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 consent of Canon Inc.

© CANON INC. 2015

Caution
Use of this manual should be strictly supervised to avoid disclosure of confidential information.
Explanation of Symbols
The following symbols are used throughout this Service Manual.

<table>
<thead>
<tr>
<th>Symbols</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="check.png" alt="Check" /></td>
<td>Check.</td>
</tr>
<tr>
<td>![Check visually](check visually.png)</td>
<td>Check visually.</td>
</tr>
<tr>
<td>![Check the noise](check the noise.png)</td>
<td>Check the noise.</td>
</tr>
<tr>
<td><img src="disconnect.png" alt="Disconnect the connector" /></td>
<td>Disconnect the connector.</td>
</tr>
<tr>
<td><img src="connect.png" alt="Connect the connector" /></td>
<td>Connect the connector.</td>
</tr>
<tr>
<td><img src="remove.png" alt="Remove the cable/wire from the cable guide or wire saddle" /></td>
<td>Remove the cable/wire from the cable guide or wire saddle.</td>
</tr>
<tr>
<td><img src="set.png" alt="Set the cable/wire to the cable guide or wire saddle" /></td>
<td>Set the cable/wire to the cable guide or wire saddle.</td>
</tr>
<tr>
<td>![Remove the screw](remove screw.png)</td>
<td>Remove the screw.</td>
</tr>
<tr>
<td><img src="tighten.png" alt="Tighten the screw" /></td>
<td>Tighten the screw.</td>
</tr>
<tr>
<td>![Remove the claw](remove claw.png)</td>
<td>Remove the claw.</td>
</tr>
<tr>
<td><img src="insert.png" alt="Insert the claw" /></td>
<td>Insert the claw.</td>
</tr>
<tr>
<td>![Use the bundled part](use bundled.png)</td>
<td>Use the bundled part.</td>
</tr>
<tr>
<td><img src="push.png" alt="Push the part" /></td>
<td>Push the part.</td>
</tr>
<tr>
<td><img src="plug.png" alt="Plug the power cable" /></td>
<td>Plug the power cable.</td>
</tr>
<tr>
<td>![Turn on the power](turn on power.png)</td>
<td>Turn on the power.</td>
</tr>
</tbody>
</table>

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, ![path](path.png) represents the path of mechanical drive; where a signal name accompanies the symbol, the arrow ![direction](direction.png) 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

1 Product Outline
   Features .............................................................................. 1-2
   Specifications ..................................................................... 1-2
   Names of Parts ................................................................. 1-3
     External View .................................................................. 1-3
     Cross Section .................................................................. 1-3

2 Technology
   Basic Configuration ......................................................... 2-2
     Component Configuration .............................................. 2-2
     List of Major Electric Parts ......................................... 2-2
     Roller Layout ............................................................... 2-2
     Sensor Layout ............................................................... 2-3
     Drive Configuration ..................................................... 2-3
   Controls ............................................................................... 2-4
     Electric Circuit Diagram ............................................... 2-4
     Operation Mode ........................................................... 2-4
     Outline ............................................................................. 2-4
     Forward Pickup/Delivery Operation .................................... 2-4
     Forward Pickup/Reverse Delivery Operation ..................... 2-5
     Document Pickup/Separation ............................................ 2-7
   Basic Operation ............................................................... 2-7
   Pickup roller assembly and Separation roller ....................... 2-8
   Document Reversing ........................................................ 2-9
   Basic Operation ............................................................... 2-9
   Document Delivery .......................................................... 2-10

3 Periodic Servicing
   List of Work for Servicing .................................................. 3-2

4 Parts Replacement and Cleaning Procedure
   List of Parts ......................................................................... 4-2
   External Covers .................................................................... 4-2
   Consumable Parts Requiring Periodic Replacement and Cleaning
     Points .................................................................................. 4-2
     List of Clutches, Solenoids, Motors, PCBs .............................. 4-3
     List of Sensors ................................................................... 4-3
     Others .................................................................................. 4-4
   Removing the Equipment ..................................................... 4-5
   Removing the Equipment ..................................................... 4-5
     Procedure ............................................................................ 4-5
     Actions after Reinstalling the ADF ......................................... 4-6
   External Covers .................................................................... 4-7
   Removing the Front Cover .................................................. 4-7
     Procedure ............................................................................ 4-7
Adjustment

Overview .............................................. 5-2
Outline .............................................. 5-2
Adjustment When Removing the Equipment ............... 5-2
Adjustment After Replacing the Parts ............... 5-2
Preparation or Creation of Test Chart ............... 5-2

5.1 Adjustment

Adjusting the Height ........................................ 5-3
Check the Height ........................................ 5-3
Order of Adjustment ........................................ 5-5
Adjusting the Left Hinge Height ....................... 5-5
Adjusting the Right Hinge Height ...................... 5-6
Adjusting the Perpendicularity ....................... 5-6
Adjusting the Reading Position ....................... 5-9
6 Installation

How to Check this Installation Procedure-----------------------------6-2
Symbols in the Illustration-----------------------------------------6-2
Product Name--------------------------------------------------------6-2
Making Pre-installation Checks--------------------------------------6-2
Cautions at the Installation----------------------------------------6-2
Points to Note at Installation--------------------------------------6-2
Unpacking and Checking the Components-----------------------------6-3
Unpacking and Checking the Contents-------------------------------6-3
Installation Procedure---------------------------------------------6-4
Installing this Equipment------------------------------------------6-4
Adjustment----------------------------------------------------------6-9
Overview of Adjustment---------------------------------------------6-9
Preparation or Creation of Test Chart-------------------------------6-9
Adjusting the Height-----------------------------------------------6-9
Check the Height--------------------------------------------------6-9
Order of Adjustment------------------------------------------------6-11
Adjusting the Left Hinge Height-------------------------------------6-11
Adjusting the Right Hinge Height------------------------------------6-12
Adjusting the Perpendicularity--------------------------------------6-13
Adjusting the Reading Position--------------------------------------6-15
Adjusting the Magnification----------------------------------------6-16
Adjustment Procedure-----------------------------------------------6-16
Adjusting the Image Position (Horizontal Scanning Direction)------6-17
Adjustment Procedure-----------------------------------------------6-17
Adjusting the Image Position (Leading Edge)------------------------6-17
Adjustment Procedure-----------------------------------------------6-17
Adjusting the White Level------------------------------------------6-18

Appendix

Service Tools--------------------------------------------------------II
Solvents and Oils-----------------------------------------------II
Special Tools------------------------------------------------------II
General Circuit Diagram-----------------------------------------III
General Circuit Diagram-----------------------------------------III

Others-------------------------------------------------------------6-19
Attaching the Hinge Covers----------------------------------------6-19
Cleaning the Stream Reading Glass---------------------------------6-19
Checking the Operation--------------------------------------------6-19
Operation Check---------------------------------------------------6-19
Safety Precautions

- Notes Before it Works Serving
- Points to Note at Cleaning
- Notes On Assembly/Disassembly
Notes Before it Works Serving

⚠️ Caution:
At servicing, be sure to turn off the power source according to the specified steps and disconnect the power plug.

Points to Note at Cleaning

⚠️ Caution:
When using organic solvent such as alcohol to clean, be sure to check that the component of solvent is vaporized completely before assembling.

Notes On Assembly/Disassembly

Follow the items below to assemble/disassemble the device.
• Disconnect the power plug from the outlet for safety when assembling/disassembling.
• If not specially instructed, reverse the order of disassembly to reinstall.
• Ensure to use the correct screw type (length, diameter, etc.) at the correct position when assembling.
• To keep electric conduction, binding screws with washers are used to attach the grounding wire and the arrester. Ensure to use the correct screw type when assembling.
• Unless it is specially needed, do not operate the device with some parts removed.
• Never remove the paint-locked screws when disassembling.
Product Outline

- Features
- Specifications
- Names of Parts
### Features

- Improvement of quick-engaging/disengaging the Pickup roller assembly and the Separation roller
- Improvement of paper curl detection by the modification the Document length sensor
- Installation of the Document delivery Lamp function

### Specifications

<table>
<thead>
<tr>
<th>Item</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Document pickup method</td>
<td>Automatic pickup and delivery</td>
</tr>
<tr>
<td>Document loading direction</td>
<td>Face-up</td>
</tr>
<tr>
<td>Document loading position</td>
<td>Aligned to center</td>
</tr>
<tr>
<td>Document separation method</td>
<td>Upper separation</td>
</tr>
<tr>
<td>Document weight Single-sided</td>
<td>AB configuration: 42-128 g/m²</td>
</tr>
<tr>
<td></td>
<td>(Single-sided one sheet feed: 38-128 g/m²)</td>
</tr>
<tr>
<td></td>
<td>Inch configuration: 50-128 g/m²</td>
</tr>
<tr>
<td>Double-sided</td>
<td>50-128 g/m²</td>
</tr>
<tr>
<td>Black and White mixed width document</td>
<td>Same types of paper: 50-128 g/m²</td>
</tr>
<tr>
<td></td>
<td>Different types of paper: 64-81 g/m²</td>
</tr>
<tr>
<td>Color mixed width document Black and White/ Color mixed</td>
<td>Same types of paper: 64-128 g/m²</td>
</tr>
<tr>
<td></td>
<td>Different types of paper: 64-81 g/m²</td>
</tr>
<tr>
<td>Document longer than 432 mm</td>
<td>Single-sided one sheet feed: 60-90 g/m²</td>
</tr>
<tr>
<td>Document size</td>
<td>AB configuration: B6, A5R, A5, B5R, B5, A4R, A4, B4, A3</td>
</tr>
<tr>
<td></td>
<td>Inch configuration: 11×17, LGL, LTR, LTRR, STMT, STMTR, 8K, 16K</td>
</tr>
<tr>
<td></td>
<td>Width: 140-297 mm</td>
</tr>
<tr>
<td></td>
<td>Length: 128-432 mm</td>
</tr>
<tr>
<td></td>
<td>(It is available when the operator holds long documents between 432mm and 630mm.)</td>
</tr>
<tr>
<td>Document supply tray capacity</td>
<td>100 sheets (80g/m²)</td>
</tr>
<tr>
<td>Document feeding mode</td>
<td>Single-sided/Double-sided</td>
</tr>
<tr>
<td>Document size detection</td>
<td>Available (Standard size)</td>
</tr>
<tr>
<td>Mixed document function</td>
<td>Same types of paper can be mixed.</td>
</tr>
<tr>
<td></td>
<td>Different types of paper can be mixed.</td>
</tr>
<tr>
<td>Book document</td>
<td>Supported (The document thickness must be 50 mm or less.)</td>
</tr>
<tr>
<td>Power supply</td>
<td>Supplied from the host machine</td>
</tr>
<tr>
<td>Dimensions</td>
<td>565 mm×525 mm×139 mm (W×D×H)</td>
</tr>
<tr>
<td>Weight</td>
<td>Approx. 8kg</td>
</tr>
</tbody>
</table>
Names of Parts

External View

Feeder Cover
Slide guide
Rear Cover
Rear Small Cover
Front Cover
Document supply tray
Document delivery assembly

Cross Section

[1] Lower registration roller
[2] Upper registration roller
[3] Pickup roller assembly
[4] Separation roller
[5] Upper delivery reversal roller
[6] Lower delivery reversal roller
[7] Read roller 2 (upper)
[8] Platen roller
[9] Read roller 1 (upper)
Technology

- Basic Configuration
- Controls
- Work of service
Basic Configuration

Component Configuration

List of Major Electric Parts

- CL1: Pickup clutch
- CL2: Registration clutch
- SL1: Release solenoid
- SL2: Stamp solenoid
- M1: Pickup motor
- M2: Read motor

- PCB1: ADF driver PCB
- PCB2: Document set LED PCB
- PCB3: Different width sensor PCB
- PCB4: Document width sensor PCB
- PCB5: Document delivery LED PCB

Roller Layout

[1] Lower registration roller
[2] Upper registration roller
[3] Feed roller
[4] Separation roller
[5] Pickup roller
[6] Upper delivery reversal roller
[7] Lower delivery reversal roller
[8] Read roller 2 (lower)
[9] Read roller 2 (upper)
[10] Platen roller
[12] Read roller 1 (lower)
[13] Read roller 1 (upper)
## Sensor Layout

<table>
<thead>
<tr>
<th>No.</th>
<th>Component part</th>
<th>Detection content</th>
</tr>
</thead>
<tbody>
<tr>
<td>SR1</td>
<td>Registration sensor</td>
<td>Registration arch creation timing</td>
</tr>
<tr>
<td>SR2</td>
<td>Read sensor</td>
<td>Image reading start/completion timing</td>
</tr>
<tr>
<td>SR3</td>
<td>Delivery reversal sensor</td>
<td>Delivery reversal timing</td>
</tr>
<tr>
<td>SR5</td>
<td>Document set sensor</td>
<td>Document set detection</td>
</tr>
<tr>
<td>SR6</td>
<td>Cover open/closed sensor</td>
<td>Open/close of Feeder Cover</td>
</tr>
<tr>
<td>SR7</td>
<td>Document length sensor 1</td>
<td>Document size detection(length)</td>
</tr>
<tr>
<td>SR8</td>
<td>Document length sensor 2</td>
<td>Document size detection(length)</td>
</tr>
<tr>
<td>SR9</td>
<td>Different width sensor 1</td>
<td>Document size detection(width)</td>
</tr>
<tr>
<td>SR10</td>
<td>Different width sensor 2</td>
<td>Document size detection(width)</td>
</tr>
<tr>
<td>SR11</td>
<td>Different width sensor 3</td>
<td>Document size detection(width)</td>
</tr>
<tr>
<td>SR12</td>
<td>Different width sensor 4</td>
<td>Document size detection(width)</td>
</tr>
<tr>
<td>SR13</td>
<td>Document width sensor 1</td>
<td>Document size detection(width)</td>
</tr>
<tr>
<td>SR14</td>
<td>Document width sensor 2</td>
<td>Document size detection(width)</td>
</tr>
<tr>
<td>SR15</td>
<td>Document width sensor 3</td>
<td>Document size detection(width)</td>
</tr>
</tbody>
</table>

## Drive Configuration

<table>
<thead>
<tr>
<th>No.</th>
<th>Part name</th>
<th>Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>M1</td>
<td>Pickup motor</td>
<td>Pickup documents.</td>
</tr>
<tr>
<td>M2</td>
<td>Read motor</td>
<td>Feeds documents when Stream reading or Delivery.</td>
</tr>
<tr>
<td>SL1</td>
<td>Release solenoid</td>
<td>Shifts the Lower delivery reversal roller after reversal of a document.</td>
</tr>
<tr>
<td>SL2</td>
<td>Stamp solenoid</td>
<td>Stamps on a document.</td>
</tr>
<tr>
<td>CL1</td>
<td>Pickup clutch</td>
<td>Transmit the Pickup motor drive to the Pickup roller and the Feed roller.</td>
</tr>
<tr>
<td>CL2</td>
<td>Registration clutch</td>
<td>Transmit the power of the Pickup motor to the Lower registration roller.</td>
</tr>
</tbody>
</table>
**Controls**

### Electric Circuit Diagram

Electric circuits of this machine are controlled by the host machine. The Main Controller PCB of the host machine detects the input signals from sensors to output DC load drive signal such as motors, solenoids, and clutches at the predetermined timing. The ADF driver PCB does not have a memory space. The data, such as the service mode, is stored in the host machine.

![Electric Circuit Diagram](image)

**Operation Mode**

#### Outline

The ADF has two operation modes.

<table>
<thead>
<tr>
<th>Operation mode name</th>
<th>Outline of operation</th>
<th>Associated print mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forward pickup/Delivery</td>
<td>Picks up, reads, and then delivers a document.</td>
<td>Single-sided document -&gt; Simplex printing</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Single-sided document -&gt; Duplex printing</td>
</tr>
<tr>
<td>Forward feed/reverse Delivery</td>
<td>Picks up, reads, reverses, and delivers a document.</td>
<td>Double-sided document -&gt; Duplex printing</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Double-sided document -&gt; Simplex printing</td>
</tr>
</tbody>
</table>

**Forward Pickup/Delivery Operation**

- Simplex read operation (when two document sheets are placed)

![Forward Pickup/Delivery Operation](image)
### Forward Pickup/Reverse Delivery Operation

- Duplex read operation (when two document sheets are placed)

1. **Start of reading of first document sheet**
2. **Completion of reading of first document sheet**
3. **Start of reading of front side of first document sheet**
4. **End of reading of first document sheet**
5. **Position to start of reading of first document sheet**
6. **Stop after feeding the first document sheet to reversal position**
7. **To next document**
8. **Completion of delivery of second document sheet**
9. **End of job**
10. **Start of reading of second document sheet**
11. **Completion of reading of second document sheet**
12. **Start of reading of front side of second document sheet**
13. **End of reading of second document sheet**
14. **Position to start of reading of second document sheet**
15. **Completion of delivery of the second document sheet**
Removal of registration loop of reverse side of the first document sheet
Release of the Lower delivery reversal roller
Position to start reading of reverse side at the first document sheet
Completion of reading of reverse side at the first document sheet/Pressurization of the Lower delivery reversal roller

Stop after feeding the first document sheet to reversal position
Removal of idle registration loop at the first document sheet/Re-pickup/Release of the Lower delivery reversal roller
Idle feed of first document sheet
To next

Start of separation at the second document sheet/Pressurization of the Lower delivery reversal roller
Start of reading of top side of second document sheet
End of reading of front side of second document sheet
Stop after feeding the second document sheet to reversal position
Delivery of first document sheet
Removal of registration loop of reverse side at the second document sheet/Re-pickup/Release of the Lower delivery reversal roller
To next

F-2-9
F-2-10
After pressing the start key with a document placed on the Document supply tray, a document is picked up in the following procedure.

- **Pickup operation**
The Pickup motor (M1) drives to lower the Pickup roller assembly through the Pickup clutch (CL1) and then the Pickup roller rotates to feed a document. The stopper rises in conjunction with the Pickup roller assembly. The Separation roller is used to improve the separation performance while feeding a document.

- **Formation of loop**
During Pickup Operation, the Lower registration roller is stopped rotating while moving a document against the Upper/Lower registration rollers and then form a loop. Thus it prevents a document from skewing.
Feed
The Pickup motor (M1) drives the Lower registration roller through the Registration clutch (CL2). Thus a document is fed. A document is fed to the read wait point when the Read motor (M2) drives the Read roller 1 (upper).

Stream reading
The stream reading starts when the leading edge of a document reaches the reading point and the read start signal is received from the host machine. "Stream reading" is a scan function which a document is scanned while feeding along the Document glass. The Scanner which is fixed under the Document glass reads the image. A document is fed by the Read roller 1 (upper) and the Platen roller driven by the Read motor (M2). The read image is stored in the memory of the host machine.

Pickup roller assembly and Separation roller
The Pickup roller assembly consists of the Pickup roller and the Feed roller. When the start key is pressed or a document pickup signal is input, the Pickup motor (M1) drives to lower the Pickup roller assembly through the Pickup clutch (CL1) and then the Pickup roller and the Feed roller rotates to feed a document to the Registration roller. The Pickup roller assembly is equipped with stoppers to prevent that a document is inserted deeper than appropriate position. The Separation roller is used to improve the separation performance while picking up a document.
Document Reversing

Basic Operation

There are two types of document reversal operation: one that is performed from the top to the reverse side of the document and the other that is performed from the reverse side to the top of the document. Since the basic operation methods are identical, only the reversal operation performed from the reverse side to the top is discussed below.

Top side pickup

The Read motor (M2) drives the Read roller 1 (upper) and the Platen roller to scan the surface of a document on stream reading. After completion of scanning, Read motor (M2) drives the Read roller 2 (upper) and the Upper delivery reversal roller to feed a document to the reverse point.

Reversal/Feed 1

After the trailing edge of a fed document passes the Delivery reversal sensor (SR3), the Read motor (M2) stops. Thus a document stops at the reverse point. The Read motor (M2) drives in reverse direction to feed a document to the Registration roller and then it stops. After that, the Release solenoid (SL1) turns on to release the Lower delivery reversal roller.

Reversal/Feed 2

The Pickup motor (M1) drives the Lower registration roller through the Registration clutch (CL2) to feed a document to the Read wait point. Thus, the document is reversed. After a document is picked up again, Turn OFF the Release solenoid (SL1) to pressurize at the same time that reverse side reading is complete. After that, each operation is performed such as re-reverse, feeding and delivering.
### Basic Operation

A document is delivered by the Read roller 2 (upper) and the Upper delivery reversal roller driven by the Read motor (M2).

![Diagram of document delivery](image)

### Document Detection

#### Outline

This machine detects a document using either of the two methods depending on the print mode.
- Normal print mode (other than mixed size print mode and banner paper mode)
- Mixed size print mode and banner paper mode

#### Normal print mode

<table>
<thead>
<tr>
<th>Function</th>
<th>Description</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Width Detects the document width on the Document supply tray.</td>
<td>Document width sensor 1/2/3 (SR13/14/15)</td>
</tr>
</tbody>
</table>

#### Mixed size print mode and banner paper mode

<table>
<thead>
<tr>
<th>Function</th>
<th>Description</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mixed width document size detection</td>
<td>Length Document length is detected while feeding.</td>
<td>Registration sensor (SR1) Read sensor (SR2)</td>
</tr>
<tr>
<td></td>
<td>Width Detects the maximum document width on the Document supply tray.</td>
<td>Document width sensor 1/2/3 (SR13/14/15)</td>
</tr>
<tr>
<td></td>
<td>Document width is detected while feeding</td>
<td>Different width sensor 1/2/3/4 (SR9/10/11/12)</td>
</tr>
</tbody>
</table>
Initial Document Size Detection

Initial document size is detected when a document is placed on the Document supply tray. The Document length sensor 1/2 (SR7/8) and the Document width sensor 1/2/3 (SR13/14/15) are used for the detection.

The light shading detects document length whose sensor is the Document length sensor 1/2 (SR7/8).

Document width is detected by the Document width sensor 1/2/3 (SR13/14/15) which performs by light prevention plate connected with the Slide guide adjustment.

Document sizes are determined by combination of ON/OFF states of these sensors.

The Document length sensor 1 (SR7) is a Reflection Sensor which is available to detect the length of a document in case that the curled paper is placed on the document pickup tray.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>W&lt;=143.9</td>
<td>OFF</td>
<td>OFF</td>
<td>OFF</td>
<td>ON</td>
<td>ON</td>
<td>-</td>
<td>STMTR A5R</td>
</tr>
<tr>
<td></td>
<td>OFF</td>
<td>ON</td>
<td>OFF</td>
<td>ON</td>
<td>ON</td>
<td>-</td>
<td>STMTR A5R</td>
</tr>
<tr>
<td></td>
<td>OFF</td>
<td>OFF</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
<td>-</td>
<td>STMTR A5R</td>
</tr>
<tr>
<td></td>
<td>ON</td>
<td>OFF</td>
<td>OFF</td>
<td>ON</td>
<td>ON</td>
<td>-</td>
<td>STMTR A5R</td>
</tr>
<tr>
<td></td>
<td>OFF</td>
<td>OFF</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
<td>-</td>
<td>STMTR A5R</td>
</tr>
<tr>
<td></td>
<td>OFF</td>
<td>OFF</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
<td>-</td>
<td>STMTR A5R</td>
</tr>
<tr>
<td></td>
<td>OFF</td>
<td>OFF</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
<td>-</td>
<td>STMTR A5R</td>
</tr>
<tr>
<td>143.9&lt;W&lt;=165.0</td>
<td>OFF</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
<td>-</td>
<td>A5R</td>
</tr>
<tr>
<td></td>
<td>OFF</td>
<td>OFF</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
<td>-</td>
<td>A5R</td>
</tr>
<tr>
<td></td>
<td>ON</td>
<td>OFF</td>
<td>OFF</td>
<td>ON</td>
<td>ON</td>
<td>-</td>
<td>A4R</td>
</tr>
<tr>
<td>165.0&lt;W&lt;=196.0</td>
<td>OFF</td>
<td>OFF</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
<td>-</td>
<td>B5R</td>
</tr>
<tr>
<td></td>
<td>OFF</td>
<td>ON</td>
<td>OFF</td>
<td>ON</td>
<td>ON</td>
<td>-</td>
<td>B5R</td>
</tr>
<tr>
<td></td>
<td>ON</td>
<td>OFF</td>
<td>OFF</td>
<td>ON</td>
<td>ON</td>
<td>-</td>
<td>B6</td>
</tr>
<tr>
<td>196.0&lt;W&lt;=213.9</td>
<td>ON</td>
<td>OFF</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
<td>-</td>
<td>A4R</td>
</tr>
<tr>
<td>213.9&lt;W&lt;=236.5</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
<td>-</td>
<td>B4R</td>
</tr>
<tr>
<td>236.5&lt;W&lt;=263.5</td>
<td>ON</td>
<td>OFF</td>
<td>OFF</td>
<td>ON</td>
<td>ON</td>
<td>-</td>
<td>11\times17</td>
</tr>
<tr>
<td>263.5&lt;W&lt;=288.2</td>
<td>ON</td>
<td>ON</td>
<td>OFF</td>
<td>ON</td>
<td>ON</td>
<td>-</td>
<td>11\times17</td>
</tr>
<tr>
<td>288.2&lt;W</td>
<td>OFF</td>
<td>ON</td>
<td>OFF</td>
<td>ON</td>
<td>ON</td>
<td>-</td>
<td>A3</td>
</tr>
</tbody>
</table>

The following table shows the relationship among detection sensor signals and initial document size detections.
### Mixed width document size detection

In case that mixed width and length documents are set, 3 types of paper detections such as maximum width, other than maximum width and length are performed.

The maximum width is detected by the Document width sensor 1/2/3 (SR13/14/15) in the same way of initial document size detection.

Width other than maximum width are detected by the Different width sensor 1/2/3/4 (SR9/10/11/12).

Document length is detected by ON state on the Read sensor (SR2) and OFF state on the Registration sensor (SR1). Each document size is determined by the combination of the ON/OFF states on these sensors.

#### Same series mixed width document combination

<table>
<thead>
<tr>
<th>Same series of size (AB configuration)</th>
<th>Same series of size (Inch configuration)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A4</td>
<td>B5</td>
</tr>
<tr>
<td>A3</td>
<td>A</td>
</tr>
<tr>
<td>B4</td>
<td>-</td>
</tr>
<tr>
<td>A4R</td>
<td>-</td>
</tr>
<tr>
<td>B5R</td>
<td>-</td>
</tr>
<tr>
<td>11×17</td>
<td>-</td>
</tr>
<tr>
<td>LGL</td>
<td>-</td>
</tr>
<tr>
<td>LTRR</td>
<td>-</td>
</tr>
<tr>
<td>STMT</td>
<td>-</td>
</tr>
</tbody>
</table>

#### Different series mixed width document combination

- **AB configuration Mixed**

<table>
<thead>
<tr>
<th>Different series of size</th>
</tr>
</thead>
<tbody>
<tr>
<td>B4R</td>
</tr>
<tr>
<td>--------------------------</td>
</tr>
<tr>
<td>Maximum size</td>
</tr>
<tr>
<td>A3</td>
</tr>
<tr>
<td>A4</td>
</tr>
<tr>
<td>B4</td>
</tr>
<tr>
<td>B5</td>
</tr>
<tr>
<td>A4R</td>
</tr>
<tr>
<td>A5</td>
</tr>
<tr>
<td>B5R</td>
</tr>
<tr>
<td>B6</td>
</tr>
</tbody>
</table>

- **Inch configuration Mixed**

<table>
<thead>
<tr>
<th>Different series of size</th>
</tr>
</thead>
<tbody>
<tr>
<td>LGL</td>
</tr>
<tr>
<td>--------------------------</td>
</tr>
<tr>
<td>Maximum size</td>
</tr>
<tr>
<td>11×17</td>
</tr>
<tr>
<td>LTR</td>
</tr>
<tr>
<td>LGL</td>
</tr>
<tr>
<td>LTRR</td>
</tr>
<tr>
<td>STMT</td>
</tr>
</tbody>
</table>

#### Contents

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Combination assured</td>
</tr>
<tr>
<td>B</td>
<td>Not assured. (Possible to feed)</td>
</tr>
<tr>
<td>C</td>
<td>Not assured. (Possible to have original jam)</td>
</tr>
<tr>
<td>-</td>
<td>Out of Specifications</td>
</tr>
</tbody>
</table>
Detecting Jams

Detecting method

This machine detects document jams using the sensors shown below. Document jam check timing is controlled by the host machine which determines jam occurrence by document existence on the specific sensors. Jam codes can be checked by outputting a jam error log report in the service mode of the host machine.

<table>
<thead>
<tr>
<th>ACC ID</th>
<th>JAM Code</th>
<th>JAM Type</th>
<th>Sensor Name</th>
<th>Sensor ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>0003</td>
<td>DELAY</td>
<td>Registration sensor</td>
<td>SR1</td>
</tr>
<tr>
<td>01</td>
<td>0043</td>
<td>DELAY</td>
<td>Registration sensor</td>
<td>SR1</td>
</tr>
<tr>
<td>01</td>
<td>0004</td>
<td>STNRY</td>
<td>Registration sensor</td>
<td>SR1</td>
</tr>
<tr>
<td>01</td>
<td>0044</td>
<td>STNRY</td>
<td>Registration sensor</td>
<td>SR1</td>
</tr>
<tr>
<td>01</td>
<td>0009</td>
<td>DELAY</td>
<td>Read sensor</td>
<td>SR2</td>
</tr>
<tr>
<td>01</td>
<td>0049</td>
<td>DELAY</td>
<td>Read sensor</td>
<td>SR2</td>
</tr>
<tr>
<td>01</td>
<td>0010</td>
<td>STNRY</td>
<td>Read sensor</td>
<td>SR2</td>
</tr>
<tr>
<td>01</td>
<td>0050</td>
<td>STNRY</td>
<td>Read sensor</td>
<td>SR2</td>
</tr>
<tr>
<td>01</td>
<td>0013</td>
<td>DELAY</td>
<td>Delivery reversal sensor</td>
<td>SR3</td>
</tr>
<tr>
<td>01</td>
<td>0053</td>
<td>DELAY</td>
<td>Delivery reversal sensor</td>
<td>SR3</td>
</tr>
<tr>
<td>01</td>
<td>0014</td>
<td>STNRY</td>
<td>Delivery reversal sensor</td>
<td>SR3</td>
</tr>
<tr>
<td>01</td>
<td>0054</td>
<td>STNRY</td>
<td>Delivery reversal sensor</td>
<td>SR3</td>
</tr>
<tr>
<td>01</td>
<td>0071</td>
<td>Sequence</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| 01     | 0090     | DADF OP      | Copyboard cover open/closed sensor 1
  (At copy mode, select the Pickup Cassette) | PS_N1*1 |
| 01     | 0091     | DADF OP      | Copyboard cover open/closed sensor 1
  (other than those above) | PS_N1*1 |
| 01     | 0092     | COVER OP     | Cover open/closed sensor | SR6       |
| 01     | 0093     | COVER OP     | Cover open/closed sensor | SR6       |
| 01     | 0095     | Paper pickup error
  Document set sensor | Registration sensor
  Document set sensor | SR1/SR5 |
| 01     | 0096     | Limited function *2 | - | - |
| 01     | 00A1     | Power-on     | Registration sensor    | SR1       |
| 01     | 00A2     | Power-on     | Read sensor            | SR2       |
| 01     | 00A3     | Power-on     | Delivery reversal sensor | SR3       |

*1 The sensor of the Reader of the host machine.

*2 Limited functions jam is a jam for preventing an original to be left inside the machine when a problem which requires the machine moves to limited functions mode occurs. If an error occurs for some reasons, a jam message is displayed to make the user to perform jam removal. The troubleshooting from this jam cord is not possible.
Power Supply

The power supply lines are shown below. This machine power is supplied from the host machine.

Stamp Operation

Outline

When the stamp function is selected on the FAX mode or scan mode, a document is stamped indicating that a document is already read or sent. The Stamp solenoid (SL2) drives the Stamper. The Stamp solenoid (SL2) is driven by the signal from the ADF driver PCB (PCB1).

Original Output Indicator

After completion of reading, the LED at the Document delivery LED PCB (PCB5) lights ON to prevent from leaving a document. The LED keeps lighting for 10 seconds and then turns OFF. The function is switched ON/OFF on the service mode.

- COPIER>OPTION>BODY >CUSTOM>DFEJCLED.
Work of service

When replacing the parts

In case of removing this equipment such as parts replacement, adjust it in order as shown below.

<table>
<thead>
<tr>
<th>No.</th>
<th>Adjustment type</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Adjusting the Height</td>
<td>p. 5-3</td>
</tr>
<tr>
<td>2</td>
<td>Adjusting the Perpendicularity</td>
<td>p. 5-6</td>
</tr>
<tr>
<td>3</td>
<td>Adjusting the Reading Position</td>
<td>p. 5-9</td>
</tr>
<tr>
<td>4</td>
<td>Adjusting the Magnification</td>
<td>p. 5-9</td>
</tr>
<tr>
<td>5</td>
<td>Adjusting the Image Position (Horizontal Scanning Direction)</td>
<td>p. 5-10</td>
</tr>
<tr>
<td>6</td>
<td>Adjusting the Image Position (Leading Edge)</td>
<td>p. 5-10</td>
</tr>
<tr>
<td>7</td>
<td>Adjusting the White Level</td>
<td>p. 5-11</td>
</tr>
</tbody>
</table>

In case of parts are replaced as shown below, related adjustment must be performed and then clear the counter.

<table>
<thead>
<tr>
<th>Parts to replace</th>
<th>Adjustment type</th>
<th>Parts counter</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pickup roller assembly</td>
<td>-</td>
<td>DF-PU-RL</td>
<td>-</td>
</tr>
<tr>
<td>Separation roller</td>
<td>-</td>
<td>DF-SP-RL</td>
<td>-</td>
</tr>
<tr>
<td>Other motor/roller</td>
<td>Adjusting the Magnification</td>
<td>p. 5-9</td>
<td></td>
</tr>
<tr>
<td>Left hinge</td>
<td>-</td>
<td>DF-HNG-L</td>
<td>-</td>
</tr>
<tr>
<td>Stamper</td>
<td>-</td>
<td>STAMP</td>
<td>-</td>
</tr>
</tbody>
</table>

Cleaning

Clean the following parts.

<table>
<thead>
<tr>
<th>No.</th>
<th>Parts to clean</th>
<th>Cleaning method</th>
<th>Cleaning cycle</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>[1]</td>
<td>White plate (pressure plate)</td>
<td>Clean with a cloth which is dampened with water or neutral detergent and squeezed hard, and then wipe with a dry cloth.</td>
<td>As required</td>
<td>-</td>
</tr>
<tr>
<td>[2]</td>
<td>Platen roller</td>
<td></td>
<td></td>
<td>-</td>
</tr>
<tr>
<td>[3]</td>
<td>White sheet</td>
<td></td>
<td></td>
<td>-</td>
</tr>
</tbody>
</table>

Replacement

Replace it when the Stamper image becomes faint. (Expected life: 7,000 times) (Refer to page 4-16)
## Periodic Servicing

When the parts are reaching the expected service life, perform the parts replacement or cleaning etc if needed.

<table>
<thead>
<tr>
<th>Item</th>
<th>Part name</th>
<th>Expected service life</th>
<th>Operation</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Durables part</td>
<td>Pickup roller assembly</td>
<td>80,000 sheets</td>
<td>Replacement</td>
<td>p. 4-14</td>
</tr>
<tr>
<td>Separation roller</td>
<td></td>
<td></td>
<td></td>
<td>p. 4-15</td>
</tr>
<tr>
<td>Stamper</td>
<td>7,000 sheets</td>
<td></td>
<td></td>
<td>p. 4-16</td>
</tr>
<tr>
<td>Left hinge</td>
<td>150,000 times</td>
<td></td>
<td></td>
<td>p. 4-24</td>
</tr>
<tr>
<td>Periodically serviced parts</td>
<td>Pickup roller assembly</td>
<td>Timely</td>
<td>Cleaning</td>
<td>-</td>
</tr>
<tr>
<td>Separation roller</td>
<td></td>
<td></td>
<td></td>
<td>-</td>
</tr>
<tr>
<td>Upper/Lower registration roller</td>
<td></td>
<td></td>
<td></td>
<td>-</td>
</tr>
<tr>
<td>Feed Guide/Rib</td>
<td></td>
<td></td>
<td></td>
<td>-</td>
</tr>
<tr>
<td>Upper/Lower delivery reversal roller</td>
<td></td>
<td></td>
<td></td>
<td>-</td>
</tr>
<tr>
<td>Various rollers/driven rollers</td>
<td></td>
<td></td>
<td></td>
<td>-</td>
</tr>
<tr>
<td>Various scrapers</td>
<td></td>
<td></td>
<td></td>
<td>-</td>
</tr>
<tr>
<td>Adjusting the Height of the hinge</td>
<td>Timely</td>
<td>Adjustment</td>
<td>p. 5-3</td>
<td>-</td>
</tr>
</tbody>
</table>
3

Periodic Servicing

List of Work for Servicing
List of Work for Servicing

As for the user maintenance point as well, clean it at the time of the periodic maintenance.

PR: Replacement (Periodically replaced parts)  CR: Replacement (consumable parts)  CL: Cleaning  LU: Lubrication  AD: Adjustment  CH: Maintenance

<table>
<thead>
<tr>
<th>No.</th>
<th>Part name</th>
<th>Part number</th>
<th>Qty</th>
<th>Work interval</th>
<th>Parts counter</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Pickup roller assembly (Pickup roller, Feed roller)</td>
<td>FM1-D470</td>
<td>1</td>
<td>CR</td>
<td>CL</td>
<td>DF-PU-RL</td>
</tr>
<tr>
<td>2</td>
<td>Separation roller</td>
<td>FM1-D471</td>
<td>1</td>
<td>CR</td>
<td>CL</td>
<td>DF-SP-RL</td>
</tr>
<tr>
<td>3</td>
<td>Left hinge</td>
<td>FE3-5484</td>
<td>1</td>
<td>CR (150,000 times)</td>
<td>DF-HNG-L</td>
<td>The coming and going opening and shutting number of times</td>
</tr>
<tr>
<td>4</td>
<td>Stamper</td>
<td>FB5-9410</td>
<td>1</td>
<td>CR (7,000 times)</td>
<td>STAMP</td>
<td>User Maintenance</td>
</tr>
<tr>
<td>5</td>
<td>Upper/Lower registration roller</td>
<td></td>
<td>1</td>
<td>CL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Feed Guide (Dust collecting tape)</td>
<td></td>
<td>1</td>
<td>CL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Upper/Lower Delivery reverse roller</td>
<td></td>
<td>1</td>
<td>CL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>White plate (pressure plate)</td>
<td></td>
<td>1</td>
<td>CL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Platen roller</td>
<td></td>
<td>1</td>
<td>CL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>White sheet</td>
<td></td>
<td>1</td>
<td>CL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Various rollers/driven rollers</td>
<td></td>
<td>-</td>
<td>-</td>
<td>CL</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Various scrapers</td>
<td></td>
<td>-</td>
<td>-</td>
<td>CL</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>ADF height adjustment</td>
<td></td>
<td>-</td>
<td>-</td>
<td>AD</td>
<td></td>
</tr>
</tbody>
</table>

* The number of document sheets that have been used for the ADF actually can be checked in the service mode of the host machine. COPIER>COUNTER>FEEDER>FEED

Caution:
Use only the specified solvents and oil. Black streaks can appear due to the paper dust and other foreign particles on the rollers, scrapers, and other part. Clean these parts with care.
4

Parts Replacement and Cleaning Procedure

■ List of Parts
■ Removing the Equipment
■ External Covers
■ Main Units
■ Consumable Parts
  Requiring Periodic Replacement and Cleaning Points
■ Clutches, Motors, PCBs,
List of Parts

External Covers

<table>
<thead>
<tr>
<th>No.</th>
<th>Part name</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>[1]</td>
<td>Front Cover</td>
<td>Refer to page 4-7</td>
</tr>
<tr>
<td>[2]</td>
<td>Rear Cover</td>
<td>Refer to page 4-8</td>
</tr>
<tr>
<td>[3]</td>
<td>Feeder Cover</td>
<td>Refer to page 4-9</td>
</tr>
<tr>
<td>[4]</td>
<td>Rear Small Cover</td>
<td>Refer to page 4-8</td>
</tr>
</tbody>
</table>

Consumable Parts Requiring Periodic Replacement and Cleaning Points

<table>
<thead>
<tr>
<th>No.</th>
<th>Part name</th>
<th>Part number</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>[1]</td>
<td>Pickup roller assembly</td>
<td>FM1-D470</td>
<td>Refer to page 4-14</td>
</tr>
<tr>
<td>[2]</td>
<td>Separation roller</td>
<td>FM1-D471</td>
<td>Refer to page 4-15</td>
</tr>
<tr>
<td>[3]</td>
<td>Stamper</td>
<td>FB5-9410</td>
<td>Refer to page 4-16</td>
</tr>
<tr>
<td>[4]</td>
<td>Left hinge</td>
<td>FE3-5484</td>
<td>Refer to page 4-24</td>
</tr>
</tbody>
</table>
### List of Parts > List of Clutches, Solenoids, Motors, PCBs

<table>
<thead>
<tr>
<th>No.</th>
<th>Part name</th>
<th>Main Unit</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>M1</td>
<td>Pickup motor</td>
<td>-</td>
<td>Refer to page 4-17</td>
</tr>
<tr>
<td>M2</td>
<td>Read motor</td>
<td>-</td>
<td>Refer to page 4-17</td>
</tr>
<tr>
<td>SL1</td>
<td>Release solenoid</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>SL2</td>
<td>Stamp solenoid</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>CL1</td>
<td>Pickup clutch</td>
<td>-</td>
<td>Refer to page 4-18</td>
</tr>
<tr>
<td>CL2</td>
<td>Registration clutch</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>PCB1</td>
<td>ADF driver PCB</td>
<td>-</td>
<td>Refer to page 4-19</td>
</tr>
<tr>
<td>PCB2</td>
<td>Document set LED PCB</td>
<td>Document supply tray</td>
<td>Refer to page 4-19</td>
</tr>
<tr>
<td>PCB3</td>
<td>Different width sensor PCB</td>
<td>Feeder Cover</td>
<td>Refer to page 4-20</td>
</tr>
<tr>
<td>PCB4</td>
<td>Document width sensor PCB</td>
<td>Document supply tray</td>
<td>-</td>
</tr>
<tr>
<td>PCB5</td>
<td>Document delivery LED PCB</td>
<td>Document supply tray</td>
<td>-</td>
</tr>
</tbody>
</table>

### List of Parts > List of Sensors

<table>
<thead>
<tr>
<th>No.</th>
<th>Part name</th>
<th>Main Unit</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>SR1</td>
<td>Registration sensor</td>
<td>Feed assembly</td>
<td>Refer to page 4-21</td>
</tr>
<tr>
<td>SR2</td>
<td>Read sensor</td>
<td>Feed assembly</td>
<td>Refer to page 4-21</td>
</tr>
<tr>
<td>SR3</td>
<td>Delivery reversal sensor</td>
<td>Feed assembly</td>
<td>Refer to page 4-21</td>
</tr>
<tr>
<td>SR5</td>
<td>Document set sensor</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>SR6</td>
<td>Cover open/closed sensor</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>SR7</td>
<td>Document length sensor</td>
<td>Document supply tray</td>
<td>-</td>
</tr>
<tr>
<td>SR8</td>
<td>Document length sensor</td>
<td>Document supply tray</td>
<td>-</td>
</tr>
<tr>
<td>SR9</td>
<td>Different width sensor1</td>
<td>Feeder Cover</td>
<td>Refer to page 4-20</td>
</tr>
<tr>
<td>SR10</td>
<td>Different width sensor2</td>
<td>Feeder Cover</td>
<td>Refer to page 4-20</td>
</tr>
<tr>
<td>SR11</td>
<td>Different width sensor3</td>
<td>Feeder Cover</td>
<td>Refer to page 4-20</td>
</tr>
<tr>
<td>SR12</td>
<td>Different width sensor4</td>
<td>Feeder Cover</td>
<td>Refer to page 4-20</td>
</tr>
<tr>
<td>SR13</td>
<td>Document width sensor1</td>
<td>Document supply tray</td>
<td>-</td>
</tr>
<tr>
<td>SR14</td>
<td>Document width sensor2</td>
<td>Document supply tray</td>
<td>-</td>
</tr>
<tr>
<td>SR15</td>
<td>Document width sensor3</td>
<td>Document supply tray</td>
<td>-</td>
</tr>
<tr>
<td>No.</td>
<td>Part name</td>
<td>Reference</td>
<td></td>
</tr>
<tr>
<td>-----</td>
<td>--------------</td>
<td>--------------------</td>
<td></td>
</tr>
<tr>
<td>[1]</td>
<td>Right hinge</td>
<td>Refer to page 4-25</td>
<td></td>
</tr>
<tr>
<td>[2]</td>
<td>Platen roller</td>
<td>Refer to page 4-26</td>
<td></td>
</tr>
</tbody>
</table>
Removing the Equipment

Procedure

1) Remove the Cover of Reader.
   - Screw 2 pcs.

2) Remove the Connector and Grounding Wire.
   - Screw 1 pc.
   - Connector 2 pcs.

3) Open the ADF.
4) Remove the ADF.

**CAUTION:**
When holding this equipment, be careful not to touch the Platen roller.

- Screw 2 pcs.

---

**Actions after Reinstalling the ADF**

1) Adjusting the Height. (*Adjusting the Height*(page 6-9).)
2) Adjusting the Perpendicularity. (*Adjusting the Perpendicularity*(page 6-13).)
3) Adjusting the Reading Position. (*Adjusting the Reading Position*(page 5-9).)
4) Adjusting the Magnification. (*Adjusting the Magnification*(page 5-9).)
5) Adjusting the Image Position (Horizontal Scanning Direction). (*Adjusting the Image Position (Horizontal Scanning Direction)* (page 5-10).)
6) Adjusting the Image Position (Leading Edge). (*Adjusting the Image Position (Leading Edge)* (page 5-10).)
7) Adjusting the White Level. (*Adjusting the White Level*(page 5-11).)
External Covers

Removing the Front Cover

Procedure

1) Open the Feeder Cover.

2) Remove the screw.
   - Screw 1 pc.

3) Open the ADF.
4) Remove the Front Cover.
   - Screw 2 pcs.
Removing the Rear Cover

Procedure

1) Open the Feeder Cover.

2) Remove the Rear Small Cover.
   - Screw 1 pc.

3) Lift the Document supply tray while pushing the Claws and then remove the Rear Cover.
   - Screw 2 pcs.
   - Claw 2 pcs.
Removing the Feeder Cover

Preparation

1) Remove the Rear Cover. (*Removing the Rear Cover*(page 4-8).)
2) Remove the Front Cover. (*Removing the Front Cover*(page 4-7).)

Procedure

1) Remove the Harness and Grounding Wire.
   - Connector 1 pc.
   - Screw 1 pc.
   - Clamp 2 pcs.

2) Remove the Feeder Cover.
   - Screw 1 pc.
   - Positioning pin 1 pc.

CAUTION:
Be careful not to hang the cables while putting the rear cables through the hole at the plate.
Removing the Inner cover

■ Preparation

1) Remove the Pickup roller assembly. (*Removing the Pickup roller assembly* (page 4-14)).

■ Procedure

1) Remove the inner cover from the Feeder Cover.
   - Screw 1 pc.
   - Claw 2 pcs.
Main Units > Removing the Feed assembly

- Preparation
1) Remove the Front Cover. ("Removing the Front Cover" (page 4-7).)
2) Remove the ADF from the host machine. ("Removing the Equipment" (page 4-5).)
3) Remove the Feeder Cover. ("Removing the Feeder Cover" (page 4-9).)

- Procedure
1) Remove the Tray holder.
   - Screw 1 pc.
2) Remove the Grounding Wire.
   - Screw 1 pc.
3) Remove the Connector on the ADF driver PCB.
   - Connector 8 pcs.
4) Remove the Grounding Wire and then remove the Document supply tray.
   - Screw 1 pc.
   - Ferrite Core 1 pc.

5) Remove the Read motor. ([Removing the Read motor (M2)](page 4-17).)
6) Remove the Left hinge. ([Removing the Left hinge](page 4-24).)
7) Remove the Pickup clutch/Registration clutch. ([Pickup Clutch/Registration Clutch(CL1/CL2)](page 4-18).)
8) Remove the Pickup motor. ([Removing the Pickup motor (M1)](page 4-17).)

9) Remove the harness guide.
   - Screw 1 pc.
   - Connector 2 pcs.
10) Remove the feed unit.
   - Screw 6 pcs.
Consumable Parts Requiring Periodic Replacement and Cleaning Points

Removing the Pickup roller assembly

Procedure

1) Open the Feeder cover.

2) Remove the Pickup roller assembly.

Actions after Replacement

1) Clear Parts count.
   - COPIER > COUNTER > DRBL-2 > DF-PU-RL
Removing the Separation roller

Procedure

1) Open the Feeder cover.

Actions after Replacement

1) Clear Parts count.
   - COPIER > COUNTER > DRBL-2 > DF-SP-RL
Replacing the Stamp

### Procedure

1) Open the Feeder Cover and Separation guide.
2) Using tweezers, remove the Stamper.
3) Use tweezers to attach the new Stamper. Be careful to set the Stamper side to the front.

4) Close the Feeder cover and Separation guide.

**CAUTION:**
If the Stamper is floating, a jam can occur. Be sure to push in the Stamper until it clicks.

### Actions after Replacement

1) Clear Parts count.
   - **COPIER > COUNTER > DRBL-2 > STAMP**
Clutches, Motors, PCBs, Others

Removing the Pickup motor (M1)

- Preparation
  1) Remove the Rear Cover. (*Removing the Rear Cover*(page 4-8).)
  2) Remove the Clutch unit. (*Pickup Clutch/Registration Clutch(CL1/CL2)* (page 4-18).)

- Procedure
  1) Remove the Pickup motor.
     - Screw 2 pcs.
     - Tension spring 1 pc.

- Actions after Replacement
  1) Adjusting the Magnification. (*Adjusting the Magnification* (page 5-9).)

Removing the Read motor (M2)

- Preparation
  1) Remove the Rear Cover. (*Removing the Rear Cover* (page 4-8).)

- Procedure
  1) Remove the Read motor.
     - Connector 1 pc.
     - Screw 3 pcs.
     - Tension spring 1 pc.

- Actions after Replacement
  1) Adjusting the Magnification. (*Adjusting the Magnification* (page 5-9).)
Pickup Clutch/Registration Clutch(CL1/CL2)

### Preparation

1) Remove the Rear Cover. (*Removing the Rear Cover*(page 4-8).)
2) Remove the Feeder Cover. (*Removing the Feeder Cover*(page 4-9).)

### Procedure

1) Remove the Clutch support plate.
   - Connector 3 pcs.
   - Screw 2 pcs.

2) Remove the Clutches.
   - Resin ring 2 pcs.
   - Shaft Support 2 pcs.
Removing the ADF driver PCB (PCB1)

**Preparation**
1) Remove the Rear Cover. *(Removing the Rear Cover*(page 4-8).)

**Procedure**
1) Remove the ADF driver PCB.
   - Connector 10 pcs. (ALL)
   - Screw 2 pcs.

---

Removing the Document set LED PCB (PCB2)

**Preparation**
1) Remove the Inner cover. *(Removing the Inner cover*(page 4-10).)

**Procedure**
1) Remove the different width sensor holder.
   - Screw 3 pcs.
2) Remove the LED PCB.
   - Screw 1 pc.
   - Connector 1 pc.

- Preparation
  1) Remove the Inner cover. ("Removing the Inner cover" (page 4-10.).)

- Procedure
  1) Remove the different width sensor holder.
     - Screw 3pcs.
2) Remove the Different width sensor PCB.
   - Connector 1 pc.
   - Claw 3 pcs.

Removing the Sensor(SR1,SR2,SR3)

■ Preparation
1) Remove the Feed assembly. ([Removing the Feed assembly](page 4-11))

■ Procedure
1) Remove the metal plate.
   - Screw 3 pcs.
2) Remove the Resin ring, Flange, Pulley E-ring and Bearing (A position). Remove the Shaft Support and Gear (B position).
   - Resin ring 1 pc.
   - Flange 1 pc
   - Pulley 1 pc.
   - E-ring 1 pc.
   - Bearing 1 pc.
   - Shaft Support 1 pc
   - Gear 1 pc.

3) While pushing the Claws in the direction of the arrow, remove the Platen roller unit in the direction of the arrow.
   - Claw 2 pcs.
4) Remove the Cover
- Screw 2 pcs.

5) Remove the Read roller 2(upper)
- Resin ring 1 pc.
- Flange 1 pc.
- Pulley 1 pc.
- E-ring 1 pc.
- Bearing 1 pc.
- Shaft Support 1 pc.
- Gear 1 pc.
6) Remove the Sensor mount.
- Screw 2 pcs.
- Claw 2 pcs.

7) Remove the Sensors.
- Connector 3 pcs.

Removing the Left hinge

■ Preparation
1) Remove the ADF from the host machine. ("Removing the Equipment" (page 4-5).)
2) Removing the Rear Cover. ("Removing the Rear Cover" (page 4-8).)

■ Procedure
3) Remove the Left hinge.
- Screw 6 pcs.

CAUTION:
Be careful not to drop the Left hinge. Hold it while removing the screws from it.
■ Actions after Replacement

1) Clear Parts count.
   • COPIER > COUNTER > DRBL-2 > DF-HNG-L

■ Preparation

1) Remove the ADF from the host machine. ("Removing the Equipment" (page 4-5).)

■ Procedure

2) Reverse ADF.
3) Remove the Right hinge.
   - Screw 2 pcs.

![Diagram of Right hinge removal process]

F-4-46
Removing the Platen roller

■ Preparation
1) Remove the Feed assembly. (*Removing the Feed assembly* (page 4-11)).

■ Procedure
1) Remove the Metal plate.
   - Screw 3 pcs.

2) Remove the Resin ring, Flange, Pulley E-ring and Bearing (A position). Remove the Shaft Support and Gear (B position).
   - Resin ring 1 pc.
   - Flange 1 pc.
   - Pulley 1 pc.
   - E-ring 1 pc.
   - Bearing 1 pc.
   - Shaft Support 1 pc.
   - Gear 1 pc.
3) While pushing the Claws in the direction of the arrow, remove the Platen roller unit in the direction of the arrow.
   - Claw 2 pcs.

4) Remove the Platen roller.
   - Screw 2 pcs.
   - Platen roller holder(front) 1 pc.
   - Plate 1 pc.
   - Shaft Support 1 pc.
   - Platen roller holder(rear) 1 pc.
   - Gear 1 pc.
5 Adjustment

■ Overview
■ Adjustment
Outline

This machine has the following adjustment items. Check the image for each item and adjust it if necessary. Follow the procedure in order for the image adjustment.

■ Adjustment When Removing the Equipment

In case of removing this equipment and then re-installed, adjust it in order as shown below.

<table>
<thead>
<tr>
<th>No.</th>
<th>Adjustment type</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Adjusting the Height</td>
<td>p. 5-3</td>
</tr>
<tr>
<td>2</td>
<td>Adjusting the Perpendicularity</td>
<td>p. 5-6</td>
</tr>
<tr>
<td>3</td>
<td>Adjusting the Reading Position</td>
<td>p. 5-9</td>
</tr>
<tr>
<td>4</td>
<td>Adjusting the Magnification</td>
<td>p. 5-9</td>
</tr>
<tr>
<td>5</td>
<td>Adjusting the Image Position (Horizontal Scanning Direction)</td>
<td>p. 5-10</td>
</tr>
<tr>
<td>6</td>
<td>Adjusting the Image Position (Leading Edge)</td>
<td>p. 5-10</td>
</tr>
<tr>
<td>7</td>
<td>Adjusting the White Level</td>
<td>p. 5-11</td>
</tr>
</tbody>
</table>

■ Adjustment After Replacing the Parts

In case of removing the parts as shown below, adjust the following item.

<table>
<thead>
<tr>
<th>Parts to replace</th>
<th>Adjustment type</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motor/Roller</td>
<td>Adjusting the Magnification</td>
<td>p. 5-9</td>
</tr>
</tbody>
</table>

NOTE:
Be sure to write a character or mark to identify the printed image direction.
Adjustment

Overview of Adjustment

This Equipment has the following adjustment items. Check the image for each item and adjust it if necessary. The following is the order of adjustment.

<table>
<thead>
<tr>
<th>No</th>
<th>Adjustment Item</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Adjusting the Height</td>
</tr>
<tr>
<td>2</td>
<td>Adjusting the Perpendicularity</td>
</tr>
<tr>
<td>3</td>
<td>Adjusting the Reading Position</td>
</tr>
<tr>
<td>4</td>
<td>Adjusting the Magnification</td>
</tr>
<tr>
<td>5</td>
<td>Adjusting the Image Position (Horizontal Scanning Direction)</td>
</tr>
<tr>
<td>6</td>
<td>Adjusting the Image Position (Leading Edge)</td>
</tr>
<tr>
<td>7</td>
<td>Adjusting the White Level</td>
</tr>
</tbody>
</table>

Preparation or Creation of Test Chart

Prepare a test chart. If there is no test chart, create a test chart.

Create a test chart that has a 10 mm smaller rectangle from the edge of A4 or LTR paper.

NOTE:
Be sure to write a character or mark to identify the printed image direction.

Adjusting the Height

Check the Height

When closing this Equipment, make sure that the Front and Rear Document Glass Spacers of this Equipment bottom are in contact with the Document Glass.

If visual check is difficult, perform the check with reference to the next and subsequent pages.
Check the Left Hinge Height

1) Checking the rear-left height of this machine.
   Cut a sheet of paper to make a paper slip with width of 45mm.
   Set paper against the protrusions of the stream reading glass in such a manner that the sheet of the stream reading glass is nearly hidden.

   **NOTE:**
   By placing the paper slip as instructed, it does not interfere the soundproofing sheet stuck on the bottom of this Equipment when closing it.

   **CAUTION:**
   Paper use paper generally.
   Set paper so that it does not reach the document reader.

2) Pulling out the set paper.
   Pull out the paper in the direction of the arrow to check that slight resistance is felt.

3) Checking the front-left height of this Equipment.
   Set paper against the protrusions of the stream reading glass in such a manner that the sheet of the stream reading glass is nearly hidden.

   **CAUTION:**
   Set paper so that it does not reach the document reader.
4) Pulling out the set paper.
   Pull out the paper in the direction of the arrow to check that slight resistance is felt.

- Checking the Right Hinge Height
  1) Be sure that the white plate is in close contact with the front and rear document glass when the this Equipment is closed.

- Order of Adjustment
  (When the front or rear side is floating)
  1) Adjust the Left Hinge Height.
  2) Adjust the Right Hinge Height.
  3) Check or Adjust the Left Hinge Height.
  (When the left or right both sides are floating)
  1) Adjust the Left Hinge Height.
  2) Adjust the Right Hinge Height.
  3) Adjust the Left Hinge Height.
  4) Check or Adjust the Right Hinge Height.

- Adjusting the Left Hinge Height
  1) Adjust the height with the left hinge height adjusting screw.

  CAUTION:
  Loosen the lock nut before adjustment, and tighten it after adjustment.

  • If the front spacer is floating, turn the adjusting screw clockwise to bring the front spacer closer to the glass.
  • If only the rear spacer or both front and rear spacers are floating, turn the adjusting screw counterclockwise to bring the rear spacer closer to the glass.
Adjusting the Right Hinge Height

1) Adjust the height with the right hinge height adjusting screw.

CAUTION:
Loosen the lock nut before adjustment, and tighten it after adjustment.

- Turning the adjusting screw clockwise reduces the front-right side height of this Equipment.
- Turning the adjusting screw counterclockwise increases the front-right side height of this Equipment.

2) Check the height of the left hinge. If the height is inappropriate, adjust it again.

---

Adjusting the Perpendicularity

1) Load a test chart in this Equipment to make a copy.
2) Check the perpendicularity at the leading edges of the Test Chart and copy.
   Measure dimensions A and B on the Test Chart and dimensions A' and B' on the copy. If (A-B) is not (A'-B'), go through steps after step 3).
3) Loosen the screw securing the Right Hinge, and slide the hinge back and forth with reference to the graduation marks.

- For A’>B’
  Slide the hinge to rear side.
- For B’>A’
  Slide the hinge to front side.

4) Tighten back the fixing screw loosened in step 3).

5) Remove the White Plate.

6) Place the White Plate on the Copyboard Glass by aligning it with the Index Sheet.
7) Close this Equipment, and then open it again.

8) Press the White Plate upward as shown in the figure below.

CAUTION:
If the White Plate is pressed downward, it is placed on the Index Sheet, so be sure to press it upward.

9) With this Equipment closed, check that the White Plate is not placed on the Index Sheet as shown in the figures.

CAUTION:
Be sure that there is no gap between the White Plate and the Index Sheet. As a guide, it should be 0.3 mm or less.
Adjusting the Reading Position

1) Enter the service mode (Level 1).
2) On the Service Mode Screen, touch the following notations in sequence to bring up the Adjustment Screen:
   COPIER > FUNCTION > INSTALL > STRD-POS
3) Press [OK]. A press on [OK] will cause the scanner to start a scan; in several seconds, the machine will end auto adjustment of the read position and indicate 'OK'.

CAUTION:
If the machine fails auto adjustment and indicates 'NG', go through the following:
(1) Clean the white roller of this Equipment and the Stream Reading Glass of the Host Machine; then, execute auto adjustment once again.
(2) If the auto adjustment operation still fails, start service mode, and make adjustments manually:
   COPIER>ADJUST>ADJ-XY>STRD-POS
   Adjust the reading position by changing the setting in this service mode so that the leading edge of the test chart can match the leading edge of the copy image.
Write down the new adjustment value on the service label on the back of Reader Front Cover.

4) Exit the service mode after completion.

Adjusting the Magnification

1) Place the Test Chart in this Equipment, and make a copy.
2) Compare Test Chart and copy in terms of the length of the image in feed direction; as necessary, make adjustments in service mode.

**Adjustment Procedure**

1) Enter the service mode (Level 1).
2) From the Service Mode screen, touch the following notations to bring up the Adjustment screen:
   FEEDER>ADJUST.LA-SPEED
3) Change the value as follows.
   • If the printed image of the copy is shorter, decrease the setting (so that the speed at which originals are moved in stream reading mode will be reduced).
   • If the printed image of the copy is longer, increase the setting so that the speed at which originals are moved in stream reading mode will be increased).
   unit of adjustments: 0.1%
4) Write down the new adjustment value on the service label on the back of Reader Front Cover.
5) Exit the service mode after completion.

< If the printed image is shorter >  
< If the printed image is longer >
Adjusting the Image Position (Horizontal Scanning Direction)

1) Copy the test chart with the This Equipment.
2) Compare the horizontal registration between the copy and the test chart. As necessary, make the following adjustment.

■ Adjustment Procedure

1) Enter the service mode (Level 1).
2) On the Service Mode screen, touch the following notations to bring up the Adjustment screen:
   [COPIER] > [ADJUST] > [ADJ-XY] > [ADJ-Y-DF]
3) Change the value as follows.
   - If the printed image is displaced to the front, decrease the setting.
   - If the printed image is displaced to the rear, increase the setting.
   unit of adjustment: 0.1 mm
4) Write down the new adjustment value on the service label on the back of Reader Front Cover.
5) Exit the service mode after completion.

< If the image is displaced toward front >

< If the image is displaced toward rear >

Adjusting the Image Position (Leading Edge)

1) Copy the test chart with this Equipment.
2) Compare the leading edge registration between the copy and the test chart. As necessary, make the following adjustment.

■ Adjustment Procedure

1) Enter the service mode (Level 1).
2) On the Service Mode screen, touch the following notations to bring up the Adjustment screen:
   [FEEDER] > [ADJUST] > [DOCST]
3) Change the value as follows.
   - If the printed image is displaced to the leading edge, decrease the setting.
   - If the printed image is displaced to the trailing edge, increase the setting.
   unit of adjustment: 0.1 mm
4) Write down the new adjustment value on the service label on the back of Reader Front Cover.
5) Exit the service mode after completion.

< If the image is displaced toward leading edge >  < If the image is displaced toward trailing edge >
Adjusting the White Level

NOTE:
1) This is an item of adjustment in which the white level of images made in stream reading mode are matched with the white level of images made in copyboard cover mode. If you omit this adjustment, the following will likely occur:
   • Inappropriate reproduction of background density in images made in stream reading mode
   • Wrong speck detection in stream reading mode

2) The white level adjustments perform the following.
   COPIER > FUNCTION > CCD > DF-WLVL1, COPIER > FUNCTION > CCD > DF-WLVL2 in the service mode (Level 1).

1) Enter the service mode (Level 1).
2) Touch the following notations in sequence to bring up the Adjustment Screen:
   COPIER > FUNCTION > CCD
3) Place paper (of the white paper type most often used by the user) on the copyboard glass, and close this Equipment.
4) Press [DF-WLVL1] to highlight.
5) Press [OK].
   Automatic adjustment starts; if it ends successfully, the screen shows [OK].
6) Remove the paper from the copyboard glass, and place it on the original tray of this Equipment.
7) Press [DF-WLVL2] on the touch panel to highlight.
8) Press [OK].
   - The machine executes auto adjustment (duplex stream reading).
   - When the adjustment ends normally, the machine indicates 'OK!' on the screen.
9) If adjustment fails, perform steps 3) to 8) again.
10) The result of the adjustment is reflected to COPIER > ADJUST > CCD > DFTAR-R/
       DFTAR-G / DFTAR-B and write down the new adjustment value on the service label on the back of Reader Front Cover.
11) Exit the service mode after completion.
6

Installation

- How to Check this Installation Procedure
- Product Name
- Making Pre-installation Checks
- Points to Note at Installation
- Unpacking and Checking the Components
- Installation Procedure
- Adjustment
- Others
How to Check this Installation Procedure

Symbols in the Illustration

The frequently-performed operations are described with symbols in this procedure.

- Packaged Item
- Unused Parts
- Screw
- Install
- Remove
- Tighten
- Loosen
- Harness (Common for Guides and Clamps)
- Connector
- Power Cord
- Install
- Remove
- Connect
- Disconnect
- Connect
- Disconnect
- Power
- ON
- OFF
- Check the sound
- Check visually
- Check
- Push
- Cleaning

Product Name

Safety regulations require the product’s name to be registered. In some regions where this product is sold, the following name may be registered instead.
F281170

Making Pre-installation Checks

Cautions at the Installation

- Check that the main power switch is OFF.
- 1) Turn OFF the main power switch.
- 2) Be sure that display in the Control Panel and the lamp of the main power supply are turned off, then disconnect the power plug.

Points to Note at Installation

CAUTION: Marked portion
When tightening the screws, do not tighten them too tightly. Otherwise, there is a risk of damage and deformation of screw holes.
Unpacking and Checking the Components

Unpacking and Checking the Contents

1) Make sure that none of the following parts are missing.

- [ ] DADF 1 unit
- [ ] Hinge Cover 2 pcs.
- [ ] Face Sticker 2 pcs.
- [ ] Stepped Screw (Black; M5x6) 2 pcs.
- [ ] Stepped Screw (M4x10) 2 pcs.
- [ ] RS Tight Screw (M3x8) 1 pc.

2) Check to make sure that none of the following documentations are missing.

- • EAC Document (Europe model only)
- • China RoHS Document (Asia model only)
Installation Procedure

Installing this Equipment

1) Remove packing materials and tapes from this Equipment.

NOTE:
Weight of this Equipment is about 7.5kg.

2)
5) Engage the Hinges of this Equipment with the Stepped Screws from behind and slide them toward the front of the Host Machine.

**CAUTION:**
When holding this Equipment, be careful not to touch the Platen Roller.

**NOTE:**
Secure the Right Hinge so that the edge of the screw head can align with the mark-off line (long).
7) Remove the White Plate.

8) Place the White Plate on the Copyboard Glass by aligning it with the Index Sheet.

9) CAUTION: If the White Plate is pressed downward, it may occur to place on the Index Sheet, so be sure to press it upward.
11) After closing this Equipment, make sure that the White Plate is not over the Index Sheet.

**CAUTION:**

Be sure that there is no gap between the White Plate and the Index Sheet. As a guide, it should be 0.3 mm or less.

---

**NOTE:**

The removed Screws and Face Robber Covers will be used in step 15).
14) RS Tight Screw M3x8

15) NOTE:
Place the gap between two tie-wrap of the cable to the groove of the cover.
Adjustment

Overview of Adjustment

This Equipment has the following adjustment items. Check the image for each item and adjust it if necessary. The following is the order of adjustment.

<table>
<thead>
<tr>
<th>No</th>
<th>Adjustment Item</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Adjusting the Height</td>
</tr>
<tr>
<td>2</td>
<td>Adjusting the Perpendicularity</td>
</tr>
<tr>
<td>3</td>
<td>Adjusting the Reading Position</td>
</tr>
<tr>
<td>4</td>
<td>Adjusting the Magnification</td>
</tr>
<tr>
<td>5</td>
<td>Adjusting the Image Position (Horizontal Scanning Direction)</td>
</tr>
<tr>
<td>6</td>
<td>Adjusting the Image Position (Leading Edge)</td>
</tr>
<tr>
<td>7</td>
<td>Adjusting the White Level</td>
</tr>
</tbody>
</table>

Preparation or Creation of Test Chart

Prepare a test chart. If there is no test chart, create a test chart.

Create a test chart that has a 10 mm smaller rectangle from the edge of A4 or LTR paper.

NOTE:
Be sure to write a character or mark to identify the printed image direction.

Adjusting the Height

Check the Height

When closing this Equipment, make sure that the Front and Rear Document Glass Spacers of this Equipment bottom are in contact with the Document Glass. If visual check is difficult, perform the check with reference to the next and subsequent pages.
Check the Left Hinge Height

1) Checking the rear-left height of this machine.
   Cut a sheet of paper to make a paper slip with width of 45mm.
   Set paper against the protrusions of the stream reading glass in such a manner that the sheet of the stream reading glass is nearly hidden.

   NOTE:
   By placing the paper slip as instructed, it does not interfere the soundproofing sheet stuck on the bottom of this Equipment when closing it.

   CAUTION:
   Paper use paper generally.
   Set paper so that it does not reach the document reader.

2) Pulling out the set paper.
   Pull out the paper in the direction of the arrow to check that slight resistance is felt.

3) Checking the front-left height of this Equipment.
   Set paper against the protrusions of the stream reading glass in such a manner that the sheet of the stream reading glass is nearly hidden.

   CAUTION:
   Set paper so that it does not reach the document reader.
4) Pulling out the set paper.
   Pull out the paper in the direction of the arrow to check that slight resistance is felt.

- Checking the Right Hinge Height

1) Be sure that the white plate is in close contact with the front and rear document glass when this Equipment is closed.

- Order of Adjustment

   - (When the front or rear side is floating)
     1) Adjust the Left Hinge Height.
     2) Adjust the Right Hinge Height.
     3) Check or Adjust the Left Hinge Height.

   - (When the left or right both sides are floating)
     1) Adjust the Left Hinge Height.
     2) Adjust the Right Hinge Height.
     3) Adjust the Left Hinge Height.
     4) Check or Adjust the Right Hinge Height.

- Adjusting the Left Hinge Height

1) Adjust the height with the left hinge height adjusting screw.

   **CAUTION:**
   Loosen the lock nut before adjustment, and tighten it after adjustment.

   • If the front spacer is floating, turn the adjusting screw clockwise to bring the front spacer closer to the glass.
   • If only the rear spacer or both front and rear spacers are floating, turn the adjusting screw counterclockwise to bring the rear spacer closer to the glass.
### Adjusting the Right Hinge Height

1) Adjust the height with the right hinge height adjusting screw.

**CAUTION:**
Loosen the lock nut before adjustment, and tighten it after adjustment.

- Turning the adjusting screw clockwise reduces the front-right side height of this Equipment.
- Turning the adjusting screw counterclockwise increases the front-right side height of this Equipment.

2) Check the height of the left hinge. If the height is inappropriate, adjust it again.
Adjusting the Perpendicularity

1) Load a test chart in this Equipment to make a copy.
2) Check the perpendicularity at the leading edges of the Test Chart and copy.
   Measure dimensions A and B on the Test Chart and dimensions A’ and B’ on the copy. If (A-B) is not (A’-B’), go through steps after step 3).

3) Loosen the screw securing the Right Hinge, and slide the hinge back and forth with reference to the graduation marks.

   • For A’>B’
     Slide the hinge to rear side.
   • For B’>A’
     Slide the hinge to front side.

4) Tighten back the fixing screw loosened in step 3).
5) Remove the White Plate.

6) Place the White Plate on the Copyboard Glass by aligning it with the Index Sheet.

7) Close this Equipment, and then open it again.

8) Press the White Plate upward as shown in the figure below.

CAUTION:
If the White Plate is pressed downward, it is placed on the Index Sheet, so be sure to press it upward.
9) With this Equipment closed, check that the White Plate is not placed on the Index Sheet as shown in the figures.

CAUTION:
Be sure that there is no gap between the White Plate and the Index Sheet. As a guide, it should be 0.3 mm or less.

Adjusting the Reading Position

1) Enter the service mode (Level 1).
2) On the Service Mode Screen, touch the following notations in sequence to bring up the Adjustment Screen:
   COPIER > FUNCTION > INSTALL > STRD-POS
3) Press [OK]. A press on [OK] will cause the scanner to start a scan; in several seconds, the machine will end auto adjustment of the read position and indicate 'OK'.

Caution:
If the machine fails auto adjustment and indicates 'NG', go through the following:
(1) Clean the white roller of this Equipment and the Stream Reading Glass of the Host Machine; then, execute auto adjustment once again.
(2) If the auto adjustment operation still fails, start service mode, and make adjustments manually:
   COPIER>ADJUST>ADJ-XY>STRD-POS
Adjust the reading position by changing the setting in this service mode so that the leading edge of the test chart can match the leading edge of the copy image.
Write down the new adjustment value on the service label on the back of Reader Front Cover.

4) Exit the service mode after completion.
Adjusting the Magnification

1) Place the Test Chart in this Equipment, and make a copy.
2) Compare Test Chart and copy in terms of the length of the image in feed direction; as necessary, make adjustments in service mode.

■ Adjustment Procedure

1) Enter the service mode (Level 1).
2) From the Service Mode screen, touch the following notations to bring up the Adjustment screen:

   FEEDER>ADJUST>LA-SPEED

3) Change the value as follows.
   • If the printed image of the copy is shorter, decrease the setting (so that the speed at which originals are moved in stream reading mode will be reduced).
   • If the printed image of the copy is longer, increase the setting so that the speed at which originals are moved in stream reading mode will be increased).
   unit of adjustments: 0.1%

4) Write down the new adjustment value on the service label on the back of Reader Front Cover.

5) Exit the service mode after completion.

< If the printed image is shorter >

< If the printed image is longer >
## Adjusting the Image Position (Horizontal Scanning Direction)

1. Copy the test chart with the This Equipment.
2. Compare the horizontal registration between the copy and the test chart. As necessary, make the following adjustment.

### Adjustment Procedure

1. Enter the service mode (Level 1).
2. On the Service Mode screen, touch the following notations to bring up the Adjustment screen:
   
   COPIER > ADJUST > ADJ-XY > ADJ-Y-DF

3. Change the value as follows.
   - If the printed image is displaced to the front, decrease the setting.
   - If the printed image is displaced to the rear, increase the setting.
   
   Unit of adjustment: 0.1 mm

4. Write down the new adjustment value on the service label on the back of Reader Front Cover.
5. Exit the service mode after completion.

---

## Adjusting the Image Position (Leading Edge)

1. Copy the test chart with this Equipment.
2. Compare the leading edge registration between the copy and the test chart. As necessary, make the following adjustment.

### Adjustment Procedure

1. Enter the service mode (Level 1).
2. On the Service Mode screen, touch the following notations to bring up the Adjustment screen:
   
   FEEDER > ADJUST > DOCST

3. Change the value as follows.
   - If the printed image is displaced to the leading edge, decrease the setting.
   - If the printed image is displaced to the trailing edge, increase the setting.
   
   Unit of adjustment: 0.1 mm

4. Write down the new adjustment value on the service label on the back of Reader Front Cover.
5. Exit the service mode after completion.

---
Adjusting the White Level

NOTE:
1) This is an item of adjustment in which the white level of images made in stream reading mode are matched with the white level of images made in copyboard cover mode. If you omit this adjustment, the following will likely occur:
   - Inappropriate reproduction of background density in images made in stream reading mode
   - Wrong speck detection in stream reading mode

2) The white level adjustments perform the following. COPIER > FUNCTION > CCD > DF-WLVL1, COPIER > FUNCTION > CCD > DF-WLVL2 in the service mode (Level 1).

1) Enter the service mode (Level 1).
2) Touch the following notations in sequence to bring up the Adjustment Screen:
   COPIER > FUNCTION > CCD
3) Place paper (of the white paper type most often used by the user) on the copyboard glass, and close this Equipment.
4) Press [DF-WLVL1] to highlight.
5) Press [OK]. Automatic adjustment starts; if it ends successfully, the screen shows [OK].
6) Remove the paper from the copyboard glass, and place it on the original tray of this Equipment.
7) Press [DF-WLVL2] on the touch panel to highlight.
8) Press [OK].
   - The machine executes auto adjustment (duplex stream reading).
   - When the adjustment ends normally, the machine indicates 'OK!' on the screen.
9) If adjustment fails, perform steps 3) to 8) again.
10) The result of the adjustment is reflected to COPIER > ADJUST > CCD > DFTAR-R/
     DFTAR-G/ DFTAR-B and write down the new adjustment value on the service label on the back of Reader Front Cover.
11) Exit the service mode after completion.
Attaching the Hinge Covers

1) Using the cleaning sheet supplied for Host Machine, wipe the Stream Reading Glass to clean.

Cleaning the Stream Reading Glass

1) Check the following operations.
   - Check the single-sided and double-sided copy operations.
Appendix

- Service Tools
- General Circuit Diagram
## Solvents and Oils

<table>
<thead>
<tr>
<th>No.</th>
<th>Name</th>
<th>Uses</th>
<th>Composition</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Vic Clean</td>
<td>Cleaning: e.g., glass, plastic, rubber parts, external covers</td>
<td>Hydrocarbon (fluorine family), Alcohol, Surface activating agent, Water</td>
<td>• Do not bring near fire. • Procure locally. Isopropyl alcohol may be substituted.</td>
</tr>
<tr>
<td>2</td>
<td>Lubricating oil (EM-50L)</td>
<td>Lubrication; e.g., gears.</td>
<td>Special oil Special solid lubricating agent Lithium soap</td>
<td>• Tool No.: HY9-0007</td>
</tr>
</tbody>
</table>

## Special Tools

None