

Service Manual

Cassette

Cassette Feeding Module-K1

Canon

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

The product names and company names used in this manual are the registered trademarks of the individual companies.

Copyright

This manual is copyrighted with all rights reserved. Under the copyright laws, this manual may not be copied, reproduced or translated into another language, in whole or in part, without the written consent of Canon Inc.

COPYRIGHT © 2001 CANON INC.

Printed in Japan

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

1.1 Product Specifications	1- 1
1.1.1 Specifications	1- 1
1.2 Names of Parts	1- 1
1.2.1 Locations of Main Rollers and Sensors.....	1- 1

Chapter 2 Functions

2.1 Pick-Up/Feed System.....	2- 1
2.1.1 Overview	2- 1
2.1.2 Cassette Pickup Operation	2- 1
2.1.3 Cassette Paper Size Detection.....	2- 2
2.1.4 Paper Pickup Control System.....	2- 3
2.2 Detecting Jams	2- 4
2.2.1 Delay Jam in Pickup Assembly	2- 4
2.2.2 Delay Jam in Pickup Assembly (Paper Leading Edge Jam at Delivery Sensor Wound Paper Jam at Fixing Assembly)	2- 4
2.2.3 Stationary Jam in Pickup Assembly.....	2- 4
2.2.4 Stationary Jam in Delivery Assembly (Paper Trailing Edge Stationary Jam at Delivery Sensor/ Stationary Jam at Delivery Sensor)	2- 5

Chapter 3 Parts Replacement Procedure

3.1 Document Feeding System.....	3- 1
3.1.1 Pickup Roller Unit.....	3- 1
3.1.1.1 Removing the Cassette Paper Pickup Roller	3- 1
3.2 Electrical System	3- 1
3.2.1 Cassette Size Detection Unit.....	3- 1
3.2.1.1 Removing the Paper Size Detection Switches.....	3- 1
3.2.2 Cassette Retry Paper Sensor.....	3- 1
3.2.2.1 Removing the Cassette Pickup Assembly	3- 1
3.2.2.2 Removing the Retry Sensor	3- 1
3.2.3 Cassette Paper Sensor	3- 1
3.2.3.1 Removing the Cassette Pickup Assembly	3- 1
3.2.3.2 Removing the Cassette Paper Presence/Absence Sensor	3- 2
3.2.4 Cassette Pickup Solenoid	3- 2
3.2.4.1 Removing the Cassette Pickup Assembly	3- 2
3.2.4.2 Removing the Cassette Pickup Solenoid.....	3- 2

Chapter 4 Maintenance

4.1 Maintenance and Inspection.....	4- 1
4.1.1 Periodically Replaced Parts.....	4- 1

Contents

4.1.1.1 Periodically Replaced Parts	4- 1
4.1.2 Durables	4- 1
4.1.2.1 Durables	4- 1
4.1.3 Periodical Servicing.....	4- 1
4.1.3.1 Periodical Servicing	4- 1

Chapter 1 Specifications

Contents

1.1 Product Specifications	1-1
1.1.1 Specifications	1-1
1.2 Names of Parts	1-1
1.2.1 Locations of Main Rollers and Sensors	1-1

1.1 Product Specifications

1.1.1 Specifications

Functions and operation methods of the cassette unit are as follows:

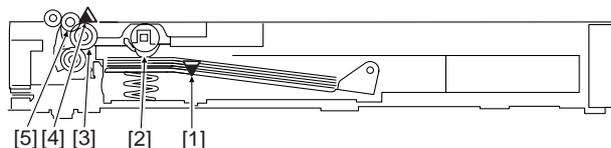
T-1-1

Item	Function/Operation method
Type	Front loading
Pickup method	Claw retard
Cassette stage(s)	1-stage cassette unit
	2-stage cassette unit
	3-stage cassette unit
Paper size setting	Set by user
Media type	Domestic Label sheet (60 g/m ² to 90 g/m ²)Domestic Label sheet (60 g/m ² to 90 g/m ²)
Paper size	A3/B4/A4/A4R/B5/B5R/A5/LDR/LGL/LTR/LTR-R/STMT
Environmental measures	Taken (A cassette heater is available as an accessory)
Paper loading capacity	250Sheets(80g/m ² Paper)
Operation panel	Not provided.
Display	Not provided.
Power supply	Not provided (Power is supplied from host machine.)
Weight	1-stage cassette model (6.0kg)
	2-stage cassette model(12.0kg)
	3-stage cassette model(18.0kg)
Dimensions	1-stage cassette model 580.3mmx569.3mmx116.8mm
	2-stage cassette model580.3mmx569.3mmx201.8mm
	3-stage cassette model580.3mmx569.3mmx286.8mm

1.2 Names of Parts

1.2.1 Locations of Main Rollers and Sensors

Locations of main rollers and sensors are shown below.



F-1-1

T-1-2

number	Sensor/Roller
[1]	Cassette 2 paper presence/absence sensor
[2]	Pickup roller
[3]	Cassette pickup roller
[4]	Cassette 2 retry sensor
[5]	Feed roller 1

Chapter 2 Functions

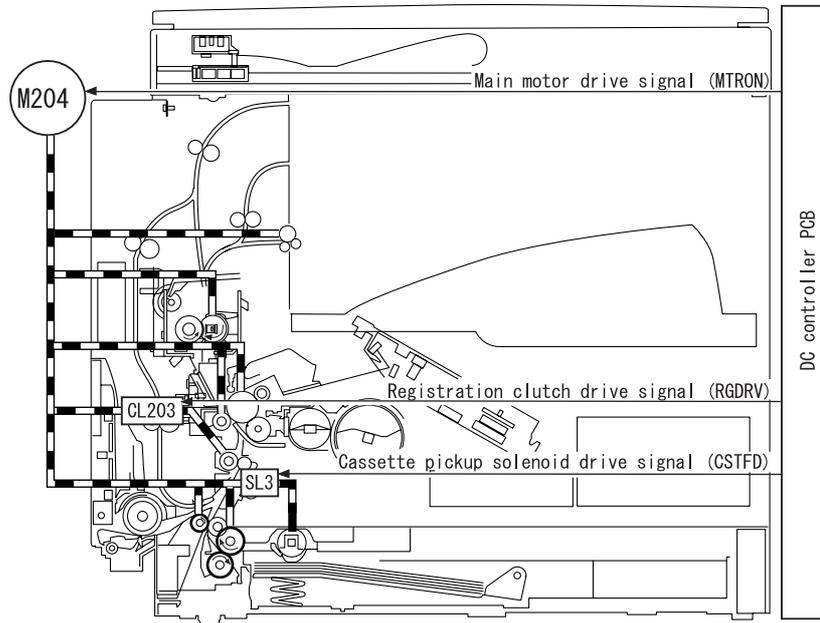
Contents

2.1 Pick-Up/Feed System.....	2-1
2.1.1 Overview	2-1
2.1.2 Cassette Pickup Operation.....	2-1
2.1.3 Cassette Paper Size Detection	2-2
2.1.4 Paper Pickup Control System.....	2-3
2.2 Detecting Jams	2-4
2.2.1 Delay Jam in Pickup Assembly.....	2-4
2.2.2 Delay Jam in Pickup Assembly (Paper Leading Edge Jam at Delivery Sensor Wound Paper Jam at Fixing Assembly).....	2-4
2.2.3 Stationary Jam in Pickup Assembly.....	2-4
2.2.4 Stationary Jam in Delivery Assembly (Paper Trailing Edge Stationary Jam at Delivery Sensor/Stationary Jam at Delivery Sensor).....	2-5

2.1 Pick-Up/Feed System

2.1.1 Overview

The paper picked up from the cassette is fed to the registration roller using the vertical path roller driven by the main motor (M204). The registration roller is not rotating when paper reaches there, so an arch is formed at the leading of the paper to prevent skewing. The DC controller PCB turns on the registration clutch (CL203) at the prescribed timing to transfer the main motor rotation to the registration roller, thus feeding the paper to the delivery tray through the transfer, separation, fixing, and delivery assemblies.

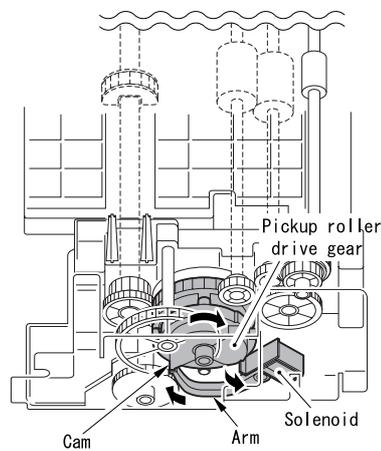


F-2-1

2.1.2 Cassette Pickup Operation

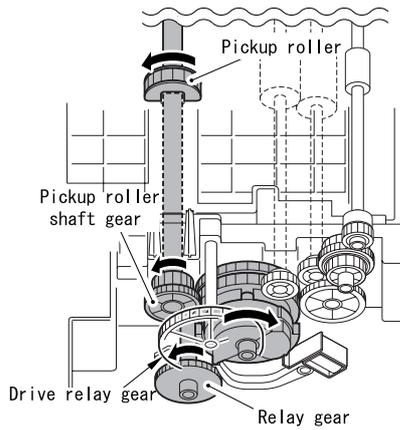
Rotation of the pickup roller is controlled by the pickup roller drive gear, which transfers the drive power of the main motor (M204) to the pickup roller drive shaft, and the cassette pickup solenoid (SL202). When the main motor starts rotating, the interlocked relay gear also starts rotating. At this time, the pickup roller drive gear is not driven because its toothless portion is positioned at the relay gear and therefore these gears are not engaged with each other.

1) The DC controller PCB issues a cassette pickup solenoid drive signal (CSTFD). When the solenoid is turned on, the control arm pushes the cam to rotate the pickup roller drive gear slightly.



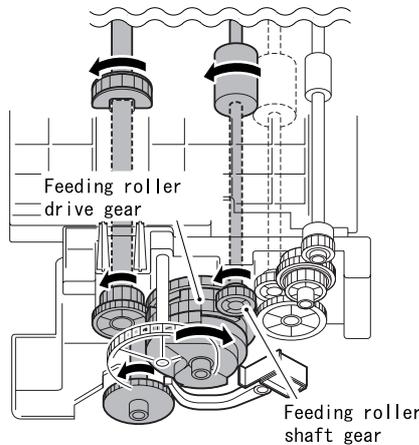
F-2-2

2) When the pickup roller drive gear is engaged with the pickup roller shaft gear, drive power is transferred to the pickup roller shaft gear and consequently the pickup roller starts rotating.



F-2-3

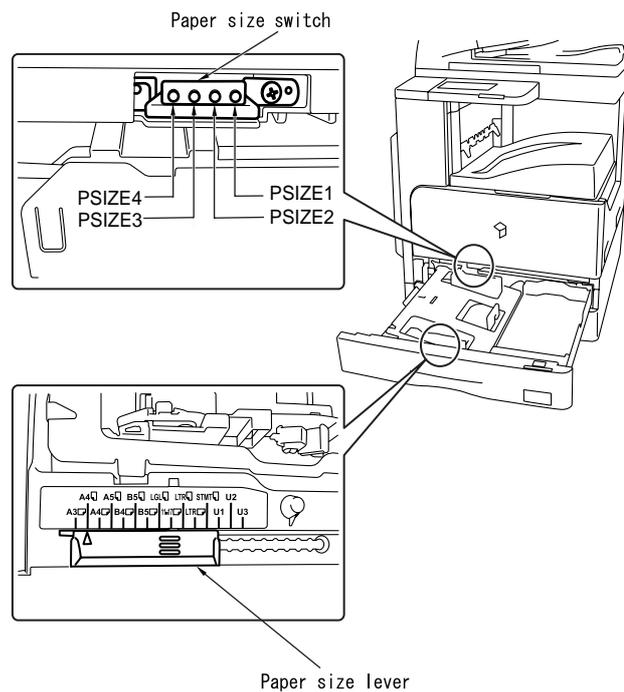
- 3) When the feed roller drive gear is engaged with the feed roller shaft gear, drive power is transferred to the feed roller shaft gear and consequently the feed roller starts rotating.
- 4) When the pickup roller rotates once, the toothless portion of the pickup roller drive gear comes to the position of the relay gear and consequently drive power of the main motor is not transferred, stopping the rotation of pickup and feed rollers.
- 5) The picked up paper is fed to the registration roller through the vertical path roller.



F-2-4

2.1.3 Cassette Paper Size Detection

The size of the paper in the cassette is detected by the DC controller PCB when the user changes the position of the cassette paper size lever. When the cassette is inserted in the iR host machine, the paper size lever pushes the paper size switches provided in the iR host machine to allow the DC controller PCB to detect presence of the cassette and the size of paper. Paper size switches are arranged as shown below. Paper sizes are determined by the combinations of the switches pushed by the paper size lever.



F-2-5

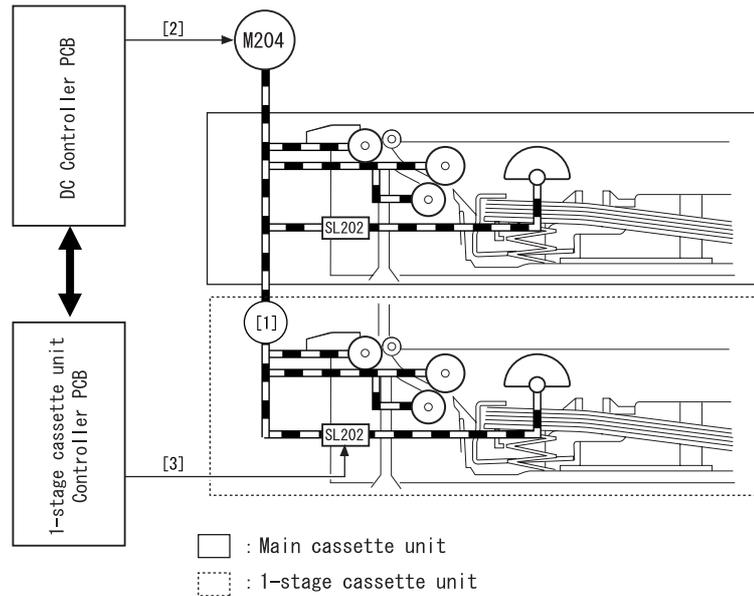
T-2-1

	A3	A4	A4R	A5	B4	B5	B5R	LGL	11x17	LTR	LTRR	STM T	U1*	U2*	U3*
PSIZ E1	ON	OFF	ON	OFF	OFF	ON	ON	OFF	ON	ON	ON	ON	OFF	OFF	OFF
PSIZ E2	OFF	ON	OFF	ON	OFF	OFF	ON	ON	OFF	ON	ON	ON	ON	OFF	OFF
PSIZ E3	OFF	OFF	ON	OFF	ON	OFF	OFF	ON	ON	OFF	ON	ON	ON	ON	OFF
PSIZ E4	OFF	OFF	OFF	ON	OFF	ON	OFF	OFF	ON	ON	OFF	ON	ON	ON	ON

ON: The push switch is pushed.
 OFF: The push switch is not pushed.
 *: Not used.

2.1.4 Paper Pickup Control System

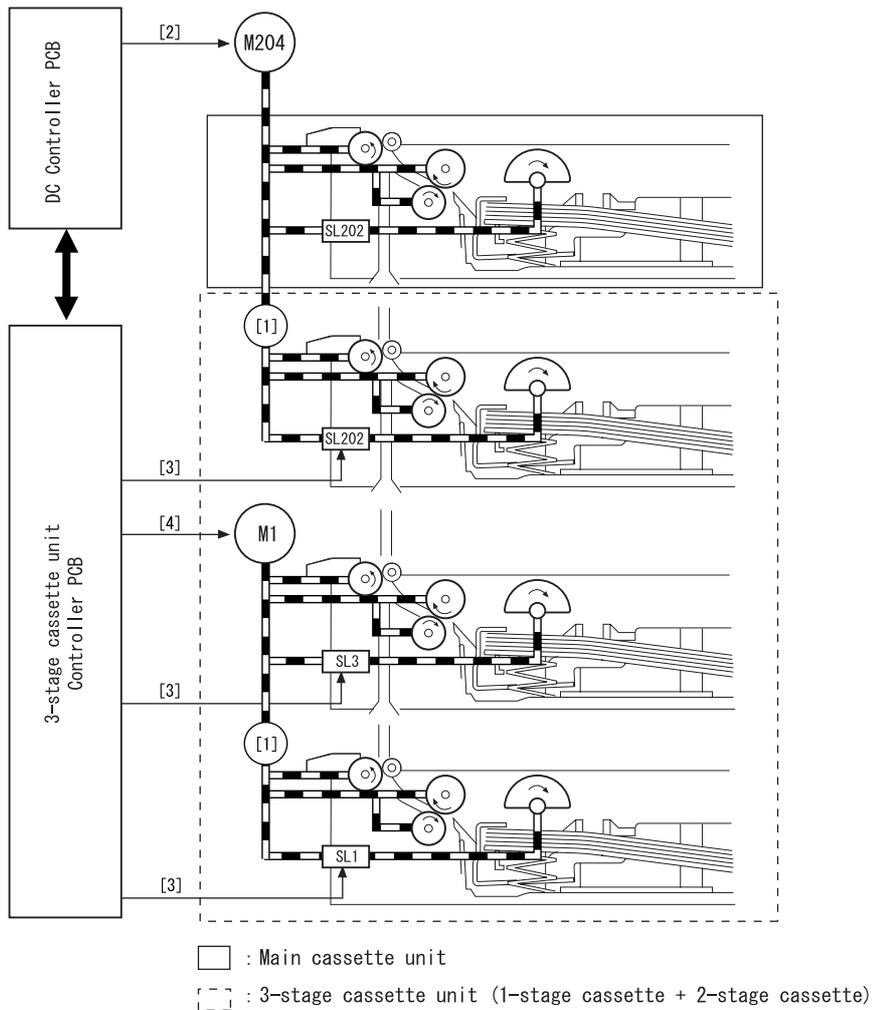
The paper pickup control system is shown below.
 - 1-stage cassette unit



F-2-6
 T-2-2

Symbol	Name
[1]	Connecting gear
[2]	Main motor drive signal (MTRON)
[3]	Cassette pickup solenoid drive signal (CSTFD)

- 3-stage cassette unit (1-stage cassette + 2-stage cassette)



F-2-7

2.2 Detecting Jams

2.2.1 Delay Jam in Pickup Assembly

Delay Jam in Pickup Assembly

The registration sensor cannot detect the leading edge of paper within the jam detection time interval after paper pickup started.

T-2-3

Sensor/Solenoid

Registration sensor (SR209)

Pickup solenoid (SL202)

2.2.2 Delay Jam in Pickup Assembly (Paper Leading Edge Jam at Delivery Sensor Wound Paper Jam at Fixing Assembly)

Paper Leading Edge Jam at Delivery Sensor

The delivery sensor cannot detect presence of paper within the prescribed time after the registration clutch has been turned on.

T-2-4

Sensor/Registration clutch

Delivery sensor (SR203)

Registration clutch (CL203)

Wound Paper Jam at Fuser

The delivery sensor has detected absence of paper within the prescribed time after it detected presence of paper (within the prescribed time after the registration clutch had been turned on).

T-2-5

Sensor/Registration clutch

Delivery sensor (SR203)

Registration clutch (CL203)

2.2.3 Stationary Jam in Pickup Assembly

Stationary Jam in Pickup Assembly

The registration sensor does not detect absence of paper within the prescribed time before the next leading edge of fed paper reaches the registration sensor.

T-2-6

Sensor

Registration sensor(SR209)

2.2.4 Stationary Jam in Delivery Assembly (Paper Trailing Edge Stationary Jam at Delivery Sensor/Stationary Jam at Delivery Sensor)

Paper Trailing Edge Stationary Jam at Delivery Sensor

The delivery sensor cannot detect absence of paper within the prescribed time after the registration sensor has been turned off.

T-2-7

Sensor

Registration sensor (SR209)

Delivery sensor (SR203)

Stationary Jam at Delivery Sensor

The delivery sensor cannot detect absence of paper within the prescribed time after it has detected the leading edge of paper.

T-2-8

Sensor

Delivery sensor (SR203)

Chapter 3 Parts Replacement Procedure

Contents

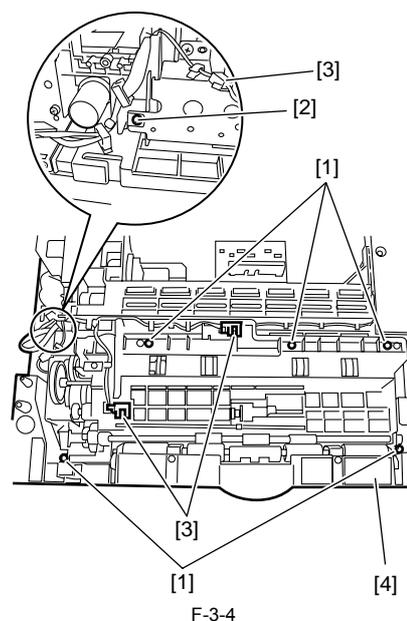
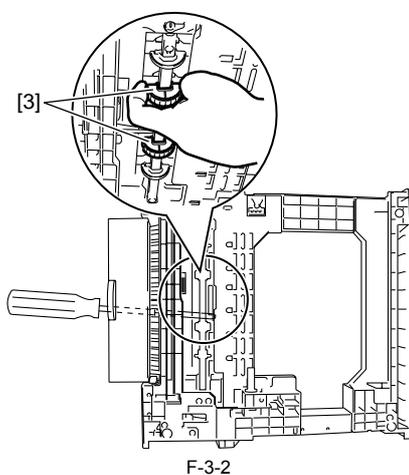
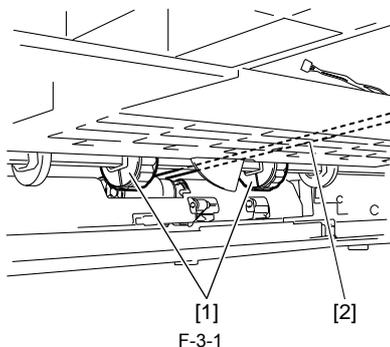
3.1 Document Feeding System.....	3-1
3.1.1 Pickup Roller Unit.....	3-1
3.1.1.1 Removing the Cassette Paper Pickup Roller	3-1
3.2 Electrical System.....	3-1
3.2.1 Cassette Size Detection Unit	3-1
3.2.1.1 Removing the Paper Size Detection Switches.....	3-1
3.2.2 Cassette Retry Paper Sensor.....	3-1
3.2.2.1 Removing the Cassette Pickup Assembly	3-1
3.2.2.2 Removing the Retry Sensor.....	3-1
3.2.3 Cassette Paper Sensor.....	3-1
3.2.3.1 Removing the Cassette Pickup Assembly	3-1
3.2.3.2 Removing the Cassette Paper Presence/Absence Sensor	3-2
3.2.4 Cassette Pickup Solenoid	3-2
3.2.4.1 Removing the Cassette Pickup Assembly	3-2
3.2.4.2 Removing the Cassette Pickup Solenoid.....	3-2

3.1 Document Feeding System

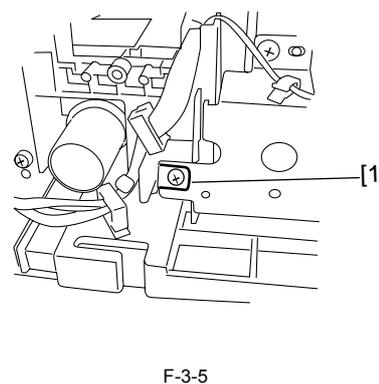
3.1.1 Pickup Roller Unit

3.1.1.1 Removing the Cassette Paper Pickup Roller

- 1) Remove the cassette.
- 2) Open the lower-left cover.
- 3) With the pickup roller [1] down, insert a screwdriver [2] or the like from the left side of the host machine as shown below.
- 4) Remove the pickup roller [3] with your fingers as shown below.



▲ Install the cassette pickup assembly with the ground plate [1] outside the side plate.

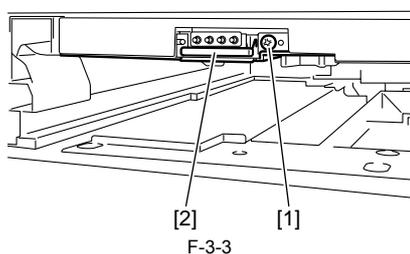


3.2 Electrical System

3.2.1 Cassette Size Detection Unit

3.2.1.1 Removing the Paper Size Detection Switches

- 1) Remove the screw [1], and then remove the paper size switches [2].



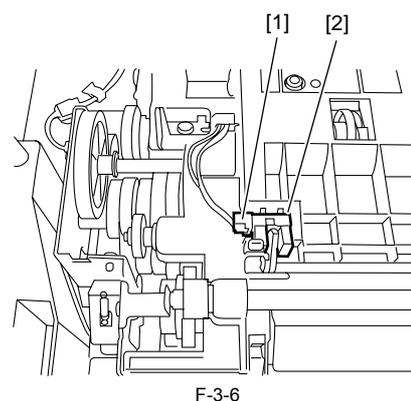
3.2.2 Cassette Retry Paper Sensor

3.2.2.1 Removing the Cassette Pickup Assembly

- 1) Detach the cassette rear cover. (2 screws)
- 2) Remove the five screws [1] and one screw with toothed washer [2].
- 3) Disconnect the three connectors [3], and then remove the cassette pickup assembly [4].

3.2.2.2 Removing the Retry Sensor

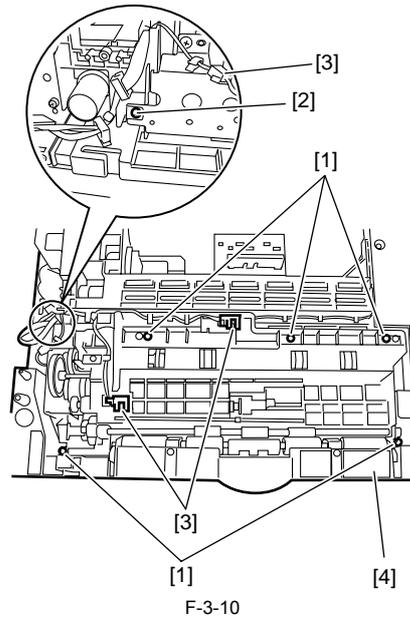
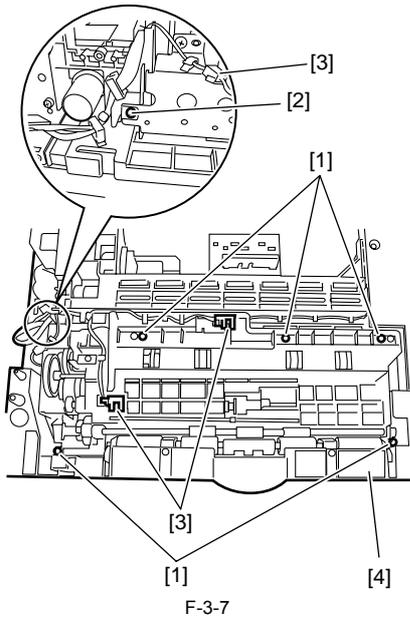
- 1) Disconnect the connector [1], and then remove the retry sensor [2].



3.2.3 Cassette Paper Sensor

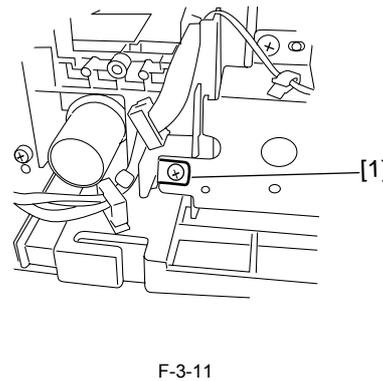
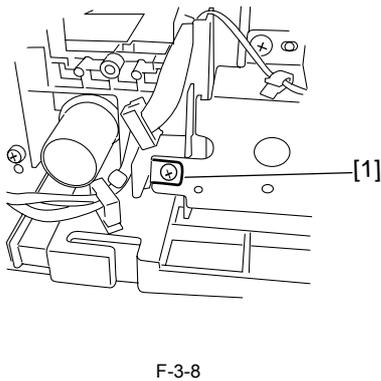
3.2.3.1 Removing the Cassette Pickup Assembly

- 1) Detach the cassette rear cover. (2 screws)
- 2) Remove the five screws [1] and one screw with toothed washer [2].
- 3) Disconnect the three connectors [3], and then remove the cassette pickup assembly [4].



⚠ Install the cassette pickup assembly with the ground plate [1] outside the side plate.

⚠ Install the cassette pickup assembly with the ground plate [1] outside the side plate.

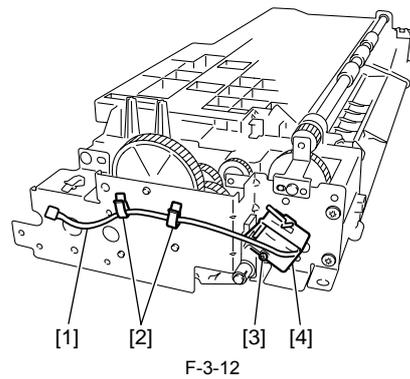
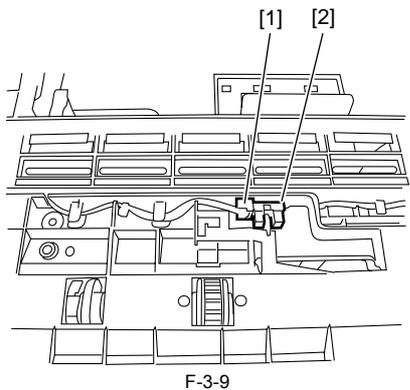


3.2.3.2 Removing the Cassette Paper Presence/Absence Sensor

- 1) Disconnect the connector [1], and then remove the cassette paper presence/absence sensor [2].

3.2.4.2 Removing the Cassette Pickup Solenoid

- 1) Remove the harness [1] from the two wire saddles [2].
- 2) Remove the screw [3], and then remove the cassette pickup solenoid [4].



3.2.4 Cassette Pickup Solenoid

3.2.4.1 Removing the Cassette Pickup Assembly

- 1) Detach the cassette rear cover. (2 screws)
- 2) Remove the five screws [1] and one screw with toothed washer [2].
- 3) Disconnect the three connectors [3], and then remove the cassette pickup assembly [4].

Chapter 4 Maintenance

Contents

4.1 Maintenance and Inspection.....	4-1
4.1.1 Periodically Replaced Parts.....	4-1
4.1.1.1 Periodically Replaced Parts.....	4-1
4.1.2 Durables.....	4-1
4.1.2.1 Durables.....	4-1
4.1.3 Periodical Servicing.....	4-1
4.1.3.1 Periodical Servicing.....	4-1

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 need to be replaced on a periodical basis.

4.1.2 Durables

4.1.2.1 Durables

This machine does not have items that may be classified as durables.

4.1.3 Periodical Servicing

4.1.3.1 Periodical Servicing

The machine does not have items that must be serviced on a periodical basis.

Sep 20 2005

Canon