

Service Manual

Buffer Pass Unit

Buffer Pass Unit-C1

The Canon logo is displayed in a bold, black, sans-serif font. The letter 'C' is stylized with a thick stroke and a small gap at the top. The letters 'a', 'n', 'o', and 'n' are also in a bold, sans-serif font, with the 'o' being a simple circle.

Nov 13 2003

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.

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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."

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Chapter 1 Specifications

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1.1 Product Specifications

1.1.1 Specifications

0003-8114

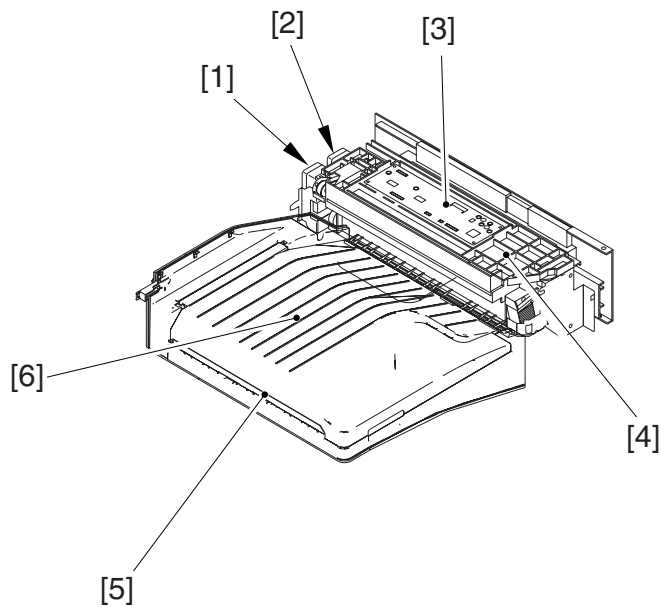
T-1-1

Paper placement	face-down	
Paper size	A3, A4, A4R, A5, A5R, B4, B5, B5R, postcard, 279x432 (11x17), LGL, LTR, LTRR, STMT, STMTR, elongation size	Feed direction:139.7 to 482.6 mm: cross feed direction: 98.4 to 330.2mm; both maximum
Paper weight	60 to 256 g/m2	

1.2 Names of Parts

1.2.1 External Appearance

0003-7941

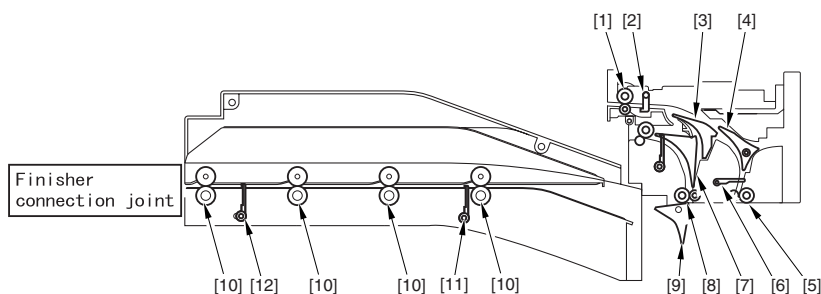


F-1-1

- [1] No. 2 delivery motor
- [2] Reversal/duplex motor
- [3] Relay delivery controller PCB
- [4] Relay delivery unit
- [5] Finisher connection joint
- [6] Buffer pass assembly

1.2.2 Cross Section

0003-7942



F-1-2

- [1] Reversing roller

- [2] Reversal sensor
- [3] Duplex flapper 1
- [4] Duplex flapper 2
- [5] Duplex inlet roller
- [6] Duple inlet sensor
- [7] No. 2 delivery flapper
- [8] No. 2 delivery inlet roller
- [9] No. 1 delivery flapper
- [10] Buffer feed roller
- [11] Buffer inlet sensor
- [12] Buffer outlet sensor

Chapter 2 Functions

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2.1 Basic Construction

2.1.1 Overview

0003-8912

When the buffer pass unit is installed, the relay delivery assembly will provide the following functions:

-feeds paper to the buffer pass

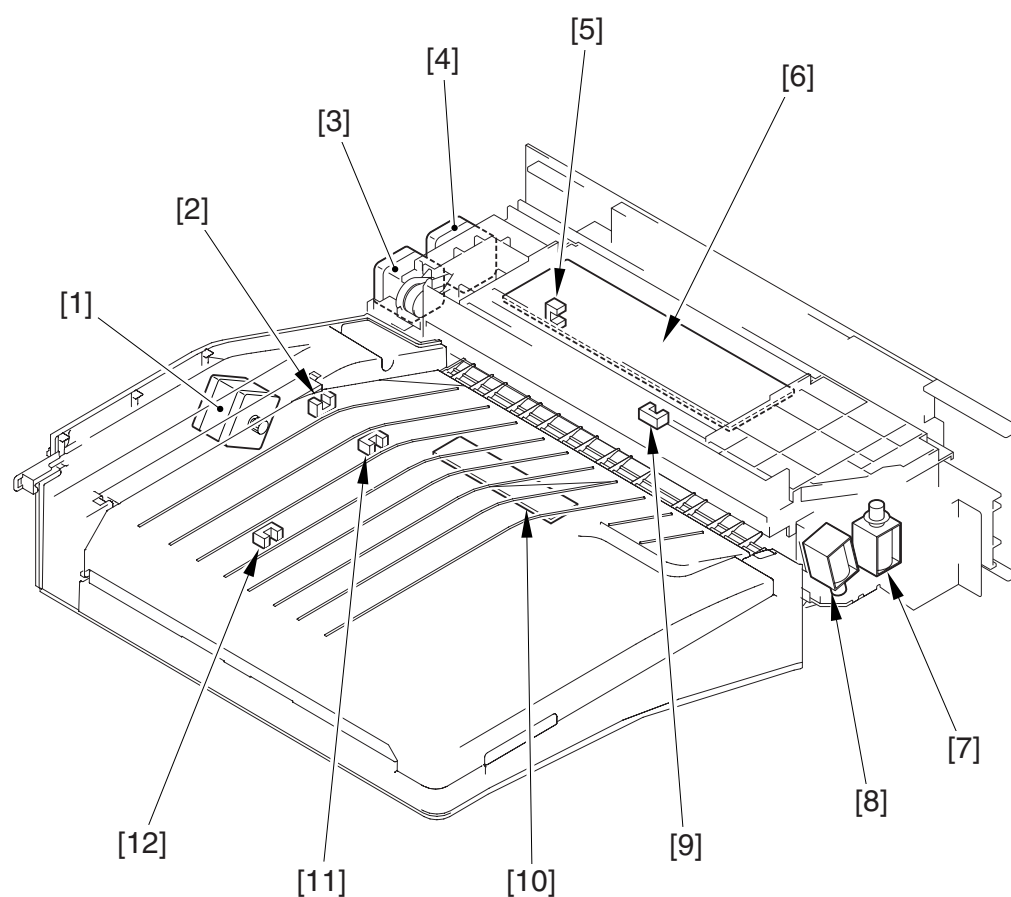
-moves paper in duplex mode

The foregoing functions do not call for the use of the No. 2 delivery assembly or the No. 2 delivery roller.

2.1.2 Basic Construction

0003-7969

The buffer unit consists of the following major components:

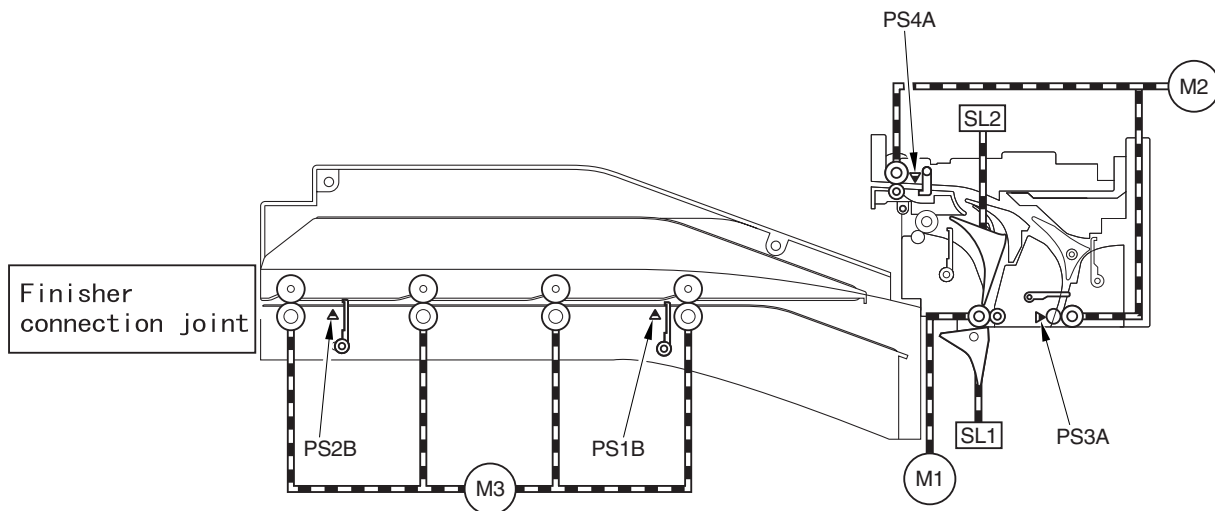


F-2-1

- [1] Buffer pass motor
- [2] Buffer pass open/closed sensor
- [3] No. 2 delivery motor
- [4] Reversal/duplex motor
- [5] Duplex inlet sensor

- [6] Relay delivery controller PCB
- [7] No. 2 delivery solenoid
- [8] No. 1 delivery solenoid
- [9] Reversal sensor
- [10] Buffer pass driver PCB
- [11] Buffer pass inlet sensor
- [12] Buffer pass outlet sensor

The following is a diagram showing the drive system of the buffer path:



F-2-2

T-2-1

Notation	Name
M1	No 2 delivery motor
M2	Reversal/duplex motor
M3	Buffer pass motor
PS3A	Duplex inlet sensor
PS4A	Reversal sensor
PS1B	Buffer pass inlet sensor
PS2B	Buffer pass outlet sensor
SL1	No.1 delivery solenoid
SL2	No.2 delivery solenoid

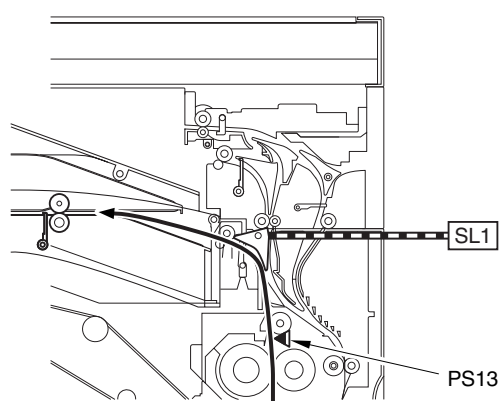
2.2 Basic Operation

2.2.1 Feeding Paper Into the Buffer Pass

0003-7974

Paper is fed into the buffer pass in the following sequence of operation:

1. Paper arrives from the host machine's delivery assembly. A specific period of time after the leading edge of the paper has reached the fixing outlet sensor (PS13), the No. 1 delivery solenoid (SL1) goes on to prompt delivery of paper to the buffer pass.



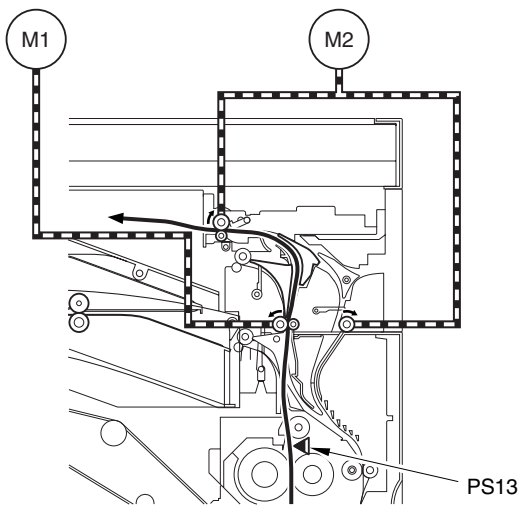
F-2-3

2.2.2 Moving Paper in Duplex Mode

0003-7976

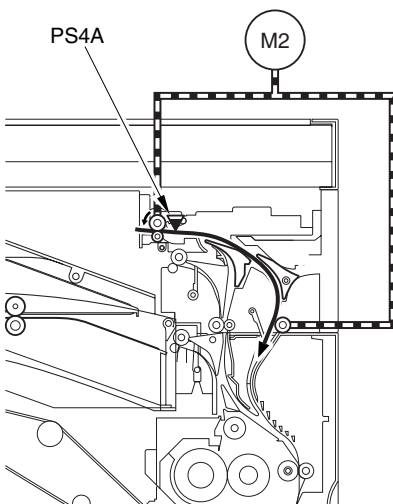
Paper is moved in the following sequence of operation in duplex copy (print) mode:

1. Paper arrives from the host machine's delivery assembly. A specific period of time after the leading edge of the paper has reached the fixing outlet sensor (PS13), the No. 2 deliver motor (M1) and the Reversal/duplex motor (M2) start to rotate.



F-2-4

2. When the paper moves past the reversal sensor (PS4A) and its trailing edge reaches a specific point in front of the reversal roller, the Reversal/duplex motor stops for a moment; it then starts to rotate in reverse after a specific period of time. As a result, the paper moves ahead to the inlet of the duplex inlet assembly.



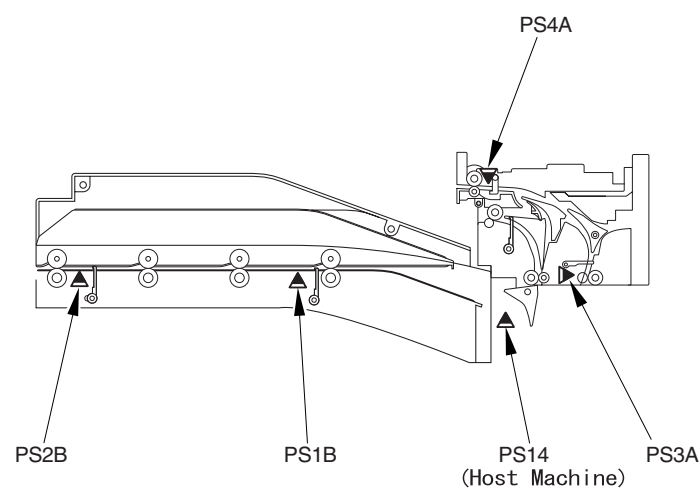
F-2-5

2.3 Detecting Jams

2.3.1 Arrangement of Sensors

0003-7970

The following diagram shows the arrangement of sensors used to detect jams in the buffer pass:



F-2-6

2.3.2 Delay Jams

0003-7971

A delay jam is identified when appropriate sensors do not go on within a specific period of time. The following table shows the sensors used in detecting a delay jam:

T-2-2

Notation	Name
PS14	No. 1 delivery sensor (host machine)
PS3A	Duplex inlet sensor
PS4A	Reversal sensor
PS1A	Buffer pass inlet sensor
PS2B	Buffer pass outlet sensor

2.3.3 Stationary Jams

0003-7972

A stationary jam is identified when appropriate sensors do not go on within a specific period of time after they have gone on. The following table shows the sensors used to detect a stationary jam:

T-2-3

Notation	Name
PS14	No. 1 delivery sensor (host machine)
PS3A	Duplex inlet sensor
PS4A	Reversal sensor
PS1A	Buffer pass inlet sensor
PS2B	Buffer pass outlet sensor

2.3.4 Stationary Jam/Cover Open Jam at Power-On

0003-7973

A check is made for a stationary jam and a cover open jam when the power is turned on by looking for residual paper using the following sensors, i.e., the presence of paper over the respective sensors will cause the machine to identify a stationary/cover open jam:

T-2-4

Notation	Name
PS14	No. 1 delivery sensor (host machine)
PS3A	Duplex inlet sensor
PS4A	Reversal sensor
PS1A	Buffer pass inlet sensor
PS2B	Buffer pass outlet sensor

Chapter 3 Parts

Replacement Procedure

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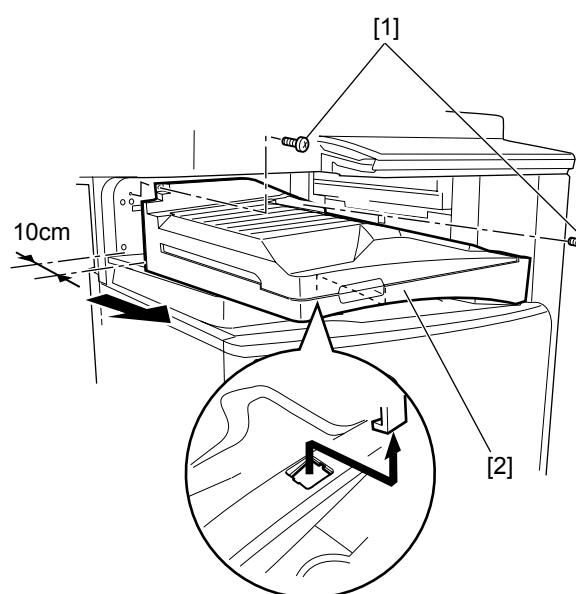
3.1 Removing from the Host Machine

3.1.1 Buffer Pass

3.1.1.1 Detaching from the Host Machine

0003-8301

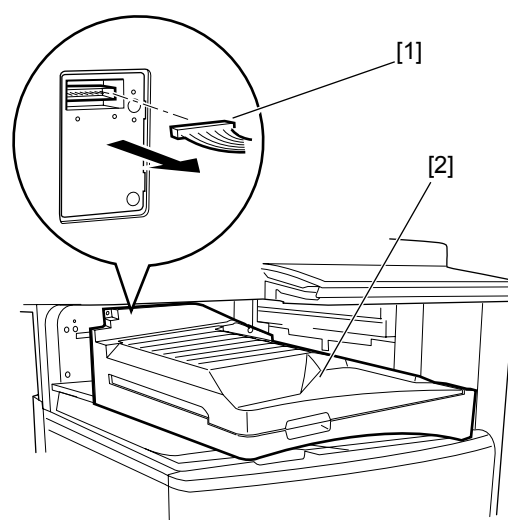
1) Remove the 2 screws [1], and free the hook [2]; then, slide the buffer pass about 10 cm to the front.



F-3-1

⚠ The buffer pass is connected to the host machine by means of a connector. Take care not to slide it too far out to the front.

2) Disconnect the connector [1], and detach the buffer path [2].



F-3-2

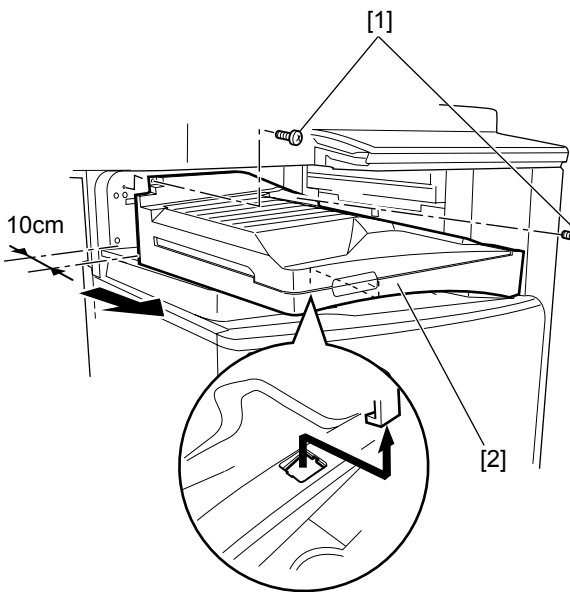
3.2 External Covers

3.2.1 Buffer Pass Upper Unit

3.2.1.1 Detaching from the Host Machine

0003-8303

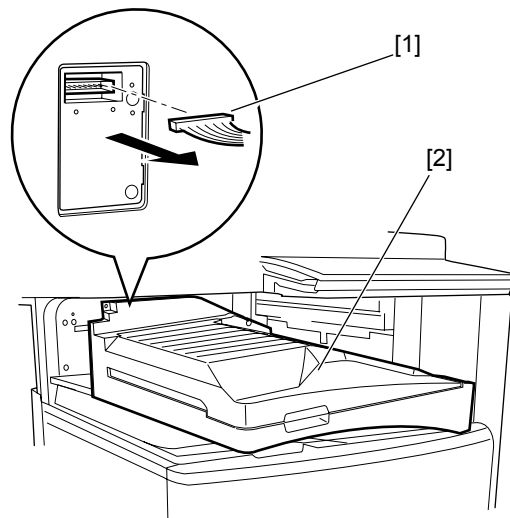
- 1) Remove the 2 screws [1], and free the hook [2]; then, slide the buffer pass about 10 cm to the front.



F-3-3

⚠ The buffer pass is connected to the host machine by means of a connector. Take care not to slide it too far out to the front.

- 2) Disconnect the connector [1], and detach the buffer path [2].

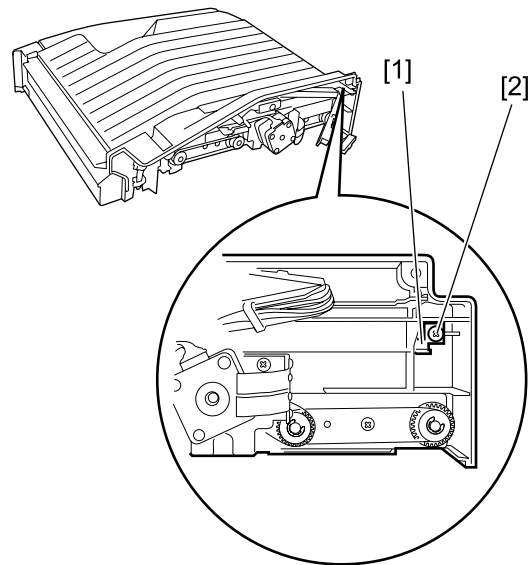


F-3-4

3.2.1.2 Removing the Buffer Pass Upper Unit

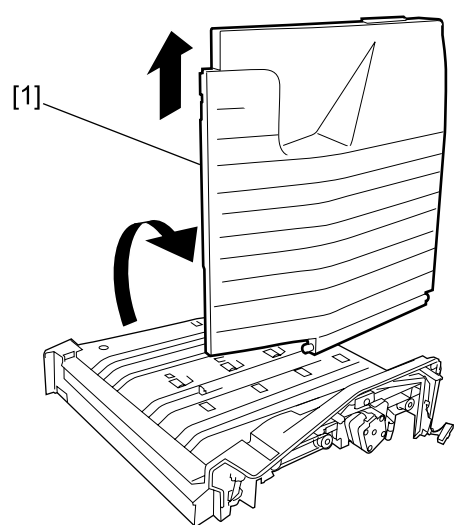
0003-8304

- 1) Remove the screw [1], and detach the buffer pass upper unit retainer [2].



F-3-5

- 2) Open the buffer pass upper unit [1] to detach.



F-3-6

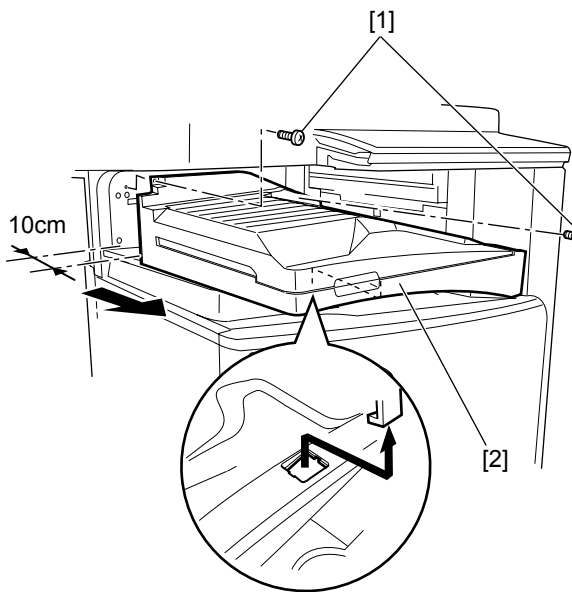
3.3 Drive System

3.3.1 Buffer Pass Motor

3.3.1.1 Detaching from the Host Machine

0003-8307

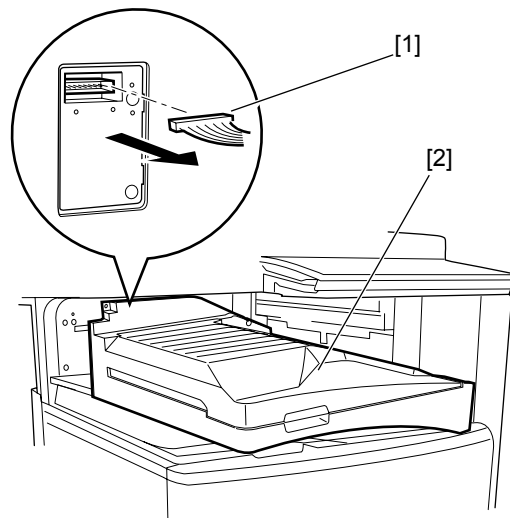
- 1) Remove the 2 screws [1], and free the hook [2]; then, slide the buffer pass about 10 cm to the front.



F-3-7

⚠ The buffer pass is connected to the host machine by means of a connector. Take care not to slide it too far out to the front.

- 2) Disconnect the connector [1], and detach the buffer path [2].

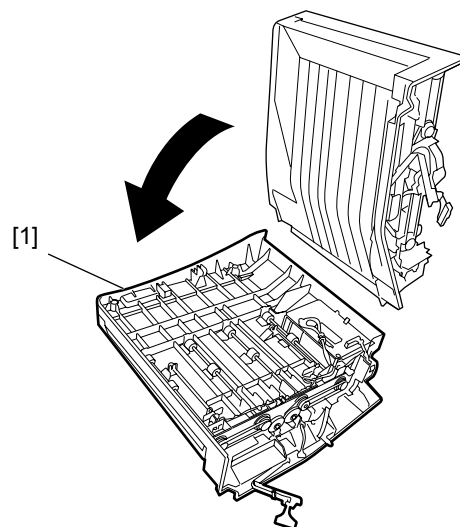


F-3-8

3.3.1.2 Removing the Buffer Pass Motor

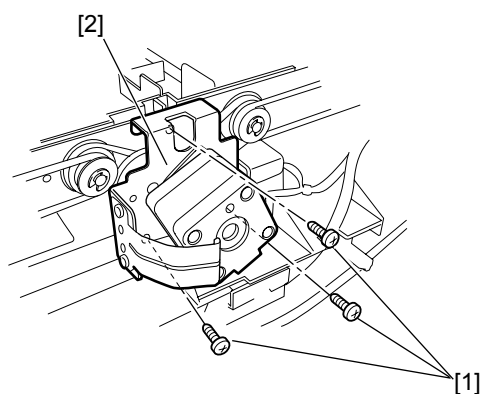
0003-8193

- 1) Turn over the buffer pass [1].



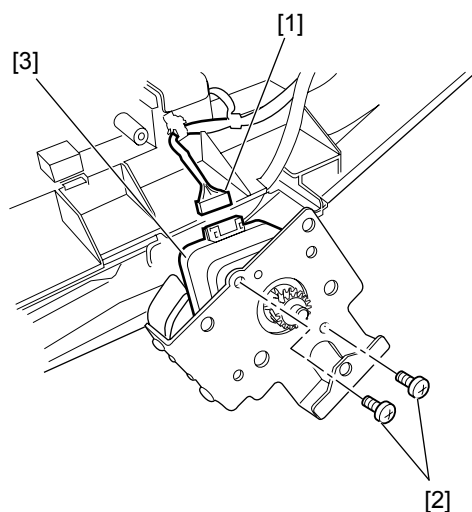
F-3-9

- 2) Remove the 3 screws [1], and detach the buffer pass motor unit [2].



F-3-10

3) Disconnect the connector [1], and remove the 2 screws [2]; then, detach the buffer pass motor [3].



F-3-11

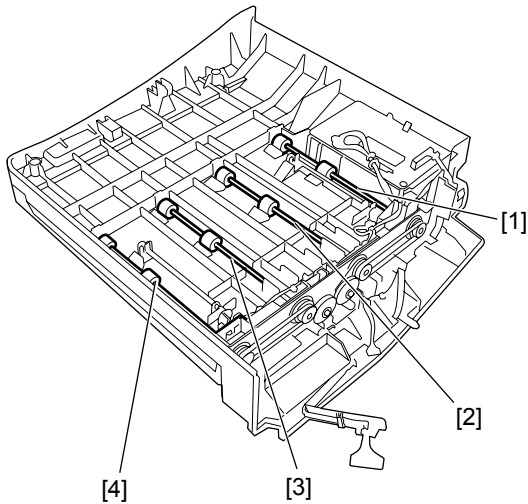
3.4 Document Feeding System

3.4.1 Feed Rollor

3.4.1.1 Overview

0003-8464

The buffer pass is equipped with 4 feed rollers, which may be removed more or less in the same way. (The instructions that follow use the feed roller 4.) If you are removing the feed roller 1, 2, or 3, however, be sure to remove the buffer pass motor in advance.



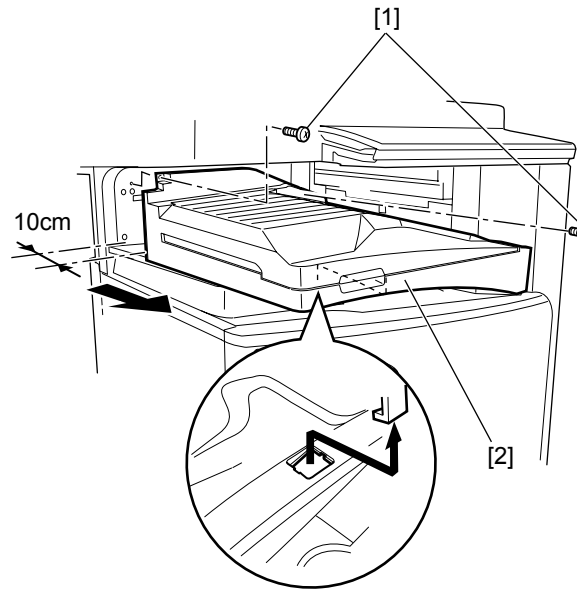
F-3-12

- [1] Feed roller 1
- [2] Feed roller 2
- [3] Feed roller 3
- [4] Feed roller 4

3.4.1.2 Detaching from the Host Machine

0003-8467

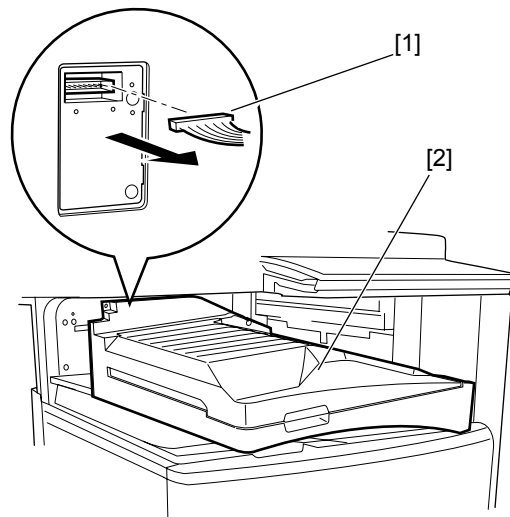
- 1) Remove the 2 screws [1], and free the hook [2]; then, slide the buffer pass about 10 cm to the front.



F-3-13

- ⚠ The buffer pass is connected to the host machine by means of a connector. Take care not to slide it too far out to the front.

- 2) Disconnect the connector [1], and detach the buffer path [2].

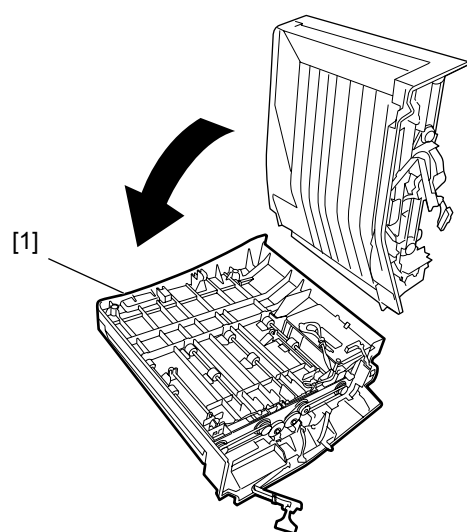


F-3-14

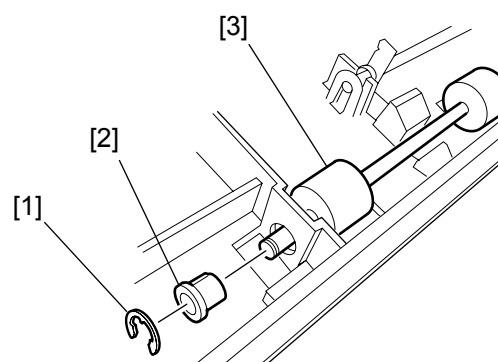
3.4.1.3 Removing the Feed Roller

0003-8463

- 1) Turn over the buffer pass [1].

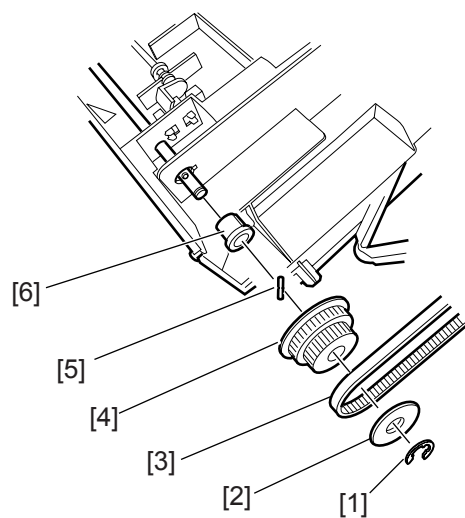


F-3-15



F-3-17

- 2) Remove E-ring [1], and detach the washer [2].
- 3) Detach the belt [3]; then, remove the gear [4], parallel pin [5], and bushing [6].



F-3-16

- 4) Remove the E-ring [1]; then, detach the bushing [2] and the feed roller [3].

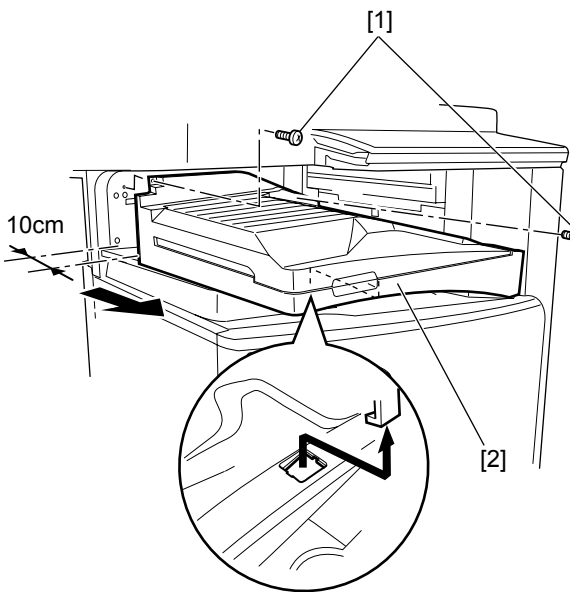
3.5 Electrical System

3.5.1 Buffer Pass Driver PCB

3.5.1.1 Detaching from the Host Machine

0003-8308

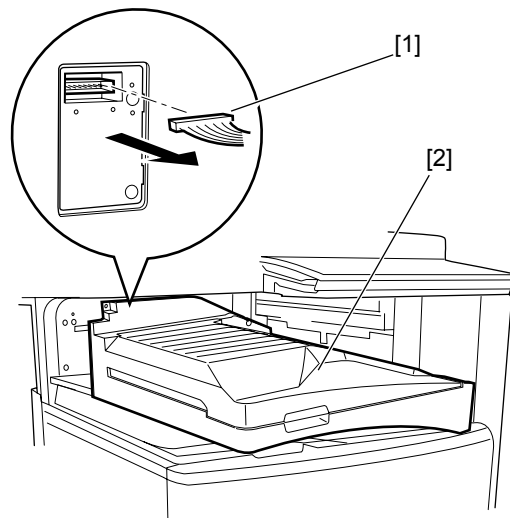
- 1) Remove the 2 screws [1], and free the hook [2]; then, slide the buffer pass about 10 cm to the front.



F-3-18

⚠ The buffer pass is connected to the host machine by means of a connector. Take care not to slide it too far out to the front.

- 2) Disconnect the connector [1], and detach the buffer path [2].

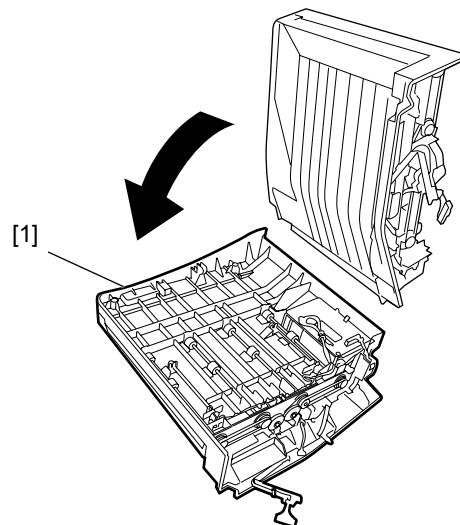


F-3-19

3.5.1.2 Removing the Buffer Pass Driver PCB

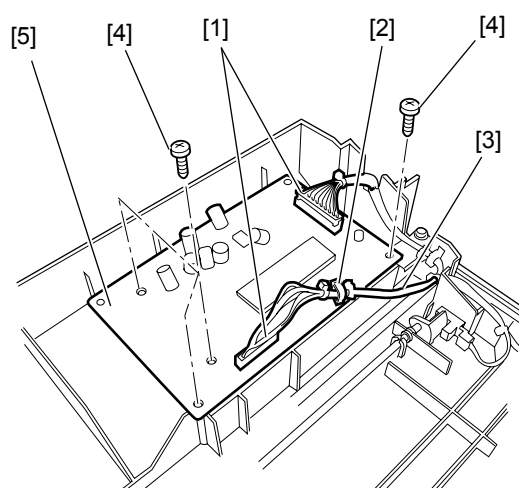
0003-8195

- 1) Turn over the buffer pass [1].



F-3-20

- 2) Disconnect the 2 connectors [1], and free the harness [3] from the harness retainer [2].
- 3) Remove the 4 screws [4], and detach the buffer pass drive PCB [5].



F-3-21

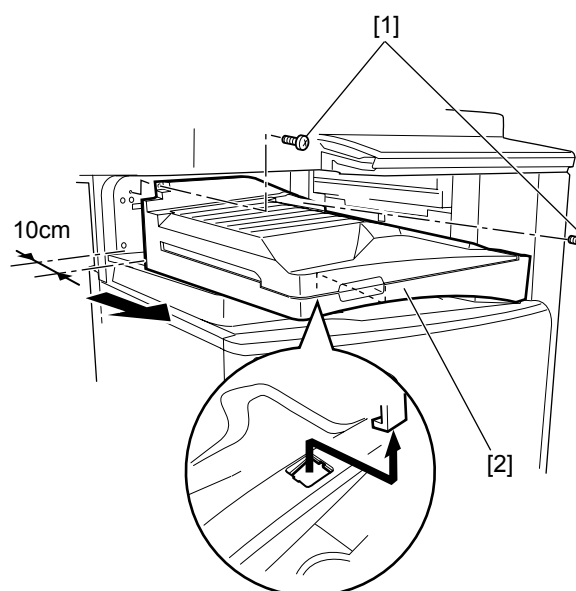
3.5.2 Buffer Pass Open/Close Sensor

3.5.2.1 Detaching from the

Host Machine

0003-8456

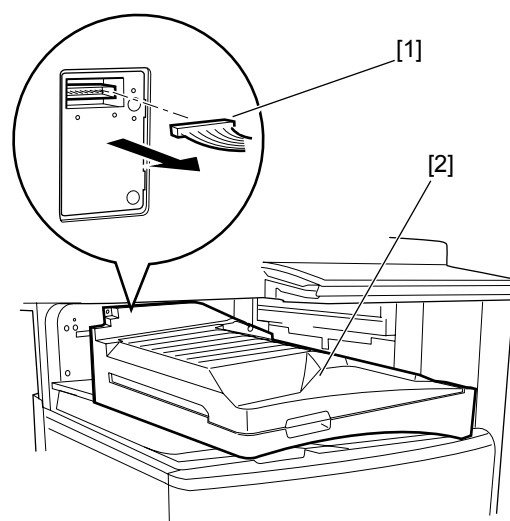
1) Remove the 2 screws [1], and free the hook [2]; then, slide the buffer pass about 10 cm to the front.



F-3-22

⚠ The buffer pass is connected to the host machine by means of a connector. Take care not to slide it too far out to the front.

2) Disconnect the connector [1], and detach the buffer path [2].



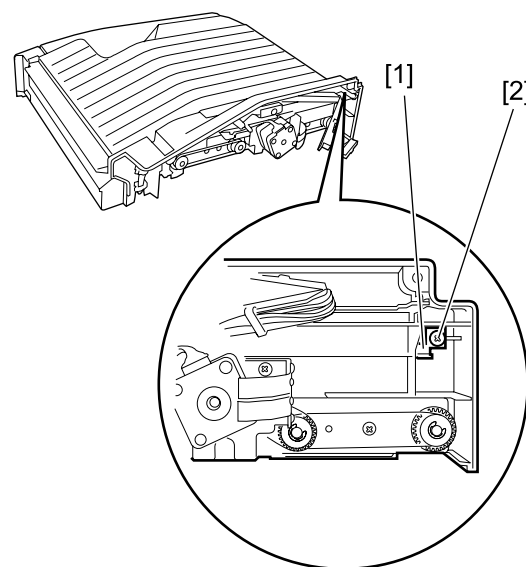
F-3-23

3.5.2.2 Removing the Buffer

Pass Upper Unit

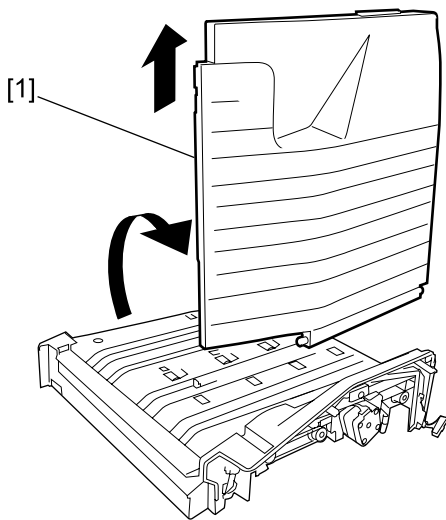
0003-8459

1) Remove the screw [1], and detach the buffer pass upper unit retainer [2].



F-3-24

2) Open the buffer pass upper unit [1] to detach.

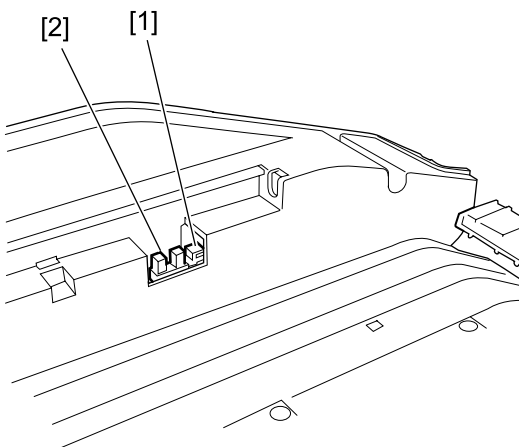


F-3-25

3.5.2.3 Removing the Buffer

Pass Open/Closed Sensor 0003-8460

- 1) Disconnect the connector [1], and detach the sensor [2].



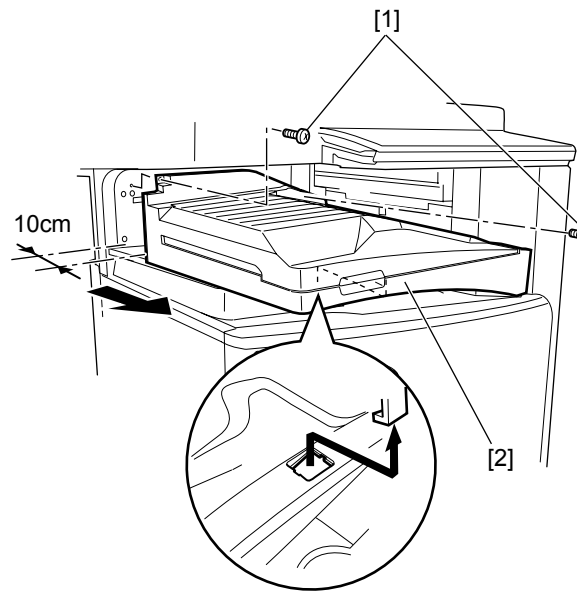
F-3-26

3.5.3 Buffer Pass Inlet Sensor

3.5.3.1 Detaching from the

Host Machine 0003-8457

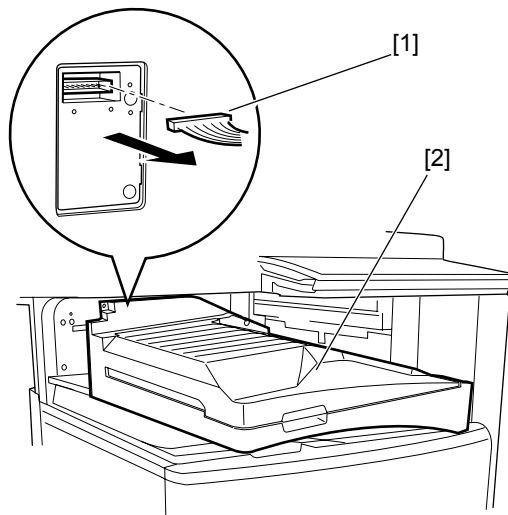
- 1) Remove the 2 screws [1], and free the hook [2]; then, slide the buffer pass about 10 cm to the front.



F-3-27

- ⚠** The buffer pass is connected to the host machine by means of a connector. Take care not to slide it too far out to the front.

- 2) Disconnect the connector [1], and detach the buffer path [2].

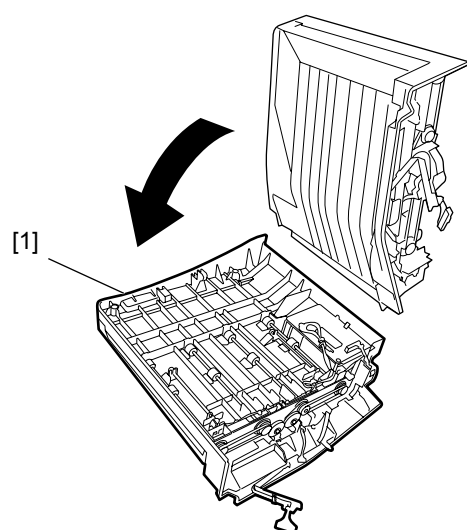


F-3-28

3.5.3.2 Removing the Buffer

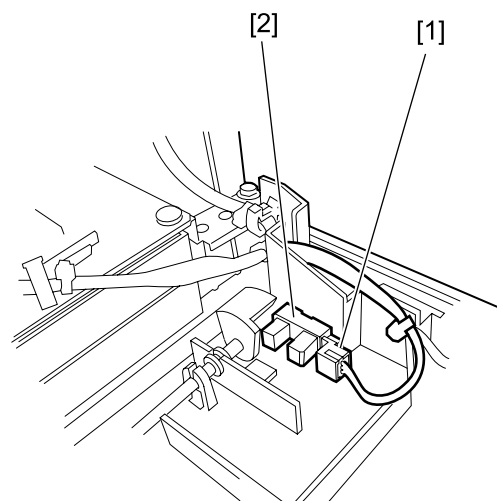
Pass Inlet Sensor 0003-8461

- 1) Turn over the buffer pass [1].



F-3-29

2) Disconnect the connector [1], and detach the sensor [2].



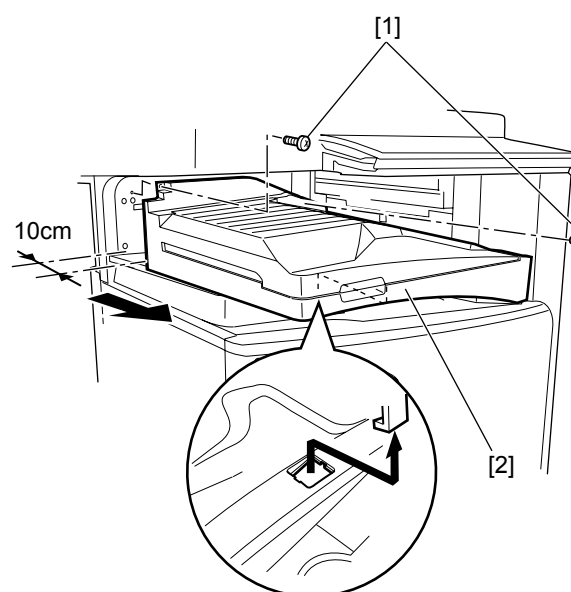
F-3-30

3.5.4 Buffer Pass Delivery Sensor

3.5.4.1 Detaching from the Host Machine

0003-8458

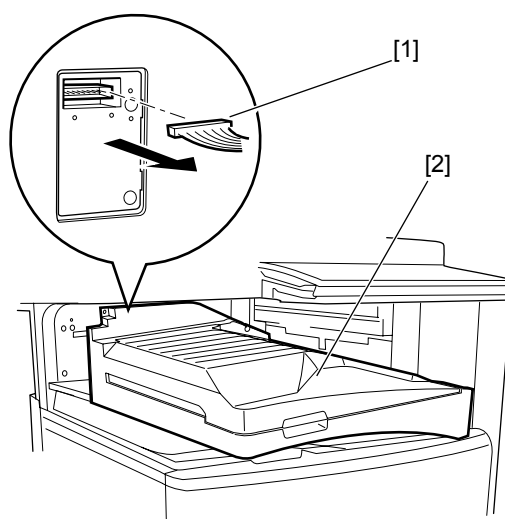
1) Remove the 2 screws [1], and free the hook [2]; then, slide the buffer pass about 10 cm to the front.



F-3-31

⚠ The buffer pass is connected to the host machine by means of a connector. Take care not to slide it too far out to the front.

2) Disconnect the connector [1], and detach the buffer path [2].

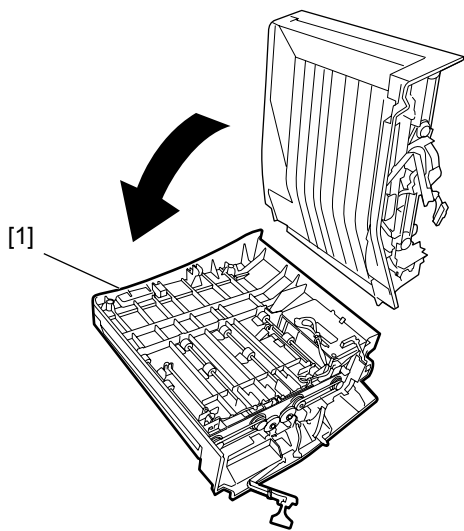


F-3-32

3.5.4.2 Removing the Buffer Pass Outlet Sensor

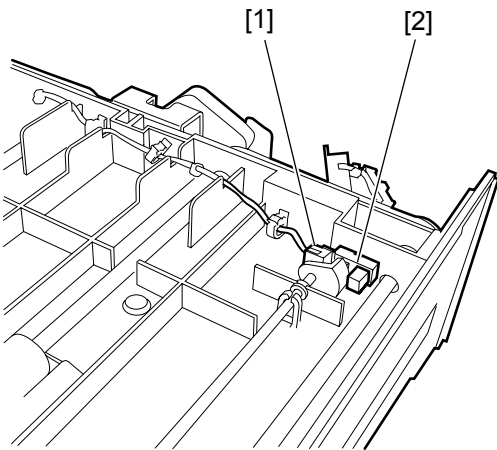
0003-8462

1) Turn over the buffer pass [1].



F-3-33

2) Disconnect the connector [1], and detach the sensor [2].



F-3-34

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