Service Manual

Paper Deck
Side Paper Deck-X1

Canon

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Application

This manual has been issued by Canon Inc. for qualified persons to learn technical theory, installation, maintenance, and repair of products. This manual covers all localities where the products are sold. For this reason, there may be information in this manual that does not apply to your locality.

Corrections

This manual may contain technical inaccuracies or typographical errors due to improvements or changes in products. When changes occur in applicable products or in the contents of this manual, Canon will release technical information as the need arises. In the event of major changes in the contents of this manual over a long or short period, Canon will issue a new edition of this manual.

The following paragraph does not apply to any countries where such provisions are inconsistent with local law.

Trademarks

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Copyright

Caution

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

Symbols Used

This documentation uses the following symbols to indicate special information:

Symbol	Description
	Indicates an item of a non-specific nature, possibly classified as Note, Caution, or Warning.
	Indicates an item requiring care to avoid electric shocks.
	Indicates an item requiring care to avoid combustion (fire).
	Indicates an item prohibiting disassembly to avoid electric shocks or problems.
	Indicates an item requiring disconnection of the power plug from the electric outlet.
 Memo	Indicates an item intended to provide notes assisting the understanding of the topic in question.
 REF.	Indicates an item of reference assisting the understanding of the topic in question.
	Provides a description of a service mode.
	Provides a description of the nature of an error indication.

The following rules apply throughout this Service Manual:

1. Each chapter contains sections explaining the purpose of specific functions and the relationship between electrical and mechanical systems with reference to the timing of operation.
   In the diagrams, ▭▮▮▮▭ represents the path of mechanical drive; where a signal name accompanies the symbol , the arrow ⟶ indicates the direction of the electric signal.
   The expression "turn on the power" means flipping on the power switch, closing the front door, and closing the delivery unit door, which results in supplying the machine with power.
2. In the digital circuits, '1'is used to indicate that the voltage level of a given signal is "High", while '0' is used to indicate "Low".(The voltage value, however, differs from circuit to circuit.) In addition, the asterisk (*) as in "DRMD*" indicates that the DRMD signal goes on when '0'.
   In practically all cases, the internal mechanisms of a microprocessor cannot be checked in the field. Therefore, the operations of the microprocessors used in the machines are not discussed: they are explained in terms of from sensors to the input of the DC controller PCB and from the output of the DC controller PCB to the loads.

The descriptions in this Service Manual are subject to change without notice for product improvement or other purposes, and major changes will be communicated in the form of Service Information bulletins.
All service persons are expected to have a good understanding of the contents of this Service Manual and all relevant Service Information bulletins and be able to identify and isolate faults in the machine."

Contents

Chapter 1 Specifications

Contents

1.1 Product Specifications

1.1.1 Specifications

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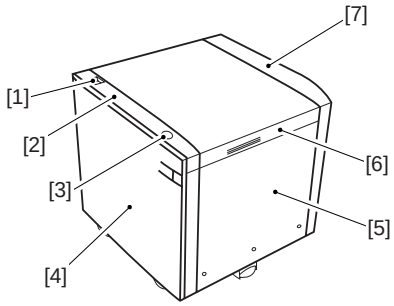
Item	Description
Pickup method	Clawless (retard) method
Paper accommodation	Side tray method
Paper type	- Plain paper (64 to 90 g/m2) - Cardboard (90 to 200 g/m2)
Paper size	A3, B4, A4, B5, A4R, 279x432 mm (11x17), LGL, LTR, LTRR
Capacity	Stack high: 375.5 mm (approx. 3500 sheets of 80 g/m2 paper)
Paper size switching	By size guide plate in steps and input in user mode
Dimensions	593 (W) X 621 (D) X 574.5 (H) mm
Weight	46 kg (approx.)
Power supply	DC power supplied by host machine
[Operating Environment] Temperature/Humidity/Atmospheric pressure	Same as host machine

The above specifications are subject to change for product improvement.

1.2 Names of Parts

1.2.1 External View



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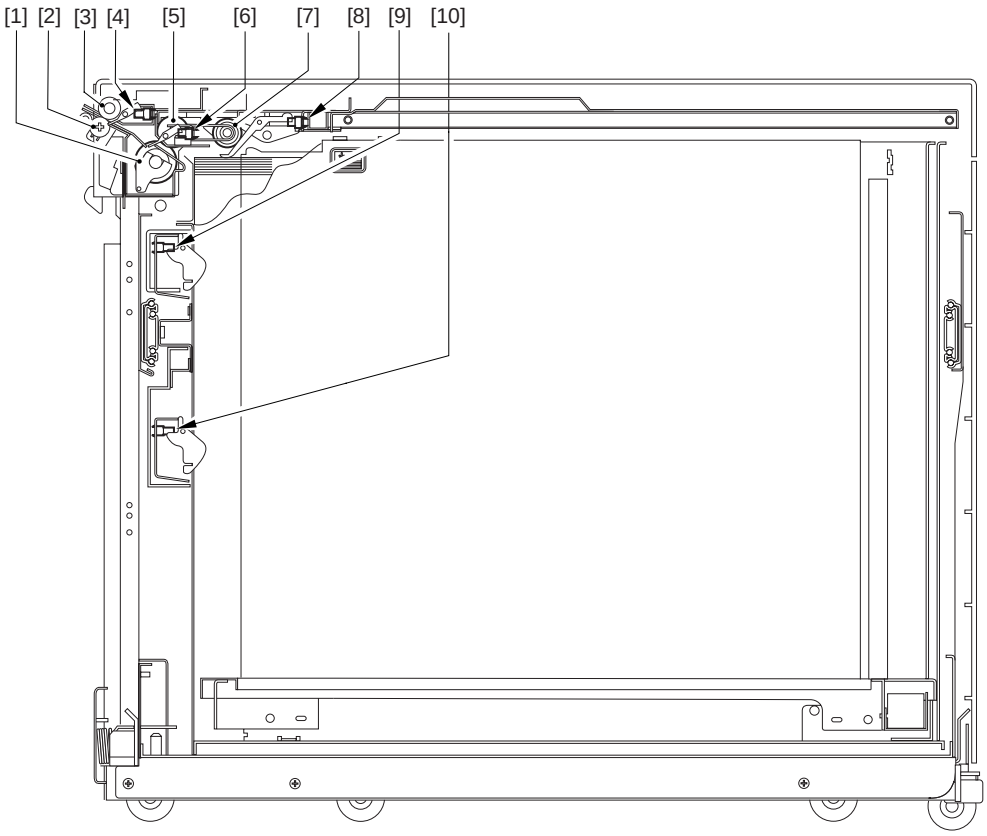
[1]Deck release grip
[2]Front upper cover
[3]Compartment open switch
[4]Front cover
[5]Right cover
[6]Upper cover
[7]Rear cover

1.2.2 Cross Section



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[1]Deck separation roller
[2]Deck feed wheel
[3]Deck feed roller
[4]Deck feed sensor
[5]Deck pickup/feed roller
[6]Deck pickup sensor
[7]Deck pickup roller
[8]Deck paper sensor
[9]Deck paper supply position sensor
Deck paper level sensor

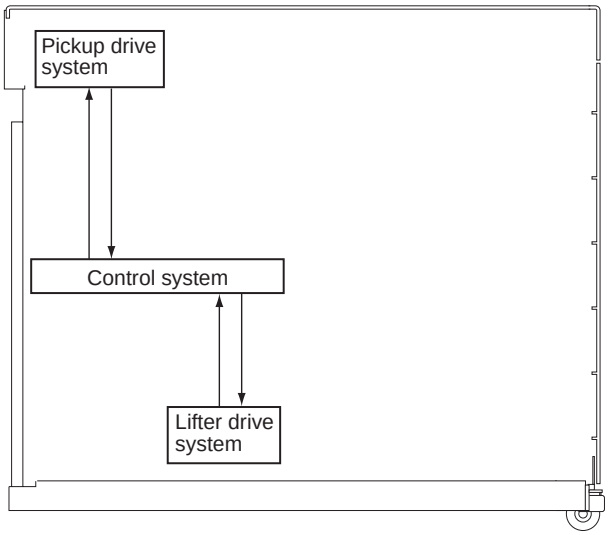
Chapter 2 Functions

Contents

2.1 Basic Construction

2.1.1 Functional Construction

The machine may be divided into three functional blocks: lifter drive system, pickup drive system, and control system.



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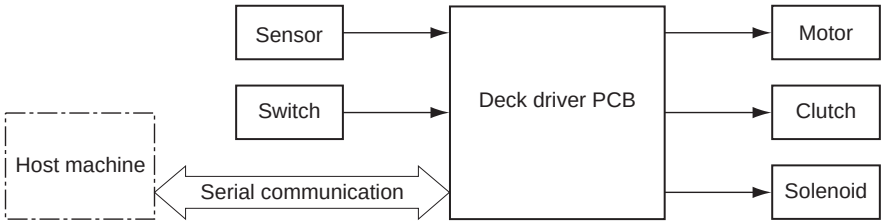
2.1.2 Outline of Electrical Circuitry

The machine's electric mechanisms are driven by the deck driver PCB.



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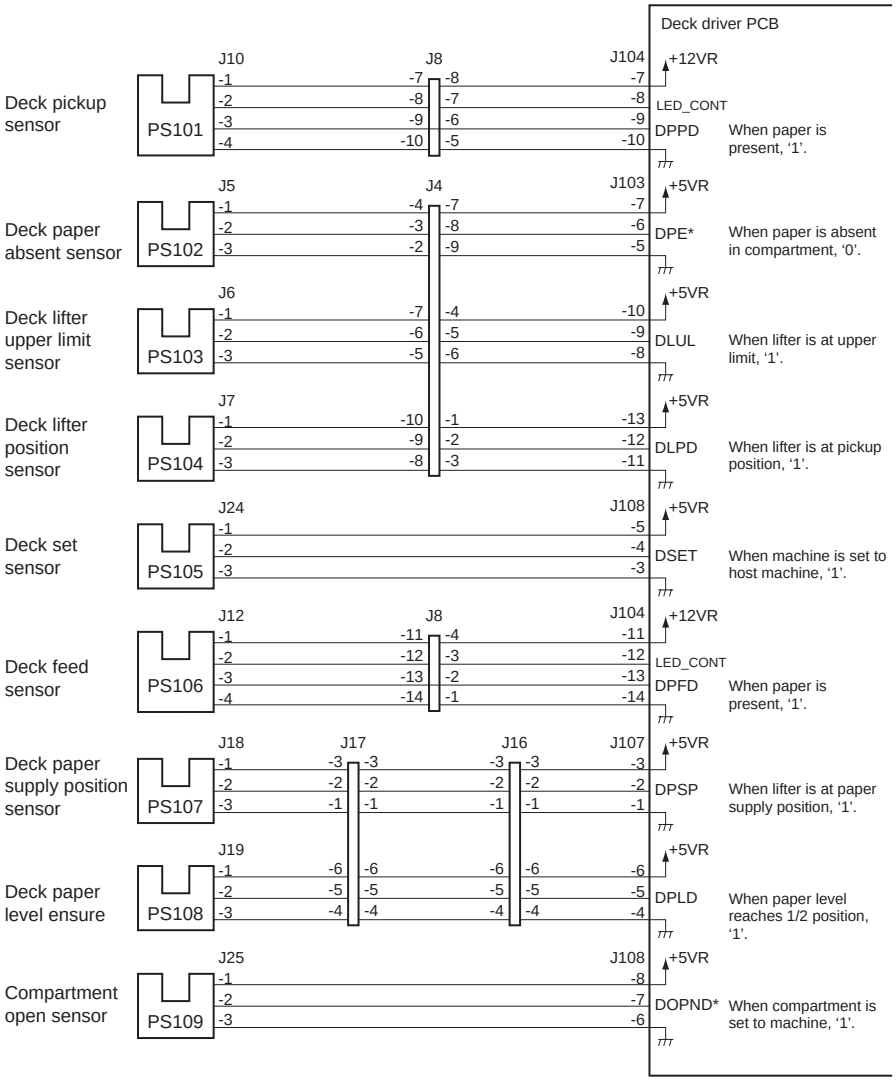
2.2 Basic Operation

2.2.1 Inputs to the Deck Driver PCB (1/2)



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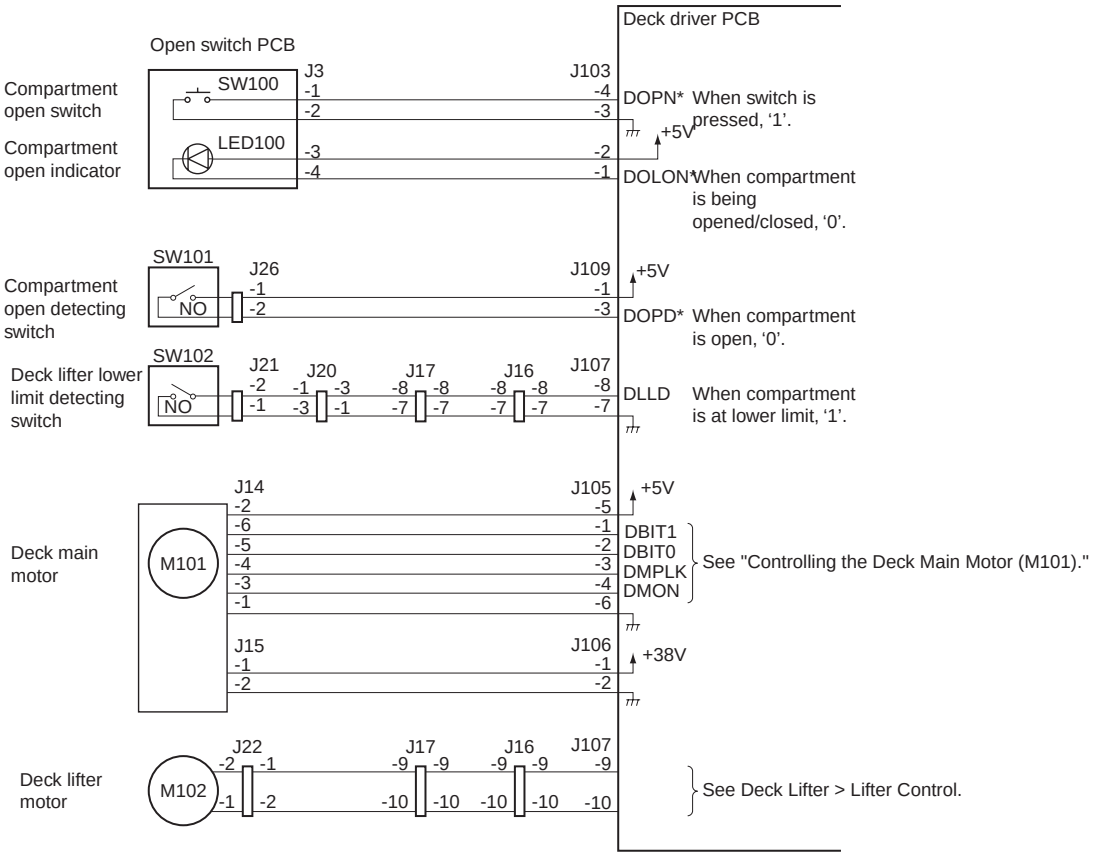
2.2.2 Inputs to the Deck Driver PCB (2/2)



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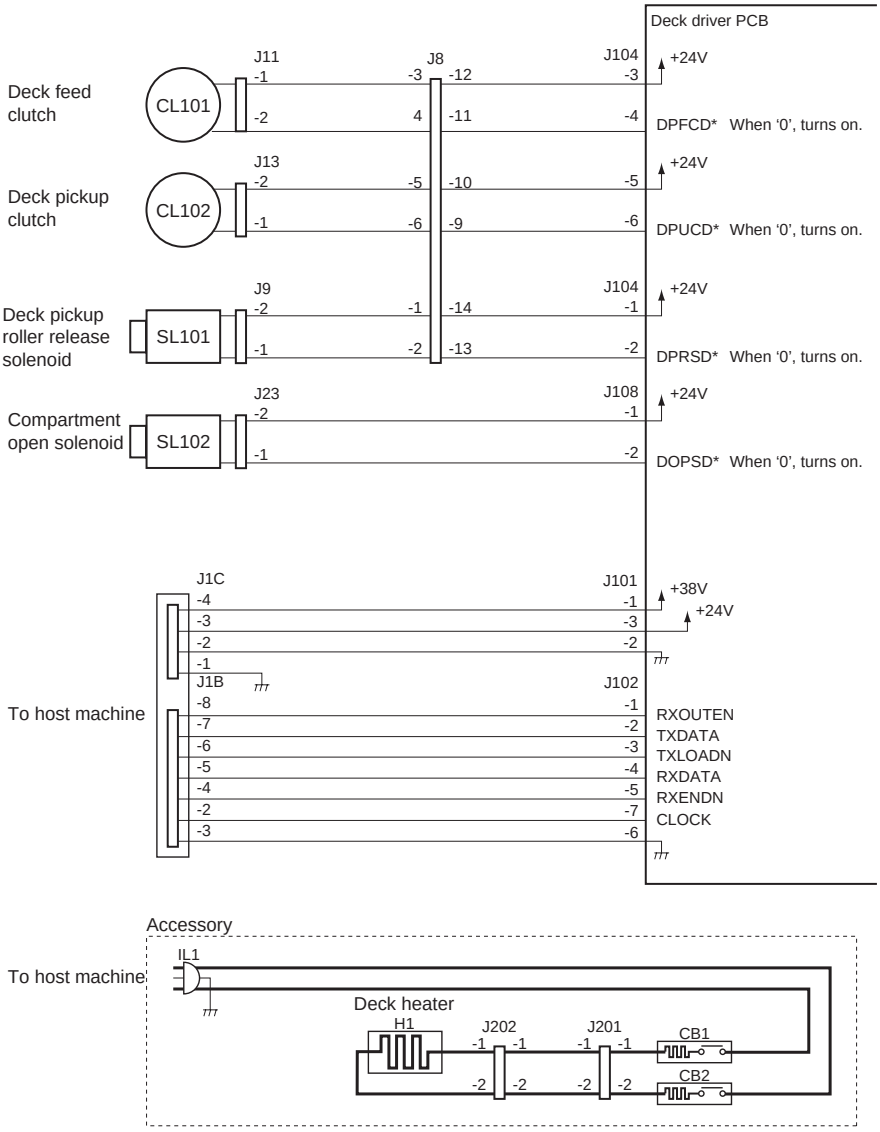
2.2.3 Outputs from the Deck Driver PCB (1/1)



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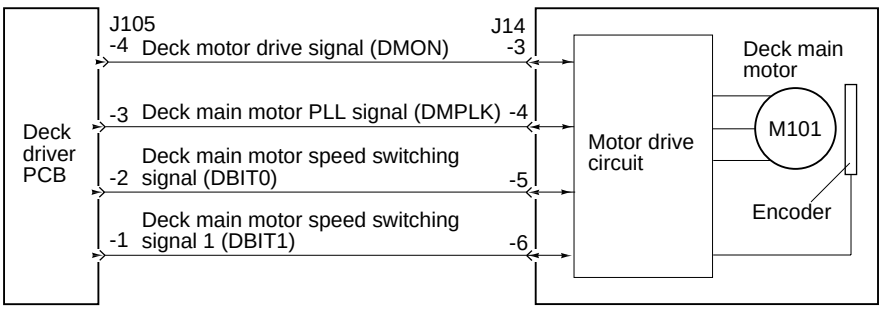
2.2.4 Controlling the Deck Main Motor (M101)

The deck main motor (M101) is controlled by the host machine for the following:
1. Turning on and off



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DMON: deck main motor dive signal. The motor rotates when '1' and stops when '0'
DMPLK: deck main motor PLL lock signal (motor rotation detection). An error will be identified if DMPLK remains '1'or more while DMON is '1'
DBIT0, DBIT1: deck main motor speed switching signals. The combination of the 2 signals controls deck main motor speed.

2. Changing the speed of rotation
For the purpose of supporting future-released new copying machine, pick-up/feed speed is automatically switched in this deck. The auto switching is conducted by the combination of the speed switching signals (i.e., DBIT 0, DBIT 1) sent from the DC controller of the host machine to the side deck driver PCB. The combination list is shown below. In case of this machine, the motor rotates with high-speed.

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Motor rotation speed	Speed switching signals	
	DBIT 0	DBIT 1
High	L	L

Motor rotation speed	Speed switching signals	
	DBIT 0	DBIT 1
Middle	H	L
Low	L	H

ERROR CODE: E043
The case that the deck main motor PLL lock signal (DMPLK) is '1'for 2 sec. or more when the deck main motor drive signal (DMON) is '1'

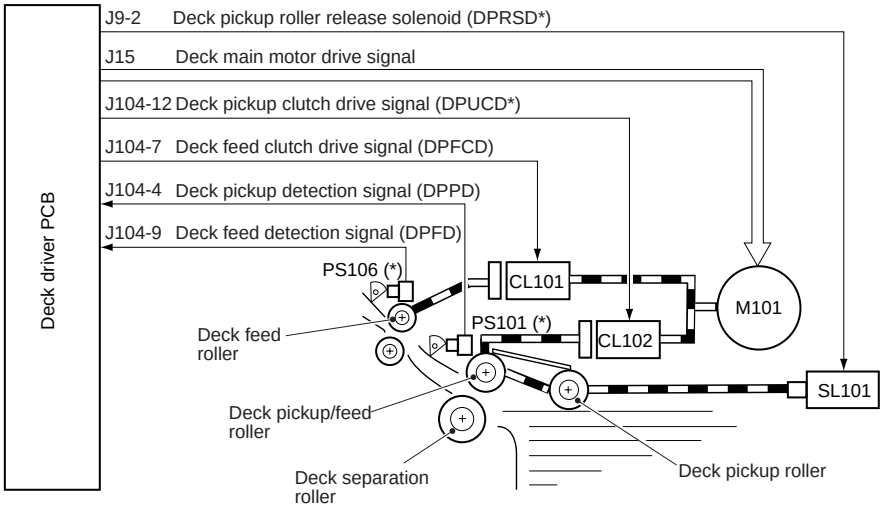
2.3 Pick-Up/Feed Systm

2.3.1 Outline

Paper placed in the compartment is picked up and fed into the host machine by the drive of the deck main motor (M101). The movement of paper is monitored by the deck pickup sensor (PS101) and deck feed sensor (PS106) mounted in the feed path.

2.3.2 Pickup Operation

The paper in the compartment is raised to and held at a specific position.
When the Start key is pressed on the host machine and, as a result, the deck pickup clutch (CL102) turns on, the drive of the deck main motor (M101) rotates the deck pickup roller to pick up paper.
At this time, the deck pickup/feed roller and the deck separation roller ensure that only one sheet of paper is picked up. When the deck feed sensor (PS106) detects paper, the deck pickup roller release solenoid (SL101) turns on to move the deck pickup roller to move away from the paper.
The deck feed roller starts to rotate when the deck feed clutch (CL101) turns on. Paper is picked up and sent to the registration roller of the host machine.
The deck pickup sensor (PS101) is used only to check for a stationary jam at time of power-on.



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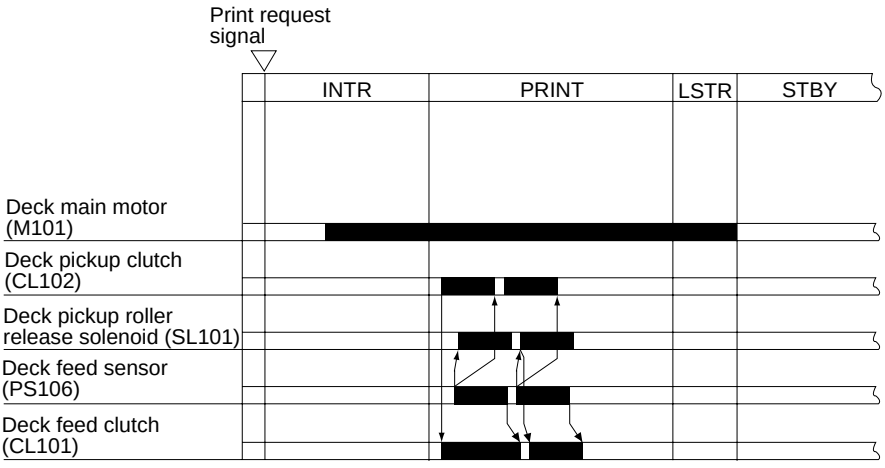
*PS101,PS106: Optical sensor

2.3.3 Sequence of Deck Pickup Sequence (A4, 2 sheets, continuous)



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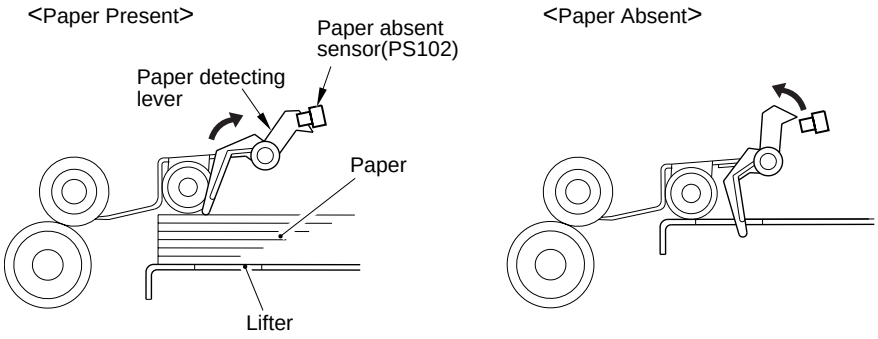
2.4 Paper Detection

2.4.1 Detecting the Presence/Absence of Paper

The presence/absence of paper in the compartment is detected by the deck paper sensor (PS102). When the compartment runs out of paper and, as a result, the paper detecting lever of the pickup roller assembly leaves the deck paper sensor, a message will be indicated on the control panel of the host machine.



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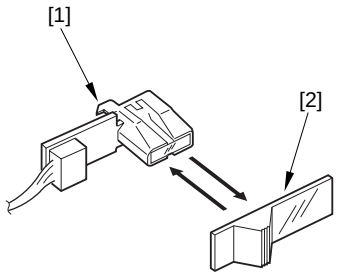
2.4.2 Switching the Paper Size

The machine's paper size is changed by moving the guide plate found in the compartment to suit a new size and then entering the new paper size in user mode.

2.4.3 Optical Sensor

To support high-speed process by a connecting device, the optical sensor [1] and prism [2] are used for the deck pickup sensor (PS101) and deck feed sensor (PS106) in the Side Paper Deck. Because of this, paper is properly detected.



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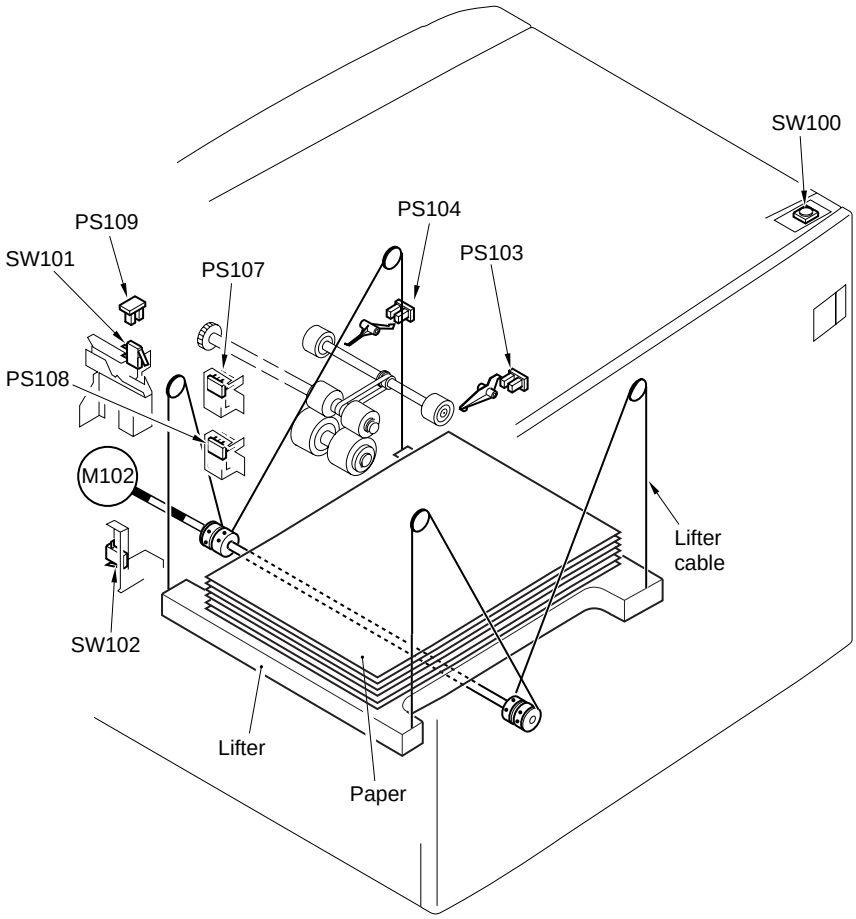
2.5 Deck Lifter

2.5.1 Outline

The machine's lifter is connected to a reel by means of a cable, and is driven by the deck lifter motor (M102). It moves up or down according to the direction of motor rotation.

2.5.2 Controlling the Lifter

Moving Up the Lifter
The lifter is moved up when the compartment open detecting switch (SW101) and compartment open sensor (PS109) find that the compartment has been set in place. It is then stopped as soon as the deck lifter position sensor (PS104) detects the top face of the paper placed on the lifter.
The deck lifter upper limit sensor (PS103) is used to prevent damage to the machine otherwise occurring if the lifter fails to stop moving up when the sensor lever has blocked the deck lifter position sensor.
Moving Down the Lifter
The lifter starts to move down when the compartment open switch (SW100) is pressed, and it keeps moving down until it is past the lever of the deck pickup supply position sensor (PS107), i.e., the falling edge of sensor output.
When paper is supplied, the added weight pushes down the lever of the deck paper supply position sensor, causing the lifter to repeat moving farther down until the deck lifter limit detecting switch (SW102) is pushed (maximum paper supply position).



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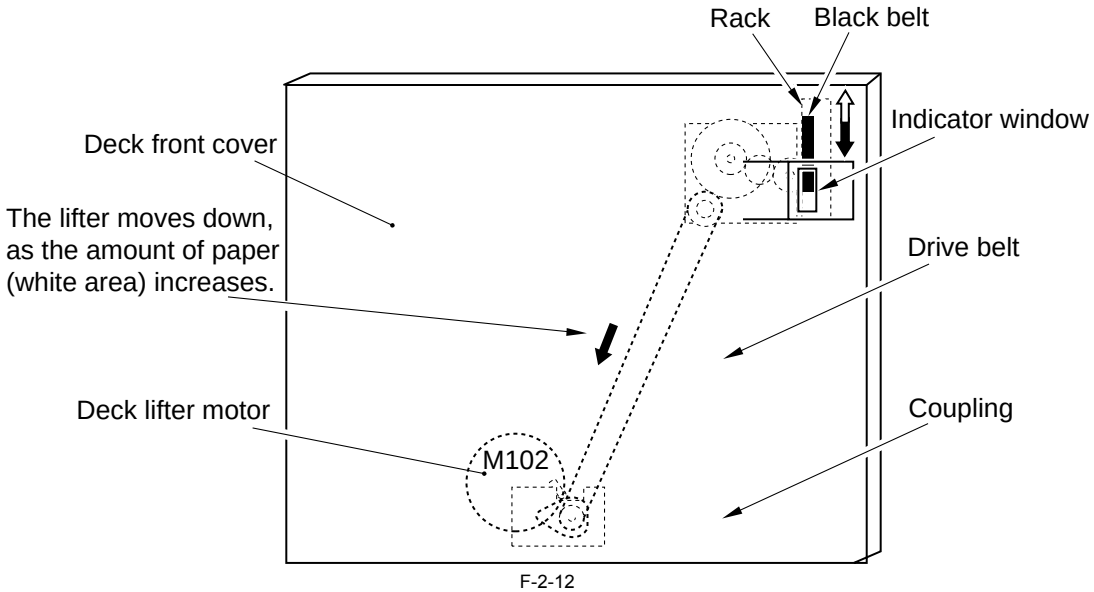
2.5.3 Paper Level Indicator on the Deck Front Cover

The level of paper is communicated as follows: the drive of the deck lifter motor (M102) is received by a coupling, and is transmitted to the rack by the drive belt. The rack is equipped with a black belt which moves up and down within the display window provided on the deck front cover in keeping with the movement of the rack.
When the level of paper decreases and, as a result, the lifter moves up to pickup position, the area of the black belt within the display window increases gradually while the area of white (representing the amount of paper) decreases, indicating the level of paper.



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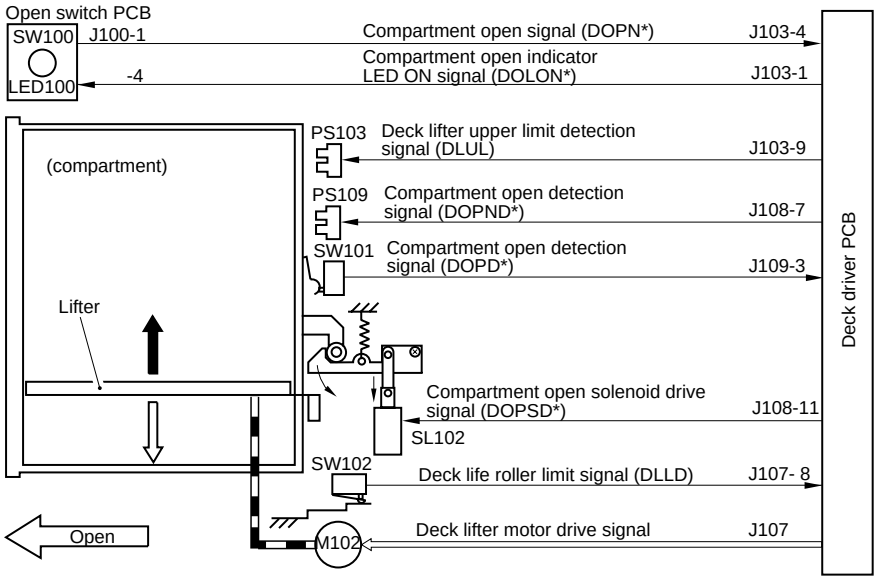
2.6 Opening /Closing the Compartment

2.6.1 Mechanism

When the compartment open switch (SW100) is pressed, the compartment open solenoid (SL102) turns on to unlock the compartment. As a result, the compartment is pushed several centimeters forward by the work of a spring; at the same time, the lifter motor (M102) starts to rotate to move down the lifter.
When the compartment is pushed into the host machine, on the other hand, the compartment open sensor (PS109) detects the light-blocking plate in the compartment, and the lifter moves as far up as pickup position.

The compartment open indicator (LED100) on the open switch PCB flashes while the compartment is opening/closing; it remains on while the compartment is left open.



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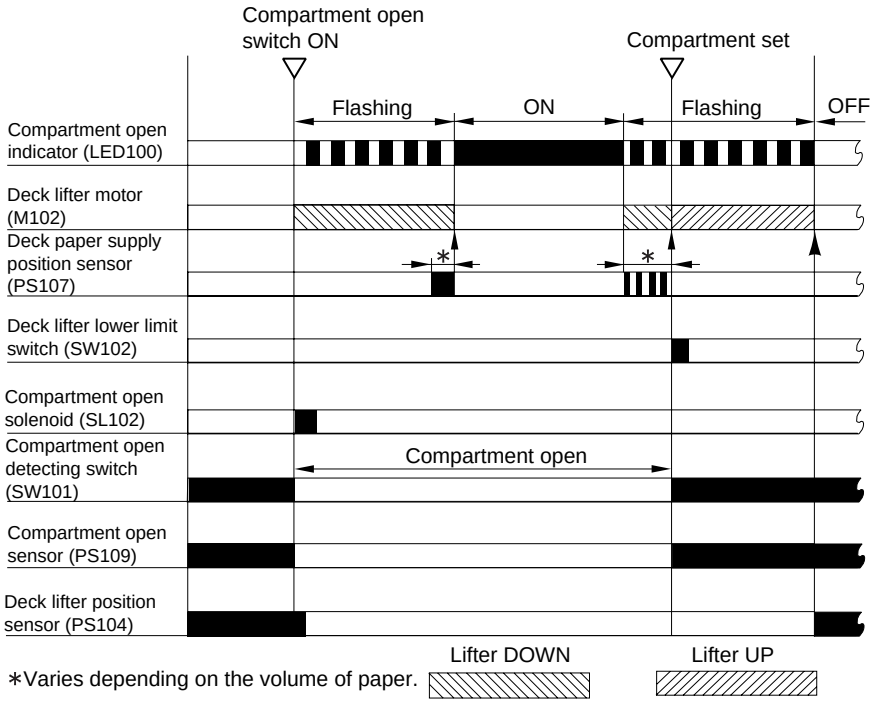
2.6.2 Sequence of Operations (opening/closing)



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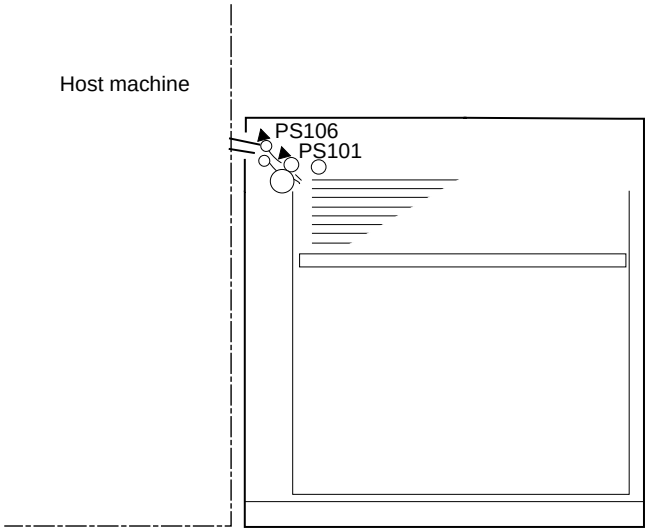
2.7 Detecting Jams

2.7.1 Outline

The two sensors shown in the following figure are used to find out whether paper is moving normally inside the machine.
A jam is identified by reading the signals from these sensors at such times as stored in the host machine's memory. If a jam is identified, the sheets that are ahead of the jam are discharged and then the machine is stopped; thereafter, instructions of jam removal will be indicated on the host machine's control panel.

2.7.2 Arrangement of Jam Sensors



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2.7.3 Types of Jams

Notation

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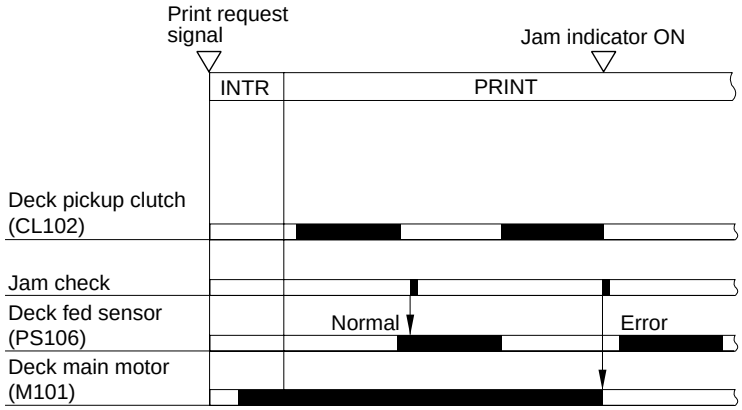
Notation	Sensor	Timing jam	Delay jam	Stationary jam at power-on
PS101	Deck pickup sensor	No	No	Yes
PS106	Deck feed sensor	Yes	Yes	Yes

2.7.4 Sequence of Operations (jam detection)

- Delay Jam



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- Stationary Jam at Power-On

A jam will be identified if paper exits over a specific sensor when the host machine's power switch is turned on, is in warm-up, or is in standby.

Chapter 3 Parts Replacement Procedure

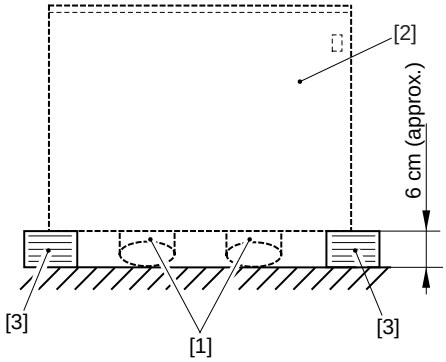
Contents

3.1 Removing from the Host Machine

3.1.1 Compartment

3.1.1.1 Removing the Compartment

1) To avoid deforming the roll support [1], place a stack of sheets [3] (about 6 cm high) on the floor for placing the machine [2].



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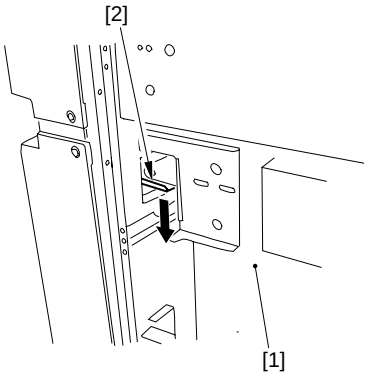
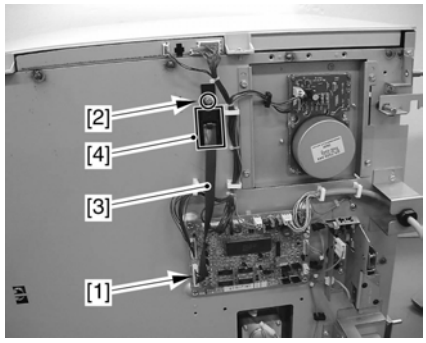
2) Disconnect the machine from its host machine, and push down the latch plate [2] of the compartment to open the compartment [1].



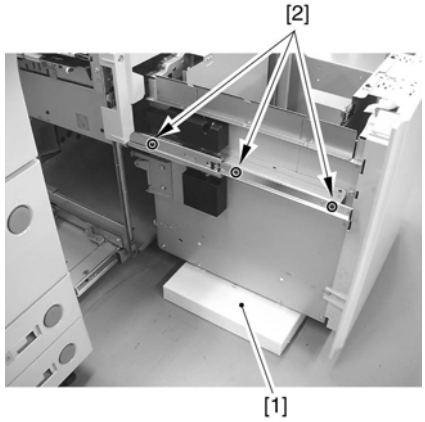
F-3-2

3) Remove the right cover.
4) Remove the connector [1] and screw [2]. Put the cable [3] into the main unit through the hole [4] of the rear side plate.



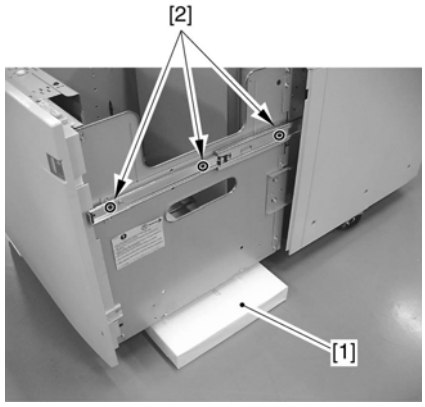
F-3-3

5) Place the bunch of papers [1] prepared at step 1) under the compartment. Remove the three screws [2] fixing the right rail of the compartment.



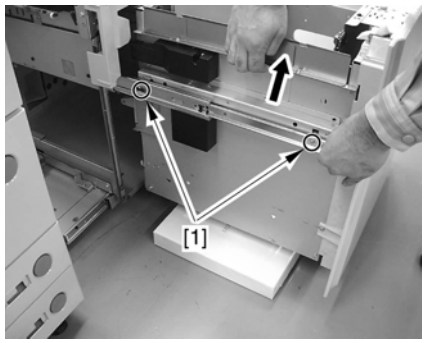
F-3-4

6) Place the bunch of papers [1] prepared at step 1) under the compartment. Remove the three screws [2] fixing the left rail of the compartment.



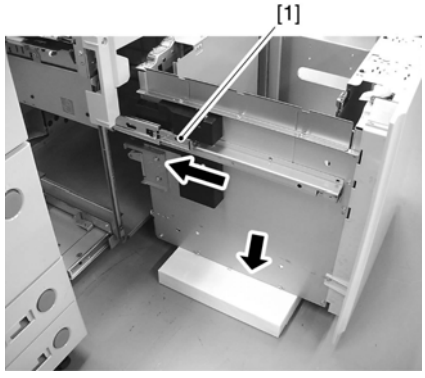
F-3-5

7) Hold up the compartment slightly, and remove the two guide pins [1] found on the rail.



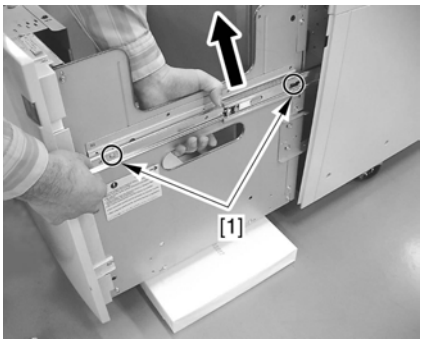
F-3-6

8) Slide the right rail [1] into the main unit, and put down the compartment on the papers.



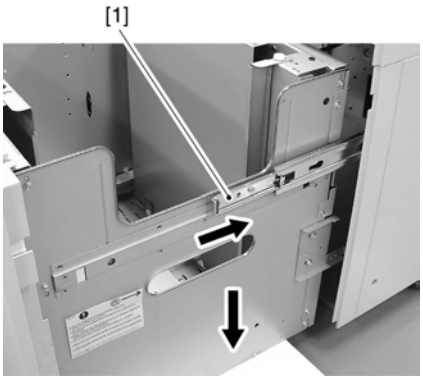
F-3-7

9) Hold up the compartment slightly, and remove the two guide pins [1] found on the rail.



F-3-8

10) Slide the left rail [1] into the main unit, and put down the compartment on the papers.

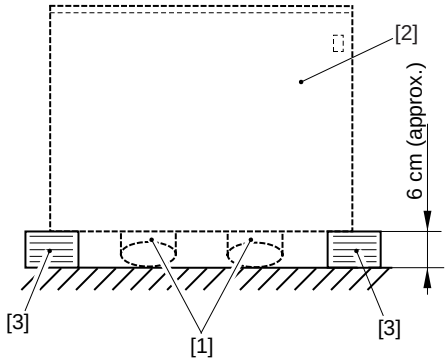


F-3-9

3.1.2 Paper Deck

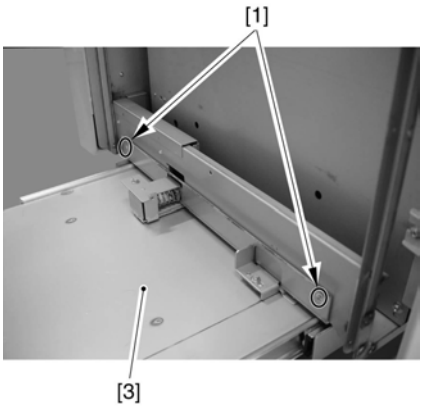
3.1.2.1 Disconnecting from the Host Machine

1) To avoid deforming the roll support [1], place a stack of sheets [3] (about 6 cm high) on the floor for placing the machine [2].



F-3-10

2) Remove the right cover.
3) Remove the four screws [1], and remove the machine [2] from the base [3].



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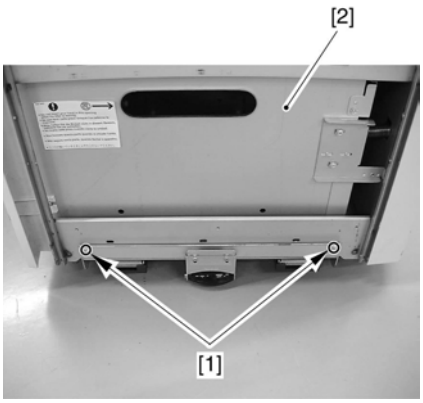

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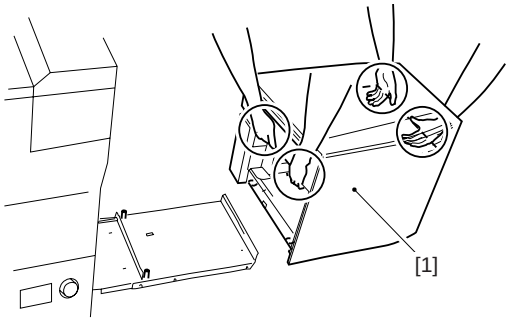
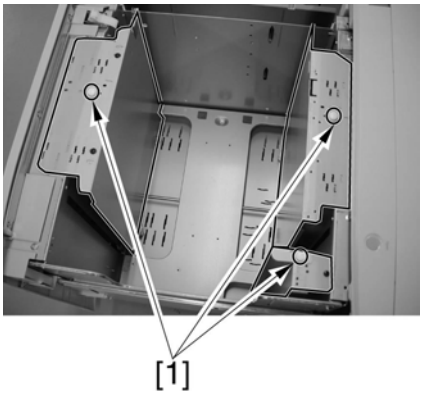
4) Holding the machine as shown, place the machine [1] on the stack of sheets prepared in step 1).



F-3-13

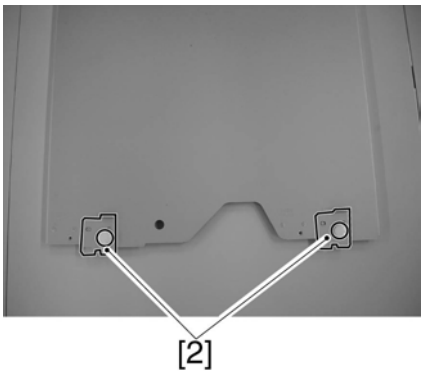
3.1.2.2 Changing the Paper Size

If the paper size must be changed, perform the following:
1) Open the compartment, and remove all paper.
2) Detach the lifter sheet.
3) Remove the limit plate securing screws [1] and position the right/left limit plates and the paper end limit plate according to the new paper size.

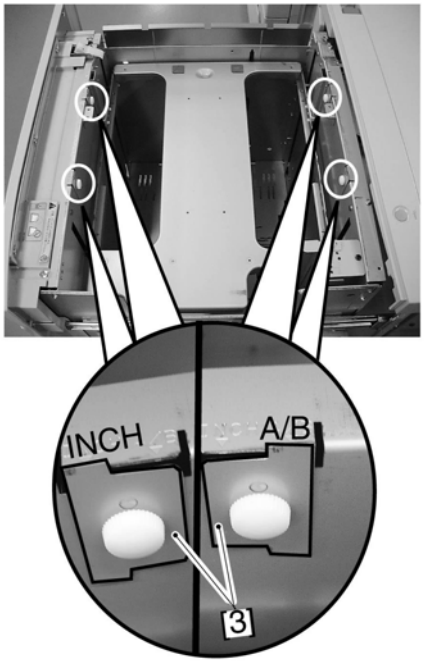


F-3-14

When changing the paper size from the A/B type to the inch type or changing the other way, position also the four switching plates [2] under the front/rear limit plates and four switching plates [3].

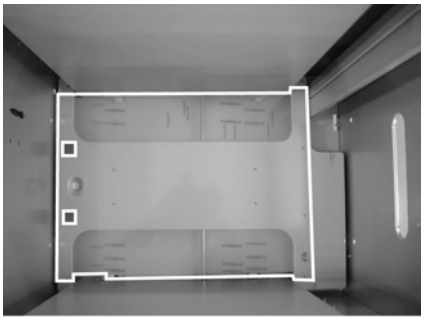


F-3-15



F-3-16

4) Place a lifter sheet for the new paper size on the lifer.



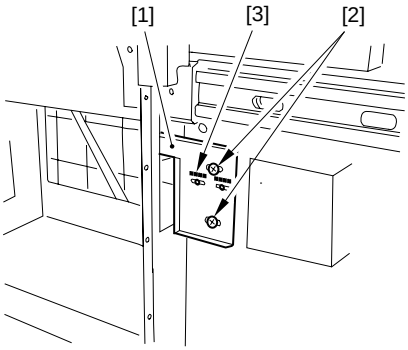
F-3-17

5) Set the user mode of the host machine according to the paper size (User Mode Key > Common Settings > Store Size for Side Paper Deck).

3.1.2.3 Adjusting the Registration

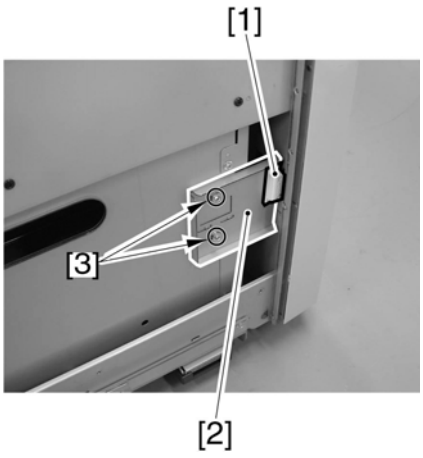
If the left/right registration (same as host machine) must be adjusted, perform the following:

1) Slide out the compartment, and turn the two screws [2] to adjust the position of the latch plate [1] of the compartment open solenoid (SL102). (At this time, refer to the index [3] on the latch plate to facilitate the work.)



F-3-18

2) Remove the front cover.
3) Adjust the position of the magnet mount [2] with the two screws [3] so that the magnet [1] may contact the deck rear frame when the storage is closed.

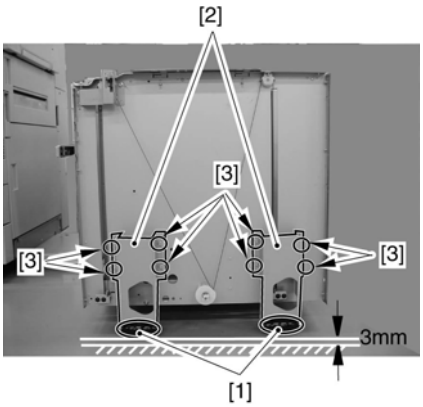


F-3-19

3.1.2.4 Adjusting the Position of the Roll

If the compartment cannot be opened/closed smoothly, thus requiring the adjustment of the position of the roll mounted to the machine's front, perform the following:

1) Open the compartment, and remove all paper.
2) Remove the front cover.
3) With the compartment fully slid out, turn the eight mounting screws [3] of the roll support plates [2] so that the roll [1] is about 3 mm from the floor. (At this time, refer to the index on the front side plate to facilitate the work.)

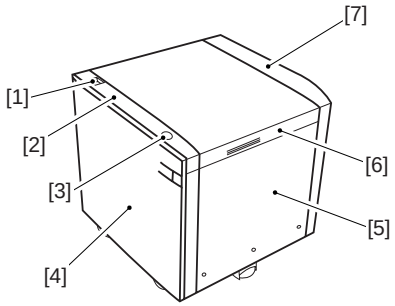


F-3-20

3.2 External Covers

3.2.1 External Covers

3.2.1.1 External Covers



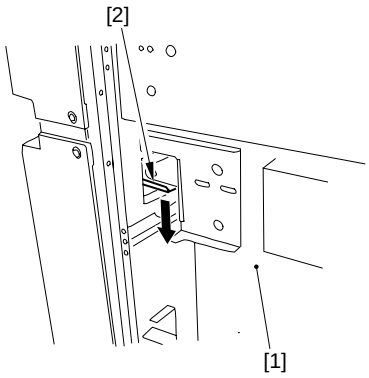
F-3-21

[1]Deck release grip
[2]Front upper cover
[3]Compartment open switch
[4]Front cover
[5]Right cover
[6]Upper cover
[7]Rear cover

3.2.2 Front Cover

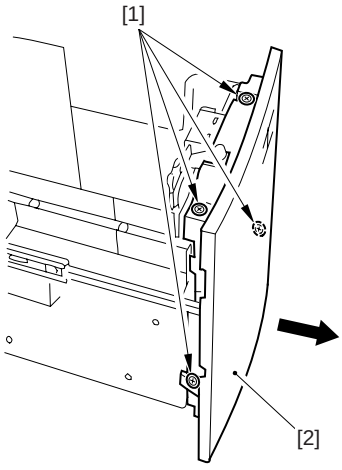
3.2.2.1 Removing the Front Cover

1) Disconnect the machine from its host machine, and push down the latch plate [2] of the compartment 1 to open the compartment [1].



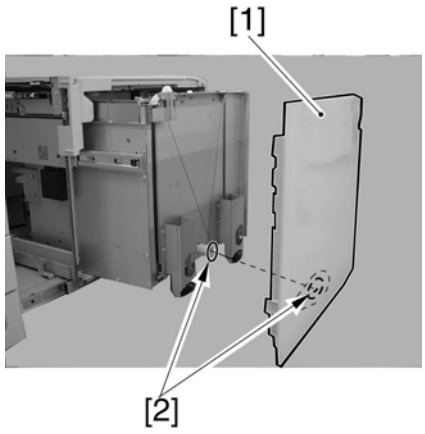
F-3-22

2) Loosen the four screws [1], and remove the machine's front cover [2] by moving it to the front.



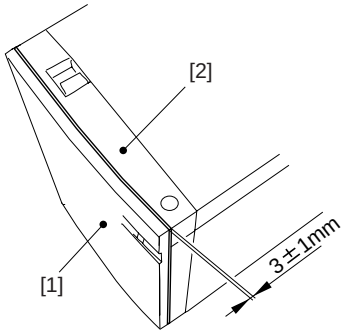
F-3-23

When mounting the front cover [1] to the machine, be sure to match the coupling [2] of the mechanism to indicate the level of paper.



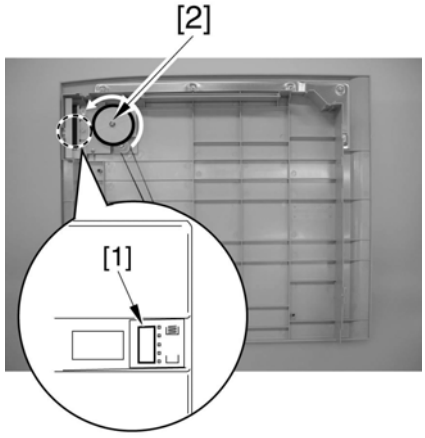
F-3-24

Be sure to mount the front cover [1] so that the gap between it and the front upper cover [2] is 3 +/-1 mm.



F-3-25

After the front cover has been removed, if its initial position is lost (as by moving the paper level indicator drive belt located behind the front cover or by moving the lifter), move down the lifter to its lower limit, and move the drive gear [2] by hand so that the white area [1] increases (indicated by an arrow in the diagram).
If the machine is turned on without correcting the position of the paper level indicator and the lifter position, the paper level indicator mechanism can become damaged.

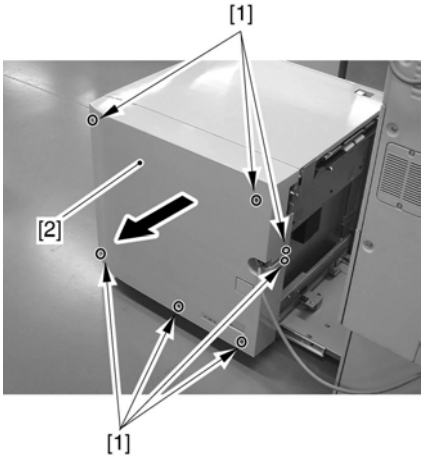


F-3-26

3.2.3 Rear Cover

3.2.3.1 Removing the Rear Cover

1) Disconnect the machine from its host machine; then, remove the six screws [1], and detach the rear cover [2].

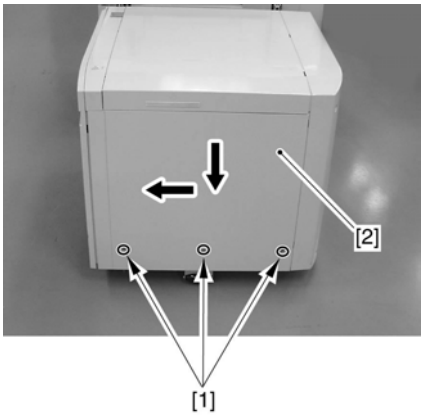


F-3-27

3.2.4 Right Cover

3.2.4.1 Removing the Right Cover

1) Remove the three screws [1], and move the right cover [2] toward the front and then toward the rear to detach.

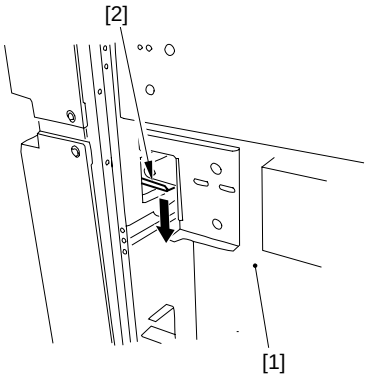


F-3-28

3.2.5 Upper Cover

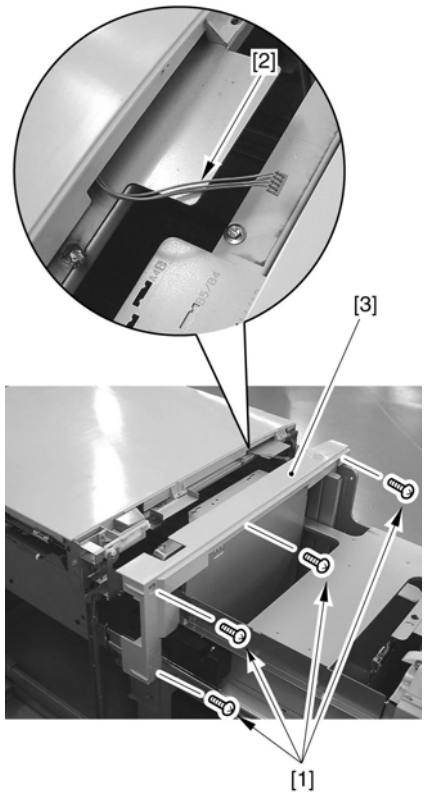
3.2.5.1 Removing the Upper Cover

1) Remove the rear cover.
2) Push down the latch plate [2] of the compartment [1] to open the compartment [1].



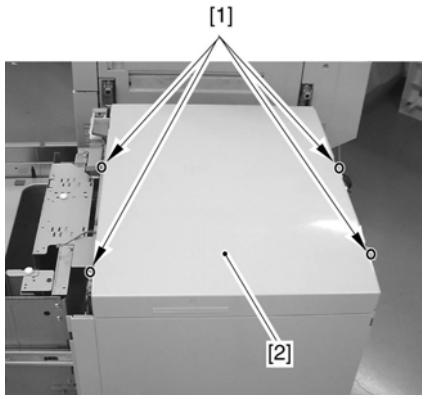
F-3-29

3) Remove the three screws [1], and disconnect the connector [2]; then, detach the front upper cover [3].



F-3-30

4) Close the deck vertical path assembly; then, remove the four screws [1], and detach the upper cover [2].



F-3-31

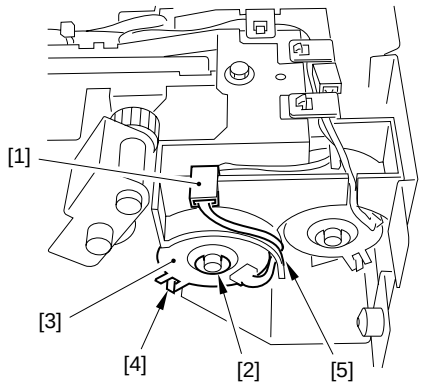
3.3 Drive System

3.3.1 Deck Pickup Clutch

3.3.1.1 Removing the Deck Pickup Clutch (CL102)

1) Remove the deck pickup unit.
2) Disconnect the connector [1], and remove the E-ring [2]; then, detach the deck pickup clutch [3].

⚠
When mounting the deck pickup clutch, be sure that the clutch is fitted into the stop [4].
Moreover, be sure to hook the harness on the U-groove [5].



F-3-32

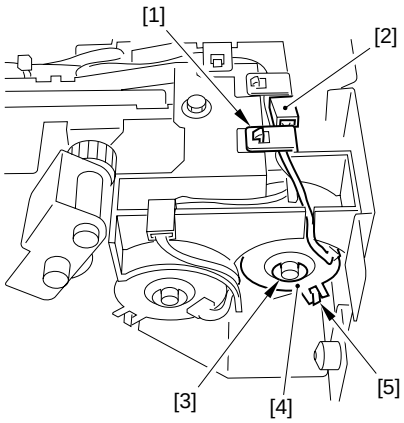
3.3.2 Deck Feed Clutch

3.3.2.1 Removing the Deck Feed Clutch (CL101)

1) Remove the deck pickup unit.
2) Remove the harness retainer [1], disconnect the connector [2], and remove the E-ring [3]; then, detach the deck feed clutch [4].

⚠

When mounting the deck feed clutch, be sure that the clutch is fitted into the stop [5].

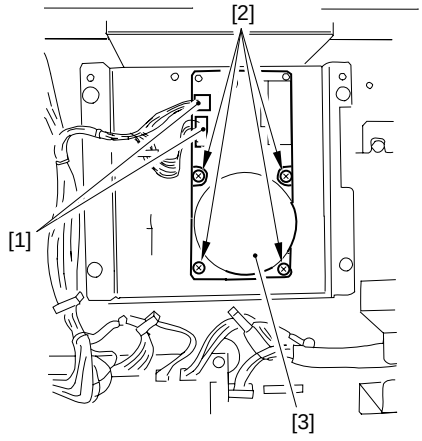


F-3-33

3.3.3 Deck Main Motor

3.3.3.1 Removing the Deck Main Motor (M101)

1) Disconnect the machine from its host machine, and remove the rear cover (6 screws).
2) Disconnect the two connectors [1], and remove the four screws [3]; then, detach the deck main motor [3].
   At this time, take care not to damage the tip of the motor spindle.

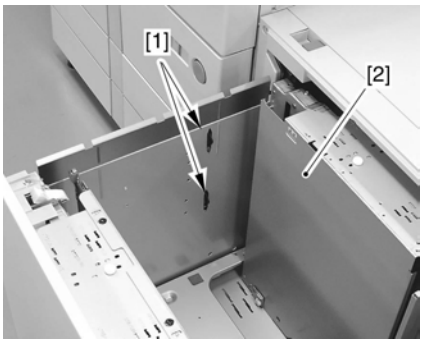


F-3-34

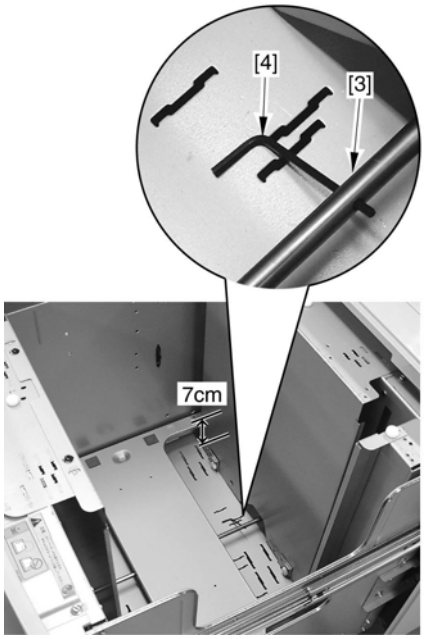
3.3.4 Deck Lifter Motor

3.3.4.1 Removing the Deck Lifter Motor (M102)

1) Open the compartment, and remove all paper.
2) Turn on the host machine's power switch; if the lifter is up, push the lever [1] of the paper supply position sensor inside the compartment to stop the lifter [2] about 7 cm from the bottom plate of the compartment. Insert a hex wrench [4] into the hole of the lifter drive shaft [3] to fix the lifter drive shaft [3] in position (thereby preventing it from turning).

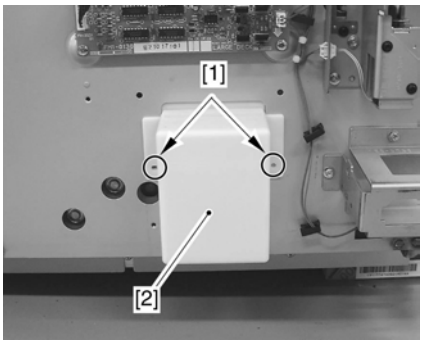


F-3-35



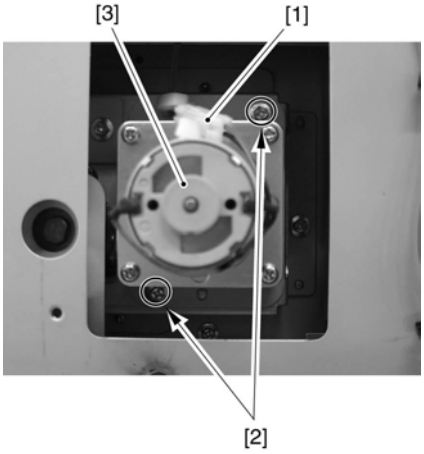
F-3-36

3) Turn off the host machine's power switch.
4) Close the compartment.
5) Remove the rear cover.
6) Remove the two screws [1]; then, remove the lifter motor cover [2].



F-3-37

7) Disconnect the connector [1], and remove the two screws [2]; then, remove the deck lifter motor unit [3].

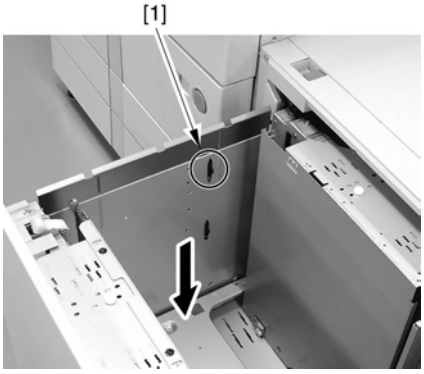


F-3-38

3.3.5 Lifter Cable (Front)

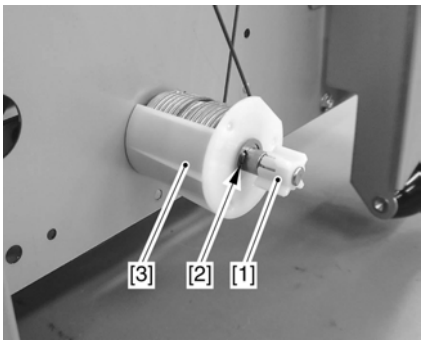
3.3.5.1 Removing the Lifter Cable (front)

1) Open the compartment, and remove all paper.
2) Push the lever [1] of the paper supply position sensor inside the compartment to shift down the lifter to the bottom.
3) Turn off the host machine's power switch.
4) Remove the front cover.



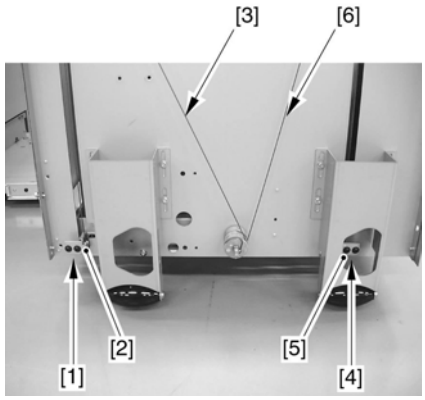
F-3-39

5) Remove the coupling shaft [1] and E-ring [2]; detach the pulley cover [3].



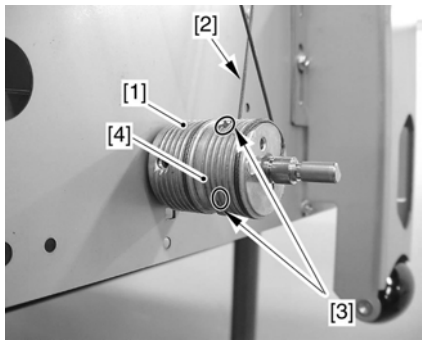
F-3-40

6) Remove the two screws [1] and cable fixing plate [2] on the left; detach the outer lifter cable [3].
7) Remove the two screws [4] and cable fixing plate [5] on the right; detach the inner lifter cable [6].



F-3-41

8) When removing the inner lifter cable [2] from the inner pulley [1], be sure to loosen the two setscrews [3] of the outer pulley and detach the outer pulley [4] beforehand.

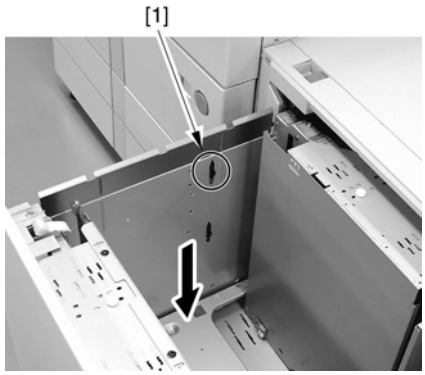


F-3-42

3.3.6 Lifter Cable

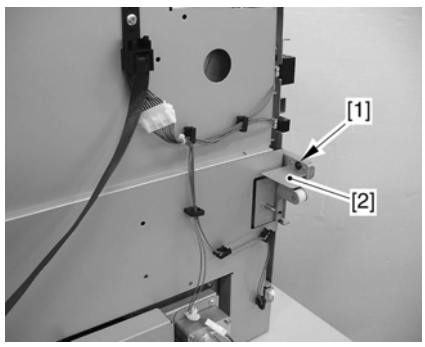
3.3.6.1 Removing the Lifter Cable (rear)

1) Open the compartment, and remove all paper.
2) Push the lever [1] of the paper supply position sensor inside the compartment to shift down the lifter to the bottom.



F-3-43

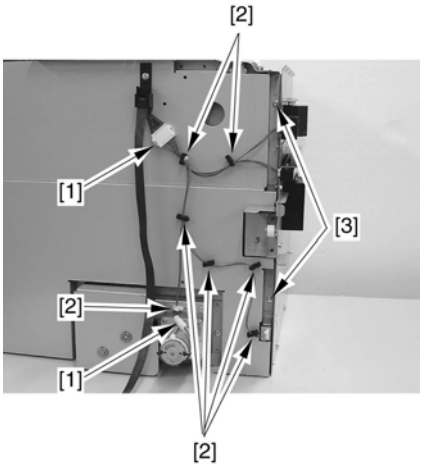
3) Remove the compartment.
4) Remove the screw [1], and detach the sensor plate [2].



F-3-44

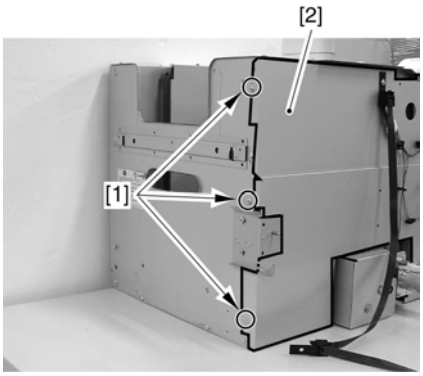
5) Remove the two connectors [1], and free the harness from the 7 harness

guides [2]. Remove the two screws [3].



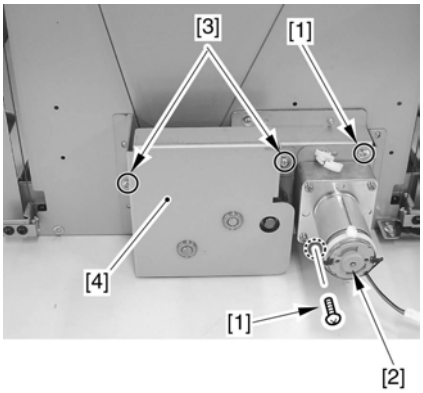
F-3-45

6) Remove the three screws [1], and detach the rear plate [2].



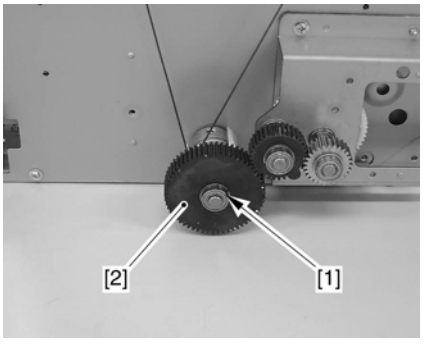
F-3-46

7) Remove the two screws [1], and detach the lifter motor [2]. Remove the two screws [3], and detach the drive support plate [4].



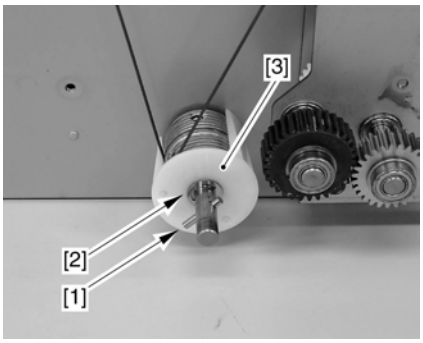
F-3-47

8) Remove the bearing [1] and gear [2].



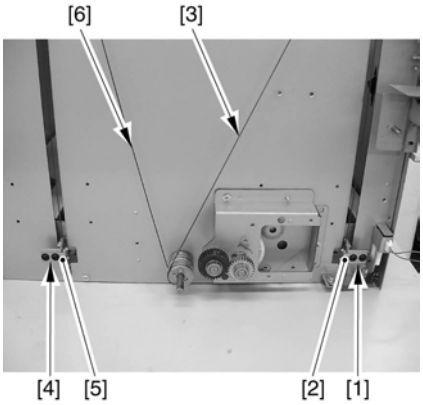
F-3-48

9) Remove the dowel pin [1] and E-ring [2]; detach the pulley cover [3].



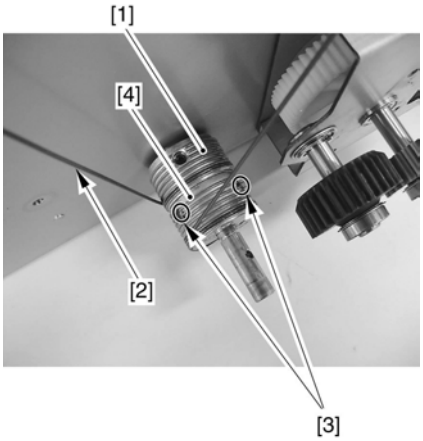
F-3-49

10) Remove the two screws [1] and cable fixing plate [2] on the right; detach the outer lifter cable [3].
11) Remove the two screws [4] and cable fixing plate [5] on the left; detach the inner lifter cable [6].



F-3-50

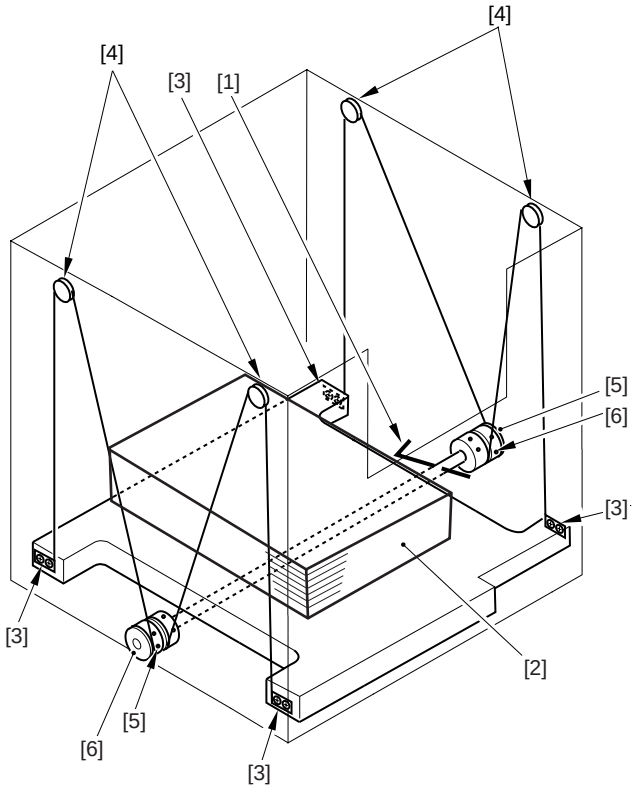
12) When removing the inner lifter cable [2] from the inner pulley [1], be sure to loosen the two setscrews [3] of the outer pulley and detach the outer pulley [4] beforehand.



F-3-51

3.3.6.2 Routing the Lifter Cable

1) Insert the hex wrench [1] into the hole of the lifter drive shaft to fix the lifter drive shaft. (To prevent rotating)
2) Load papers [2] (approx. 500 sheets) on the lifter to fix the lifter.
3) Fix the cable fixing plate [3] to the lifter by the two screws.
4) Hook the lifter cable on the upper pulley [4].
5) Hook the ball of the lifter cable on the pulley [5] of the lifter drive shaft; then, wind it along the groove of the pulley about one time. At this time, be sure that the lifter cable is taut.
6) n this condition, secure the pulley to the lifter drive shaft using two set screws [6].
7) After securing all pulleys that have been removed to the lifter drive shaft, measure the distance from the bottom plate of the compartment to the top face of the lifter, and make sure that the lifter is level.



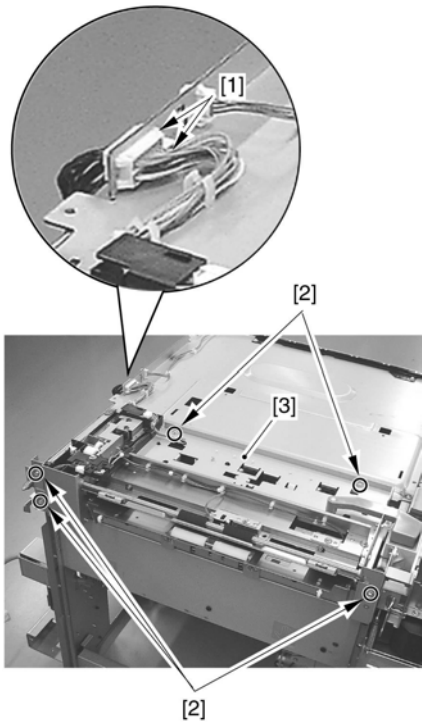
F-3-52

3.4 Document Feeding System

3.4.1 Deck Pickup Unit

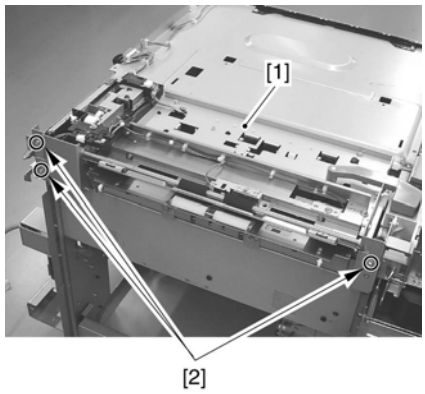
3.4.1.1 Removing the Deck Pickup Unit

1) Remove the upper cover.
2) Disconnect the two connectors [1], and remove the five screws [2].
3) Remove the deck pickup unit [3].



F-3-53

When mounting the deck pickup unit [1], be sure to tighten the three screws [3] shown in the picture first.

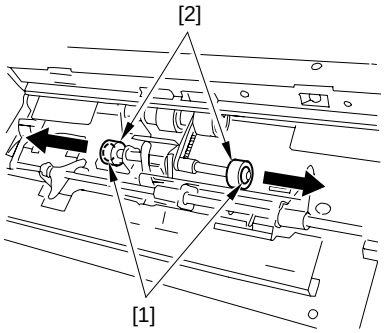


F-3-54

3.4.2 Deck Pickup Roller

3.4.2.1 Removing the Deck Pickup Roller

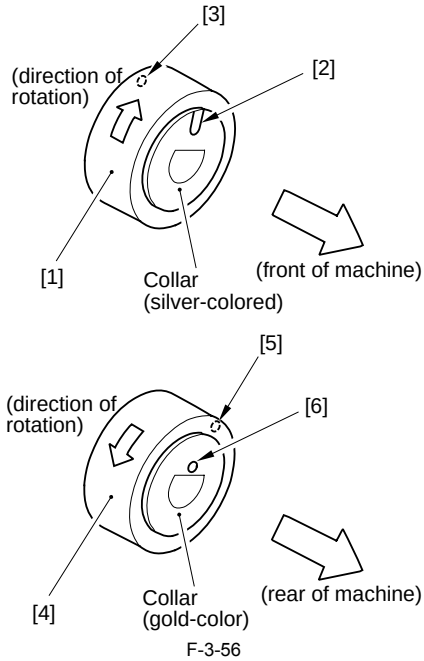
1) Remove the deck pickup unit.
2) Turn over the deck pickup unit; then, remove the resin ring [1] (1 each), and remove each pickup roller [2].



F-3-55

3.4.2.2 Orientation of the Deck Pickup Roller

When mounting the deck pickup roller [1] to the machine's front, be sure that the marking [2] on the collar (silver) is toward the front and the marking [3] on the side of the roller is toward the rear.
When moving the deck pickup roller [4] at the machine's rear, on the other hand, be sure that the marking [5] on the side of the roller and the marking [6] on the collar (silver) are toward the rear.

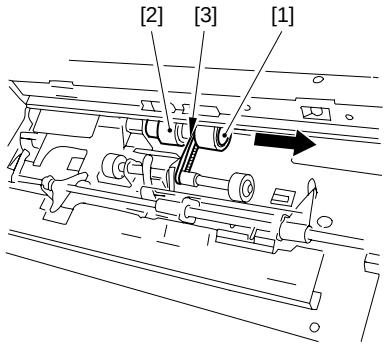


F-3-56

3.4.3 Deck Pickup/Feed Roller

3.4.3.1 Removing the Deck Pickup/Feed Roller

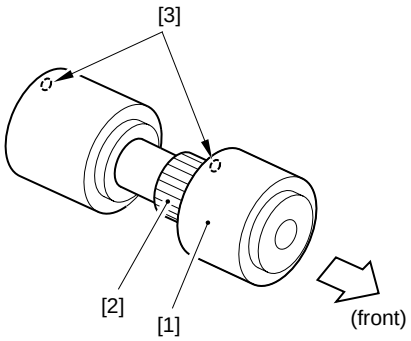
1) Remove the deck pickup unit.
2) Turn over the deck pickup unit.
3) Remove the resin ring [1], and move the deck pickup/feed roller [2] and the drive belt [3] toward the front to detach.



F-3-57

3.4.3.2 Orientation of the Deck Pickup/Feed Roller

When mounting the deck pickup/feed roller [1], be sure that the belt pulley [2] is toward the front.
When mounting the roller rubber to the roller shaft, be sure that the marking [3] is toward the rear.

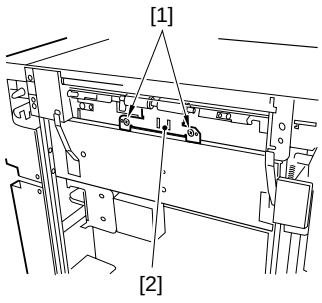


F-3-58

3.4.4 Deck Separation Roller

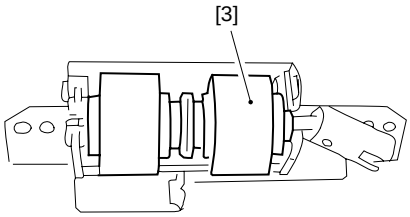
3.4.4.1 Removing the Deck Separation Roller

1) Disconnect the machine from its host machine; then, remove the two screws [1], and remove the separation roller support plate [2].



F-3-59

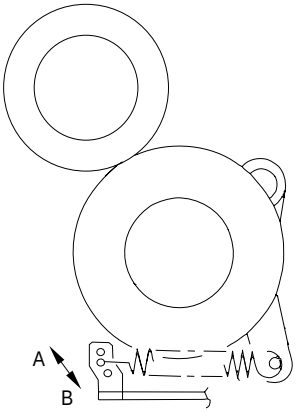
2) Remove the joint, and detach the deck separation roller [3].



F-3-60

3.4.4.2 Adjusting the Pressure of the Deck Separation Roller

If pickup failure or double feeding occurs when the pickup is from the machine, change the location of the pressure spring of the deck separation roller, thereby adjusting the roller nip:
- If pickup failure occurs, move the spring in the direction of the arrow A.
- If double feeding occurs, move the spring in the direction of the arrow B.

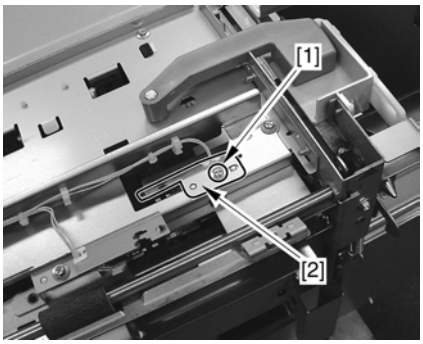


F-3-61

3.4.5 Deck Pick-up Sensor

3.4.5.1 Removing the Deck Pickup Sensor (PS101) Unit

1) Remove the deck upper cover.
2) Remove the screw [1], and detach the deck pickup sensor unit [2].

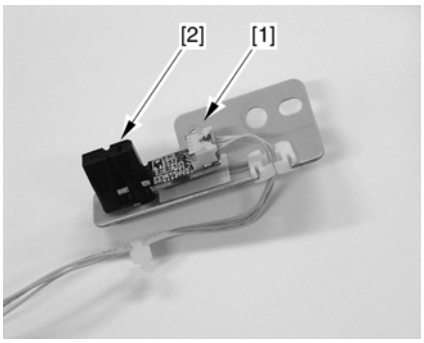


F-3-62

3) Disconnect the connector [1], and free the claw to detach the deck pickup sensor [2].

⚠
When removing the scanner sensor, be sure to remove the paint used to lock the claw in place in advance to prevent breaking the claw. When mounting it, be sure the claw is not displaced or the sensor is not disoriented.

⚠
The urethane sponge used on the deck separation roller is pink at first; over time, it turns to orange and then to yellow, accelerated if exposed to light. This is a general characteristic of urethane sponge, and these changes will not represent changes in performance. (There are not multiple types classified by color.)

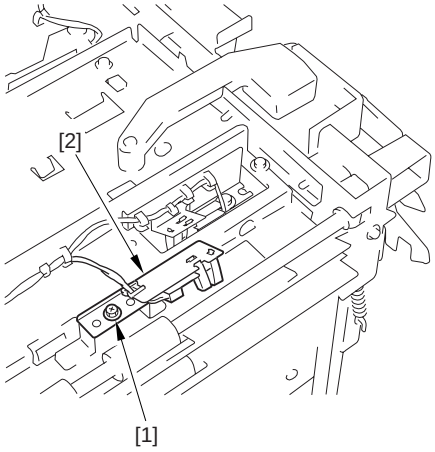


F-3-63

3.4.6 Deck Feed Sensor

3.4.6.1 Removing the Deck Feed Sensor (PS106) Unit

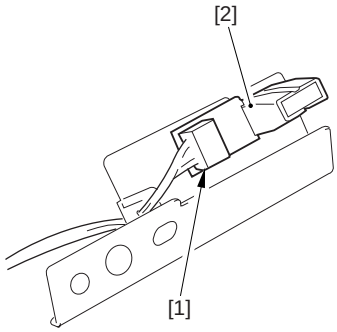
1) Remove the deck upper cover.
2) Remove the screw [1], and detach the deck feed sensor unit [2].



F-3-64

3) Disconnect the connector [1], and free the claw to remove the deck feed sensor [2].

When removing the scanner sensor, be sure to remove the paint used to lock the claw in place in advance to prevent breaking the claw. When mounting it, be sure the claw is not displaced or the sensor is not disoriented.



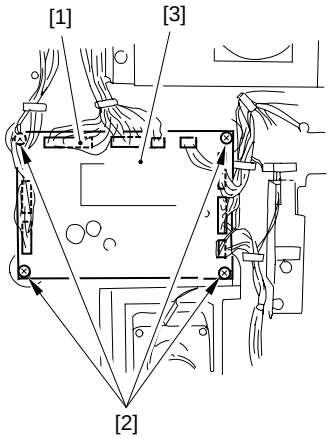
F-3-65

3.5 Electrical System

3.5.1 Deck Driver PCB

3.5.1.1 Removing the Deck Driver PCB

1) Disconnect the machine from its host machine, and remove the rear cover (6 screws).
2) Disconnect the nine connectors [1], and remove the four screws [2]; then, detach the deck driver PCB [3].

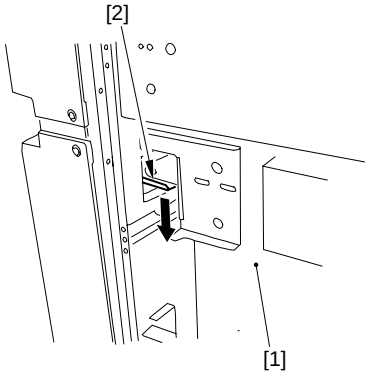


F-3-66

3.5.2 Open Switch PCB

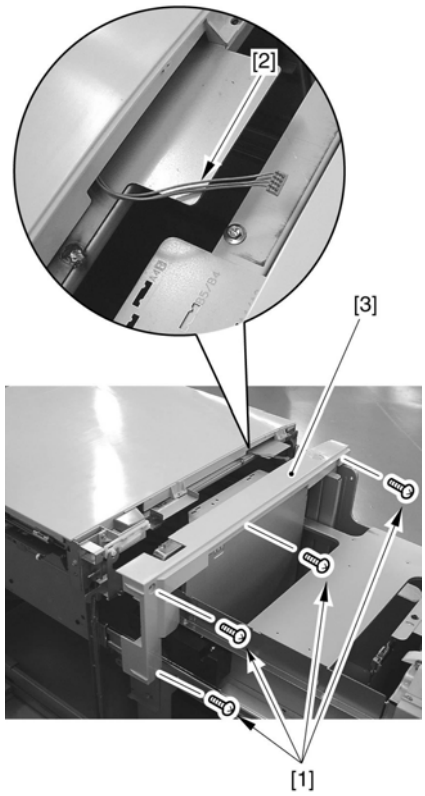
3.5.2.1 Removing the Open Switch PCB

1) Disconnect the machine from its host machine; then, push down the latch plate [2] of the compartment to open the compartment [1].



F-3-67

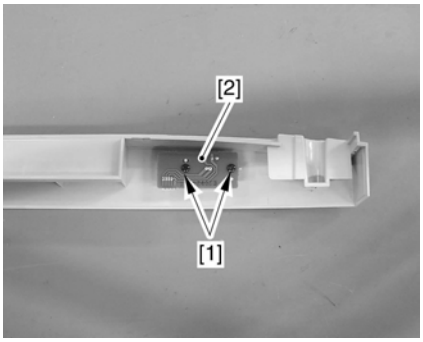
2) Remove the four screws [1], and disconnect the connector [2]; then, detach the front upper cover [3].



F-3-68

3) Remove the two screws [1], and detach the open switch PCB [2].

When mounting the front upper cover, take care to avoid biting the harness by the open switch PCB and forgetting to connect the connectors.



F-3-69

Chapter 4 Maintenance

Contents

4.1 Maintenance and Inspection

4.1.1 Periodically Replaced Parts

4.1.1.1 Periodically Replaced Parts

The machine does not have parts that require periodical replacement.

A periodically replaced part is one that must be replaced on a periodical basis to ensure a specific level of machine performance; once it fails, it can affect machine functions considerably regardless of its external appearance. If possible, schedule the replacement to coincide with scheduled servicing.

4.1.2 Durables

4.1.2.1 Consumables and Durables

Some parts of the machine may require replacement once or more during the period of machine warranty because of deterioration or damage. Replace them when they fail.

T-4-1

No.	Part name	Part number	Q'ty	Life (sheets)	Remarks
1	Pickup roller (front)	FF5-7830-000	1	500,000	Actual number checked in service mode
2	Pickup roller (rear)	FF5-7829-000	1	500,000	Actual number checked in service mode
3	Pickup/feed roller	FF6-1975-000	1	500,000	Actual number checked in service mode
4	Separation roller	FB5-6586-000	1	500,000	Actual number checked in service mode

These values are estimates only, and are subject to change based on future data.

4.1.3 Periodical Servicing

4.1.3.1 Scheduled Servicing

T-4-2

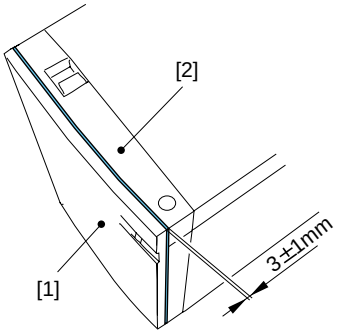
Location	installation	Remarks
Deck feed roller	Clean	
Deck feed wheel	Clean	
Optical sensor	Clean	If high temperature/humidity, every 250,000 pages.
Prism	Clean	If high temperature/humidity, every 250,000 pages.

4.2 Adjustment

4.2.1 Basic Adjustment

4.2.1.1 Position of the Front Cover

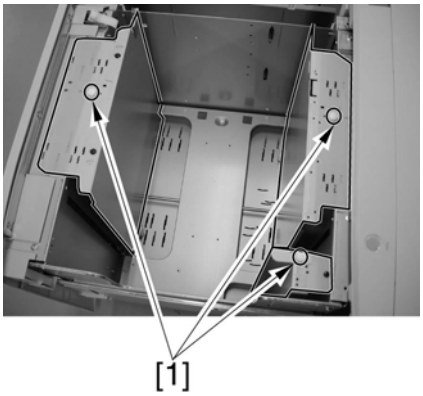
Be sure that the front cover [1] is mounted so that the gap between it and the front upper cover [2] is 3 +/-1 mm.



F-4-1

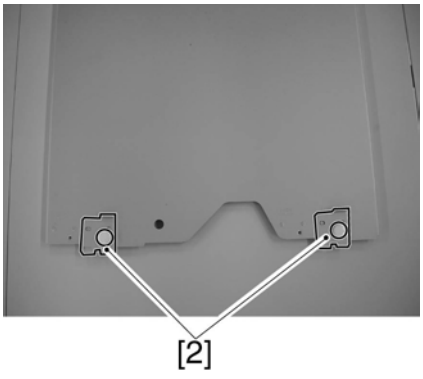
4.2.1.2 Changing the Paper Size

If the paper size must be changed, perform the following:
1) Open the compartment, and remove all paper.
2) Detach the lifter sheet.
3) Remove the limit plate securing screws [1] and position the right/left limit plates and the paper end limit plate according to the new paper size.

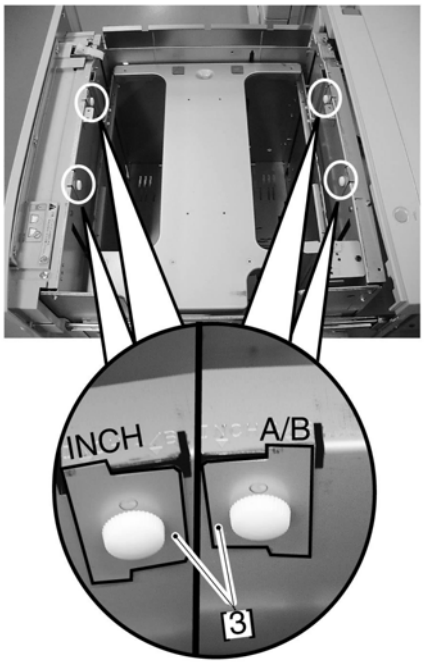


F-4-2

⚠
When changing the paper size from the A/B type to the inch type or changing the other way, position also the four switching plates [2] under the front/rear limit plates and four switching plates [3].

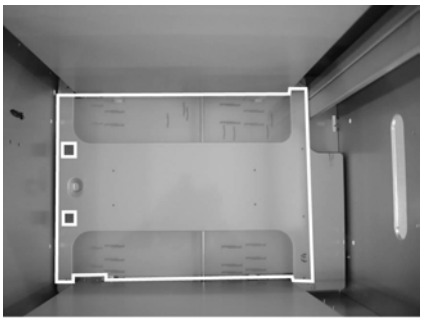


F-4-3



F-4-4

4) Place a lifter sheet for the new paper size on the lifer.

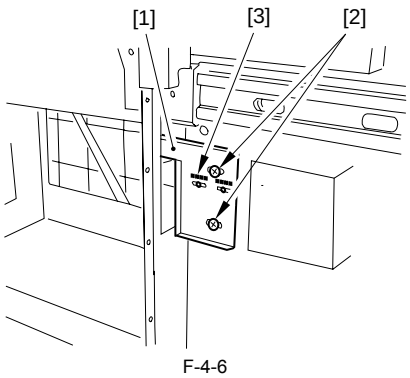


F-4-5

5) Set the user mode of the host machine according to the paper size (User Mode Key > Common Settings > Store Size for Side Paper Deck).

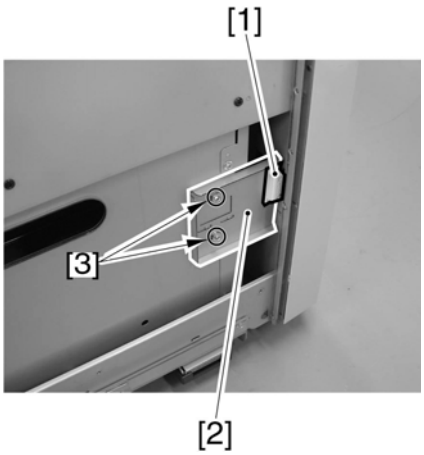
4.2.1.3 Adjusting the Registration

If the left/right registration (same as host machine) must be adjusted, perform the following:
1) Slide out the compartment, and turn the two screws [2] to adjust the position of the latch plate [1] of the compartment open solenoid (SL102). (At this time, refer to the index [3] on the latch plate to facilitate the work.)



F-4-6

2) Remove the front cover.
3) Adjust the position of the magnet mount [2] with the two screws [3] so that the magnet [1] may contact the deck rear frame when the storage is closed.

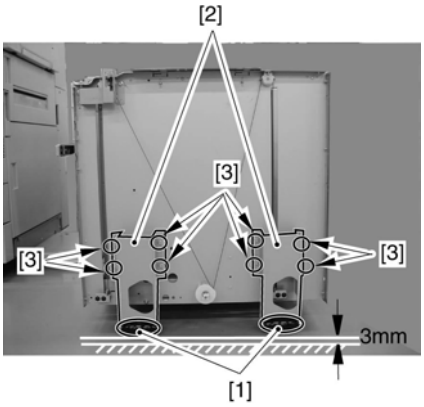


F-4-7

4.2.1.4 Adjusting the Position of the Roll

If the compartment cannot be opened/closed smoothly, thus requiring the adjustment of the position of the roll mounted to the machine's front, perform the following:

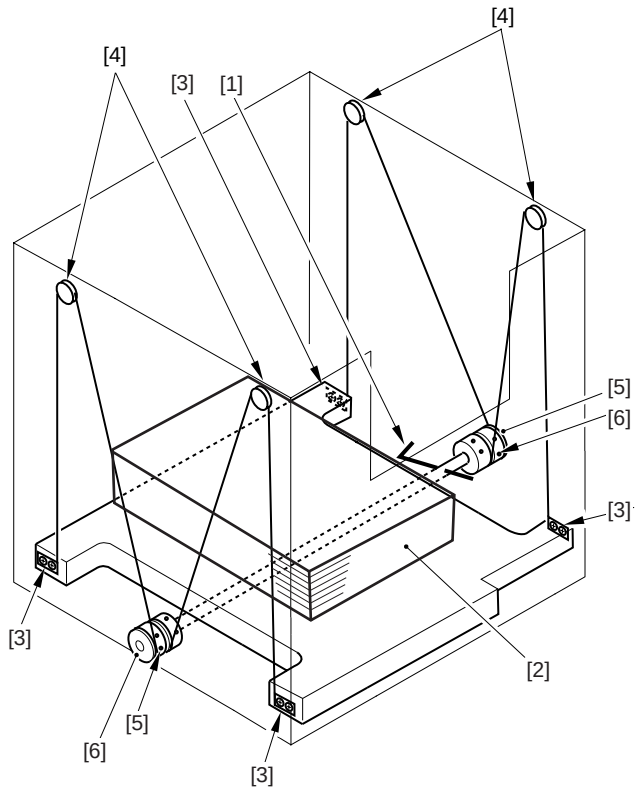
1) Open the compartment, and remove all paper.
2) Remove the front cover.
3) With the compartment fully slid out, turn the eight mounting screws [3] of the roll support plates [2] so that the roll [1] is about 3 mm from the floor. (At this time, refer to the index on the front side plate to facilitate the work.)



F-4-8

4.2.1.5 Routing the Lifter Cable

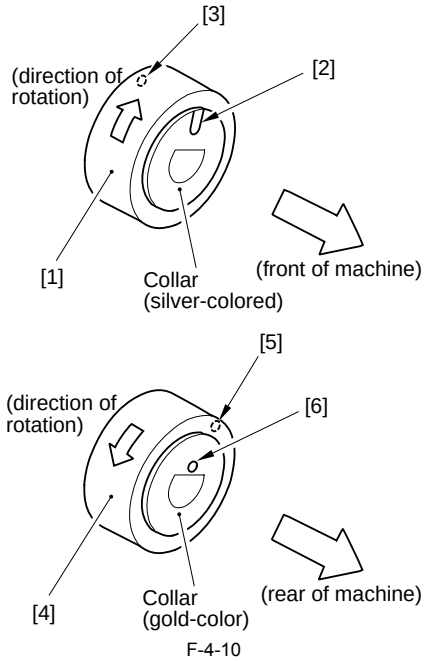
1) Insert the hex wrench [1] into the hole of the lifter drive shaft to fix the lifter drive shaft. (To prevent rotating)
2) Load papers [2] (approx. 500 sheets) on the lifter to fix the lifter.
3) Fix the cable fixing plate [3] to the lifter by the two screws.
4) Hook the lifter cable on the upper pulley [4].
5) Hook the ball of the lifter cable on the pulley [5] of the lifter drive shaft; then, wind it along the groove of the pulley about one time. At this time, be sure that the lifter cable is taut.
6) n this condition, secure the pulley to the lifter drive shaft using two set screws [6].
7) After securing all pulleys that have been removed to the lifter drive shaft, measure the distance from the bottom plate of the compartment to the top face of the lifter, and make sure that the lifter is level.



F-4-9

4.2.1.6 Orientation of the Deck Pickup Roller

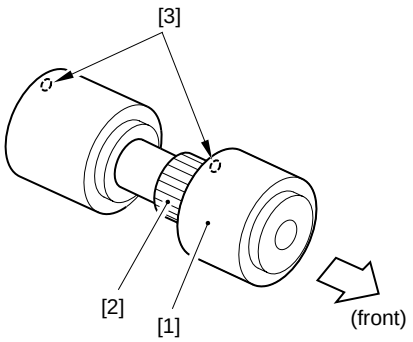
When mounting the deck pickup roller [1] to the machine's front, be sure that the marking [2] on the collar (silver) is toward the front and the marking [3] on the side of the roller is toward the rear.
When moving the deck pickup roller [4] at the machine's rear, on the other hand, be sure that the marking [5] on the side of the roller and the marking [6] on the collar (silver) are toward the rear.



F-4-10

4.2.1.7 Orientation of the Deck Pickup/Feed Roller

When mounting the deck pickup/feed roller [1], be sure that the belt pulley [2] is toward the front.
When mounting the roller rubber to the roller shaft, be sure that the marking [3] is toward the rear.

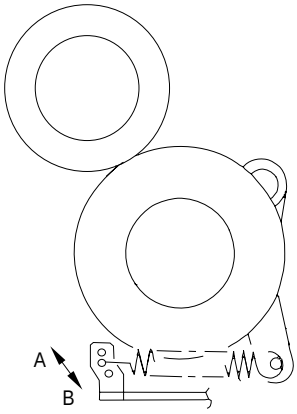


F-4-11

4.2.1.8 Adjusting the Pressure of the Deck Separation Roller

If pickup failure or double feeding occurs when the pickup is from the machine, change the location of the pressure spring of the deck separation roller, thereby adjusting the roller nip:

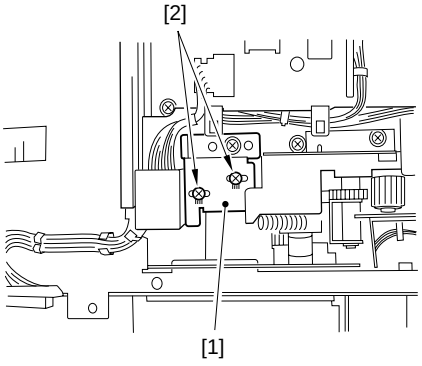
- If pickup failure occurs, move the spring in the direction of the arrow A.
- If double feeding occurs, move the spring in the direction of the arrow B.



F-4-12

4.2.1.9 Position of the Deck Pickup Roller Release Solenoid (SL101)

Before removing the deck pickup roller release solenoid [1] from its support plate, take note of the positions of the two fixing screws [2] of the solenoid with reference to the index on the support plate. Or, mark the position of the solenoid on the support plate with a scriber.
If the solenoid must be mounted on its own, be sure to secure it in place where it was initially found.



F-4-13

4.3 Troubleshooting

4.3.1 Malfunction

4.3.1.1 Malfunction/Faulty Detection

4.3.1.1.1 Pickup fails

0011-3117

Right upper door, Right lower door
1) Are the right upper door and the right lower door closed properly?
NO: Close the doors properly.

Lifter
2) Does the lifter move down when the compartment is slid out? Further, is the sound of the lifter moving up heard when the compartment is set?
NO: See "he deck lifter fails to move up".

Deck pickup roller
3) Does the deck pickup roller rotate?
Belt (displacement)
4) Is the belt used to transmit drive to the deck pickup roller correctly attached?
NO: Attach the belt correctly.

Drive belt, Gear, Coupling
5) Is the drive from the deck main motor (M101) transmitted to the pickup assembly through the drive belt, gear, and coupling?
NO: Check the drive belt, gear, and coupling.

Deck pickup/feed clutch (CL101: feed; CL102: pickup)
Deck driver PCB (output)
6) Press the Start key of the host machine. Does the voltage at the following connectors on the deck driver PCB change from 24 to 0 V?
J104-4 (CL101), J104-6 (CL102)
NO: Check the wiring to the clutch; if normal, replace the clutch.
YES: Replace the deck driver PCB.

4.3.1.1.2 The deck lifter fails to move up

0011-3118

Side paper deck
1) It the deck mounted correctly?
NO: Mount the deck correctly.

Lifter cable
2) Is the lifter cable strung correctly?
NO: String the lifter cable correctly.

Spring, Lever
3) Push up the pickup roller releasing lever with your finger. Does the pickup roller move down?
NO: Remove the pickup assembly, and check the spring and lever.

Deck lifter motor (M102)
4) Does the deck lifter motor rotate?
YES: Go to step 6.

Deck lifter driver PCB, Deck open detecting switch (SW101)
5) Does the voltage between J109-3 on the side deck driver PCB and GND (-) change from about 0 to 5 V when the deck is closed?
NO: Replace the side deck driver PCB.
YES: Check the wiring up to the switch; if normal, replace the switch.

Deck lifer lower limit switch (SW102), Side deck driver PCB
6) Is the voltage between J107-8 (-) note side deck driver PCB and GND (-) as follows?
- When the deck is opened, 0 V.
- When the deck is closed, 5 V.
YES: Check the lever and wiring; if normal, replace the sensor.
NO: Replace the side deck driver PCB.

4.3.1.1.3 E043

0011-3119

Connector

1) Are the connectors on the deck driver PCB (J101, J105, J106) inserted correctly?
NO: Connect the connectors correctly.

Deck main motor (M101)
Deck driver PCB

2) Is there electrical continuity between the following connectors on the deck driver PCB?

[Signal]	[Connector]
38VU	J106-1 and J101-1
0VU	J106-2 and J101-2

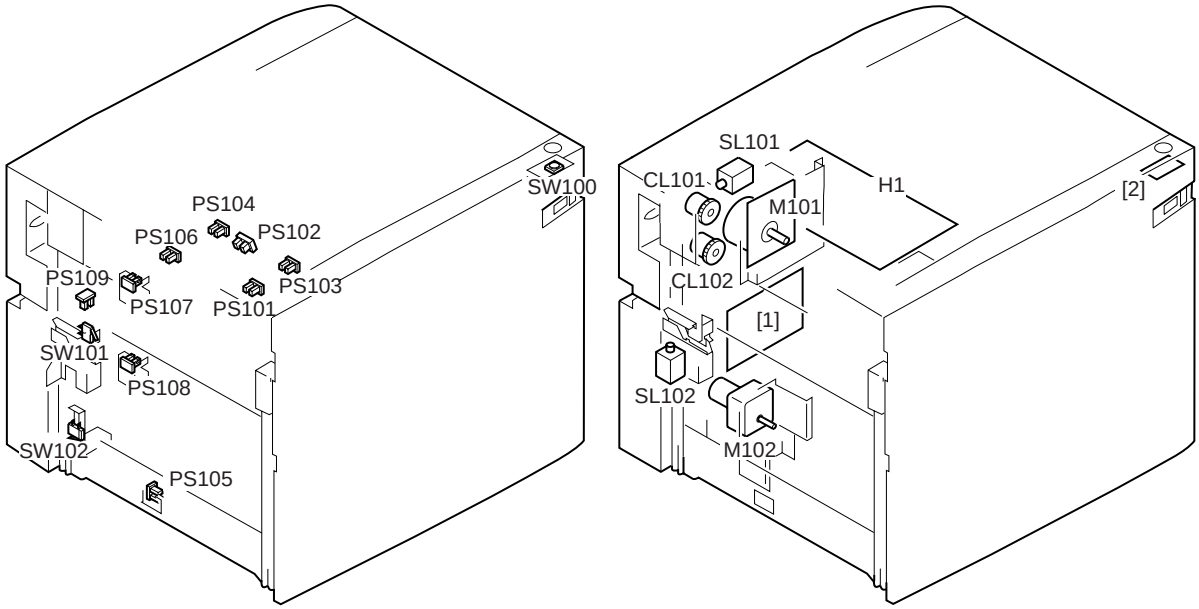
YES: Replace the deck main motor (M101).
NO: Replace the deck driver PCB.

4.4 Outline of Electrical Components

4.4.1 Arrangement of Electric Parts

T-4-3

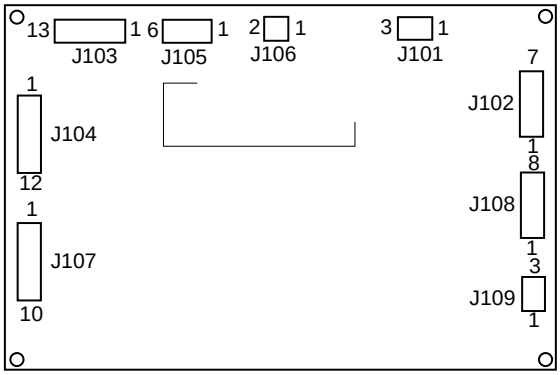
Notation	Name
PS101	Deck pickup sensor
PS102	Deck paper sensor
PS103	Deck lifter upper limit sensor
PS104	Deck lifter position sensor
PS105	Deck set sensor
PS106	Deck feed sensor
PS107	Deck paper supply positionsensor
PS108	Deck paper level sensor
PS109	Compartment open sensor
SW100	Compartment open switch
SW101	Compartment open detecting switch
SW102	Deck lifter lower limit detecting switch
M101	Deck main motor
M102	Deck lifter motor
CL101	Deck feed clutch
CL102	Deck pickup clutch
SL101	Deck pickup roller releasesolenoid
SL102	Compartment open solenoid
H1	Deck heater (accessory)
[1]	Deck driver PCB
[2]	Open switch PCB



F-4-14

4.5 Variable Resistors (VR), Light-Emitting Diodes (LED), and Check Pins by PCB

4.5.1 Deck Driver PCB



F-4-15

Chapter 5 Error Code

Contents

5.1 Overview

5.1.1 Outline

The machine communicates its state to its host machine as needed for diagnosis by the host machine' CPU.
The host machine will indicate a code on its control panel upon detection of an error, the nature of which may be checked in the host machine' service code.
The following table shows the applicable codes and faults associated with them together with the timing of detection:

5.1.2 Error Code

E043

T-5-1

Code	Cause	Description
E043	The deck main motor (M101) is faulty. The deck driver PCB is faulty. The host machine is faulty.	After the deck main motor drive signal has been generated, the PLL lock signal (DMPLK) remains '1' for 2 sec or more.

Feb 7 2006

Canon