

1000 SHEET PAPER DECK-D1 SERVICE MANUAL

REVISION 0

Canon

MAR. 1999

FY8-13FR-000

IMPORTANT

THIS DOCUMENTATION IS PUBLISHED BY CANON INC., JAPAN, TO SERVE AS A SOURCE OF REFERENCE FOR WORK IN THE FIELD.

SPECIFICATIONS AND OTHER INFORMATION CONTAINED HEREIN MAY VARY SLIGHTLY FROM ACTUAL MACHINE VALUES OR THOSE FOUND IN ADVERTISING AND OTHER PRINTED MATTER.

ANY QUESTIONS REGARDING INFORMATION CONTAINED HEREIN SHOULD BE DIRECTED TO THE COPIER SERVICE DEPARTMENT OF THE SALES COMPANY.

THIS DOCUMENTATION IS INTENDED FOR ALL SALES AREAS, AND MAY CONTAIN INFORMATION NOT APPLICABLE TO CERTAIN AREAS.

COPYRIGHT © 1999 CANON INC.

Printed in Japan

Imprimé au Japon

Use of this manual should be strictly supervised to avoid disclosure of confidential information.

Prepared by

OFFICE IMAGING PRODUCTS TECHNICAL SUPPORT DEPARTMENT 3
OFFICE IMAGING PRODUCTS TECHNICAL SUPPORT DIVISION

CANON INC.

5-1, Hakusan, 7-chome, Toride-City, Ibaraki-Pref., 302-8501, Japan

INTRODUCTION

This service manual provides basic information required in performing field service to maintain the product quality and functions of 1000 Sheet Paper Deck-D1.

Each chapter consists of the following sections:

- Chapter 1 "Introduction," Specifications, Names of Parts.
- Chapter 2 "Operation Overview," Description of the mechanical and electrical operating principles and timing by function.
- Chapter 3 "Mechanical System," Description of mechanical structure, and disassembly, assembly and adjustment methods.
- Chapter 4 "Maintenance and Inspection," Table of periodic replacement parts and consumables replacement targets, periodic service list and parts to be cleaned during a customer service call.
- Chapter 5 "Troubleshooting," Standards/adjustments, operation failure countermeasure and paper feed failure countermeasures.

"Appendix," Signal name list, general circuit diagram, special tools, solvent and oil list. Note that since installation procedure instructions are packed with the 1000 Sheet Paper Deck-D1, no installation procedures are provided in this manual. Changes of the contents made for the sake of product improvements will be notified in Service Information (Technical Information) whenever such changes are made.

Gaining a sound and thorough understanding of the copier through careful reading of this service manual and the subsequently issued Service Information (Technical Information) bulletins is the only way to develop the technical skill necessary to prolong product quality and functionality and the practical ability to be able to determine the cause of breakdowns.

CONTENTS

CHAPTER 1 INTRODUCTION

- I. SPECIFICATIONS 1-1
- II. NAMES OF PARTS 1-2
- A. External view 1-2
- B. Cross-section diagram 1-3

CHAPTER 2 OPERATION OVERVIEW

- I. BASIC PROCEDURES 2-1
 - A. Overview 2-1
 - B. Deck controller PCB 2-2
 - C. Deck controller PCB output ... 2-3
- II. PICK-UP FEED SYSTEM 2-4
 - A. Overview 2-4
 - B. Lifter operation 2-8
 - C. Remaining paper detection mechanism 2-9
- D. Paper size detection mechanism 2-10
- E. Jam detection 2-11
- III. POWER SUPPLY 2-13
 - A. Overview 2-13
 - B. Protective Functions 2-13

CHAPTER 3 MECHANICAL SYSTEM

- I. EXTERNAL CONTROL ASSEMBLY 3-1
 - A. External covers 3-1
- II. PICK-UP ASSEMBLY 3-3
 - A. Removing the pick-up unit 3-3
 - B. Tightening the lifter wire 3-9
- III. DRIVE ASSEMBLY 3-10
 - A. Removing the lifter motor (M1) 3-10
 - B. Removing the feeder motor (M2) 3-10
 - C. Removing the pick-up motor (M3) 3-10
- IV. ELECTRICAL PARTS AND COMPONENTS 3-11
 - A. Deck controller PCB 3-11
 - B. Power supply PCB 3-11

CHAPTER 4 MAINTENANCE AND INSPECTION

- I. PERIODIC REPLACEMENT PARTS 4-1
- II. CONSUMABLES REPLACEMENT TARGETS 4-1
- III. PERIODIC MAINTENANCE 4-1
- IV. PARTS TO BE CLEANED DURING A CUSTOMER SERVICE CALL 4-2

CHAPTER 5 TROUBLESHOOTING

I.	STANDARDS AND ADJUSTMENTS.....	5-1	IV.	LOCATION OF ELECTRICAL PARTS	5-10
	A. Overview	5-1		A. Sensors	5-10
	B. Operational checks to be performed by the user	5-1		B. Solenoids and Motors	5-11
	C. Operational checks to be performed by the service engineer	5-2	V.	LIST OF VARIABLE RESISTORS (VR), LEDS, CHECK PINS BY PRINTED CIRCUIT BOARD	5-13
II.	COUNTERMEASURES TO COPE WITH DEFECTIVE OPERATION	5-5		A. Deck controller PCB	5-14
III.	COUNTERMEASURES TO COPE WITH DEFECTIVE FEED.....	5-7		B. User LED PCB	5-15
	A. Paper jams	5-7		C. Remaining paper detection PCB	5-15

APPENDIX

A.	SIGNAL NAMES AND CODE TABLE	A-1	C.	SPECIAL TOOLS	A-5
B.	GENERAL CIRCUIT DIAGRAM.....	A-3	D.	TABLE OF SOLVENTS AND OILS	A-5

CHAPTER 1

INTRODUCTION

I. SPECIFICATIONS.....	1-1	A. External view.....	1-2
II. NAMES OF PARTS	1-2	B. Cross-section diagram	1-3

I. SPECIFICATIONS

Item	Specification
Pick-up system	Clawless (retard)
Paper storage system	Side tray system
Type of pick-up paper	Plain paper, coloured paper and thick paper (64 g/m ² to 105 g/m ²)
Paper sizes	A4, LTR
Paper capacity	Stacking height (equivalent to 1000 sheets of 80 g/m ² type paper)
Operating environment	
Temperature	10 to 32.5°C
Humidity	20 to 80%
Atmospheric pressure	786 to 1013 hPa (560 to 760 mmHg)
Dimensions	309.7 (W) x 520 (D) x 651 (H)
Weight	Approx. 18.5 kg
Maximum power consumption	100-120 V: Max. 22 W, 200-240 V: Max. 20 W
Power supply	100 to 120 V AC (50/60 Hz) 220 to 240 V AC (50 Hz)

II. NAMES OF PARTS

A. External view

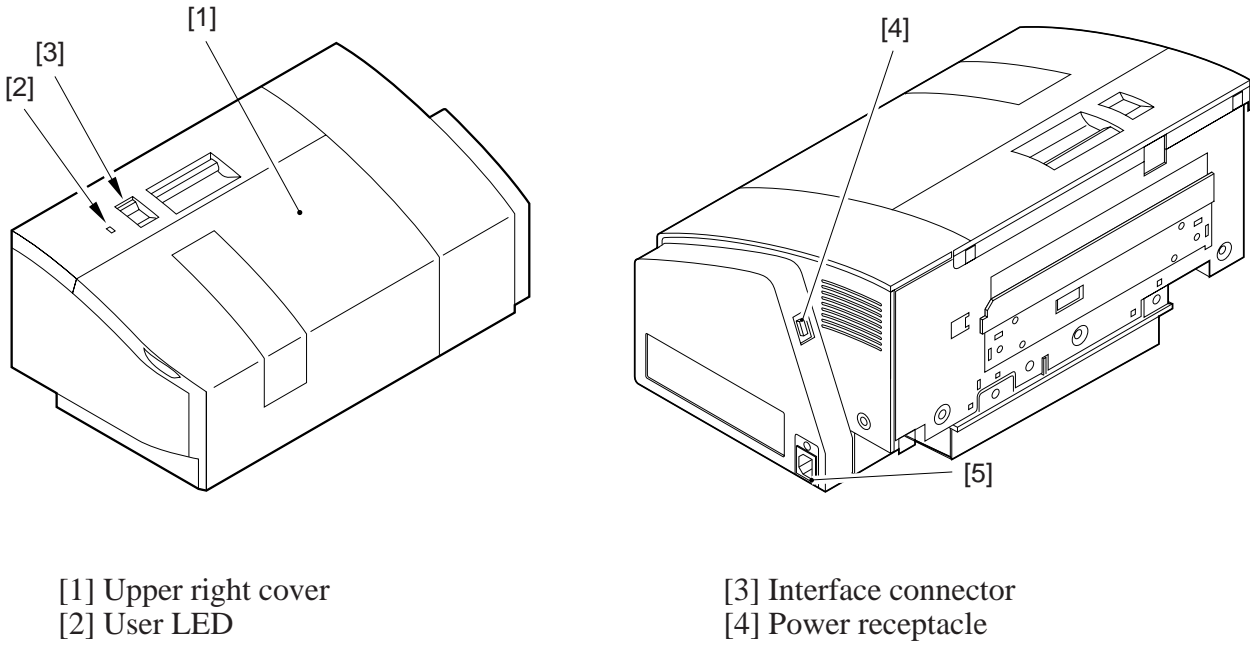
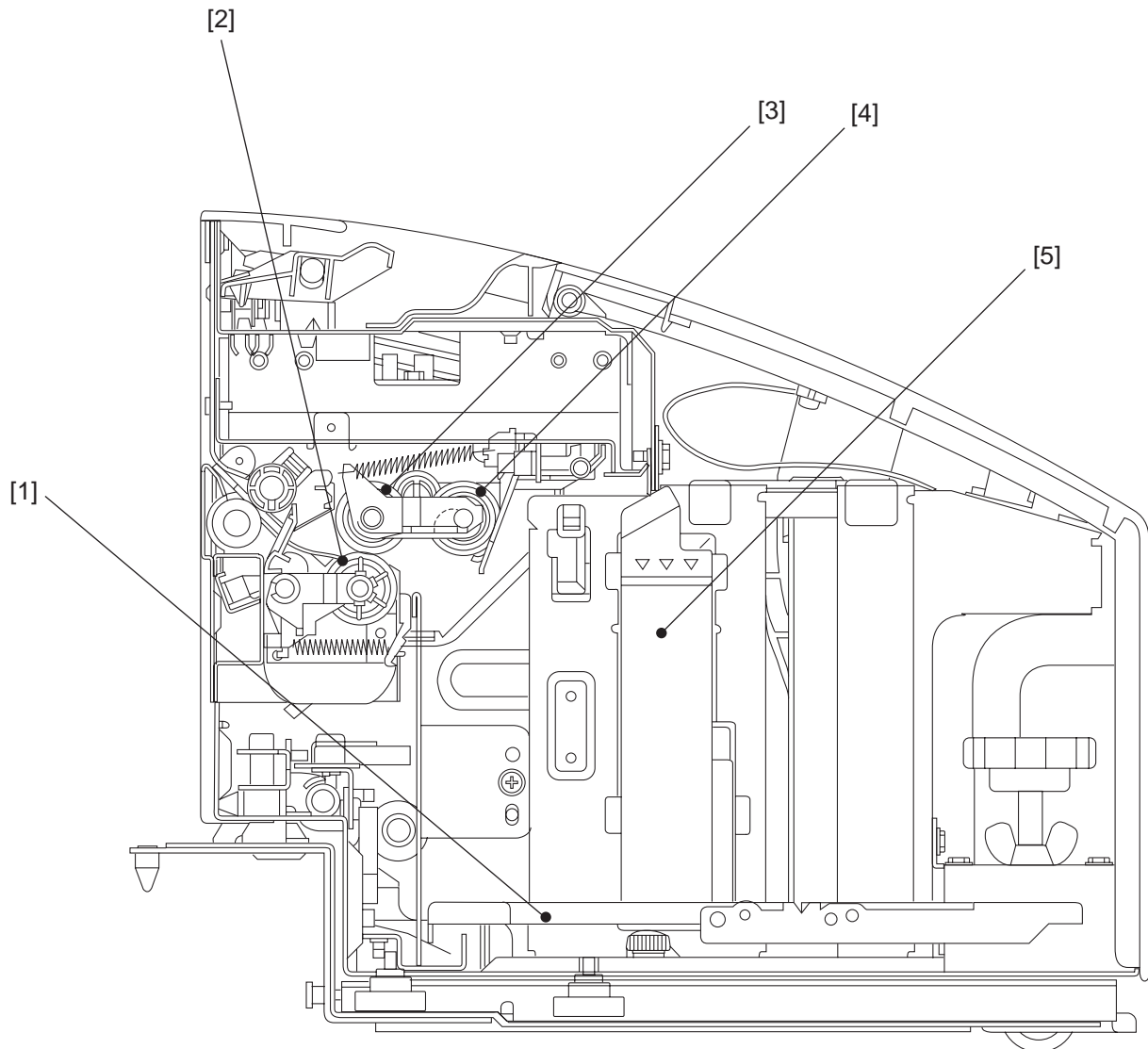


Figure 1-201

B. Cross-section diagram



- [1] Lifter
- [2] Separation roller
- [3] Feed roller

- [4] Pick-up roller
- [5] Paper size limit panel

Figure 1-202

CHAPTER 2

OPERATION OVERVIEW

I.	BASIC PROCEDURES	2-1	D.	Paper size detection	
	A. Overview	2-1		mechanism	2-10
	B. Deck controller PCB	2-2	E.	Jam detection	2-11
	C. Deck controller PCB output ...	2-3	III.	POWER SUPPLY	2-13
II.	PICK-UP FEED SYSTEM	2-4		A. Overview	2-13
	A. Overview	2-4		B. Protective Functions	2-13
	B. Lifter operation	2-8			
	C. Remaining paper detection				
	mechanism	2-9			

I. BASIC PROCEDURES

A. Overview

The paper deck (referred to as "deck" below, for the sake of simplicity) feeds copy paper to the copier. The deck operating sequence is controlled by the deck controller PCB.

The deck controller PCB employs an 8-bit microprocessor (IC201) that controls the operating sequence and serial communications between the option controller PCB and the main unit.

The deck controller PCB drives the solenoids and motors, etc., in response to signals fed from the option controller PCB of the copier via the serial interface. The deck controller PCB, also sends sensor, switch and other information to the main unit's option controller, via the serial interface.

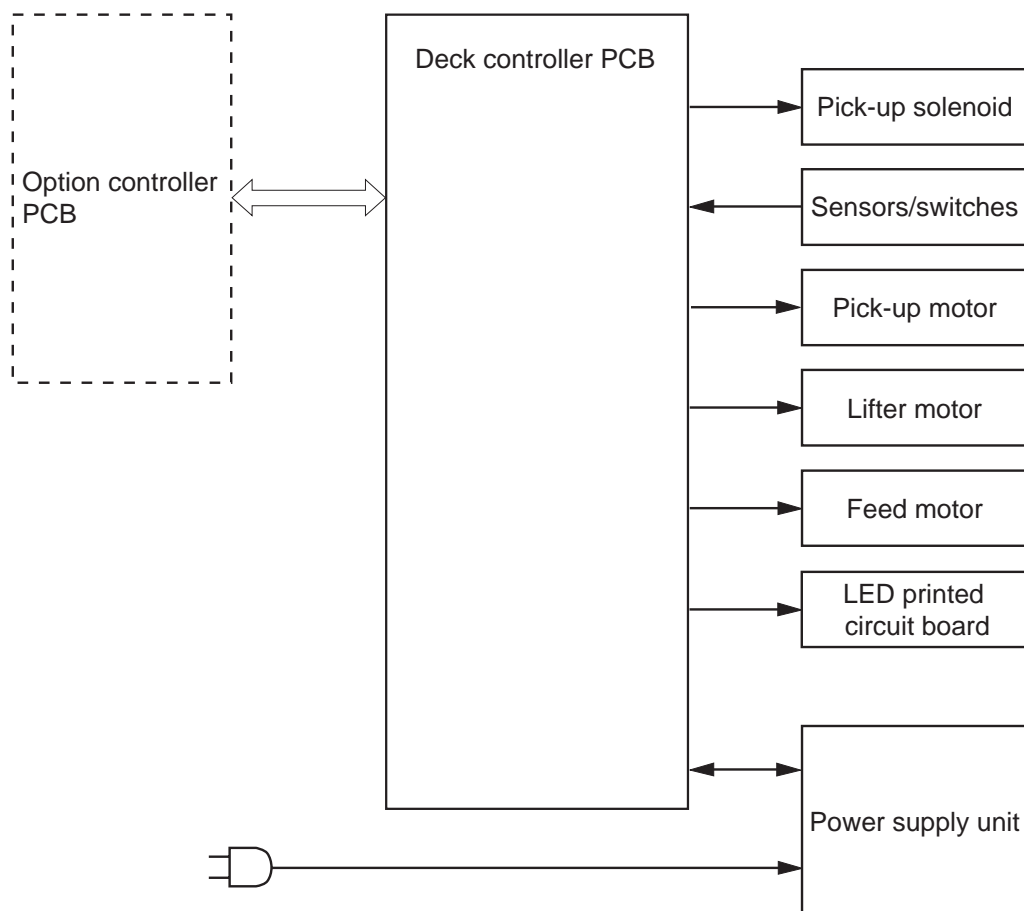


Figure 2-101

B. Deck controller PCB

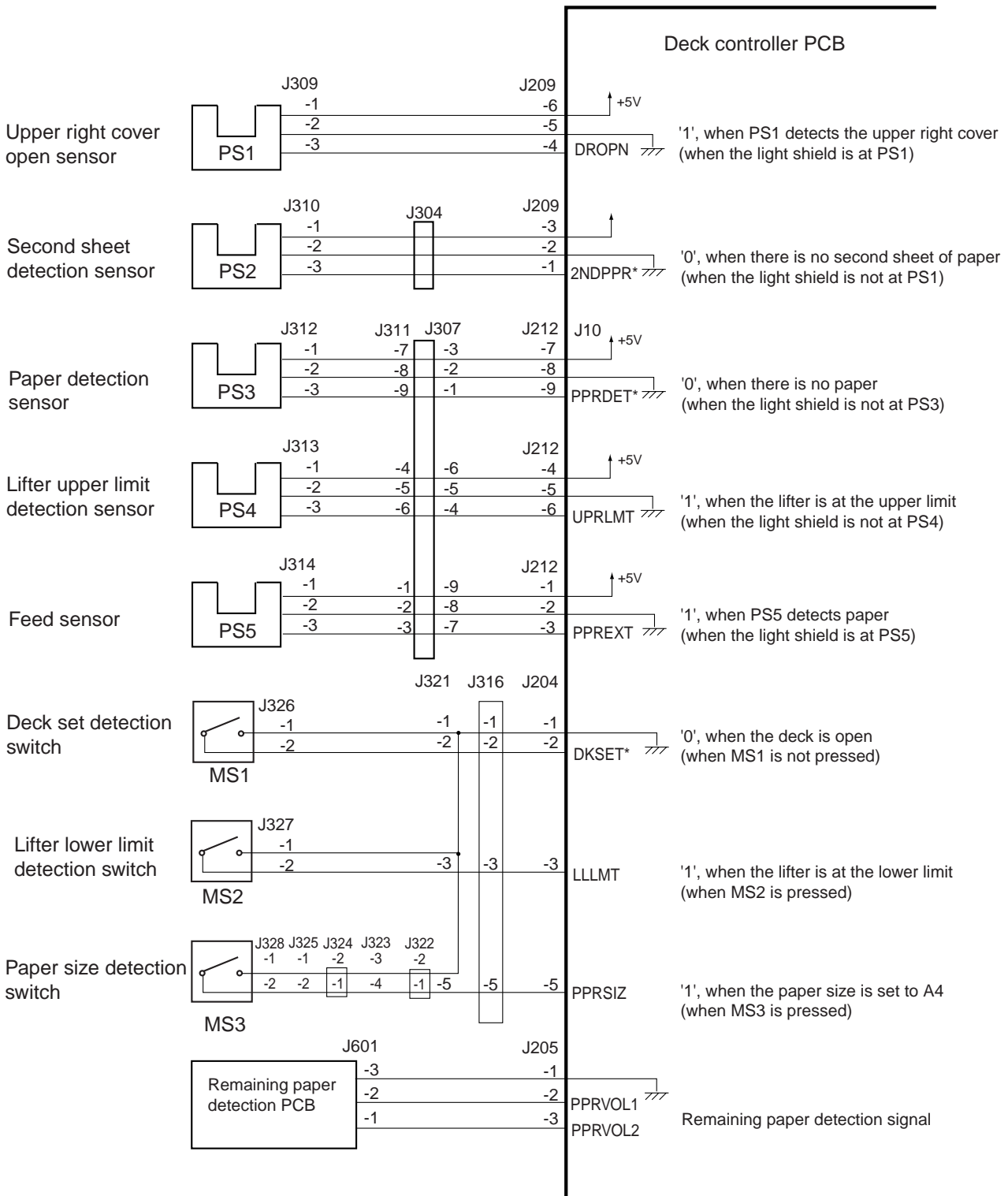


Figure 2-102

C. Deck controller PCB output

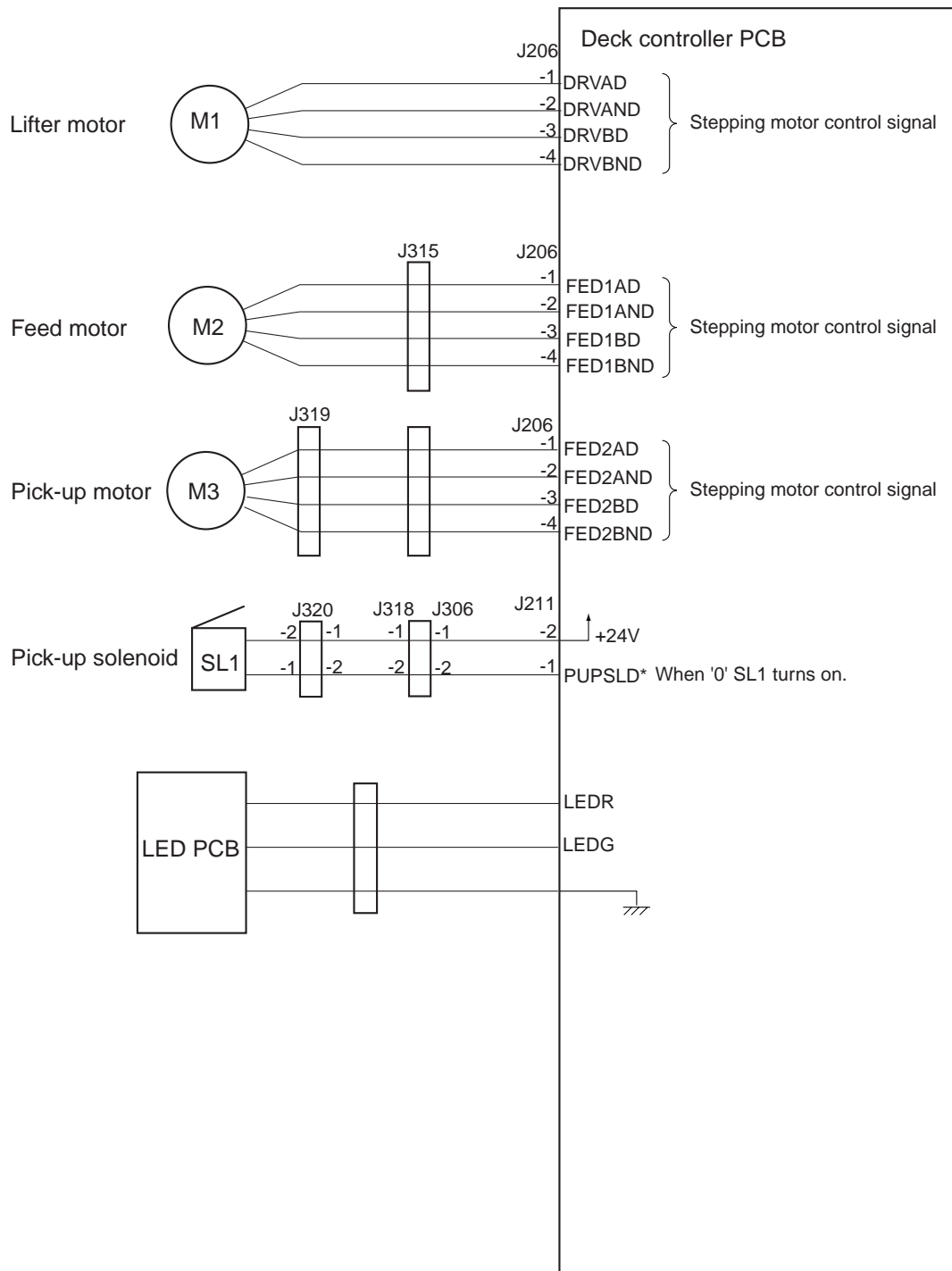


Figure 2-103

II. PICK-UP FEED SYSTEM

A. Overview

The deck out-of-paper sensor (PS3) detects whether or not there is copy paper in the deck. When the pick-up start signal is transmitted from the option controller PCB of the copier main unit, the deck controller PCB starts turning the pick-up motor (M3). This action causes the pick-up roller, feed roller 1 and separation roller to turn.

At the same time as the pick-up motor starts turning, the pick-up solenoid (SL1) goes on. This causes the pick-up roller to be lowered to the copy paper surface. As a result, the copy paper is fed to feed roller 2 by the rotating pick-up roller.

When the leading edge of the copy paper reaches the feed sensor (PS5) in front of feed roller 2, the feed motor starts to turn and the copy paper is fed to the copier main unit .

When the deck controller PCB detects that the currently picked up sheet is the last sheet during continuous copying when the second sheet detection sensor is off, before the next pick-up operation starts, the deck controller PCB notifies the option controller PCB in the copier main unit that there is no more paper.

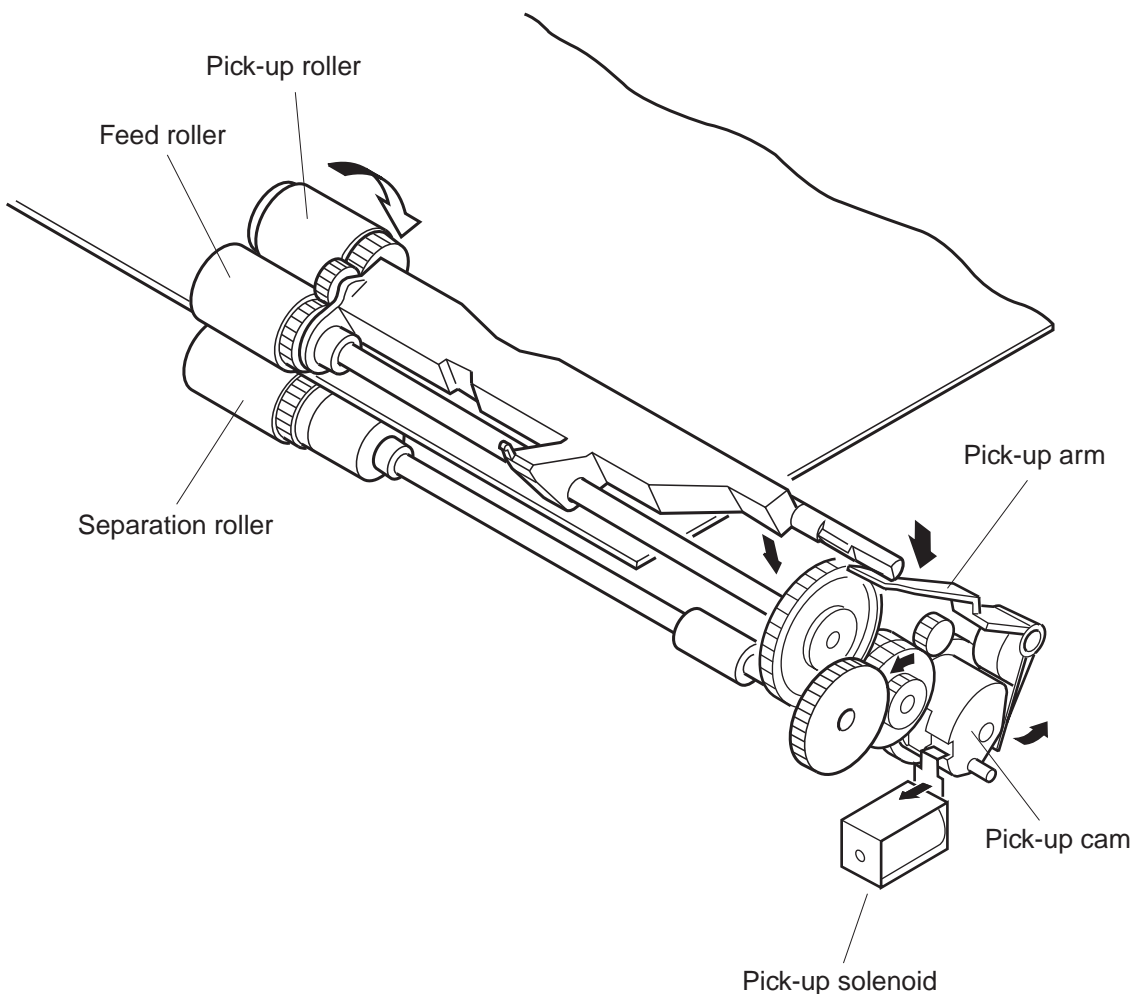


Figure 2-201

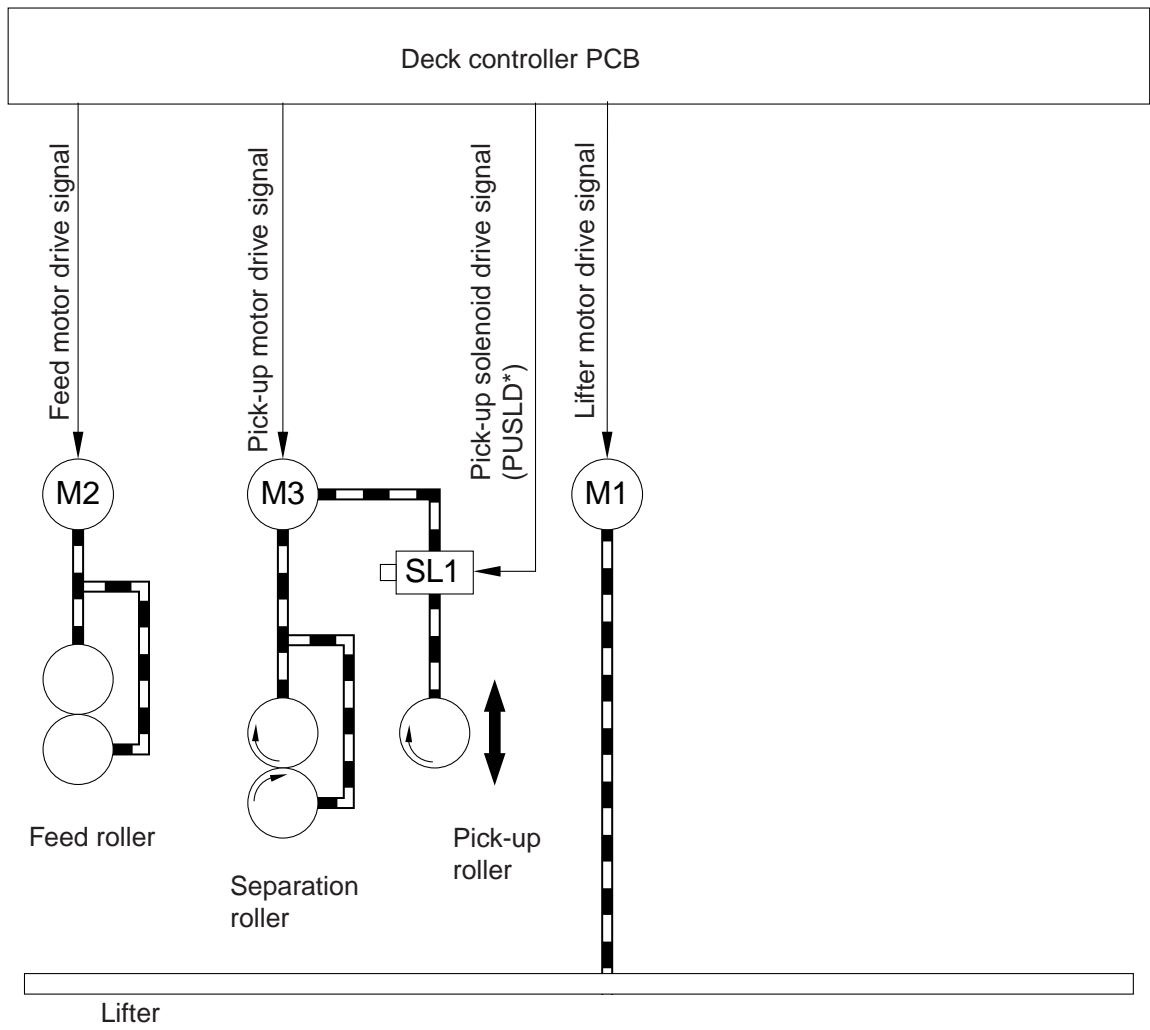


Figure 2-202

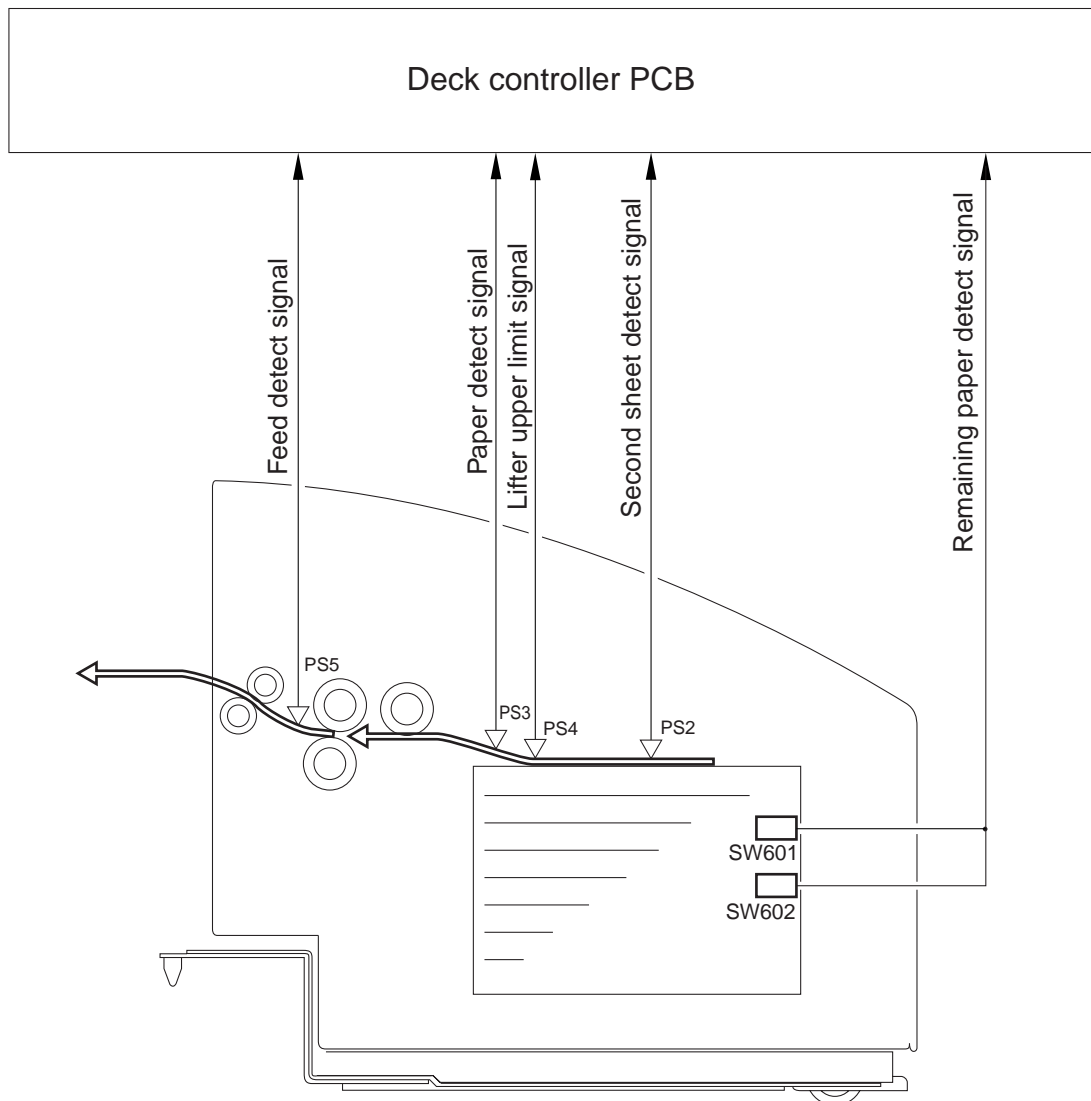


Figure 2-203

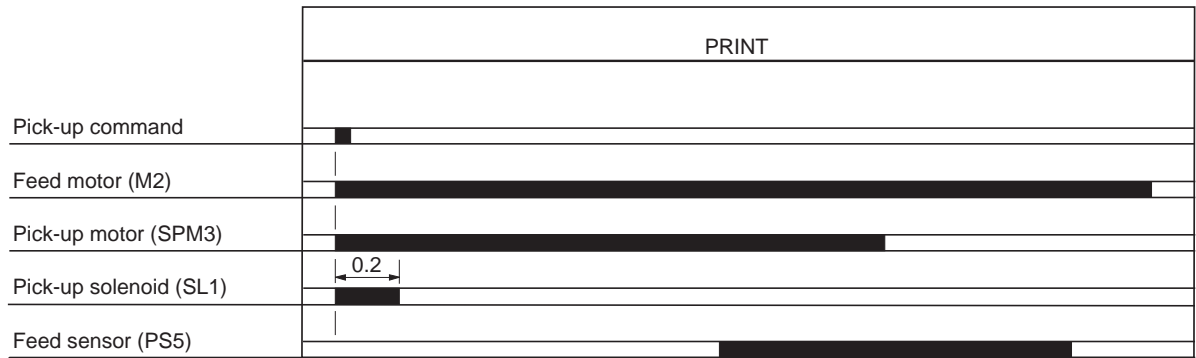


Figure 2-204

B. Lifter operation

The lifter in the deck is suspended by two wires. The wires are operated by the lifter motor (M1: stepping motor).

When the right upper cover open sensor (PS1) detects that the upper right door has been opened, the deck controller PCB reverses the lifter motor and lowers the lifter until the lower limit lifter switch (MS3) goes on.

When the right upper cover opening sensor (PS1) detects that the upper right door has been closed, the deck driver PCB rotates the lifter motor forward and raises the lifter until the upper limit lifter sensor (PS4) goes on.

As the number of sheets are reduced by paper being picked up, the upper limit lifter detection sensor goes off, the deck controller PCB rotates the lifter motor forward and raises the lifter until the lifter upper limit goes on.

When the lifter upper limit sensor does not go on within the stipulated time after the lifter starts to rise, the deck controller PCB assumes that a lifter breakdown has occurred and transmits an error code to the option controller PCB in the copier main unit .

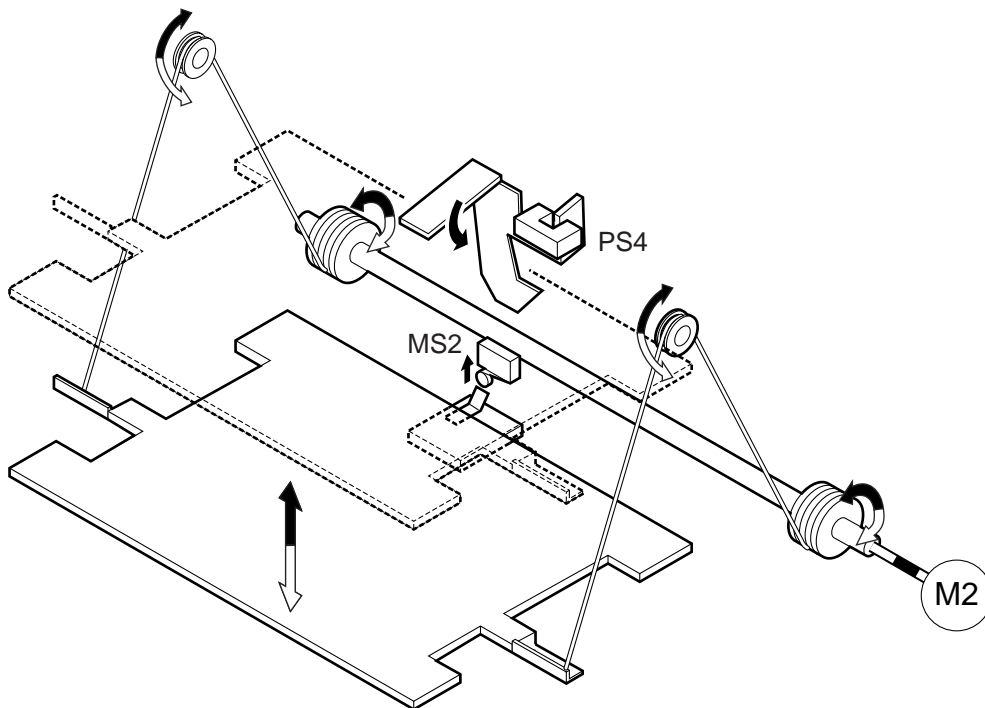


Figure 2-205

C. Remaining paper detection mechanism

The remaining paper detection switch 1 (SW601) and the remaining paper detection switch 2 (SW602) on the remaining paper detection PCB are pressed through the lifter ascending movement and the swing arm operation. The combination of the on/off status of these two remaining paper detection switches makes it possible to detect four remaining paper levels. Remaining paper detection switch combinations are shown in Table 2-201.

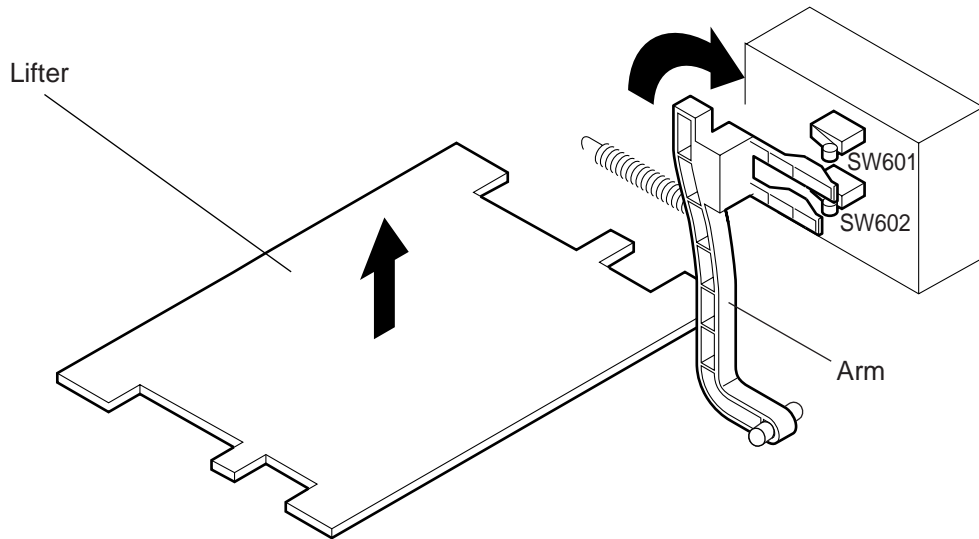


Figure 2-206

Remaining paper detection switches		Remaining paper level
SW601	SW602	
OFF	OFF	100%
ON	OFF	75%
ON	ON	50%
OFF	ON	25%

Table 2-201

D. Paper size detection mechanism

This copier detects paper size through the use of a paper size detection switch (MS3). This paper size detection switch is pressed by the notch in the paper size indication plate; the switch goes on when the paper size detection plate is set to the A4 side, and goes off when the plate is set to the LTR size side.

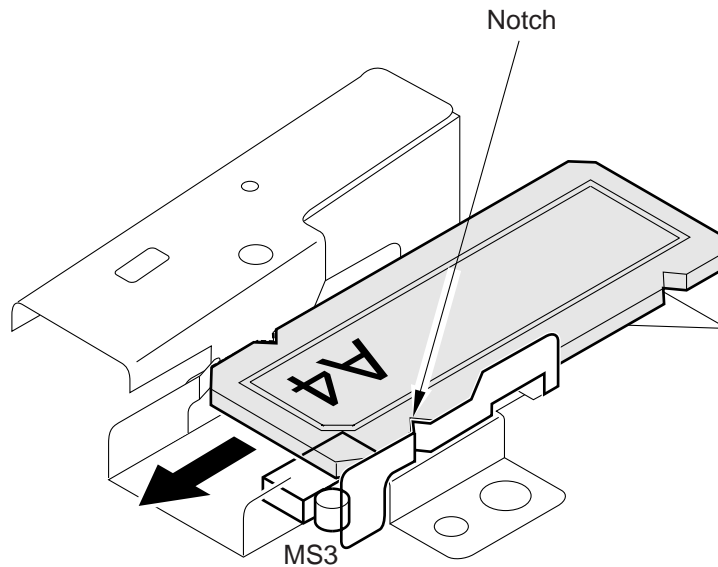


Figure 2-207

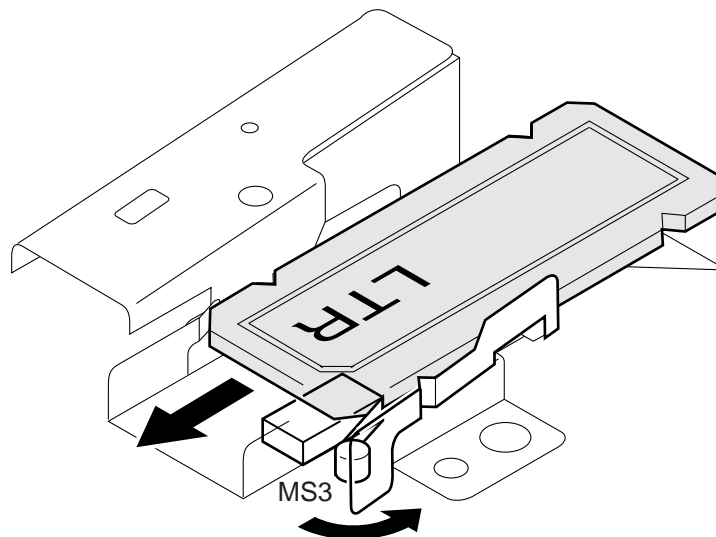


Figure 2-208

E. Jam detection

A feed sensor (PS5) has been installed to detect the presence of copy paper and whether or not the copy paper is being fed normally.

The microprocessor in the deck driver printed circuit board detects paper jams by sensing whether or not the copy paper is at the sensor position at check timing intervals stored in memory.

When the microprocessor assumes that a paper jam has occurred, it notifies the copier main unit to stop the pick-up operation and tells the option controller PCB that a paper jam has occurred.

1. Pick-up delay jam

The microprocessor assumes that a pick-up delay jam has occurred when the copy paper does not reach the feed sensor (PS5) within a specified time after receiving the pick-up start signal.

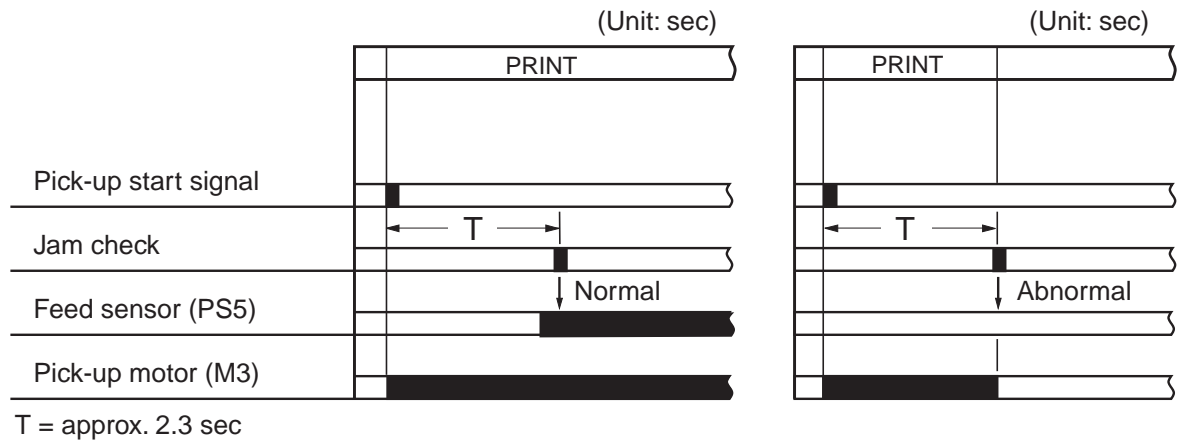


Figure 2-209

2. Stationary jam

The microprocessor assumes that a stationary jam has occurred when the copy paper does not pass the feed sensor (PS5) within a specified time after the feed sensor (PS5) goes on.

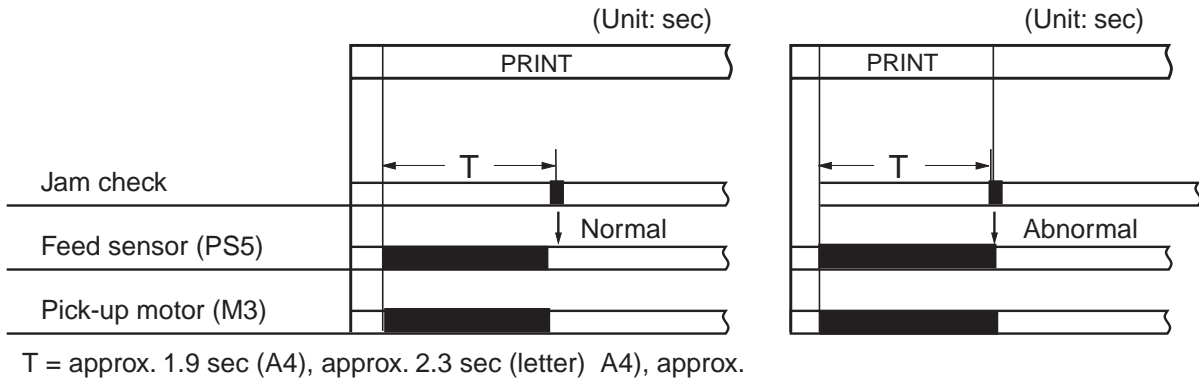


Figure 2-210

III. POWER SUPPLY

A. Overview

The power supply unit is equipped with a remote switch system.

When the power switch of the copier main unit is turned on, the option controller PCB in the copier main unit outputs a power on signal (PWRON) to the power supply PCB, via the deck controller PCB. When the PWRON signal is "1", the power supply provides +24 V and +5 V to the deck controller printed circuit board.

The lifter motor, pick-up motor, feed motor and solenoids use +24 V, while the sensors and the deck controller PCB ICs, etc., use +5 V. A block diagram of the power supply is shown below.

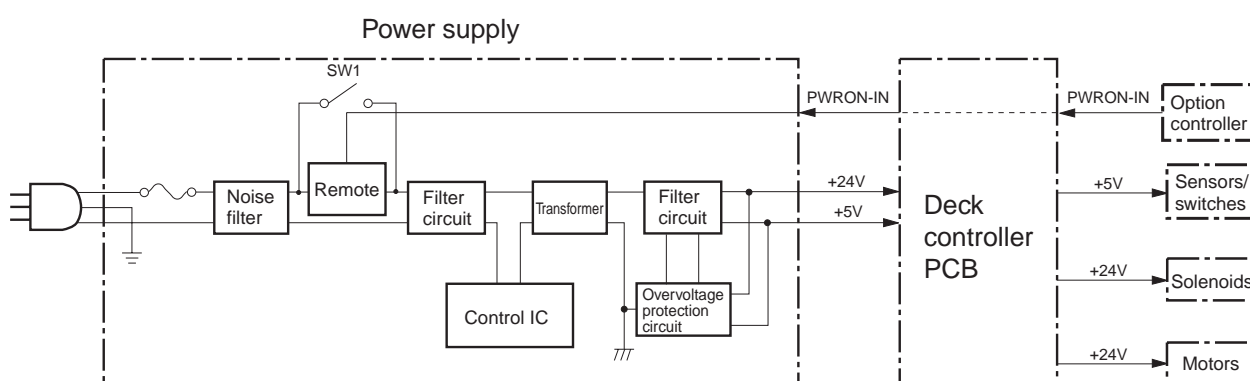


Figure 2-301

B. Protective Functions

The +24 V and +5 V power circuits are equipped with overvoltage and overcurrent protective functions that automatically turn off the output voltage to prevent the breakdown of power supply circuits in the event of overcurrent or overvoltage caused by electrical shorts or other problems on the load side.

When the overvoltage and overcurrent protection functions have been triggered, and DC voltage is no longer being supplied from the power supply circuit, turn off the power switch on the printer assembly, and correct the problem on the load side before turning on the printer assembly power switch.

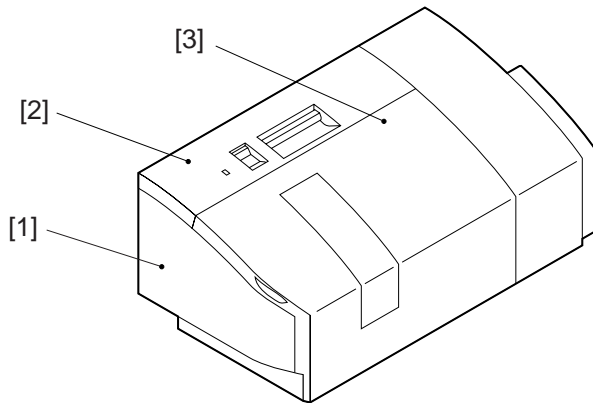
CHAPTER 3

MECHANICAL SYSTEM

I.	EXTERNAL CONTROL ASSEMBLY	3-1	B.	Removing the feeder motor (M2)	3-10
	A. External covers	3-1	C.	Removing the pick-up motor (M3)	3-10
II.	PICK-UP ASSEMBLY	3-3	IV.	ELECTRICAL PARTS AND COMPONENTS	3-11
	A. Removing the pick-up unit	3-3	A.	Deck controller PCB	3-11
	B. Tightening the lifter wire	3-9	B.	Power supply PCB	3-11
III.	DRIVE ASSEMBLY	3-10			
	A. Removing the lifter motor (M1)	3-10			

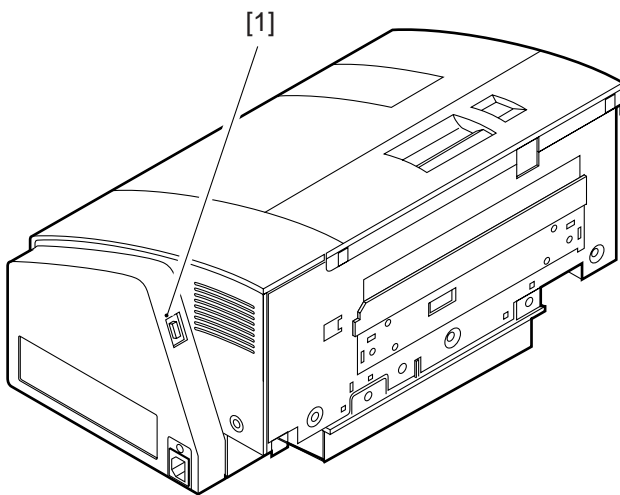
I. EXTERNAL CONTROL ASSEMBLY

A. External covers



- [1] Front cover
- [2] Upper left cover
- [3] Upper right cover

Figure 3-101



- [1] Rear cover

Figure 3-102

1. **Removing the upper left cover**
 - 1) Remove the two screws [1] and the upper right cover [2].

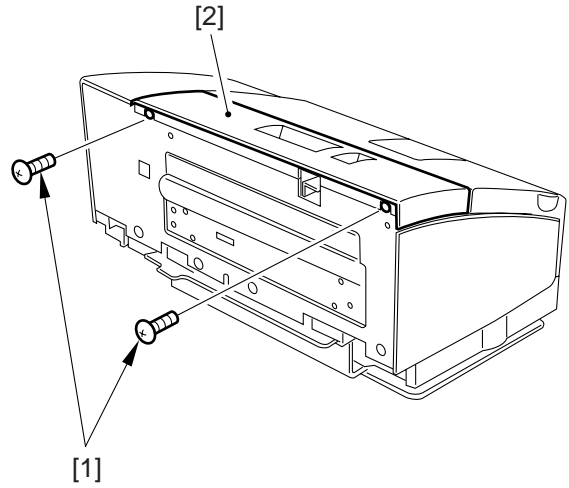


Figure 3-103

2. **Removing the front cover**
 - 1) Remove the upper left cover.
 - 2) Remove the two screws [1] and the front cover [2].

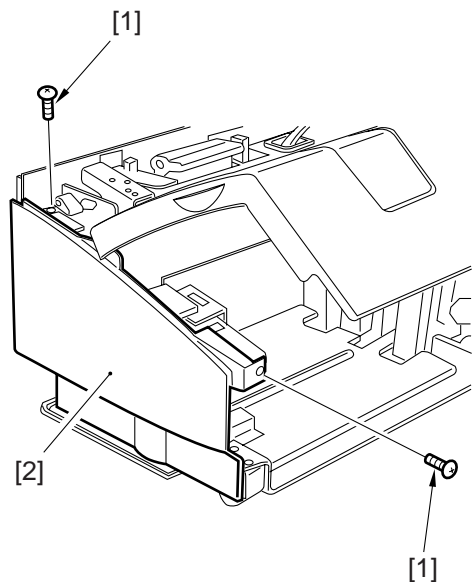


Figure 3-104

3. Removing the rear cover

- 1) Remove the upper left cover.
- 2) Remove the two screws [1] and the rear cover [2].

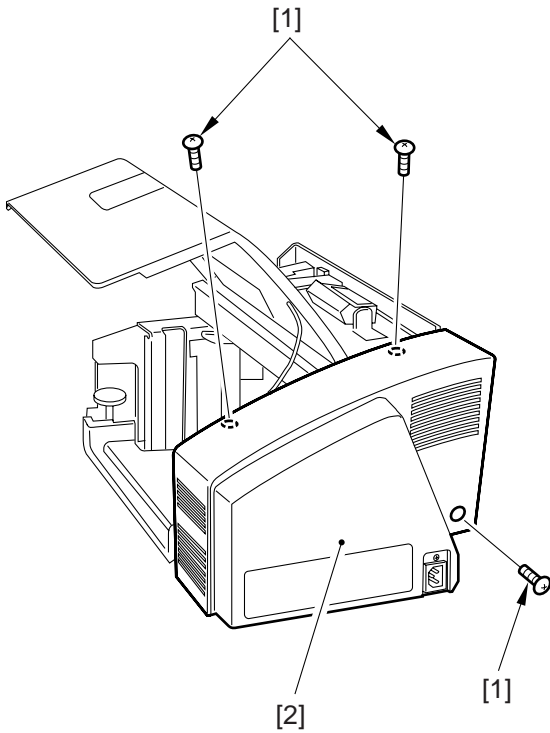


Figure 3-105

4. Removing the upper right cover

- 1) Remove the upper left cover.
- 2) Remove the three screws [1] and the upper right cover [2].

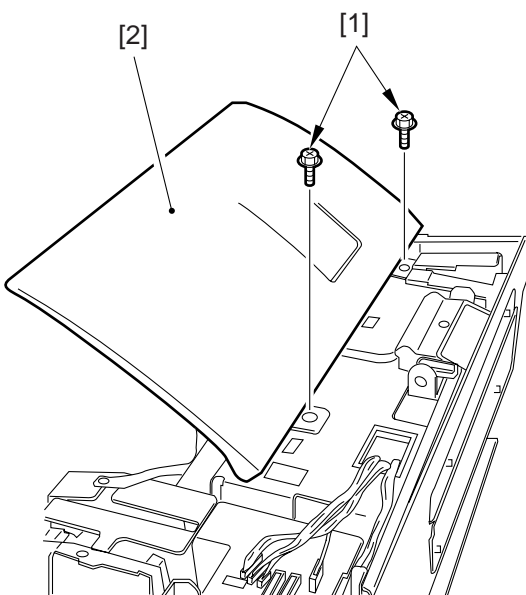


Figure 3-106

II. PICK-UP ASSEMBLY

A. Removing the pick-up unit

1. Remove the pick-up unit.

- 1) Remove the upper right cover.
- 2) Remove the front cover.
- 3) Remove the two screws [1] and the paper size limit panel [2].

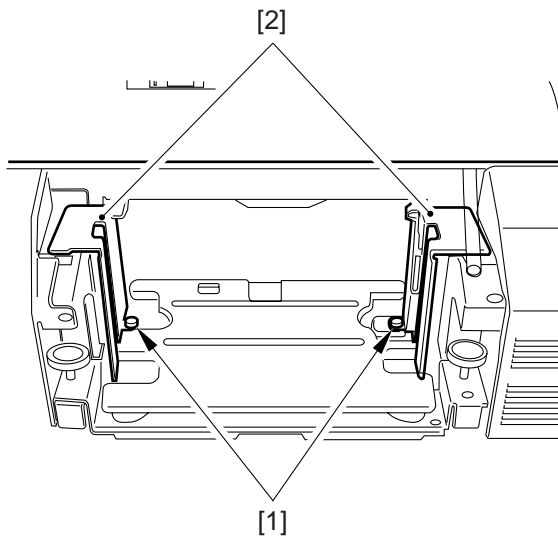


Figure 3-201

- 4) Remove the two screws [3], the fixing plate [4] and the paper size limit panel [5].

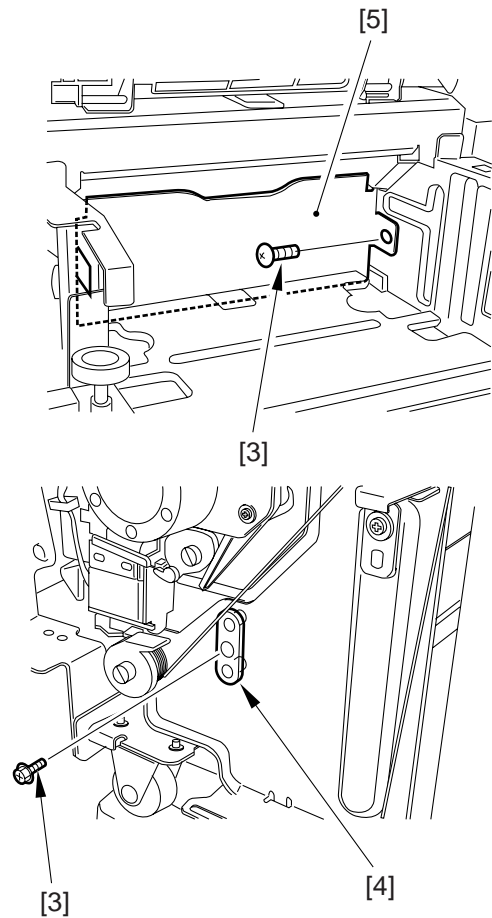


Figure 3-202

- 5) Remove the four connectors [6] to release the cable clamp [7].

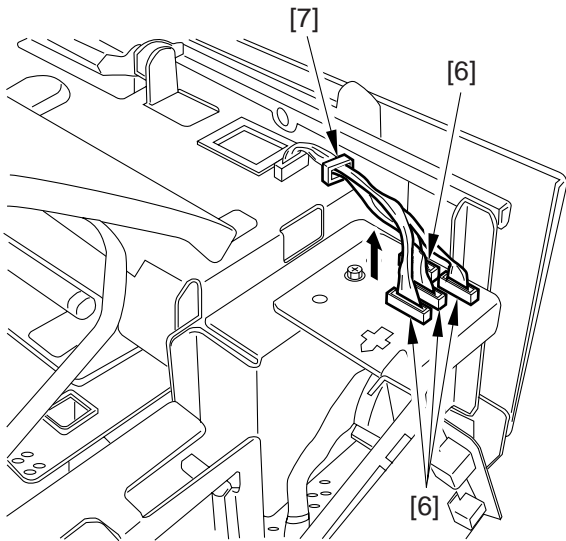


Figure 3-203

- 6) Remove the two screws [8] and pull the pick-up unit [9] toward you to remove it.

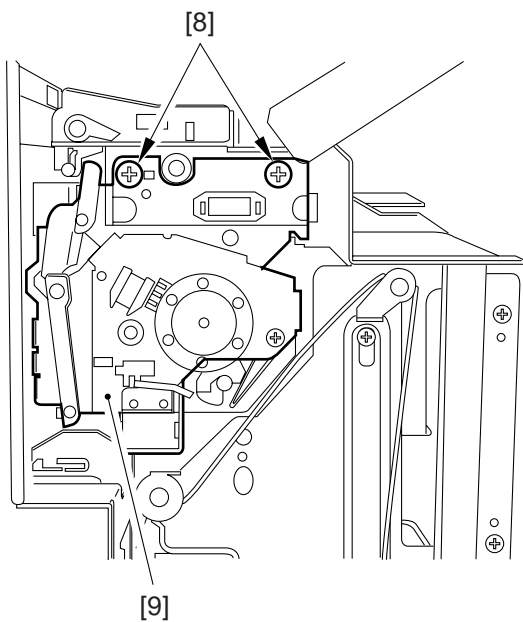


Figure 3-204

2. Removing the pick-up roller

- 1) Open the upper right cover.
- 2) Release the claw [1] and remove the pick-up roller from the shaft.

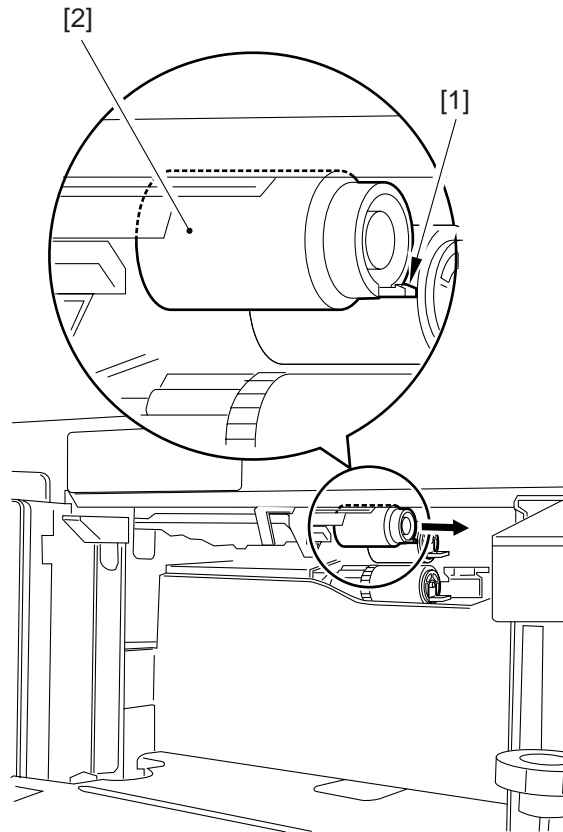


Figure 3-205

3. Removing the feed roller and separation roller

- 1) Remove the upper right cover.
- 2) Rotate the knob to remove the feed roller [2] and the separation roller [3].

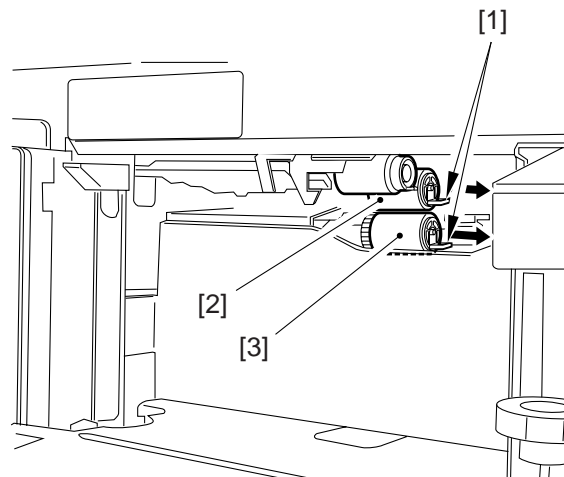


Figure 3-206

4. Lifter wire

a. Removing parts in front of the lifter wire.

- 1) Remove the upper left cover.
- 2) Remove the front cover.
- 3) Remove the three screws [3] and the bracket [4].

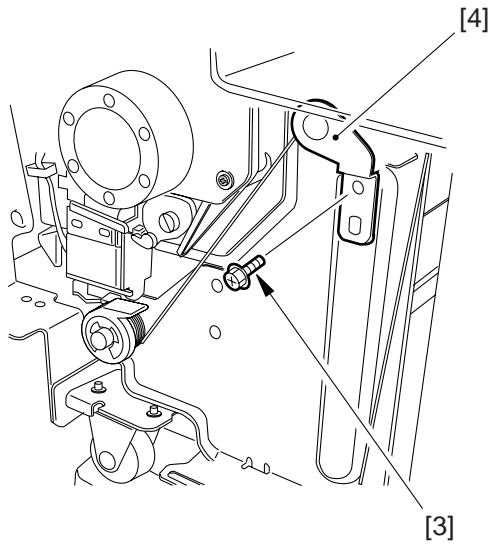


Figure 3-207

- 5) Remove the E-ring and the pulley cover [2].

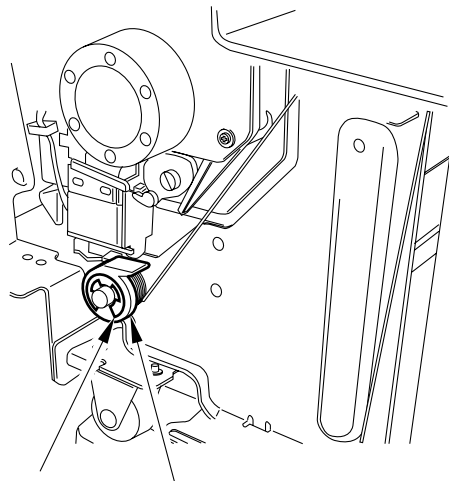


Figure 3-208

- 6) Remove the pulley cover [5].

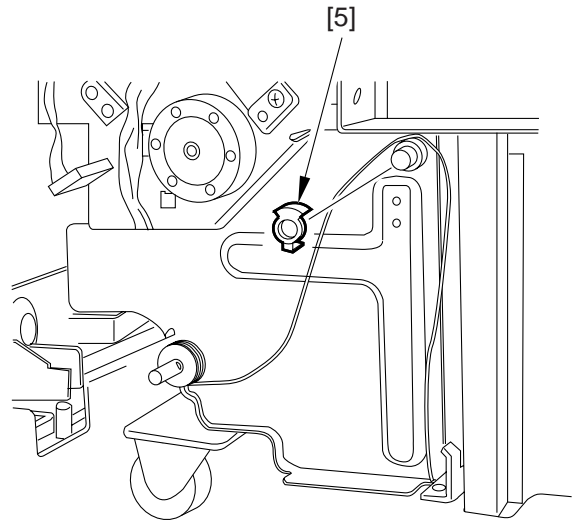


Figure 3-209

- 7) Remove the screw [1] and the lifter wire [7].

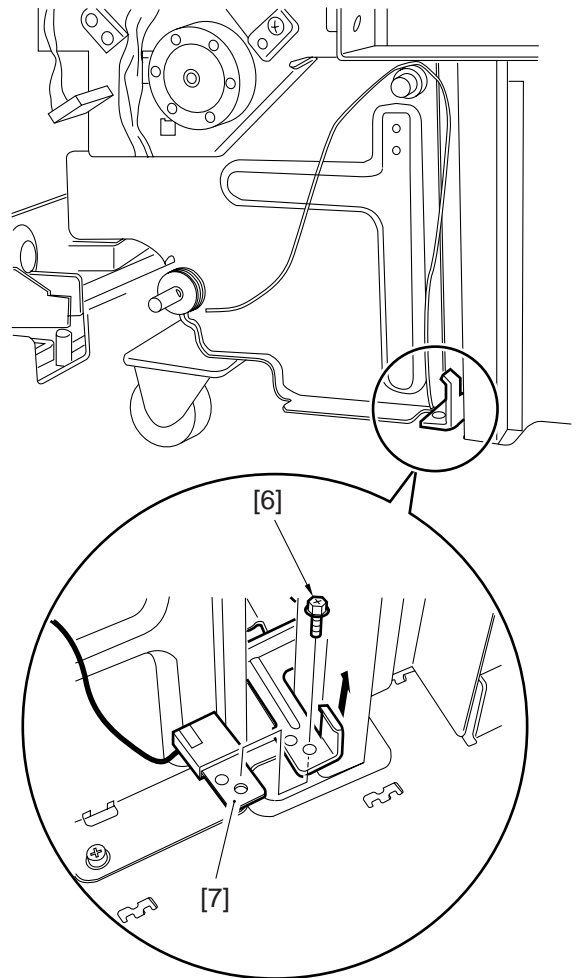


Figure 3-210

- b. Removing parts behind the lifter wire.
 - 1) Remove the upper left cover.
 - 2) Remove the rear cover.
 - 3) Remove the deck controller printed circuit board.
 - 4) Remove the power supply printed circuit board.
 - 5) Remove the three screws [1] and the power supply mount [2].

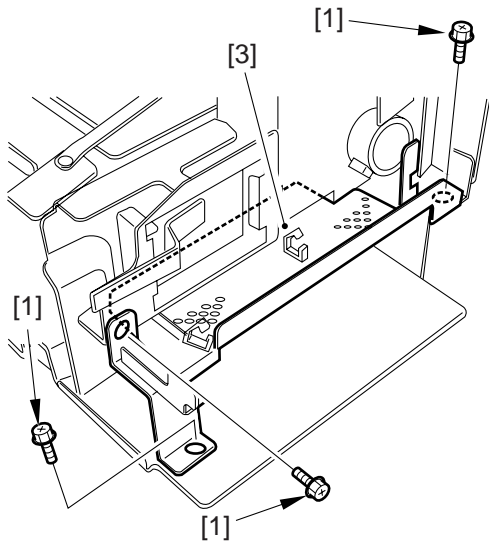


Figure 3-211

- 6) Remove the four connectors [3].

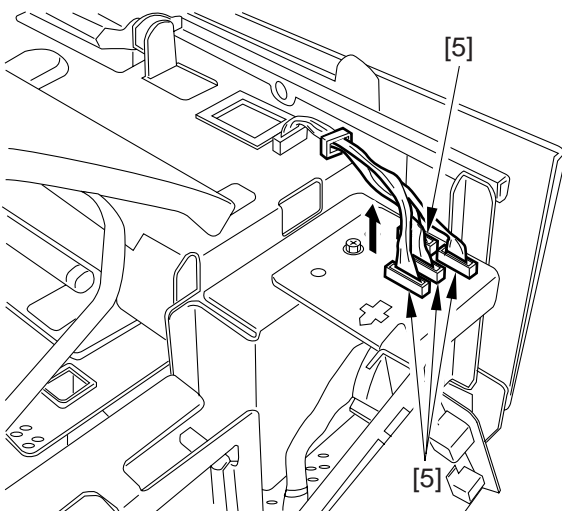


Figure 3-212

- 7) Remove the three screws [4] and the remaining paper detection unit [5].

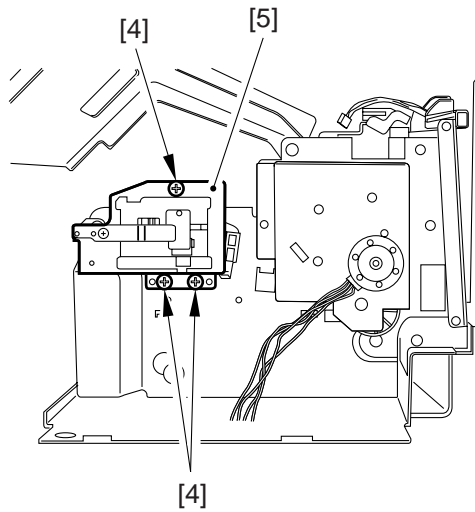


Figure 3-213

- 8) Remove the two screws [6] and the lifter drive unit [7].

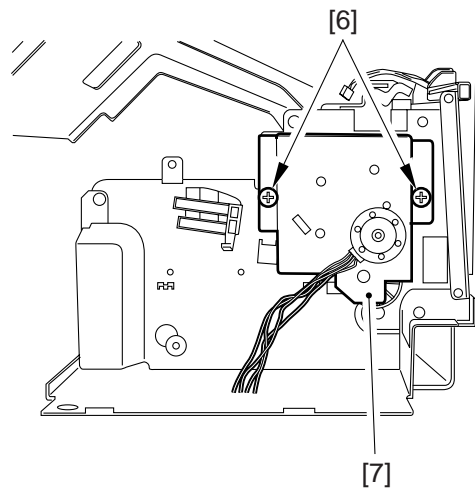


Figure 3-214

- 9) Remove the three screws [8] and the rear panel [9].

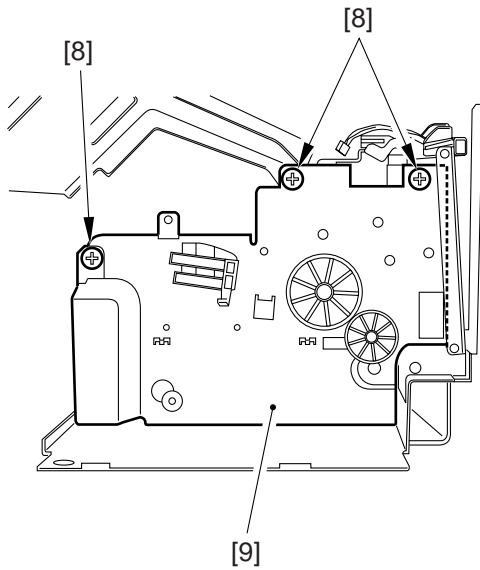


Figure 3-215

- 12) Remove the E-ring [12] and the pulley cover [13].

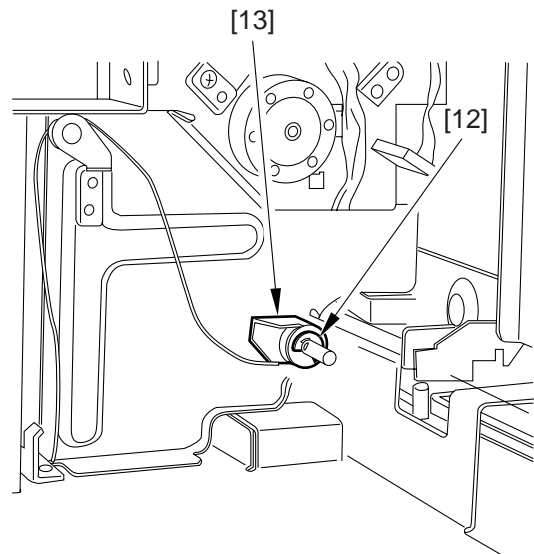


Figure 3-217

- 11) Remove the E-ring [10] and the gear [11].

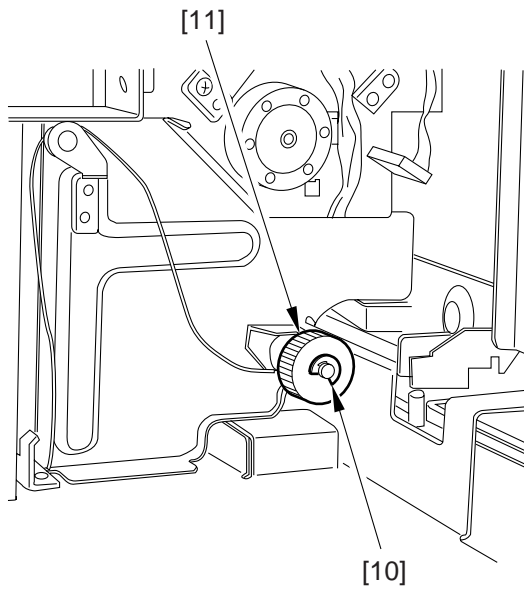


Figure 3-216

- 13) Remove the screw [14] and the bracket [15].

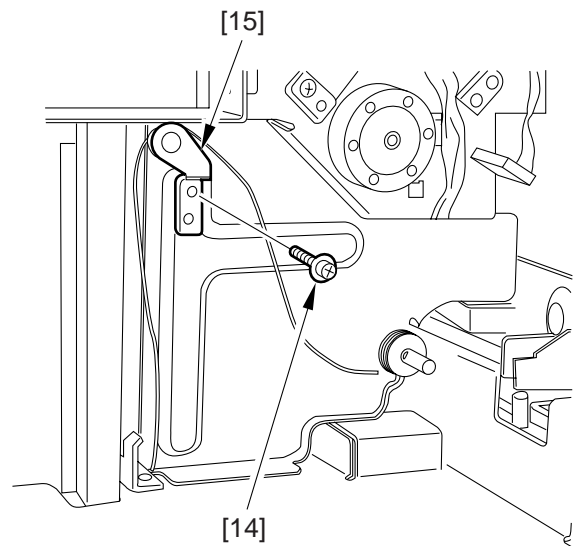


Figure 3-218

- 15) Remove the screw [17] and the lifter wire [18].

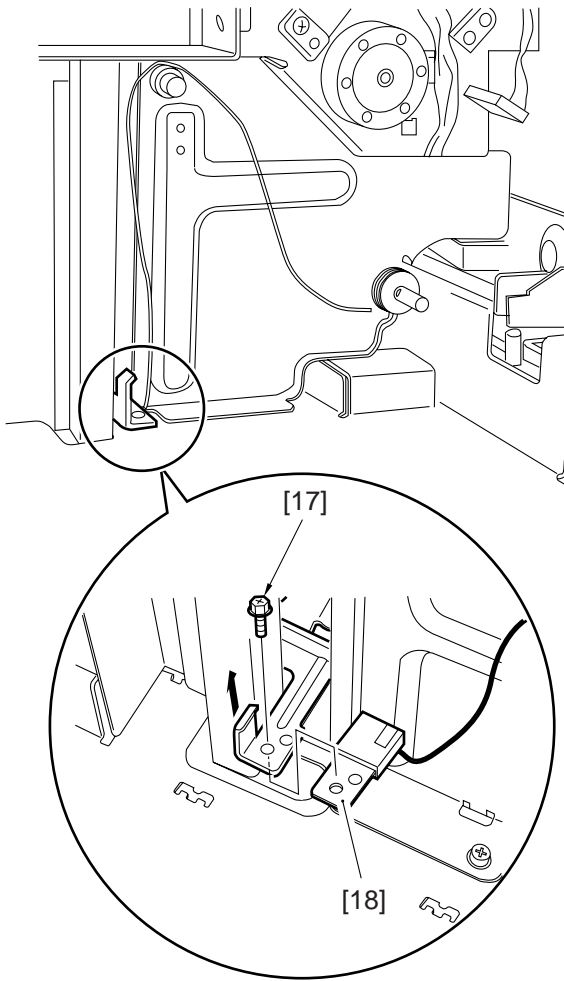


Figure 3-219

B. Tightening the lifter wire

- 1) Secure the bracket [1] to the lifter with a screw.
- 2) Thread the lifter wire onto the upper pulley [2].
- 3) Load the spool of the lifter wire onto the pulley [3] of the lifter drive shaft, and wind the wire around the pulley groove twice, by hand.
- 4) Now secure the pulley to the lifter shaft with the two set screws [4].

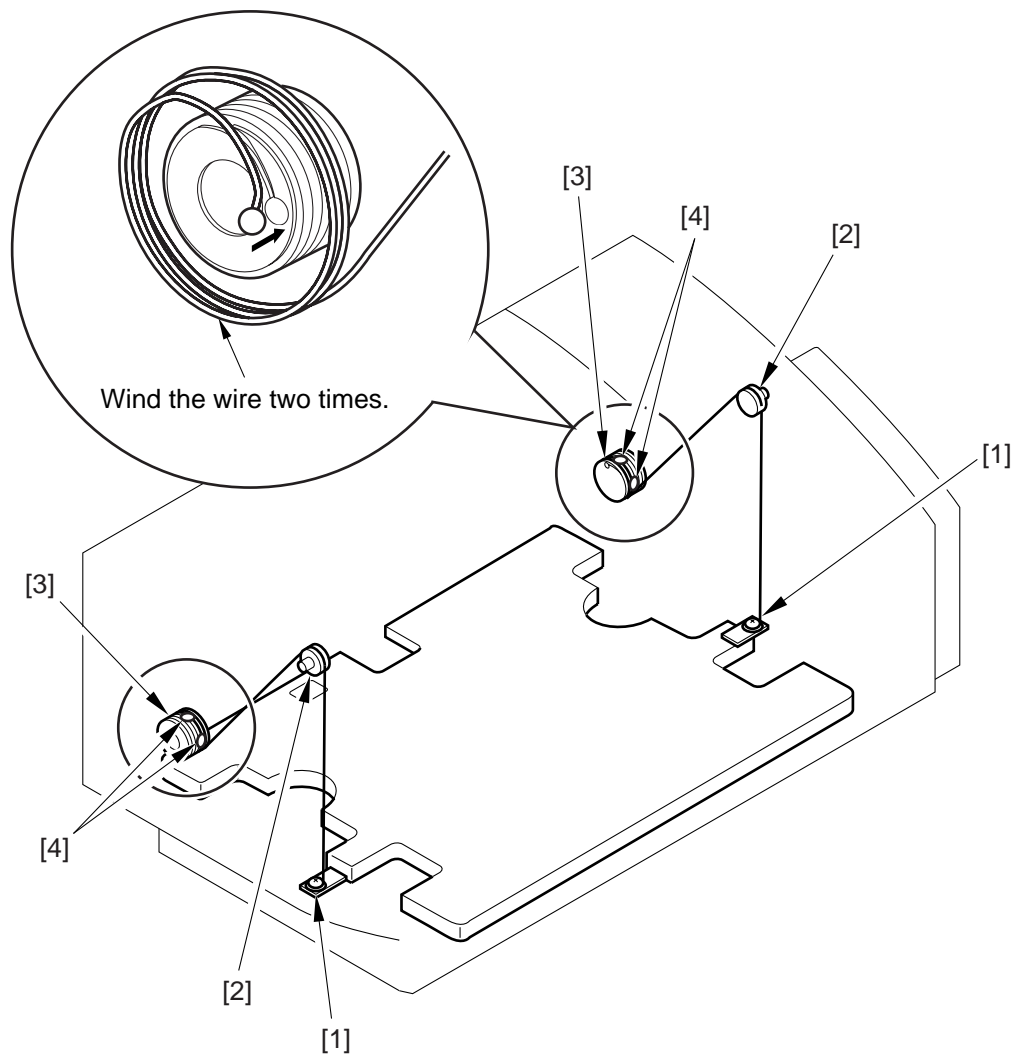


Figure 3-220

III. DRIVE ASSEMBLY

A. Removing the lifter motor (M1)

- 1) Remove the upper left cover.
- 2) Remove the rear cover.
- 3) Remove the deck controller printed circuit board.
- 4) Remove the two screws [2] and the lifter motor (M1) [3].

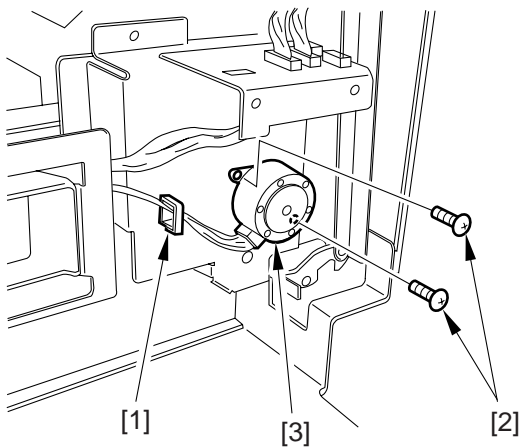


Figure 3-301

B. Removing the feeder motor (M2)

- 1) Remove the pick-up unit.
- 2) Remove the two screws [1] and the feeder motor (M2) [2].

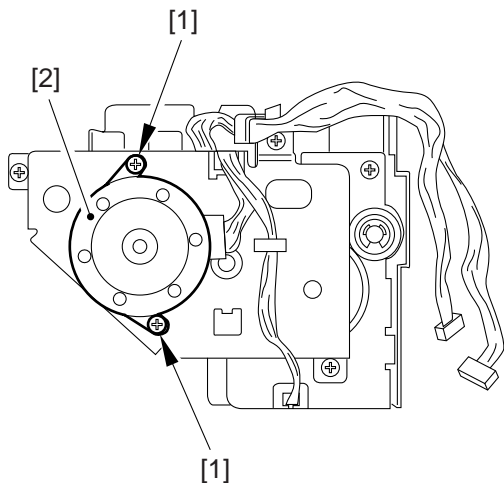


Figure 3-302

C. Removing the pick-up motor (M3)

- 1) Remove the upper left cover.
- 2) Remove the front cover.
- 3) Remove the connector [1], the two screws [2] and the feeder motor (M3) [3].

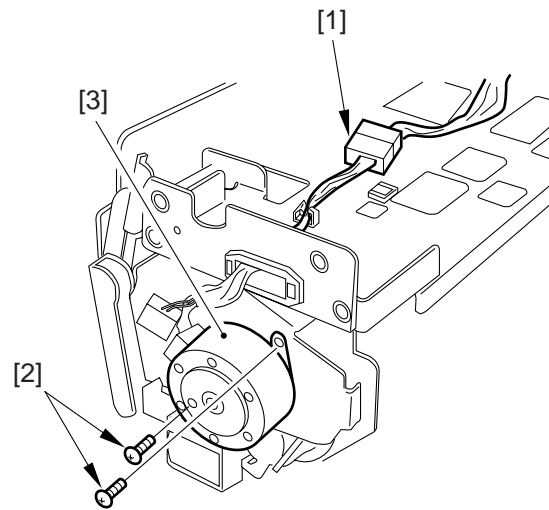


Figure 3-303

IV. ELECTRICAL PARTS AND COMPONENTS

A. Deck controller PCB

1. Removing the deck controller printed circuit board

- 1) Remove the upper left cover.
- 2) Remove the rear cover.
- 3) Remove the 12 connectors [1], the two screws [2] and the deck controller PCB [3].

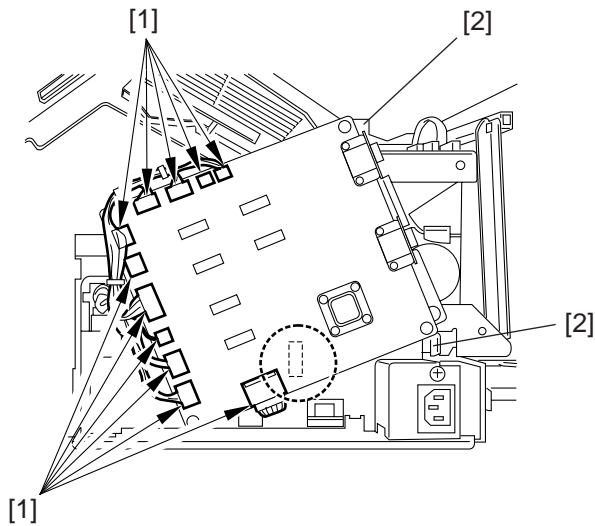


Figure 3-401

B. Power supply PCB

1. Removing the power supply printed circuit board

- 1) Remove the upper left cover.
- 2) Remove the rear cover.
- 3) Remove the deck controller PCB.
- 4) Remove the two screws [1] and pull out the power supply PCB [2] to remove it.

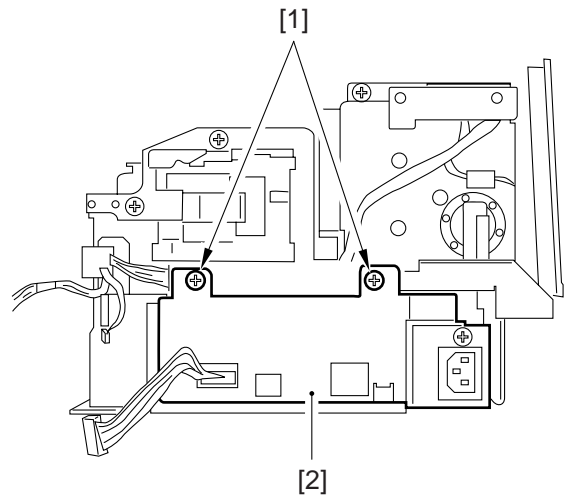


Figure 3-402

CHAPTER 4

MAINTENANCE AND INSPECTION

I.	PERIODIC REPLACEMENT PARTS	4-1	III.	PERIODIC MAINTENANCE	4-1
II.	CONSUMABLES REPLACEMENT TARGETS	4-1	IV.	PARTS TO BE CLEANED DURING A CUSTOMER SERVICE CALL	4-2

I. PERIODIC REPLACEMENT PARTS

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

II. CONSUMABLES REPLACEMENT TARGETS

These parts may require replacement once or more during the warranty period due to deterioration or damage. The expected life (number of pages) of parts that do not need to be replaced until they fail is indicated below.

As of January, 1999

No.	Name	Part No.	Quantity	Expected life span	Remarks
1	Feed roller	RF5-1834-000	1	150,000 sheets	Actual number of sheets used.
2	Separation roller	RF5-1834-000	1	150,000 sheets	Actual number of sheets used.

Note:

The information in the table above is only an estimate, and may be revised in the light of empirical data.

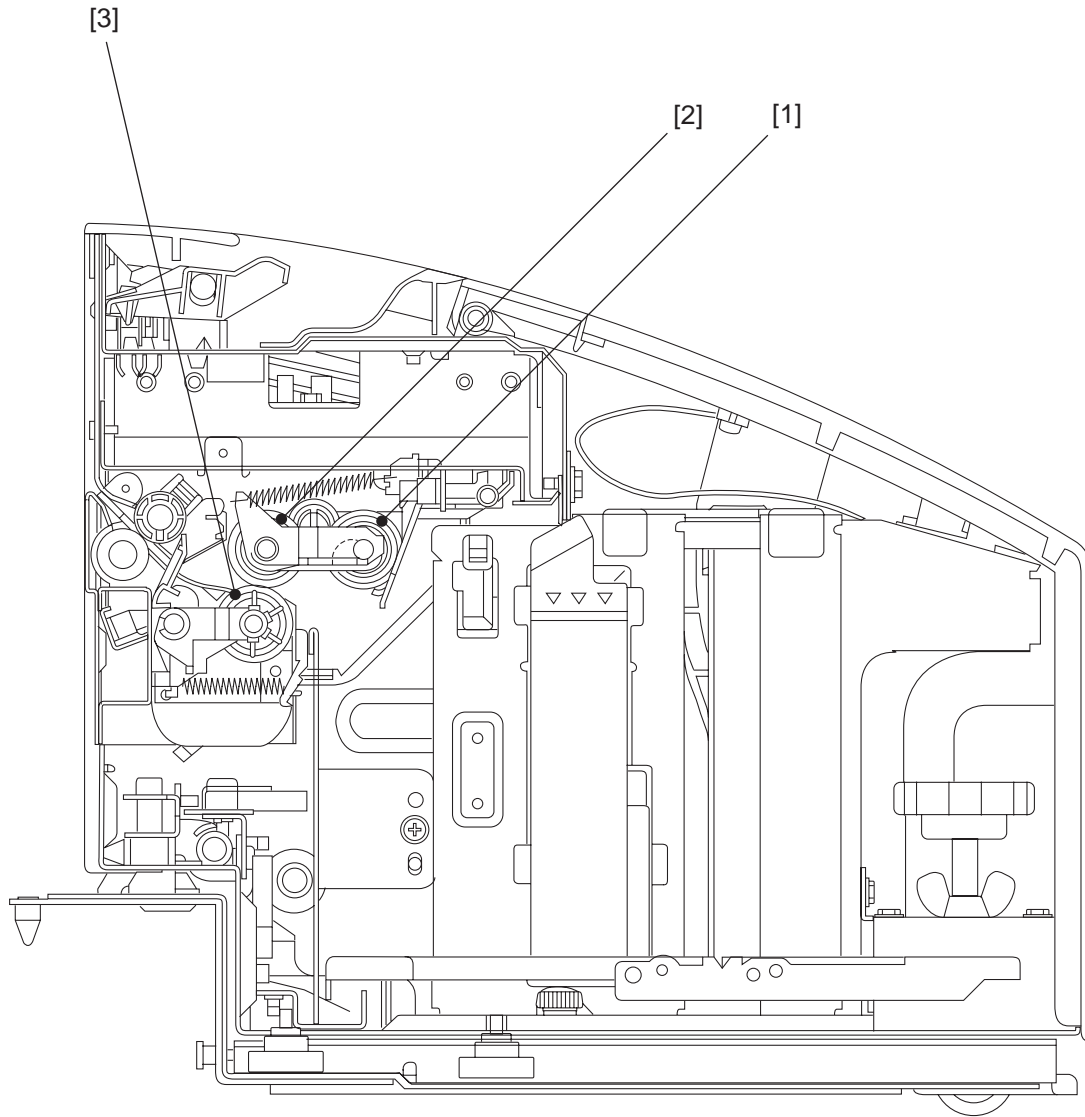
III. PERIODIC MAINTENANCE

There are no parts that require periodic maintenance.

IV. PARTS TO BE CLEANED DURING A CUSTOMER SERVICE CALL

1. Pick-up roller, separation roller, feed roller

Use lint-free paper or a cloth moistened in alcohol to clean these parts.



[1] Pick-up roller
[2] Feed roller

[3] Separation roller

Figure 4-401

CHAPTER 5

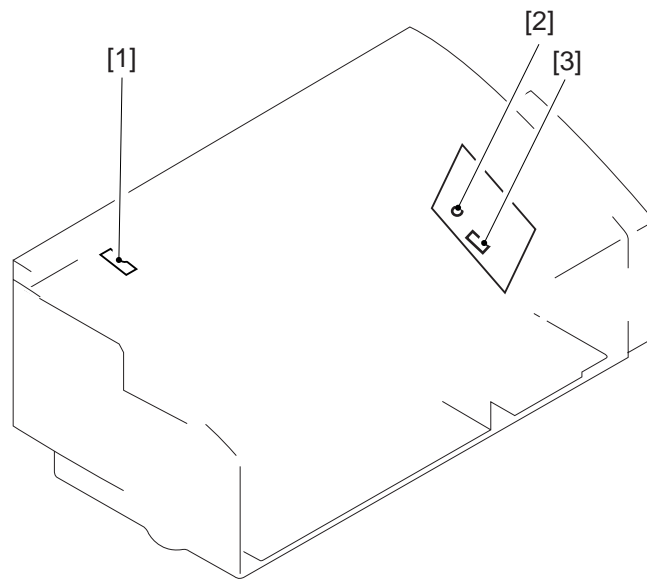
TROUBLESHOOTING

I.	STANDARDS AND ADJUSTMENTS.....	5-1			
	A. Overview	5-1			
	B. Operational checks to be performed by the user	5-1			
	C. Operational checks to be performed by the service engineer	5-2			
II.	COUNTERMEASURES TO COPE WITH DEFECTIVE OPERATION.....	5-5			
III.	COUNTERMEASURES TO COPE WITH DEFECTIVE FEED	5-7			
	A. Paper jams	5-7			
	B. Incomplete Feed	5-9			
IV.	LOCATION OF ELECTRICAL PARTS	5-10			
	A. Sensors	5-10			
	B. Solenoids and Motors	5-11			
	C. PCBs	5-12			
V.	LIST OF VARIABLE RESISTORS (VR), LEDS, CHECK PINS BY PRINTED CIRCUIT BOARD	5-13			
	A. Deck controller PCB	5-14			
	B. User LED PCB	5-15			
	C. Remaining paper detection PCB	5-15			

I. STANDARDS AND ADJUSTMENTS

A. Overview

When a breakdown or jam occurs in the unit, the condition of the unit can be checked by the user LED (LED1: green and orange 2-colour light) on the LED PCB and the service LED (LED201: red light) in the deck driver PCB. In combination with the DIP switches (SW201) on the paper deck driver PCB you can check the details of breakdowns and errors.



- [1] User LED
- [2] Service LED
- [3] DIP switch

Figure 5-101

B. Operational checks to be performed by the user

The condition of the user LED (LED1) in the unit enables you to check operational conditions.

- 1) Continuous green light: the unit and the printer assembly are communicating normally.
- 2) Flashing orange light: a paper jam has occurred, a door is open or other condition requiring operator intervention has occurred.
- 3) Continuous orange light: breakdown

The user LEDs operate only when the DIP switches are in the following state: SW201-1: OFF, SW201-2: OFF, SW201-3: OFF, SW201-4: OFF (factory default settings).

C. Operational checks to be performed by the service engineer

The combination of DIP switch indications and service LED (LED202) lighting makes it possible to check the operational condition of the unit.

1. Normal operation

During normal operation the DIP switches are in the following state: SW201-1: OFF, SW201-2: OFF, SW201-3: OFF, SW201-4: OFF.

The service LED repeats a cycle consisting of 0.5 sec on and 0.3 sec off when the unit is operating normally. When an error occurs, the service LED flashes in the cycle shown below: header (1.0 sec on, 0.2 sec off), detected error details (0.3 sec on, 0.2 sec off) and pause (2.0 sec off).

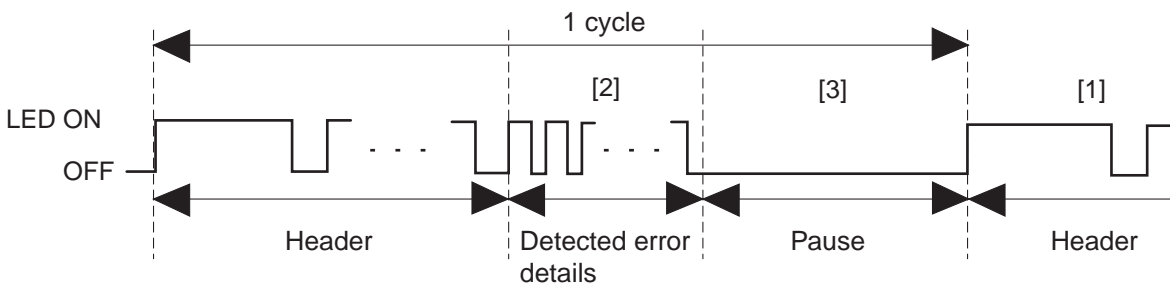


Figure 5-102

Use the information in Table 5-101 to identify errors based on service LED lighting status. For example, when the service LED flashes twice in the header section, and once in the error detection section, the feeder sensor jam.

Header	Detection details	Error description
2	1	Feed sensor delay jam
2	2	Feed sensor initial jam
2	4	Feed sensor stationary jam
1	1	Deck open
1	2	Upper right cover open, lifter being raised
1	3	Out of paper

Table 5-101

2. Sensor Check

To enter the sensor check mode, set the DIP switches to the following settings: SW201-1: OFF, SW201-2: OFF, SW201-3: ON, SW201-4: ON; then turn on the power.

When the sensor check mode is entered, you can check the state of the 5 sensors and 5 switches listed below.

- Upper cover open detection sensor (PS1)
- Second sheet detection sensor (PS2)
- Paper detection (PS3)
- Lifter upper limit detection sensor (PS4)
- Feed sensor (PS5)
- Deck set detection switch (MS1)
- Lifter lower limit detection switch (MS2)
- Paper size detection switch (MS3)
- Remaining paper detection switch 1 (SW601)
- Remaining paper detection switch 2 (SW602)

<Operation Procedure>

- 1) Turn off the power to the printer assembly.
- 2) Open the rear cover.
- 3) Set the DIP switches as follows: SW201-1: OFF, SW201-2: OFF, SW201-3: ON, SW201-4: ON
- 4) Pull the deck out of the copier, open the upper right cover and turn on the power.
- 5) Press the sensor levers or switches to check if the LEDs go on or not.
Since it is not possible to check which sensor is malfunctioning when two sensor levers are pressed, press one at a time. And, do not touch the switches with bare hands.
- 6) If an LED does not go on, this indicates that the corresponding switch or LED is malfunctioning.

3. Test pick-up

A test pick-up starts when the DIP switches are set as follows, and the power is turned on: SW201-1: ON, SW201-2: OFF, SW201-3: ON, SW201-4: OFF. This test continues as long as there is paper in the deck.

The pick-up mode is exited by turning off SW201-1 and the test pick-up is interrupted. The test pick-up can be resumed by setting SW201-1 back to ON again.

Note:

1. Since the printer assembly is not on when the unit is in the pick-up mode, picked up paper and fed sheets will cause a paper jam in the printer assembly. Thus, if multiple sheets are loaded in a cassette in the pick-up mode when the unit is installed in the printer assembly, paper will be continuously fed to the printer assembly until the paper runs out, causing repeated jams. For this reason, place only one paper sheet in the cassette.
2. When tests in the pick-up mode are completed, turn off all DIP switches.

II. COUNTERMEASURES TO COPE WITH DEFECTIVE OPERATION

1 No power

Cause/Location of error	Procedure	Check item	Result	Measure
Poor interface connector contact	1	Is the power on signal being input?	NO	Correct interface connector connection.
Defective power switch	2	Remove the power supply assembly and place the tester lead pins across the power switch terminals. Check if the tester gives a reading of 0Ω when the switch is set to ON and a reading of $\infty \Omega$ when it is set to OFF.	NO	Replace the power supply assembly.
Blown power supply fuse	3	Turn off the power switch and wait two minutes before turning it on again. Does the unit operate normally now?	NO	Remove the power supply assembly and replace the blown fuse.
Overcurrent/overvoltage detection circuit triggered			YES	Disconnect the power supply connector and connect it again. If this does not help, correct the cause that triggered the overcurrent/overvoltage detection circuits in the power supply assembly and turn on the power again.
Defective power supply unit	4	Turn off the printer assembly power switch and disconnect connector J203 on the deck controller PCB. Turn on the unit power switch and measure the DC power supply output of cable connector J203. (Be sure not to short-circuit any components at this time.) Does the J203 connector output the measured DC power supply?	NO	Replace the power supply assembly.
Wiring, DC load, deck controller PCB			YES	Check the wiring and DC load ahead of the deck controller PCB. If the wiring and the DC load are OK, replace the deck controller PCB.

2 Lifter motor breakdown

Cause/Location of error	Procedure	Check item	Result	Measure
Poor contact in motor drive signal line connector	1	Is J206 on the paper deck drive printed circuit board correctly connected?	NO	Correct connection.
Defective lift motor	2	Can the error condition be remedied by replacing the motor?	YES	Replace the motor.
Deck controller PCB	3	Can the error condition be remedied by replacing the deck controller PCB?	YES	Replace the deck controller PCB.

3 Feed motor breakdown

Cause/Location of error	Procedure	Check item	Result	Measure
Poor contact in feed motor drive signal line connector	1	Are connector J207 and feed motor connector J315 on the deck controller PCB correctly connected?	NO	Correct connection.
Defective feed motor	2	Can the error condition be remedied by replacing the feed motor?	YES	Replace.
Deck controller PCB	3	Can the error condition be remedied by replacing the deck controller PCB?	YES	Replace the deck controller PCB.

4 Pick-up motor breakdown

Cause/Location of error	Procedure	Check item	Result	Measure
Poor contact in pick-up motor drive signal line connector	1	Are connector J210 on the deck controller PCB and connectors J305 and J319 on the pick-up correctly connected?	NO	Correct connection.
Defective pick-up motor	2	Can the error condition be remedied by replacing the pick-up motor?	YES	Replace.
Deck controller PCB	3	Can the error condition be remedied by replacing the deck controller PCB?	YES	Replace the deck controller PCB.

III. COUNTERMEASURES TO COPE WITH DEFECTIVE FEED

A. Paper jams

1	Pick-up block
----------	----------------------

Cause/Location of error	Procedure	Check item	Result	Measure
Cassette pick-up roller Feed roller 1	1	Is the cassette pick-up roller or feed roller worn or deformed?	YES	Replace. Both the separation roller and feed roller must be replaced at the same time.
Gears	2	Remove the pick-up assembly and check drive gears and springs. Are there any worn or damaged parts? Are there any loose springs?	YES	Replace worn or damaged parts. Correct springs.
Poor contact in pick-up motor drive connectors	3	Are connector J210 on the paper deck drive printed circuit board?	NO	Correct connection.
Pick-up motor breakdown	4	Can the error condition be remedied by replacing the pick-up motor?	YES	Replace.
Paper deck driver printed circuit board			NO	Replace the paper deck driver printed circuit board.

2 Feed Assembly

Cause/Location of error	Procedure	Check item	Result	Measure
Feed sensor	1	Open the feed assembly after the test pick-up. Did the leading edge of the paper reach the feed sensor?	YES	Go to procedure 10.
Defective detection mechanism in feed paper sensor	2	Is the registration paper sensor lever or spring worn or deformed? Are there any loose springs?	YES	Replace if damaged or deformed. Correct spring position.
Feed paper sensor breakdown	3	Can the error condition be corrected by replacing the registration paper sensor?	YES	Replace.
Registration roller	4	Is the registration roller worn, deformed or dirty?	YES	Replace if worn or deformed. Clean to remove dirt.
Gears	5	Remove the feed assembly and check drive gears and springs. Are there any worn or damaged parts? Are there any loose parts?	YES	Replace if damaged or deformed. Correct spring position.
Poor contact in feed motor drive connectors	6	Are connector J205 and relay connector J302 on the paper deck drive printed circuit board correctly connected?	NO	Correct connection.
Feed motor breakdown	7	Can the error condition be corrected by replacing the feed motor?	YES	Replace.
Feed sensor	8	Are the feed sensor lever and springs damaged or deformed? Is the sensor lever spring loose?	YES	Replace if damaged or deformed. Correct spring position.
Feed sensor breakdown	9	Can the error condition be corrected by replacing the feed sensor?	YES	Replace.
Feed roller 2	10	Is feed roller 2 worn, deformed or dirty?	YES	Replace if worn or deformed. Clean to remove dirt.
Deck controller PCB	11	Can the error condition be corrected by replacing the deck controller PCB?	YES	Replace.

B. Incomplete Feed

1 Multi-feed

Cause/Location of error	Procedure	Check item	Result	Measure
Separation roller	1	Is the separation roller worn or deformed?	YES	Replace the separation roller.
Springs	2	Is the spring that holds the separation roller correct?	NO	Replace the spring if it is damaged. Correct its position if it is loose

2 Wrinkled paper

Cause/Location of error	Procedure	Check item	Result	Measure
Rollers	1	Check the pick-up assembly and feed assembly rollers. Are they worn or deformed?	YES	Replace if worn or deformed.

3 Leading edge folding

Cause/Location of error	Procedure	Check item	Result	Measure
Feed guide	1	Check the feed path. Are the feed guides damaged or deformed?	YES	Replace damaged or deformed feed guides.

4 Skew Feed

Cause/Location of error	Procedure	Check item	Result	Measure
Feed roller, separation guide, pick-up assembly / feed assembly rollers	1	Has paper dust or dirt accumulated in the feed roller and separation roller guides?	YES	Clean to remove dirt.
Pick-up assembly/ feed assembly rollers	2	Are there any damaged or deformed pick-up assembly and feed assembly rollers?	YES	Replace any damaged or deformed rollers.

IV. LOCATION OF ELECTRICAL PARTS

A. Sensors

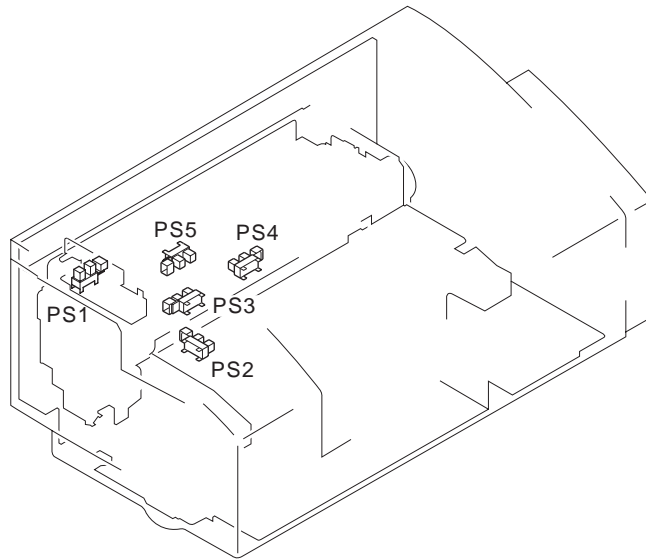


Figure 5-401

Symbol	Name	Signal	Function
	Photo interrupter	PS1	Upper right cover open detecton sensor
		PS2	Second sheet detection sensor
		PS3	Paper detection sensor
		PS4	Lifter upper limit detection sensor
		PS5	Feed sensor

Table 5-401

B. Solenoids and Motors

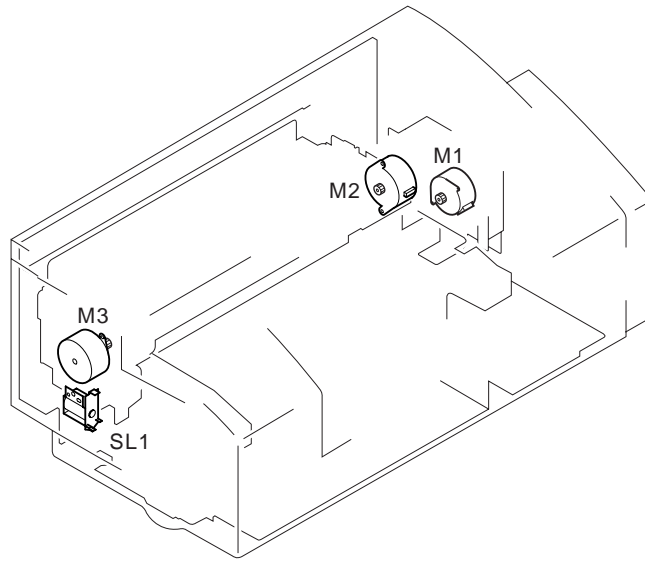


Figure 5-402

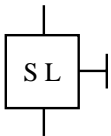
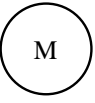
Symbol	Name	Signal	Function
	Solenoid	SL1	Pick-up solenoid
	Motors	M1 M2 M3	Lifter motor Feed motor Pick-up motor

Table 5-402

C. PCBs

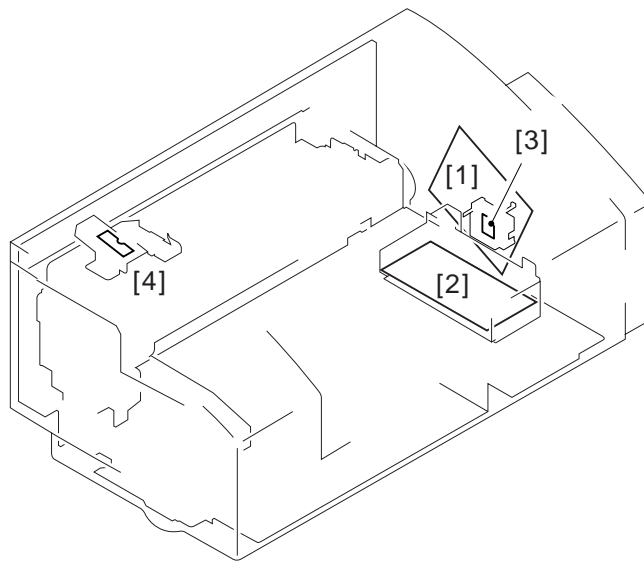


Figure 5-403

No.	Name	Function
[1]	Deck driver PCB	Control and detection of loads
[2]	Power supply unit	Power supply
[3]	Remaining paper detection PCB	Detects paper remaining in the deck
[4]	LED PCB	Displays unit status

Table 5-402

V. LIST OF VARIABLE RESISTORS (VR), LEDS, CHECK PINS BY PRINTED CIRCUIT BOARD

Only the LEDs and check pins that need to be checked during field service are listed below.

Note:

Check pins not listed below are only for factory use, and their adjustment and checking requires special tools and measurement instruments. Their adjustments require a great degree of accuracy and must not be touched during field service.

Note:

Some LEDs leak a small amount of current even when normal, and therefore glow faintly even when they are off. Do not mistake this phenomenon for their being ON.

A. Deck controller PCB

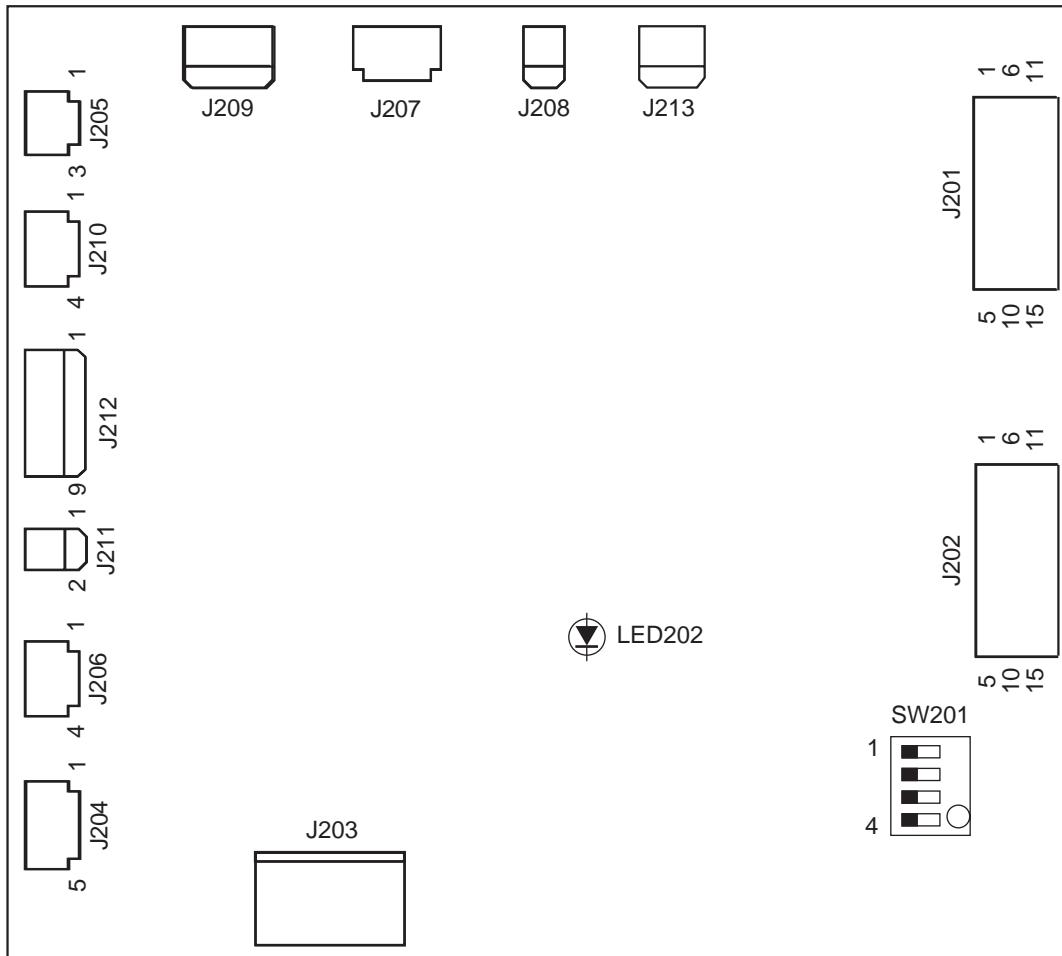


Figure 5-501

No.	Function
SW201	1
	2
	3
	4
LED202	Inspect for servicing

Table 5-501

B. User LED PCB

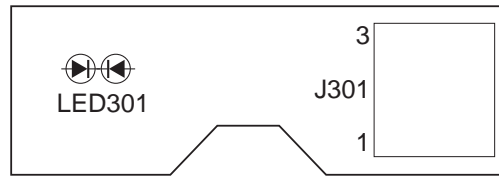


Figure 5-502

LED No.	Function
LED1	LED to be inspected by the user

Table 5-502

C. Remaining paper detection PCB

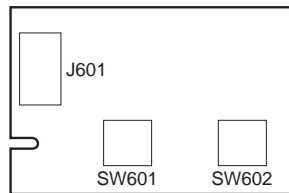


Figure 5-503

APPENDIX

A.	SIGNAL NAMES AND CODE TABLE	A-1	C.	SPECIAL TOOLS	A-5
B.	GENERAL CIRCUIT DIAGRAM.....	A-3	D.	TABLE OF SOLVENTS AND OILS	A-5

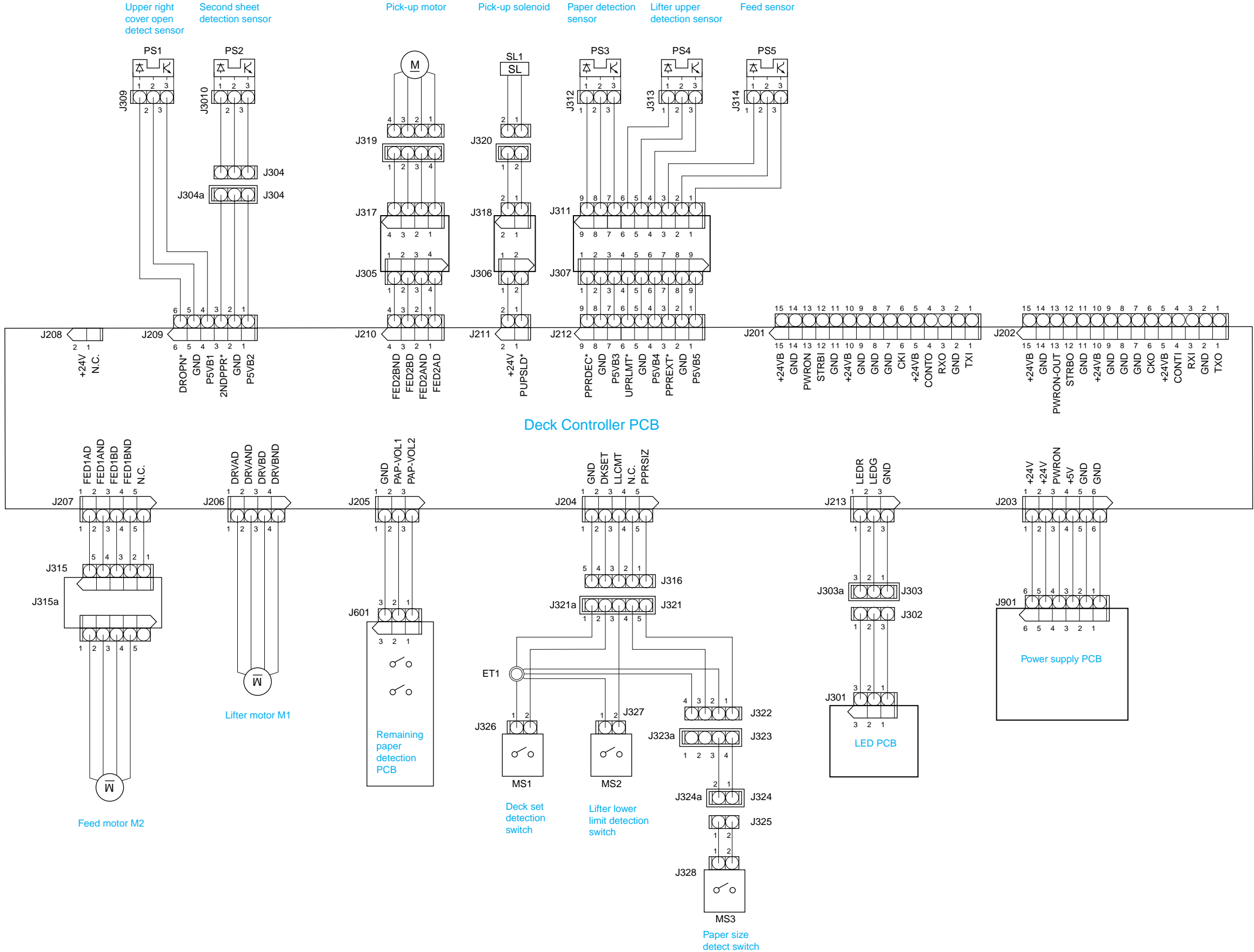
A. SIGNAL NAMES AND CODE TABLE

Input and Output signals to the paper deck drive PCB

Connector	Pin	Code	I/O	Signal name
J201	1	TXI	Input	Serial input signal
	2	GND		
	3	RXO	Output	Serial output signal
	4	CONTO	Output	Communication ready signal
	5	+24V		
	6	CKI	Input	Synch clock signal
	7	GND		
	8	GND		
	9	GND		
	10	+24V		
	11	GND		
	12	STRBI	Input	Strobe signal
	13	PWRON-IN	Input	Power ON signal
	14	GND		
	15	+24V		
J202	1	TXO	Output	Serial output signal
	2	GND		
	3	RXI	Input	Serial input signal
	4	CONTI	Input	Communication ready signal
	5	+24V		
	6	CKO	Input	Synch clock signal
	7	GND		
	8	GND		
	9	GND		
	10	+24V		
	11	GND		
	12	STRBO	Output	Strobe signal
	13	PWRON-OUT	Output	Power ON signal
	14	GND		
	15	+24V		
J203	1	+24V	Input	Power ON signal
	2	+24V	Input	
	3	PWRON-IN	Output	
	4	+5V	Input	
	5	GND		
	6	GND		

Connector	Pin	Code	I/O	Signal name
J204	1	GND		
	2	DKSET	Input	Deck set detect signal
	3	LLLMT	Input	Lifter lower limit signal
	4	NC	Input	
	5	PPRSIZE	Input	Paper size detect signal
	6	GND		
J205	1	GND		
	2	PAP-VOL1	Input	Remaining paper detect signal
	3	PAP-VOL2	Input	Remaining paper detect signal
J206	1	DRVAD	Output	Lifter motor control signal
	2	DRVAND	Output	Lifter motor control signal
	3	DRVBD	Output	Lifter motor control signal
	4	DRVBND	Output	Lifter motor control signal
J207	1	FED1AD	Output	Feed motor control signal
	2	FED1AND	Output	Feed motor control signal
	3	FED1BD	Output	Feed motor control signal
	4	FED1BND	Output	Feed motor control signal
J208	1	NC		
	2	NC		
J209	1	+5VB2	Output	
	2	GND		
	3	2NDPPR*	Input	2nd paper detect signal
	4	+5VB1	Output	
	5	GND		
	6	DROPN	Input	Upper right cover open signal
J211	1	PUPSLD*	Output	Pick up solenoid drive signal
	2	+24V	Output	
J212	1	+5VB5		
	2	GND		
	3	PPREXT		Paper feed detect signal
	4	+5VB4		
	5	GND		
	6	UPRLMT		Lifter upper limit detect signal
	7	+5VB3		
	8	GND		
	9	PPREXT		Paper detect signal
J213	1	LED R	Output	Red LED lit-up signal
	2	LED G	Output	Green LED lit-up signal
	3	GND		

B. GENERAL CIRCUIT DIAGRAM



C. SPECIAL TOOLS

In addition to the standard tools there are no special tools required for servicing the unit.

D. TABLE OF SOLVENTS AND OILS

No.	Name	Application	Chemical composition	Action
1	Alcohol solution C-17	Cleaning Ex. plastics rubber exterior covers	Fluorine hydrocarbons Alcohol Surface active agent Water	<ul style="list-style-type: none"> • Keep away from naked flame • Procure locally • Alternative products: C1, IPA (Isopropyl alcohol)
2	Lubricating oil	Apply between the gear and shaft	Petroleum jelly	<ul style="list-style-type: none"> • Developer Oil 68 • Tool number: CK-8003
3	Lubricating solvent	Apply to the gear Not for moulded assembly application.	Lithium grease	<ul style="list-style-type: none"> • Permalube SHV-2 • Tool number: CK-8005

Prepared by
Office Imaging Products Technical Support Dept.3
Office Imaging Products Technical Support Div.
Office Imaging Products Quality Assurance Center.
CANON INC.
Printed in Japan

REVISION 0 (MAR.) (28353)

5-7, Hakusan, 7-chome, Toride-City, Ibaraki-Pref., 302-8501, Japan

Canon



This publication is printed on
70% reprocessed paper.