SORTER-H1

SERVICE MANUAL

REVISION 0

Canon

JAN. 1999

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 SORTER-H1 REV. 0 JAN. 1999 PRINTED IN JAPAN (IMPRIME AU JAPON)

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INTRODUCTION

This Service Manual contains basic information required for after-sales service of the 7-bin DESK TOP SORTER.

This information is vital to the service technician in maintaining the high print quality and performance of the 7-bin DESK TOP SORTER.

This manual consists of following chapters:

Chapter 1: General Description

Features, specifications, Parts of the Desktop 7-bin Sorter

Chapter 2: Operation and Overview

Basic operation, Feed/drive system and Power supply

Chapter 3: Mechanical System

Explanation of mechanical operation, disassembly, reassembly, and adjustment procedures

Chapter 4: Maintenance and Servicing

Parts Replacement Schedule, Consumables and Periodic Service Schedule

Chapter 5: Troubleshooting

Maintenance and Adjustment,Initial Check, Check of Operation, Troubleshooting Malfunctions, Location/Functions of Electrical Parts and List of Variable Resistors (VT), Leds, Check Pins, Jumpers and Switches on PCB

Appendix: General timing chart, general circuit diagram, etc.

Information in this manual is subject to change as the product is improved or redesigned.

All relevant information in such cases will be supplied in Service Information Bulletins.

A thorough understanding of this printer, based on information in this Manual and Service Information Bulletins, is required for maintaining its performance and for locating and repairing the causes of malfunctions.

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CHAPTER 1 GENERAL DESCRIPTION

CHAPTER 2 OPERATION OVERVIEW

CHAPTER 3 MECHANICAL SYSTEM

CHAPTER 4 MAINTENANCE AND SERVICING

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CHAPTER 5 TROUBLESHOOTING

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CHAPTER 1

GENERAL DESCRIPTION

 SORTER-H1 REV. 0 JAN. 1999 PRINTED IN JAPAN (IMPRIME AU JAPON)

I. FEATURES

This sorter is operated in 3 modes as described below.

1. Job Separator

Face-down bins can be changed so that the printed paper can be sorted according to jobs.

2. Stacker

Printed paper is loaded into bins in succession from the lowest one.

3. Collator

When a document comprising multiple sheets is printed multiple times, the face-down bins are changed over for each document.

II. SPECIFICATIONS

Item		Specification
Paper delivery method	Face-up	Single bin fixed (Removable type: uses main unit tray)
	Face-down	7 bin fixed
No.of bins		7
Stacking method	Face-down	Job separator, stacker, collator
	Face-up	Simple stacking
Paper types	Face-down	Plain paper, coloured paper, thick paper
	Face-up	Plain paper, coloured paper, thick paper, labels, OHP, envelopes
Paper sizes	Face-down	LGL, LTR, A4, 18mm ◊ 257mm, (min.) to 257mm ◊ 364mm (max.) size plain paper (60g/m^2 to 105g/m^2)
	Face-up	A3, B4, A4-R, LGR, LGL, LTR-R, B5 -R, A5 (vertical) and executive size plain paper (60g/m^2 to 105g/m^2) 98.4mm ◊ 190.5mm (min.) to 297mm ◊ 432mm (max.) size plain paper (60g/m^2 to 199g/m^2 recommended paper) Monarch, COM-10, DL, B5, C5 and 98.4mm ◊ 190.5mm (min.) to 176mm ◊ 250mm (max.) size envelopes
Capacity		Face up bin: approx. 100 sheets of 64g paper Face down bin: approx. 100 sheets of 64g paper
Max.power consumption		Approx. 28W, or less. (Room temperature 20˚C, with rated voltage input)
Dimensions (*1)		520 (width) ◊ 470 (depth) ◊ 530 (height) mm
Weight		Approx. 12kg
Power supply		100 - 127A (50/60Hz) 0.5A 200 - 240A (50/60Hz) 0.3A (Voltage tolerance within ± 10%)

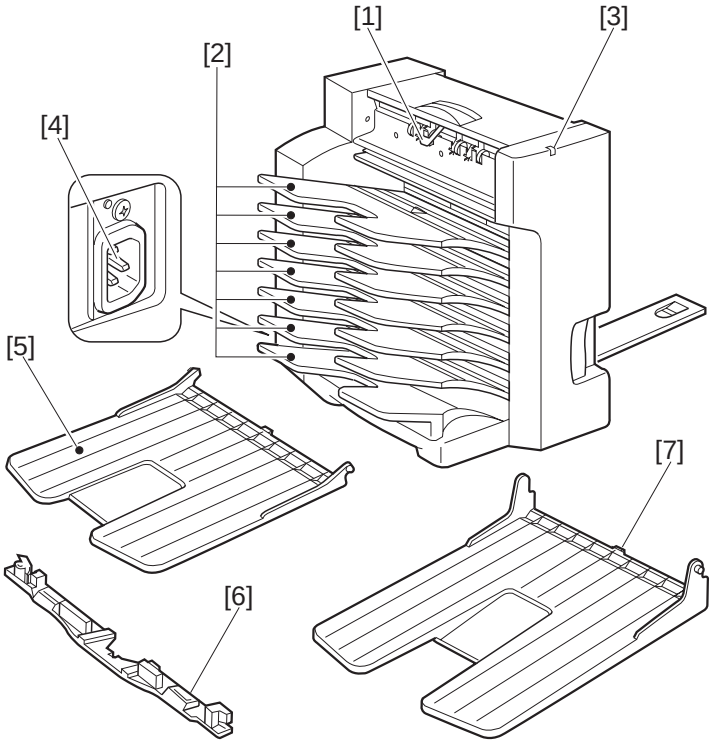
*1: The width of the base unit (without tray) is 290mm.

Table 1-201

Specifications are subject to change for the sake of product improvements.

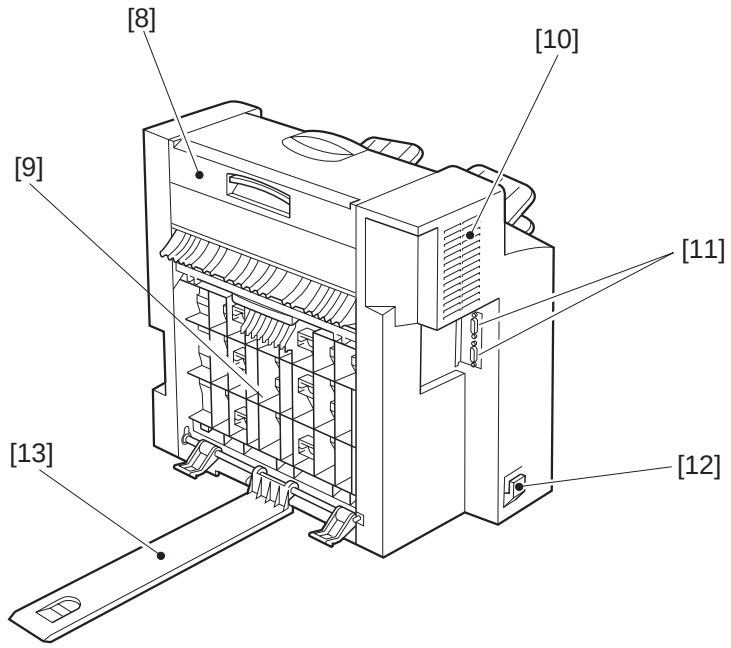
III. NAMES OF PARTS

A. External Views



[1] Paper stack sensor lever
[2] Face-down bin
[3] Power LED
[4] Power receptacle
[5] Reversal tray
[6] 7-bin sorter adapter plate
[7] Face-up tray (printer attachment)

Figure 1-301



[8] Jam release cover
[9] Right cover
[10] Ventilation slots
[11] Interface connector
[12] Cable holder
[13] Guide shaft

Figure 1-302

B. Sectional View

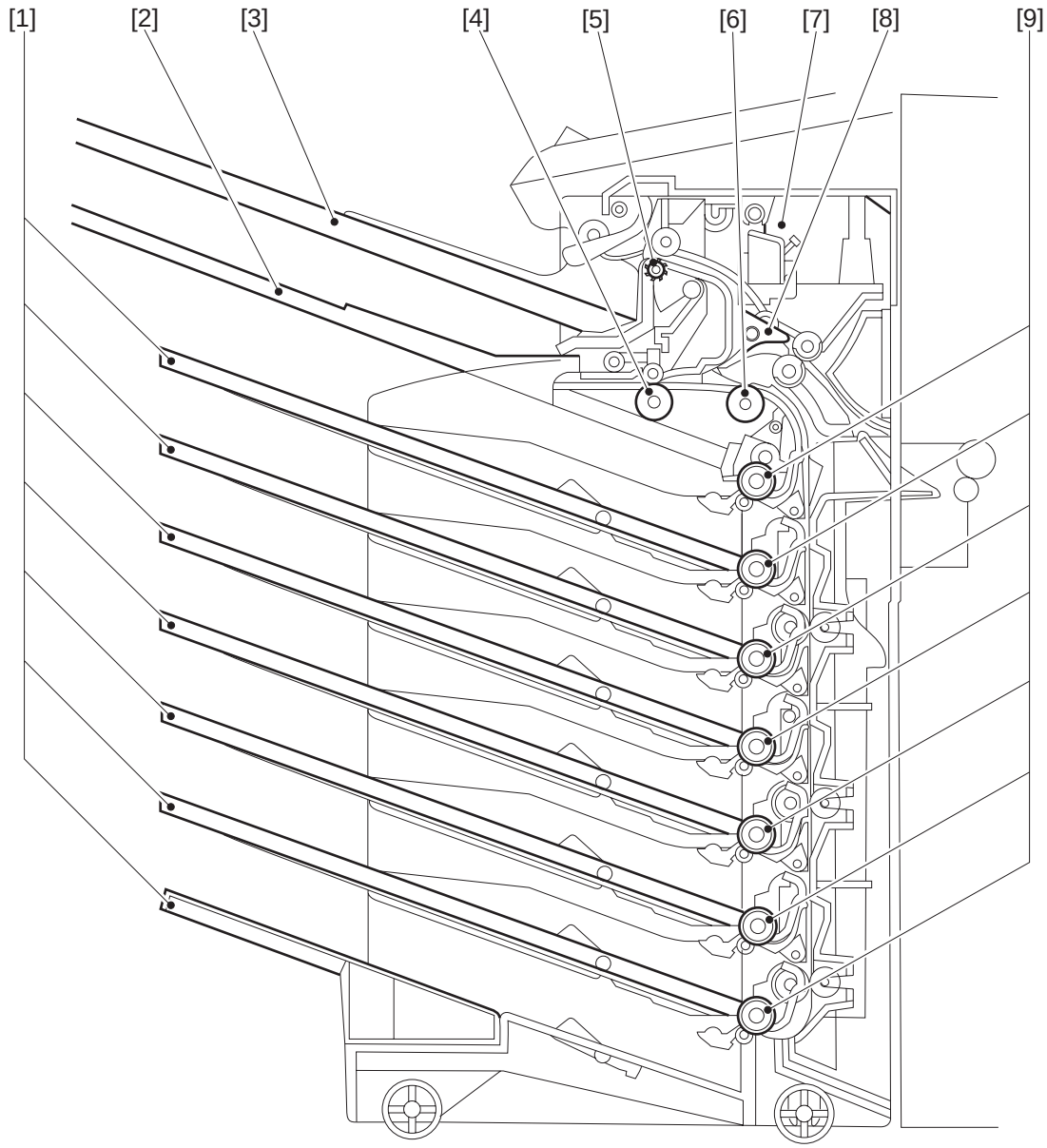


Figure 1-303

[1] Face-down bin
[2] Reversal tray
[3] Face-up tray (printer tray)
[4] Reversing roller
[5] Face-up delivery roller
[6] Feed roller
[7] Feed motor
[8] Face-up flapper
[9] Face-down delivery roller

CHAPTER 2

OPERATION OVERVIEW

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I. BASIC OPERATION

A. Overview

The 7-bin sorter delivers printed paper from the printer to bins with the paper facing upward or downward. In the face-down delivery procedure, the job separator, collator, etc., can be also operated.

These operations are controlled with the 7-bin sorter driver PCB according to various commands issued from the option controller.

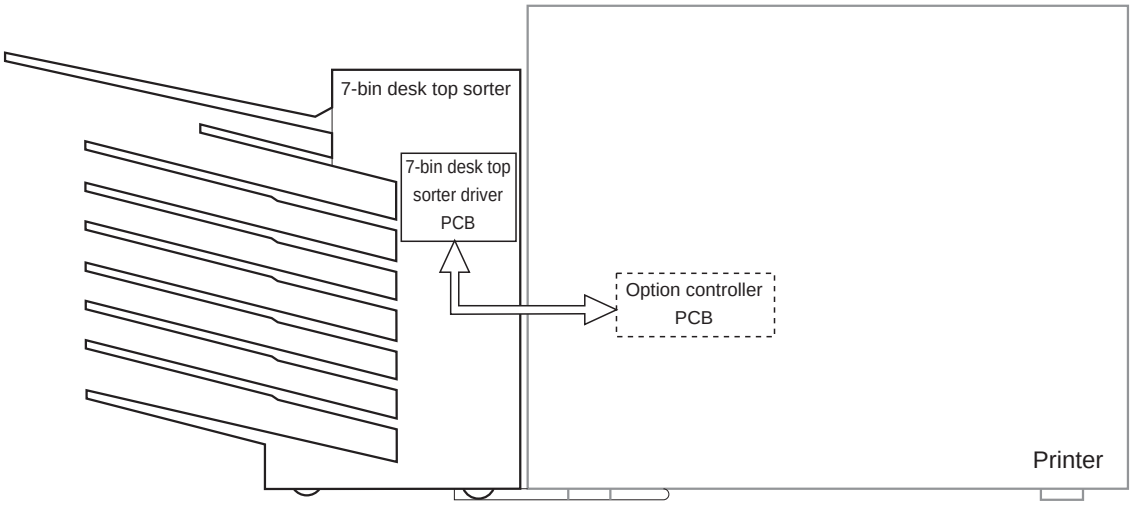

Figure 2-101

B. Electrical Circuits

The operation sequence of the 7-bin sorter is controlled with the 7-bin sorter driver PCB.

The 7-bin sorter driver PCB employs on 8 bit microcomputer (CPU) to be used for the sequence control and serial communication with the option controller PCB.

The 7-bin sorter driver drives the solenoid, motor, etc. under various commands given from the option controller through the serial communication line.

The 7-bin sorter driver sends information on various sensors, switches, etc. to the option controller through the serial communication line.

The IC mounted in the 7-bin sorter driver has major functions as follows:

- Q1 (CPU, EP-ROM, RAM)
- Sequence control
- Sequence program incorporated
- Backup of initial values of data

Flow of signals between the 7-bin sorter and option controller is shown in the figure below.

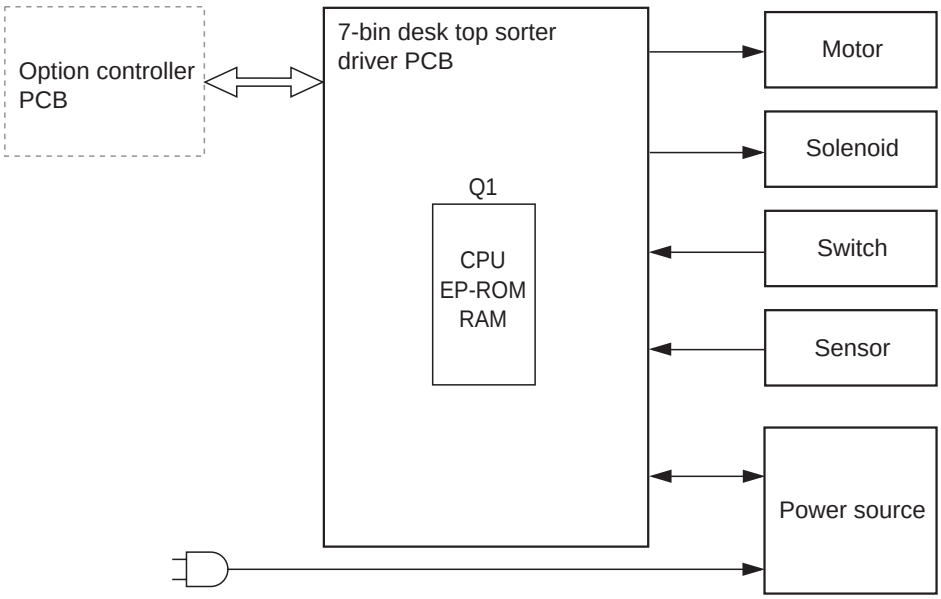

Figure 2-102

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C. Sorter Driver PCB I/O

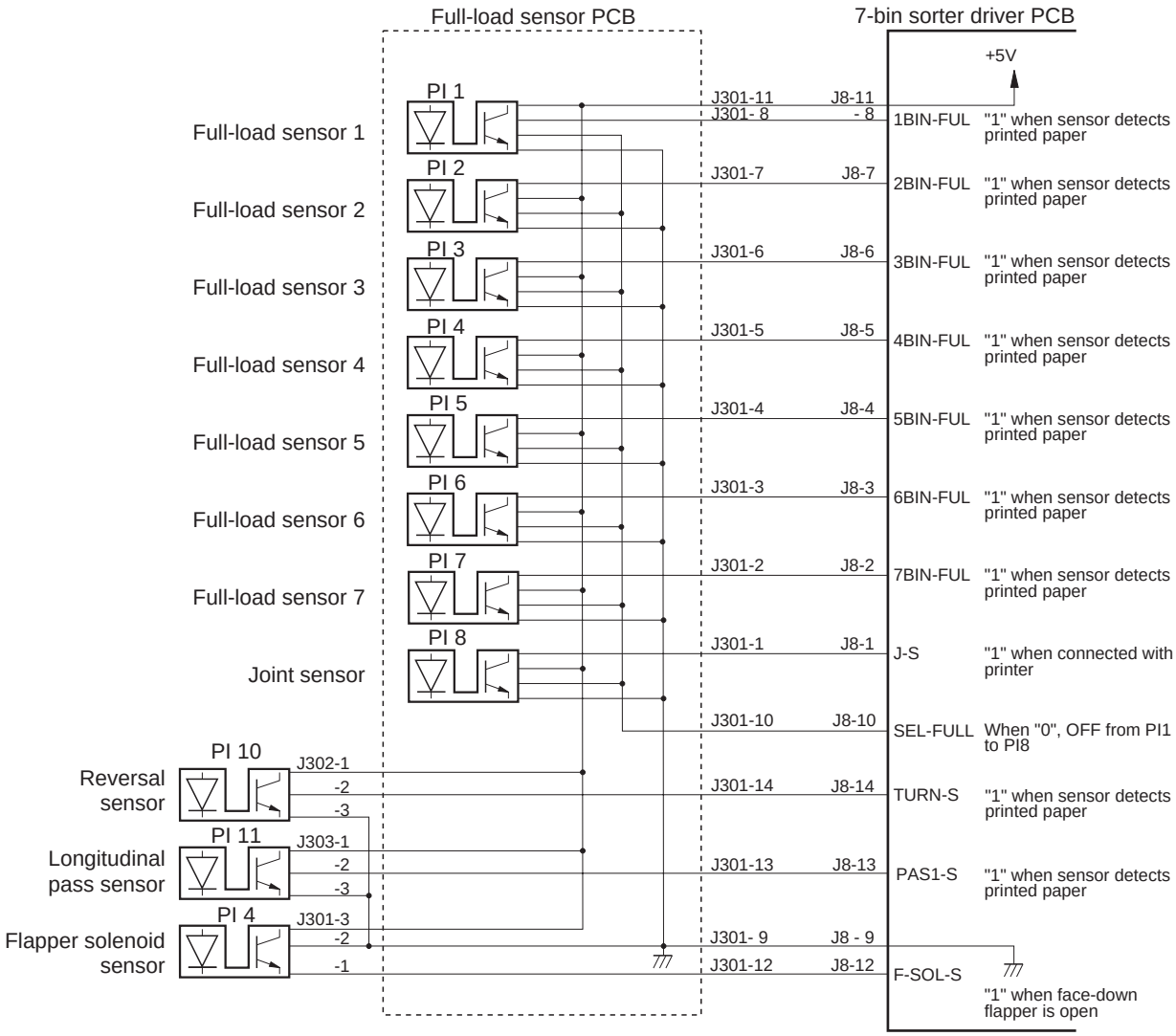

Figure 2-103

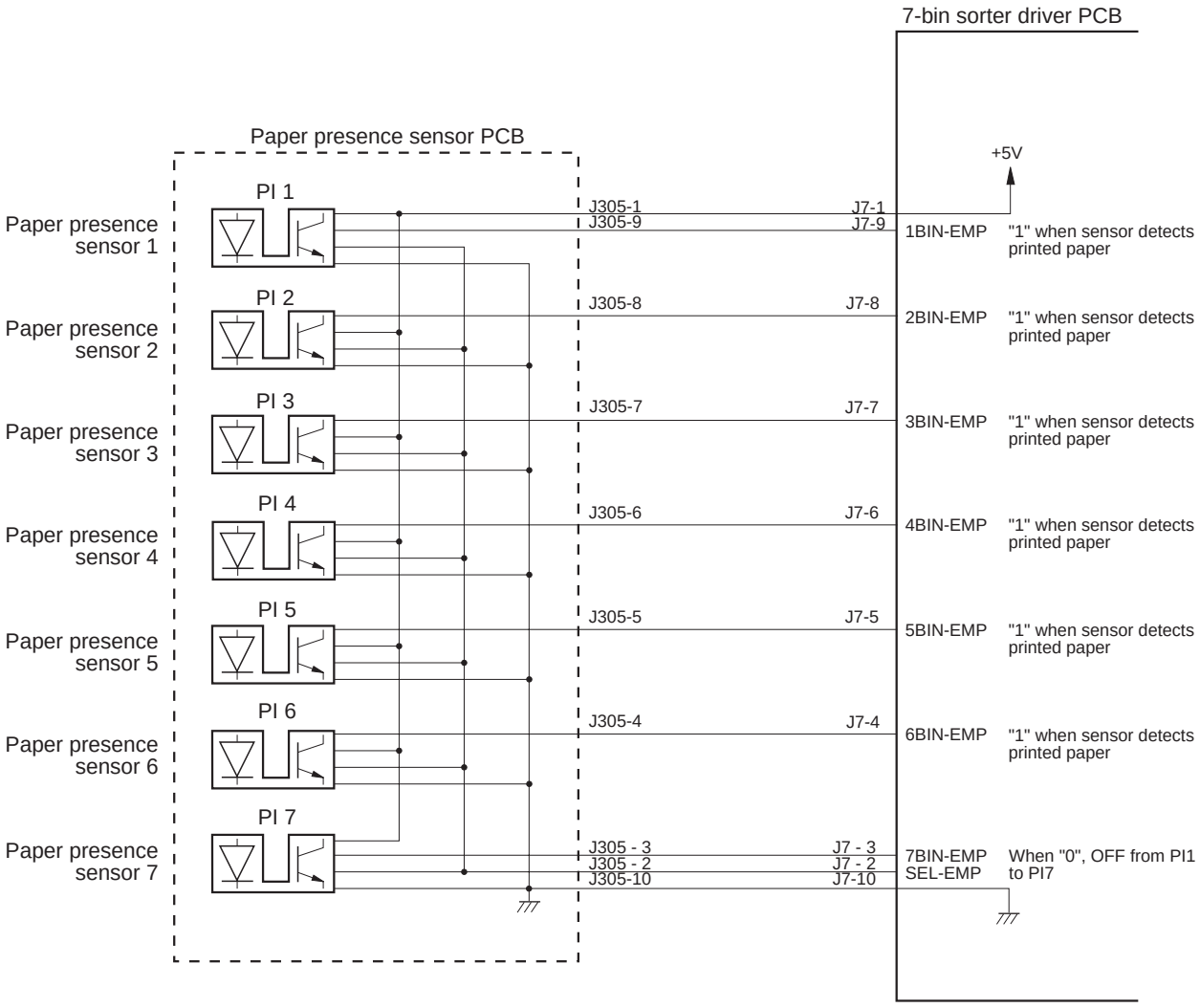

Figure 2-104

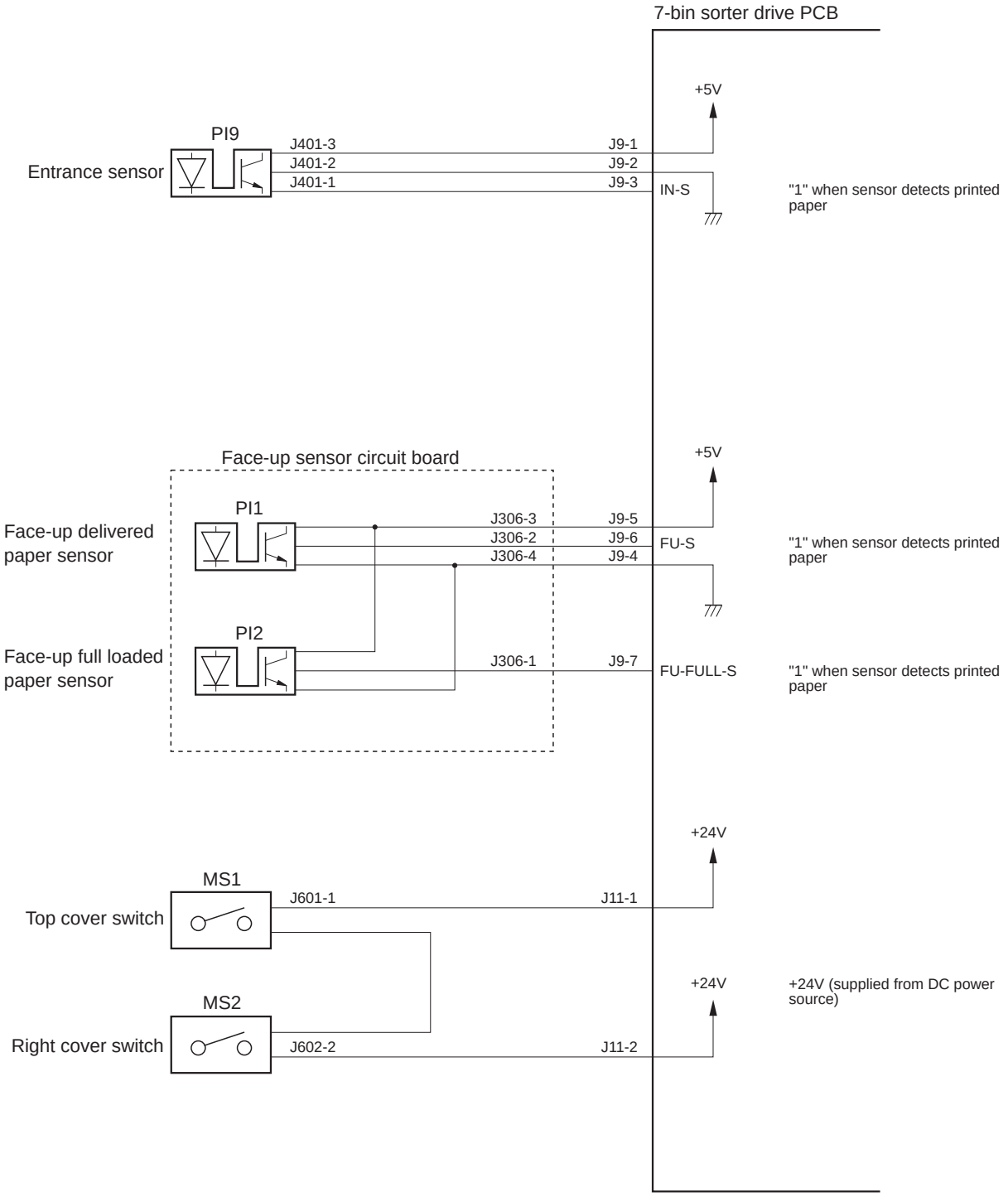

Figure 2-105

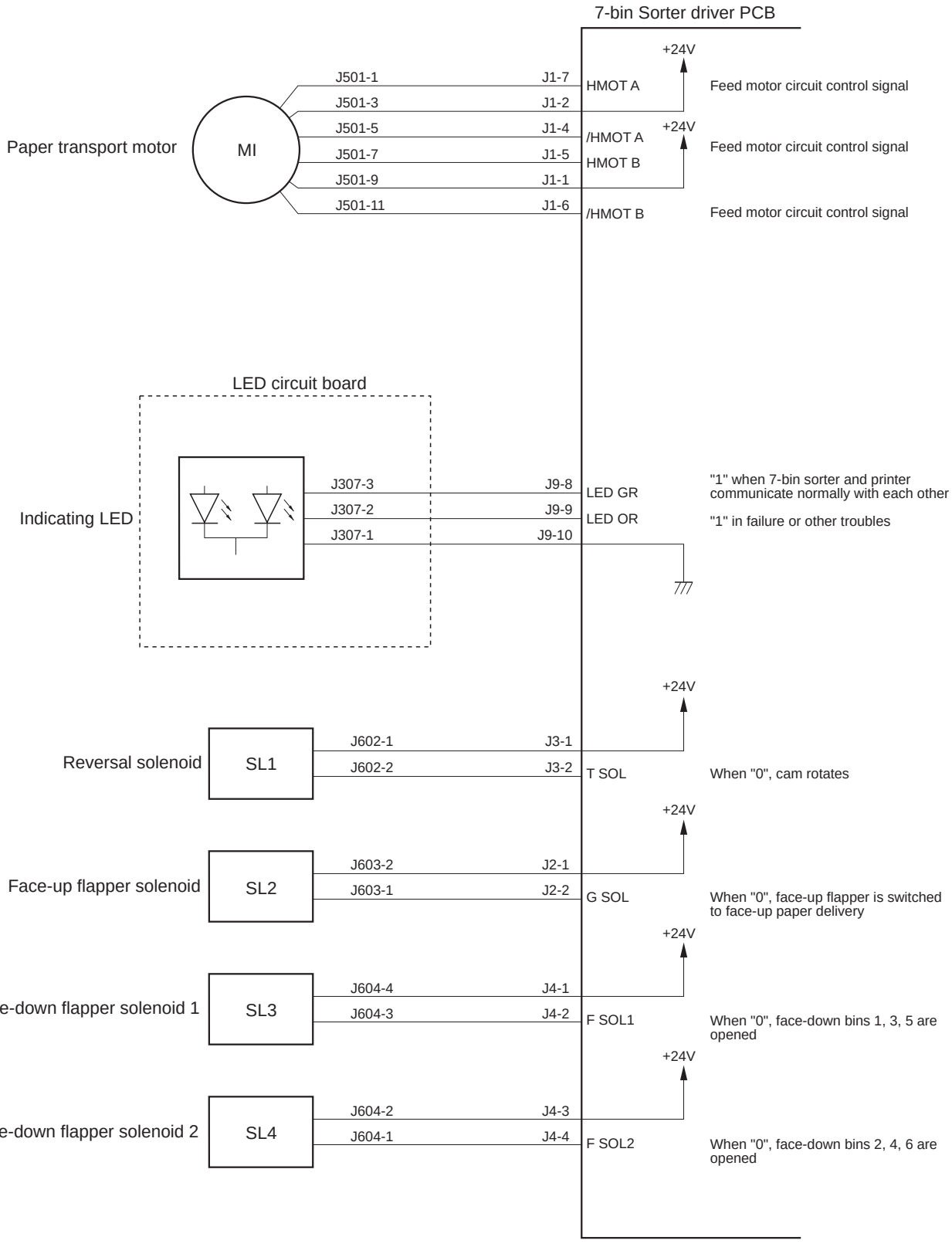

Figure 2-106

II. PICK-UP/DRIVE SYSTEM

A. Overview

This sorter loads printed paper from the printer into the tray according to commands from the option controller circuit board.

- Paper delivery modes
  - Face-down delivery
    - Job separator
    - Stacker
    - Collator
  - Face-up delivery
    - Simple loading

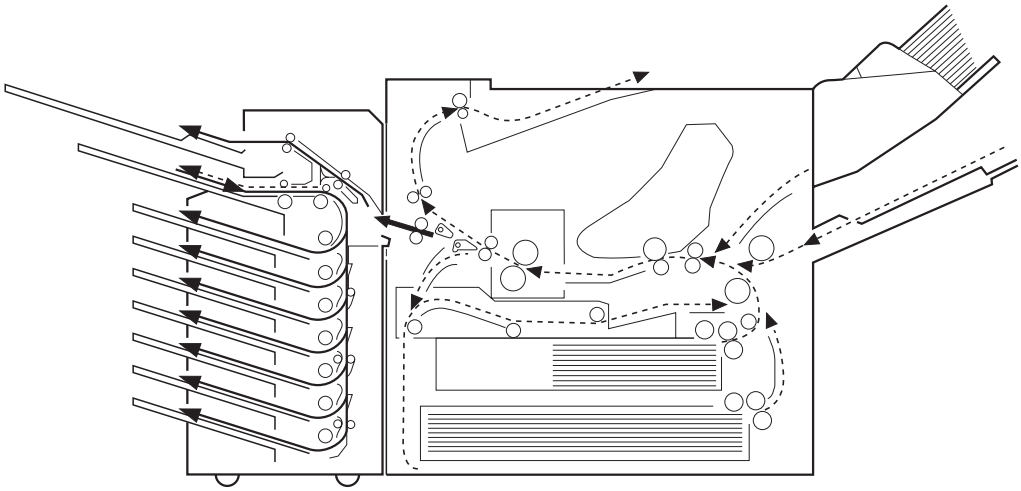

Figure 2-201

1. Face-Down Delivery

a. Job separator, stacker and collator

The printed paper is reversed with the reversal tray and then delivered to a bin as specified or automatically in the paper face-down mode.

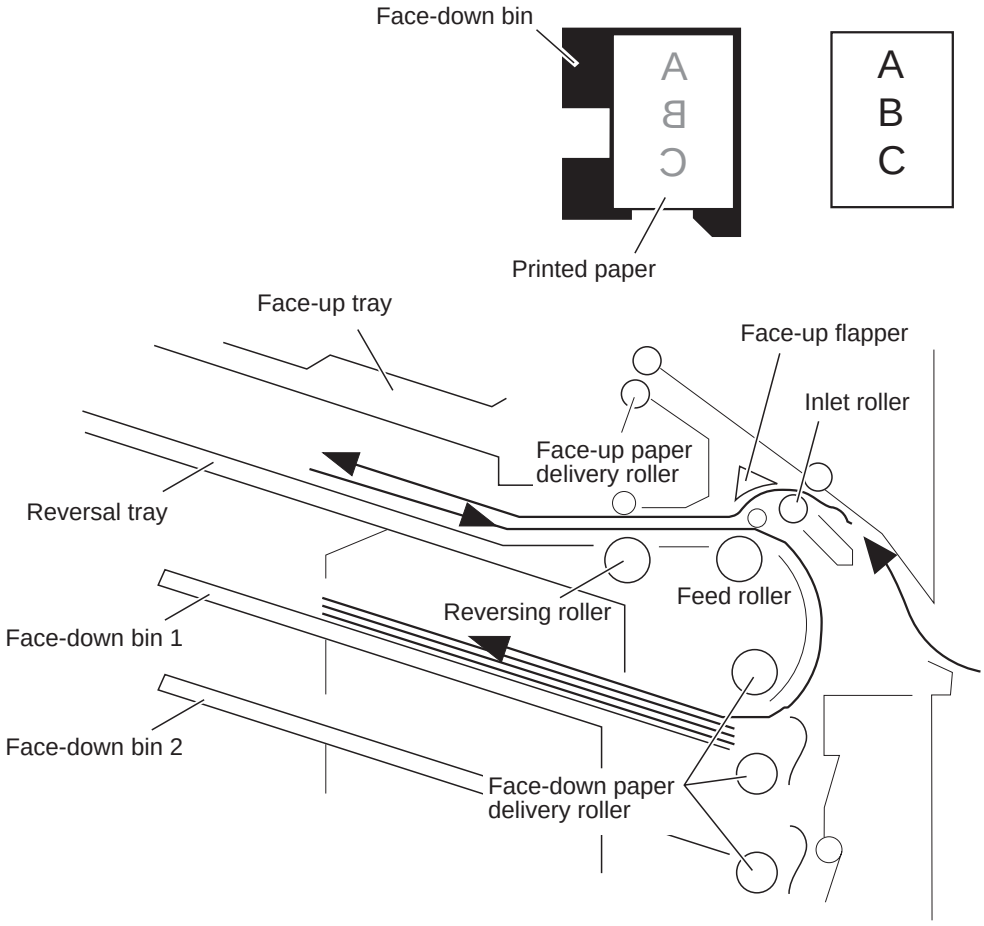

Figure 2-202

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2. Face-Up Delivery

a. Simple loading

Printed paper is delivered to the face-up tray in the face-up mode.

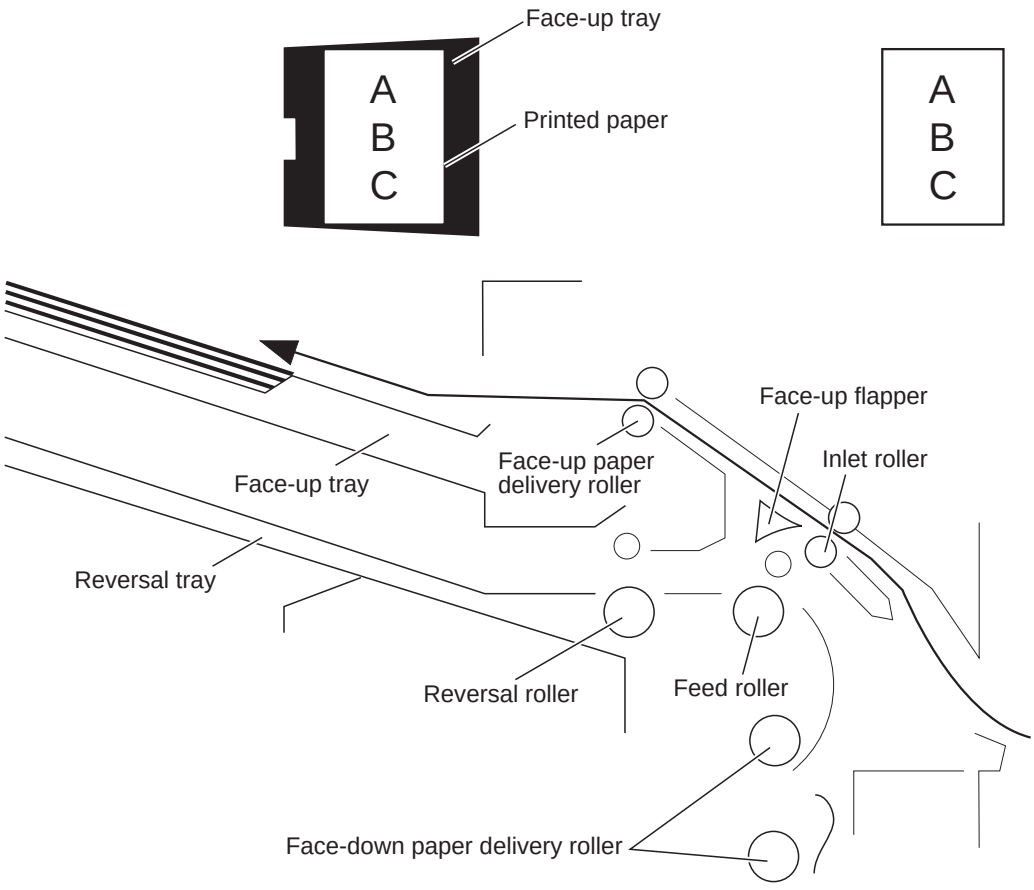

Figure 2-203

B. Pick-up and Delivery

1. Outline

Paper sent from the printer is reversed before being delivered to the face-down bins in the face-down mode.

The feed motor (M1) is a stepping motor. This motor is controlled in forward rotation with the microcomputer (CPU) located on the 7-bin sorter driver PCB.

In the paper path, 11 photo interrupters as follows are provided to detect arrival or passage of print paper: an inlet sensor (PI9), reversal sensor (PI10), longitudinal pass sensor (PI11), face-up delivery sensor (face-up sensor circuit board,PI1), and paper presence sensors (paper presence sensor PCB, PI1~PI7).

If no paper arrives at or passes through the sensors within specified time, the 7-bin sorter driver judges it as occurrence of paper jam, stops the operation and informs the option controller of the occurrence of a paper jam.

Full-load sensors (full-load sensor circuit board, PI1~PI7) and a face-up full-load sensor (face-up sensor circuit board, PI2) are also provided.

When the delivery bins are fully loaded with print paper, the 7-bin sorter driver informs the option controller of the full-load condition. Paper having been already printed by the printer is delivered to the bin.

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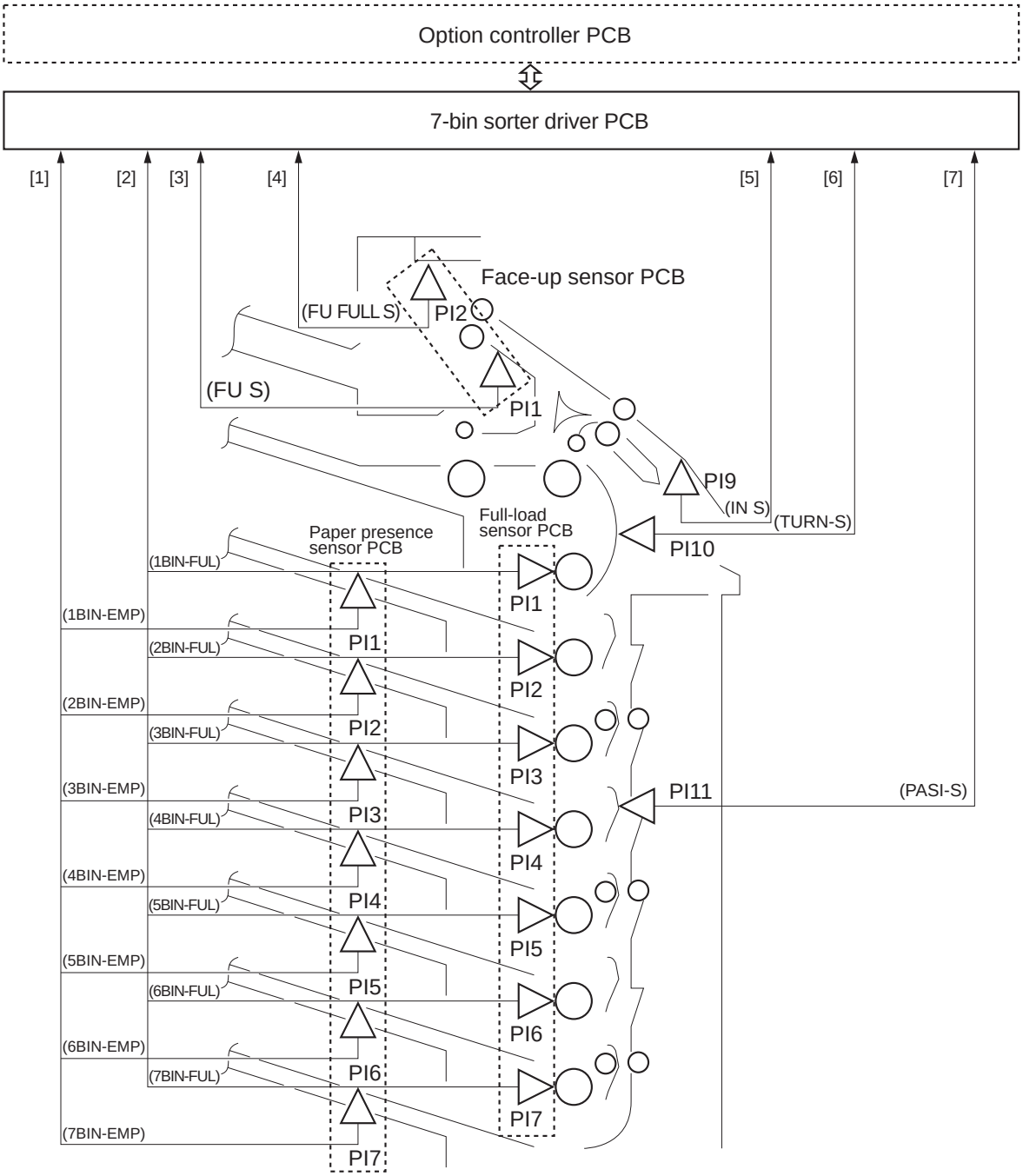


Figure 2-204

[1] Paper presence detection signal
[2] Full-load detection signal
[3] Face-up delivery paper detection signal
[4] Face-up paper full-load detection signal
[5] Inlet paper detection signal
[6] Reversed paper detection signal
[7] Vertical pass paper detection signal

PI9: Inlet sensor
PI10: Reversal sensor
PI11: Longitudinal pass sensor
Face-up sensor PCB (PI1): Face-up delivery paper sensor
Face-up sensor PCB (PI2): Face-up full-load sensor
Full-load sensor PCB (PI1~PI7): Full-load sensor
Paper presence sensor PCB (PI1~PI7): Paper presence detection sensor

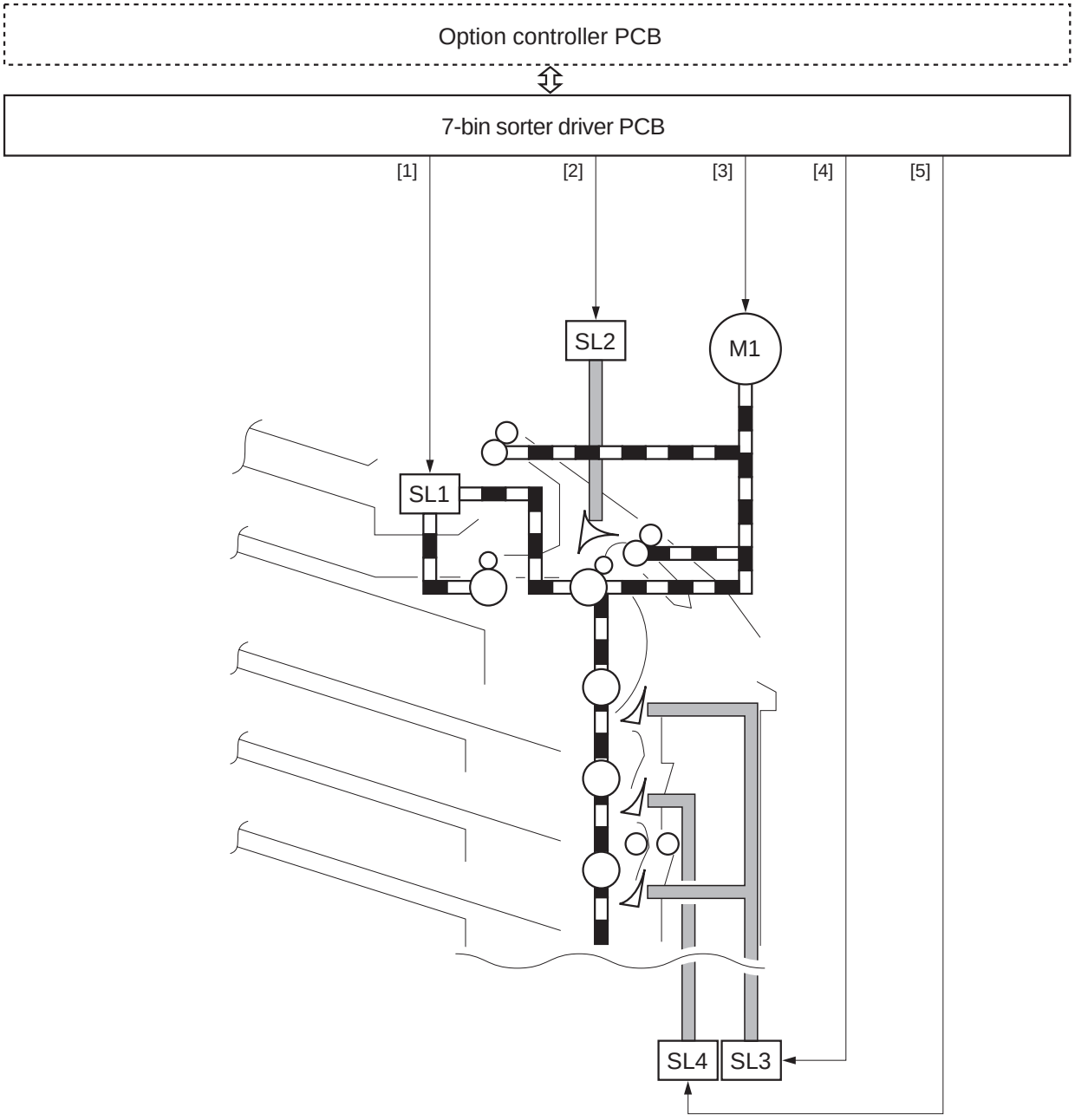


Figure 2-205

M1: Feed motor
SL1: Reversal solenoid
SL2: Face-up flapper solenoid
SL3: Face-down flapper solenoid 1
SL4: Face-down flapper solenoid 2

[1] Reversal solenoid drive signal (T-SOL)
[2] Face-up flapper solenoid drive signal (G-SOL)
[3] Feed motor drive signal (HMOT)
[4] Face-down flapper solenoid 1 drive signal (FSOL-1)
[5] Face-down flapper solenoid 2 drive signal (FSOL-2)

2. Face-Down Feed (reversing operation) and Delivery of Paper

When paper sent from the printer is to be delivered to the bins in the face-down mode, the 7-bin sorter driver PCB receives a command from the option controller, rotates the feed motor (M1), and rotates the inlet roller, reversing roller, paper feed roller and face-down paper delivery roller.

Paper from the printer is sent into the reversal tray by the rotation of the inlet roller. Then, when the inlet sensor (PI9) detects the trailing edge of the printed paper, the reversing solenoid (SL1) is turned ON, the solenoid catch releases the cam, and the M1 drive rotates the cam, and rotates the reversing roller in the forward and then reverse direction. The cam is fixed again with the catch of the solenoid and the reversing roller stops.

By the reverse rotation of the reversing roller, the paper reaches the paper feed roller, is sent in the longitudinal pass mode by reverse rotation of the paper feed roller, fed by rotation of the face-down paper delivery roller, and delivered to a specified face-down bin.

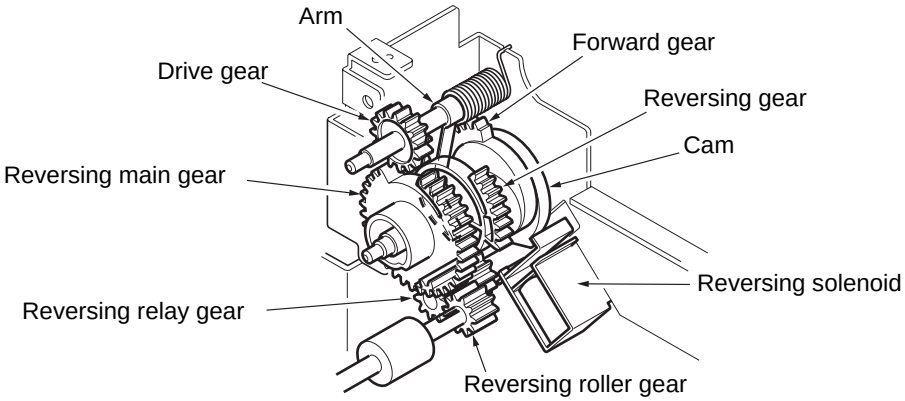
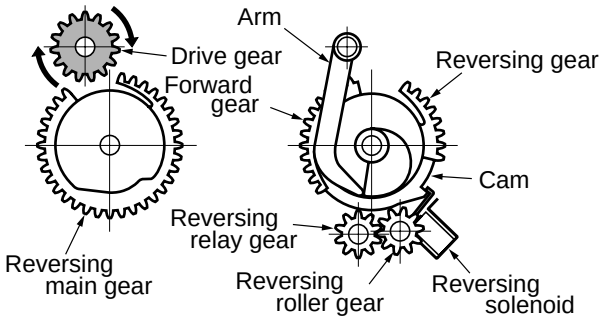


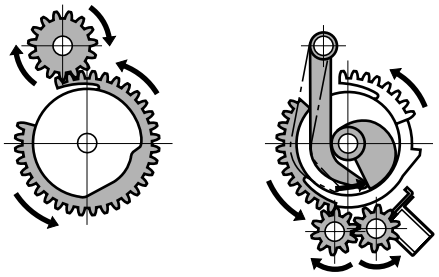
Figure 2-206

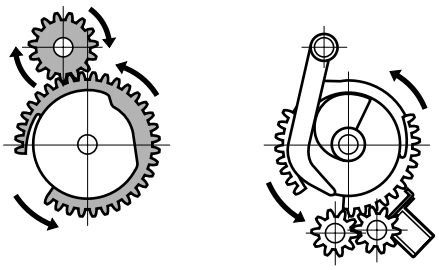
1. Drive gear rotates in the linkage with the rotation of the feed motor (M1). At this time, the reversing main gear, forward gear, and reversing gear do not rotate since the cam is fixed with the catch of the reversing solenoid.



2. When the inlet sensor (PI9) detects the trailing end of the paper, the reversing solenoid (SLI) is turned ON once and the solenoid catch releases the cam. At the same time, the reversing main gear reaches the drive gear under the spring force of the arm and starts rotating in the direction of the arrows. The forward gear rotates in the linkage with the reversing main gear. When the forward gear is engaged with the reversing relay gear, the driving force is transmitted to the reversing roller gear and the reversing roller rotates in the forward direction.

3. When the forward gear is disengaged from the reversing relay gear, the reversing relay gear and reversing roller gear stop rotating.





4. The reversing gear rotates in the linkage with the reversing main gear, the reversing gear is engaged with the reversing roller gear and the reversing roller reverses.

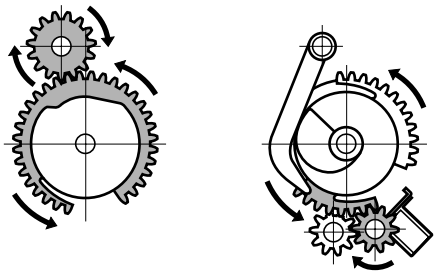


Figure 2-207

3. Face-Up Feed and Delivery

When paper sent from the printer is to be delivered to the bin in the face-up mode, the 7-bin sorter driver receives a command from the option controller, rotates the feed motor (M1) in the forward direction, and rotates the face-up paper delivery roller and inlet roller.

When the inlet sensor (PI9) detects paper sent from the printer, it turns ON the face-up flapper solenoid (SL2) and switches the face-up flapper to the face-up side so that the printed paper is fed without being reversed and delivered to the face-up tray.

C. Job Separation

The job separator operates to switch the face-down bins according to the job to deliver the paper to a bin in the face-down mode. If the paper is of a size not allowing face-down delivery, the paper is delivered to a face-up tray in the face-up mode, instead of being delivered to the face-down bin.

The paper is reversed and fed by the rotation of the paper feed roller and detected with the reverse sensor. Then the 7-bin sorter driver turns ON either the flapper solenoid 1 (SL3) or 2 (SL4) depending on the intended delivery bin, and the paper is delivered to that face-down bin.

When the face-down bin 1, 3, or 5 is specified, the SL 3 is turned ON and when Face-down bin 2, 4, or 6 is specified, SL4 is turned ON. When the face-down bin 7 is specified, neither the SL3 nor 4 is turned ON.

When a delivery bin is loaded with no paper, paper is delivered to it. When multiple bins are empty, paper is delivered from the uppermost empty bin, such as 1, then 2, and so on. When all delivery bins are empty, paper is delivered in succession from bin 1 to lower ones.

When no delivery bin is empty any more, the paper is delivered to the bin which has been unused the longest. Subsequent jobs are delivered to the bin below the one of the previous job until one delivery bin is emptied. When the previous job was delivered to the face-down bin 7, the next job is delivered to the face-down bin 1.

If there is paper in bins when power is turned ON, an unoccupied bin is searched in the order of the face-down bin 1, 2 and so on and the paper is delivered in that order. When there is no more empty delivery bin, the paper is delivered to the bin which was the uppermost one when the power was turned ON. Subsequent jobs are delivered to bins subsequent to the previous job in succession until one bin is emptied. When the previous job was delivered to the face-down bin 7, the following job is delivered to face-down bin 1. When the bin to be delivered is fully loaded, the paper is delivered to the bin below the fully loaded bin.

When the bin is fully loaded, the 7-bin sorter driver circuit board notifies the option controller circuit board of the full-loaded condition. However, if some paper has been already printed, it is delivered to a bin.

By unloading the bins, the printer resumes printing and delivery of paper to a specified bin is continued.

D. Stacker

In the stacker operation, the 7 face-down bins are handled as 1 bin. Paper is delivered in the face-down mode from the lowest bin 7. When bin 7 becomes full, delivery is switched to bin 6, and then to 5, and so on to upper ones. If the paper is of a size not allowing face-down delivery, it is delivered to a face-up tray in the face-up mode, instead of being delivered to the face-down bin.

The paper is reversed and fed by the rotation of the paper feed roller and is detected by the reverse sensor. Then the 7-bin sorter driver turns ON either the flapper solenoid 1 (SL3) or 2 (SL4) depending on the intended delivery bin, and the paper is delivered to the specified face-down bin.

When face-down bin 1, 3, or 5 is specified, the SL 3 is turned ON and when Face-down bin 2, 4, or 6 is specified, SL4 is turned ON. When the face-down bin 7 is specified, neither the SL3 nor 4 is turned ON.

Paper is delivered in the face-down mode from the face-down bin 7 in succession to upper one. When power is turned OFF and then ON again, delivery is started from the uppermost bin among those containing printed paper.

When all of the face-down bins are fully loaded, the 7-bin sorter driver notifies the option controller of the full-loaded condition. However, the paper already being printed is delivered to a bin. When all the face-down bins are unloaded, the 7-bin sorter driver notifies the option controller of the unloaded paper delivery bin condition and the printer resumes printing and paper is delivered from the lowermost face-down bin 7.

E. Collator

The collator is designed so that, when multiple sheets of documents are printed multiple times, the first sheet is delivered to the uppermost face-down bin 1, the second sheet to the bin below the first one, and so one, changing the bins every time of delivery in the face-down mode.

If the paper is of a size not allowing face-down delivery, the paper is delivered to a face-up tray in the face-up mode, instead of being delivered to the face-down bin.

Paper is reversed and fed by the rotation of the paper feed roller and is detected with the reverse sensor. Then, the 7-bin sorter driver turns ON either the flapper solenoid 1 (FL3) or 2 (FL4) depending on the intended delivery bin, so that paper is delivered to the specified face-down bin.

When face-down bin 1, 3, or 5 is specified, the SL 3 is turned ON and when Face-down bin 2, 4, or 6 is specified, SL4 is turned ON. When face-down bin 7 is specified, neither the SL3 nor 4 is turned ON.

Paper is delivered from the bin 1 in succession to the lower one in the face-down mode, whether there are empty bins or not. When there are more than 7 pages after the paper is delivered to bin 7, the bin is shifted to the uppermost face-down bin 1 and paper is delivered to it, followed by the bin 2, bin 3, and so on.

When one bin is fully loaded, the 7-bin sorter driver informs the option controller of the full loaded condition. Paper already printed is delivered to a bin. By removing the paper loaded in the bins, the printer resumes printing and paper delivery to specified bins is continued.

F. Jam Detection

Paper sensors are provided as follows to detect the presence of paper, and whether it is being normally fed:

- o Inlet paper sensor (PI9)
- o Reversed paper sensor (PI0)
- o Longitudinal pass sensor (PI11)
- o Face-up delivery paper sensor (face up sensor circuit board, PI1)

Paper jam is judged by whether there is paper at the sensor position at the check times memorized in the micro-computer (CPU) located on the 7-bin sorter driver. If the CPU judges it to be a jam, delivery to the 7-bin sorter, or warming up, is discontinued and jam occurrence is notified to the option controller.

1. Jam due to paper remaining in machine

If the inlet sensor (PI9), reversal sensor (PI10), or longitudinal pass sensor (PI11) detects paper during the warming up process, the CPU judges it as a jam of paper remaining in the machine.

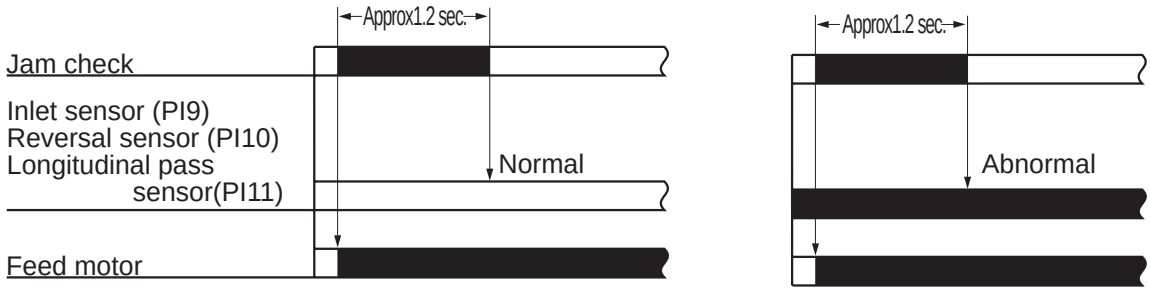


Figure 2-208

2. Jam Due to Too Early Paper Arrival at Inlet

When the inlet sensor (PI9) detects paper arrival without receiving paper feed notification from the option controller, the CPU judges it as a jam due to too early paper arrival at the inlet.

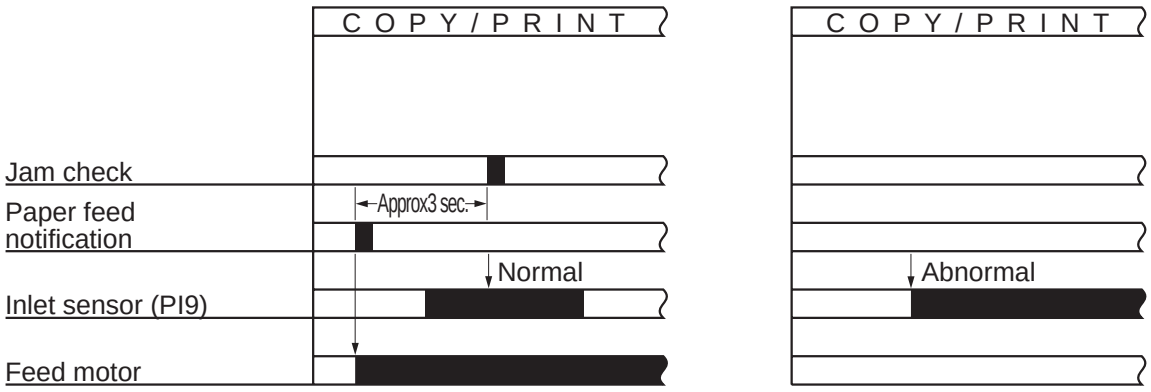


Figure 2-209

3. Inlet Delay Jam

If the leading edge of paper does not reach the inlet sensor (PI9) within specified time after the paper feed notification was received from the option controller, the CPU judges it as inlet delay jam.

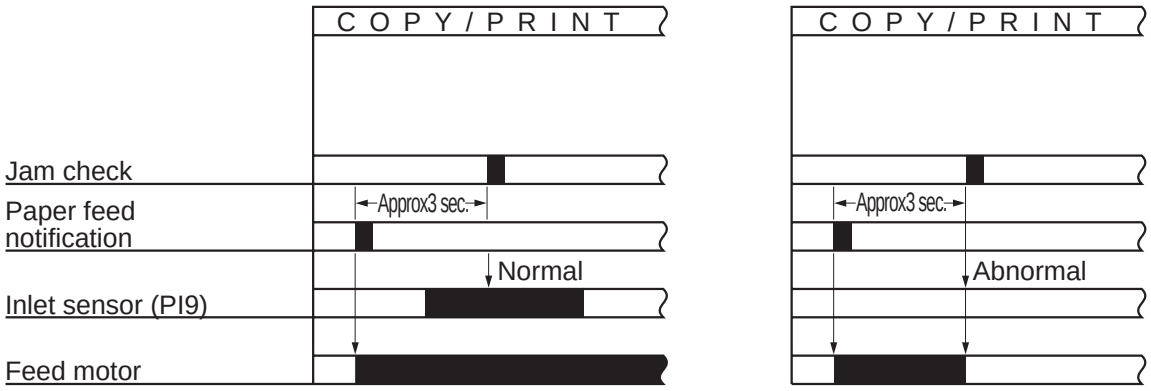
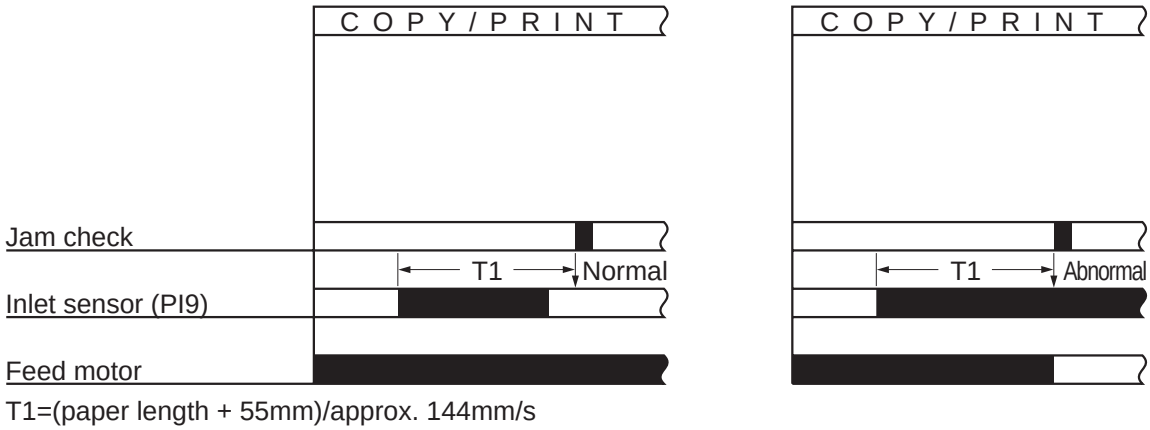


Figure 2-210

4. Inlet Stationary Jam

If the trailing edge of the paper does not pass through the inlet sensor (PI9) after the Leading edge of that paper arrived at the inlet sensor (PI9) and was fed for the specified time, the CPU judges it as inlet stationary jam.



T1=(paper length + 55mm)/approx. 144mm/s

Figure 2-211

5. Face-up Delivery Paper Delay Jam

If the Leading edge of the paper does not reach the face-up delivery paper sensor (face-up sensor circuit board, PI1) after the trailing edge of that paper passed through the inlet sensor (PI9) and was fed for the specified time, the CPU judges it as face-up delivery paper delay jam.

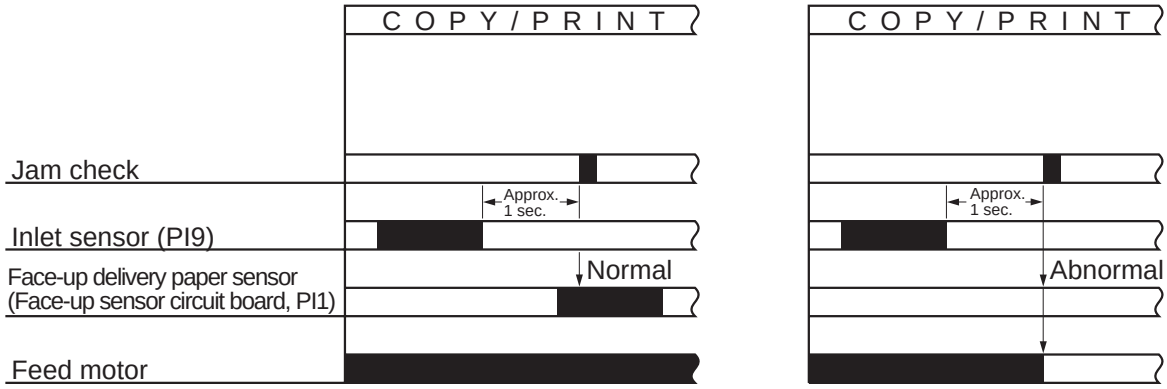


Figure 2-212

6. Face-up Delivery Paper Stationary Jam

If the trailing edge of the paper does not pass through the face-up delivery paper sensor (face-up sensor PCB, PI1) after the Leading edge of that paper arrived at that sensor (face-up sensor PCB, PI1) and was fed for the specified time, the CPU judges it as face-up delivery paper stationary jam.

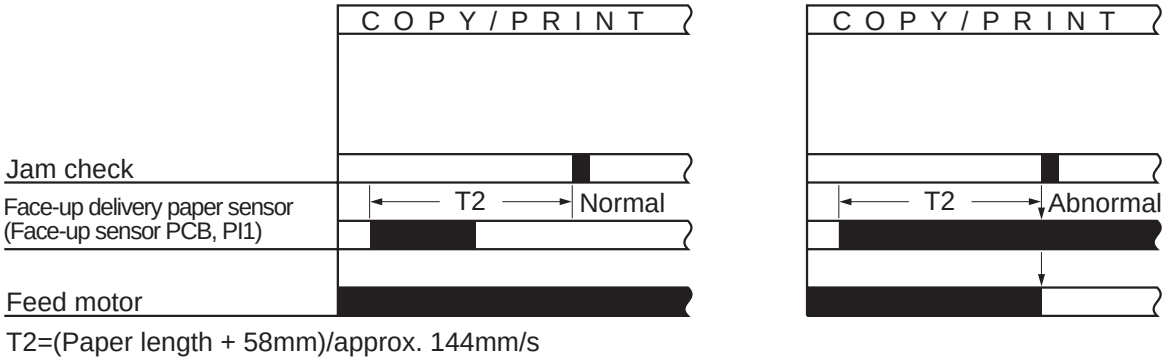


Figure 2-213

7. Reverse Delay Jam

If the Front edge of the paper does not reach the reverse paper sensor (PI10) after the trailing edge of that paper passed the inlet sensor (PI9) and was fed for the specified time, the CPU judges it as reverse delay jam.

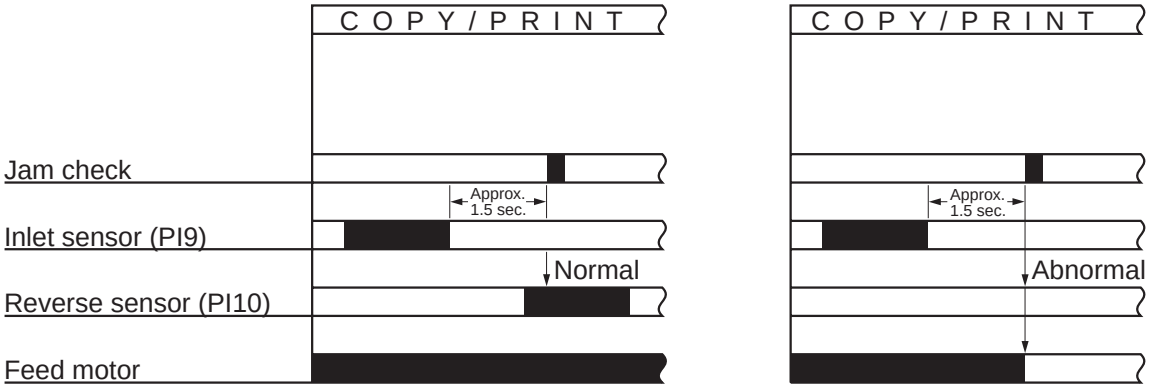


Figure 2-214

8. Reverse Stationary Jam

If the trailing edge of the paper does not pass the reverse sensor (PI10) after the Leading edge of that paper arrived at the sensor (PI10) and was fed for the specified time, the CPU judges it as reverse stationary jam.

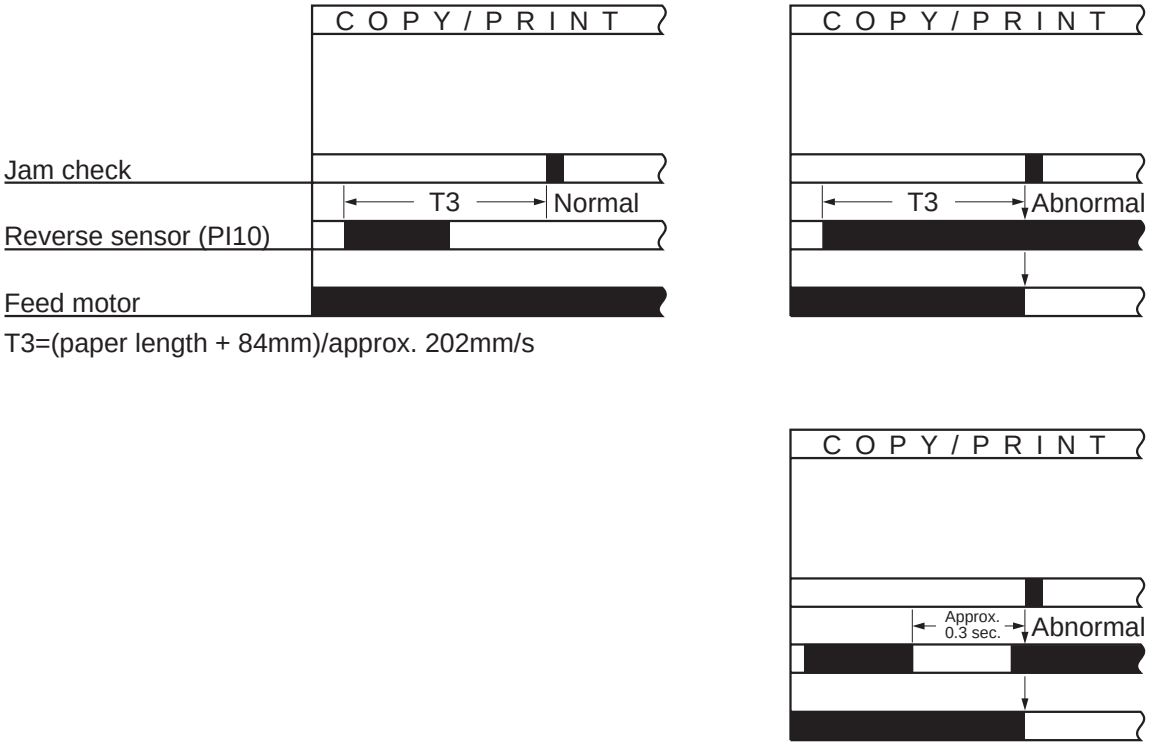


Figure 2-215

9. Longitudinal Pass Delay Jam (only when paper is delivered to face-down bins 4 ~ 7)

If the Leading edge of the paper does not reach the longitudinal pass sensor (PI11) after the Leading edge of that paper passed through the reverse sensor (PI10) and was fed for the specified time, the CPU judges it as longitudinal pass delay jam.

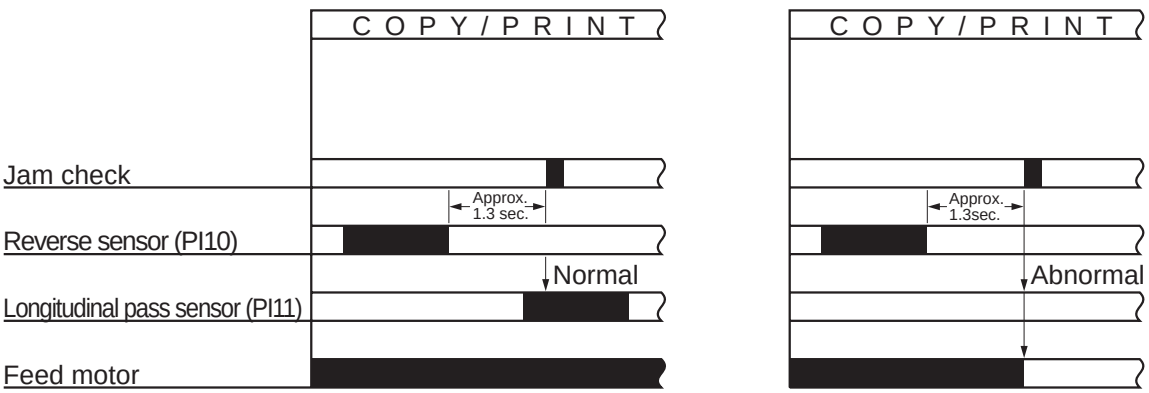


Figure 2-216

10. Longitudinal Pass Stationary Jam (only when paper is delivered to face- down bins 4 ~ 7)

If the trailing edge of the paper does not pass through the longitudinal pass sensor (PI11) after the Leading edge of that paper reached that sensor (PI11) and was fed for the specified time, the CPU judges it as a longitudinal pass stationary jam. Or, if the longitudinal pass sensor (PI11) is turned ON about 0.3 seconds after the trailing edge of the paper passed the longitudinal pass sensor (PI11), CPU judges it as a reverse stationary jam.

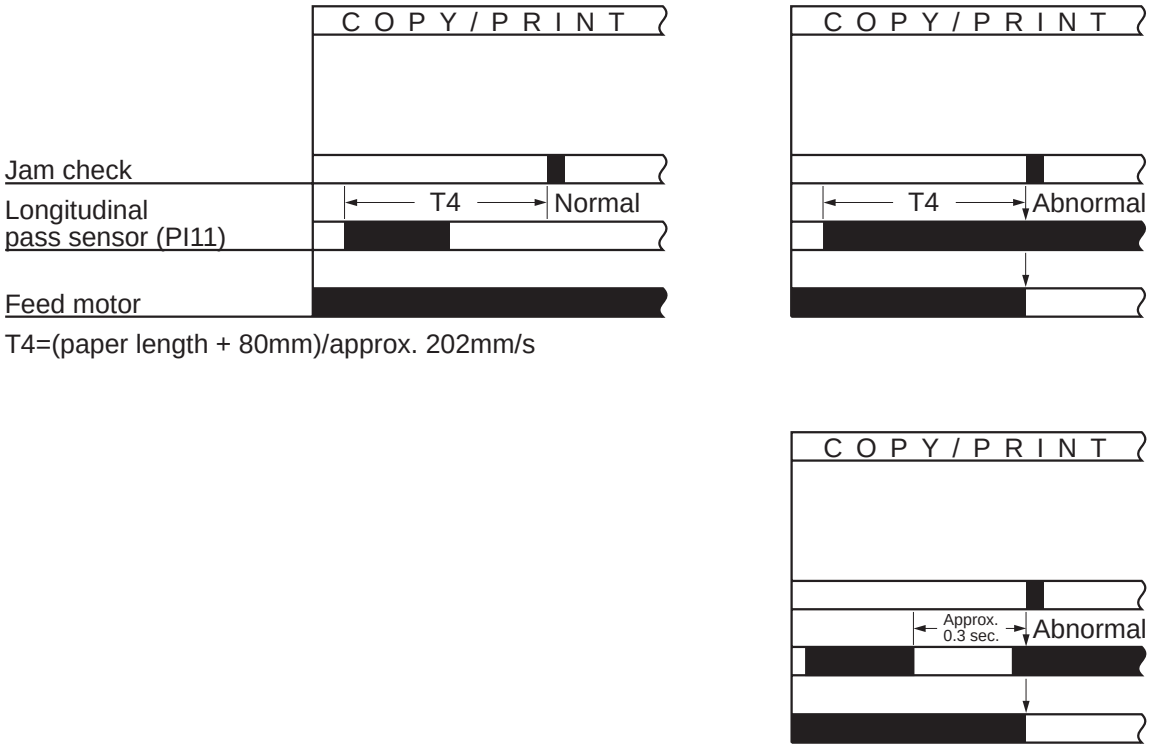


Figure 2-217

SORTER-H1 REV. 0 JAN. 1999 PRINTED IN JAPAN (IMPRIME AU JAPON)

III. POWER SUPPLY

A. Overview

The remote switch system is used for the power supply unit of this machine.

When the power switch of the printer is turned ON, the printer gives a command to the option controller. The option controller issues power ON signal (PWRON-IN) to the power supply unit through the 7-bin sorter driver, according to the command to turn ON the power. The power supply circuit supplies power of +24V to the 7-bin sorter driver when the PWRON-IN signal is "H".

+24V is used for driving the feed motor, solenoids, and others. +5V is used for sensors, ICs in the 7-bin sorter driver PCB, and others.

A stand-alone mode switch is provided on the power supply PCB, to allow to control power ON/OFF without power ON signal (PWRON-IN), for self-running mode and sensor check mode.

Block diagram is shown below.

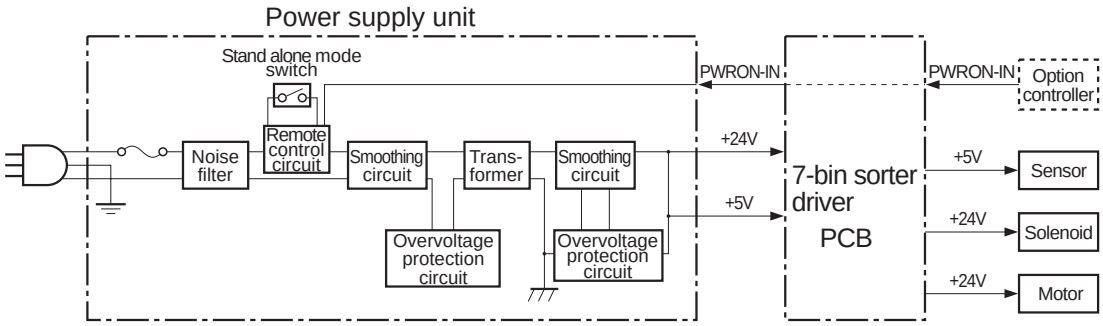


Figure 2-301

B. Protective Functions

The +24V power supply circuit has an overcurrent protection function to prevent failure of the power circuit by cutting off the output voltage automatically when a short-circuit or other trouble occurs on the load side causing overcurrent. An overvoltage protection function is also provided to cut off the output voltage automatically to protect the power supply circuit from failure when voltage of 27 ~ 32V is detected in the +24V power supply circuit and voltage of 6 ~ 10V in the +5V power circuit.

Therefore, when the overcurrent and overvoltage protective functions are activated so that no DC voltage is obtained from the power supply circuit, it is necessary to turn the printer power switch OFF, correct the trouble on the load side, and then turn ON the power supply again.

CHAPTER 3

MECHANICAL SYSTEM

This chapter describes mechanical features and operations as well as disassembly and assembly procedures.

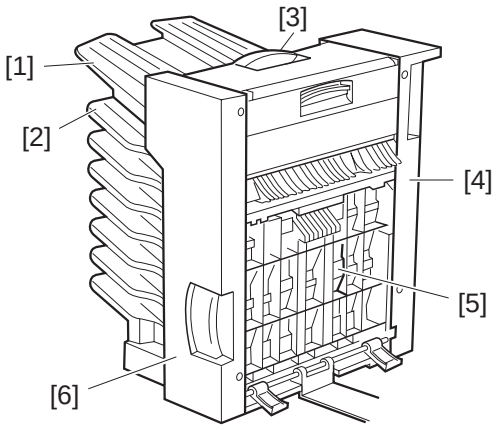
The following precautions must be observed during disassembly and assembly work.

1. For the sake of safety, disconnect the power plug before performing any disassembly or assembly work.
2. Unless otherwise specified, assembly work is performed in the reverse order of the disassem bly operations.
3. Be sure to use the right type (diameter and length) or screws in the right places.
4. An inner-clip washer is used with one securing screw on the earth wires and varistors, etc., to prevent buildup of static electricity. Make sure to use this washer during assembly work.
5. In principal, the copier must not be operated when parts have been removed.
6. Paint locked screws are not to be removed during disassembly.

 SORTER-H1 REV. 0 JAN. 1999 PRINTED IN JAPAN (IMPRIME AU JAPON)

I. EXTERNAL COVER CONTROL

A. Outer Covers

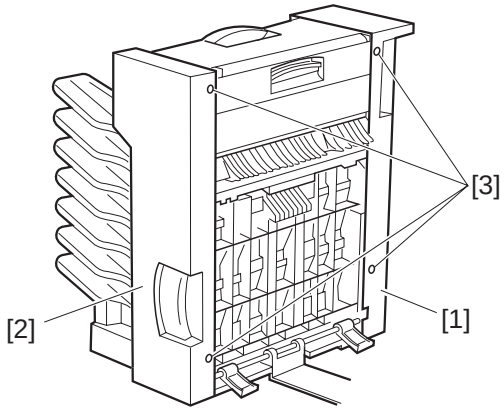


[1] Reverse tray [2] Bin
[3] Top cover [4] Rear cover
[5] Right cover [6] Front cover

Figure 3-101

1. Front / Rear Covers

1) Remove the 4 screws.

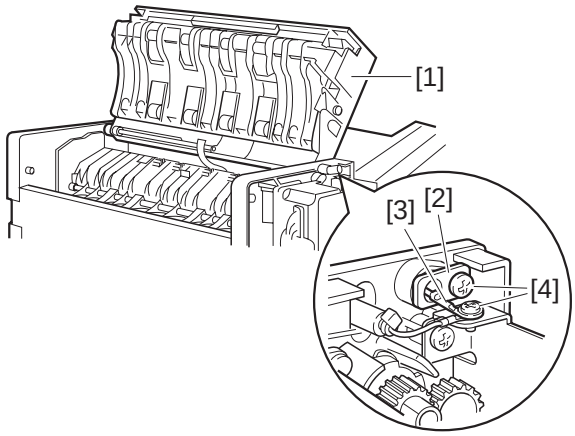


[1] Rear cover [2] Front cover
[3] Screw

Figure 3-102

2. Top Cover

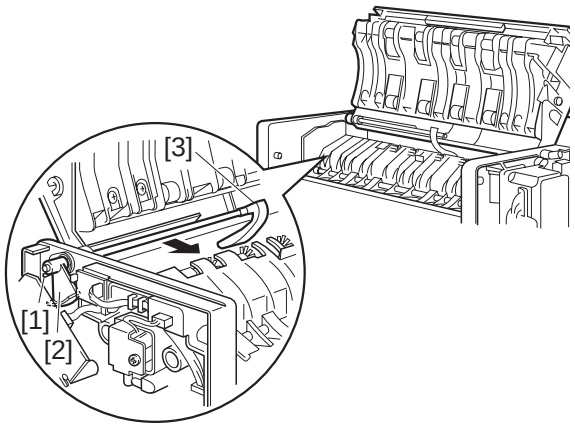
1) Open the top cover.
2) Remove the 2 screws, remove the top cover bracket and disconnect the earth wire.



[1] Top cover [2] Top cover bracket
[3] Grounding wire [4] Screw

Figure 3-103

3) Holding the catch, remove the sensor flag.
4) Bend and remove the full-load sensor lever.

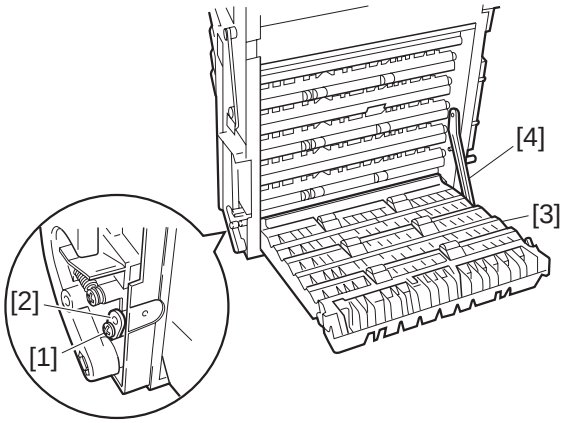


[1] Catch [2] Sensor flag
[3] Full-load sensor lever

Figure 3-104

3. Right Cover

1) Remove the screw and remove the right cover bracket.
2) Open the right cover and, lifting it up, remove it from the side frame stopper.

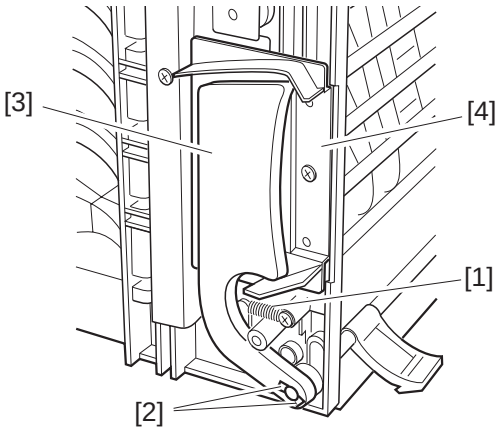


[1] Screw [2] Right cover bracket
[3] Right cover [4] Side frame stopper

Figure 3-105

4. Sorter bin

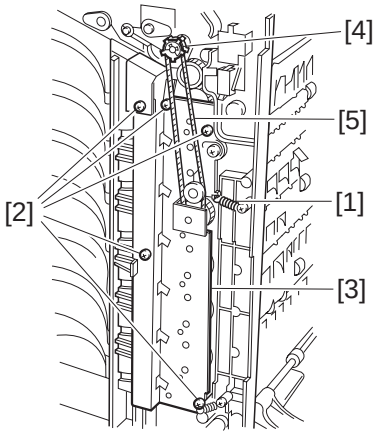
1) Remove the spring.
2) Release the catch and remove the latch lever.
3) Remove the screw and detach the latch cover.



[1] Spring [2] Catch
[3] Latch lever [4] Latch cover

Figure 3-106

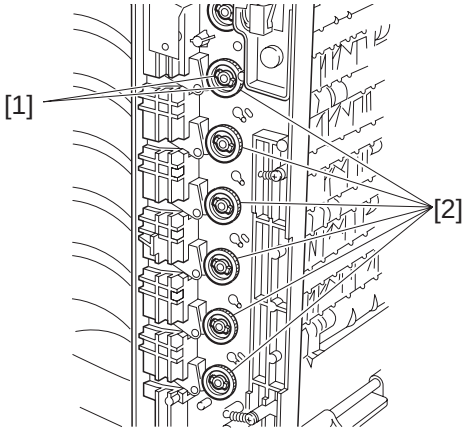
4) Remove the spring.
5) Remove the 5 screws, remove the belt from the roller gear, and then remove the face-down paper delivery gear, lifting it up slightly.



[1] Spring [2] Screw
[3] Face-down paper delivery gear set
[4] Roller gear [5] Belt

Figure 3-107

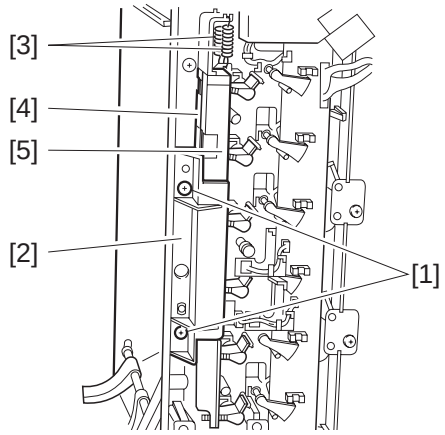
6) Remove the face-down paper delivery gears at 6 points, releasing the catch.



[1] Catch
[2] Face-down paper delivery gear

Figure 3-108

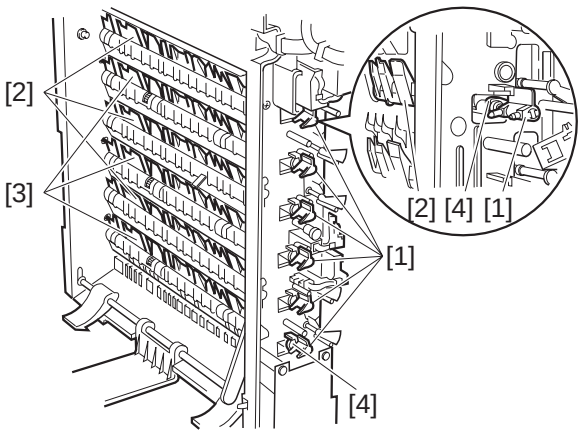
7) Remove the 2 screws and remove the flapper link guide.
8) Remove only the lower one of 2 springs and remove the flapper links 1 and 2.



[1] Screw [2] Flapper link guide
[3] Spring [4] Flapper link 1
[5] Flapper link 2

Figure 3-109

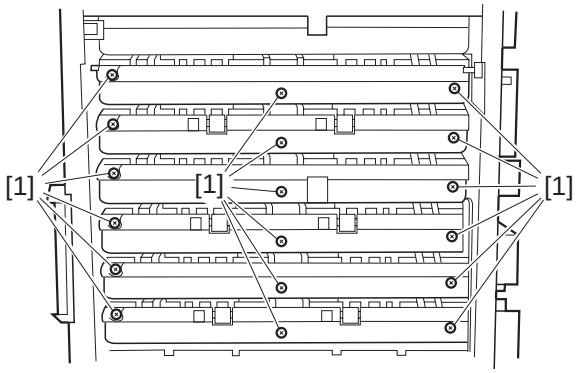
9) Remove the 6 flapper arms pulling them Forward.
10) Detach the flappers 1 and 2 from the frame catch.
11) Slide the flappers 1 and 2 to the right, remove them.



[1] Flapper arm [2] Flapper 1
[3] Flapper 2 [4] Catch

Figure 3-110

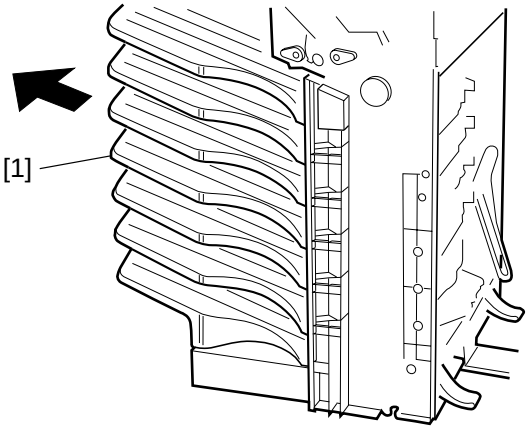
12) Remove the 18 screws .



[1] Screw

Figure 3-111

13) Remove the bin, pulling it to the left side.



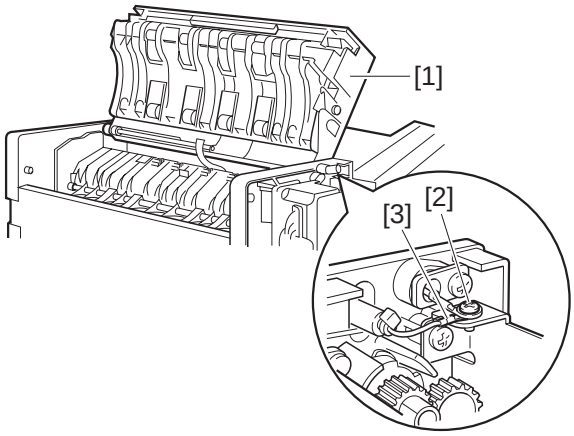
[1] Bin

Figure 3-112

II. PAPER FEED SYSTEM

1. Paper Delivery Guide Assembly

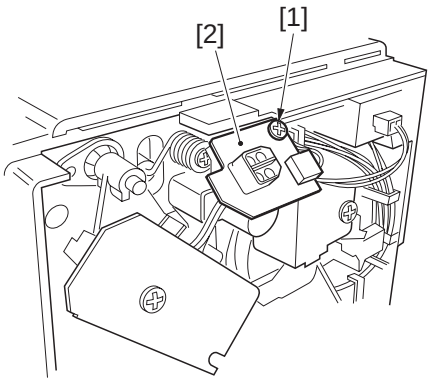
1) Refer to the instructions on page 3-1, and detach the front and rear covers.
2) Open the top cover, remove the screw and disconnect the earth wire.



[1] Top cover [2] Screw
[3] Earth wire

Figure 3-201

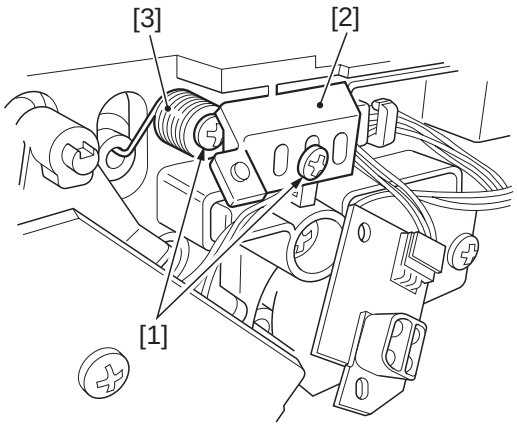
3) Remove the screw and remove the LED PCB.



[1] Screw [2] LED PCB

Figure 3-202

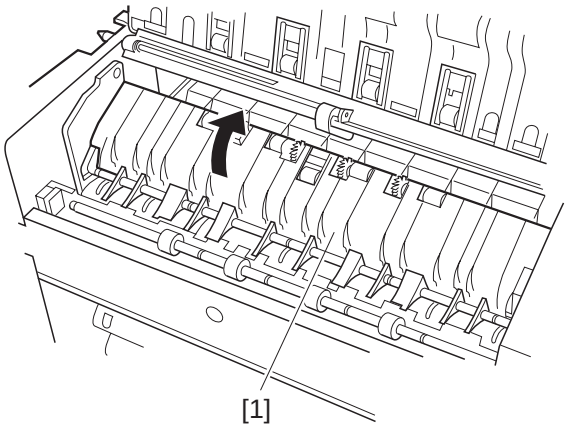
4) Remove the screw and remove the LED PCB mounting base.
5) Remove the screw and remove the cam tension spring.



[1] Screw
[2] LED PCB mounting base
[3] Cam tension spring

Figure 3-203

6) Lift up the paper delivery guide assembly from the left side first.

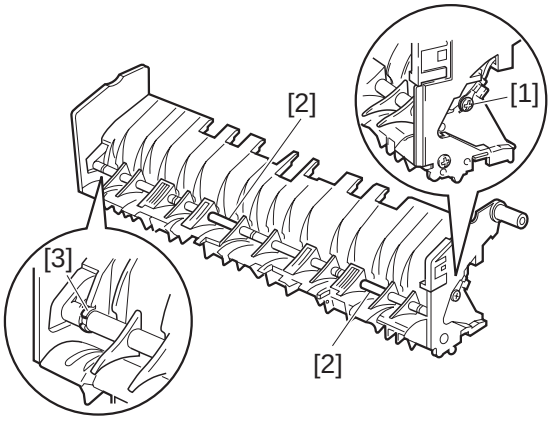


[1] Paper delivery guide assembly

Figure 3-204

2. Face-up flapper

1) Remove the screw.
2) Detach the face-up flapper from the catch and remove it, shifting it to the left.

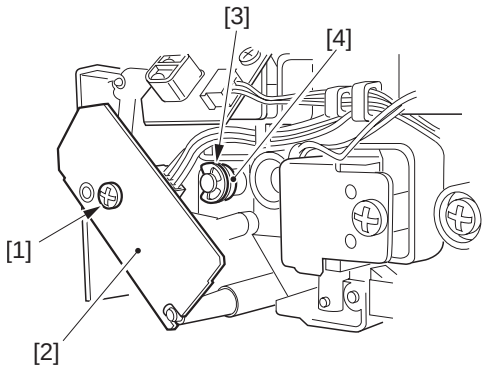


[1] Screw [2] Face-up flapper
[3] Catch

Figure 3-205

3. Face-up Paper Delivery Roller

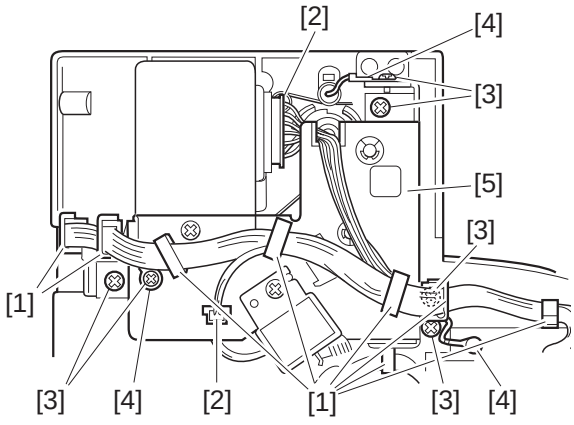
1) Refer to the instructions on page 3-1, and detach the front and rear covers.
2) Remove a screw and remove the face-up sensor circuit board.
3) Remove the E-ring and remove the bearing.



[1] Screw
[2] Face-up sensor circuit board
[3] E-ring [4] Bearing

Figure 3-206

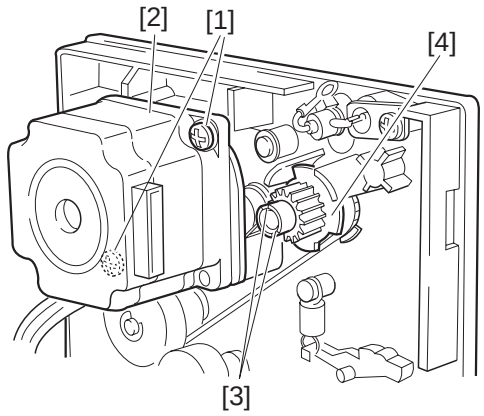
4) Remove the 8 cable fixtures and disconnect the 2 connectors.
5) Remove the 6 screws, and remove the grounding wires and motor bracket.



[1] Cable fixture [2] Connector
[3] Screw [4] Grounding wire
[5] Motor bracket

Figure 3-207

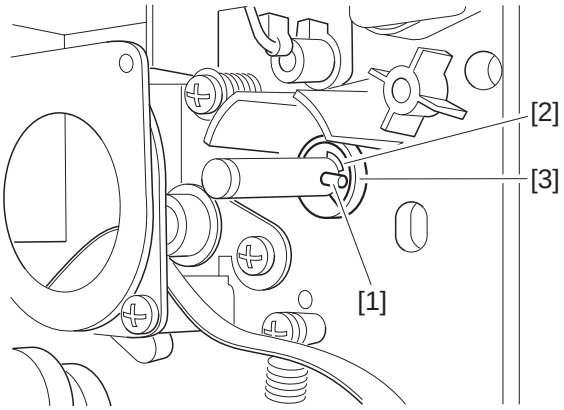
6) Remove the 2 screws and remove the motor.
7) Release the catch and remove the pulley.



[1] Screw
[2] Motor
[3] Catch
[4] Pulley

Figure 3-208

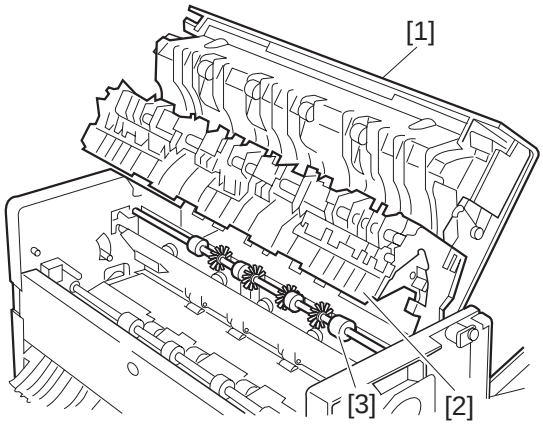
8) Remove the dowel pin and then the E-ring and bearing.



[1] Dowel pin
[2] E-ring
[3] Bearing

Figure 3-209

9) Open the top cover and lift up the paper delivery guide assembly.
10) Slide the face-up delivery roller to the right and remove them.

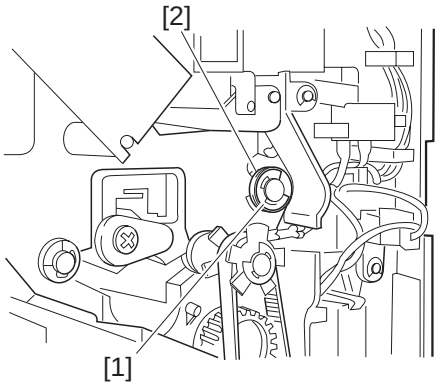


[1] Top cover
[2] Paper delivery guide assembly
[3] Face-up delivery roller

Figure 3-210

4. Inlet Roller

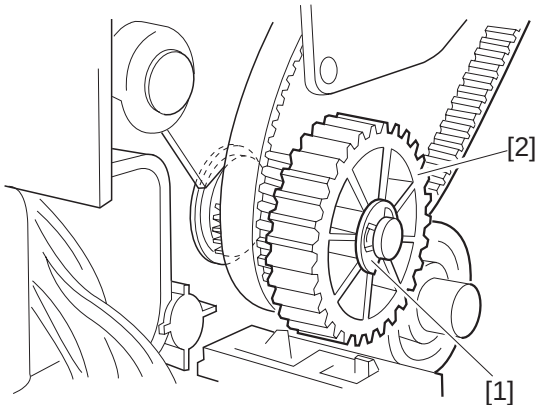
1) Refer to the instructions on page 3-1 and detach the front and rear covers.
2) Remove the E-ring and remove the bearing.



[1] E-ring
[2] Bearing

Figure 3-211

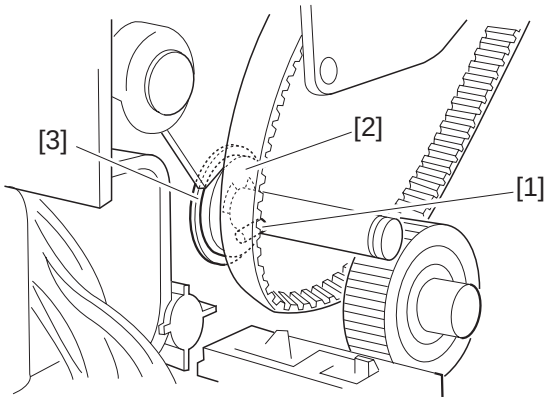
3) Carry out steps 4) to 6) of Para. 3 on page 3-5.
4) Remove the E-ring and then remove the gear.



[1] E-ring [2] Gear

Figure 3-212

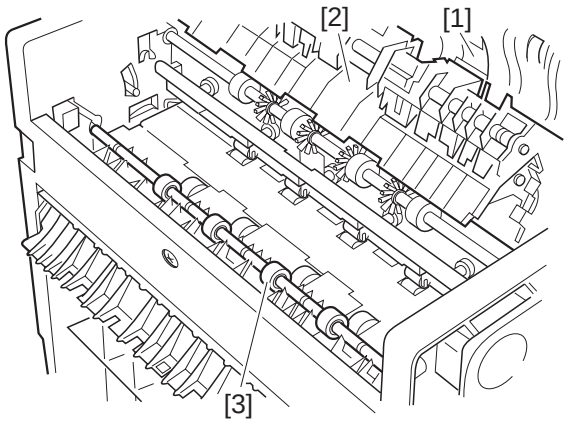
5) Remove the dowel pin and then the E-ring and bearing.



[1] Dowel pin [2] E-ring
[3] Bearing

Figure 3-213

6) Open the top cover, lift the paper delivery guide assembly and remove the inlet roller.

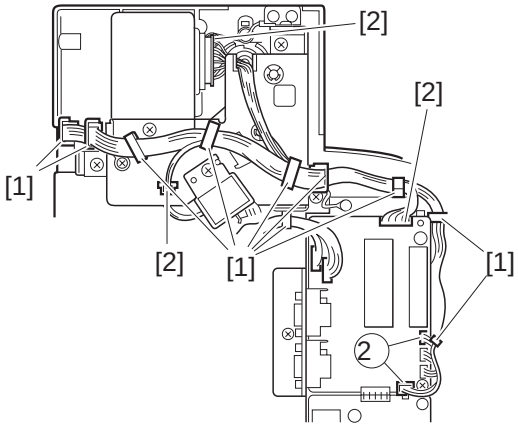


[1] Top cover
[2] Paper delivery guide assembly
[3] Inlet roller

Figure 3-214

5. Face-down Reverse Inlet Guide

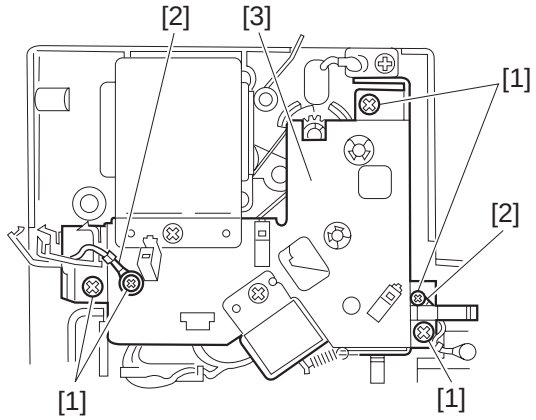
1) Carry out steps 1) to 6) of Para. 1 on page 3-4 and remove the paper delivery guide assembly.
2) Remove the 10 cable fixtures and remove the 5 connectors.



[1] Cable fixture [2] Connector

Figure 3-215

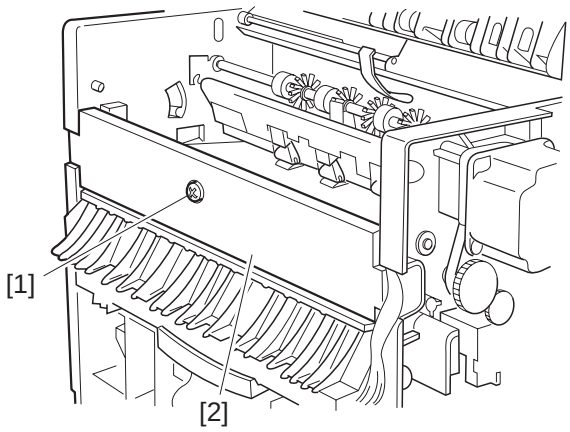
3) Remove the 5 screws and remove the grounding wire and motor bracket.



[1] Screw [2] Grounding wire
[3] Motor bracket

Figure 3-216

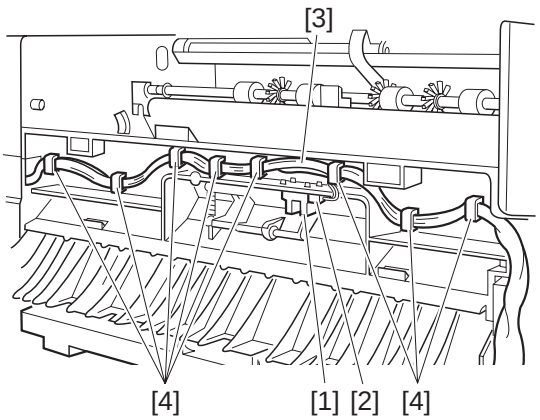
4) Remove the screw and detach the inlet guide cover.



[1] Screw [2] Inlet guide cover

Figure 3-217

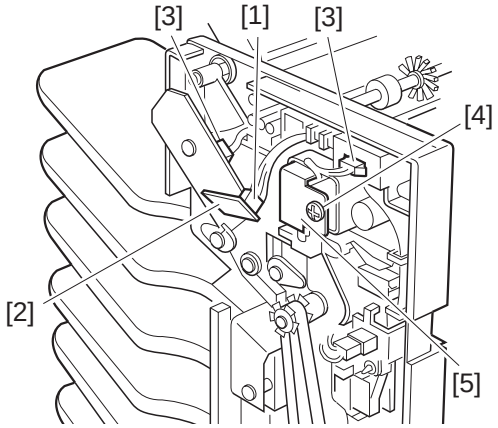
5) Disconnect the inlet sensor connector.
6) Remove the cable from the catches at 8 positions.



[1] Inlet sensor [2] Connector
[3] Cable [4] Catch

Figure 3-218

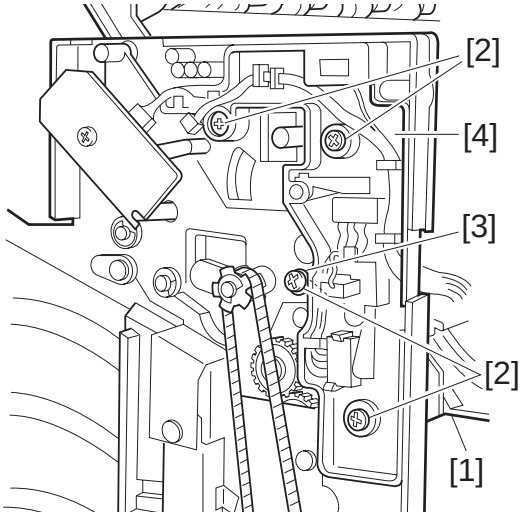
7) Disconnect the LED connector and remove the LED PCB.
8) Disconnect the 2 connectors.
9) Remove the screw and remove the face-up flapper solenoid.



[1] LED connector [2] LED PCB
[3] Connector [4] Screw
[5] Face-up flapper solenoid

Figure 3-219

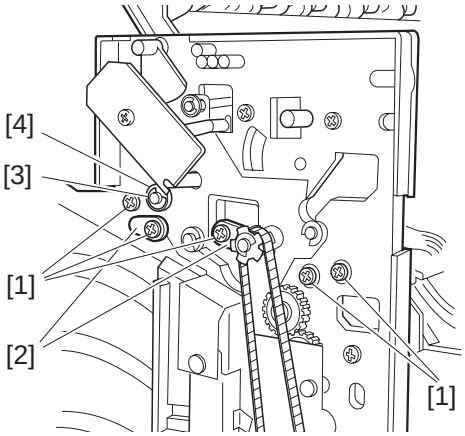
10) Open the right cover.
11) Remove 4 screws, disconnect the grounding wire and remove the switch holder.



[1] Right cover [2] Screw
[3] Grounding wire [4] Switch holder

Figure 3-220

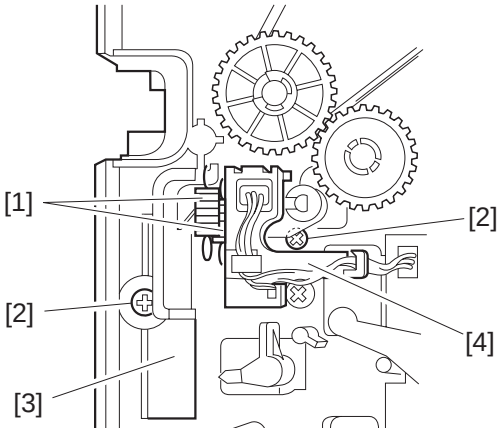
12) Remove the 5 stepped screws.
13) Remove the 2 retaining pins.
14) Remove the E-ring and remove the bearing.



[1] Stepped screw [2] Retaining pin
[3] E-ring [4] Bearing

Figure 3-221

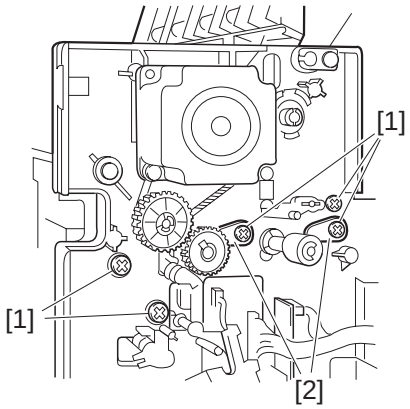
15) Carry out steps 7) and 8) on page 3-3 and remove the flapper links 1 and 2.
16) Remove the 2 springs.
17) Remove the 2 screws and remove the right cover latch shaft and reverse sensor holder.



[1] Spring [2] Screw
[3] Right cover latch shaft
[4] Reverse sensor holder

Figure 3-222

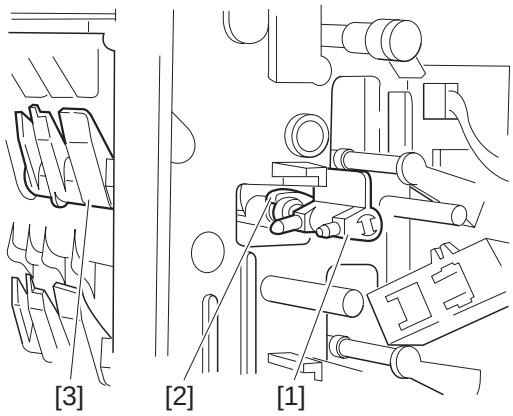
18) Remove the 5 stepped screws and remove the retaining pin.



[1] Stepped screw [2] Retaining pin

Figure 3-223

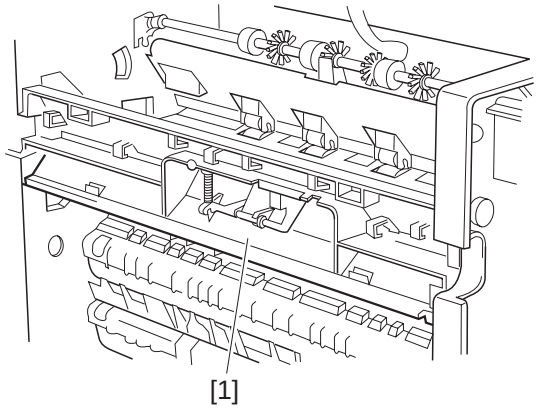
19) Remove the flapper arm, detach the flap from the catch and remove the flapper 1.



[1] Flapper arm [2] Catch
[3] Flapper 1

Figure 3-224

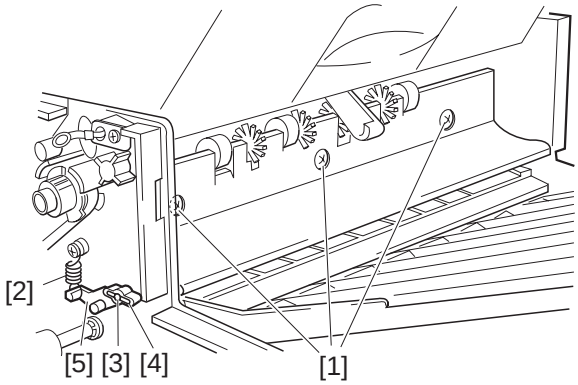
20) Prise the inlet guide loose from the circular bosses, and then take out the inlet guide.



[1] Inlet guide

Figure 3-225

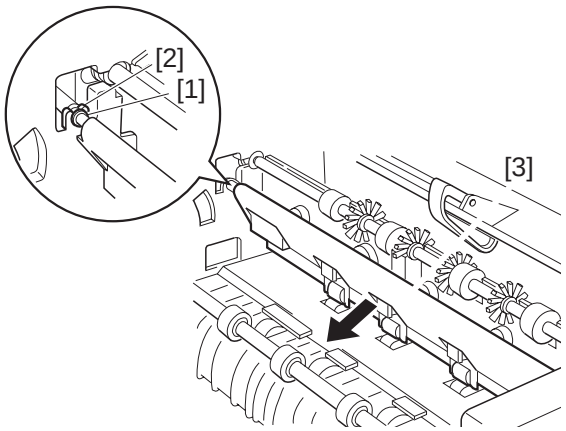
21) Remove the 3 screws.
22) Remove the spring, and then remove the dowel pin, pushing the shaft from the opposite side of the nip roller shaft.
23) Remove the nip roller arm



[1] Screw [2] Spring
[3] Nip roller shaft [4] Dowel pin
[5] Nip roller arm

Figure 3-226

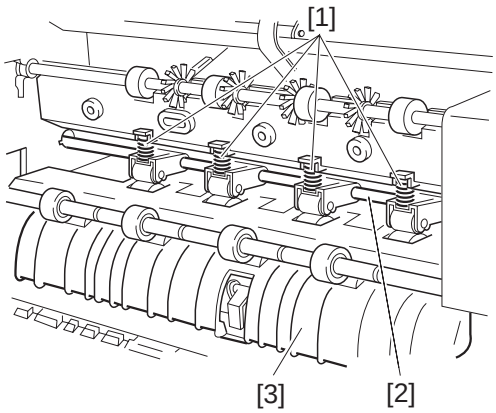
24) Detach the face-up paper delivery sensor lever from the catch and remove it pulling the reversing base.



[1] Face-up paper delivery sensor lever
[2] Catch [3] Reversing base

Figure 3-227

25) Remove the 4 springs and put slide the nip roller shaft to the left, and remove it.
26) Remove the face-down reversal inlet guide, pulling it Forward.

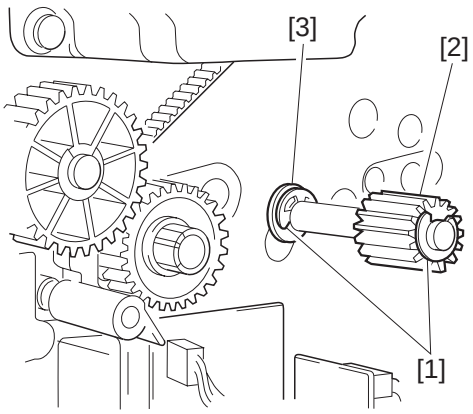


[1] Spring
[2] Nip roller shaft
[3] Face down reversal inlet guide

Figure 3-228

6. Reversing Roller

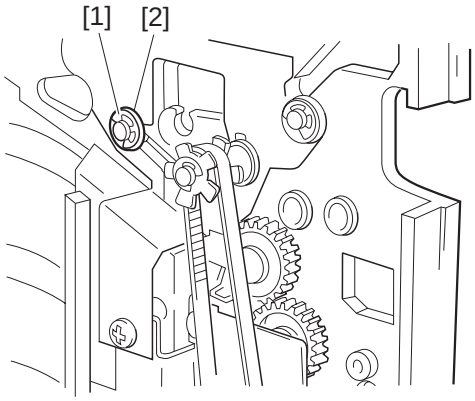
1) Carry out steps 1) of Para. 5 on page 3-6 to 27) of Para. 5 on page 3-10.
2) Remove the 2 E-rings and then the gear and bearing.



[1] E-ring [2] Gear
[3] Bearing

Figure 3-229

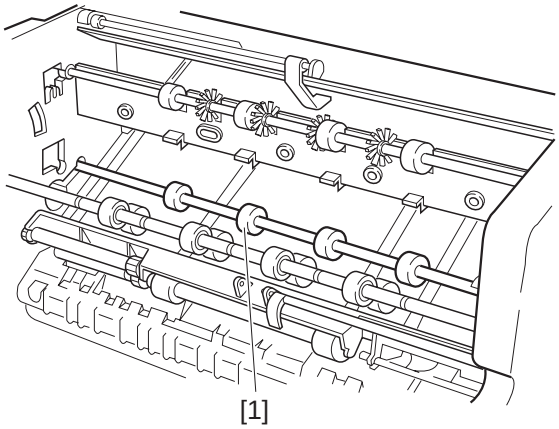
3) Remove the E-ring and remove the bearing.



[1] E-ring [2] Bearing

Figure 3-230

4) Slide the reversing roller to the right, and remove it.

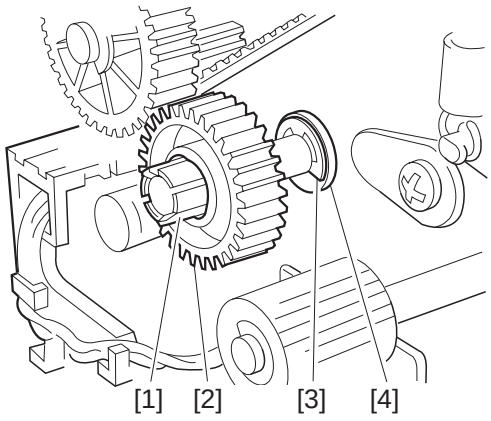


[1] Reversing roller

Figure 3-231

7. Paper Feed Roller

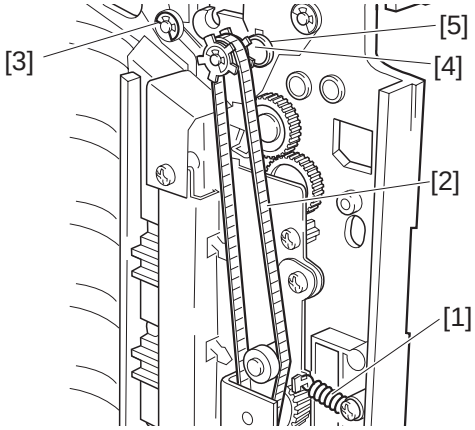
1) Carry out step 1) of Para. 5 on page 3-6 to step 27) of Para. 5 on page 3-10.
2) Release the catch, remove the gear and remove the dowel pin.
3) Remove the E-ring and remove the bearing.



[1] Catch
[2] Gear
[3] E-ring
[4] Bearing

Figure 3-232

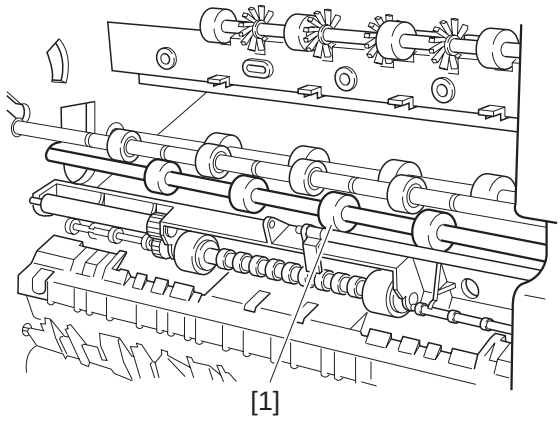
4) Remove the spring and slacken the belt.
5) Remove the E-ring and then remove the roller gear, parallel pin and bearing.



[1] Spring
[2] Belt
[3] E-ring
[4] Roller gear
[5] Bearing

Figure 3-233

6) Slide the paper feed roller to the right, and remove it.



[1] Paper feed roller

Figure 3-234

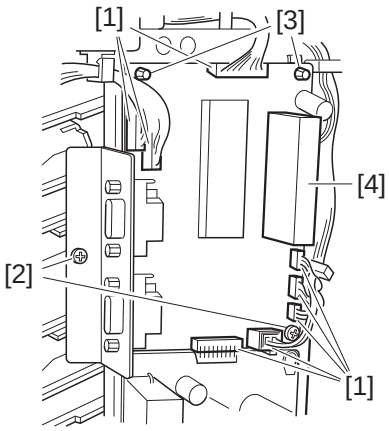
III. PCBs

A. Sorter Driver PCB

1. Removing from Sorter

1) Remove the left cover.
2) Disconnect the 9 connectors.
3) Remove the 2 screws
4) Detach the PCB, releasing the tabs at 2 positions.

[1] Connector



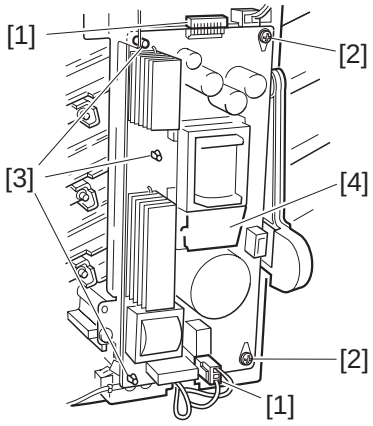
[2] Screw
[3] Tab
[4] 7-sorter driver PCB

Figure 3-301

B. Power Supply PCB

1. Removing the PCB from sorter

1) Detach the left cover.
2) Disconnect the 2 connectors.
3) Remove the 2 screws.
4) Remove the PCB, releasing the tabs at 3 positions.



[1] Connector
[2] Screw
[3] Tab
[4] Power circuit board

Figure 3-302

CHAPTER 4

MAINTENANCE AND SERVICING

 SORTER-H1 REV. 0 JAN. 1999 PRINTED IN JAPAN (IMPRIME AU JAPON)

I. MAINTENANCE AND SERVICING

A. Periodic Replacement Parts

• There are no parts in the unit that need to be periodically replaced.

Note:

Periodic replacement parts are parts that must be replaced periodically to maintain product function to a certain level (even though there is no visible external damage, the loss of function of such parts has a serious effect on overall product performance). Such parts should be replaced at the periodic service closest to when the specified number of sheets has been printed.

B. Consumable Replacement Targets

• No consumables are used for this sorter.

Note:

Consumable parts are parts to be replaced when any defect has become visible.

SORTER-H1 REV. 0 JAN. 1999 PRINTED IN JAPAN (IMPRIME AU JAPON)

C. Periodic Servece

• None.

CHAPTER 5

TROUBLESHOOTING

 SORTER-H1 REV. 0 JAN. 1999 PRINTED IN JAPAN (IMPRIME AU JAPON)

I. STANDARDS AND ADJUSTMENTS

A. Mechanical System Adjustments

• No adjustment is required for the mechanical system of this machine.

B. Electrical System Adjustments

• No adjustment is required for the electrical system of this machine.

 SORTER-H1 REV. 0 JAN. 1999 PRINTED IN JAPAN (IMPRIME AU JAPON)

II. INITIAL INSPECTION

1. Operating Environment

Same as that for the printer.

2. Paper

a. Confirm: recommended paper suitable to the 7-bin sorter is used.
b. Check that the paper is not moist.

3. Other Points

In winter, if the 7-bin sorter is taken from a cold place (such as a warehouse) into a warm room, condensation will occur inside the sorter, causing various problems.

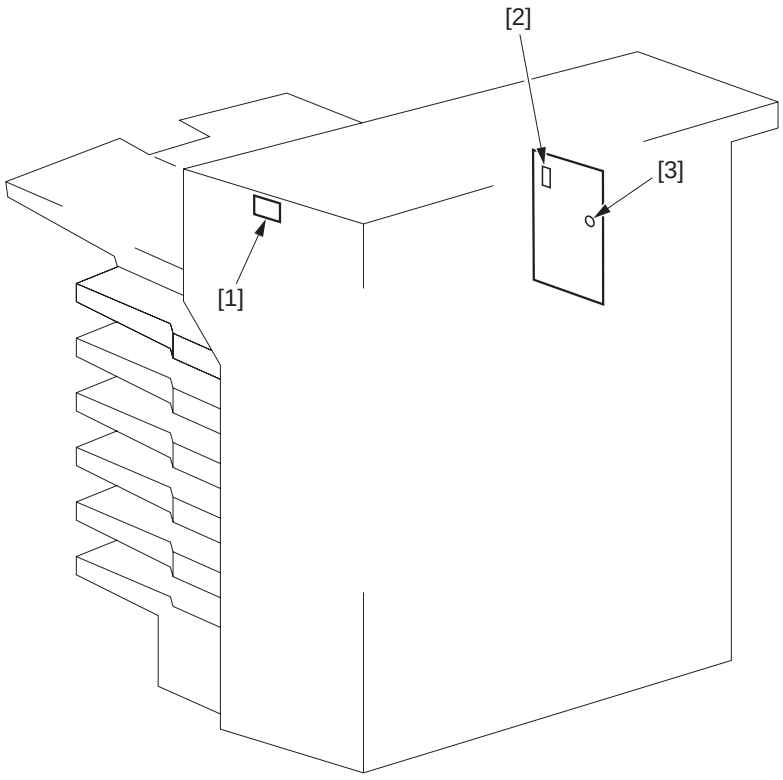
If condensation occurs, switch the sorter power on and let the unit stand for 10 to 20 minutes, or wipe each affected part dry.

SORTER-H1 REV. 0 JAN. 1999 PRINTED IN JAPAN (IMPRIME AU JAPON)

III. OPERATION CHECK

A. Overview

In the event of a failure, paper jam or other problem, the operating condition of the 7-bin sorter can be checked by the user LED (LED1) on the LED circuit board, and the service LED (LED1: red light) on the 7-bin sorter driver circuit board. In combination with the DIP switch (SW1) on the same board, details of the failure or errors can be checked.



[1] User LED
[2] Service LED
[3] DIP swtich

Figure 5-301

B. Operation Checks Carried out by the User

The lighting status of the LED (LED1) indicates the condition of the 7-bin sorter.

1) Green light ON: Normal communication between 7-bin sorter and printer
2) Orange light flashing: Jam has occurred, door is open, or other problem requires action by the operator.
3) Orange light ON: Failure has occurred.

The user LED is effective only when all of the DIP switches are OFF (factory setting).

C. Operation Checks Carried out by the Servece Engineer

1. LED

Details of failures, errors, and other problems in the sorter are indicated by the blinking frequencies of LED (LED1: red light) on the 7-bin sorter driver PCB. Refer to Table for details.

The service LED flashes in the order Header (flashing L times), Detection details (M times) and Pause, which constitute one cycle of flashing indication.

Service LED flashing intervals are as shown below.

1) Header (kept on for 1.0 second, extinguished for 0.2 seconds)
2) Contents of detection (kept on for 0.3 seconds, extinguished for 0.2 seconds)
3) Pause (extinguished for 2.0 seconds)

When there are no failure, error or other trouble, LEDs are kept ON during the warm up period and then flash (kept on for 0.5 seconds and extinguished for 0.3 seconds).

• Example: In case of indication of paper jam due to too early arrival at inlet

1) Header (flashing L times)
   (kept on for 1.0 second, extinguished for 0.2 seconds) x 2 times: jam
2) Contents of detection (flashing M times)
   (kept on 0.3 seconds, extinguished 0.2 seconds) x 2 times: early arrival at inlet
3) Paused (fixed)
   (extinguished for 2.0 seconds)

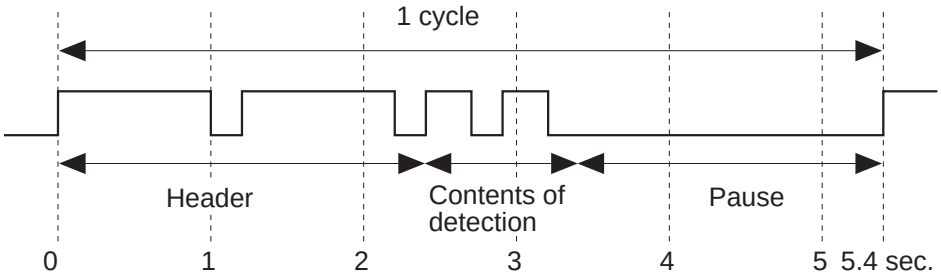


Figure 5-302

Summary of error	Header: Flashing frequency	Contents of detection: Flashing frequency	Contents of error
Failure	3	1	Flapper solenoid 1/2 failure
Jam	2	1	Jam of paper remaining in machine
		2	Jam of paper arriving earlier at inlet
		3	Inlet paper detection sensor delay jam
		4	Inlet paper detection sensor stationary jam
		5	FU delivery paper detection sensor delay jam
		6	FU delivery paper detection sensor stationary jam
		7	Reversed paper detection sensor delay jam
		8	Reversed paper detection sensor stationary jam
		9	Vertical pass paper detection sensor delay jam
		10	Vertical pass paper detection sensor stationary jam
Others	1	1	Door opened
		2	Stop due to full loading in self-advancing mode

Table 5-301

2. Check of Operation

When sensors, motors, switches or solenoids of the sorter are suspected to be defective or have been replaced, the proper operation can be checked by operating the DIP switch (SW1) on the 7-bin sorter driver PCB.

Operation can be checked in the free-running mode and sensor check mode depending on the combinations of the DIP switch (SW1). In the free-running mode, the motors, switches, solenoids and sensors on the path can be checked by feeding paper. In the sensor check mode, all sensors can be checked. When carrying out the opertion check, set up the service mode with the DIP switch (SW1) and turn on the stand-alone mode switch on the power supply PCB.

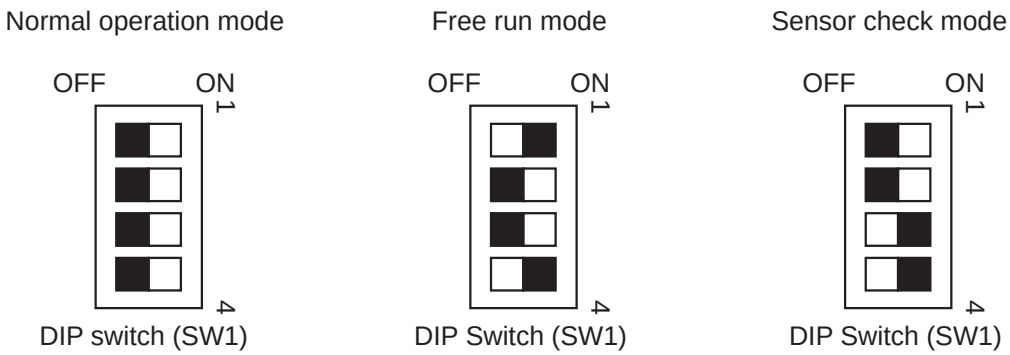


Figure 5-303

Follow the procedure below for the operation check:

a. Operation Check of Motors, Switches and Solenoids

Set the DIP switch (SW1) to free-running mode, as per figure 6-303.

Turn on the stand-alone mode switch on the power PCB. By shutting off the joint sensor (full-load sensor circuit board, PI8), the feed motor rotates, and paper can be fed, after the initial operation. The motor runs while the joint sensor (full-load sensor circuit board, PI8) is shut off.

When paper is inserted, the sheets are delivered from the face-up bin, to face-down bins 1 to 7, in succession.

1) Cover switch detection
   When the top cover or right cover is opened, the operation is stopped. When the switch has failed, the motor does not run.
2) Check of feed motor and face-up flapper solenoid
   The first sheet of paper is delivered to the face-up tray. In the event of failure of the feed motor or face-up flapper solenoid, the paper stops.
3) Check of reverse solenoid, flapper solenoid 1 and flapper solenoid 2
   When the paper is fed from the 2nd to 8th sheets, the second sheet is delivered to face-down bin 1, the third sheet to face-down bin 2, and so on. In the event of failure of the reverse solenoid,the paper stops. The failure of flapper solenoid 1 or flapper solenoid 2 are indicated by the service LED.

b. Sensor Operation Check

Set the DIP switch (SW1) to sensor check mode, referring to Figure 6-303.

Turn on the stand-alone mode switch on the power circuit board. The condition of each sensor at this time is stored in memory.

Then, when all of the sensors, with the exception of the joint sensor, are shut off or released, the service LED (LED1: red light display) will either light up, indicating normal, or not light up, indicating a fault.

IV. TROUBLESHOOTING

Take the following precautions when troubleshooting.

When measuring voltage at designated connector pins, always check to see that the connector is making good contact.

When handling PCBs, touch the metal part of the printer by hand to discharge any static electricity, before starting operation, so as not to damage the PCB.

M-1 | No power

Cause/Location	Step	Check item	Result	Action
Loose power plug	1	Is the power plug firmly inserted into the socket?	NO	Insert the plug firmly.
No power source	2	Is the specified AC current being supplied to the outlet?	NO	Explain to the customer that the problem is not in the sorter.
Loose interface cable	3	Is the interface cable between the sorter and the option controller circuit board properly connected?	NO	Connect the cables properly.
Fuse	4	Is the fuse blown?	YES	Replace the fuse.
PSU failure	5	Switch off the power supply of the printer assembly, and remove connector J202 from the power supply circuit board. Plug the power cord into the power supply unit, and turn the stand alone switch on. Then, measure the DC power output from connector J202. Be careful not to short the circuits. Is the specified value being output?	NO	Replace the power supply unit.
Printer assembly DC controller printer circuit board	6	Turn the power in the printer assembly on. Measure the voltage between the sorter driver circuit board connectors J10-1 (PWRON-IN)and J10-3 (GND). Is the measured value around 5V?	NO	Replace the DC controller PCB in the printer.
Sorter driver printed circuit board			YES	Replace the sorter driver PCB.

M-2 | Feed motor failure

Cause/Location	Step	Check item	Result	Action
Connector faulty contact	1	Are connector J1 on the sorter driver circuit board and connector J501 for the feed motor correctly connected?	NO	Connect the connectors properly.
Feed motor failure	2	Remove the motor connectr, J501. Measure the resistance between J501-3 and J501-1/5, and J501-9 and J501-7/11. Is the resistance around 7around 7Ω?	NO	Replace the feed motor.
Sorter driver printed circuit board			YES	Replace the sorter driver PCB.

M-3 | Reverse roller does not rotate

Cause/Location	Step	Check item	Result	Action
Damaged gear	1	Are any of the gears damaged?	YES	Replace the damaged gears.
Reverse soleniod failure	2	Remove reverse solenoid connector J602. Measure the resistance value between J602-1 and J602-2. Is the value around 120Ω?	NO	Replace the reverse solenoid.
Sorter driver printed circuit board			YES	Replace the sorter driver PCB.

M-4 | Flapper 1, 2 do not work

Cause/Location	Step	Check item	Result	Action
Flapper solenoid 1 failure	2	Remove connector J604 on flapper 1. Measure the resistance value between connectors J604-3 and J602-1. Is the value around 76Ω?	YES	Replace flapper solenoid 1.
Flapper solenoid 2 failure	2	Remove connector J604 on flapper 1. Measure the resistance value between connectors J604-3 and J602-1. Is the value around 76Ω?	NO	Replace flapper solonoid 2.
Sorter driver p rinter circuit board			YES	Replace the sorter driver PCB.

V. LAYOUT AND FUNCTIONS OF ELECTRICAL COMPONENTS

A. Swiches,Solenoids,Motors

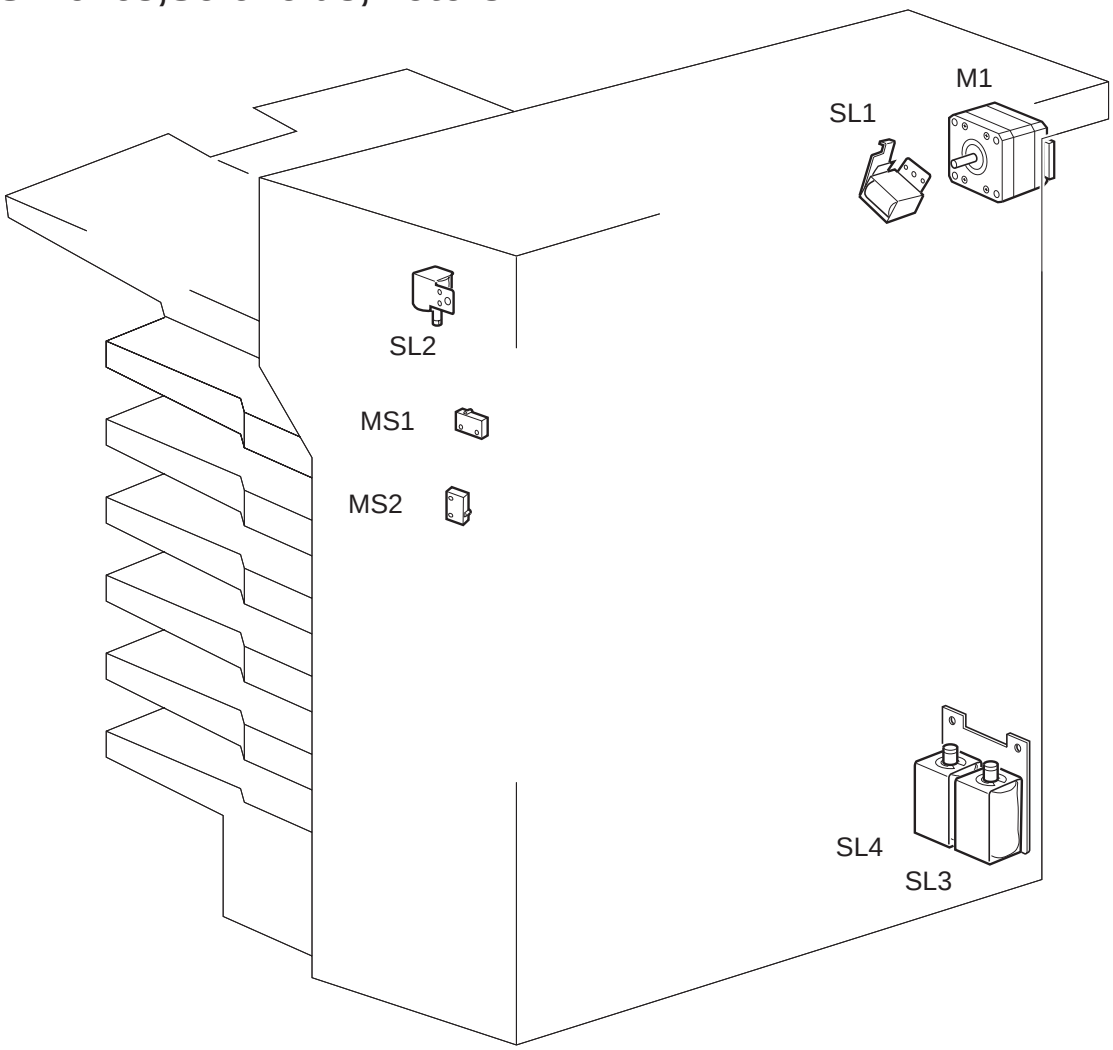


Figure 5-501

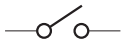
Symbol	Name	Mark	Function
	Switch	MS 1 MS 2	Top cover open/close detection switch Right cover open/close detection switch
	Solenoid	SL 1 SL 2 SL 3 SL 4	Reverse solenoid Face-up flapper solenoid Flapper solenoid 1 Flapper solenoid 2
	Motor	M 1	Feed motor

Table 5-501

B. Sensors

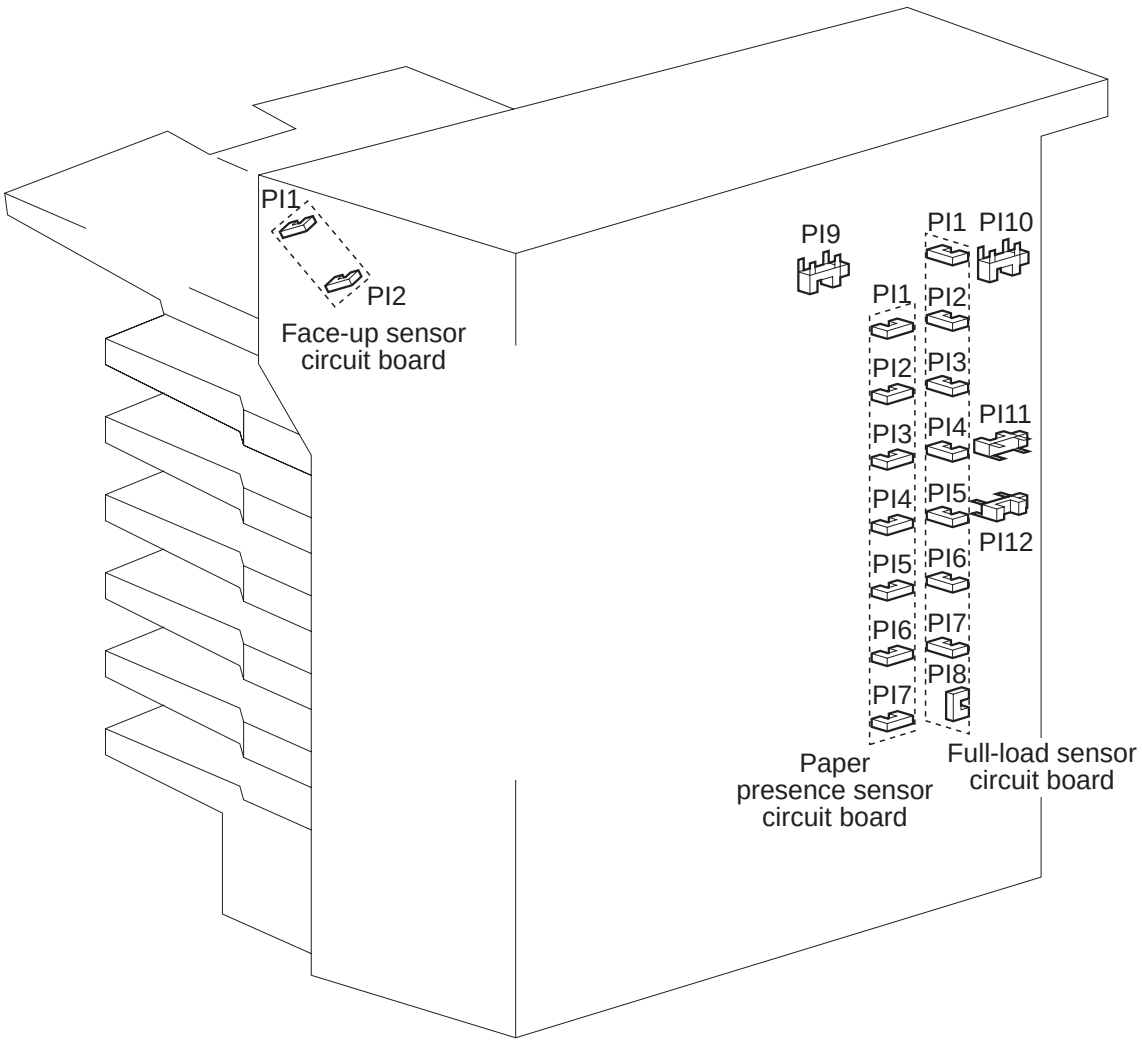


Figure 5-502

Mark	Name	Symbol	Function
	Sensor	PI9	Inlet sensor
		PI10	Reverse sensor
		PI11	Longitudinal pass sensor
		PI12	Flapper solenoid sensor
		Full-load sensor PCB	
		(PI1)	Full-load sensor 1
		(PI2)	Full-load sensor 2
		(PI3)	Full-load sensor 3
		(PI4)	Full-load sensor 4
		(PI5)	Full-load sensor 5
		(PI6)	Full-load sensor 6
		(PI7)	Full-load sensor 7
		(PI8)	Joint sensor
		Paper presence sensor PCB	
		(PI1)	Paper presence sensor 1
		(PI2)	Paper presence sensor 2
		(PI3)	Paper presence sensor 3
		(PI4)	Paper presence sensor 4
		(PI5)	Paper presence sensor 5
		(PI6)	Paper presence sensor 6
		(PI7)	Paper presence sensor 7
		Face-up sensor PCB	
		(PI1)	Face-up paper delivery paper sensor
		(PI2)	Face-up full-load paper sensor

Table 5-502

C. PCBs

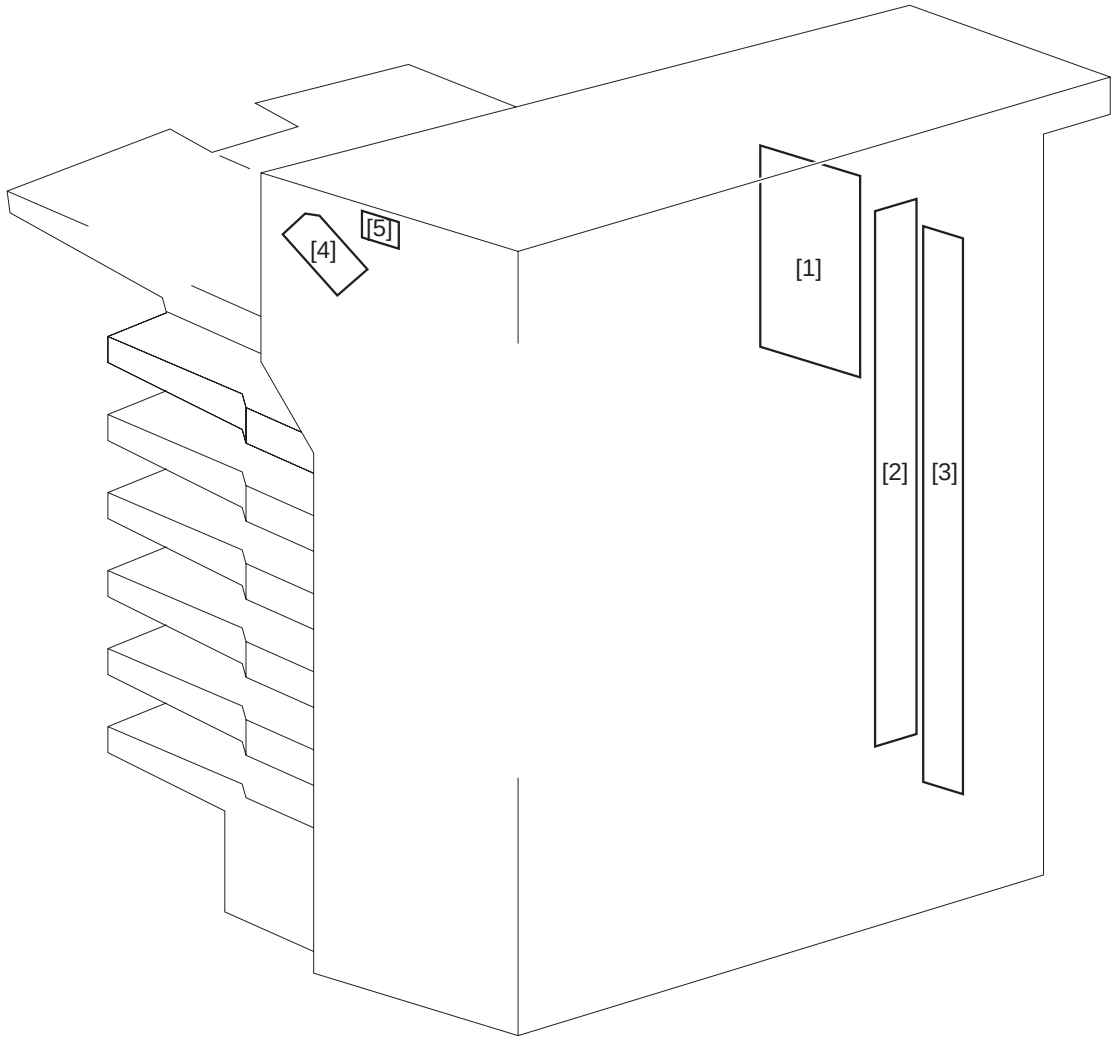


Figure 5-503

No.	Name	Function
1	7-bin sorter driver PCB	Control of loads and detection
2	Paper presence sensor PCB	Detection of paper in the face-down delivery bins.
3	Full-load sensor PCB	Detection of fully loaded paper in the face-down delivery bins, and detection of engine connection.
4	Face-up sensor PCB	Detection of paper in face-up paper delivery bin, and detection of fully-loaded paper.
5	LED PCB	Notification of condition of 7-bin sorter.

Table 5-503

D. Connectors

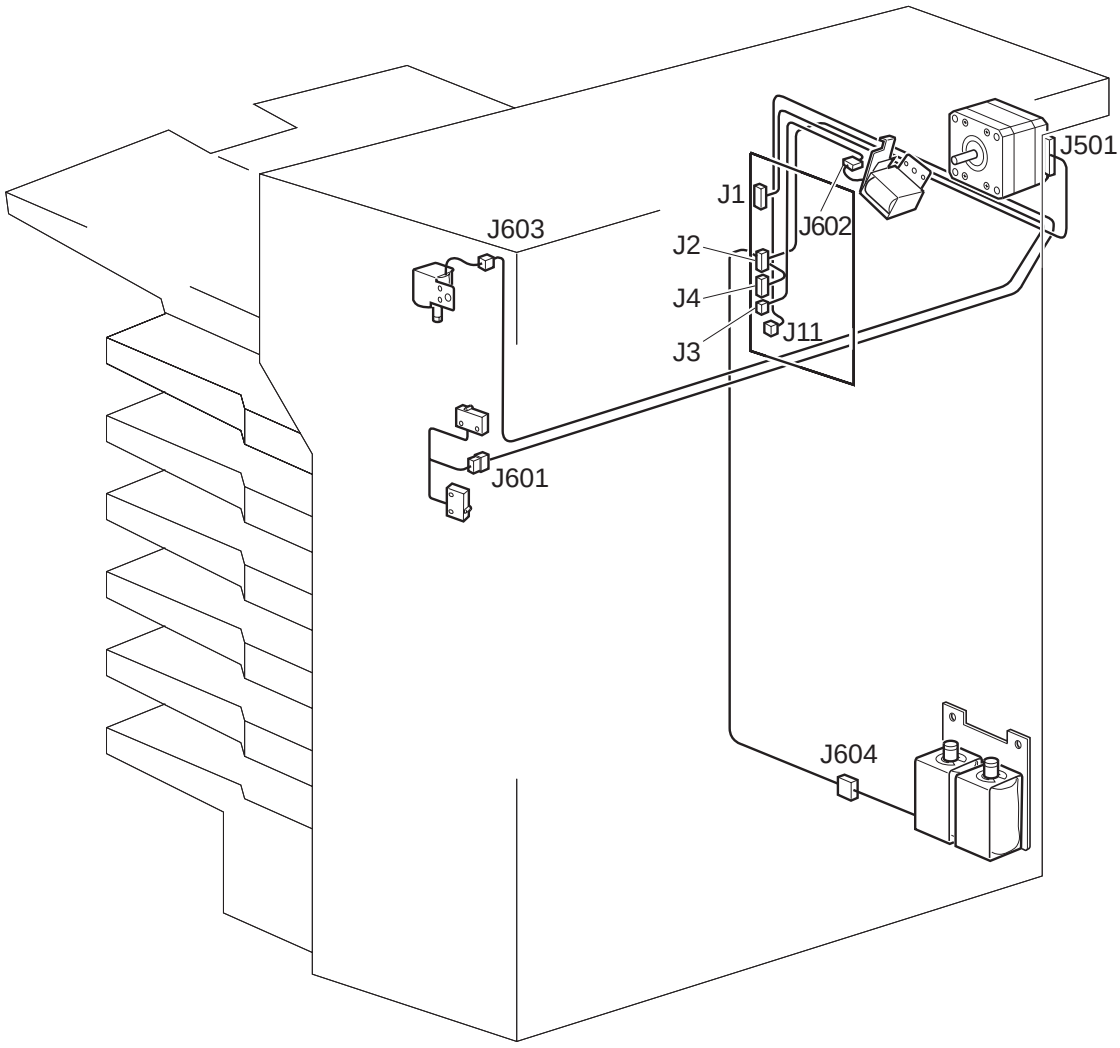


Figure 5-504

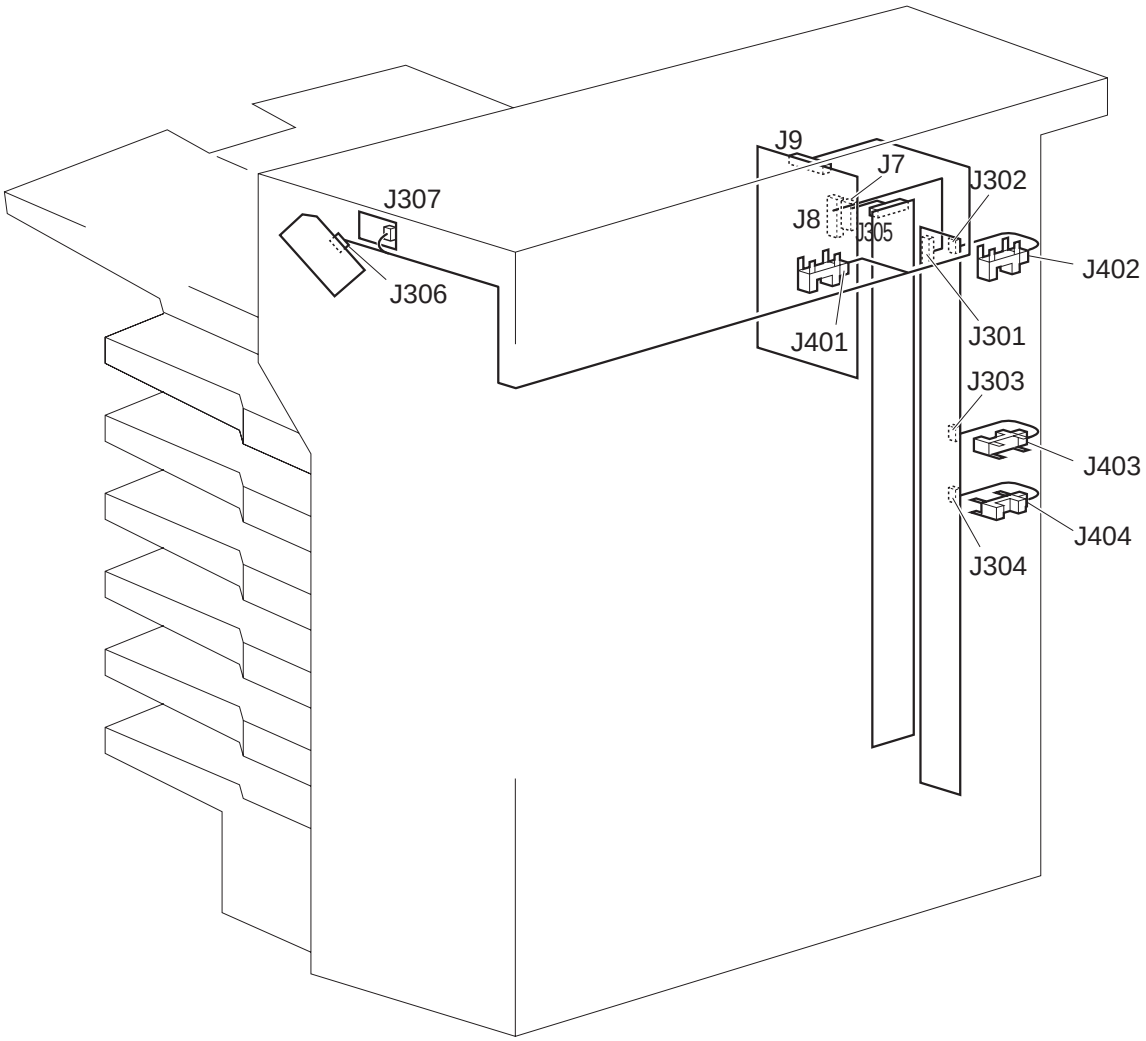


Figure 5-505

VI. LIST OF VARISTORS (VR), LEDS, CHECK PINS, JUMPERS AND SWITCHES BY PCB

Only those variable resistors, LEDs, check pins, jumpers, and switches which may require after-sales service are listed below.

All other VRs, check pins, etc. which are adjusted at the factory. These require special tools and measuring instruments and must be set with high precision. Do not touch them during after-sale service.

Notes:

1. Some LEDs receive leakage current during normal operation and thus glow dimly even when not turned ON.
2. Variable resistors which may be adjusted in after-sales service are marked .....
   Variable resistors which may not be adjusted in after-sale service are marked .....

A. Sorter Drivear PCB

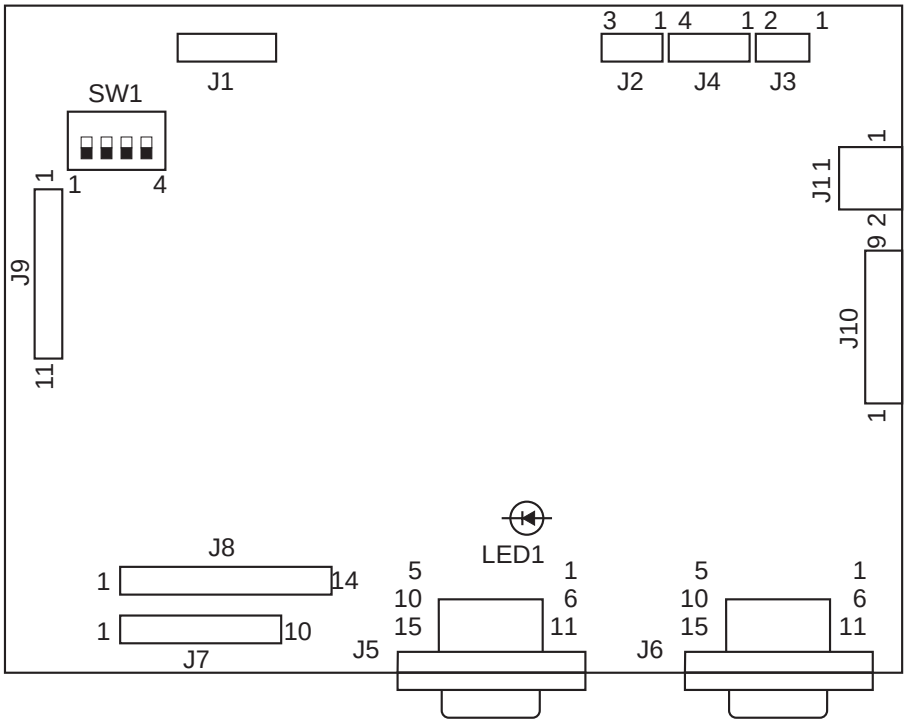


Figure 5-601

No.		Function
SW1	1	Checks various items by toggling the DIP switches ON and OFF. Refer to Figure 6-303 for the operation.
	2	
	3	
	4	
LED1		For indicating status

Table 5-601

VII. SELF DIAGNOSIS

The microprocessor on the sorter's sorter driver PCB is equipped with a self diagnostic mechanism which runs checks as needed and issues an error code on the control panel of the printer unit or the reader unit upon detection of a fault. See the following table for the nature of each code.

Code	Cause	Description
E545	• The sorter's bin flapper 1 is faulty.	• During initialization or face-down delivery, the flapper solenoid sensor (PI12) does not detect the operation of the face-down flapper solenoid 1 (SL3) even when it has turned on. Or, the flapper solenoid sensor detects the operation of the solenoid even when the solenoid has turned off.
E546	• The sorter's bin flapper 2 is faulty.	• During initialization or face-down delivery, the flapper solenoid sensor (PI12) does not detect the operation of the face-down flapper solenoid 2 (SL4) even when it has turned on. Or, the flapper solenoid sensor detects the operation of the solenoid even when the solenoid has turned off.

Note:

1. If the self diagnostic mechanism has turned on, you may reset the machine by turning off and then on the power switch on the reader unit.
2. You may continue to make prints/copies by detaching the sorter from the printer unit if the sorter goes out of order.

APPENDIX

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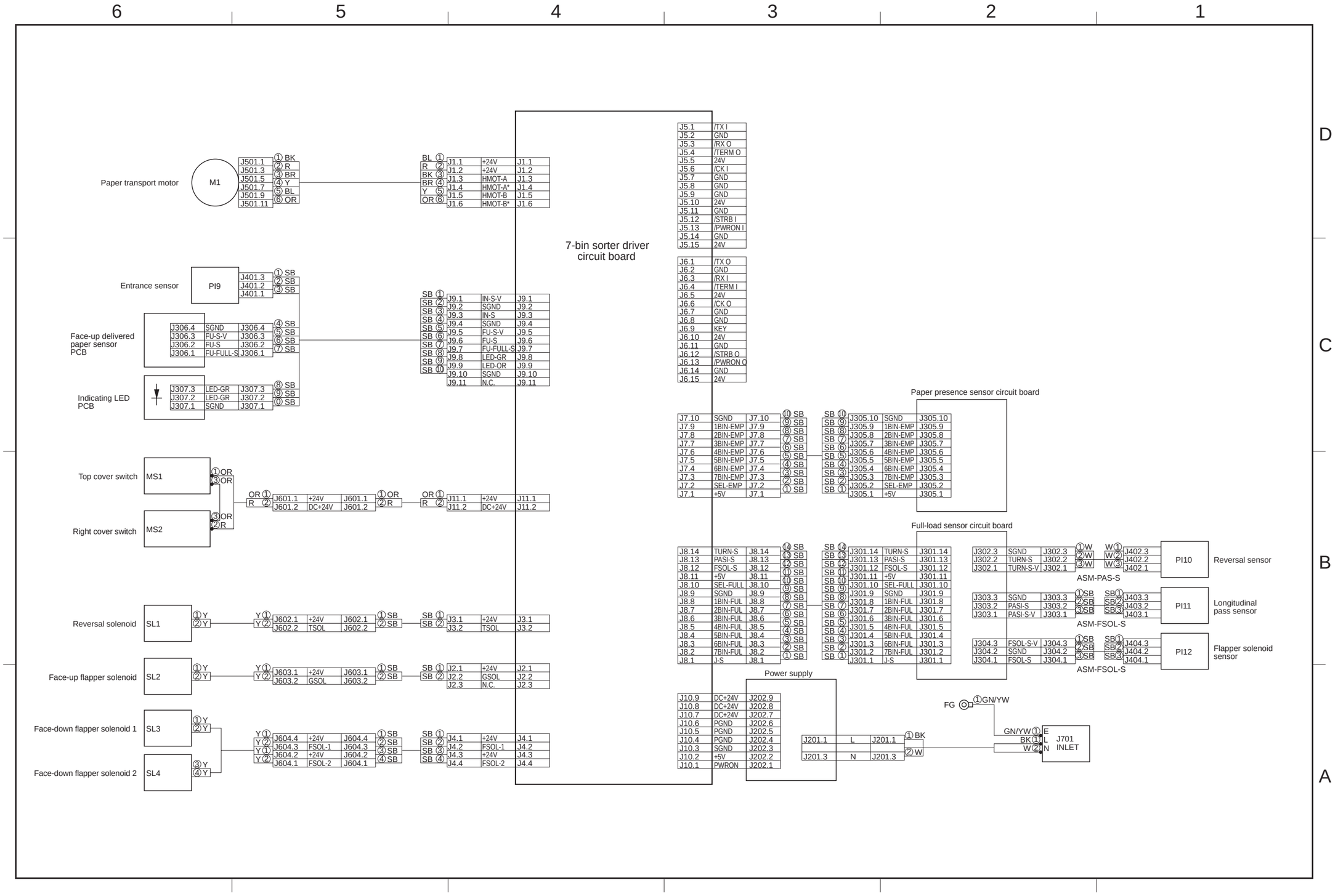
I. SIGNAL NAMES AND ABBREVIATIONS

Connector	Pin No.	Signal	Signal Name
J1	1	+24V	
	2	+24V	
	3	HMOT-A	Feed motor circuit control signal A
	4	HMOT-A*	Feed motor circuit control signal A
	5	HMOT-B	Feed motor circuit control signal B
	6	HMOT-B*	Feed motor circuit control signal B
J2	1	+24V	
	2	G-SOL	FACE-UP FLAPPER SOLENOID DRIVE signal
	3	N.C.	
J3	1	+24V	
	2	T-SOL	REVERSAL SOLENOID DRIVE signal
J4	1	+24V	
	2	FSOL-1	FACE-DOWN FLAPPER SOLENOID 1 DRIVE signal
	3	+24V	
	4	FSOL-2	FACE-DOWN FLAPPER SOLENOID 2 DRIVE signal
J7	1	+5V	
	2	SEL-EMP	
	3	7BIN-EMP	PAPER PRESENCE DETECTION signal (7 BIN)
	4	6BIN-EMP	PAPER PRESENCE DETECTION signal (6 BIN)
	5	5BIN-EMP	PAPER PRESENCE DETECTION signal (5 BIN)
	6	4BIN-EMP	PAPER PRESENCE DETECTION signal (4 BIN)
	7	3BIN-EMP	PAPER PRESENCE DETECTION signal (3 BIN)
	8	2BIN-EMP	PAPER PRESENCE DETECTION signal (2 BIN)
	9	1BIN-EMP	PAPER PRESENCE DETECTION signal (1 BIN)
	10	SGND	

Connector	Pin No.	Signal	Signal Name
J8	1	J-S	PRINTER CONNECTION signal
	2	7BIN-FUL	FULL-LOAD DETECTION signal (7BIN)
	3	6BIN-FUL	FULL-LOAD DETECTION signal (6BIN)
	4	5BIN-FUL	FULL-LOAD DETECTION signal (5BIN)
	5	4BIN-FUL	FULL-LOAD DETECTION signal (4BIN)
	6	3BIN-FUL	FULL-LOAD DETECTION signal (3BIN)
	7	2BIN-FUL	FULL-LOAD DETECTION signal (2BIN)
	8	1BIN-FUL	FULL-LOAD DETECTION signal (1BIN)
	9	SGND	
	10	SEL-FUL	
	11	+5V	
	12	F-SOL-S	FACE-DOWN FLAPPER OPEN / CLOSE DETECTION signal
	13	PASI-S	VERTICAL PASS PAPER DETECTION signal
	14	TURN-S	REVERSE PAPER DETECTION signal
J9	1	+5V	
	2	SGND	
	3	IN-S	INLET PAPER DETECTION signal
	4	SGND	
	5	+5V	
	6	FU-S	FACE-UP DELIVERY PAPER DETECTION signal
	7	FU-FULL-S	FACE-UP DELIVERY PAPER DETECTION signal
	8	LED-GR	GREEN LED LIT UP signal
	9	LED-OR	ORENGE LED LIT UP signal
	10	SGND	
	11	N.C.	
J10	1	PWRON	POWER ON signal
	2	+5V	
	3	SGND	
	4	PGND	
	5	PGND	
	6	PGND	
	7	DC+24V	
	8	DC+24V	
	9	DC+24V	
J11	1	+24V	
	2	DC+24V	



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III. TOOLS

A. Standard Tools

• Standard tools required for servicing the 7-bin sorter are the same as those for the printer.

B. Special Tools

• No special tools are required for the 7-bin sorter.

IV. SOLVENTS AND LUBRICANTS

No.	Material Name	Components	Use	Remarks
1	Alcohol:ethyl (pure or denatured) or isopropyl	C2H5OH (CH3)2CHOH	Cleaning Plastic, rubber, external parts	• Purchase locally • Flammable: keep away from flame.
2	MEK (methyl ethyl ketone)	CH3CO-C2H5	Cleaning oil and toner	• Purchase locally • Highly flammable: keep away from flame.
3	Lubricating agent	Poly Éøolefin oil, lithium soap	Apply to gears	• Tool No.: HY9-0007
4		Silicone oil		• Tool No.: CK-8005 (40g bottle)

Table 4-1

Note:
After using solvent, wipe away any residue.

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