to the right slowly, and find the position where LED1 starts to light up. Record this position as B.
8. If the LED remains lit at the left most position, record the position as position B.
9. Adjust the VR to the median value ( $\pm 1$  scale) of the positions A and B.



- Use of Minolta MR white (A4) is recommended.
- The VR must be turned in the correct direction as instructed in the procedure (because of hysteresis).



**Figure 5-51. VR Setting Position**

## 5.4 Maintenance

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The maintenance method of the 10-Bin Unit is mostly same as for the printer body. Therefore, this section only describes the method specific to the 10-Bin Unit.

### 5.4.1 Maintenance Items

The 10-Bin Unit part that requires maintenance is as shown in the following table.

**Table 5-15. Maintenance Item**

Maintenance Item	Operations required	Replacement Cycle
Transport roller (each) *	Cleaning / Replacement	300,000 sheets

\*: The transport roller includes eject roller, vertical transport roller, and horizontal transport roller in the tray section.

### 5.4.2 Cleaning the Paper Take-up Roller

1. Wipe the Transport Roller with a soft cloth moistened with water.



**Do not use any solvent, including alcohol.**

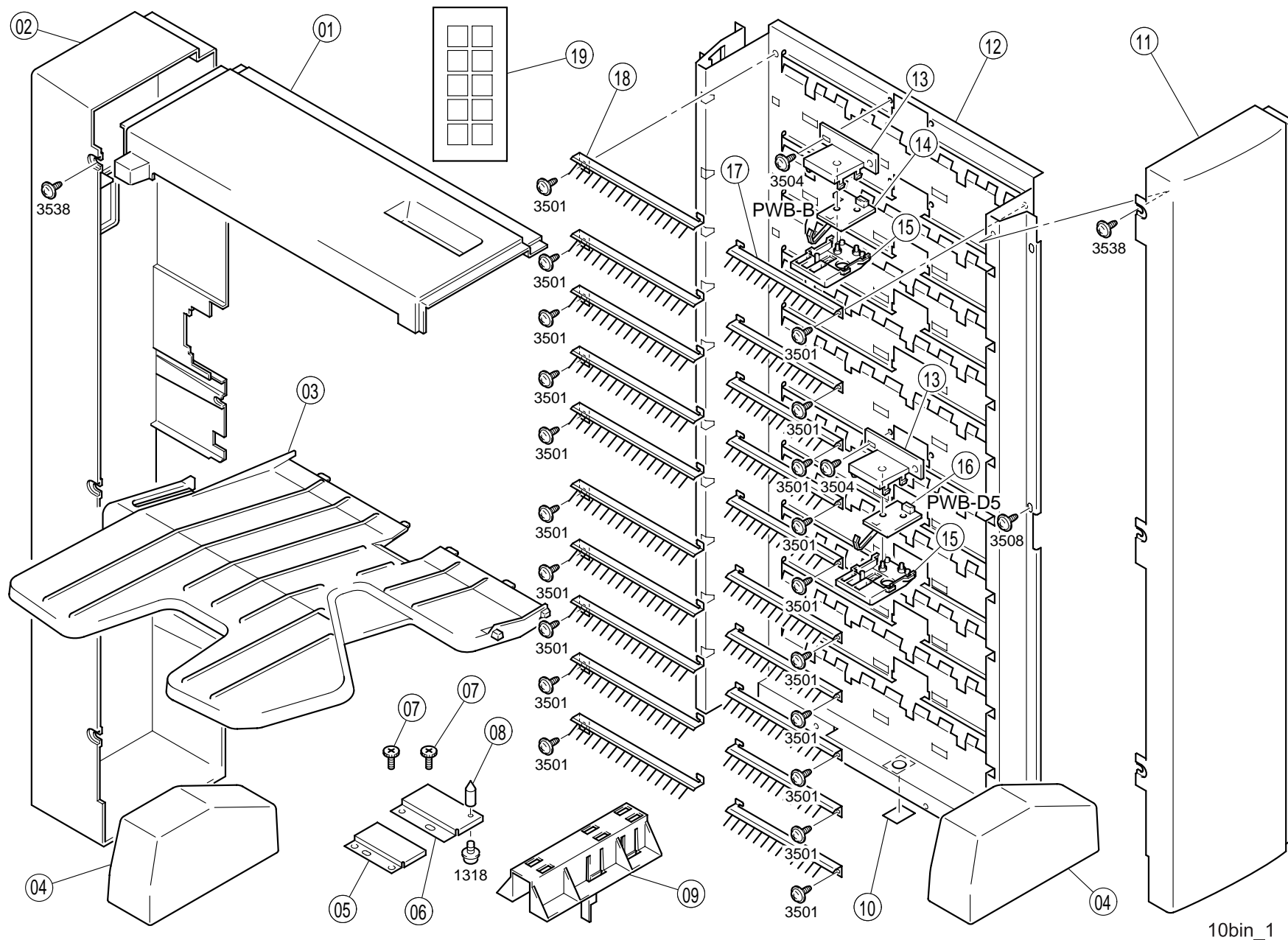
## 5.5 Exploded Diagrams

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### 5.5.1 Housing

**Table 5-16. Parts List - Housing**

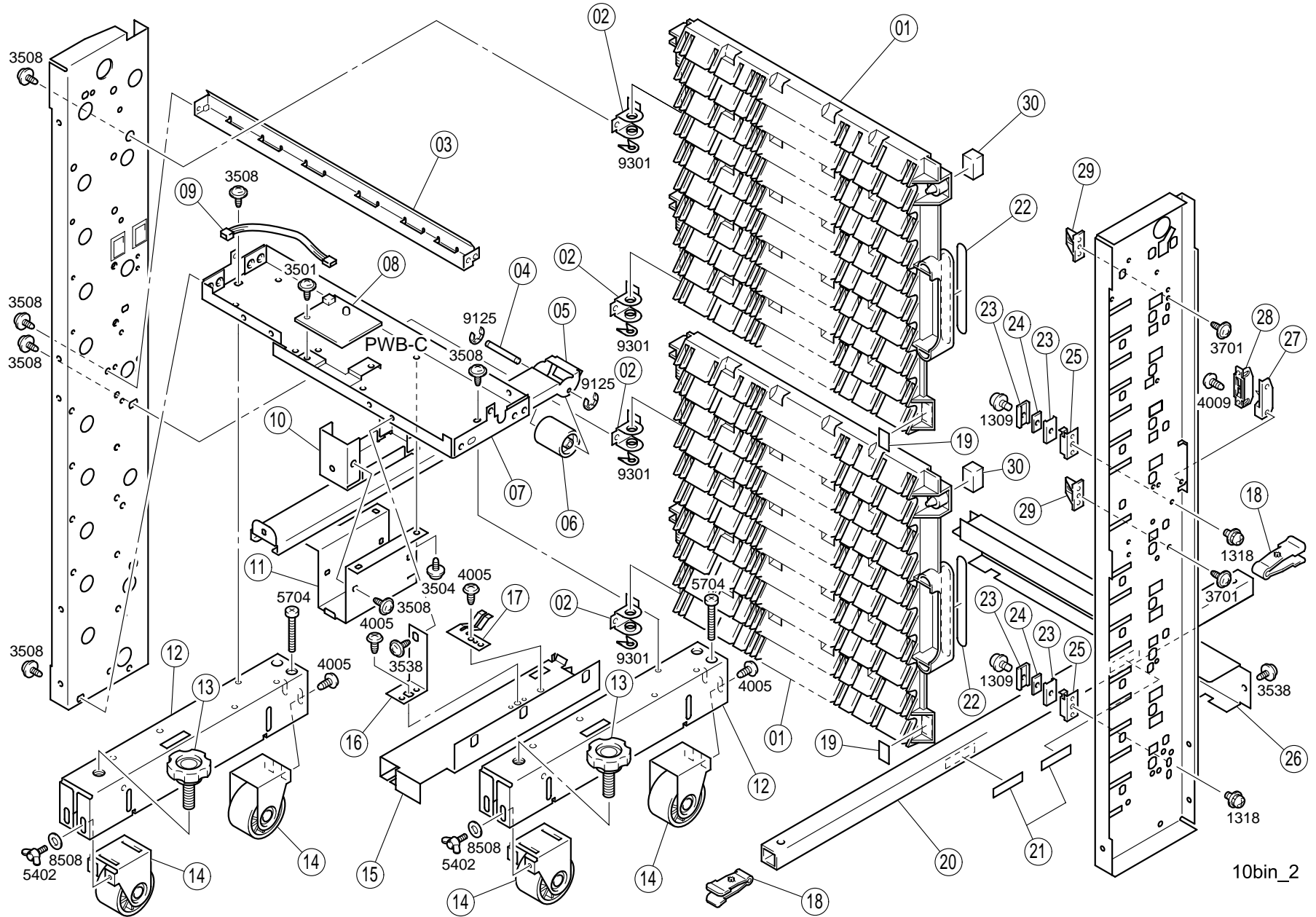
No.	Part Name	No.	Part Name
1	TOP COVER	11	FRONT COVER
2	REAR COVER	12	BIN RACK
3	TRAY	13	BRACKET
4	COVER	14	PW BOARD-B, EXIT (PWB-B)
5	PLATE	15	COVER
6	PLATE	16	PW BOARD-D, EXIT (PWB-D5)
7	SHOULDER SCREW	17	NEUTRALIZING BRUSH
8	PIN	18	NEUTRALIZING BRUSH
9	HOLDER	19	LABEL
10	POLYESTER FILM	-	-



## 5.5.2 Frames

**Table 5-17. Parts List - Frames**

No.	Part Name	No.	Part Name
1	GUIDE	16	STOP PLATE
2	SUPPORT PLATE	17	GROUND PLATE
3	GUIDE PLATE	18	STOPPER
4	SHAFT	19	PLATE
5	FOOT	20	PIPE
6	ROLL	21	LABEL
7	BASE FRAME	22	LABEL
8	PW BOARD-C, EMPTY (PWB-C)	23	PLATE
9	HARNESS	24	MAGNET
10	SUPPORT PLATE	25	BRACKET
11	BRACKET	26	COVER
12	FOOT	27	GROUND PLATE
13	ADJUSTING BOLT	28	MAGNET CATCH
14	CASTOR	29	HOLDER
15	STOP PLATE	30	RUBBER STRIP

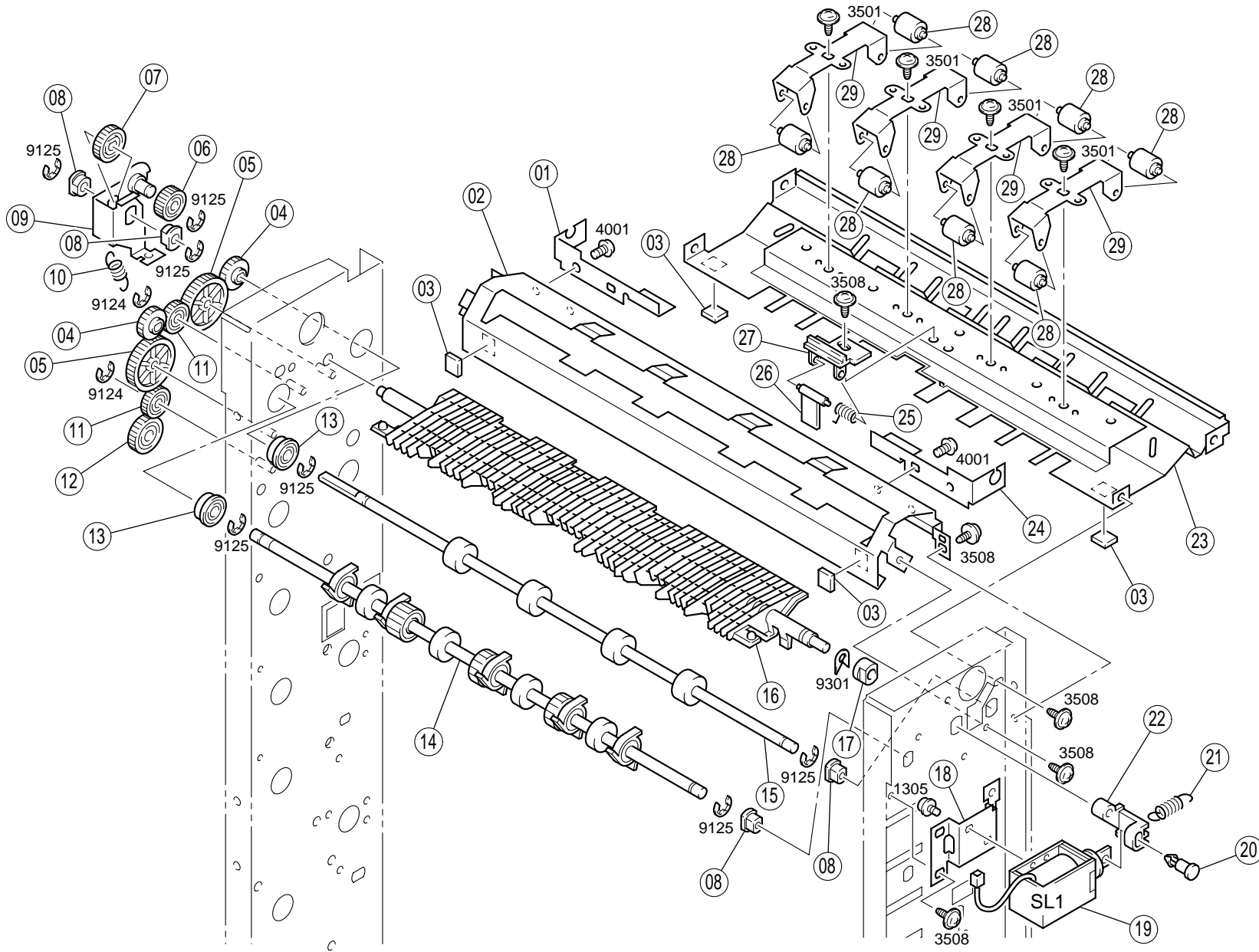




### 5.5.3 Paper Transportation Section (A)

Table 5-18. Parts List - Paper Transportation Section (A)

No.	Part Name	No.	Part Name
1	BRACKET	16	GUIDE
2	GUIDE PLATE	17	BUSHING
3	CUSHION	18	BRACKET
4	GEAR 17T	19	SOLENOID, NON-SORT (SL1)
5	GEAR 37T	20	STOPPER
6	GEAR 18T	21	TENSION SPRING
7	GEAR 20T	22	HOLDER
8	BUSHING	23	GUIDE PLATE
9	AXLE PLATE	24	BRACKET
10	TENSION SPRING	25	TORSION SPRING
11	GEAR 17T	26	ACTUATOR
12	GEAR 19T	27	HOLDER
13	BALL BEARING	28	ROLL
14	ROLLER	29	PLATE SPRING
15	ROLLER	-	-

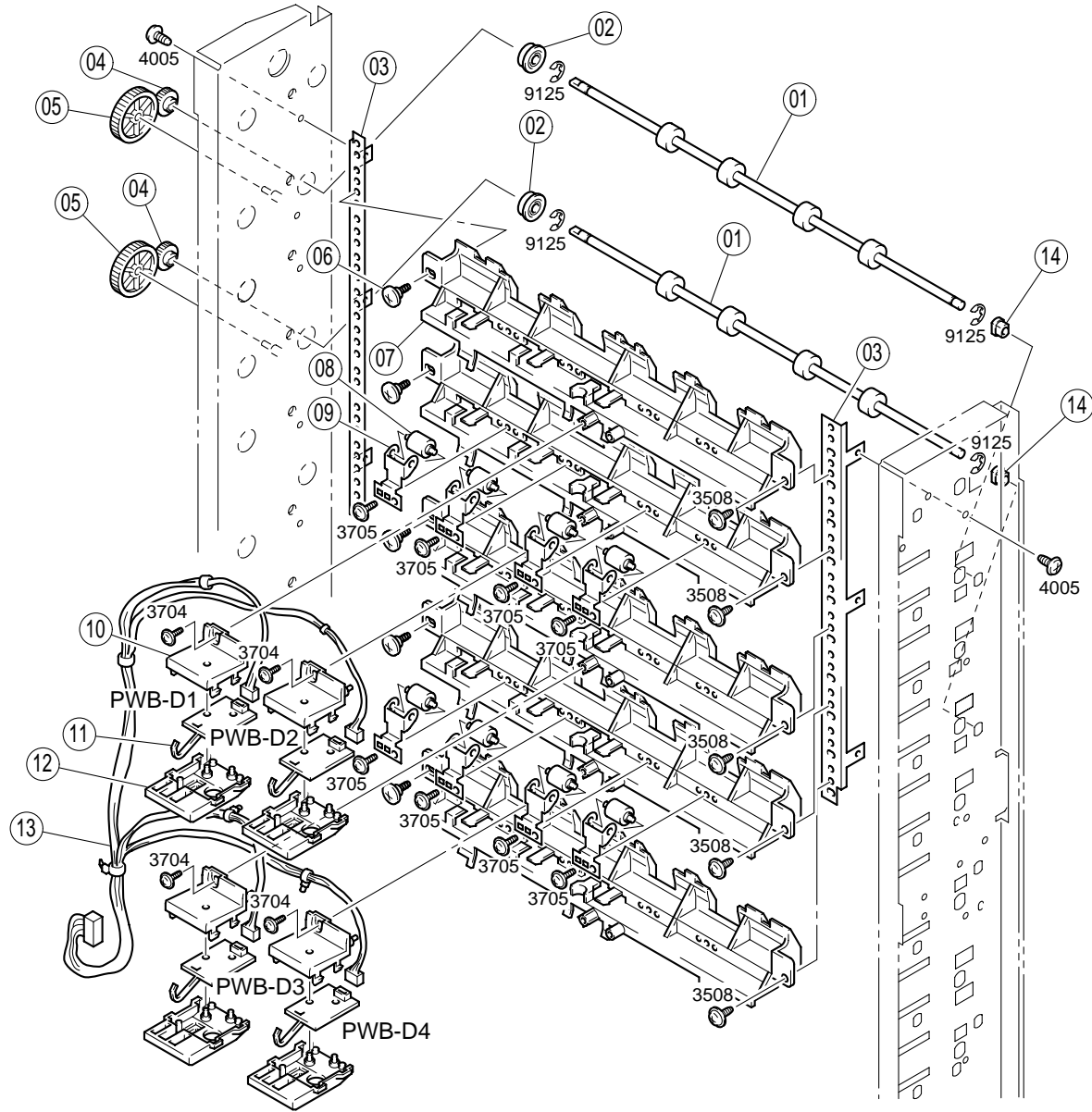


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## 5.5.4 Paper Transportation Section (B)

Table 5-19. Parts List -Paper Transportation Section (B)

No.	Part Name	No.	Part Name
1	ROLLER	8	ROLL
2	BALL BEARING	9	PLATE SPRING
3	BRACKET	10	BRACKET
4	GEAR 17T	11	PW BOARD-D (PWB-D1-D4)
5	GEAR 37T	12	COVER
6	SHOULDER SCREW	13	HARNESS
7	GUIDE	14	BUSHING

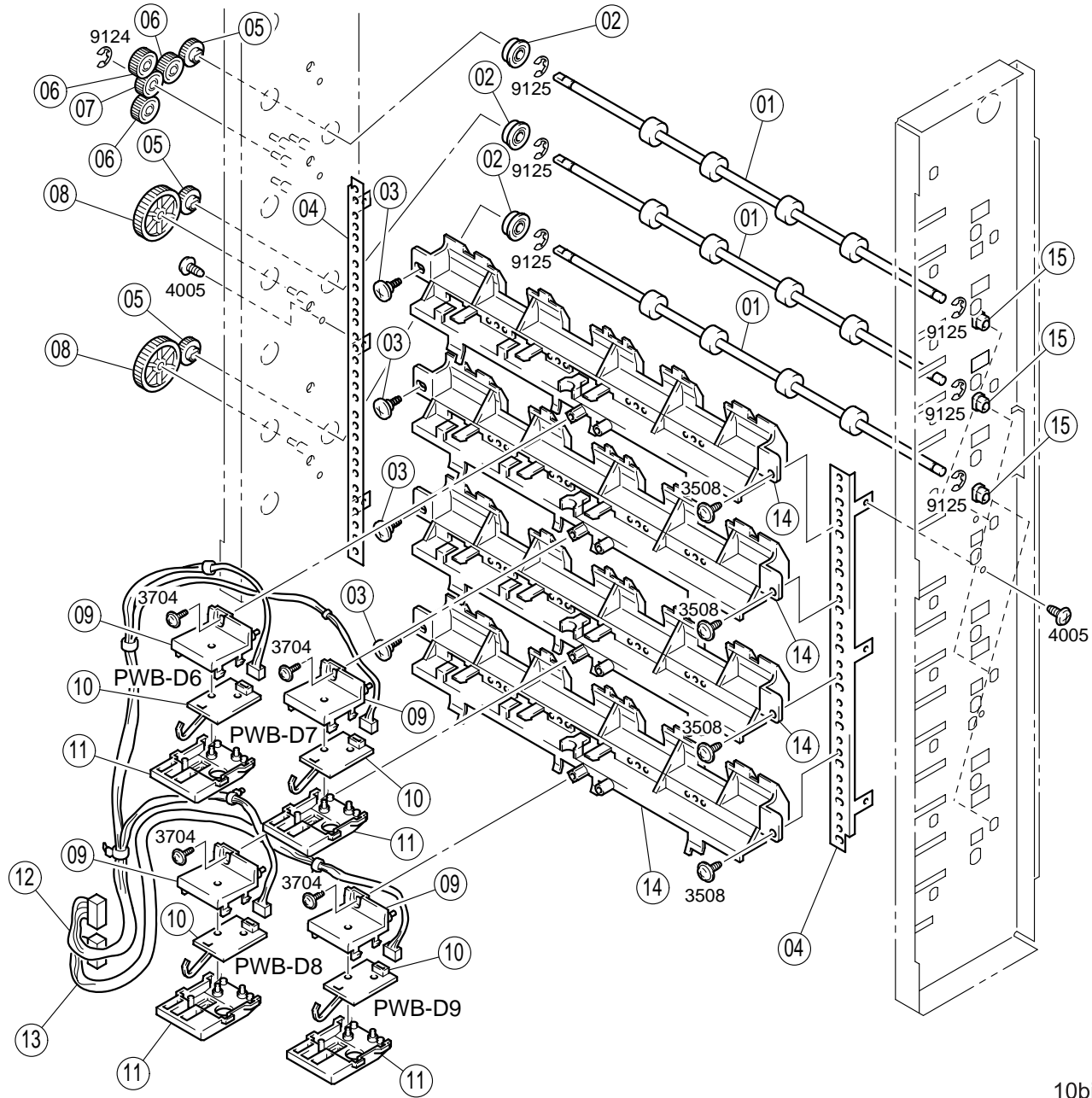


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### 5.5.5 Paper Transportation Section (C)

Table 5-20. Parts List - Paper Transportation Section (C)

No.	Part Name	No.	Part Name
1	ROLLER	9	BRACKET
2	BALL BEARING	10	PW BOARD-D (PWB-D6-D9)
3	SHOULDER SCREW	11	COVER
4	BRACKET	12	HARNESS
5	GEAR 17T	13	HARNESS
6	GEAR 19T	14	GUIDE
7	GEAR 17T	15	BUSHING
8	GEAR 37T	-	-

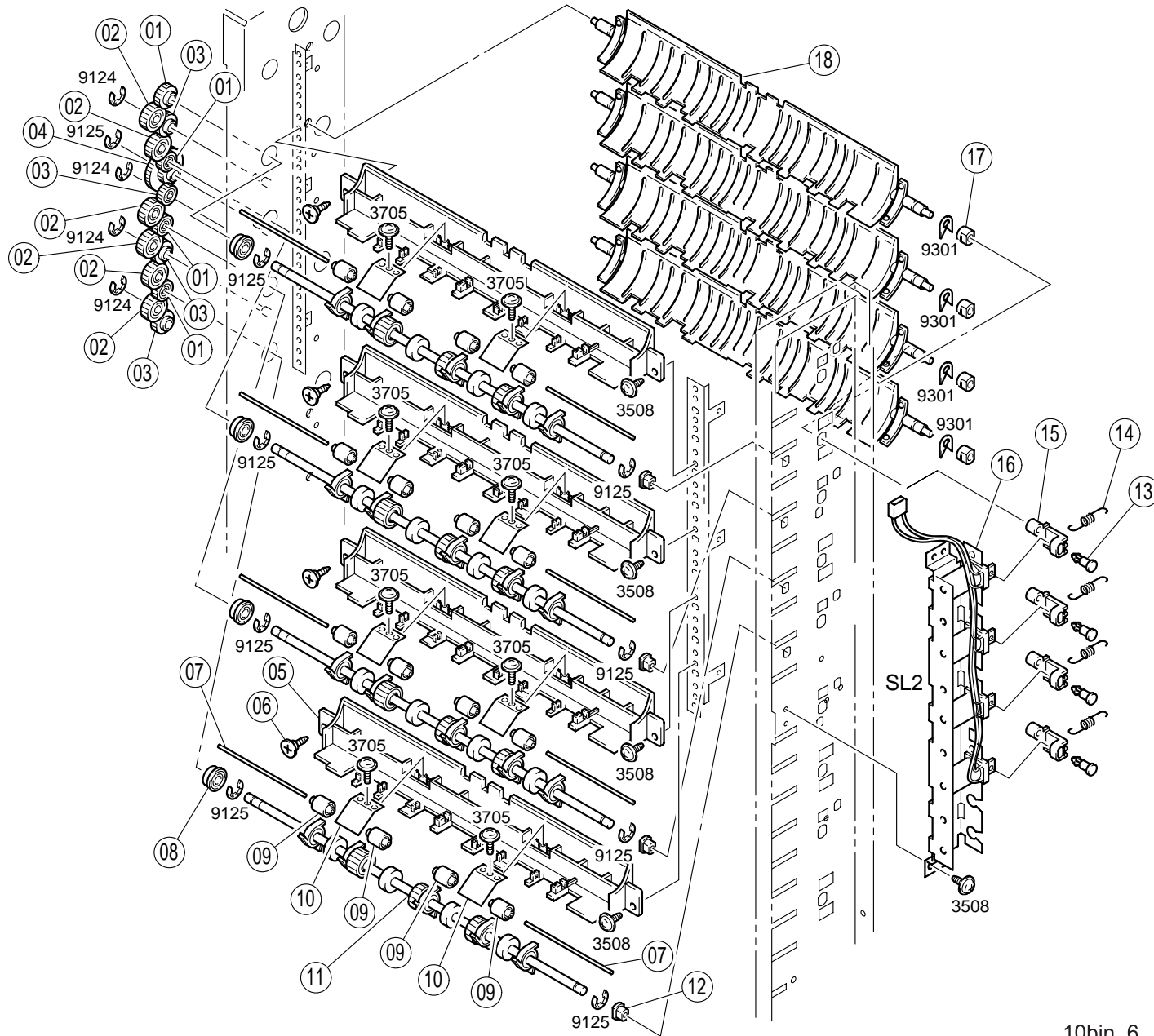


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## 5.5.6 Paper Transportation Section (D)

**Table 5-21. Parts List - Paper Transportation Section (D)**

No.	Part Name	No.	Part Name
1	GEAR 17T	10	PLATE SPRING
2	GEAR 19T	11	ROLLER
3	GEAR 17T	12	BUSHING
4	GEAR 18/40T	13	STOPPER
5	GUIDE	14	TENSION SPRING
6	SHOULDER SCREW	15	HOLDER
7	SHAFT	16	SOLENOID, DEFLECT (SL2)
8	BALL BEARING	17	BUSHING
9	ROLL	18	GUIDE



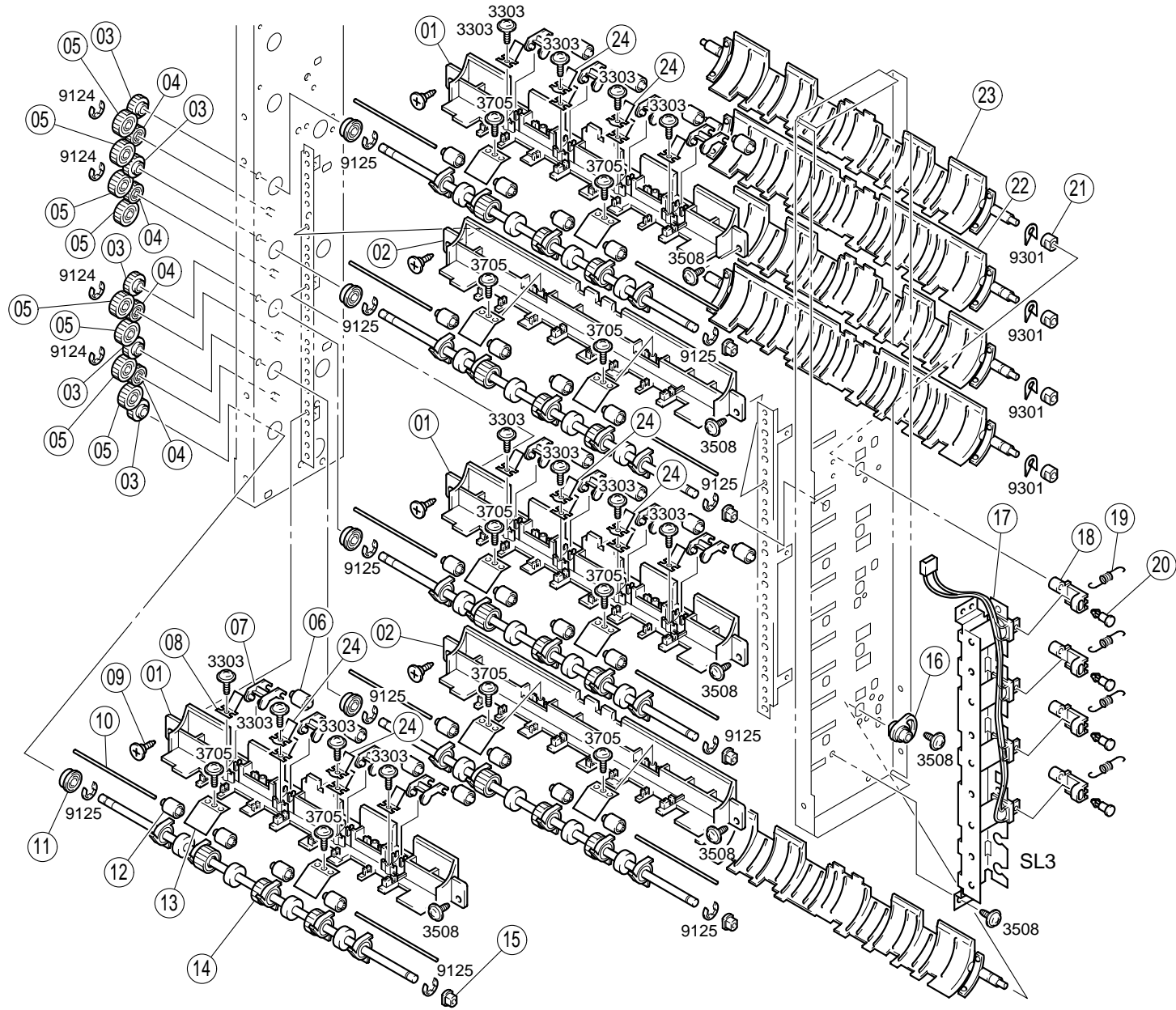
10bin\_6



## 5.5.7 Paper Transportation Section (E)

Table 5-22. Parts List - Paper Transportation Section (E)

No.	Part Name	No.	Part Name
1	GUIDE	13	PLATE SPRING
2	GUIDE	14	ROLLER
3	GEAR 17T	15	BUSHING
4	GEAR 17T	16	BUSHING
5	GEAR 19T	17	SOLENOID, DEFLECT (SL3)
6	ROLL	18	HOLDER
7	HOLDER	19	TENSION SPRING
8	PLATE SPRING	20	STOPPER
9	SHOULDER SCREW	21	BUSHING
10	SHAFT	22	GUIDE
11	BALL BEARING	23	GUIDE
12	ROLL	24	PLATE SPRING

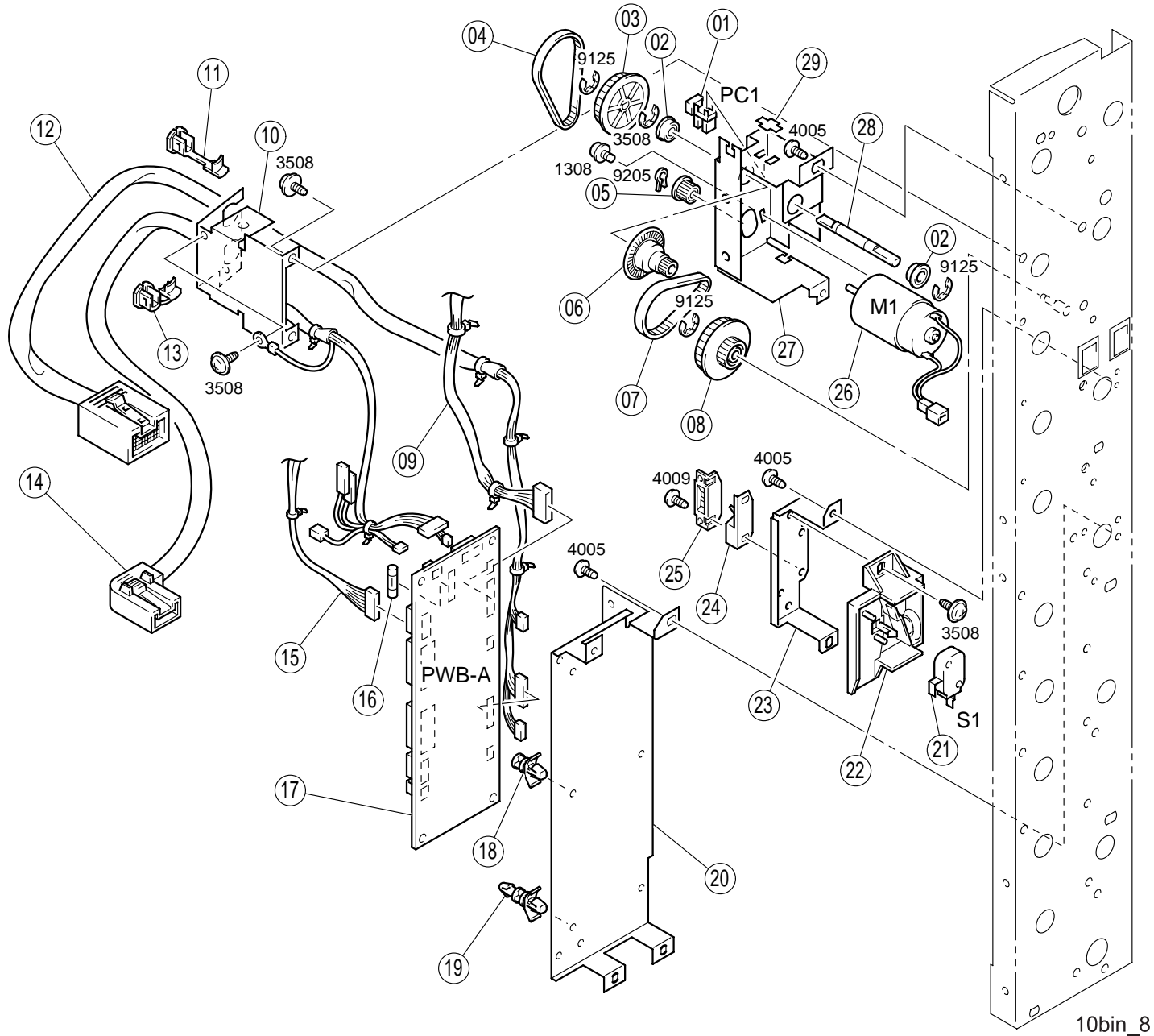


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## 5.5.8 Drive Section

**Table 5-23. Parts List - Drive Section**

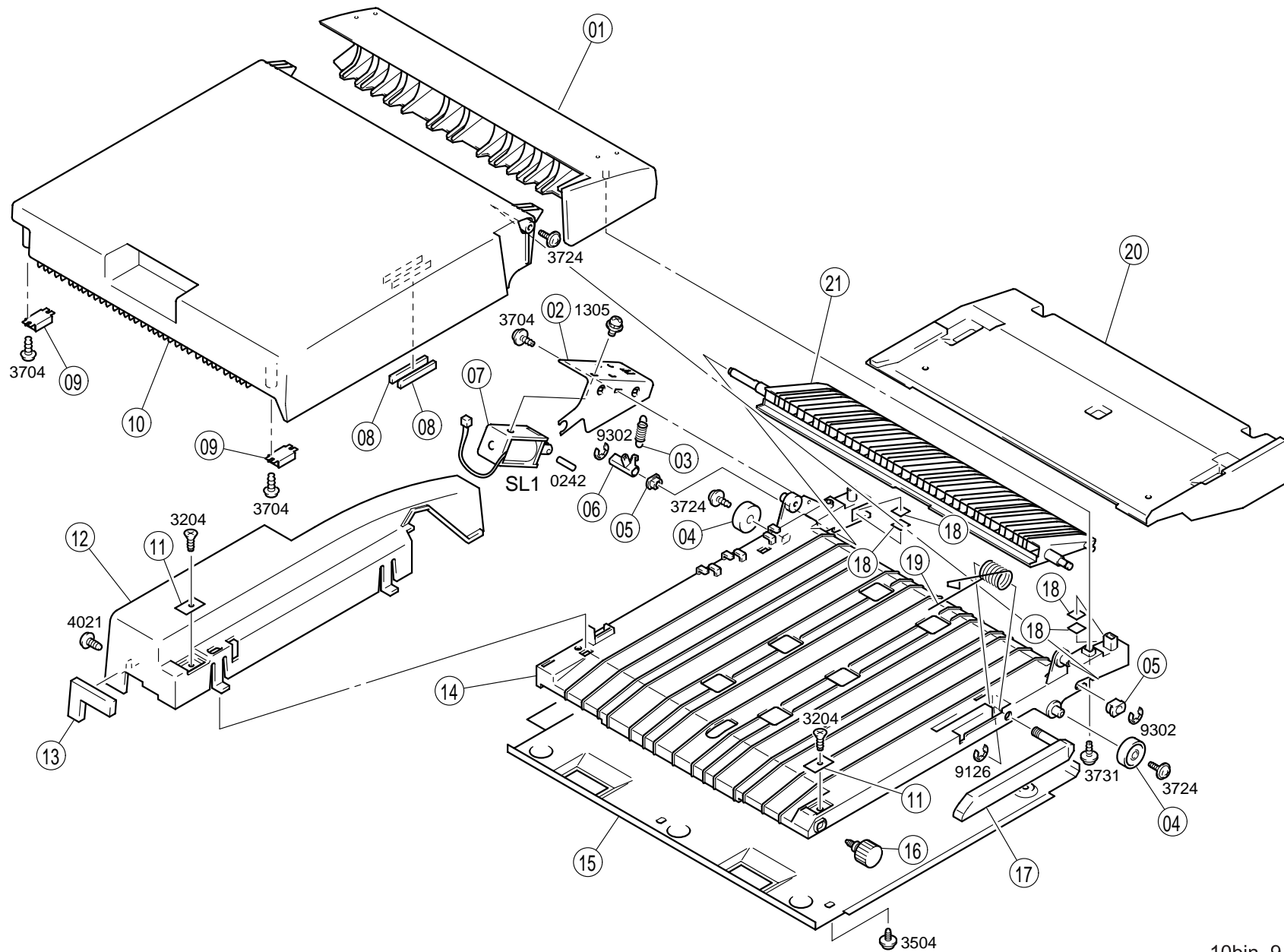
No.	Part Name	No.	Part Name
1	PHOTO INTERRUPTER, NON-SORT (PC1)	16	FUSE 0.5A
2	BALL BEARING	17	PW BOARD-A, MAIN (PWB-A)
3	PULLEY 64T	18	PWB SUPPORT 9.53H
4	TIMING BELT	19	PWB SUPPORT 9.53H
5	PULLEY	20	BRACKET
6	PULLEY 16T	21	MICRO SWITCH, POWER (S1)
7	TIMING BELT	22	HOLDER
8	PLY GEAR 64/18T	23	BRACKET
9	HARNESS	24	GROUND PLATE
10	HOLDER	25	MAGNET CATCH
11	CORD BUSHING	26	MOTOR ASSY, TRANSPORT (M1)
12	HARNESS	27	BRACKET
13	CORD BUSHING	28	SHAFT
14	HARNESS	29	STOPPER
15	HARNESS	-	-



## 5.5.9 Horizontal Transport Unit (A)

Table 5-24. Parts List - Horizontal Transport Unit (A)

No.	Part Name	No.	Part Name
1	COVER	12	REAR COVER
2	BRACKET	13	CUSHION
3	TENSION SPRING	14	GUIDE PLATE
4	ROLL	15	LOWER COVER
5	BUSHING	16	SHOULDER SCREW
6	LEVER	17	LEVER
7	SOLENOID, SWITCH (SL1)	18	CUSHION
8	SEAL	19	TORSION SPRING
9	MAGNET CATCH	20	GUIDE PLATE
10	COVER	21	GUIDE PLATE
11	PLATE	-	-

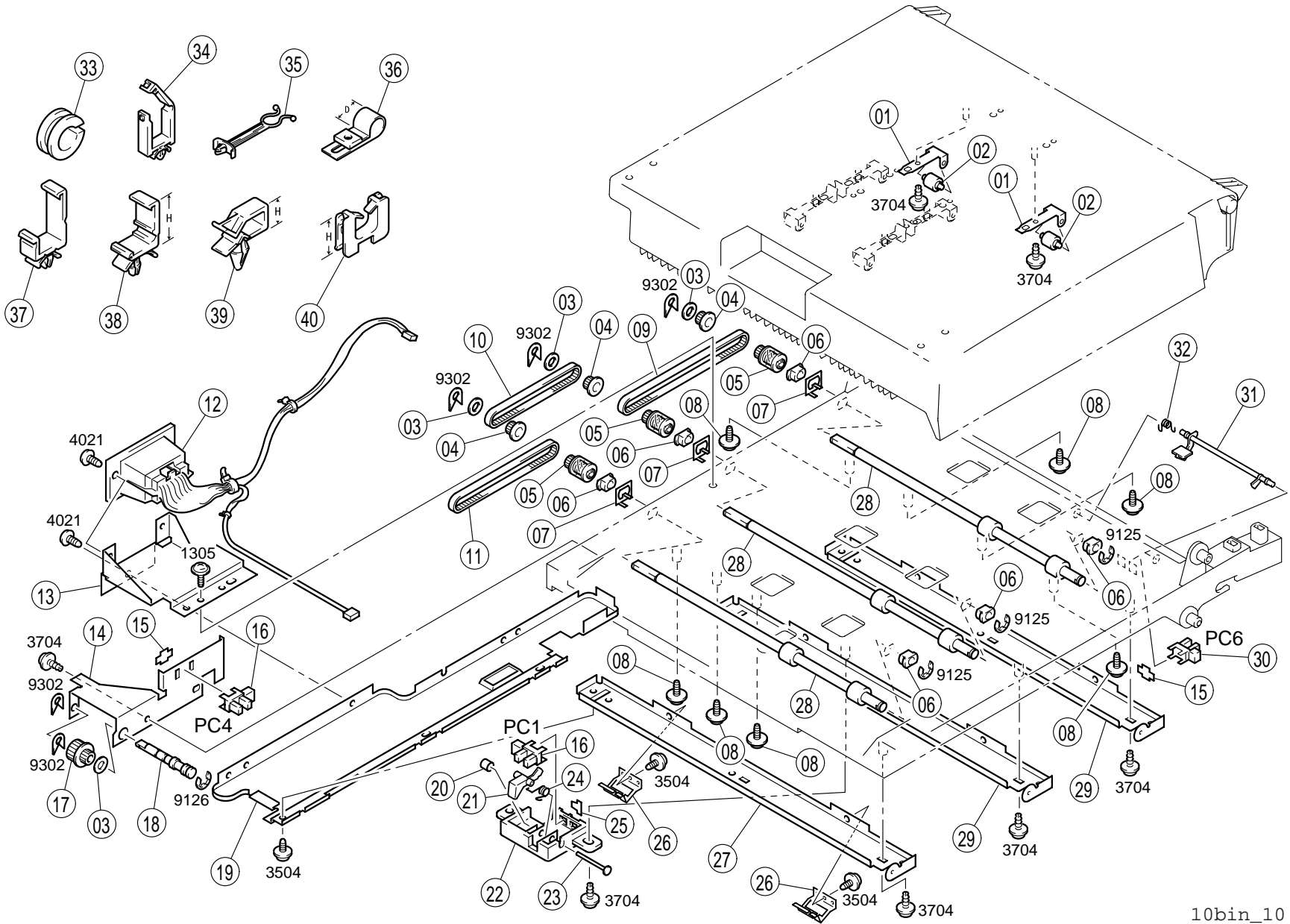


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## 5.5.10 Horizontal Transport Unit (B)

Table 5-25. Parts List - Horizontal Transport Unit (B)

No.	Part Name	No.	Part Name
1	PLATE SPRING	21	ACTUATOR
2	ROLL	22	COVER
3	WASHER	23	PIN
4	PELLY 17T	24	TORSION SPRING
5	CLUTCH	25	STOPPER
6	BUSHING	26	PLATE SPRING
7	GROUND PLATE	27	REINFORCE PLATE
8	SCREW	28	ROLLER
9	TIMING BELT	29	REINFORCE PLATE
10	TIMING BELT	30	PHOTO INTERRUPTER, EMPTY (PC6)
11	TIMING BELT	31	ACTUATOR
12	HARNESS	32	TORSION SPRING
13	BRACKET	33	GROMMET
14	BRACKET	34	WIRING SADDLE 5.2H
15	STOPPER	35	WIRING SADDLE
16	PHOTO INTERRUPTER (PC1, PC4)	36	WIRING SADDLE 3.8H
17	PLY GEAR 16/17T	37	WIRING SADDLE 27H
18	SHAFT	38	WIRING SADDLE 16.8H
19	FRAME	39	WIRING SADDLE 8.0H
20	RETAINING RING	40	EDGE COVER 8.5H



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**CHAPTER**

**6**

**OPERATING PRINCIPLES**

## 6.1 Double Cassette Unit

### 6.1.1 Structure

The structure of the Double Cassette Unit is as shown below:

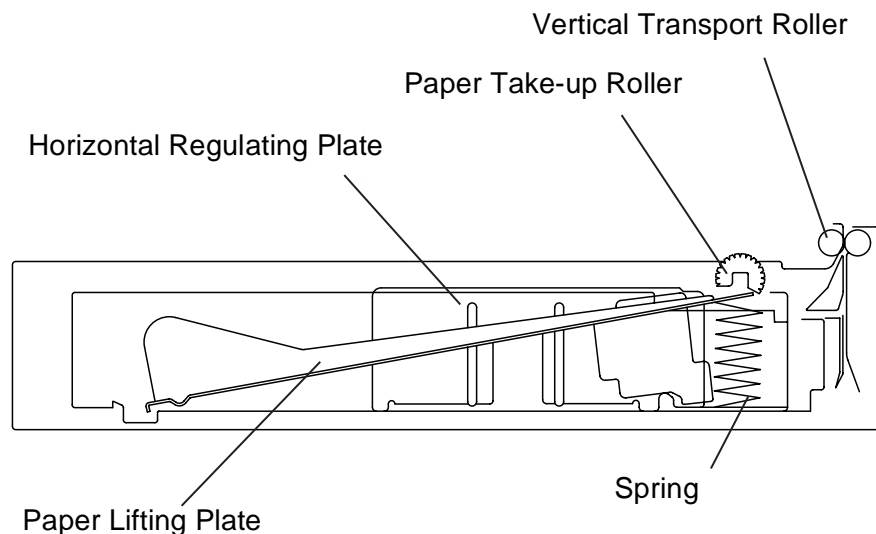


Figure 6-1. Cross-Sectional View of the Double Cassette Unit

### 6.1.1.1 Drive System

Drive from the Main Drive Motor of the printer is transmitted to the paper take-up drive mechanisms via a gear train.

Paper Take-up Drive Mechanism

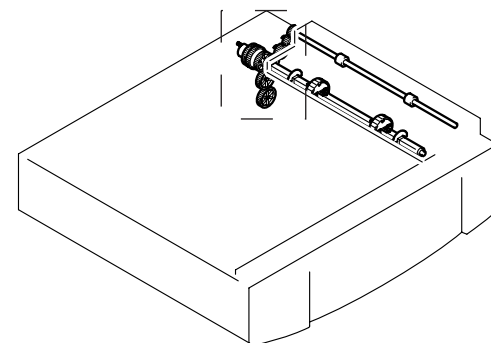


Figure 6-2. Drive System

### 6.1.1.2 Electrical Components Layout

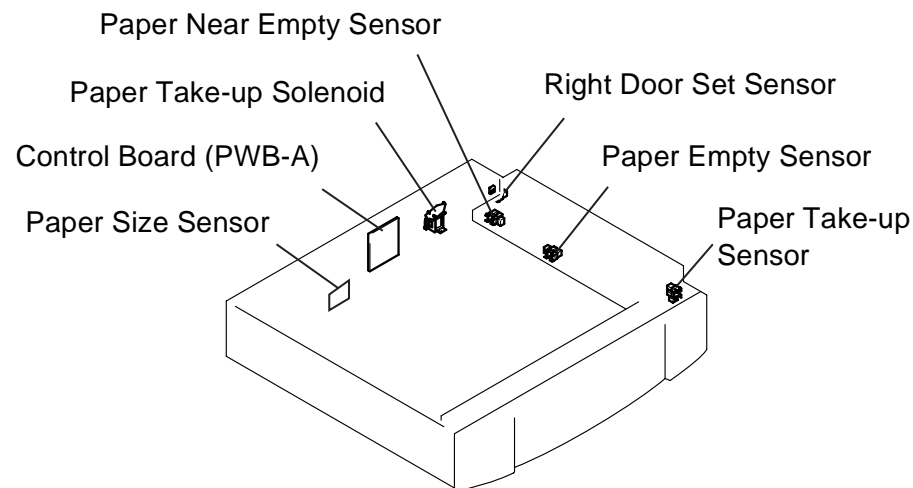


Figure 6-3. Electrical Component Layout

## 6.1.2 Mechanical Operations

### 6.1.2.1 Paper Size Regulating Plate

The Paper Size Regulating Plates move freely to allow the user to accommodate paper of different sizes. Both plates can be locked into position by meshing the notches in the Lock Lever with those in the cassette. The Paper Size Setting Plate (horizontal) employs a rack-and-pinion sliding mechanism.

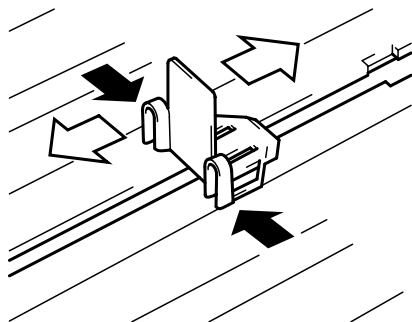


Figure 6-4. Vertical Regulating Plate

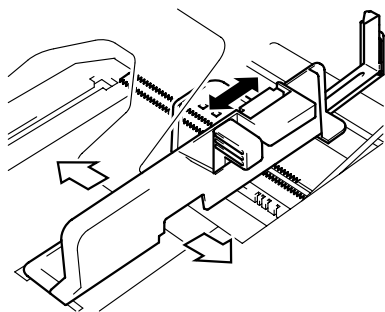


Figure 6-5. Horizontal Regulating Plate

### 6.1.2.2 Paper Lifting Plate

The Paper Lifting Plate of each cassette is raised at all times by two Paper Lifting Springs.

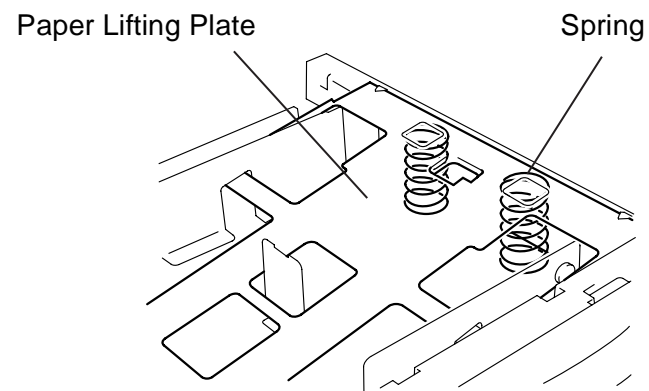


Figure 6-6. Paper Lifting Plate

### 6.1.2.3 Paper Size Setting

The paper size setting mechanism is the same as for the Cassette 1 of the printer. (See EPL-N2700 Service Manual / Chapter 2.)

### 6.1.2.4 Paper Near Empty Detection

1. A paper-near-empty condition is detected through the detection of the height of the Paper Lifting Plate.
2. As the paper stack is consumed during a print cycle, the Paper Lifting Plate of the cassette is gradually raised by the tension of the Paper Lifting Springs. When the Paper Near Empty Sensor is then unblocked, the sensor determines that it is a paper-near-empty condition (the number of sheets of paper (80 g/m<sup>2</sup>) still available for use: 50 ±30).
3. The paper out error is indicated on the LCD panel. LED then starts blinking.

**NOTE:** Since the amount of paper still available for use varies while a paper take-up sequence is in progress, detection is made at a timing when the Paper Take-up Roller is in the retracted position.

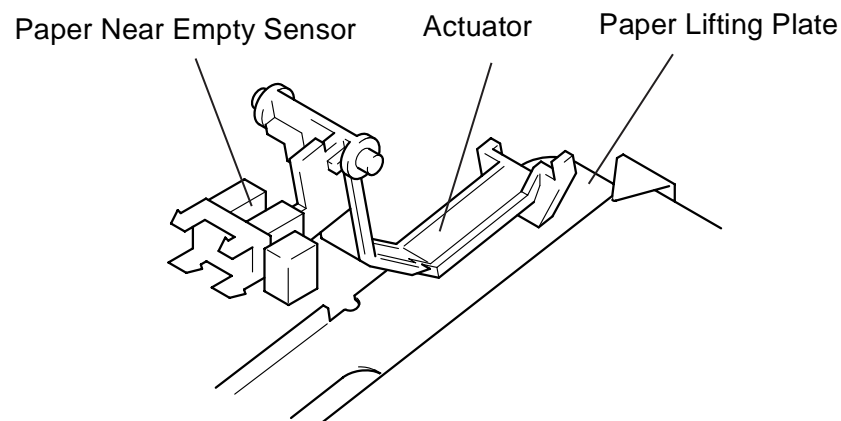


Figure 6-7. Paper Near Empty Detection Mechanism

### 6.1.2.5 Paper Empty Detection

The paper empty detection mechanism is the same as for the Cassette 1 of the printer main body. (See EPL-N2700 Service Manual / Chapter 2.)

### 6.1.2.6 Paper Separation Mechanism

Each cassette has fingers that function to separate the top sheet of paper from the rest of the paper stack at paper take-up. This mechanism uses the fingers and the Paper Take-up Roller on the both edges of the cassette. When the Paper Take-up Roller starts turning to take up the top sheet of paper, its turning force is directly transmitted to the top sheet of paper as it is in direct contact with the Paper Take-up Roller. This force forms paper loop that overcomes the block of the fingers, causing the top sheet of paper to ride over the fingers and be sent out of the cassette.

The collars and mylars placed on both sides of the Paper Take-up Roller restrict the length of the loops that form in the paper at the fingers, helping the paper edges to easily slip out of the fingers.

As to the second sheet of paper, the paper transport force obtained through friction with the top sheet of paper is weak and does not allow the second sheet of paper to ride over the block of the fingers. Hence, the second sheet of paper remains stationary with the rest of the paper stack in the cassette.

When there are only two sheets of paper left in the cassette, the bottom sheet can be fed with the top one if the friction of the Paper Lifting Plate is weak. The Friction Plate affixed to the Paper Lifting Plate prevents this from happening.

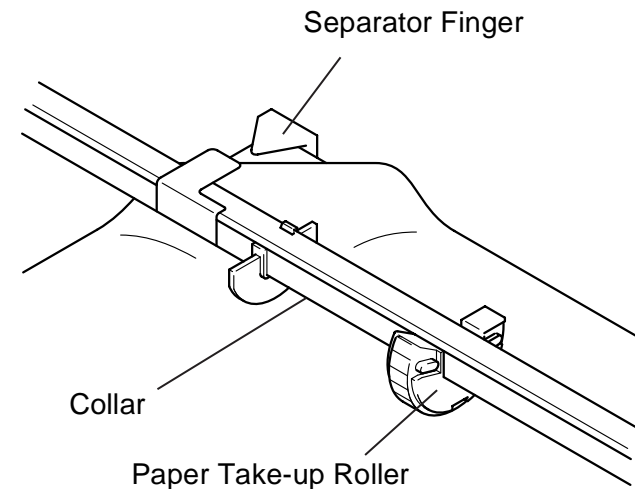
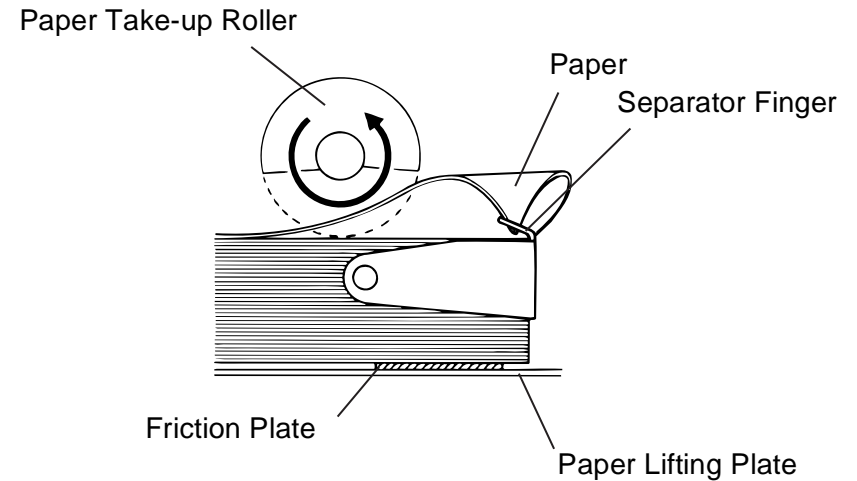


Figure 6-8. Paper Separation Mechanism

### 6.1.2.7 Paper Take-up Roller

Since the Paper Lifting Plate is raised at all times by the Paper Lifting Springs, paper is wedged in the mechanism when the cassette is slid out if the Paper Take-up Roller is round in shape. So the roller is semicircular and the circular part of the roller is positioned on top at times other than take-up. For the purpose of explanation, we call this position of the Paper Take-up Roller the “retracted” position.

The Paper Take-up Roller is grooved to keep good friction under heavy loading.

In each of the Fixed Paper Cassette and Universal Cassette, there are two Paper Take-up Rollers mounted.

When the Take-Up Solenoid is energized, it causes the spring tension to bring the drive gear into mesh with the clutch gear. This results in the drive being transmitted to the Paper Take-up Rollers.

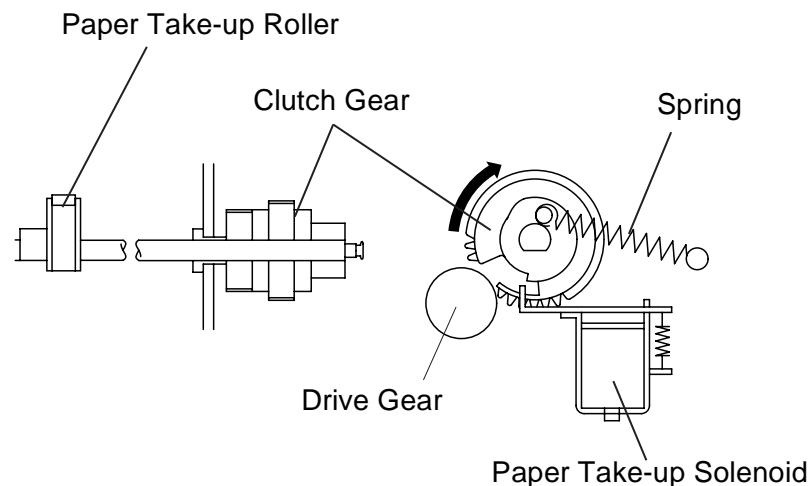


Figure 6-9. Paper Take-up Roller

### 6.1.2.8 Paper Take-Up Retry Control

To minimize the occurrence of paper misfeed due to a slippery Paper Take-up Roller, the Take-Up Solenoid is energized a second time if a sheet of paper fails to reach the Timing Roller Front Sensor (for the 500-Sheet Lower Cassette) within a given period of time after it has been deenergized.

## 6.2 Duplex Unit

### 6.2.1 Structure

The structure of the Duplex Unit is as shown below:

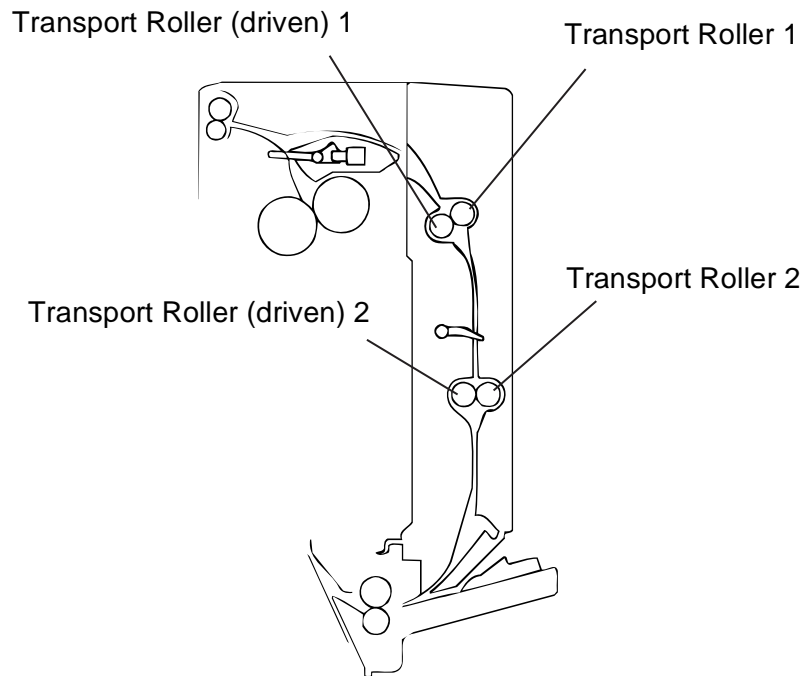


Figure 6-10. Cross-Sectional View of the Duplex Unit

### 6.2.1.1 Drive System

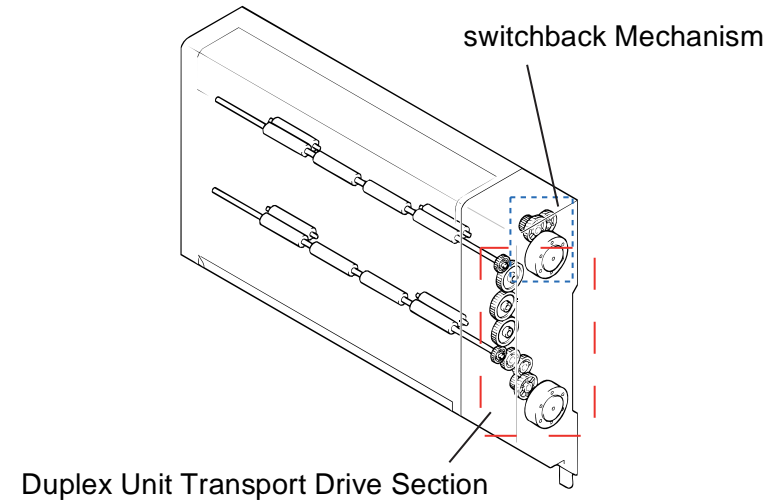


Figure 6-11. Drive System

### 6.2.1.2 Electrical Components Layout

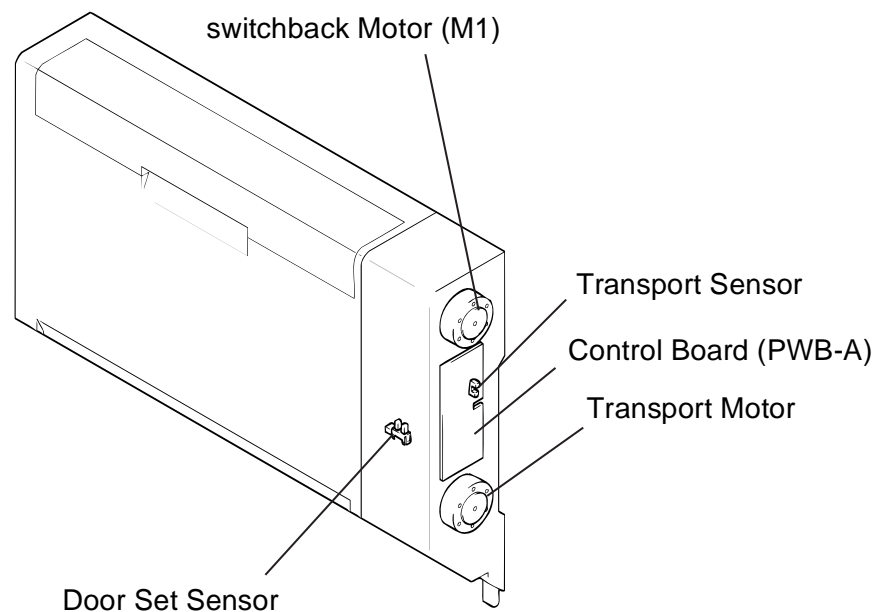


Figure 6-12. Electrical Component Layout - Duplex Unit

### 6.2.2 Mechanical Operations

#### 6.2.2.1 Switchback Mechanism

- Switchback operation

The Eject Roller reverses the direction of feeding the 1-sided print into the Duplex Unit (switchback operation). This switchback operation by the Eject Roller is accomplished by changing the direction of rotation of the Switchback Motor whose drive is transmitted via a gear train.

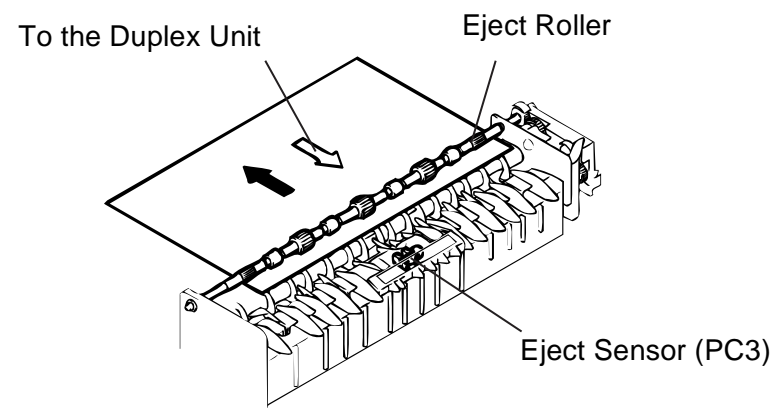
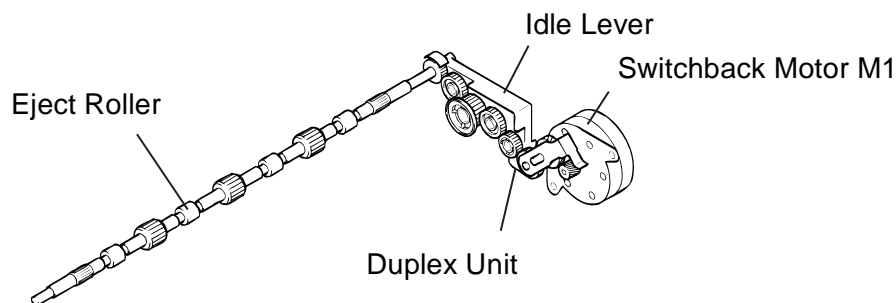


Figure 6-13. Switchback Mechanism



### □ Eject Roller Drive Coupling Mechanism

When the Duplex Unit is mounted, the tip of the Duplex Unit Lever raises the Idle Lever to disconnect the drive from the printer main body (Fusing Roller) and, instead, provides the Eject Roller with the drive from the Switchback Motor.



**Figure 6-14. Eject Roller Drive Coupling Mechanism**

### □ Switchback Motor Control

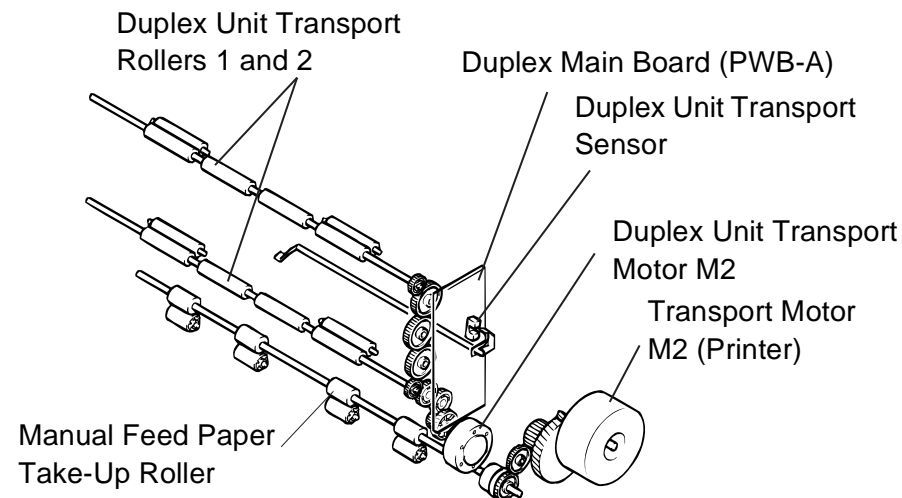
The Switchback Motor is a two-phase stepping motor. Its direction of rotation and speed are controlled by applying pulse signals output from pins 1 to 4 of PJ3A to the motor.

## 6.2.2.2 Transport/Feedback Mechanism

### □ Transport/Feedback Mechanism

The paper fed into the Duplex Unit is transported through, and eventually fed out of, the Duplex Unit before being fed to the paper take-up mechanism of the printer.

The transport and Duplex paper feedback operations are performed by two pairs of Duplex Unit Transport Rollers and the Manual Feed Paper Take-up Roller of the printer. The use of the latter contributes to smaller floor space requirements. The drive for these operations comes from the Duplex Unit Transport Motor.



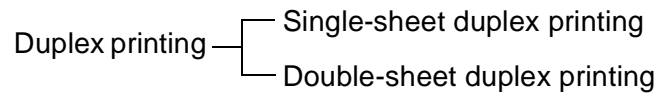
**Figure 6-15. Transport/Paper Re-Feed Mechanism**

### □ Duplex Unit Transport Motor Control

The Duplex Unit Transport Motor is a two-phase stepping motor. Its speed is controlled by applying pulse signals output from pins 1 to 4 of PJ2A to the motor.

### 6.2.2.3 Duplex Print Schemes

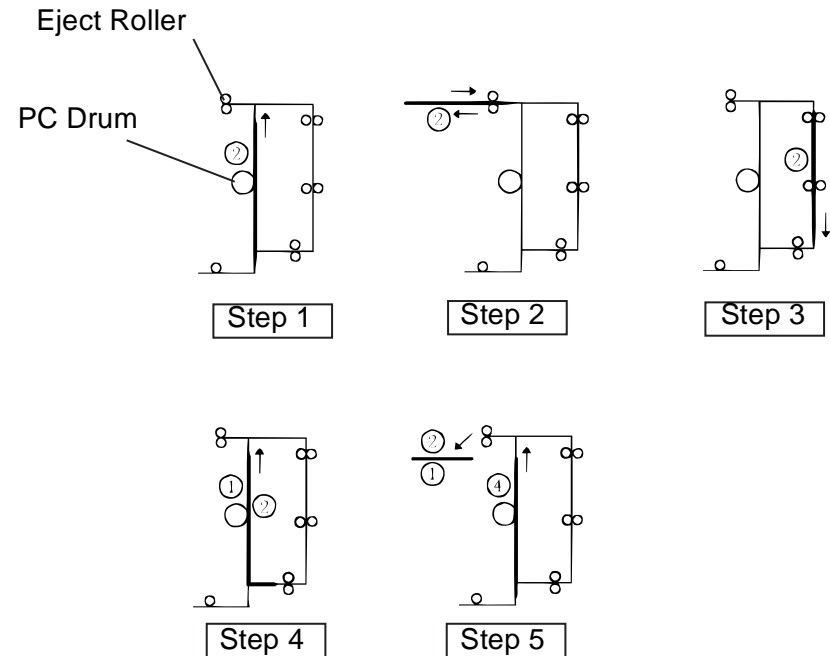
The following two 2-sided printing schemes are available.



**NOTE:** The paper size that is applicable to duplex printing is Letter LEF (215.9 mm) or smaller.

#### □ Operation of the Single-sheet duplex printing

1. A sheet of paper is taken up and fed in and the image of the second page is printed.
2. Just before the 1-sided print moves past the Eject Roller, the direction of rotation of the Eject Roller is reversed and the 1-sided print is transported towards the Duplex Unit.
3. The 1-sided print being transported through the Duplex Unit is fed into the printer without being stopped.
4. The image of the first page is printed on the 1-sided print fed out of the Duplex Unit and the resultant 2-sided print is fed towards the paper exit section of the printer.
5. As the 2-sided print is being fed out of the printer, the next sheet of paper is taken up and fed in for the printing of the image of the fourth page.
6. Steps 2 through 5 are then repeated.



**Figure 6-16. Single Sheet Duplex Print**

#### □ Operation of the double-sheet duplex printing

1. With the command from the engine controller, the first sheet of paper is taken up and fed in and the image of the second page is printed.
2. Just before the 1-sided print moves past the Eject Roller, the direction of rotation of the Eject Roller is reversed and the 1-sided print is transported towards the Duplex Unit. With the next command from the controller, the second sheet is taken up.

3. At the same time when the image of the fourth page is printed on the second sheet of paper, the first 1-sided print is transported through the Duplex Unit. Because of the Duplex paper take-up timing involved, the first 1-sided print is temporarily stopped, but it is soon fed out of the Duplex Unit.
4. The image of the first page is printed on the first 1-sided print fed out of the Duplex Unit. Then the third paper is taken up with the next print command.
5. The first sheet with the first page printed on it is fed out of the Duplex Unit through the Eject Roller. Then the image of the sixth page is printed on the third sheet. Because the third sheet is being printed on, the second sheet in the Duplex Unit is temporarily stopped.
6. The third sheet with the sixth page printed on it is switched back into the Duplex Unit. At the same time, the second paper is fed back into the printer from the Duplex Unit.
7. The image of the third page is printed on the second sheet. At the same time, the third sheet is transported toward the Duplex Unit. With the next print command, the fourth sheet is taken up.
8. The second sheet with the third page printed on it is ejected through the Eject Roller. At the same time, the image of the eighth page is printed on the fourth sheet. Because the eighth page is being printed on the fourth sheet, the third sheet in the Duplex Unit is temporarily stopped.
9. The fourth sheet with the image of the eighth page printed on it is switched back toward the Duplex Unit. At the same time, the third sheet is fed back to the printer from the Duplex Unit.
10. Steps 2 -6 are repeated.

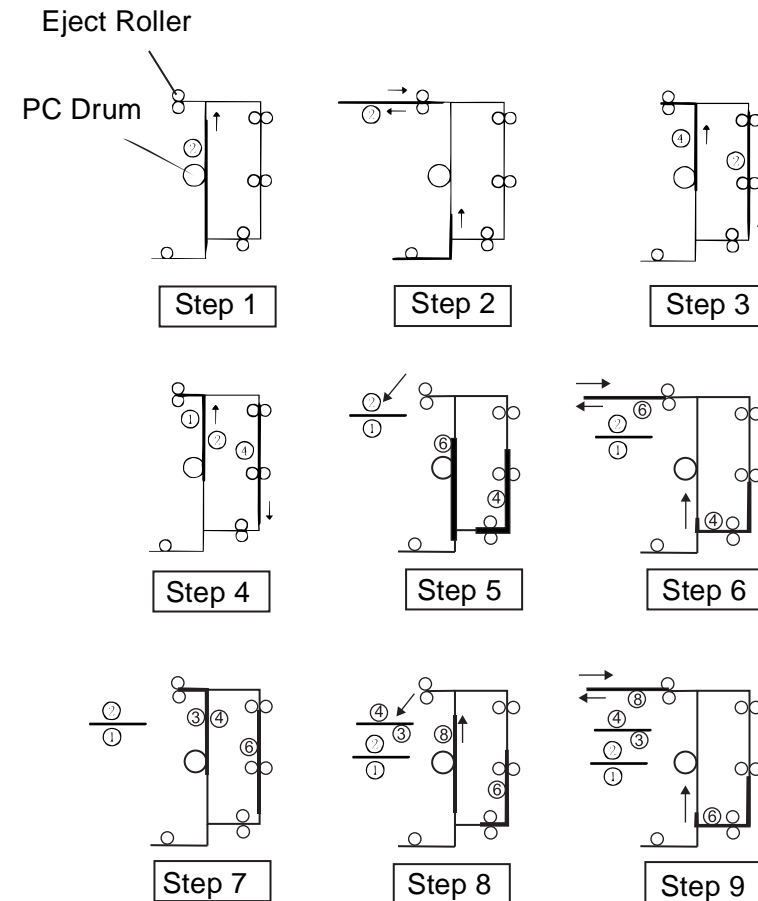


Figure 6-17. Double Sheet Duplex Print

## 6.3 LCC Unit Unit

### 6.3.1 Structure

The structure of the LCC Unit is as shown below:

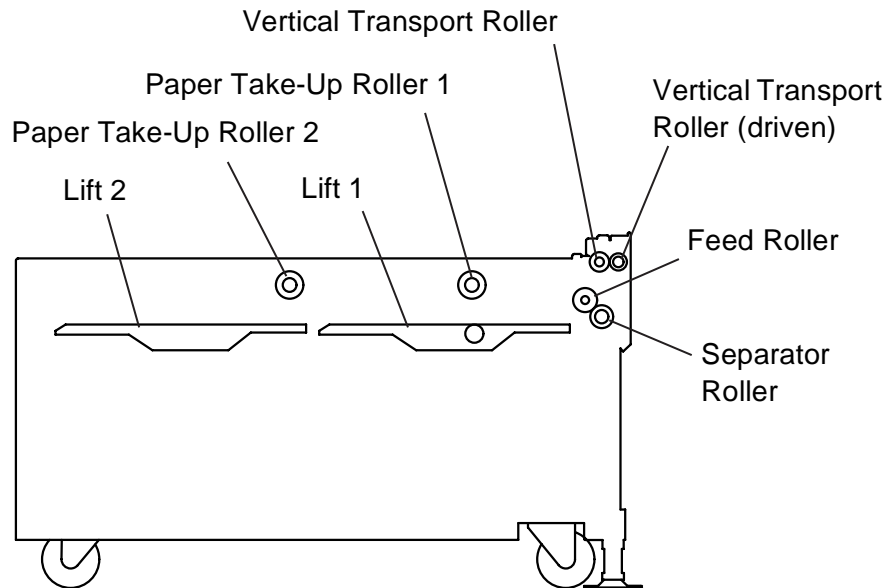


Figure 6-18. Cross-Sectional View of the LCC Unit

### 6.3.1.1 Drive System Layout

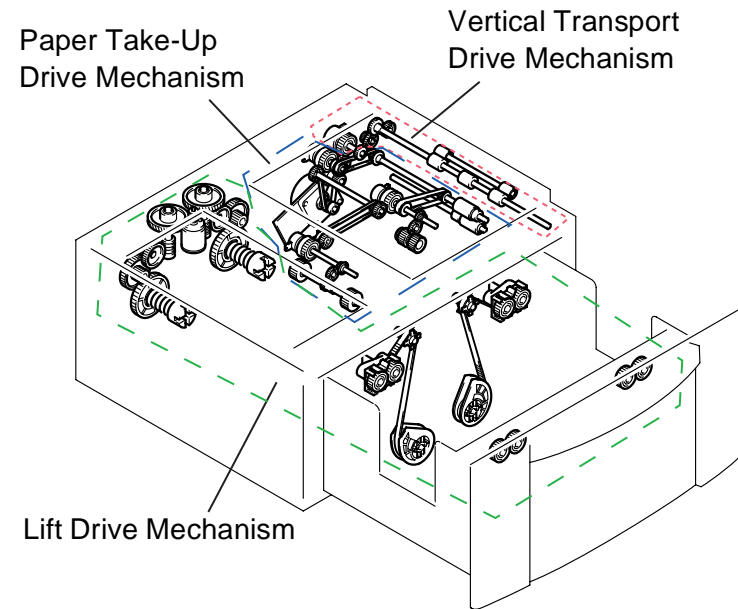


Figure 6-19. Drive System Layout

## 6.3.1.2 Electrical Components Layout

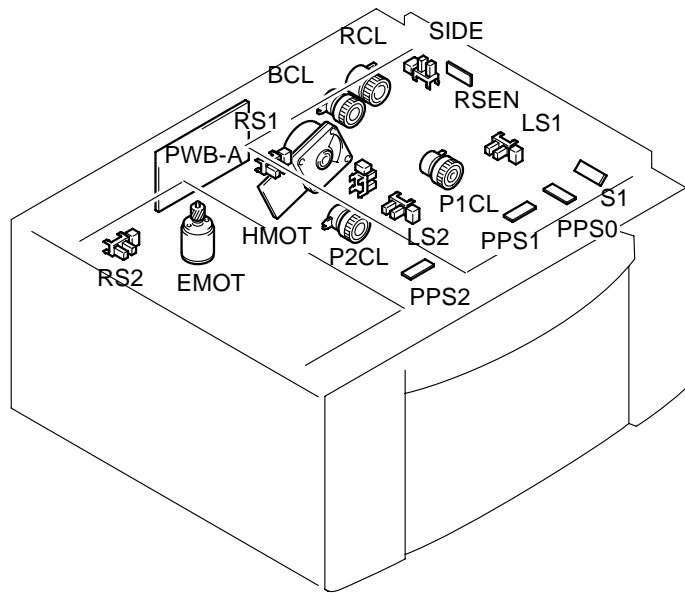


Figure 6-20. Electrical Component Layout - LCC Unit

Table 6-1. Part Description

Symbol	Name	Symbol	Name
PWB-A	LCC Main Board	PPS2	Paper Empty Sensor 2
HMOT	LCC Transport Motor	RSEN	Registration Sensor
EMOT	LCC Lift-Up Motor	S1	Paper Standby Position Sensor
P1CL	Take-Up Clutch 1	SIDE	Side Cover Set Sensor
P2CL	Take-Up Clutch 2	FRONT	LCC Set Sensor
BCL	Separator Clutch	RS1	Paper Near Empty Sensor 1
RCL	Registration Clutch	RS2	Paper Near Empty Sensor 2
PPS0	LCC Take-Up Sensor	LS1	Lift-Up Sensor 1
PPS1	Paper Empty Sensor 1	LS2	Lift-Up Sensor 2

## 6.3.2 Mechanical Operation

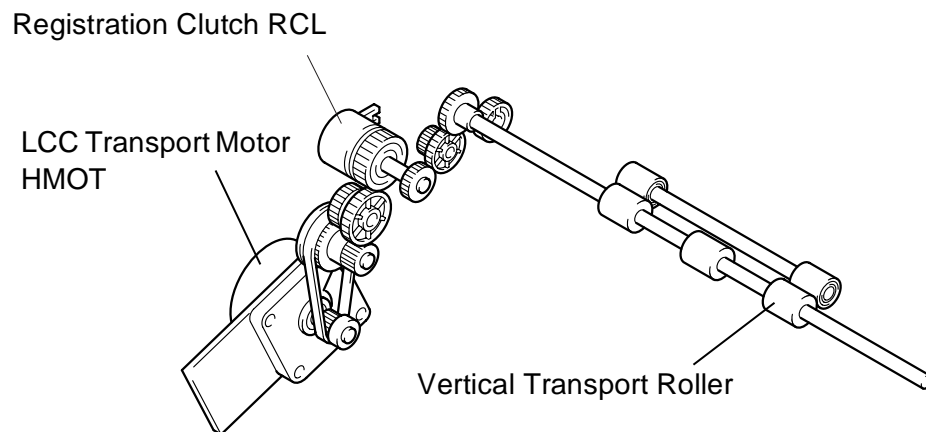
### 6.3.2.1 Vertical Transport Mechanism

#### □ Vertical Transport Drive Operation

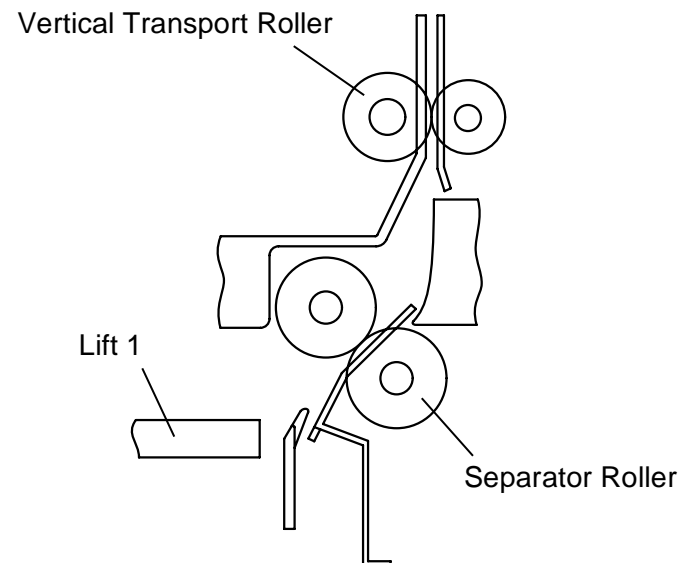
The Vertical Transport Roller is driven by LCC Transport Motor.

The driving force of the motor is transmitted via a gear train and Registration Clutch to the Vertical Transport Roller which feeds the paper from Lift 1 or 2 to the printer main body.

Because of the long paper path from Lift 2 involved, skew tends to occur in the paper fed from Lift 2. Registration Clutch RCL forms a loop in the paper between the Separator Roller and Vertical Transport Roller, thereby correcting the skew.



**Figure 6-21. Vertical Transport Drive Mechanism**



**Figure 6-22.**

#### **Detailed Description of the Vertical Transport Drive Mechanism**

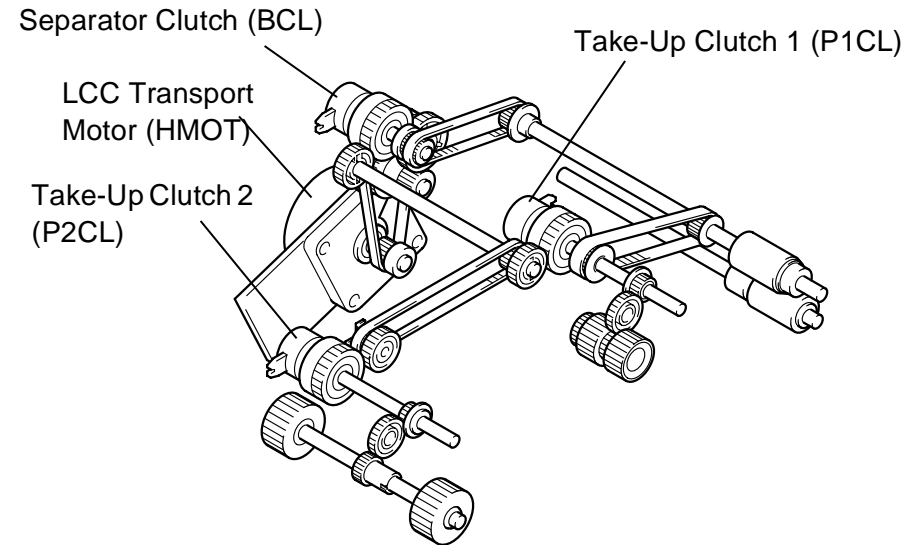
#### □ LCC Transport Motor control

A DC motor is used as the LCC Transport Motor which is energized and deenergized by the output signals fed through pins 7 to 10 and 12 of CN6 by way of LCC Main Board PWB-A by the control board of the printer.

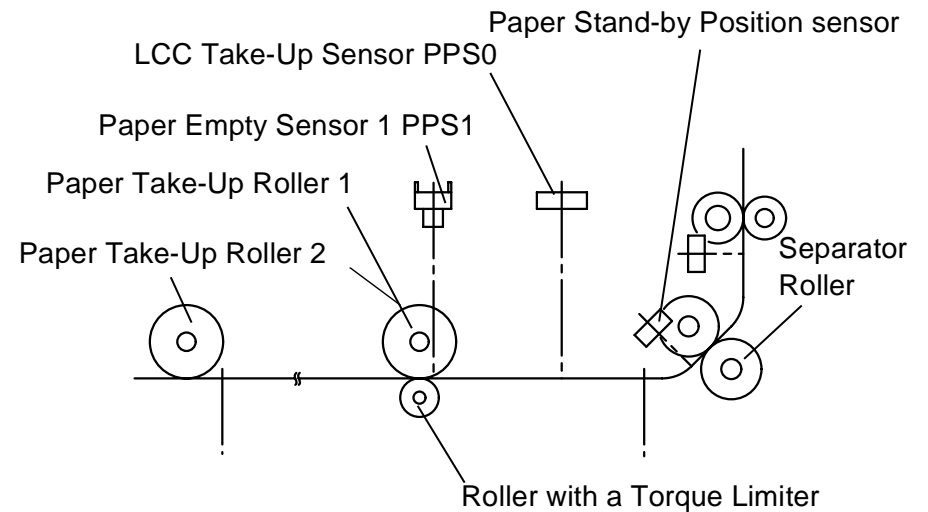
### 6.3.2.2 Paper Take-up Mechanism

The paper take-up mechanism takes up a sheet of paper from the paper stack on each lift and feeds it to the Vertical Transport Roller.

A paper take-up sequence is performed when drive from LCC Transport Motor HMOT is transmitted via Take-Up Clutch 1/2 to Paper Take-up Roller 1/2. When Lift 1 runs out of paper, paper is then fed from Lift 2. Mounted beneath Paper Take-up Roller 1 of Lift 1 is a roller with a torque limiter that prevents a double feed of the last two sheets of paper. Paper Take-up Roller 1 is active when paper is fed from Lift 1. When paper is fed from Lift 2, both Paper Take-up Roller 1 and 2 are active to perform the paper take-up sequence. In that case, Paper Empty Sensor 1 detects that a sheet of paper has been properly fed through Paper Take-up Roller 1. The sheet of paper taken up from Lift 1/2 is temporarily stopped at the Paper Standby Position Sensor to minimize variations in the position of the leading edge of the paper. When drive is transmitted by Separator Clutch to the Separator Roller, the sheet of paper is then transported to the Vertical Transport Section.



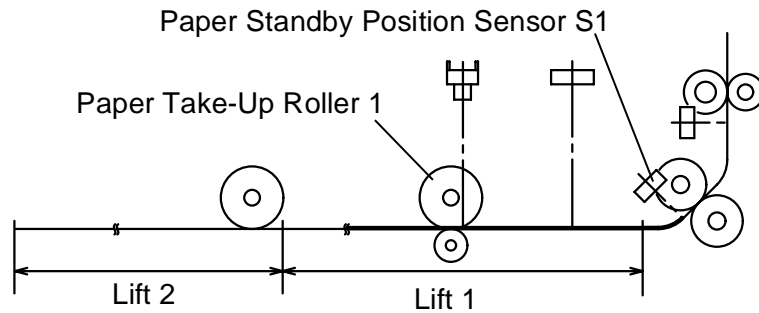
**Figure 6-23. Paper Take-up Mechanism Layout**



**Figure 6-24. Cross-Sectional View of the Paper Take-up Mechanism**

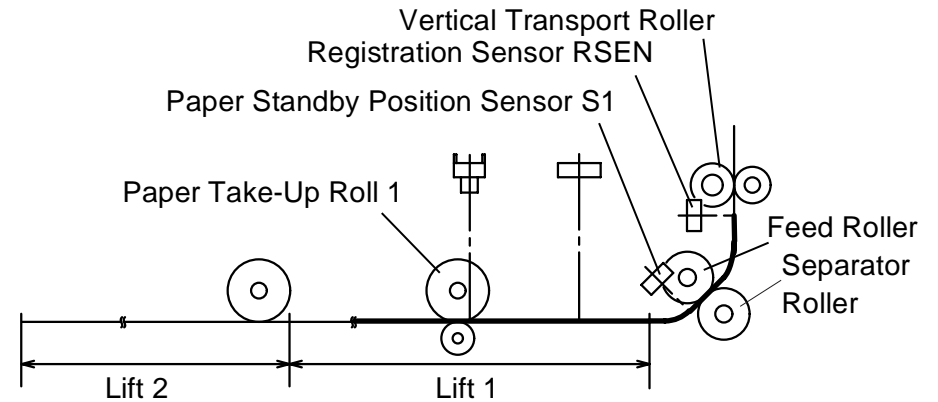
□ Paper Take-up from Lift 1

1. After Lift 1 has completed its lifting motion, Paper Take-up Roller is driven to take up and feed a sheet of paper until the paper blocks Paper Standby Position Sensor. This serves as the standby position of the paper.



**Figure 6-25. Paper Take-up from Lift 1 (1)**

2. When a Paper Take-Up signal is received from the printer, the Separator/Feed Rollers and Paper Take-up Roller 1 are driven to transport the paper up to Registration Sensor. After the Registration Sensor has been blocked, the paper is transported a little further to reach the Vertical Transport Roller, plus form a registration loop, before being brought to a stop.



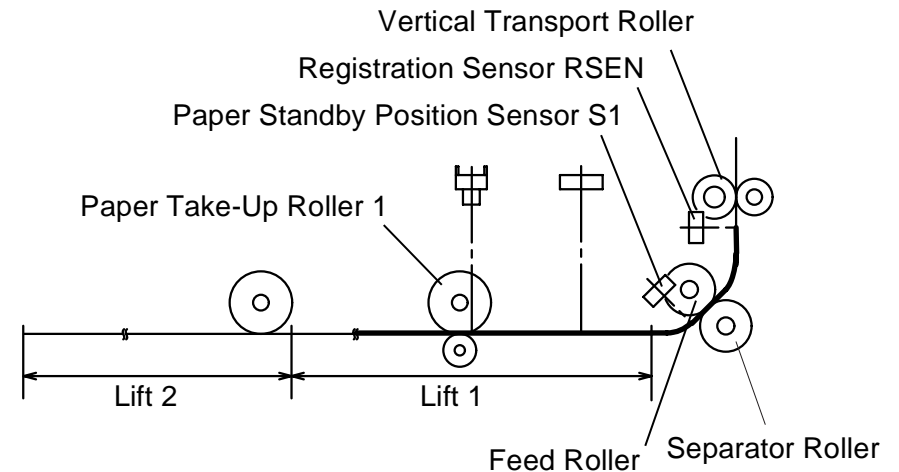
**Figure 6-26. Paper Take-up from Lift (2)**

3. The Vertical Transport Roller is driven to transport the paper to the printer. When the trailing edge of the paper being transported by the Vertical Transport Roller unblocks Paper Standby Position Sensor, the subsequent sheet of paper is transported to the standby position and the LCC waits for the next Paper Take-Up signal to be received.
4. Registration Clutch is deenergized a given period of time after the trailing edge of the paper being taken up has unblocked Registration Sensor. The next Paper Take-Up signal is transmitted after the timer, which is started as the Vertical Transport Roller starts moving for the preceding sheet of paper, has run out.
5. The steps from 2 to 4 are repeated to transport paper from Lift 1.



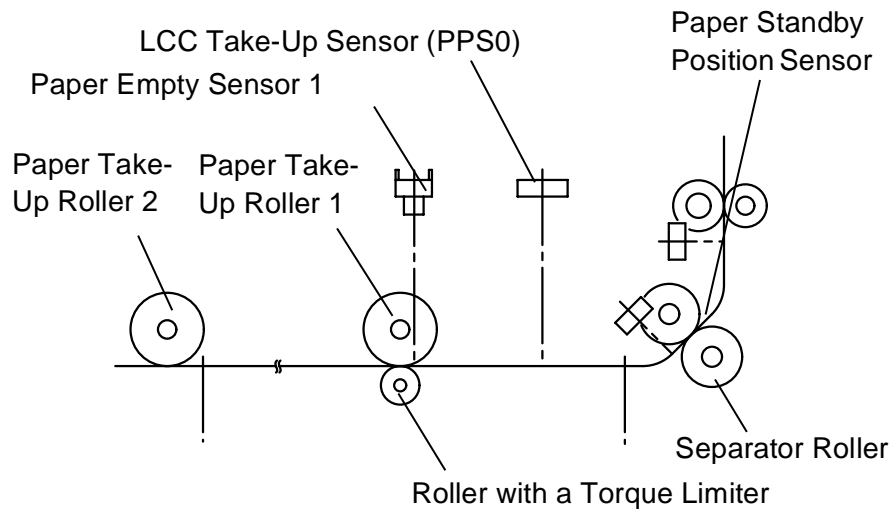
□ Paper Take-up from Lift 2

1. When all sheets of paper have been taken up and fed in from Lift 1, Lift 1 is placed in the top level position to serve as part of the paper path for paper feeding from Lift 2.
2. When the trailing edge of the last sheet of paper from Lift 1 unblocks Paper Empty Sensor 1 PPS1, both Paper Take-up Roller 1 and 2 start turning.
3. The sheet of paper is transported by driving both Paper Take-up Roller 1 and 2 up to a point at which LCC Take-Up Sensor is blocked.



**Figure 6-28. Paper Take-up from Lift 2 (2)**

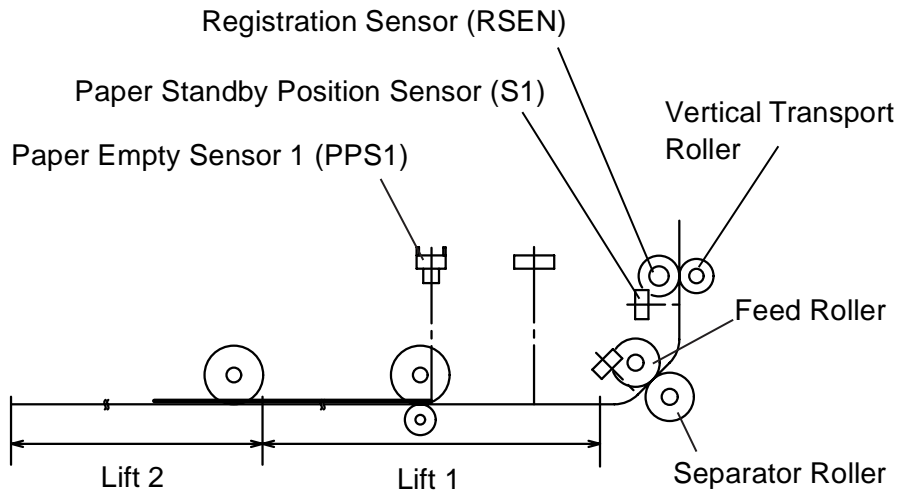
5. When a Paper Take-Up signal is received from the printer, the Separator/Feed Rollers and Paper Take-up Roller 1 are driven to transport the paper up to Registration Sensor. After the Registration Sensor has been blocked, the paper is transported a little further to reach the Vertical Transport Roller, plus form a registration loop, before being brought to a stop.



**Figure 6-27. Paper Take-up from Lift 2 (1)**

4. Paper Take-up Roller 1 is driven to transport the paper located at LCC Paper Take-up Sensor up to a point at which Paper Standby Position Sensor is blocked. This serves as the standby position of the paper.

- The Vertical Transport Roller is driven to transport the paper to the printer. When the trailing edge of the paper being transported by the Vertical Transport Roller unblocks Paper Empty Sensor 1, Paper Take-up Rollers 1 and 2 are driven to transport the subsequent sheet of paper to a position at which Paper Empty Sensor 1 is blocked.



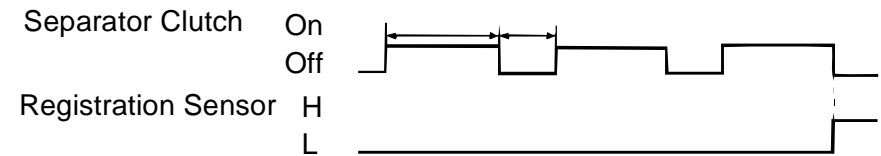
**Figure 6-29. Paper Take-up from Lift 2 (3)**

- A given period of time after the trailing edge of the preceding sheet of paper has unblocked LCC Take-Up Sensor, the subsequent sheet of paper located at Paper Empty Sensor 1 is transported to the standby position. LCC then waits for the next Paper Take-Up signal to be received.
- Registration Clutch is deenergized a given period of time after the trailing edge of the paper being taken up has unblocked Registration Sensor. The next Paper Take-Up signal is transmitted after the timer, which is started as the Vertical Transport Roller starts moving for the preceding sheet of paper, has run out.
- This sequence is repeated to transport paper from Lift 2.

### 6.3.2.3 Paper Take-Up Retry Control

To minimize the occurrence of paper misfeed due to a slippery Paper Take-up Roller, Separator Clutch is energized a second time if a sheet of paper fails to reach Registration Sensor within a given period of time after Separator Clutch has first been energized.

The control timing is as follows.



**Figure 6-30. Paper Take-up Retry Control**

A paper misfeed results if the sheet of paper does not reach the Registration Sensor even after three paper take-up sequences.

### 6.3.2.4 Paper Separating Mechanism

The paper separating mechanism employs a system with a torque limiter that is fitted to the Separator Roller shaft and stops the Separator Roller when there is a change in friction between the Feed and Separator Rolls.

#### □ Single feeding

When only one sheet of paper is fed, the friction coefficient on the top side of the paper is equal to that on the underside. Driven by the Feed Roller, the paper drives the Separator Rollers. This causes the paper to be sent to the Vertical Transport Section. The friction coefficient varies for different ambient conditions and types of paper being used, which often causes the Separator Roller to be stationary.

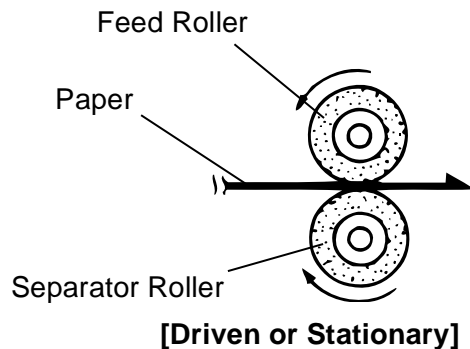


Figure 6-31. Paper Separation Mechanism - Single Feeding

#### □ Multiple Feeding

Since the friction coefficient between the underside of the second sheet of paper and Separator Roller is greater than that between the first and second sheets of paper, the Separator Roller is not driven and holds the second sheet of paper at the nip, allowing only the first sheet of paper to be fed to the Vertical Transport Section.

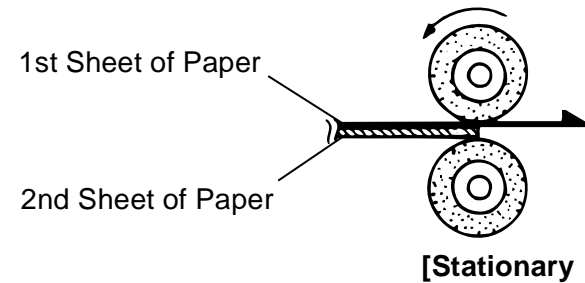


Figure 6-32. Paper Take-up Mechanism - Multiple Feeding

### 6.3.2.5 Paper Pressure Releasing Mechanism

The LCC is provided with a mechanism that releases the pressure between the Feed and Separator Rollers and between the paper and Paper Take-up Roller when the LCC is slid out of the printer.

The pressure between the Feed and Separator Rolls is released by the Separator Roller Assy and the Pressure Release Rail above the rail on the paper take-up end. When LCC is pulled out, the Pressure Release Rail pushes the Separator Roller Assy downward, thus releasing the pressure between the Feed and Separator Roller.

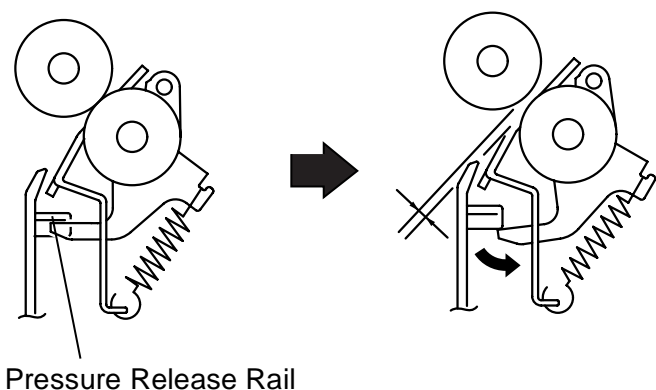


Figure 6-33. Paper Pressure Releasing Mechanism

### 6.3.2.6 Paper Take-up Roller Retracting Mechanism

The pressure between the paper and Paper Take-up Roller is released by the projection on the back side of the Front Cover, Pressure Release Lever, and Paper Take-up Roller Assy. When the LCC is slid out, it releases the Pressure Release Lever, which pushes the Paper Take-up Roller upward to release pressure between the paper and Paper Take-up Roller.

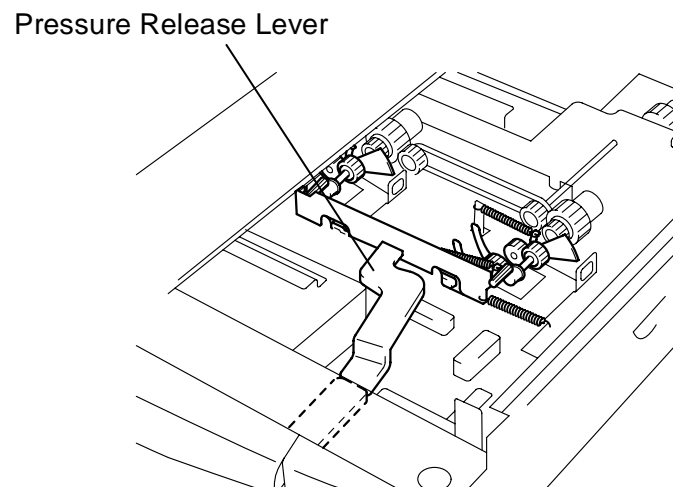


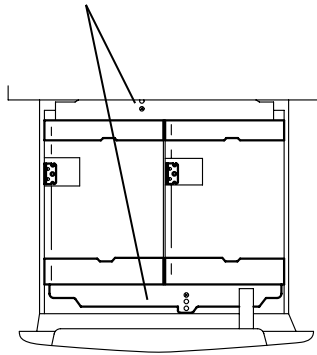
Figure 6-34. Paper Take-up Roller Retracting Mechanism

### 6.3.2.7 Paper Size Regulating Plate

The Regulating Plate (vertical) is screwed into position (not used for Letter crosswise). The Regulating Plate (horizontal) can be slid into any desired position.

Whenever the positions of the Paper Size Regulating Plates have been changed, be sure to perform the paper size setting procedure. (See Figure 6-35.)

Horizontal Paper Size Regulating Plate



Vertical Paper Size Regulating Plate

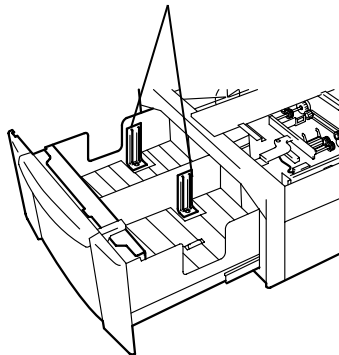


Figure 6-35. Paper Size Regulating Plates

### 6.3.2.8 Paper Size Setting

The paper sizes that can be set are A4 LEF and Letter LEF. After the positions of Paper Size Regulating Plate have been changed, set the dip switch on the control board according to the current paper size.

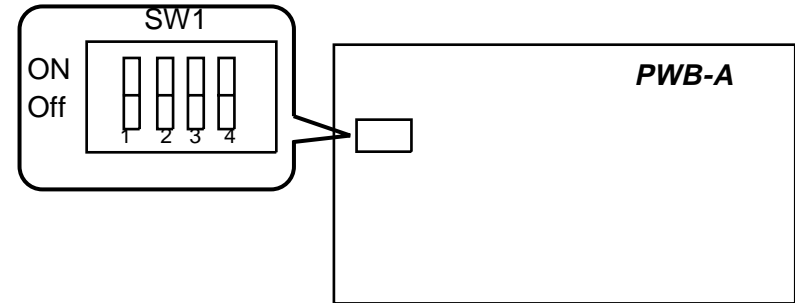


Figure 6-36. Paper Size Setting

Table 6-2. Paper Size setting

SW No.	Letter Crosswise	A4 Crosswise
1	OFF	ON
2	OFF	OFF
3	OFF	OFF
4	OFF	OFF

### 6.3.2.9 LCC Set Detection

The LCC is detected at its closed position when the light blocking plate provided on the rear end of the right rail blocks LCC Set Sensor.

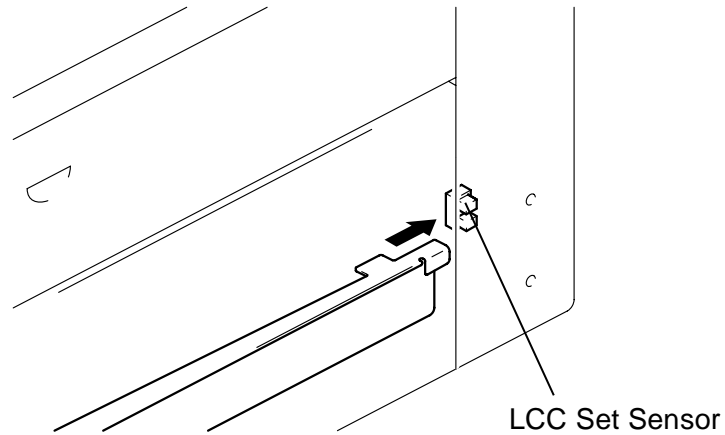
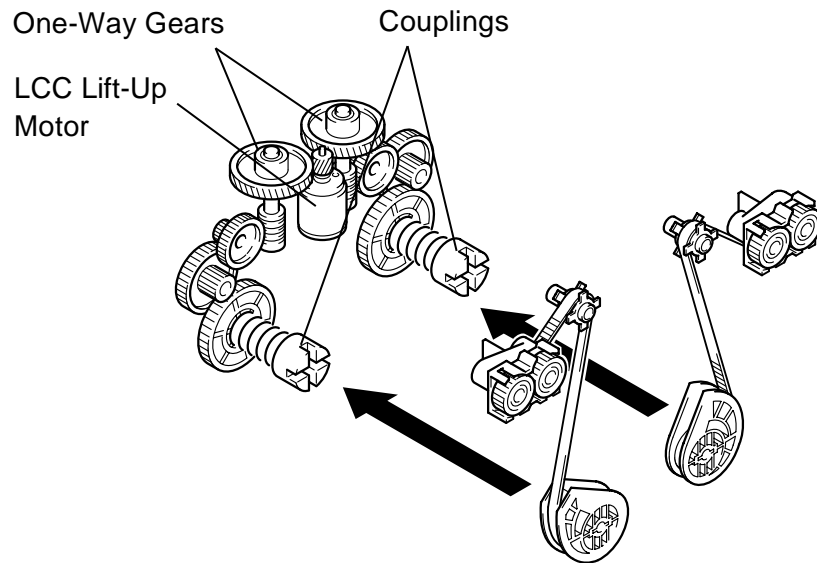


Figure 6-37. LCC Set Detection

### 6.3.2.10 Lifting Mechanism

When the LCC is set, the couplings are engaged. When LCC Lift-Up Motor turns forward and backward, its drive is transmitted via a one-way gear and gear train to raise Lift 1 and Lift 2, in that order.

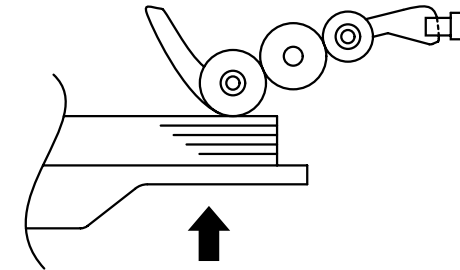
A one-way gear is in each of the Lift 1 and 2 drive mechanisms. When LCC Lift-Up Motor turns forward, its drive is transmitted to Lift 1 and when the motor turns backward, its drive is transmitted to Lift 2.



**Figure 6-38. Lifting Mechanism Layout**

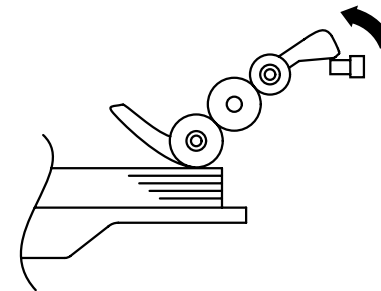
□ When LCC is Slid in:

1. LCC Set Sensor is blocked.
2. LCC Lift-Up Motor turns forward to raise Lift 1.
3. The paper stack causes the light blocking plate of the Paper Take-up Roller 1 Assy to block Lift-Up Sensor 1.



**Figure 6-39. Lifting Mechanism (1)**

4. LCC Lift-Up Motor is deenergized and then energized to start turning backward, thereby raising Lift 2.
  5. The paper stack causes the light blocking plate of the Paper Take-up Roller 2 Assy to block Lift-Up Sensor 2.
  6. LCC Lift-up Motor is deenergized.
- During a printing Cycle
1. Paper is consumed as print cycles are run.
  2. The Paper Take-up Roller gradually lowers, unblocking the Lift-Up Sensor.



**Figure 6-40. Lifting Mechanism (2)**

3. LCC Lift-Up Motor is energized and the Lift is raised. This lifts the paper stack to block the Lift-Up Sensor.
4. Return to Step 1 to repeat the sequence.

Both Lift 1 and 2 perform these sequences of operations to keep a given pressure between the paper and Paper Take-up Roller.

Lift 1 and 2 Ascent Conditions

- The LCC is slid into position.
- The Lift-Up Sensor is unblocked while a paper take-up sequence is being carried out with paper present on the Lift.

Lift 1 and 2 Stop Conditions

- The Lift-Up Sensor is blocked.
- The Lift-Up Sensor is blocked while the paper stack top level position is being corrected.

LCC Lift-Up Motor Control

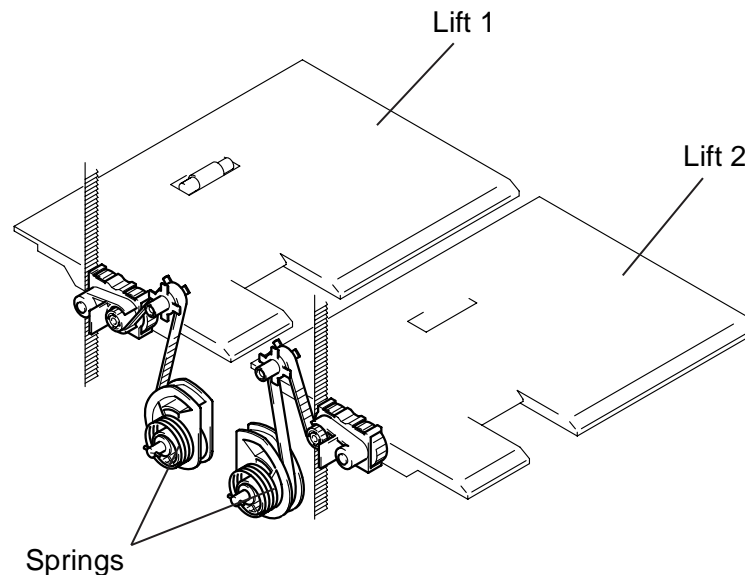
LCC Lift-Up Motor is a DC motor. It is energized or deenergized and its direction of rotation is determined by the Motor Control signals applied from the printer's control board to pins 1 and 2 of CN5 of LCC Main Board PWB-A. Depending on the motor's rotational direction, the lifter to be raised is determined. (See the table below.)

**Table 6-3.**

LCC Lift-Up Motor	Lift 1	Lift 2	CN5	
			1	2
Energized (Forward Rotation)	Ascent	Stop	H	L
Energized (Backward Rotation)	Stop	Ascent	L	H
Deenergized	Stop	Stop	L	L

Descent Motion

When the LCC is slid out of the printer, Lift 1 and 2 are lowered. To absorb shocks that would otherwise be applied during the descent motion, springs are loaded in the rear side of the LCC.



**Figure 6-41. Descent Motion**



### 6.3.2.11 Paper Near Empty Detection

A paper-near-empty condition is detected by sensing the height of Lift 1 or Lift 2. When paper is consumed during a print cycle, Lift 1 or 2 gradually moves up. This eventually unblocks the Paper Near Empty Sensor, at which timing the printer determines that the LCC will soon run out of paper (the amount of paper (80 g/m<sup>2</sup>) still available for use is 100 ±50 sheets) and gives a corresponding message on the LCD Panel.

Since the amount of paper still available for use varies while a paper take-up sequence is in progress, detection is made at a timing when the Paper Take-up Roller is in the retracted position.

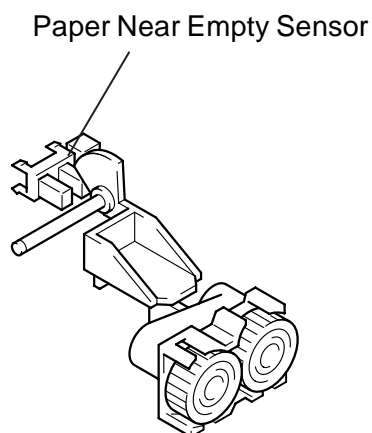


Figure 6-42. Paper Near Empty Detection

### 6.3.2.12 Paper Empty Detection

A paper-empty condition is detected by a reflector type photosensor, Paper Empty Sensor 1 PPS1 and Paper Empty Sensor 2 PPS2, installed in the Paper Take-Up Unit. When a paper-empty condition is detected, the corresponding message is displayed on the LCD Panel.

- When paper is loaded  
The light from the LED of Paper Empty Sensor 1 or Paper Empty Sensor 2 is reflected, with which the printer determines that there is paper in LCC.

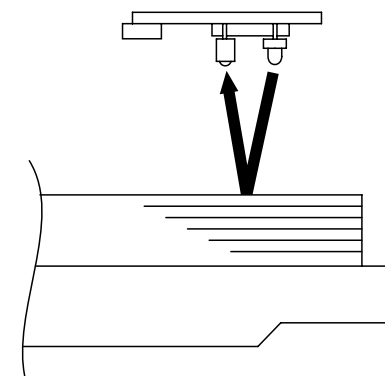


Figure 6-43.  
Paper Empty Detection (1)

- When no paper is loaded  
The light from the LED of Paper Empty Sensor 1 or Paper Empty Sensor 2 is not reflected, with which the printer determines that there is no paper loaded in the LCC.

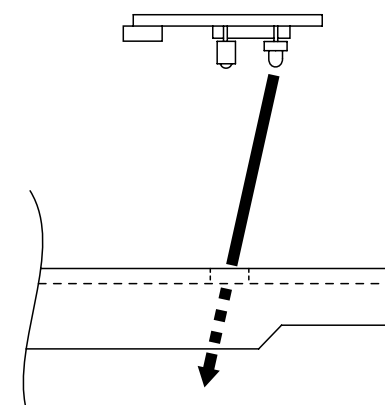
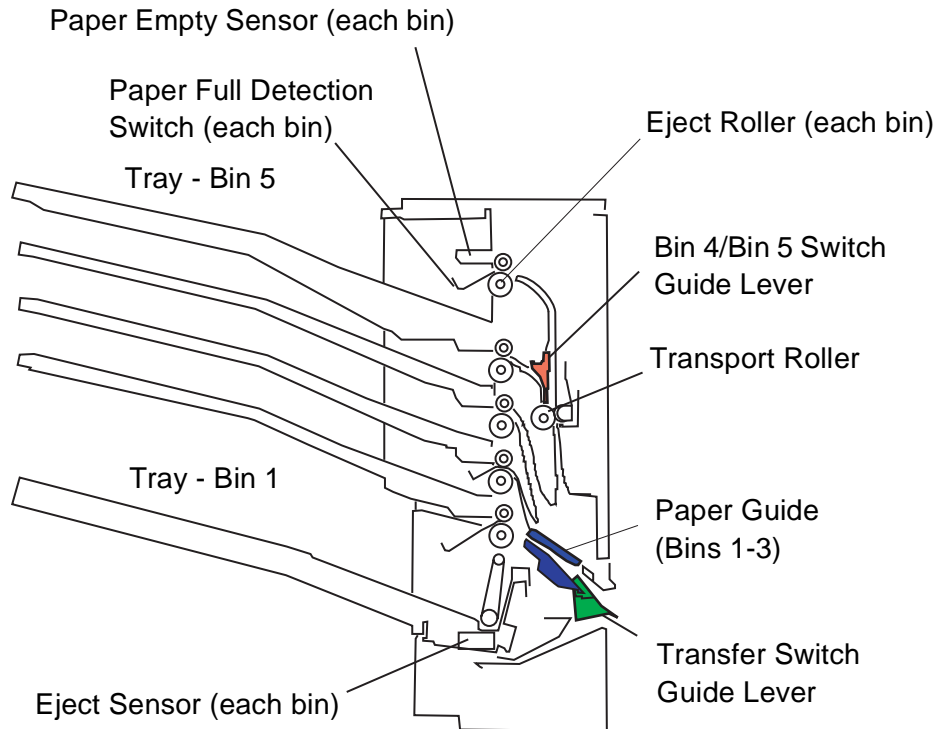


Figure 6-44.  
Paper Empty Detection (2)

## 6.4 5-Bin Unit

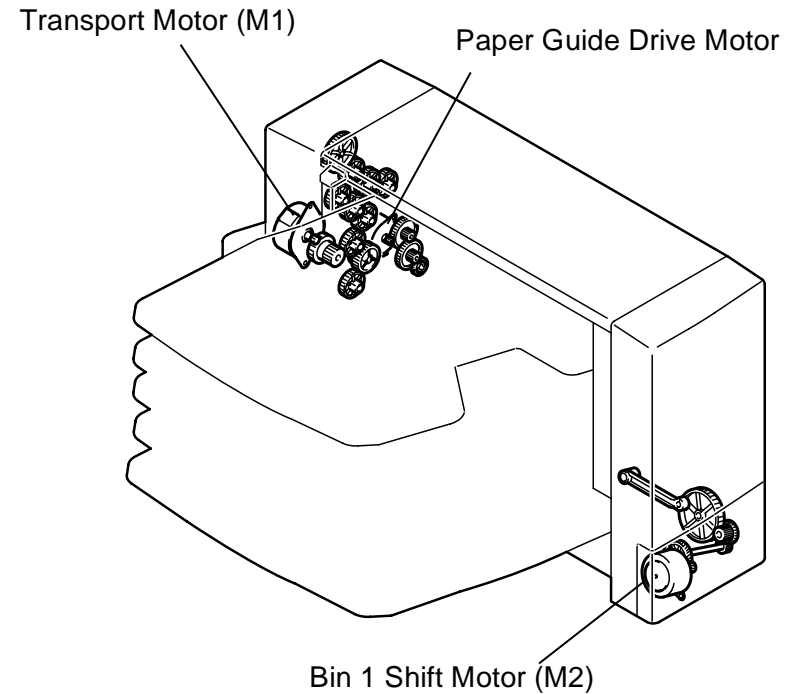
### 6.4.1 Structure



**Figure 6-45. Cross Sectional View of the 5-Bin Unit**

**NOTE:** The receptor of the Eject Sensor Board (common for all emitters of the bins) is attached to the Paper Empty Sensor Board located in the Bin 1.

### 6.4.1.1 Drive Section Layout



**Figure 6-46. Drive Section Layout**

## 6.4.1.2 Electrical Component Layout

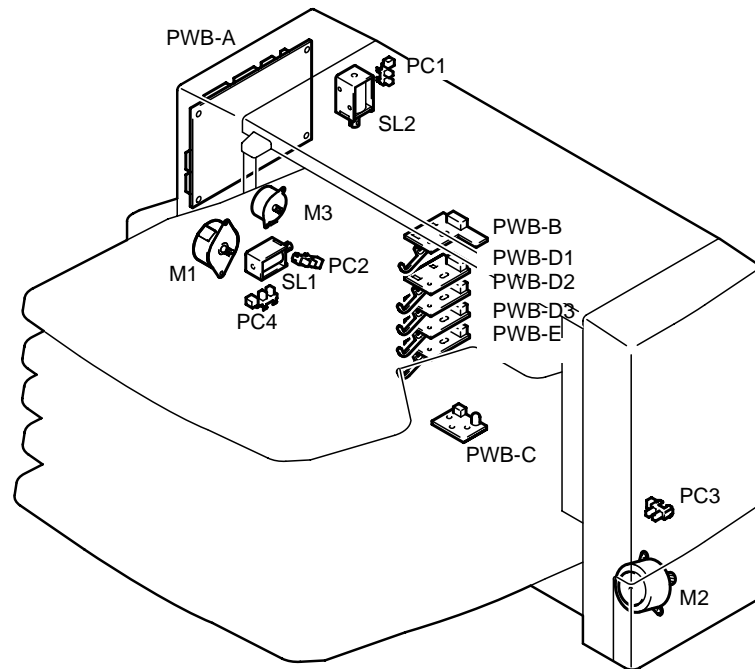


Figure 6-47. Electrical Component Layout - 5-Bin Unit

- M1: Transport Motor
- M2: Bin 1 Shift Motor
- M3: Paper Guide Drive Motor
- PC1: Paper Jam Removal Door Sensor
- PC2: Paper Guide Home Position Sensor
- PC3: Paper Guide Position Sensor
- PC4: Bin Shift Home Position Sensor
- PWB-A Board: Control Board
- PWB-B: Paper Empty Sensor Board (Bin 5), including Eject Sensor (Receptor side)
- PWB-C: Eject Sensor Board (Emitter side, commonly used for all bins)
- PWB-D1: Paper Empty Sensor Board (Bin 4)
- PWB-D2: Paper Empty Sensor Board (Bin 3)
- PWB-D3: Paper Empty Sensor Board (Bin 2)
- PWB-E: Paper Empty Sensor Board (Bin 1)
- SL1: Transfer Switch Solenoid
- SL2: Bin 4/Bin5 Switch Solenoid

## 6.4.2 Mechanical Operations

### 6.4.2.1 Paper Exit Path

The paper exit path for the paper output from the printer varies depending on the paper ejection mode. Sensors and switches monitors if the paper is being transported along the correct path. The paper paths and involved parts are as shown in the following figure.

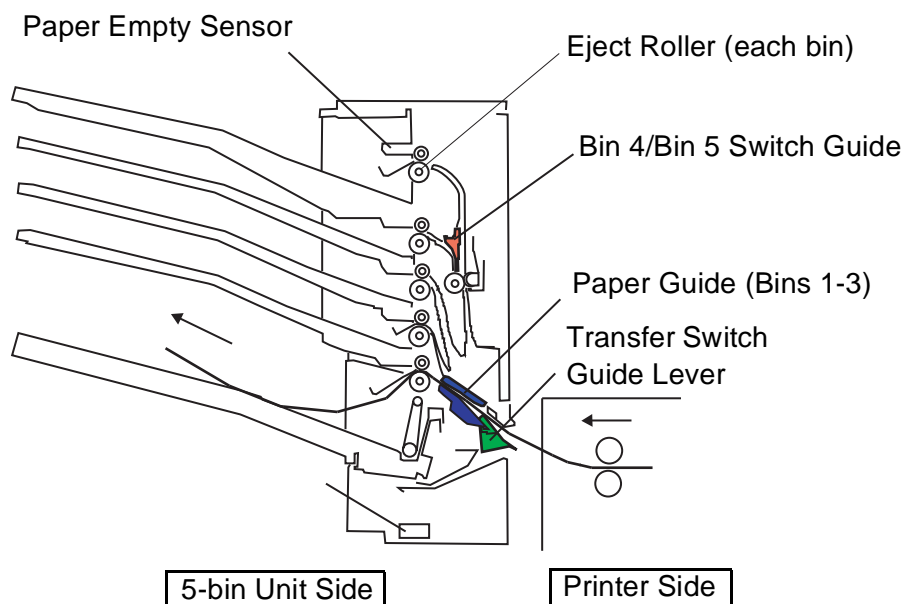


Figure 6-48. Paper Exit Paths

A sheet of paper output from the printer enters the 5-Bin Unit if the Transfer Switch Guide Lever is lowered (in the mode other than duplex mode). The paper path hereafter depends on the paper eject mode.

In the normal ejection mode (Face-down Bin 1) or shift mode, the paper guide switches to the lowest position, from which the paper is transported to the Bin 1 and then ejected to the tray in the Bin 1 by way of the Eject Sensor, Eject Roller, and Paper Empty Sensor. In the shift mode, the tray in the Bin 1 moves right and left so paper can be output to each side alternately.

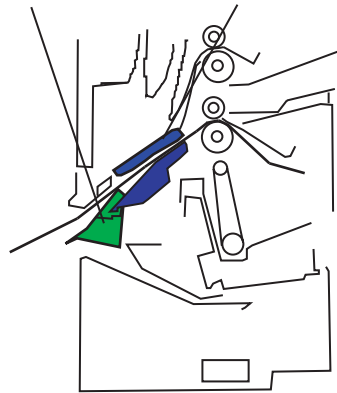
In the mail box mode, the Paper Guide and Transfer Switch Guide Lever moves/switches in accordance with the bin selected. The paper guide switches between four positions as follows; for Bin 2 or Bin 3, the Paper Guide Switches to the second or third position from the bottom. For the Bin 4 or 5, it switches to the top position and the Bin 4/Bin 5 Switch Guide Lever also switches to the position for the corresponding bin. The paper, after passing the Paper Guide (Bin 4/Bin 5 Switch Guide), is ejected to the tray in the selected bin via the Eject Sensor, Eject Roller, and Paper Empty Sensor.

If the Eject Sensor does not detect the paper within a specified period of time after the Paper Eject Sensor in the printer is turned on, it is considered as a paper jam error condition at the entry or exit part of the 5-Bin Unit.

### 6.4.2.2 Single/Duplex Print Switch Mechanism

The Transfer Switch Guide Lever moves in accordance with the Transfer Switch Solenoid (SL1). In the duplex print mode, the solenoid is turned on, which raises the Transfer Switch Guide Lever.

Transfer Switch Guide Lever      Paper Guide (Bins 1-3)



Solenoid (SL)

Figure 6-49. Single/Duplex Print Switch Mechanism

### 6.4.2.3 Paper Guide Mechanism

The Paper Guide, driven by the Paper Guide Drive Motor (M3), switches between four positions; Bins 1, 2, 3, and 4/5. The Paper Guide is composed of the Guide Position Sensor (PC3) and detection plate as shown in the figure below. As the plate turns on and off the sensor, the paper guide position is detected. The Guide Home Position Sensor (PC2) is also attached to detect the paper guide's home position.

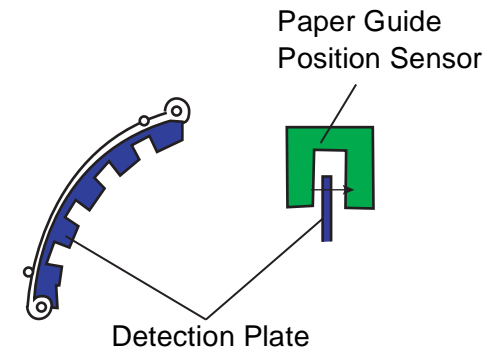


Figure 6-50. Paper Guide Mechanism

#### 6.4.2.4 Bin 4/Bin 5 Switch Mechanism

When the Bin 4 or Bin 5 is selected as the paper exit, paper from the printer is transported to the selected bin by way of the Transfer Switch Guide Lever (Bin 1), Paper Guide, and Vertical Transport Roller that moves paper up, and Bin 4/Bin 5 Switch Guide. The Bin4/Bin 5 Switch Guide switches the paper path to the selected bin according to the Solenoid's on/off operation.

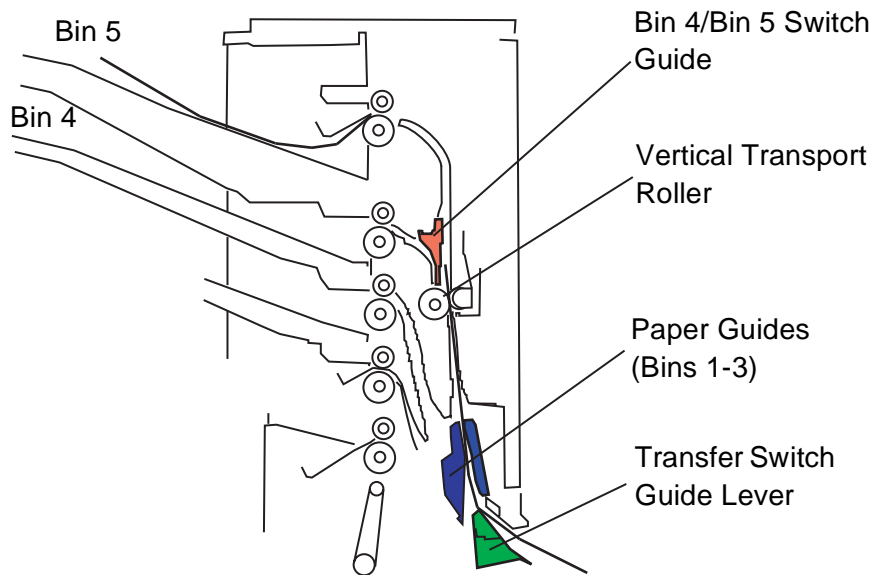


Figure 6-51. Bin 4/Bin 5 Switch Mechanism

#### 6.4.2.5 Shift Mechanism

In the shift mode, paper is ejected to the Bin 1. When the Bin 1 Shift Motor (M2) rotates, the shift rod moves right and left. With this motion, the tray in the Bin 1 also moves 40 mm alternating its position between right and left. The paper is accordingly ejected per job or number of copies to different stacks. The position of the Bin 1 is detected by the Bin 1 Shift Home Position Sensor (PC4). The PC4 turns on when it detects the Bin 1 at the home position, the left most position viewed from the tray side.

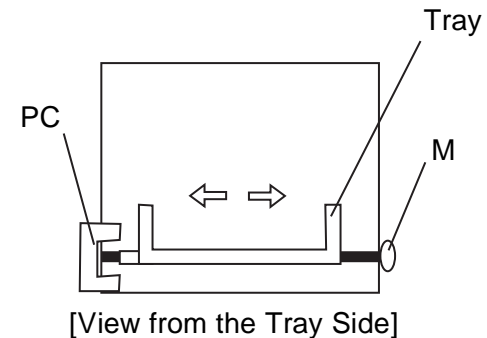
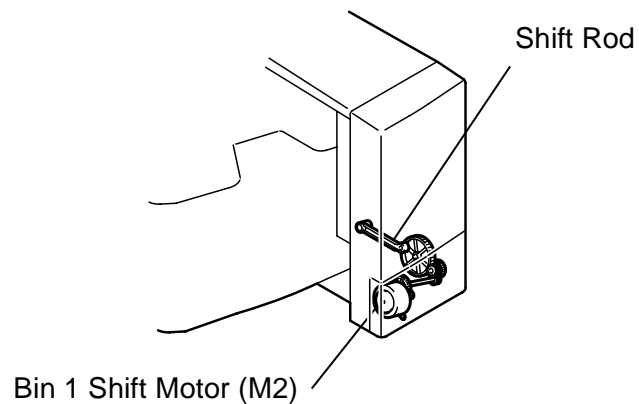


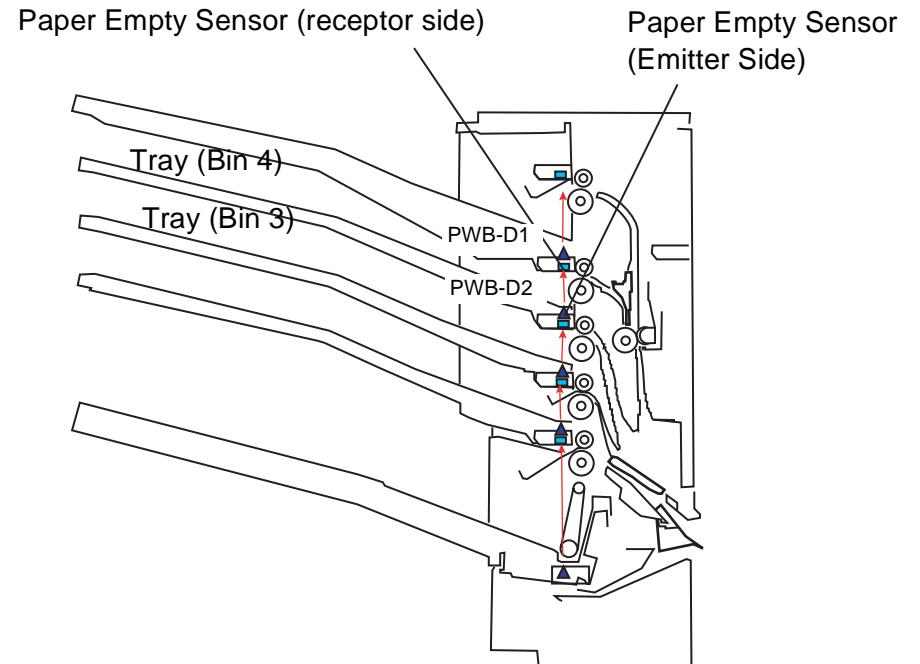
Figure 6-52. Shift Mechanism



**Figure 6-53. Shift Mechanism Drive Section**

#### 6.4.2.6 Paper Empty Detection Mechanism

A paper empty sensor is equipped with each bin. It turns on when there is no paper in the tray. Each sensor uses two sensor boards as the emitter and receptor. For example, the Bin 4 uses the upper side of the PWB-D2 (Bin 3) as the emitter and the lower side of the PWB-D1 (Bin 4) as the receptor. Without any paper, the sensor turns on. If paper is present, the emitted light is blocked, which makes the sensor remain off.



**Figure 6-54. Paper Empty Detection Mechanism**

### 6.4.2.7 Paper Full Detection Mechanism

A paper full condition is detected by the lever switch attached to each bin. When the level of the stack of paper reaches the specific level, it pushes up the lever enough to turn the sensor on. The lever switch is attached to the lower side of each sensor board.

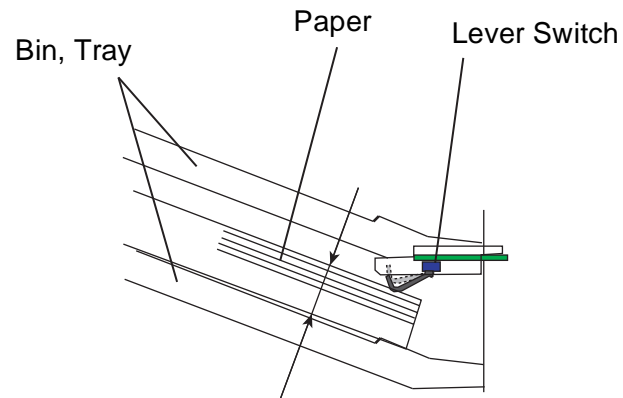


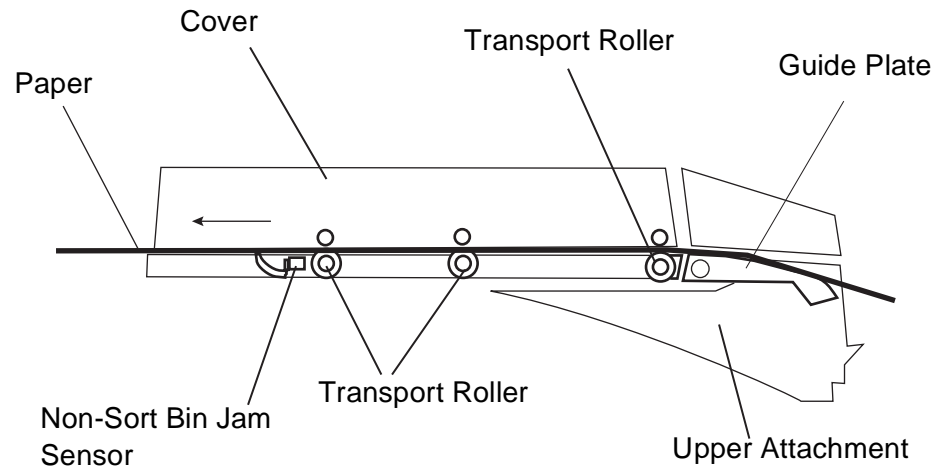
Figure 6-55. Paper Full Detection Mechanism



## 6.5 10-bin Unit

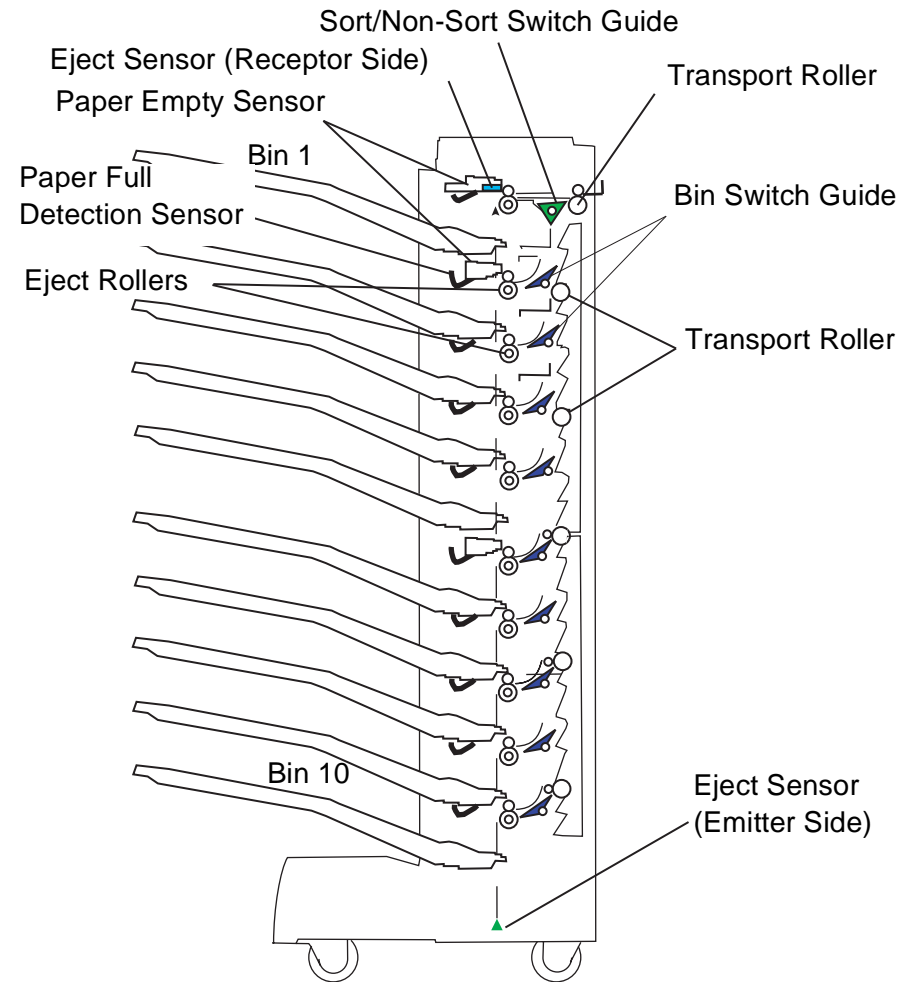
### 6.5.1 Structure

- Horizontal Transportation Unit



**Figure 6-56.**  
**Cross Sectional View - Horizontal Transportation Unit**

- Tray Section



**Figure 6-57. Cross Sectional View - Tray Section**

6.5.1.1 Drive Section Layout

- Horizontal Transportation Unit

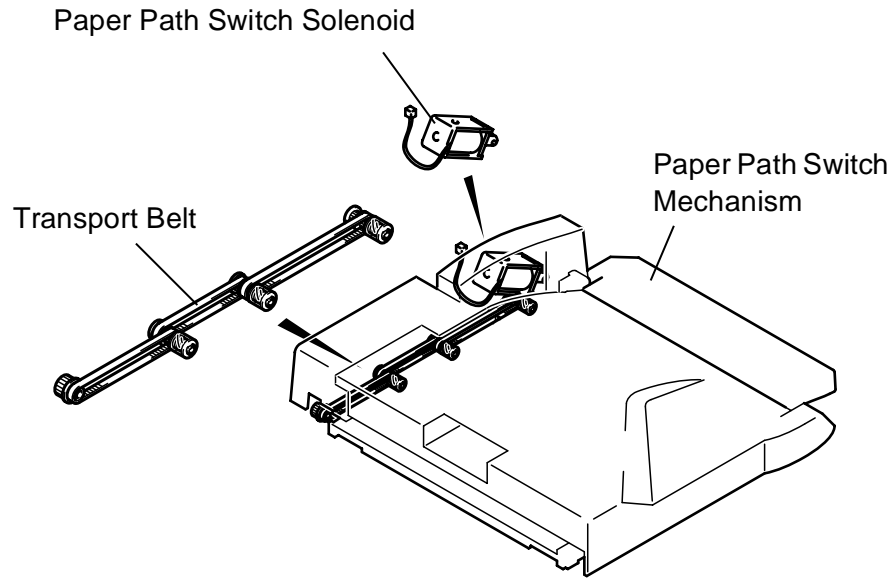


Figure 6-58.

Drive Section Layout - Horizontal Transportation Unit

- Tray Section

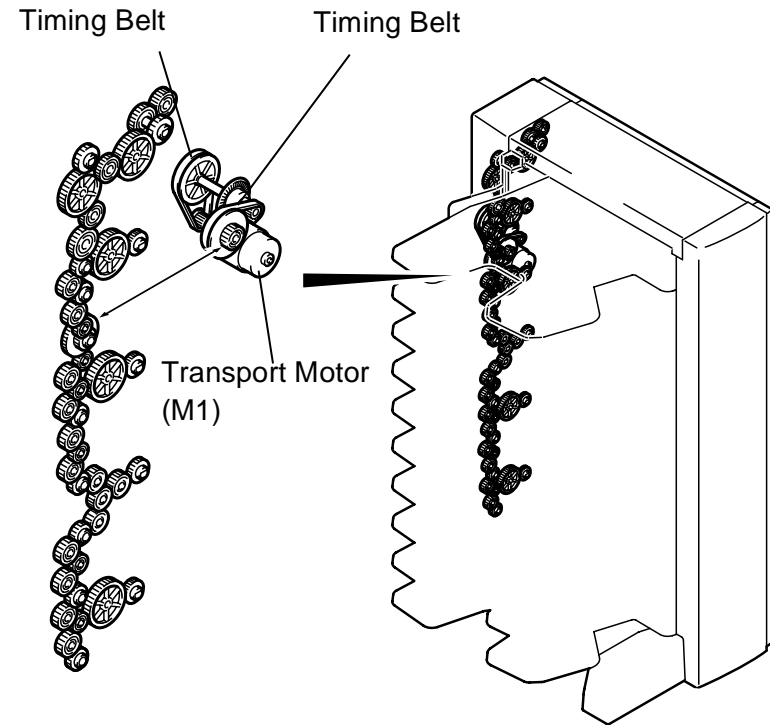
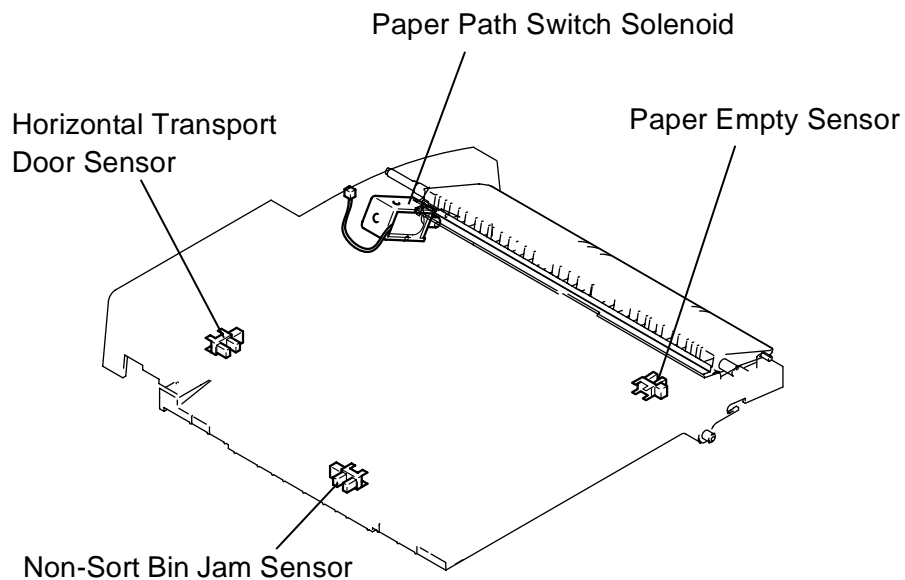


Figure 6-59. Drive Section Layout - Tray Section

### 6.5.1.2 Electrical Component Layout

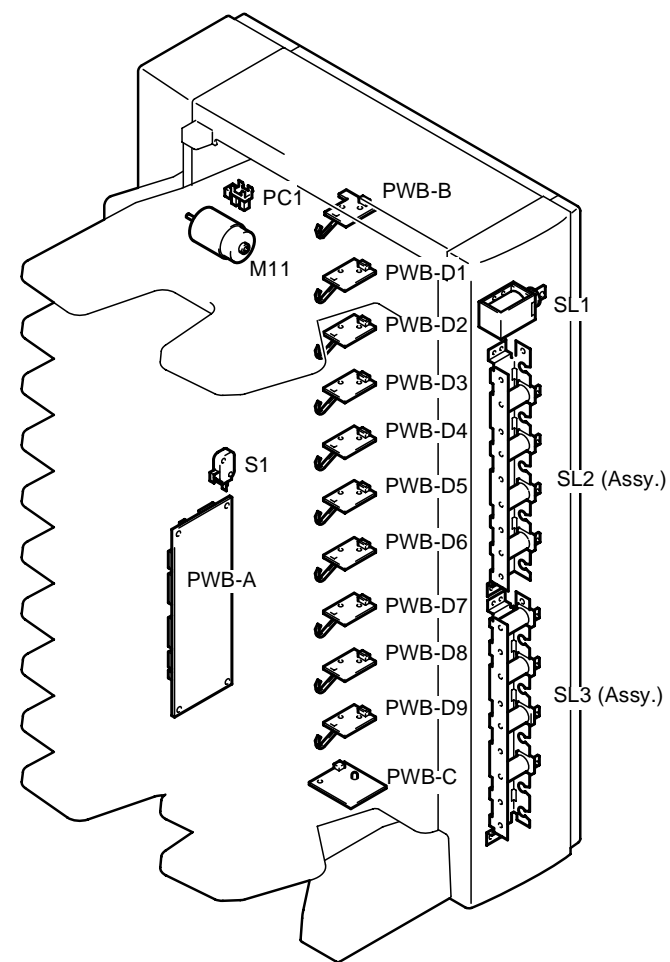
□ Horizontal Transportation Unit

□ Tray Section



**Figure 6-60.**

**Electrical Component Layout - Horizontal Transport Unit**



**Figure 6-61. Electrical Component Layout - Tray Section**

- PC1 Transport
- S1 Sorter Set Switch
- SL1 Sort/Non-Sort Switch Solenoid
- SL2 Solenoid Assy. 1 (Bins 2-5)
- SL3 Solenoid Assy. (Bins 6-9)
- PWB-A Control Board
- PWB-B Paper Empty Sensor Board (Bin 1), including the Eject Sensor (receptor)
- PWB-D1 Paper Empty Sensor Board (Bin 2)
- PWB-D2 Paper Empty Sensor Board (Bin 3)
- PWB-D3 Paper Empty Sensor Board (Bin 4)
- PWB-D4 Paper Empty Sensor Board (Bin 5)
- PWB-D5 Paper Empty Sensor Board (Bin 6)
- PWB-D6 Paper Empty Sensor Board (Bin 7)
- PWB-D7 Paper Empty Sensor Board (Bin 8)
- PWB-D8 Paper Empty Sensor Board (Bin 9)
- PWB-D9 Paper Empty Sensor Board (Bin 10)
- PWB-C Eject Sensor Board (Emitter) for all bins

## 6.5.2 Mechanical Operations

### 6.5.2.1 Paper Exit Path

The paper exit path for the paper output from the printer varies depending on the paper ejection mode. Sensors and switches monitors if the paper is being transported along the correct path. The paper paths and involved parts are as shown in the following figure.

When the 10-bin Unit is used, the entry part of the Horizontal Transport Unit is lowered by the Paper Path Switch Solenoid's operation to send paper out to the Bin 1. In the sort mode, the entry part of the Horizontal Transport Unit is also lowered so the paper from the printer advances to the Tray section through the Horizontal Transport Unit to be ejected to the bin.

If the paper fails to pass the PC1 and PWB-C within the specified period of time after the Paper Eject Sensor in the printer is turned on, it is considered as a paper jam condition at the entry or exit part of the 10-bin Unit.

The paper from the Horizontal Transport Unit is sent to the Tray Section by the Transport Roller. The paper path after this point varies depending on the paper ejection mode. The paper is output to the selected bin via the Eject Sensor, Eject Roller, and the Paper Empty Sensor. If the paper fails to reach and pass the Eject Sensor within a specified period of time after the PC1 in the Horizontal Transport Unit is turned on, it is considered as a paper jam condition at the entry or exit of the Tray Section.

For duplex print, the entry part of the Horizontal Transport Unit is raised by the solenoid. The single-sided print paper is temporarily stored between the top cover of the printer and the Horizontal Transport Unit and waits for being switched back to the duplex unit.

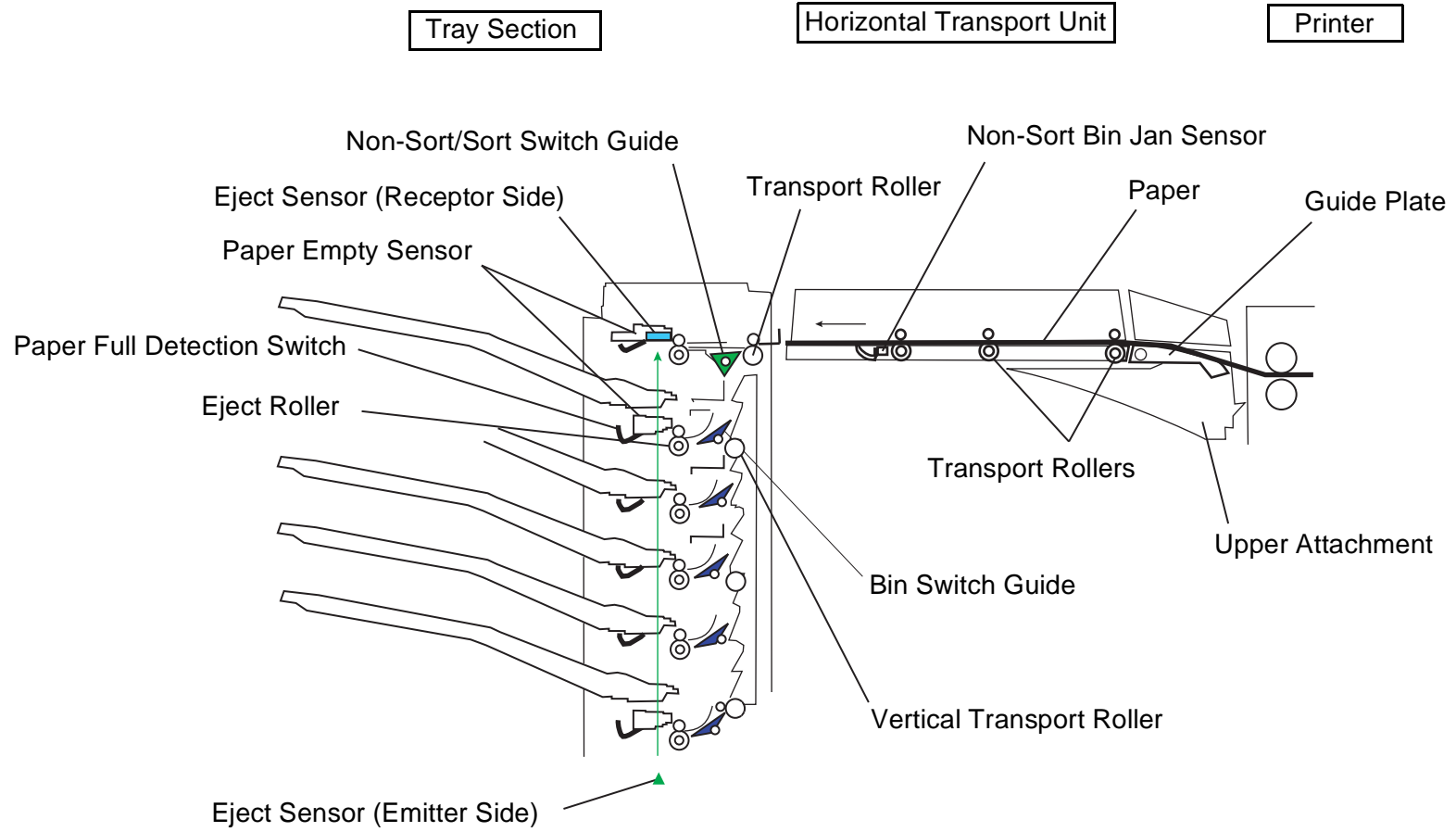


Figure 6-62. Paper Exit Path

### 6.5.2.2 Paper Transport Mechanism (Horizontal Transport Unit)

This mechanism advances paper from the Horizontal Transport Unit to the Tray Section. Drive is transmitted from the Transport Motor (M1) in the Tray Section. Therefore, the gears at the exit part of Horizontal Transport Unit and the entry part of the Tray Section must be meshed securely.

### 6.5.2.3 Bin Switch Mechanism

The Bin Switch Mechanism in the Tray Section is as shown in the right column.

The paper is passed from the Horizontal Transport Unit on to the Tray Section via the Transport Roller. The paper path after this point varies depending on the paper ejection mode. In the normal ejection mode, since the Paper Guide for Bin 1 blocks the vertical paper path, the paper is ejected to the tray in the Bin 1 via the Eject Sensor, Eject Roller, and the Paper Empty Sensor.

In the mail box mode, if any bin other than Bin 1 is selected, the Paper Guide for the Bin 1 is raised and the paper is transported vertically down, passing the Bin 1. For example, if the Bin 2 is selected, the Paper Guide for the Bin 2 lowers and blocks the paper path below. Therefore, the paper is sent to the Bin 2 and ejected to the tray in the Bin 2 via the Eject Sensor, Eject Roller, and the Paper Empty Sensor. The system works in the same way for other bins.

Paper Guide lowers when the corresponding solenoid is turned on.

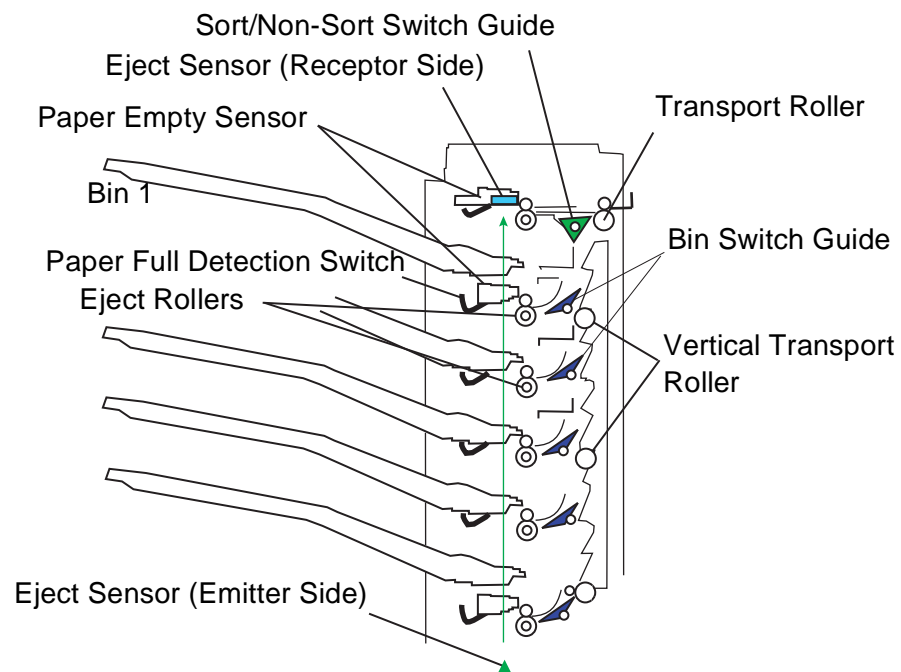


Figure 6-63. Bin Switch Mechanism

### 6.5.2.4 Paper Empty Detection Mechanism

A paper empty sensor is attached to each bin. It turns on when there is no paper in the tray. Each sensor uses two sensor boards as the emitter and receptor. For example, the Bin 4 uses the upper side of the PWB-D2 (Bin 3) as the emitter and the lower side of the PWB-D1 (Bin 4) as the receptor. Without any paper, the sensor turns on. If paper is present, the emitted light is blocked and the sensor remains off.

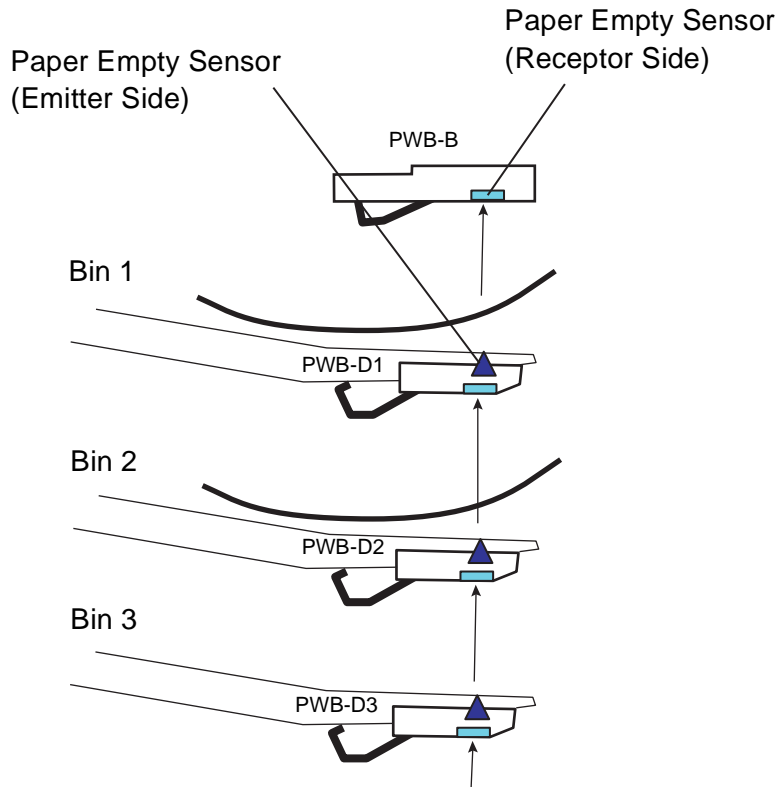


Figure 6-64. Paper Empty Detection

### 6.5.2.5 Paper Full Detection Mechanism

A paper full condition is detected by the lever switch attached to each bin. When the level of the stack of paper reaches the specific level, it pushes up the lever, which then turns the sensor on. The switch lever is attached to the lower side of each sensor board.

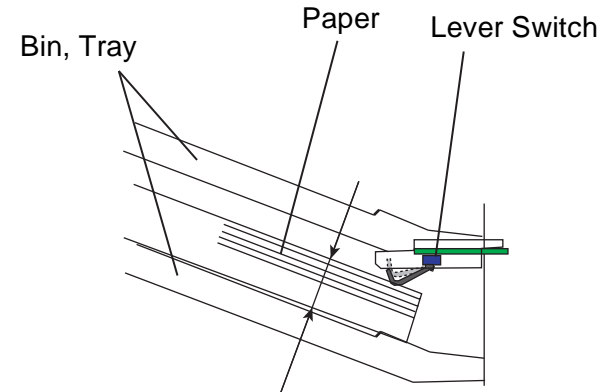


Figure 6-65. Paper Full Detection

### 6.5.3 Mode Description

There are five paper ejection modes as described in the following sections.

#### 6.5.3.1 Normal Mode (Non-Sort Mode)

In this mode, the entry part of the Horizontal Transport Unit raises to transport paper from the printer to the Bin 1 in the Tray Section via the Horizontal Transport Unit. Normally, this is used in the printing mode. Paper empty condition is detected by the Bin 1 Paper Empty Sensor and paper full condition is detected by the Bin 1 Paper Full Sensor.

#### 6.5.3.2 Large Capacity Mode (Stacker Mode)

In this mode, the entry part of the Horizontal Transport Unit raises to transport paper from the printer to the Bin 1 in the Tray Section via the Horizontal Transport Unit.

#### 6.5.3.3 Mailbox Mode

In this mode, the entry part of the Horizontal Transport Unit raises to transport paper from the printer to the selected bin in the Tray Section. This mode is convenient when some bins are allocated to specific users, who uses the printer or receives prints frequently. Any bin can be allocated.

#### 6.5.3.4 Sorter Mode

All bins are used to collate. For example, 1st page is ejected from the Bin 1 down to Bin 10 and second page is ejected from the Bin 10 up to Bin 1.

#### 6.5.3.5 Multiple Sorter Mode

All bins are used to eject paper separately per job. Unlike the sorter mode, the number of copies is not limited. As one-job pages are ejected to a bin, the bin to be used swatches for the next print job. When the number of jobs exceeds 10, the number of the bins, sheets are output to the Bin 10, 9,....., in that order for each additional job.

**NOTE:** To use the 10-bin Unit in the multiple sorter mode, instal an expansion RAM in the printer. Otherwise, the printer will show the error.