

# ***DDP92***

## ***Engine Maintenance Manual***

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N901395

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## **NOTICE TO USER**

In an effort to meet the demands of a rapidly changing technology, the manufacturer is continually developing new features and functions to meet your changing printing or printer needs. As a result, this manual may not exactly reflect future changes made to the product. Please be sure to consult all manual updates or addenda when using this product's documentation.

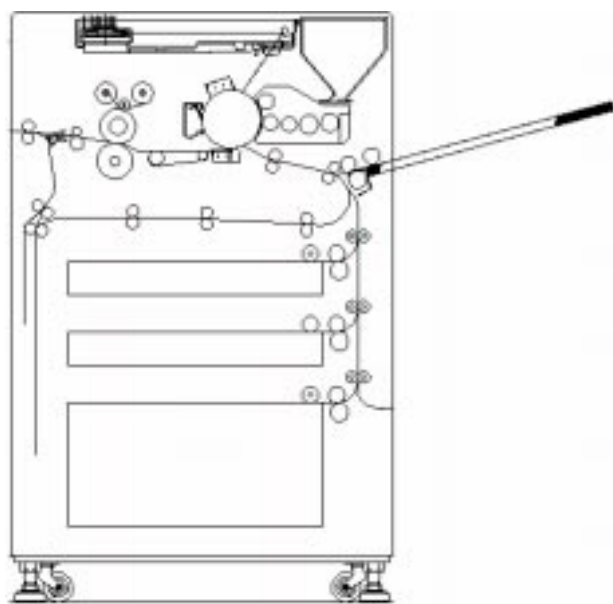
# *DDP92 Engine Maintenance Manual*

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Dated: January, 2008

***DDP92***

***Engine  
Maintenance  
Manual***





## Revisions

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# Safety

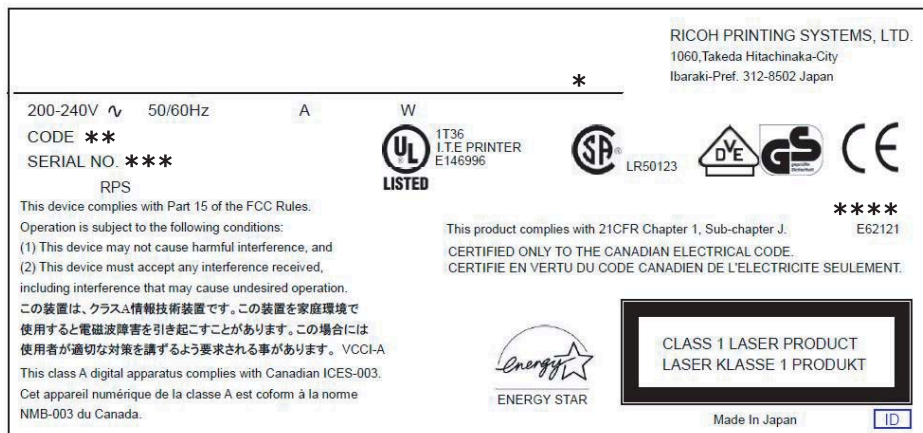
## Safety in Operation

### (1) Laser product

This product is a laser product.

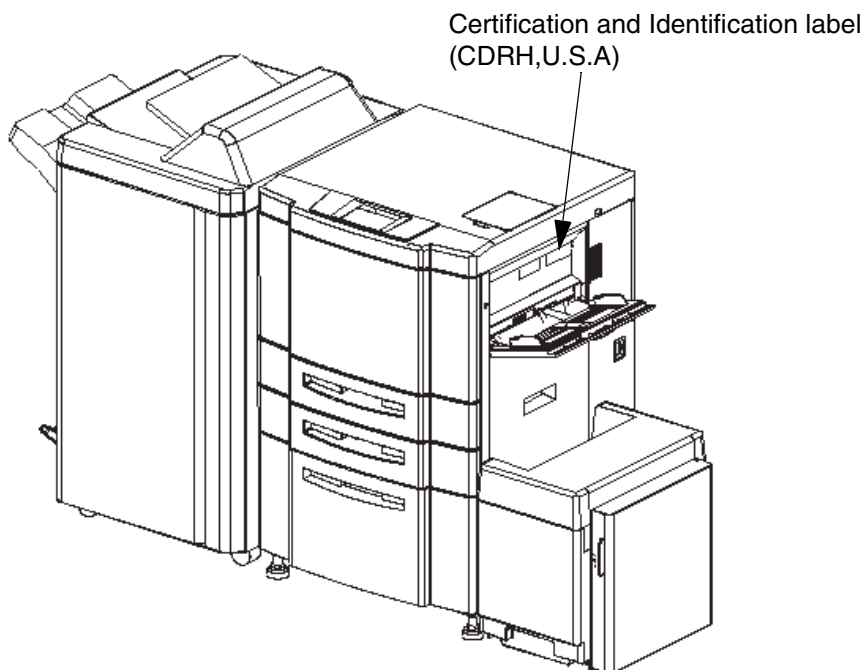
This product complies with 21 CFR Chapter 1, Subsection J. (CDRH, U.S.A)  
Certification and Identification label is attached on the rear cover of the printer.

#### (a) Certification and Identification label



- |                                                                |                                                                                                                                      |
|----------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| * :Stamp the model<br>(ex. LB092ADP1-RU)                       | * * * * :E62121 marked in this<br>position is the code of the place<br>of manufacturer. This code<br>represents the place as follows |
| * * :Stamp the production code<br>(ex. G151-17)                | Name :Ricoh Printing Systems, Ltd.                                                                                                   |
| * * * :Stamp the serial production<br>number (ex. Q4750602001) | Address :1060 Takeda, Hitachinaka City,<br>Ibaraki-Pref., 312-8502 Japan                                                             |

#### (b) Location



(2) Caution laser radiation

(a) Label

①

DANGER INVISIBLE LASER RADIATION WHEN  
OPEN. AVOID DIRECT EXPOSURE TO BEAM.

注意 このカバーを開くとレーザー光がでます。レーザー光を直接見たり、  
触れたりしないで下さい。

CAUTION INVISIBLE LASER RADIATION WHEN  
OPEN. AVOID EXPOSURE TO BEAM.

VORSICHT UNSICHTBARE LASERSTRAHLUNG  
WENN ABDECKUNG GEÖFFNET UND  
SICHERHEITSVERRIEGELUNG ÜBERBRÜCKT  
NICHT DEM STRAHL AUSSETZEN.

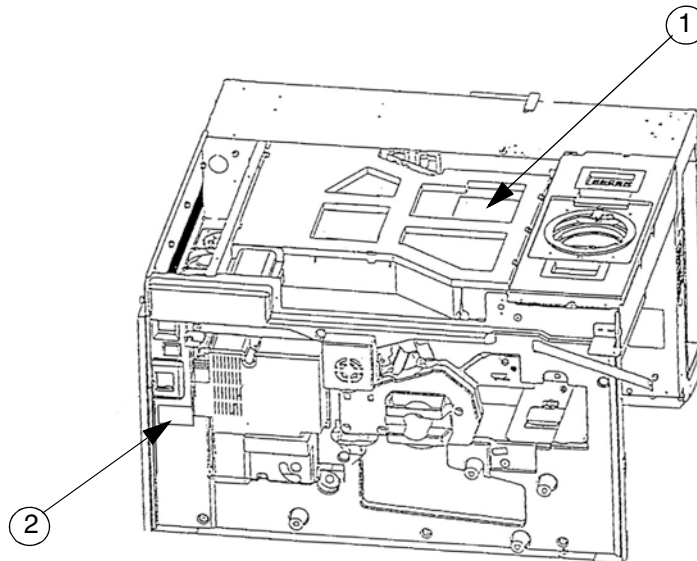
ATTENTION RAYONNEMENT LASER EN CAS  
D'OUVERTURE EXPOSITION DANGEREUSE  
AU FAISCEAU.

VARO! AVATTAESSA OLET ALTTIINA  
NÄKYMÄTTÖMÄLLE LASERSÄTEILYLLE ÄLÄ  
KATSO SÄTEESEEN.

②

DANGER - VISIBLE LASER RADIATION  
WHEN OPEN AND INTERLOCK DEFEATED  
AVOID DIRECT EXPOSURE TO BEAM

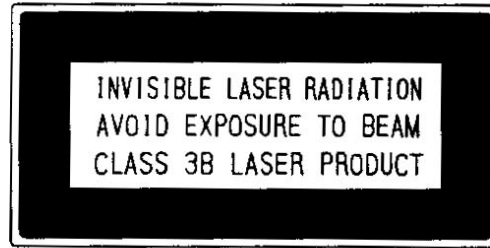
(b) Location



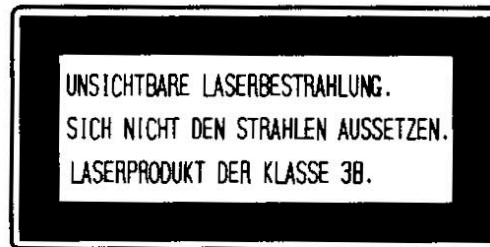
Laser class label and caution labels are attached as follows.

(1) Labels

①



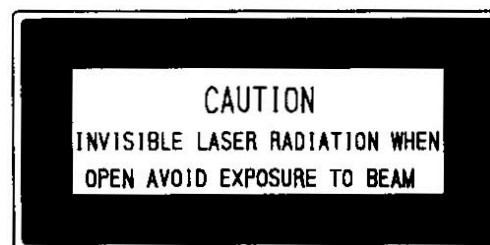
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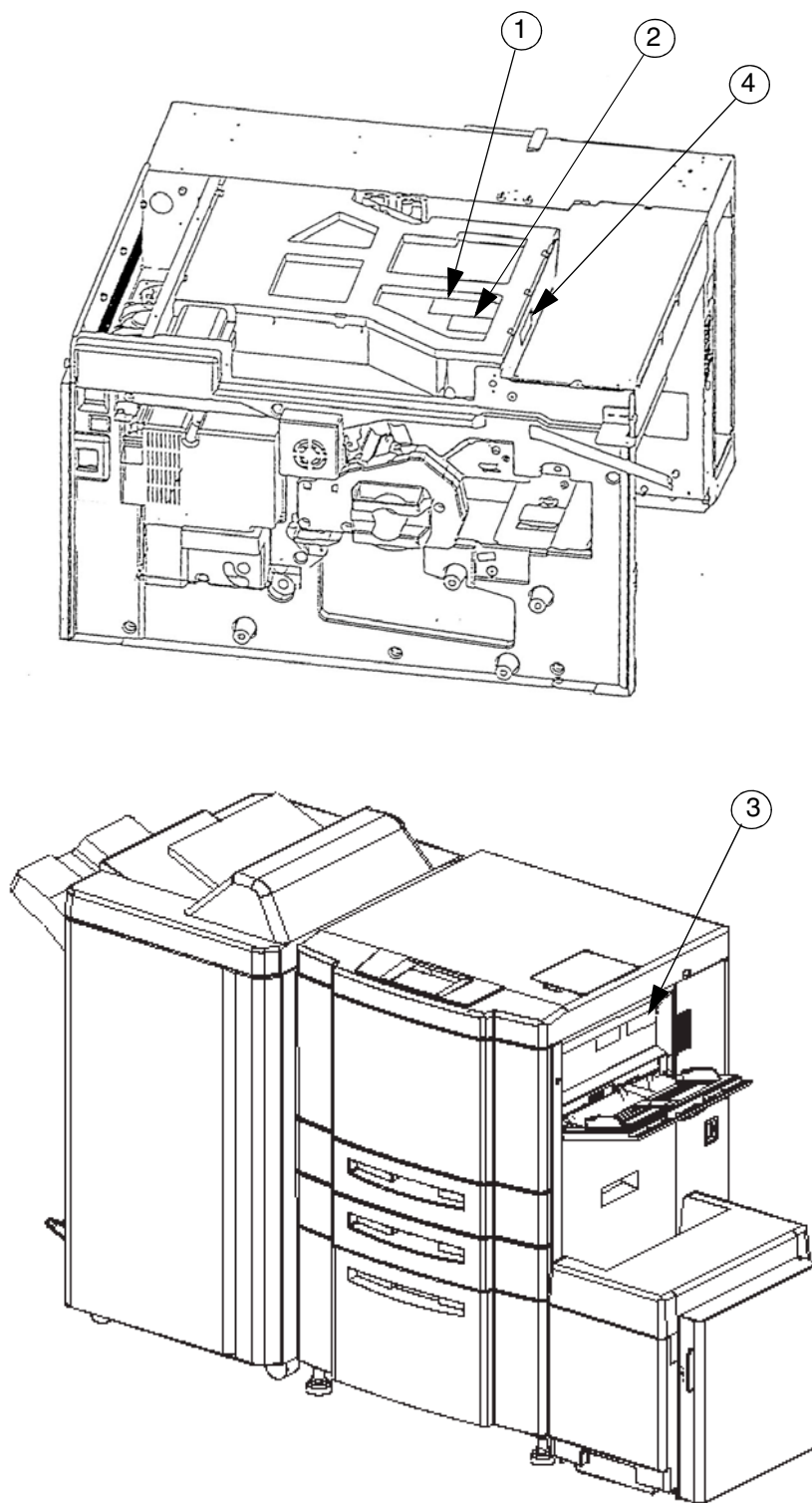
③



④



(2) Attached Locations







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# Chapter 1. Outlines

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## 1.1. Characteristics

- 92 pages/minute high speed cut sheet page printer
- High print quality applicable for graphics and images
- Small size, power saving
- Adoption of semiconductor laser and VLSI
- Applicable for various forms

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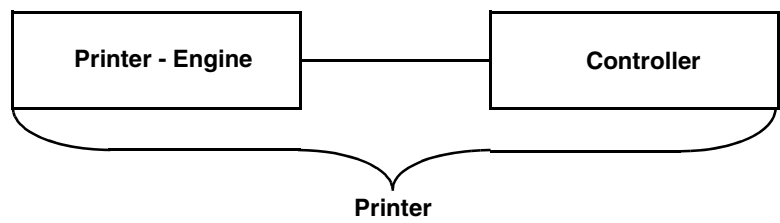
## 1.2. Specifications

|                |                                                                                                                |
|----------------|----------------------------------------------------------------------------------------------------------------|
| Printing speed | 92 pages/minute (Letter, A4/LEF)                                                                               |
| Paper          | Size: A5, A4, B4, B5, A3, Letter, Tabstock, 8.5"x12.4", Legal 13", Legal 14", Ledger, 12"x18", Free size paper |
|                | Ream weight: 16 to 110lbs Bond (60 to 199g/m <sup>2</sup> )                                                    |
| Dimensions     | Approx. 650mm(width)x Approx. 1000mm(height) x Approx. 665mm(depth) (Engine Only)                              |
| Weight         | Approx. 170kg (Engine Only)                                                                                    |
| AC Input       | AC200 to 240V $\pm$ 10%, 12A, 50/60Hz                                                                          |
|                | - Single Phase, two wires + G                                                                                  |

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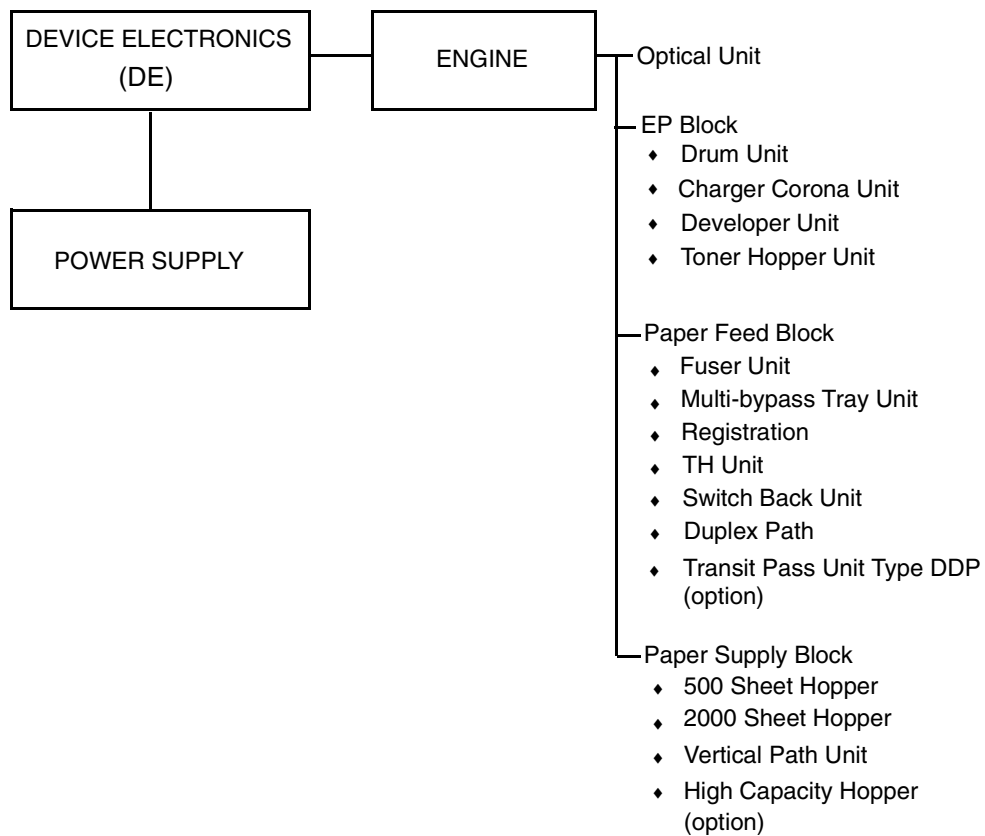
## 1.3. Configurations

### 1.3.1. System Configuration



### 1.3.2. Printer Configuration

The basic configuration of this printer is as follows and this manual is described in the same order.



---

## Chapter 2. Safe Handling of the Printer

This chapter describes the rules for safe handling of the printer which must be strictly observed by all maintenance personnel. Before conducting maintenance and inspection of the printer, you must fully comprehend the following.

1. Before conducting maintenance or inspection, be sure to switch the power supply **OFF**.
2. Make sure that the grounding cable is connected securely to the grounding terminal of the printer.
3. If it is absolutely necessary to work with the power turned ON, observe the following:
  - (a) Have one individual watch while the work is being performed so that that personnel may switch **OFF** the power switch at anytime if necessary.
  - (b) Never allow two individuals to work at the same time. It is very dangerous if a drive part actuates suddenly.
  - (c) Never wear a ring, wristwatch, cuff-links, bracelet, metal fastener or any other metallic objects.
  - (d) Be sure not to loosen or misuse screws. It is good practice to put a sheet of paper under a portion where it is difficult to find small parts if dropped. Make it a rule to replace screws back to their original place immediately after removal of a part.
  - (e) Be particularly careful not to let a tool or a part drop into the printer.
4. Whenever working on near a rotating part, stop the rotation and ascertain the shape of it. The projection of a rotating part is very dangerous as it cannot be seen when rotating. During work, pay attention to ties, sleeves, shirts and long hair so that they may not be caught in the printer. Always wear a working cap.
5. Before handling a movable part, make certain that it has completely stopped.
6. The interior temperature of the fuser unit is as high as about 180 degrees Celsius during operation. It does not cool down quickly even if the power is switched **OFF**, so leave it for more than 60 minutes to cool down sufficiently before starting work.
7. Wear eye protection whenever the following jobs are to be performed;
  - (a) To hammer the pins or rivet.
  - (b) To perform work using a hand drill.
  - (c) To mount or dismount a spring.
  - (d) To perform soldering or cutting wires.
  - (e) To clean parts.
8. Be particularly careful with the rotating blades of fans. Avoid performing work near a fan.
9. In order to check the power supply of the printer, label the breaker noting, "**Do not switch the power ON**" to prevent other personnel from turning it on by mistake when the switch on the breaker in the computer room has been put **OFF**.
10. Make sure that the power is **OFF** when replacing a PCB.
11. Care must be taken to store covers which are detached at a proper place to avoid other people from tripping or stumbling, over them.
12. Do not leave tools in any unit, nor leave them on the floor. It is dangerous if they are dropped into a unit and also it may cause other people to trip or slip on them in another instance.

13. When you are going to move the printer, first check to see that no personnel or customers are around a dangerous position.
14. The following operations can be performed with the power ON, providing that the specified work procedures are undertaken;
  - (a) Replacing the Drum Unit
  - (b) Replacing the Fuser Unit
  - (c) Replacing the Fuser Cleaning Web
15. Carefully observe cautions itemized in this Maintenance Manual for your operations.
16. Be sure that nobody touches the printer and carefully recheck if there is incorrect wiring, incorrect connections, or tools remaining on the printer before turning ON the printer.
17. Replace all the covers of the printer back to their original position and make the final checks by TMP(Test & Maintenance Program) without fail.
18. Before handing the printer over to the customer, perform overall checking again.
19. Whenever the Optical Unit cover is removed, observe the following precautions to avoid exposure of the eyes to the laser beam. The semiconductor laser of the Printer emits a beam with a wavelength of about 780 nm, which is not visible. Exercise caution.
  - (a) When adjusting the laser beam, use black tools for minimum reflection. Do not wear reflective jewelry or any other article which can reflect the beam.
  - (b) When adjusting the position or angle of the reflecting mirror, adjust carefully, and in small increments to avoid emitting the beam outside the Optical Unit.
20. After removing the Ground Cables, always install them to their original positions.

**Nach der Beseitigung der Erdungskabel sind diese wieder in ihre ursprüngliche position zu installieren.**

---

## Chapter 3. General Information

This chapter describes the cautions and matter in general in relationship to the maintenance. It is particularly essential to read the following.

---

### 3.1. Maintenance Precautions

1. Thoroughly read through and understand the instructions to handle the printer safely as described in [Chapter 2, "Safe Handling of the Printer," on page 2-1](#).
2. Do not place such parts as screws on the upper cover as these may fall off and get astray.
3. Cautions for handling the Drum Unit.
  - (a) If external light should reach the Drum Unit surface, its elementary functions may be lost no matter how weak the light may be. Therefore the cover must be closed to keep the light from penetrating when you run printing.
  - (b) The Drum Unit may suffer from light fatigue or deteriorates in charging, if it is exposed to a bright light. For this reason when it is removed from the printer and left out for some time, then there is a need to temporarily store it in a box or in a dark place. Light fatigue can be healed by leaving it in a dark room, but it may take 24 hours to heal it. Use another one for the time being, should such a problem occur.
  - (c) The Drum Unit is ideally stored in a cool place. Never in a place under the direct sunlight.

|                         |                                 |
|-------------------------|---------------------------------|
| Temperature for storage | -30 to 50 deg.C (-22 to 122° F) |
| Humidity in storage     | 1 to 95 % RH                    |
  - (d) Never touch the Drum Unit surface with your bare hands.
4. Notes for disposal of expendable parts.

Given below are the basic procedures and principles defined separately which must be adhered to for disposal.

  - (a) Fuser Unit/Drum Unit

These cannot be incinerated, and must be disposed of as nonflammable materials
  - (b) Toner/Developer

These cannot be incinerated, and must be disposed of as nonflammable materials
5. Reset the detach current according to the altitude of the place where the printer is installed. ([Refer to item 8.4.5.7 on page 8-21](#))
6. As the regist buffer is set for regular paper, it is not suitable for Label Paper or 16 lb. paper. These kinds of paper require less regist buffer.

Therefore when the customer is going to use the Label Paper or 16 lb. paper, change the data of the address below from the maintenance panel.



## 3.2. Printer Features

### 3.2.1. External view of the printer

The following are the important parts of the printer and function of each part.

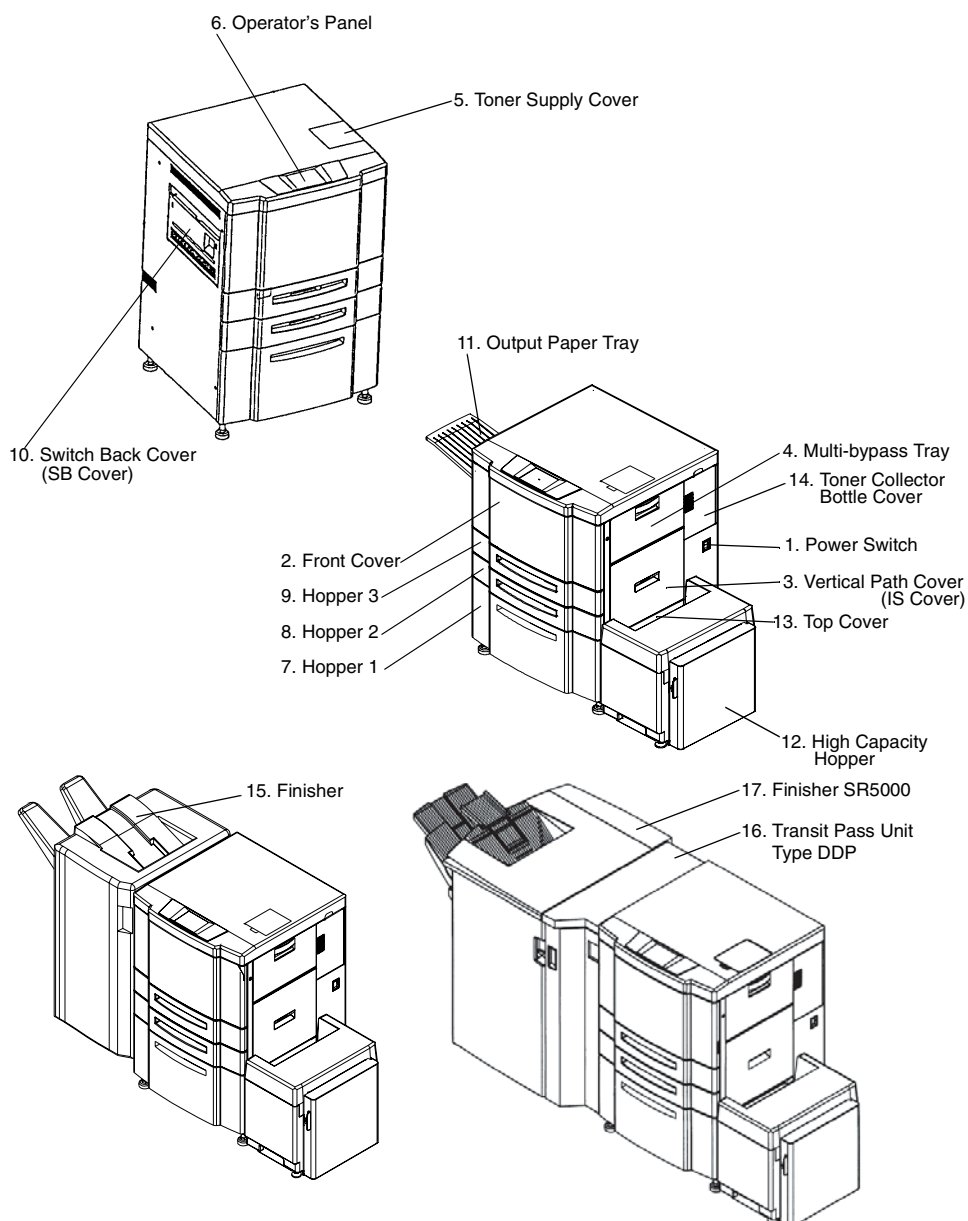


Figure 3-1. Printer Covers

- |                        |                                                                                                            |
|------------------------|------------------------------------------------------------------------------------------------------------|
| 1. Power Switch        | The Power Switch is to turn the printer on and off.                                                        |
| 2. Front Cover         | The Front Cover opens when replacing each unit, clearing paper jams or cleaning the inside of the printer. |
| 3. Vertical Path Cover | Vertical Path Cover opens when clearing paper jams.                                                        |
| 4. Multi-bypass Tray   | Multi-bypass Tray loads 150 sheets of paper.                                                               |
| 5. Toner Supply Cover  | The Toner Supply Cover is for supplying the toner.                                                         |

6. Operator's Panel The Operator's Panel has an indicator, display, status indicator and keys. The display shows printer status and error messages. The keys are not used to start, stop or set the printer functions.
7. Hopper 1 Hopper 1 loads 2,000 sheets of paper
8. Hopper 2 Hopper 2 loads 500 sheets of paper
9. Hopper 3 Hopper 3 loads 500 sheets of paper.
10. Switch Back Cover The Switch Back Cover opens when clearing paper jams.
11. Output Paper Tray Printed paper is ejected onto the Output Paper Tray.
12. High capacity Hopper (Option) High Capacity Hopper loads 3,000 sheets of paper.
13. Top Cover Top Cover opens when clearing paper jams.
14. Toner Collector Bottle Cover Open to replace the Toner Collector Bottle
15. Finisher
16. Transit Pass Unit Type DDP When Finisher SR5000 is connected, it is necessary.
17. Finisher SR5000

### **3.2.2. Using the Printer's Operator Panel**

#### **3.2.2. (1) Functions of the Operator Panel**

##### **3.2.2. (1) -1 For Operation**

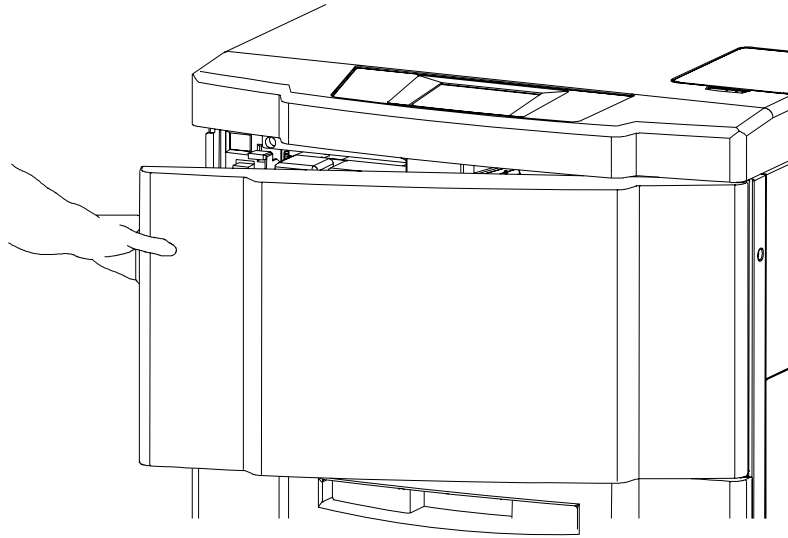
##### **3.2.2. (1) -2 For Maintenance**

### 3.2.2. (2) Replacing the Developer Mix.

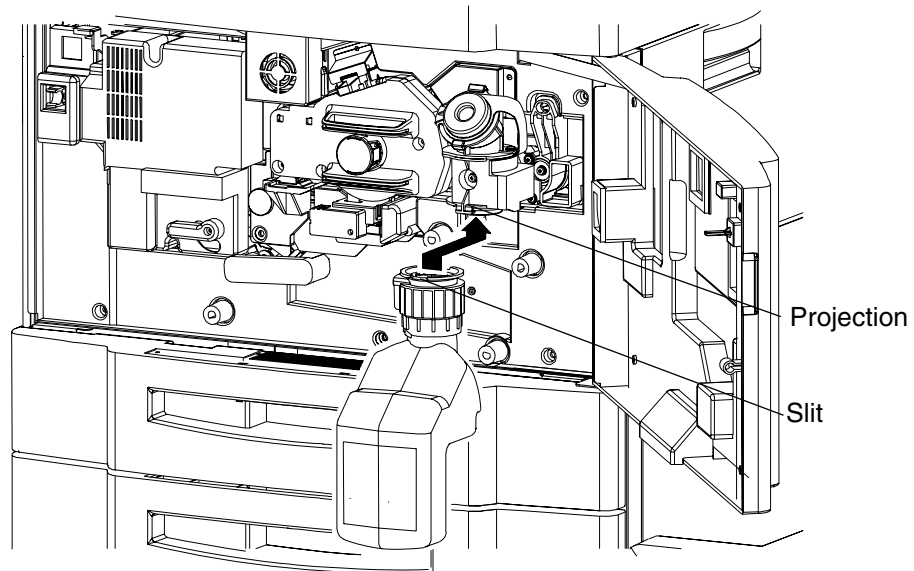
Replace the developer when DEVELOPER LIFE REPLACE DEV is displayed on the Operator's Panel. Follow the steps below to replace the developer mix.

Exhausting the Developer mix

1. Take the empty developer bottle out of the box.
2. Open the Front Cover of the printer.



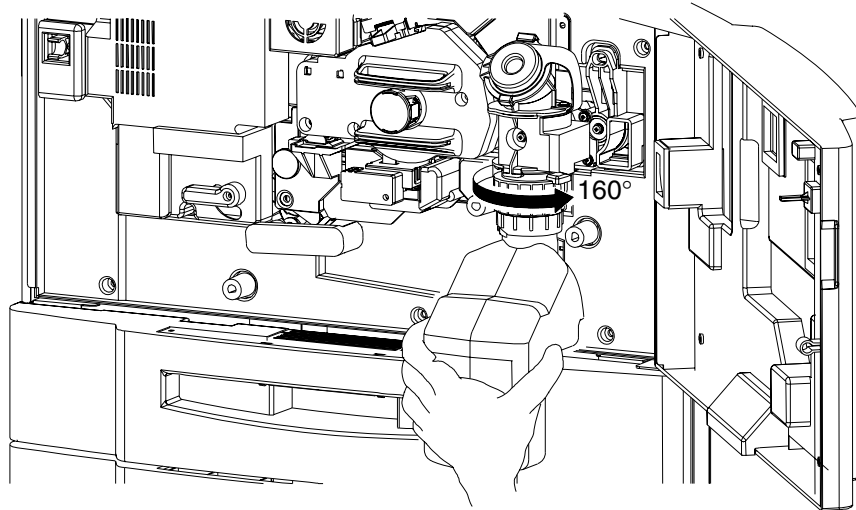
3. Attach the empty developer bottle to the Developer Unit Duct so that the slit of the bottle fits the projection of the duct.



4. Lock the empty developer bottle.

Turn the developer bottle cap about 160 degrees in the arrow direction shown below.

**Note:** Hold the developer bottle when you turn the cap so that the bottle is not turned together with the cap.



5. Press the key to start the developer exhaust process.

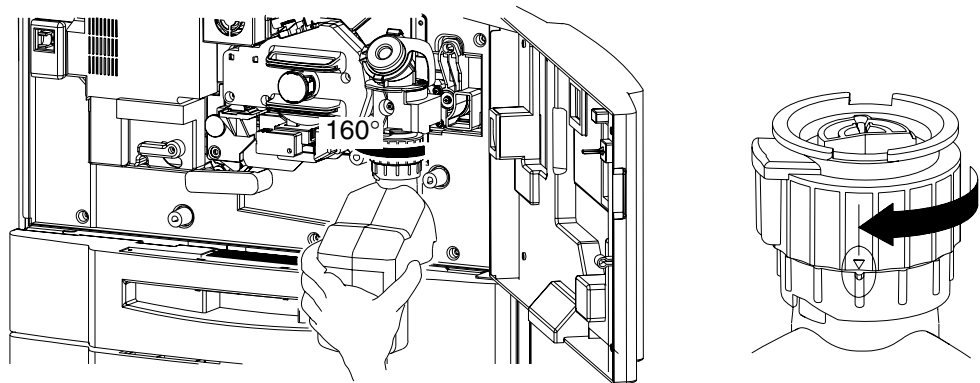
The exhaust process takes about 1 minute and 50 seconds.

(Max: 2 minutes and 10 seconds)

6. Remove the developer bottle.

Turn the developer bottle cap back about 160 degrees until it clicks in the arrow direction shown below, and remove the developer bottle.

**Note:** Be careful not to drop the developer mix left on the bottle cap.

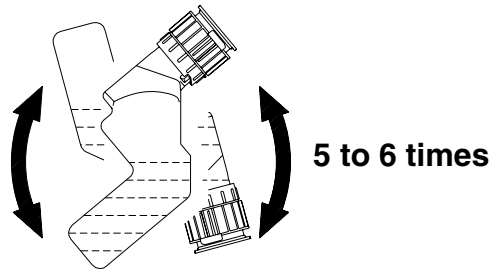


**CAUTION:**  
Dispose of the developer bottle after the exhaust process as incombustible waste.

**WARNING:**  
Never attempt to burn the developer bottle. Developer bottles are dangerous when exposed to fire.

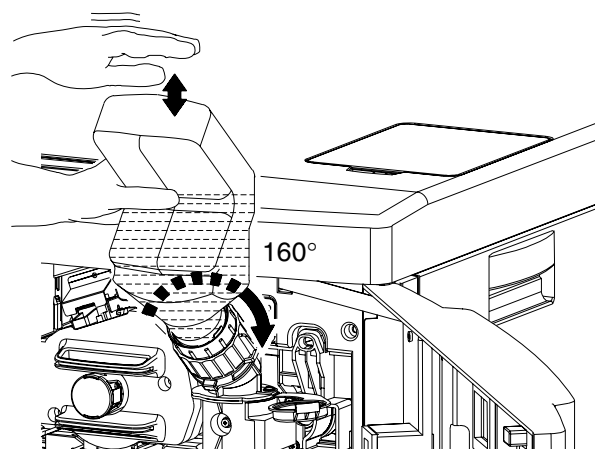
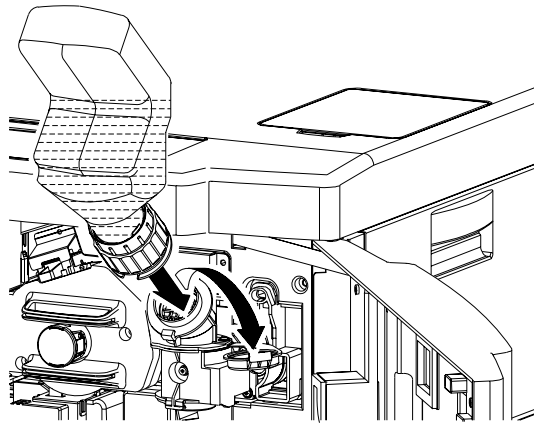
### Supplying the Developer mix

1. Take the new developer bottle out of the box and shake it.

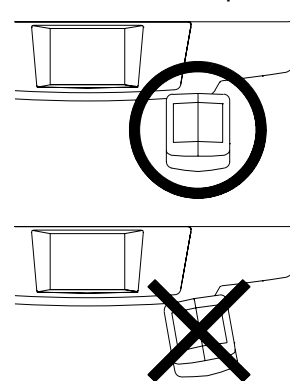


2. Remove the duct cap from the Developer Duct.  
Install the new developer bottle onto the Developer Duct.  
Turn the developer bottle cap about 160 degrees in the arrow direction shown below.

**Note:** Hold the developer bottle when you turn the cap so that the bottle is not turned together with the cap.



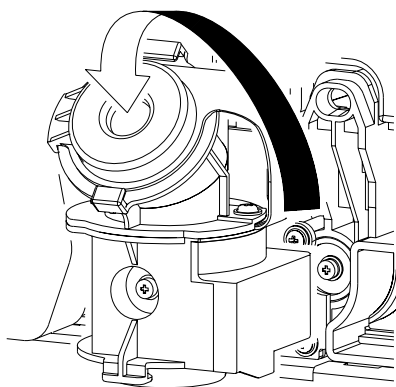
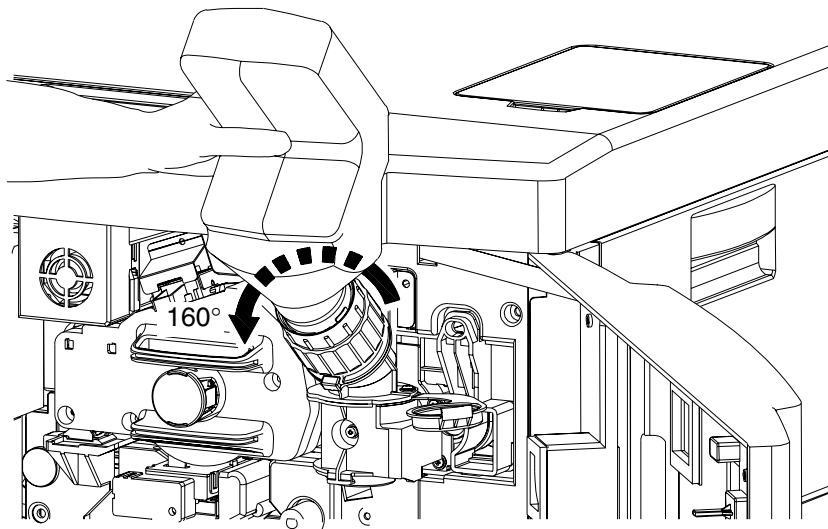
View from the top



3. Press the key to start the developer supplying process.  
The supplying process takes about 2 minutes. (Max: 4 minutes and 30 seconds)  
**Note:** Tap the top of the developer bottle to make it empty.
4. Remove the developer bottle.

Turn the developer bottle cap back about 160 degrees in the arrow direction shown below.

Put the duct cap back on the Developer Duct.



5. Clean any spilled developer on the printer.
6. Close the Front Cover of the printer.  
The COVER OPEN FRONT COVER error message appears. Press the key to clear the error message.

**Note:** Keep the empty developer bottle after supplying the developer mix in order to use it for the next developer exhaust process.

### 3.3. Removing procedures of the covers

#### 3.3.1. Names of Covers and Opening directions

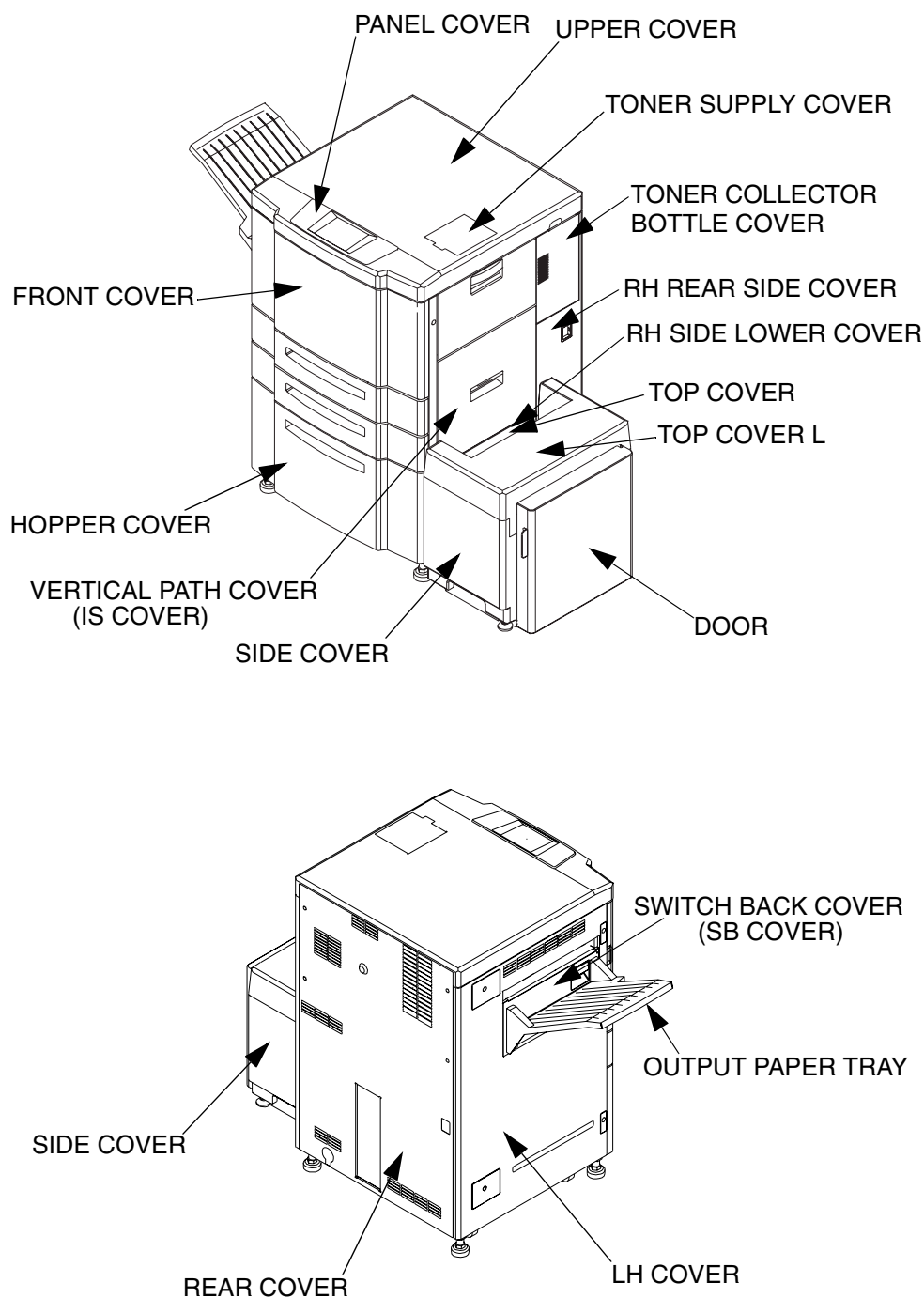


Figure 3-2. Names of Covers



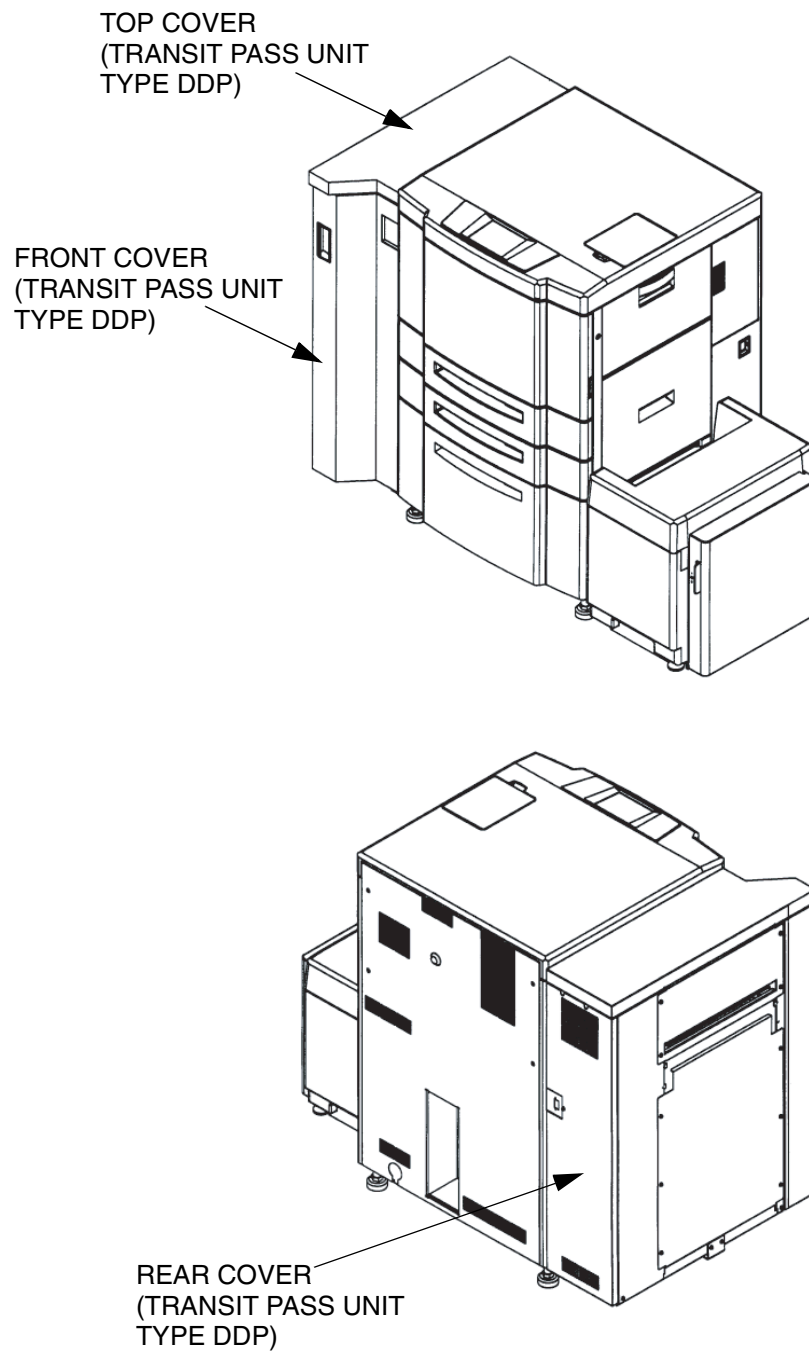


Figure 3-3. Names of Covers

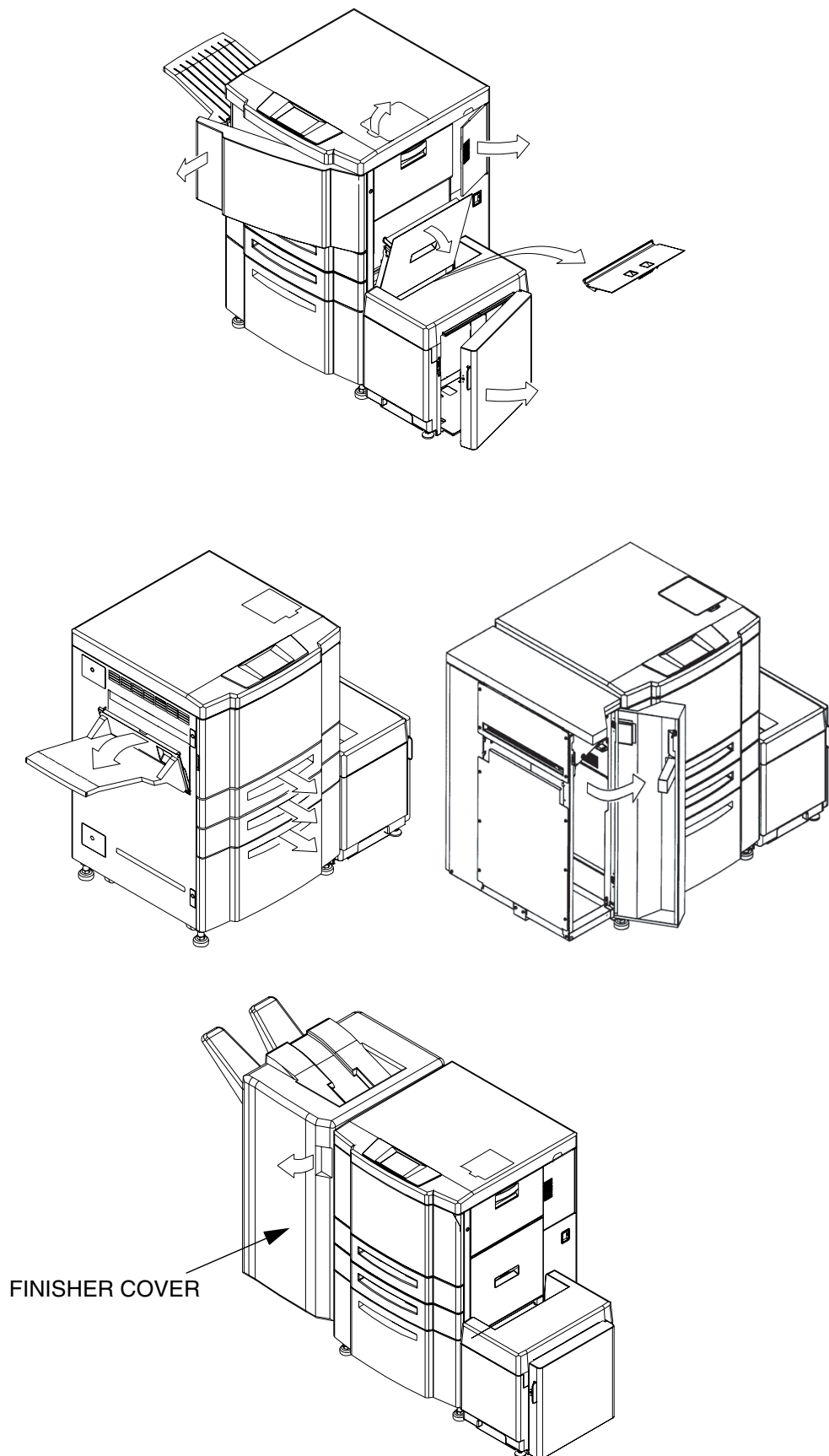
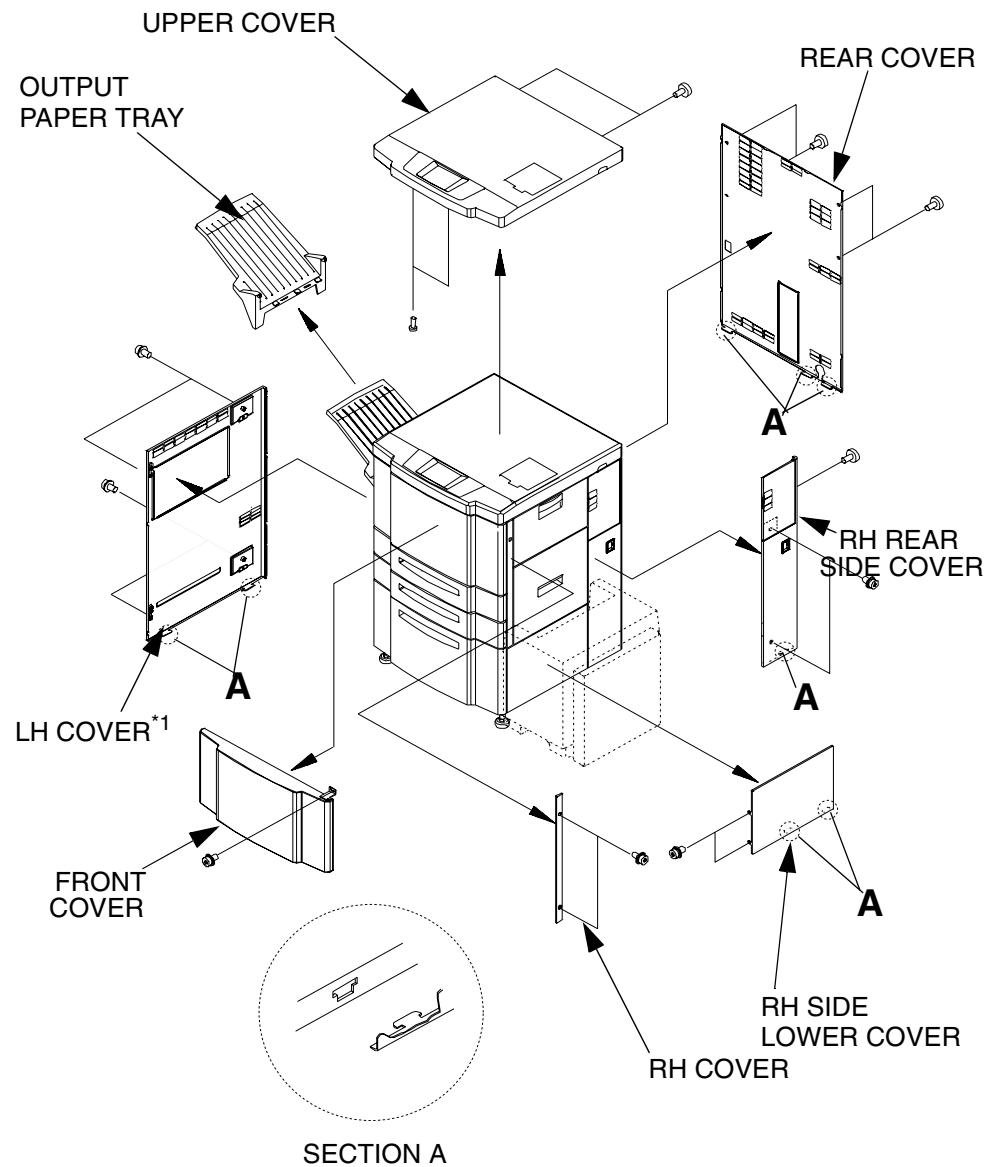


Figure 3-4. Opening direction of Covers

### 3.3.2. Removing of the Covers

#### 3.3.2. (1) Removing of the Engine Covers



\*1 REMOVE THE CONNECTED UNIT (FINISHER OR TRANSIT PASS UNIT TYPE DDP OR CONTAINER STACKER) BEFORE REMOVING THE LH COVER.

Figure 3-5. Removing the Engine Covers

### 3.3.2. (2) Removing of the High Capacity Hopper Covers

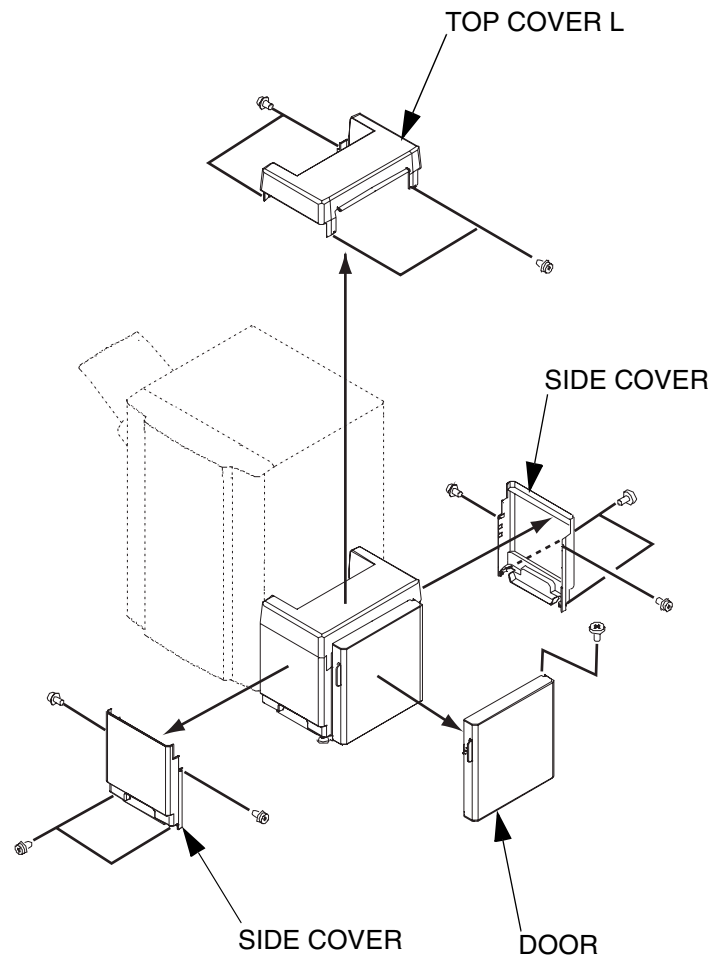


Figure 3-6. Removing of the High Capacity Hopper Covers

### 3.3.2. (3) Removing of the Transit Pass Unit Type DDP Covers

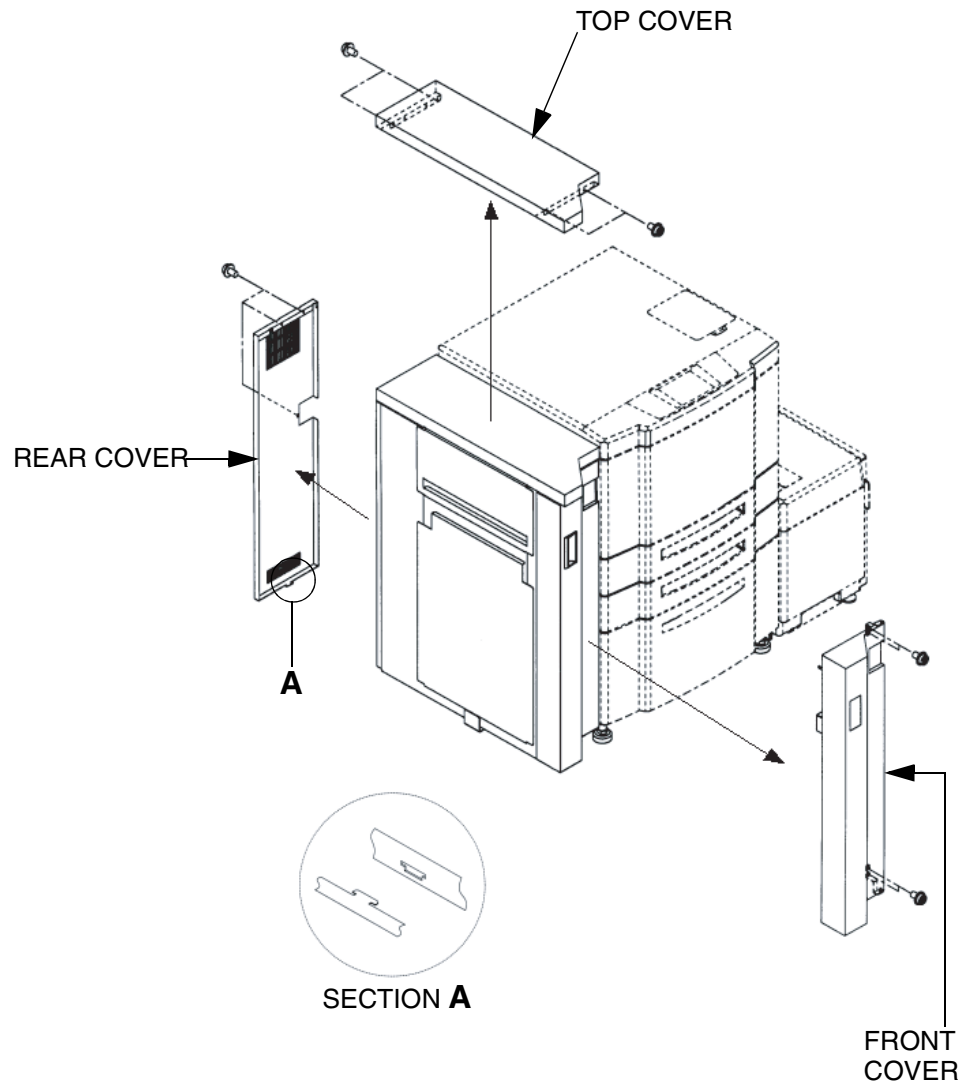


Figure 3-7. Removing of the Transit Pass Unit Type DDP Covers

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## 3.4. Powering ON and OFF the Printer

### 3.4.1. Powering ON and OFF

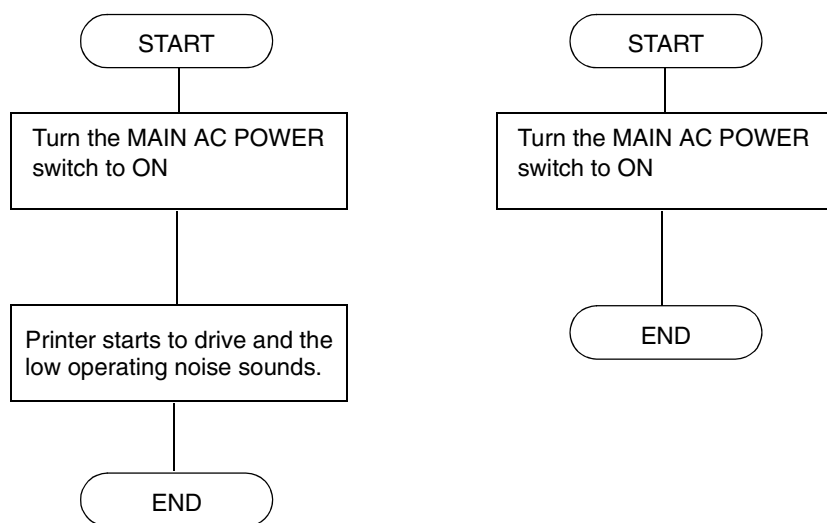


Figure 3-8. Powering ON & OFF

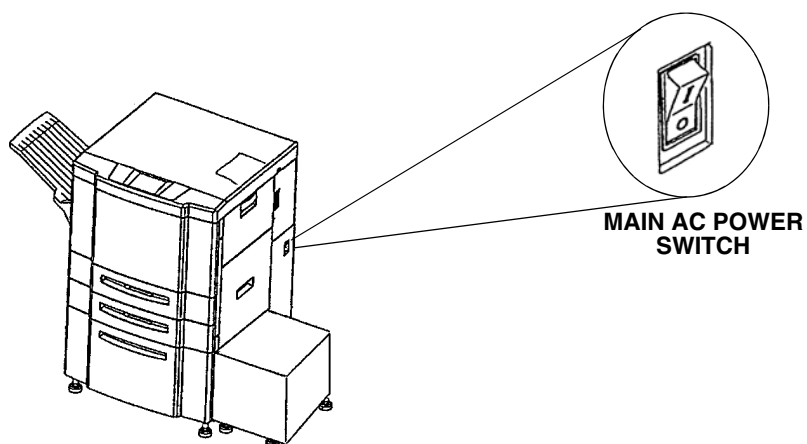


Figure 3-9. Location of the Main AC Power Switch

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### 3.5. Where Adjustments and Removals are prohibited

The following units and parts are particularly assembled and adjusted. Therefore, never disassemble them.

1. Optical Unit ..... This is assembled and adjusted in precision.
2. Developer Unit ..... The position of the Doctor Blade is adjusted in precision.
3. Fuser Unit ..... These are consumable parts.
4. Fuser Cleaner Web ..... These are consumable parts.
5. Parts painted in red ..... These are specially adjusted.

## 3.6. Tools Required

### 3.6.1. List of all tools

The tools which are necessary for servicing the printer are listed below.

Table 3-1. Names of Special Tools

| Item | Name               | Q'ty | Part Number            | APPLICATION                                 | Maint. Ref. | NOTE                                                                                           |
|------|--------------------|------|------------------------|---------------------------------------------|-------------|------------------------------------------------------------------------------------------------|
| 1.   | Interlock Stopper  | 2    | G1552542<br>(7534159)  | To be used when the front cover is open.    |             | To be shipped with the Printer as the accessory (when ordered) or may be purchased separately. |
| 2.   | Wire Cleaning Tool | 1    | G1501426<br>(N320426A) | To clean the wire of the Corotron Assembly. |             |                                                                                                |
| 3.   | Stapler Jig        | 1    | G8581458<br>(N426067)  | Used at staple position Adjustment.         |             | It is purchased separately.                                                                    |

Table 3-2. Names of General Tools - Scale in metric

| Item | NAME                                                  | SPECIFICATION                                       |
|------|-------------------------------------------------------|-----------------------------------------------------|
| 1.   | Philips Screwdriver                                   | No. 2 MediumShaft length ; approx. 100mm            |
| 2.   | Philips Screwdriver                                   | No. 2 LongShaft length ; approx. 300mm              |
| 3.   | Philips Screwdriver                                   | No. 2 ShortShaft length ; approx. 40mm              |
| 4.   | Screwdriver                                           | Tip width; approx. 6mm, shaft length; approx. 100mm |
| 5.   | Jeweller's Screwdriver Set                            | Tip width 2.0 to 2.5 mm                             |
| 6.   | Hex Wrench Set                                        | 2.5, 3.0mm size must be included in the set         |
| 7.   | Long Nose Chain Plier with side cutter (Radio Nipper) |                                                     |
| 8.   | Blower Brush                                          |                                                     |
| 9.   | Push-Pull Scale                                       | 1 kg                                                |
| 10.  | Thickness Gauge Set                                   | 0.05, 0.1, 0.2, 0.3, 0.4, 0.5 mm                    |
| 11.  | Adjustable Open End Wrench                            | Span 30mm                                           |
| 12.  | Pincette (Tweezers)                                   |                                                     |

Table 3-3. Measurement Instruments

| Item | NAME               | USAGE                                 |
|------|--------------------|---------------------------------------|
| 1.   | Digital Multimeter | Measurement of Voltage and Resistance |

**Note:** It may not be possible to measure correctly if the multimeter (analogue multimeter) of Low Input Impedance is used.

Table 3-4. Consumables

| Item | NAME            | USAGE                                      |
|------|-----------------|--------------------------------------------|
| 1.   | Lint-Free Cloth | Cleaning contaminated areas of the printer |



Table 3-5. Others

| Item | NAME                                                                                                                           | USAGE                                      |
|------|--------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|
| 1.   | Vacuum Cleaner (toner proof)                                                                                                   | Cleaning contaminated areas of the printer |
| 2.   | Note PC (for update of Controller S/W)<br>OS: WindowsNT 4.0 or Windows 2000<br>Storage: CD-ROM drive<br>LAN: 10BaseT/100BaseTx |                                            |
| 3.   | Ethernet Cable<br>- Category 5 UTP/STP<br>- Cross cable                                                                        |                                            |

### 3.6.2. Usage of the Interlock Stopper

The Interlock Stopper is used to check with the Front Cover open if the printer operates correctly.

**CAUTION:**  
Stop the print operation prior to performing the operation.

**Applicable jigs and tools : Interlock Stopper.**

#### [Usage Procedures]

1. Open the Front Cover. (Refer to item 3.3.1 on page 3-9)
2. Insert the Interlock Stopper into the Interlock Switch and fix it there.
3. Check if the printer operates correctly.

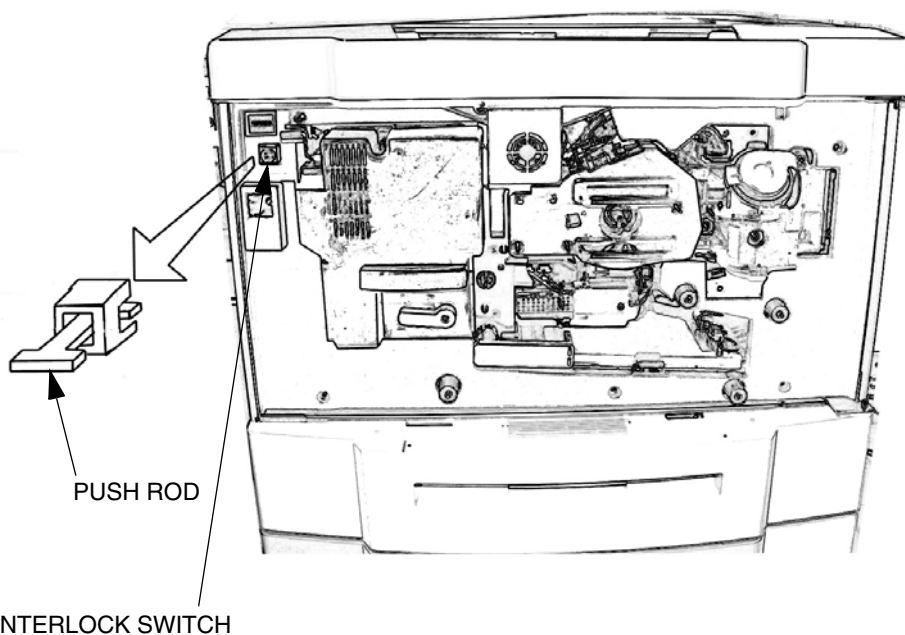


Figure 3-10. Usage of the Interlock Stopper

#### [Assembling Procedures]

Release the Interlock Stopper after performing checks. Do not leave it in the printer.

## 3.7. Motor Locations

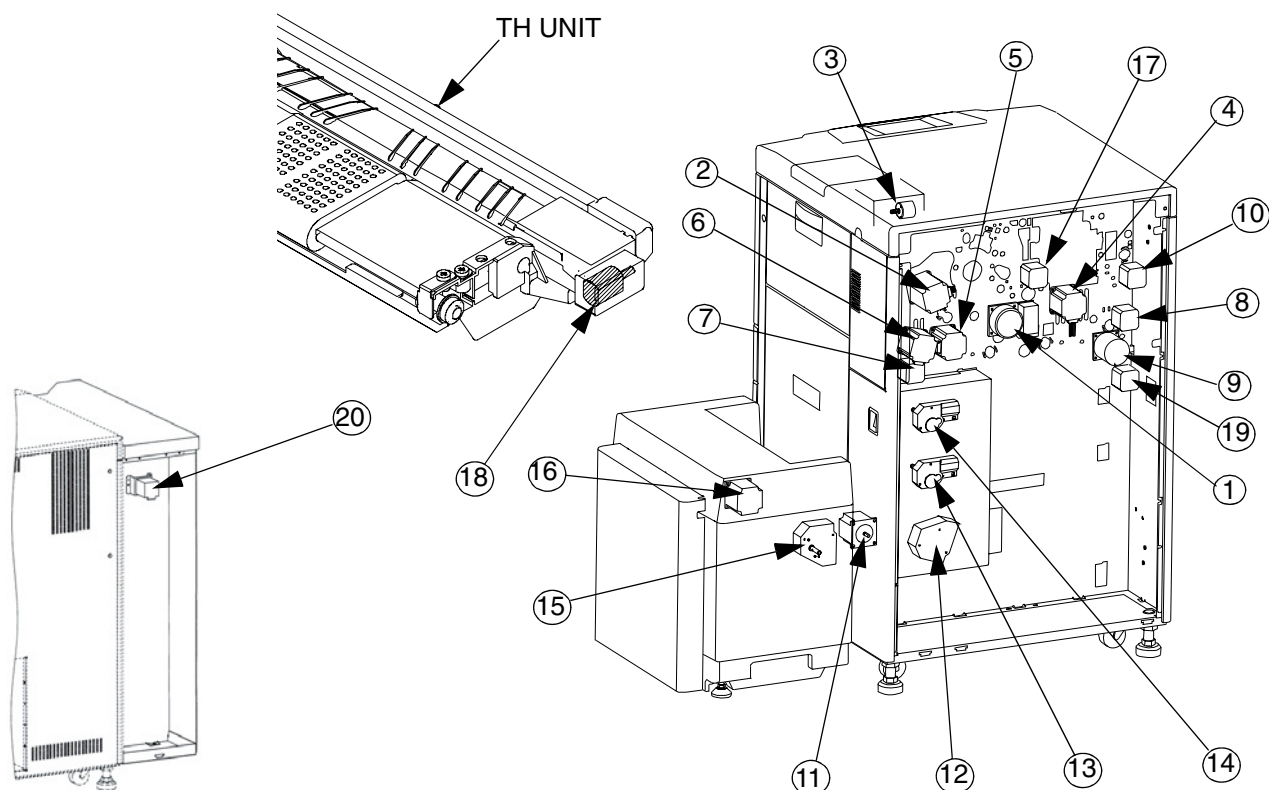


Figure 3-11. Location of all Motors

Table 3-6. Names of Motors

| No. | Name               | Marks | Motor Connector | Maintenance Ref. + Page                  | Parts Catalog |                                      |       | Remarks            |
|-----|--------------------|-------|-----------------|------------------------------------------|---------------|--------------------------------------|-------|--------------------|
|     |                    |       |                 |                                          | List          | Item No.                             | Block |                    |
| 1.  | Drum Motor         | M701  | P/J728          | <a href="#">7.1.2.5. (7) Page 7-52</a>   | 8             | 4 <sup>*1</sup><br>25 <sup>*2</sup>  | PMK   | Drum Drive Unit    |
| 2.  | DEV. Motor         | M321  | P/J321          | <a href="#">7.1.2.3. (3) Page 7-13</a>   | 6             | 76                                   | PMD   | Developer Unit     |
| 3.  | Toner Feed Motor   | M322  | P/J329          | <a href="#">7.1.2.4. (2) Page 7-37</a>   | 7             | 8                                    | PMH   | Toner Hopper Unit  |
| 4.  | HR Motor           | M501  | P/J729          | <a href="#">7.1.2.5. (8) Page 7-53</a>   | 8             | 16                                   | PMK   | Drum Drive Unit    |
| 5.  | Registration Motor | M301  | P/J725          | <a href="#">7.1.3.10 Page 7-141</a>      | 9             | 50                                   | PH    | Paper Feed Block   |
| 6.  | Timing Motor       | M302  | P/J726          | <a href="#">7.1.3.11 Page 7-142</a>      | 9             | 50                                   | PH    | Paper Feed Block   |
| 7.  | Return Motor       | M305  | P/J727          | <a href="#">7.1.3.12 Page 7-143</a>      | 9             | 51                                   | PH    | Paper Feed Block   |
| 8.  | Flip Motor         | M503  | P/J731          | <a href="#">7.1.3.7 Page 7-138</a>       | 9             | 12                                   | PH    | Paper Feed Block   |
| 9.  | SB Motor           | M504  | P/J733          | <a href="#">7.1.3.8 Page 7-139</a>       | 9             | 12                                   | PH    | Paper Feed Block   |
| 10. | PF Out Motor       | M505  | P/J730          | <a href="#">7.1.3.9 Page 7-140</a>       | 9             | 12                                   | PH    | Paper Feed Block   |
| 11. | Hopper Feed Motor  | M401  | P/J405          | <a href="#">7.1.4.3. (11) Page 7-180</a> | 18            | 103                                  | PTV   | Paper Supply Block |
| 12. | HP1 Table Motor    | M402  | P/J431          | <a href="#">7.1.4.3. (12) Page 7-181</a> | 18            | 36 <sup>*1</sup><br>37 <sup>*2</sup> | PTV   | Paper Supply Block |
| 13. | HP2 Table Motor    | M403  | P/J             | <a href="#">7.1.4.3. (13) Page 7-182</a> | 18            | 26 <sup>*1</sup><br>28 <sup>*2</sup> | PTV   | Paper Supply Block |

Table 3-6. Names of Motors

| No. | Name                             | Marks | Motor Connector | Maintenance Ref. + Page                  | Parts Catalog |                                      |       | Remarks                    |
|-----|----------------------------------|-------|-----------------|------------------------------------------|---------------|--------------------------------------|-------|----------------------------|
|     |                                  |       |                 |                                          | List          | Item No.                             | Block |                            |
| 14. | HP3 Table Motor                  | M404  | P/J             | <a href="#">7.1.4.3. (13) Page 7-182</a> | 18            | 26 <sup>*1</sup><br>28 <sup>*2</sup> | PTV   | Paper Supply Block         |
| 15. | HP5 Table Motor                  | M422  | P/J440          | <a href="#">7.2.18 Page 7-237</a>        | 19            | 9 <sup>*1</sup><br>18 <sup>*2</sup>  | LH    | High Capacity Hopper       |
| 16. | HP5 Feed Motor                   | M421  | P/J424          | <a href="#">7.2.15 Page 7-231</a>        | 19            | 162                                  | LH    | High Capacity Hopper       |
| 17. | TH Motor                         | M308  | P/J736          | <a href="#">7.1.2.5. (9) Page 7-54</a>   | 8             | 62                                   | PMK   | Drum Drive Unit            |
| 18. | Corotron Cleaner Motor           | M304  | P/J338          | <a href="#">7.1.3.4. (14) Page 7-107</a> | 13            | 51                                   | PHT   | Paper Feed Block           |
| 19. | SB Gate Motor                    | M506  | P/J533          | <a href="#">7.1.3.16 Page 7-147</a>      | 9             | 24                                   | PH    | Paper Feed Block           |
| 20. | Transit Pass Unit Type DDP Motor | M801  | P/J421          | <a href="#">7.3.4 Page 7-272</a>         | 20            | 19                                   | TP    | Transit Pass Unit Type DDP |

\*1 Do not use these parts for RoHS

\*2 Use these parts only for RoHS (from S/N Q47604xxxxx )

## 3.8. Clutch Locations

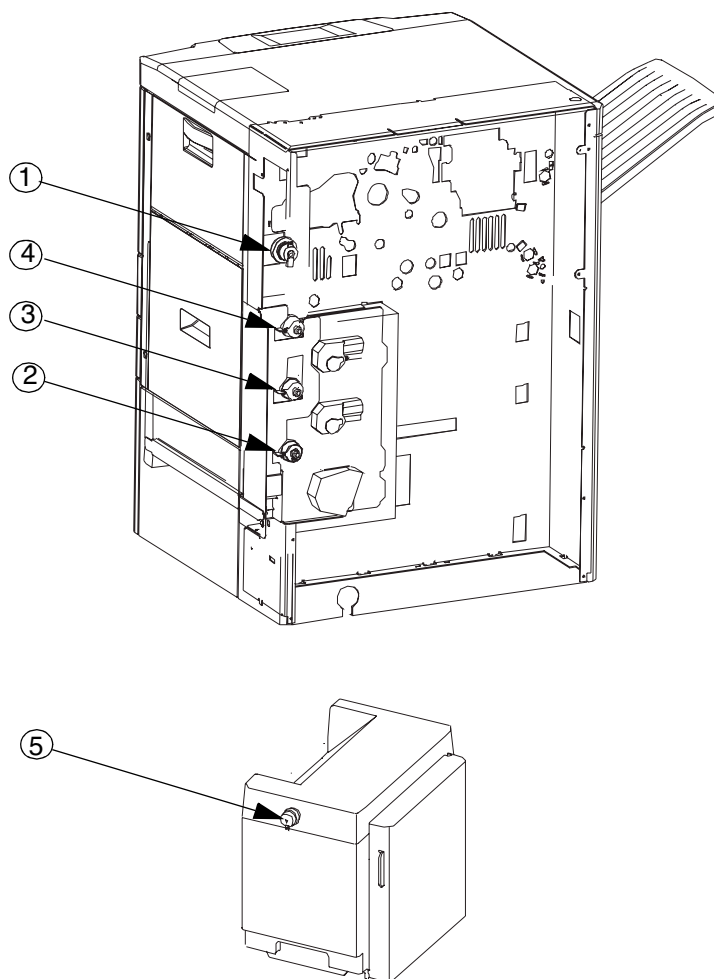


Figure 3-12. Location of all Clutches

Table 3-7. Names of Clutches

| No. | Name            | Marks | Clutch Connector | Maintenance Ref. + Page                 | Parts Catalog |          |       | Remarks                |
|-----|-----------------|-------|------------------|-----------------------------------------|---------------|----------|-------|------------------------|
|     |                 |       |                  |                                         | List          | Item No. | Block |                        |
| 1.  | MB Pick Clutch  | L301  | P/J330           | <a href="#">7.1.3.2. (7) Page 7-77</a>  | 11            | 40       | PHM   | Multi-bypass Tray Unit |
| 2.  | HP1 Pick Clutch | L401  | P/J434           | <a href="#">7.1.4.3. (7) Page 7-176</a> | 18            | 68       | PTV   | Vertical Path Assembly |
| 3.  | HP2 Pick Clutch | L402  | P/J435           | <a href="#">7.1.4.3. (7) Page 7-176</a> | 18            | 68       | PTV   | Vertical Path Assembly |
| 4.  | HP3 Pick Clutch | L403  | P/J436           | <a href="#">7.1.4.3. (7) Page 7-176</a> | 18            | 68       | PTV   | Vertical Path Assembly |
| 5.  | HP5 Pick Clutch | L421  | P/J441           | <a href="#">7.2.23 Page 7-253</a>       | 19            | 119      | LH    | High Capacity Hopper   |

### 3.9. Fan Locations

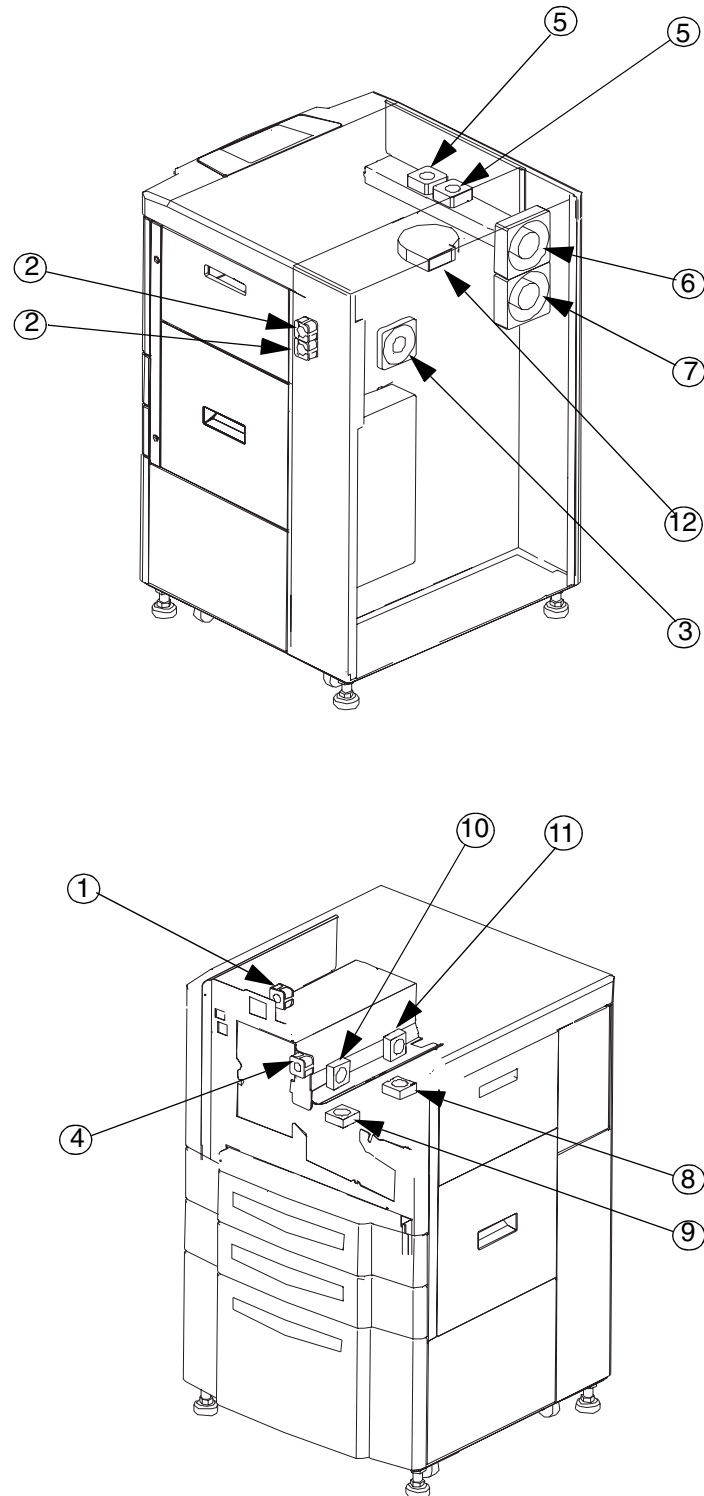


Figure 3-13. Location of all Fans & Blowers

Table 3-8. Names of Fans & Blowers

| No. | Name                | Marks | Fan Connector | Maintenance Ref. + Page                 | Parts Catalog |          |       | Remarks        |
|-----|---------------------|-------|---------------|-----------------------------------------|---------------|----------|-------|----------------|
|     |                     |       |               |                                         | List          | Item No. | Block |                |
| 1.  | Mirror Cooling Fan  | B101  | P/J117        | <a href="#">7.1.5.1. (1) Page 7-193</a> | 1             | 166      | K     | Final Assembly |
| 2.  | DEV Cooling Fan     | B323  | P/J332        | <a href="#">7.1.5.1. (6) Page 7-198</a> | 1             | 10       | K     | Final Assembly |
| 3.  | DEV Rear Fan        | B321  | P/J332        | <a href="#">7.1.5.1. (5) Page 7-197</a> | 1             | 78       | K     | Final Assembly |
| 4.  | Charger Fan         | B301  | P/J333        | <a href="#">7.1.5.1. (3) Page 7-195</a> | 1             | 144      | K     | Final Assembly |
| 5.  | DC Fan(Paper Out)   | B504  | P/J525        | <a href="#">7.1.5.1. (4) Page 7-196</a> | 1             | 34       | K     | Final Assembly |
| 6.  | HR Fan 1            | B505  | P/J527        | <a href="#">7.1.5.1. (2) Page 7-194</a> | 1             | 19       | K     | Final Assembly |
| 7.  | HR Fan 2            | B506  | P/J530        | <a href="#">7.1.5.1. (2) Page 7-194</a> | 1             | 19       | K     | Final Assembly |
| 8.  | TH Fan Ass'y (1)    | B302  | P/J337        | <a href="#">7.1.3.4. (8) Page 7-101</a> | 13            | 60       | PHT   | TH Unit        |
| 9.  | TH Fan Ass'y (2)    | B303  | P/J343        | <a href="#">7.1.3.4. (9) Page 7-102</a> | 13            | 69       | PHT   | TH Unit        |
| 10. | Separating Blower 1 | B304  | P/J344        |                                         |               |          |       |                |
| 11. | Separating Blower 2 | B305  | P/J345        |                                         |               |          |       |                |
| 12. | Ozone Blower        | B311  | P/J348        | <a href="#">7.1.5.1. (7) Page 7-199</a> | 1             | 4        | K     | Final Assembly |

## 3.10. Solenoid Locations

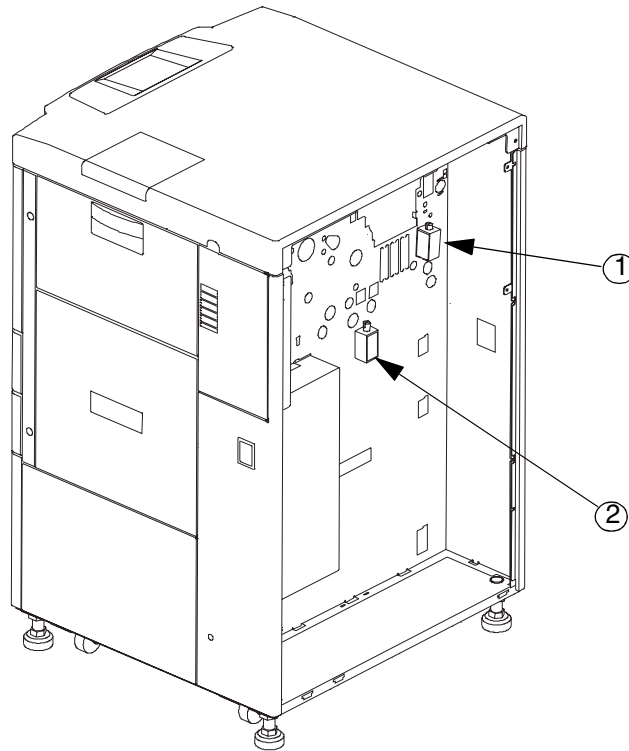


Figure 3-14. Location of all Solenoids

Table 3-9. Names of Solenoids

| No. | Name                | Marks | Solenoid Connector | Maintenance Ref. + Page                  | Parts Catalog |          |       | Remarks              |
|-----|---------------------|-------|--------------------|------------------------------------------|---------------|----------|-------|----------------------|
|     |                     |       |                    |                                          | List          | Item No. | Block |                      |
| 1.  | Flip Solenoid       | L501  | P/J732             | <a href="#">7.1.3.15 Page 7-146</a>      | 9             | 13       | PH    | Paper Feed Block     |
| 2.  | Solenoid (Decurler) | L350  | P/J350             | <a href="#">7.1.3.6. (14) Page 7-135</a> | 15            | 60       | PHD   | Duplex Path Assembly |

## 3.11. Switch & Sensor Locations

### 3.11.1. Switch Locations

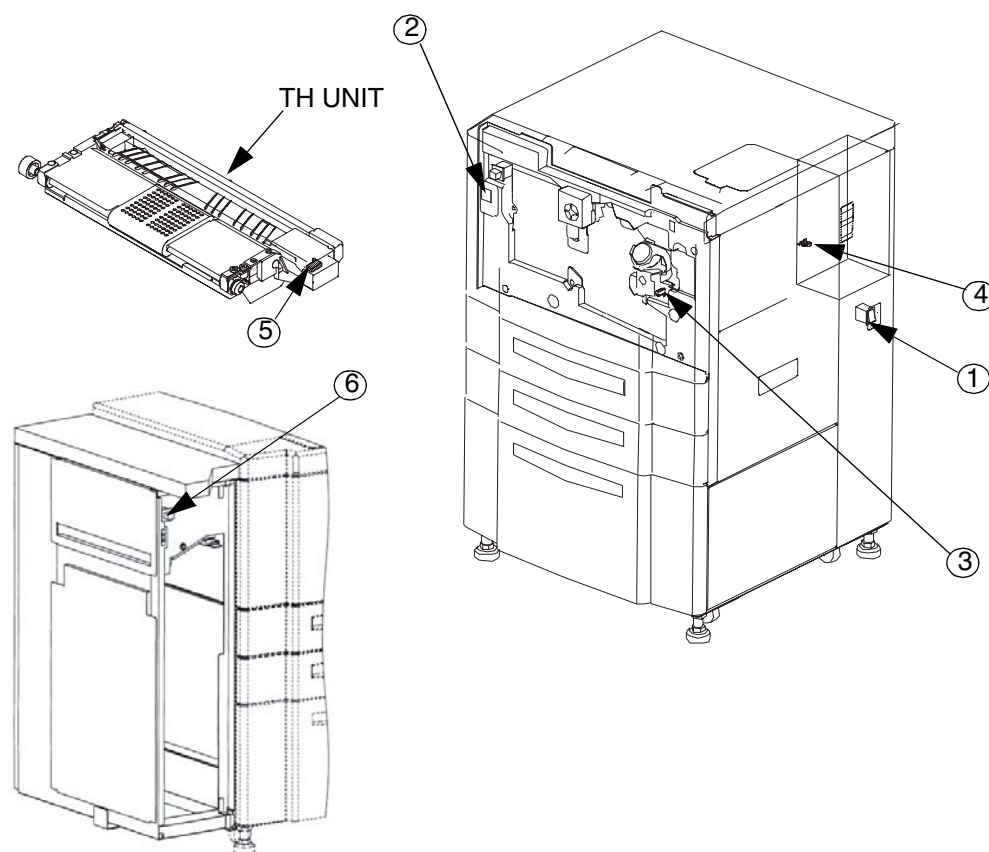


Figure 3-15. Location of all Switches

Table 3-10. Names of Switches

| No. | Name                                    | Maintenance<br>Ref. + Page               | Parts Catalog |             |       | Remarks                       |
|-----|-----------------------------------------|------------------------------------------|---------------|-------------|-------|-------------------------------|
|     |                                         |                                          | List          | Item<br>No. | Block |                               |
| 1.  | Power Switch                            |                                          |               |             |       |                               |
| 2.  | Push Button<br>Switch                   |                                          | 1             | 157         | K     | Final Assembly                |
| 3.  | DEV Bottle Set<br>Sensor                | <a href="#">7.1.2.3. (2) Page 7-12</a>   | 6             | 85          | PMD   | Developer Unit                |
| 4.  | Toner Collector<br>Bottle Set<br>Sensor | <a href="#">7.1.2.6. (2) Page 7-62</a>   | 3             | 37          | PM    | EP Section                    |
| 5.  | Cleaner Position<br>Sensor              | <a href="#">7.1.3.4. (15) Page 7-108</a> | 13            | 53          | PHT   | Paper Feed Block              |
| 6.  | Push Switch                             | <a href="#">7.3.11 Page 7-279</a>        | 20            | 24          | TP    | Transit Pass Unit<br>Type DDP |



3.11.2. Sensor Locations

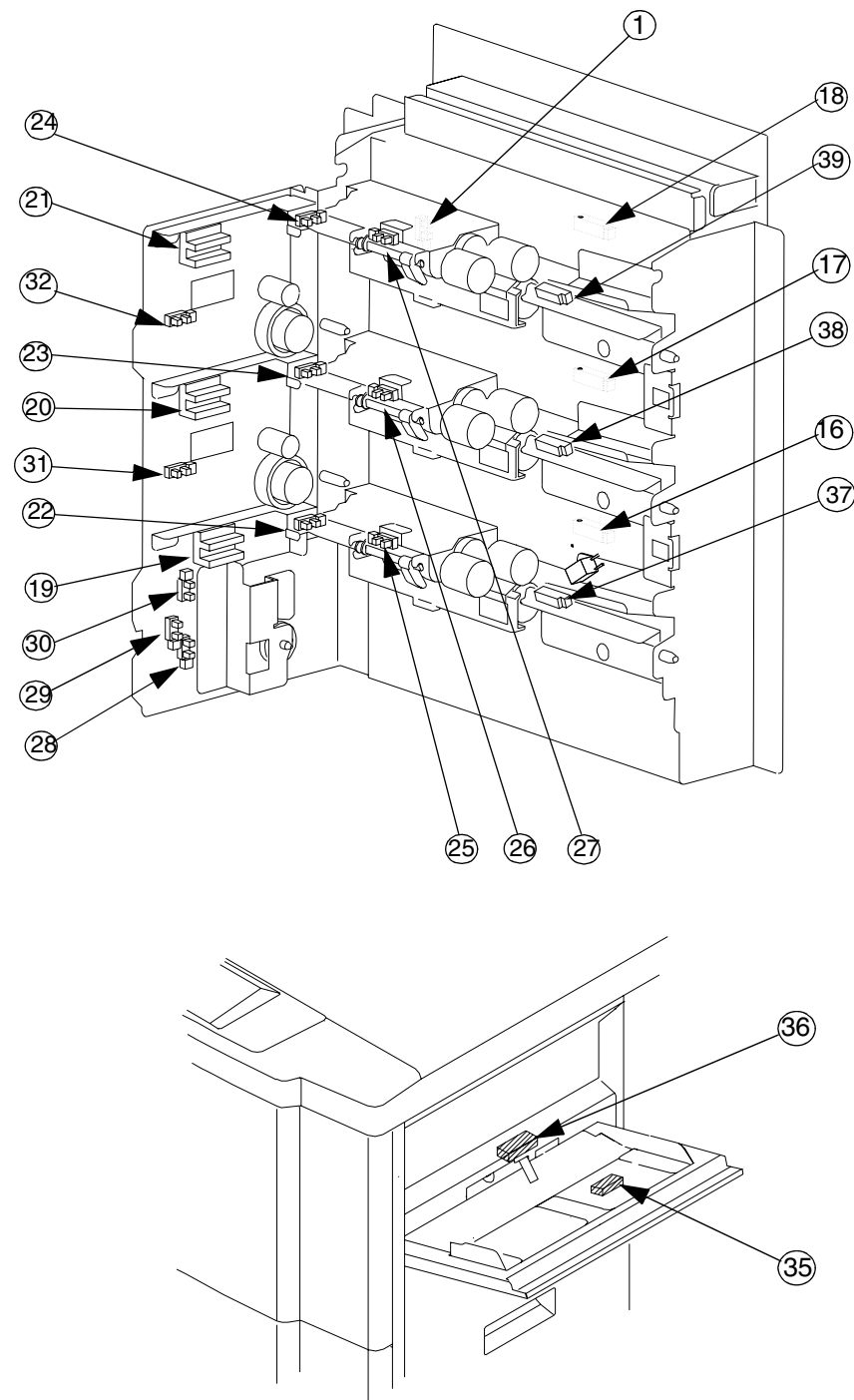


Figure 3-16. -1 Location of all Sensors

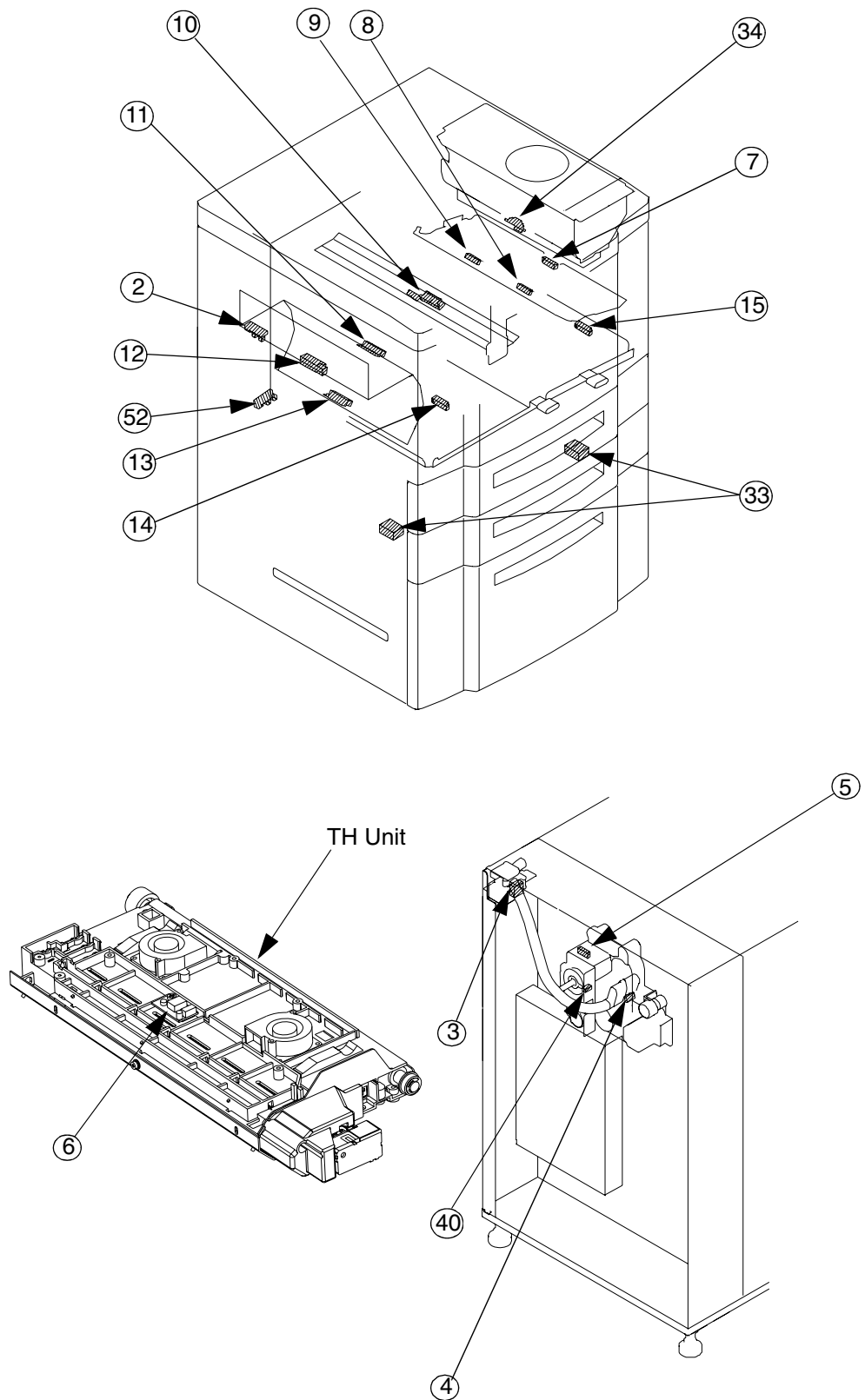


Figure 3-17. -2 Location of all Sensors

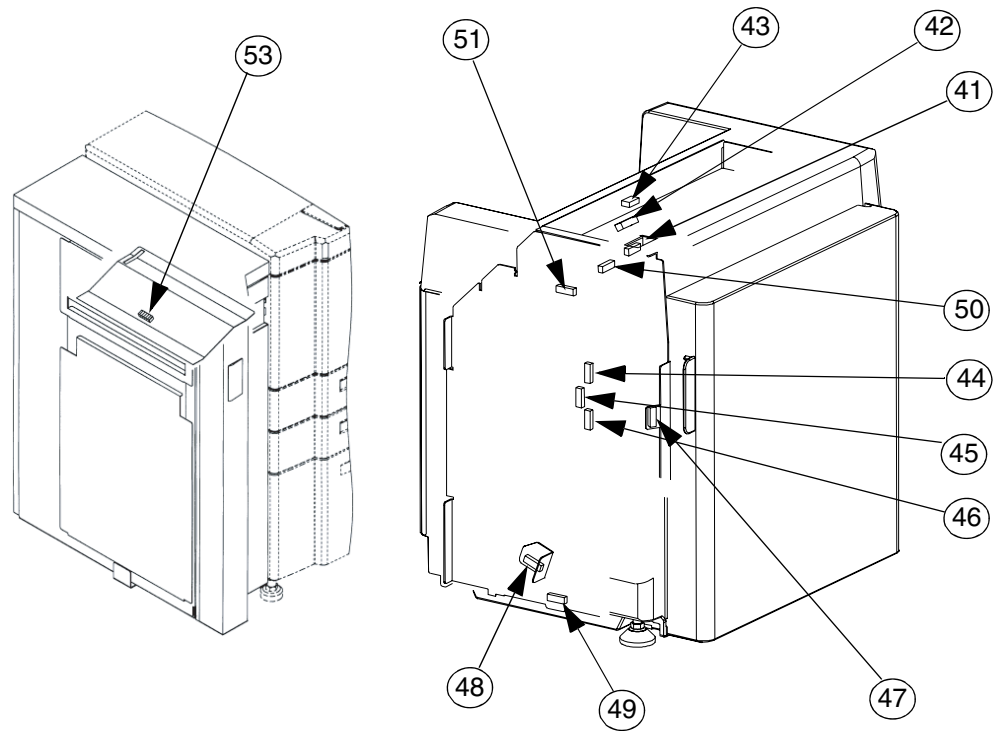


Figure 3-18. -3 Location of all Sensors

Table 3-11. Names of Sensors

| No. | Name                        | Maintenance<br>Ref. + Page            | Parts Catalog |             |       | Remarks                |
|-----|-----------------------------|---------------------------------------|---------------|-------------|-------|------------------------|
|     |                             |                                       | List          | Item<br>No. | Block |                        |
| 1.  | IS Cover Open Sensor        | 7.1.4.3. (21) Page 7-190              | 18            | 21          | PTV   | Vertical Path Assembly |
| 2.  | SB Cover Sensor             |                                       | 14            | 17          | PHS   | Switch Back Assembly   |
| 3.  | Toner Sensor (Recycle Unit) | 7.1.2.6. (5) Page 7-65<br>Bottle Full | 3             | 29          | PM    | EP Section             |
| 4.  | Recycle REV Sensor          | 7.1.2.6. (4) Page 7-64                | 3             | 28          | PM    | EP Section             |
| 5.  | Drum REV Sensor             | 7.1.2.5. (3) Page 7-48                | 8             | 51          | PMK   | Drum Drive Unit        |
| 6.  | Temperature Humidity Sensor | 7.1.3.4. (7) Page 7-100               | 13            | 17          | PHT   | TH Unit Assembly       |
| 7.  | Timing Sensor               | 7.1.3.3. (4) Page 7-88                | 12            | 29          | PHR   | Resist Assembly        |
| 8.  | Skew Sensor 1               | 7.1.3.3. (5) Page 7-89                | 12            | 29          | PHR   | Resist Assembly        |
| 9.  | Skew Sensor 2               | 7.1.3.3. (5) Page 7-89                | 12            | 29          | PHR   | Resist Assembly        |
| 10. | Drum Wrap Sensor            | 7.1.5.1. (12) Page 7-204              | 3             | 1           | PM    | EP Section             |
| 11. | Flip Sensor                 | 7.1.3.5. (5) Page 7-117               | 14            | 16          | PHS   | Switch Back Assembly   |
| 12. | PF Out Sensor               | 7.1.3.5. (7) Page 7-119               | 14            | 18          | PHS   | Switch Back Assembly   |

Table 3-11. Names of Sensors

| No. | Name                        | Maintenance<br>Ref. + Page               | Parts Catalog |             |       | Remarks                |
|-----|-----------------------------|------------------------------------------|---------------|-------------|-------|------------------------|
|     |                             |                                          | List          | Item<br>No. | Block |                        |
| 13. | SB Sensor                   | <a href="#">7.1.3.5. (6) Page 7-118</a>  | 14            | 16          | PHS   | Switch Back Assembly   |
| 14. | Return Sensor 1             | <a href="#">7.1.3.6. (6) Page 7-127</a>  | 15            | 11          | PHD   | Duplex Path            |
| 15. | Return Sensor 2             | <a href="#">7.1.3.6. (7) Page 7-128</a>  | 15            | 11          | PHD   | Duplex Path            |
| 16. | IS Feed Sensor 1            | <a href="#">7.1.4.3. (20) Page 7-189</a> | 18            | 10          | PTV   | Vertical Path Assembly |
| 17. | IS Feed Sensor 2            | <a href="#">7.1.4.3. (20) Page 7-189</a> | 18            | 10          | PTV   | Vertical Path Assembly |
| 18. | IS Feed Sensor 3            | <a href="#">7.1.4.3. (20) Page 7-189</a> | 18            | 10          | PTV   | Vertical Path Assembly |
| 19. | HP1 Size sensor             | <a href="#">7.1.4.3. (15) Page 7-184</a> | 18            | 23          | PTV   | Vertical Path Assembly |
| 20. | HP2 Size sensor             | <a href="#">7.1.4.3. (15) Page 7-184</a> | 18            | 23          | PTV   | Vertical Path Assembly |
| 21. | HP3 Size sensor             | <a href="#">7.1.4.3. (15) Page 7-184</a> | 18            | 23          | PTV   | Vertical Path Assembly |
| 22. | HP1 Height Sensor           | <a href="#">7.1.4.3. (17) Page 7-186</a> | 18            | 22          | PTV   | Vertical Path Assembly |
| 23. | HP2 Height Sensor           | <a href="#">7.1.4.3. (17) Page 7-186</a> | 18            | 22          | PTV   | Vertical Path Assembly |
| 24. | HP3 Height Sensor           | <a href="#">7.1.4.3. (17) Page 7-186</a> | 18            | 22          | PTV   | Vertical Path Assembly |
| 25. | HP1 Empty Sensor            | <a href="#">7.1.4.3. (14) Page 7-183</a> | 18            | 65          | PTV   | Vertical Path Assembly |
| 26. | HP2 Empty Sensor            | <a href="#">7.1.4.3. (14) Page 7-183</a> | 18            | 65          | PTV   | Vertical Path Assembly |
| 27. | HP3 Empty Sensor            | <a href="#">7.1.4.3. (14) Page 7-183</a> | 18            | 65          | PTV   | Vertical Path Assembly |
| 28. | HP1 Rest Sensor A           | <a href="#">7.1.4.3. (19) Page 7-188</a> | 18            | 22          | PTV   | Vertical Path Assembly |
| 29. | HP1 Rest Sensor B           | <a href="#">7.1.4.3. (19) Page 7-188</a> | 18            | 22          | PTV   | Vertical Path Assembly |
| 30. | HP1 Rest Sensor C           | <a href="#">7.1.4.3. (19) Page 7-188</a> | 18            | 22          | PTV   | Vertical Path Assembly |
| 31. | HP2 Rest Sensor A           | <a href="#">7.1.4.3. (19) Page 7-188</a> | 18            | 22          | PTV   | Vertical Path Assembly |
| 32. | HP3 Rest Sensor A           | <a href="#">7.1.4.3. (19) Page 7-188</a> | 18            | 22          | PTV   | Vertical Path Assembly |
| 33. | HP1 Upper Limit Sensor      | <a href="#">7.1.4.3. (16) Page 7-185</a> | 1             | 199         | K     | Final Assembly         |
| 34. | Toner Sensor (Toner Hopper) | <a href="#">7.1.2.4. (3) Page 7-39</a>   | 7             | 12          | PMH   | Toner Hopper           |
| 35. | MBF Size sensor             |                                          | 11            | 12          | PHM   | Multi-bypass Feeder    |
| 36. | MBF Empty Sensor            | <a href="#">7.1.3.2. (6) Page 7-76</a>   | 11            | 59          | PHM   | Multi-bypass Feeder    |

Table 3-11. Names of Sensors

| No. | Name                   | Maintenance<br>Ref. + Page               | Parts Catalog |             |       | Remarks                    |
|-----|------------------------|------------------------------------------|---------------|-------------|-------|----------------------------|
|     |                        |                                          | List          | Item<br>No. | Block |                            |
| 37. | HP1 Pick Sensor        | <a href="#">7.1.4.3. (18) Page 7-187</a> | 18            | 18          | PTV   | Vertical Path Assembly     |
| 38. | HP2 Pick Sensor        | <a href="#">7.1.4.3. (18) Page 7-187</a> | 18            | 18          | PTV   | Vertical Path Assembly     |
| 39. | HP3 Pick Sensor        | <a href="#">7.1.4.3. (18) Page 7-187</a> | 18            | 18          | PTV   | Vertical Path Assembly     |
| 40. | MG Sensor              | <a href="#">7.1.2.5. (4) Page 7-49</a>   | 8             | 34          | PMK   | Drum Drive Unit            |
| 41. | HP5 Size Sensor        | <a href="#">7.2.1 Page 7-217</a>         | 19            | 184         | LH    | High Capacity Hopper       |
| 42. | HP5 Feed Sensor        | <a href="#">7.2.8 Page 7-224</a>         | 19            | 199         | LH    | High Capacity Hopper       |
| 43. | HP5 Top Cover Sensor   | <a href="#">7.2.9 Page 7-225</a>         | 19            | 22          | LH    | High Capacity Hopper       |
| 44. | HP5 Rest Sensor (A)    | <a href="#">7.2.11 Page 7-227</a>        | 19            | 21          | LH    | High Capacity Hopper       |
| 45. | HP5 Rest Sensor (B)    | <a href="#">7.2.11 Page 7-227</a>        | 19            | 21          | LH    | High Capacity Hopper       |
| 46. | HP5 Rest Sensor (C)    | <a href="#">7.2.11 Page 7-227</a>        | 19            | 21          | LH    | High Capacity Hopper       |
| 47. | HP5 Door Sensor        | <a href="#">7.2.12 Page 7-228</a>        | 19            | 21          | LH    | High Capacity Hopper       |
| 48. | HP5 Over Run Sensor    | <a href="#">7.2.13 Page 7-229</a>        | 19            | 91          | LH    | High Capacity Hopper       |
| 49. | HP5 Lower Limit Sensor | <a href="#">7.2.14 Page 7-230</a>        | 19            | 21          | LH    | High Capacity Hopper       |
| 50. | HP5 Empty Sensor       | <a href="#">7.2.21 Page 7-250</a>        | 19            | 134         | LH    | High Capacity Hopper       |
| 51. | HP5 Height Sensor      | <a href="#">7.2.22 Page 7-251</a>        | 19            | 21          | LH    | High Capacity Hopper       |
| 52. | SB Gate Sensor         | <a href="#">7.1.3.17 Page 7-148</a>      | 9             | 25          | PH    | Paper Feed Block           |
| 53. | Transit Pass Sensor    | <a href="#">7.3.10 Page 7-278</a>        | 20            | 10          | TP    | Transit Pass Unit Type DDP |

### 3.12. PCB & Power Supply Locations

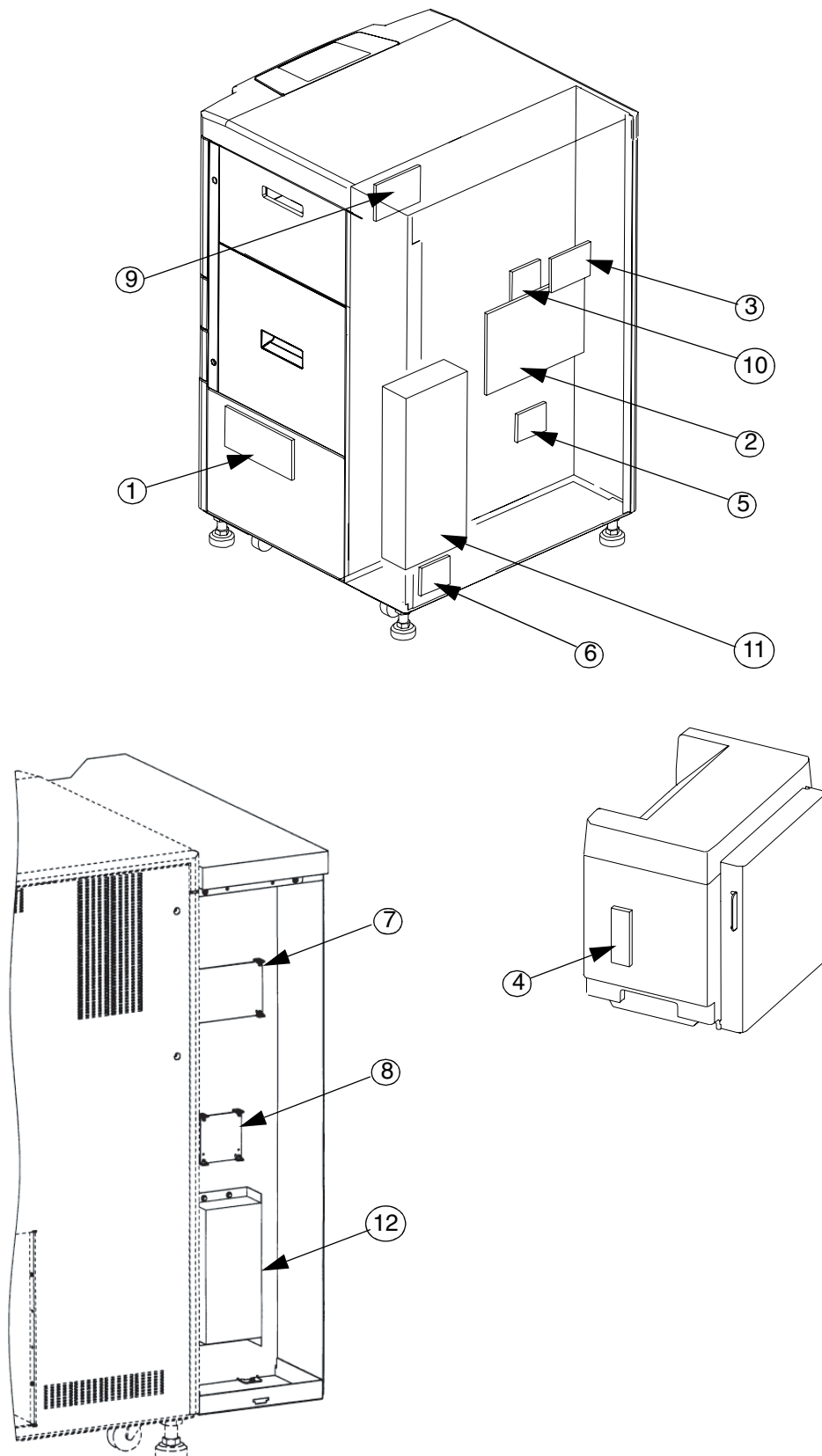


Figure 3-19. Location of all PCBs & Power Supplies

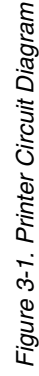
Table 3-12. Names of PCBs & Power Supplies

| No.                    | Name                                | Maintenance<br>Ref. + Page | Parts Catalog |                                        |       | Description                                  | Remarks                                                                                          |
|------------------------|-------------------------------------|----------------------------|---------------|----------------------------------------|-------|----------------------------------------------|--------------------------------------------------------------------------------------------------|
|                        |                                     |                            | List          | Item<br>No.                            | Block |                                              |                                                                                                  |
| PCB Locations          |                                     |                            |               |                                        |       |                                              |                                                                                                  |
| 1.                     | HP092<br>Assembly                   | 7.1.4.3. (22) Page 7-191   | 18            | 143                                    | PTV   | Hopper Part<br><br>Vertical Path<br>Assembly | 500 Sheet Hopper<br>(Hopper 2,3)<br>2000 Sheet Hopper<br>(Hopper 1)<br>Vertical Path<br>Assembly |
| 2.                     | CPxxx<br>Assembly                   | 7.1.5.1. (13) Page 7-205   | 1             | 180 <sup>*1</sup><br>192 <sup>*2</sup> | K     | Final<br>Assembly                            |                                                                                                  |
| 3.                     | OCxxx<br>Assembly                   | 7.1.5.1. (17) Page 7-209   | 1             | 62                                     | K     | Final<br>Assembly                            |                                                                                                  |
| 4.                     | AHxxx<br>Assembly                   | 7.2.10 Page 7-226          | 19            | 24                                     | LH    | Option<br>Hopper<br>Part                     | 3000 Sheet Hopper                                                                                |
| 5.                     | AC011<br>Assembly                   | 7.1.5.1. (22) Page 7-215   | 1             | 220                                    | K     | Final<br>Assembly                            |                                                                                                  |
| 6.                     | Heater Driver                       | 7.1.5.1. (23) Page 7-216   | 1             | 225                                    | K     | Final<br>Assembly                            |                                                                                                  |
| 7.                     | ED089<br>Assembly                   | 7.3.7 Page 7-275           | 20            | 48                                     | TP    | Transit Pass<br>Unit Type<br>DDP             |                                                                                                  |
| 8.                     | RB301<br>Assembly                   | 7.3.8 Page 7-276           | 20            | 44                                     | TP    | Transit Pass<br>Unit Type<br>DDP             |                                                                                                  |
| Power Supply Locations |                                     |                            |               |                                        |       |                                              |                                                                                                  |
| 9.                     | High Voltage<br>Power Supply<br>(1) | 7.1.5.1. (14) Page 7-206   | 1             | 177                                    | K     | Final<br>Assembly                            |                                                                                                  |
| 10.                    | High Voltage<br>Power Supply<br>(2) | 7.1.5.1. (15) Page 7-207   | 1             | 178                                    | K     | Final<br>Assembly                            |                                                                                                  |
| 11.                    | Power Supply                        | 7.1.5.1. (16) Page 7-208   | 1             | 175                                    | K     | Final<br>Assembly                            |                                                                                                  |
| 12.                    | Power Supply                        | 7.3.9 Page 7-277           | 20            | 41                                     | TP    | Transit Pass<br>Unit Type<br>DDP             |                                                                                                  |

\*1 Do not use these parts for RoHS

\*2 Use these parts only for RoHS (from S/N Q47604xxxxx )

## DDP92 WHOLE WIRING DIAGRAM





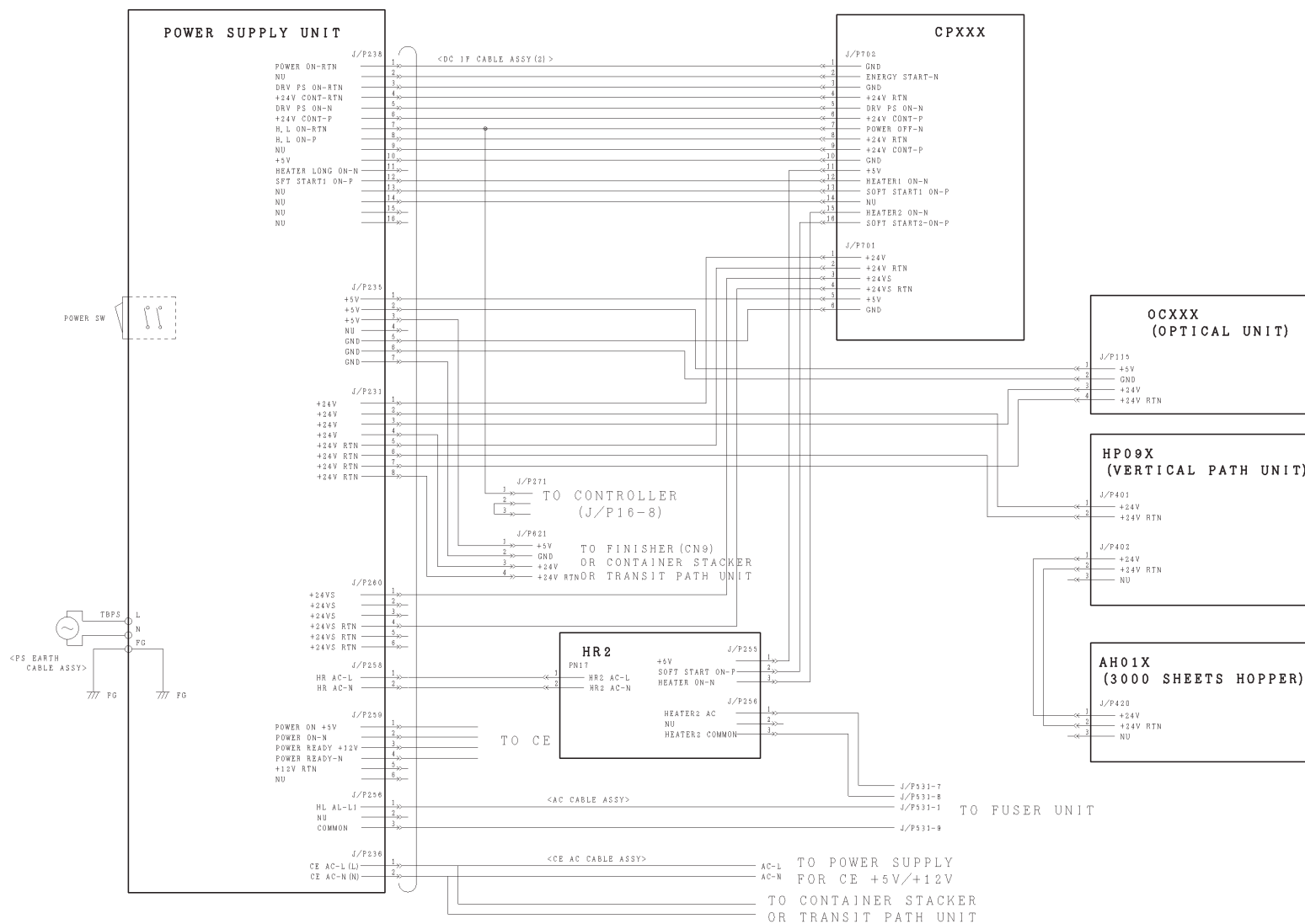


*Figure 3-2. Printer Circuit Diagram*

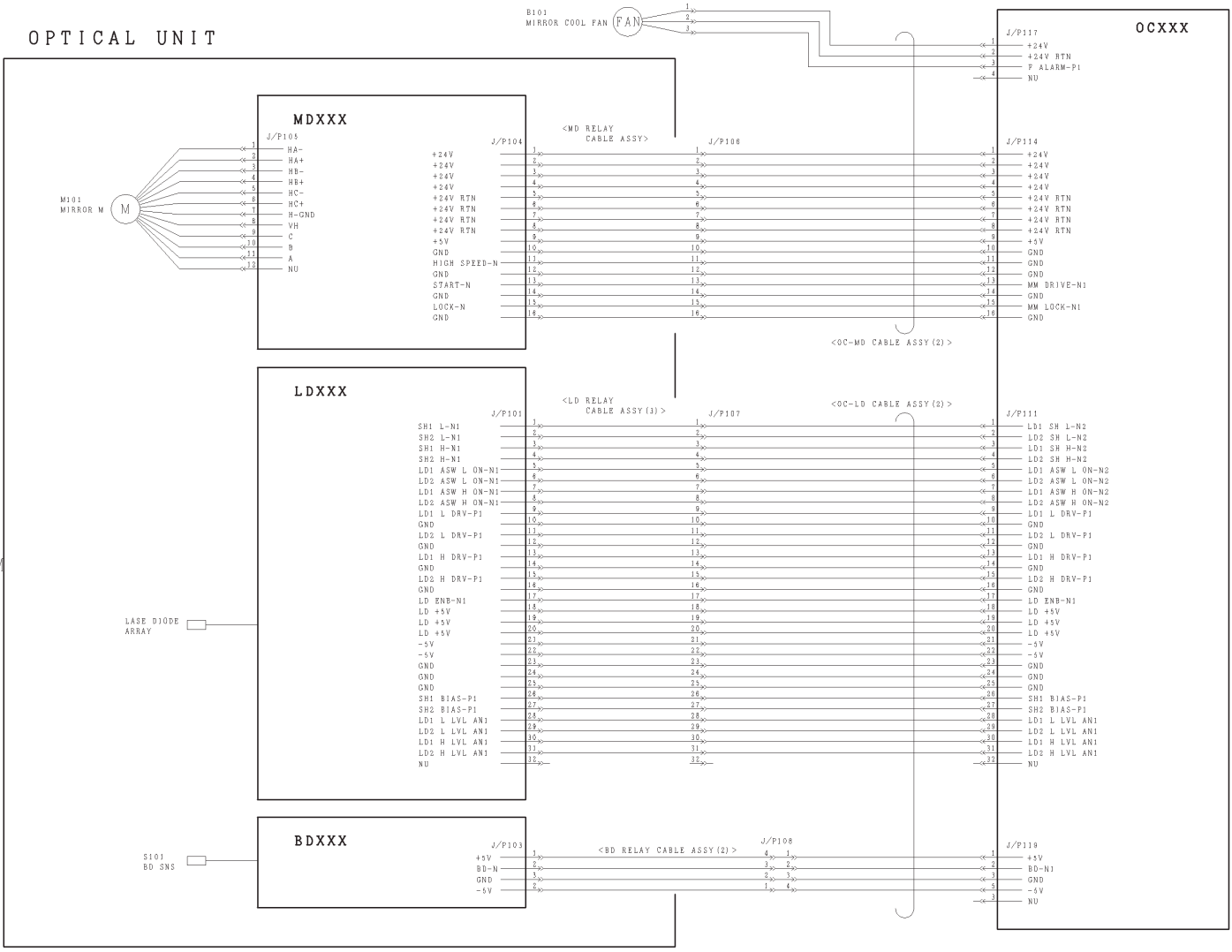


Figure 3-3. Printer Circuit Diagram





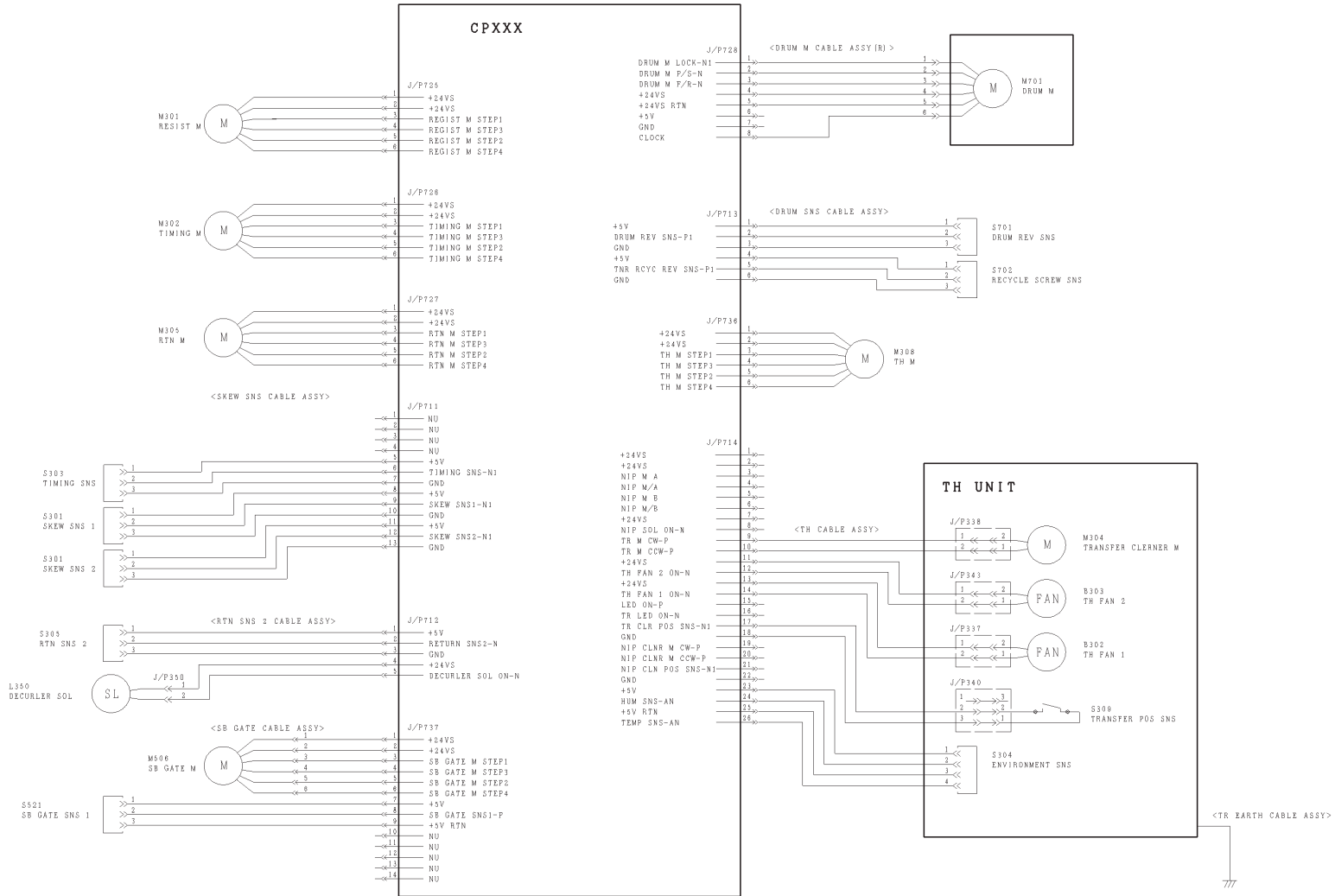
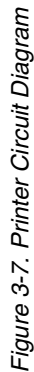


Figure 3-6. Printer Circuit Diagram



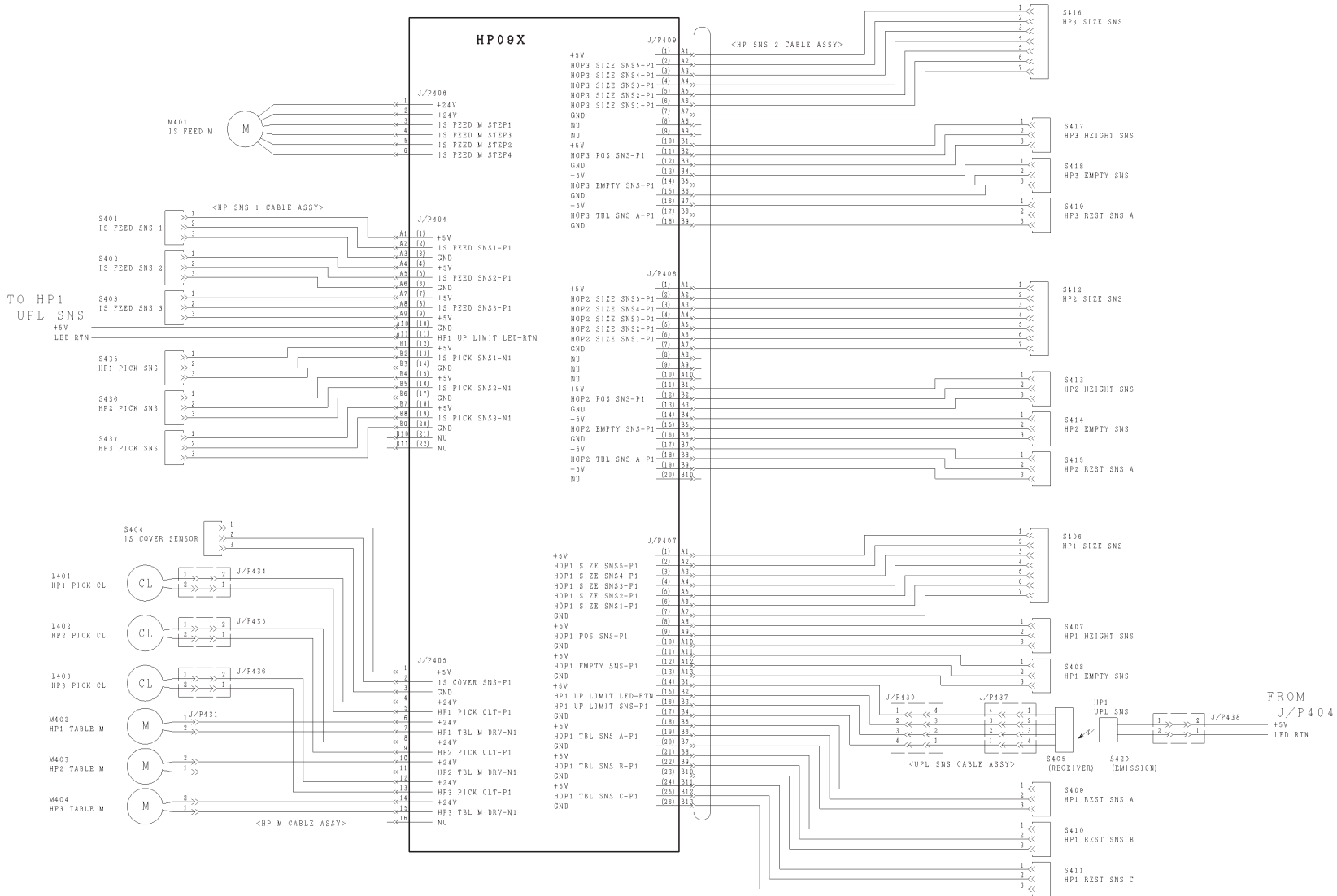


Figure 3-8. Printer Circuit Diagram

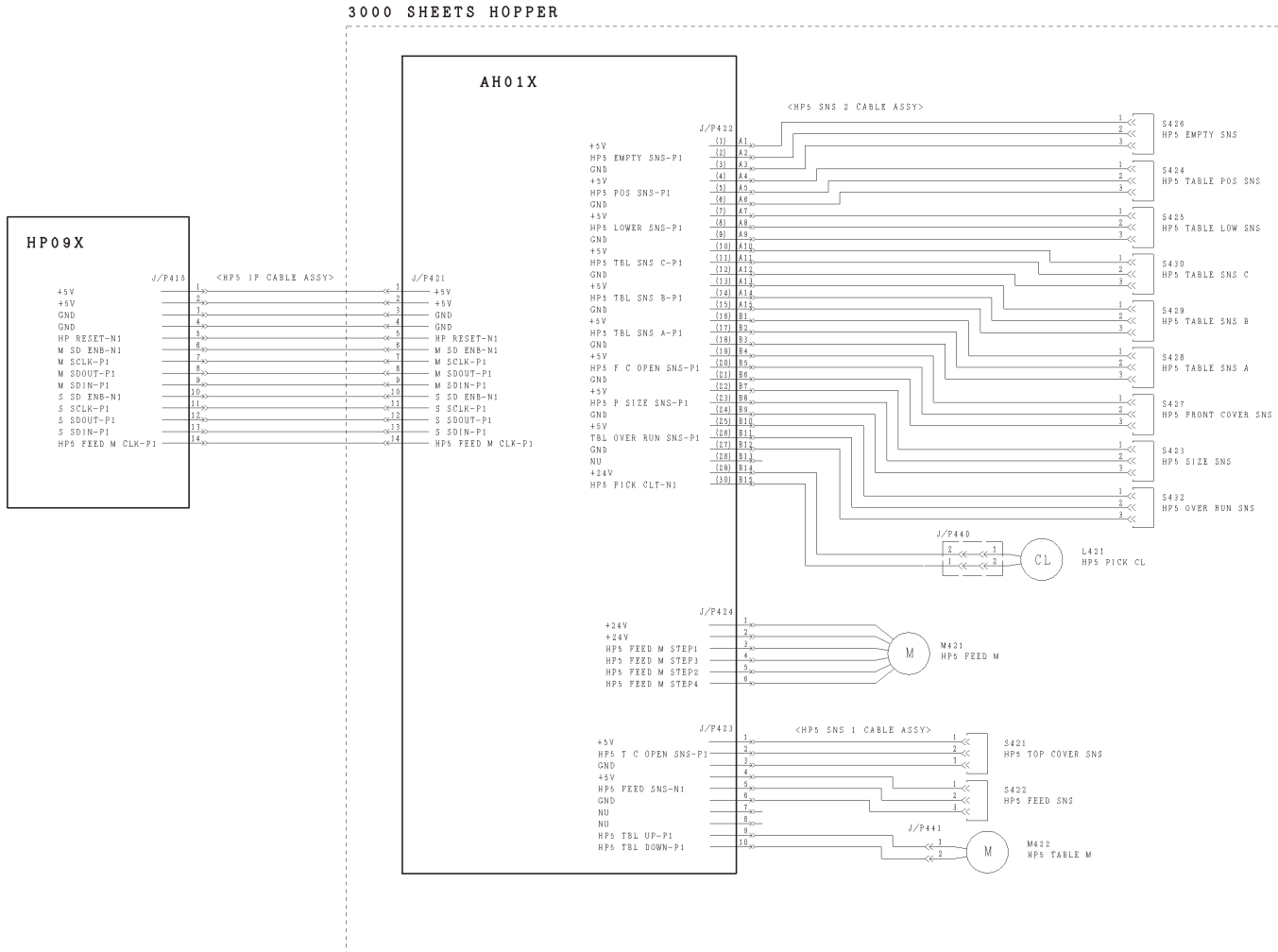


Figure 3-9. Printer Circuit Diagram



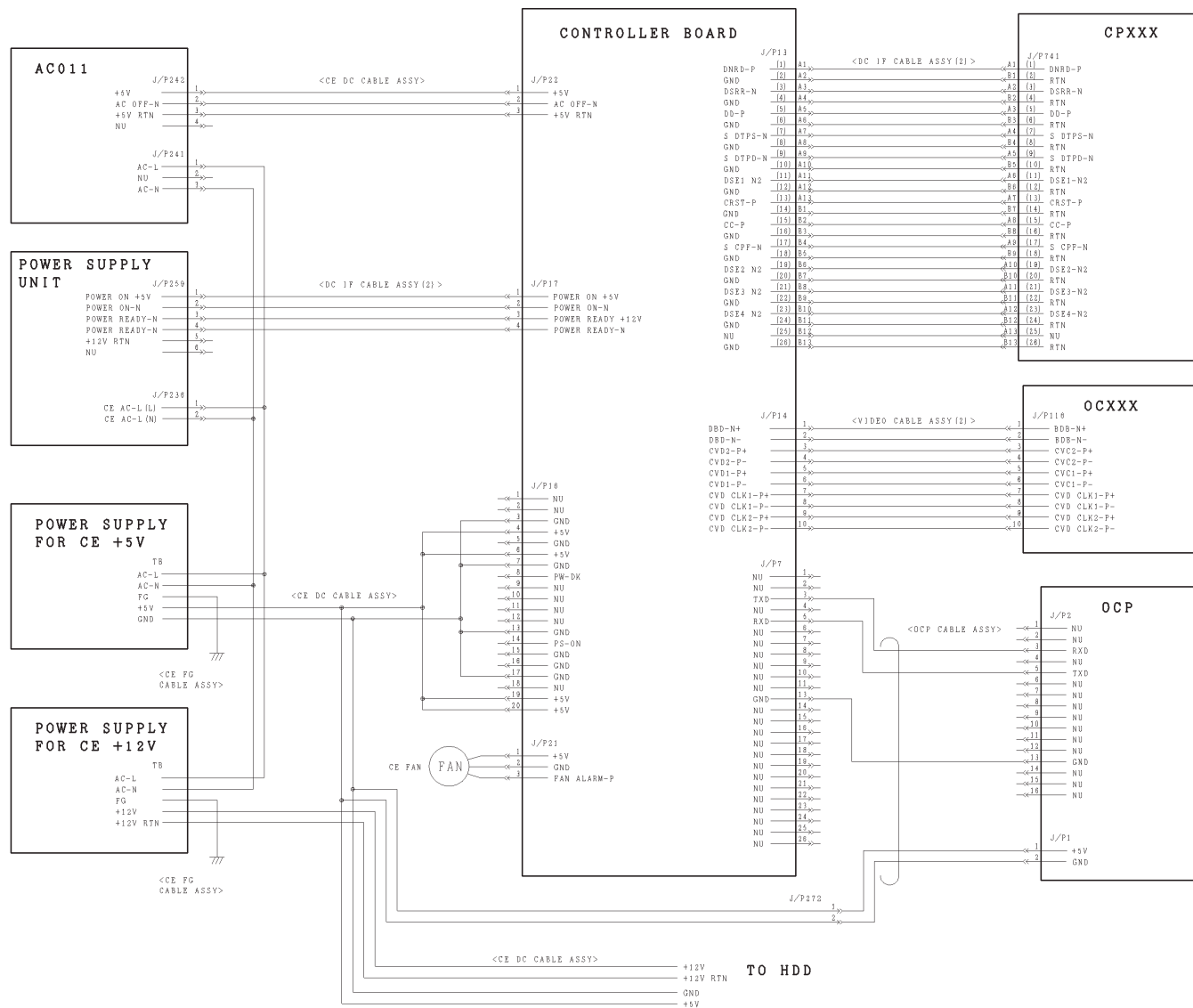


*Figure 3-10. Printer Circuit Diagram*

IEEE 1254 I/F  
(PERIPHERAL)

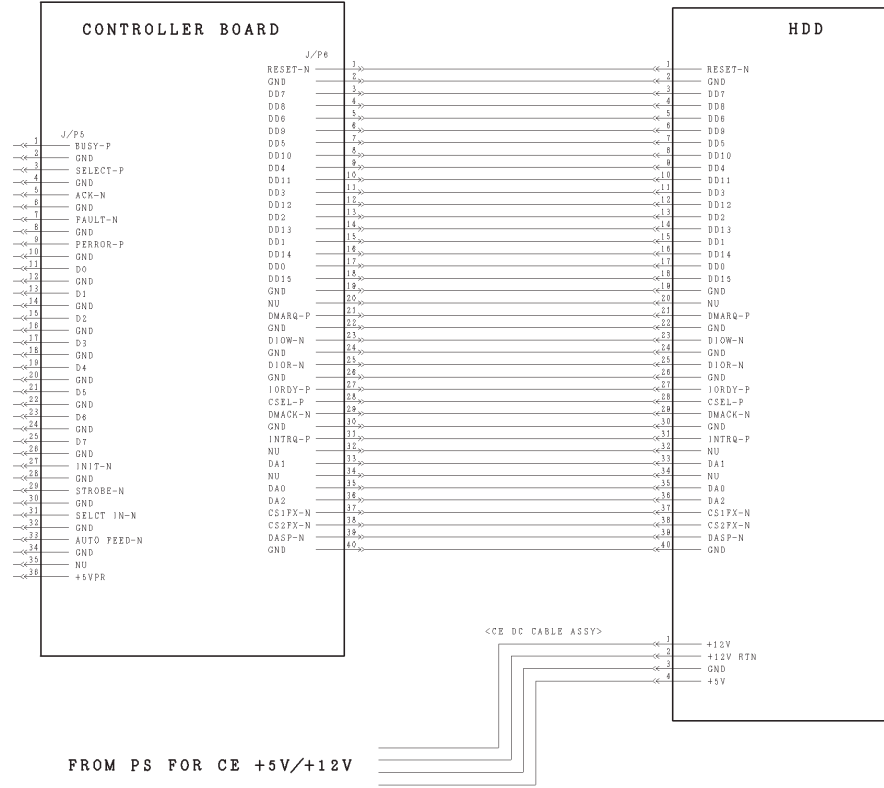


Figure 3-11. Printer Circuit Diagram

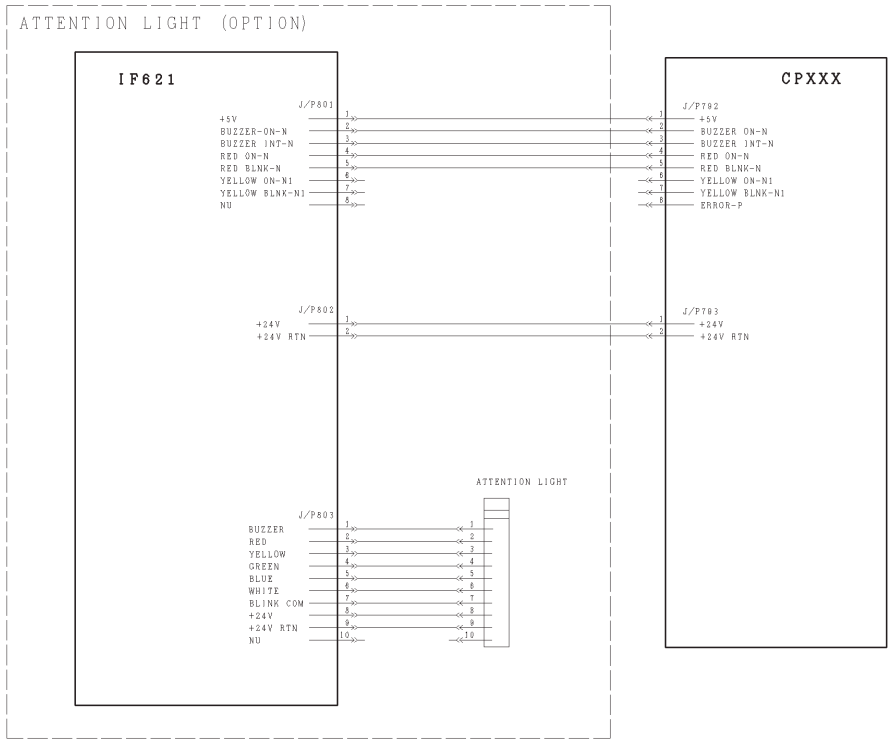


Figure 3-12. Printer Circuit Diagram

## TRANSIT PATH UNIT WIRING DIAGRAM

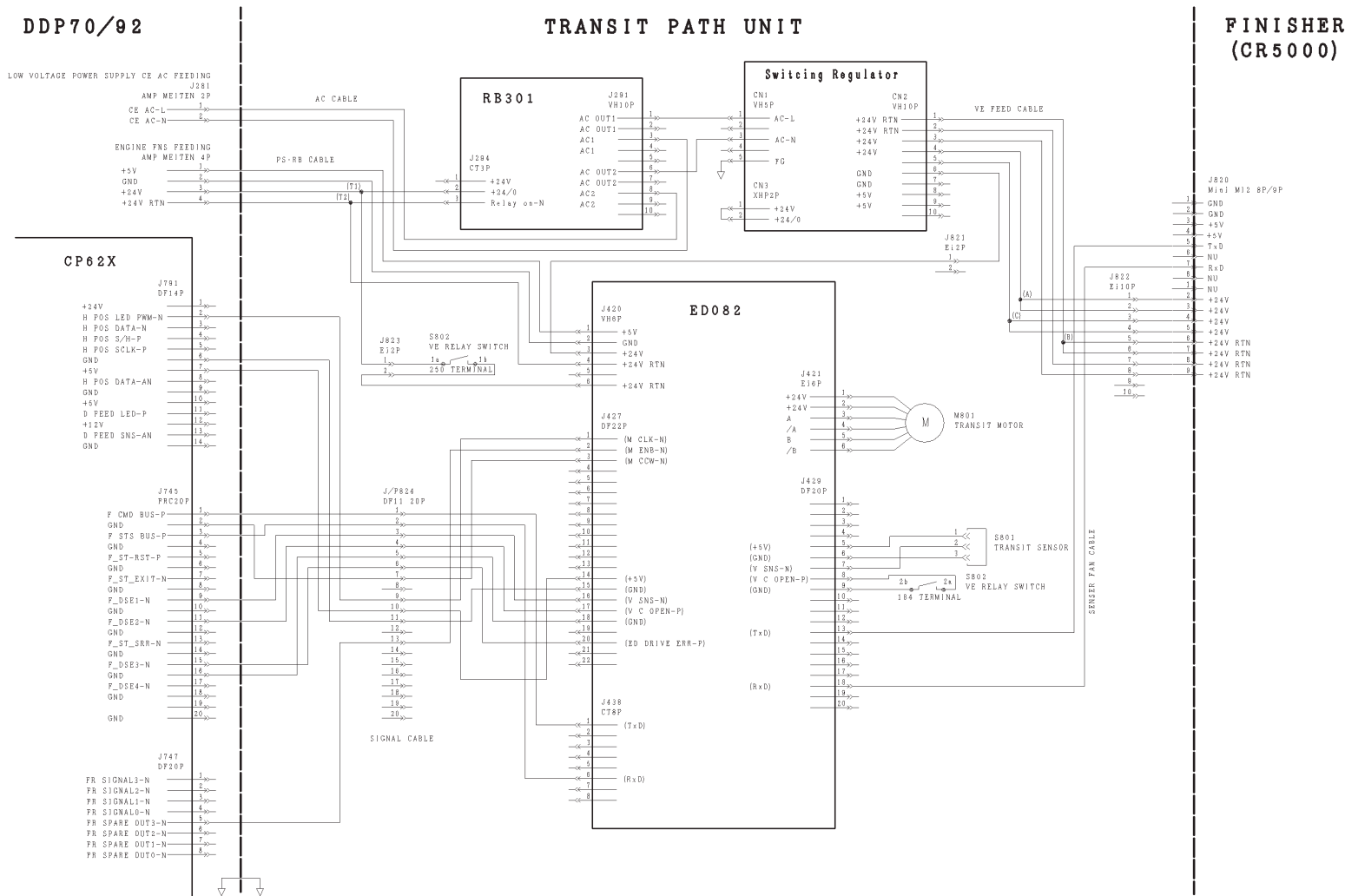


Figure 3-13. Printer Circuit Diagram

## 3.14. Outputting the Printer Log Data

## 3.15. Setting of the DIP SW

DIP SW location

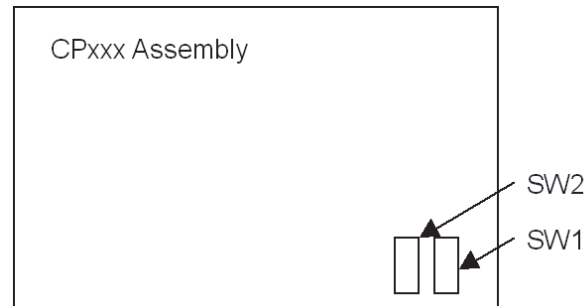


Figure 3-14. Location of DIP SW

Setting of the DIP SW on the CPxxx Assembly are as follows.

Table 3-13. Setting of the DIP SW1

| SW No. | function                                    |
|--------|---------------------------------------------|
| 1      | Fixed "ON"                                  |
| 2      | Fixed "OFF"                                 |
| 3      | Fixed "OFF"                                 |
| 4      | The Container stacker 2 is connected : "ON" |
| 5      | The Container stacker 1 is connected : "ON" |
| 6      | The HCF is connected : "ON"                 |
| 7      | Fixed "OFF"                                 |
| 8      | The Finisher is connected : "ON"            |

Table 3-14. Setting of the DIP SW2

| SW No. | function                                     |
|--------|----------------------------------------------|
| 1      | Fixed "OFF"                                  |
| 2      | Fixed "OFF"                                  |
| 3      | Drum Motor type DR6236-200 is mounted : "ON" |
| 4      | Fixed "OFF"                                  |
| 5      | Fixed "OFF"                                  |
| 6      | The Finisher (SR5000) is connected : "ON"    |
| 7      | Fixed "OFF"                                  |
| 8      | Fixed "OFF"                                  |

**Note:** Don't mix up the SW1 and the SW2.  
DIP SW2 is only for RoHS machine.

## Chapter 4. Preventive Maintenance

This section contains information for maintaining the printer for continuous failure-free, high quality performance. Including in this section are procedures for cleaning the exterior and interior of the printer.

While performing any maintenance procedure, visually inspect the printer for loose, broken or missing cables, connectors or other parts. Look for scratches, nicks or gouges on the Conveyance Belt. In addition look for spilt toner on or around the print path which may degrade the print quality.

### PREVENTIVE MAINTENANCE SCHEDULE

For many of the preventive maintenance procedures, there are no set times to perform them. The determining factor for when to perform a procedure depends on the extent of use. Printers that are used more heavily will require more frequent preventive maintenance.

#### CAUTION:

**The print density may change depending on the environment. When the printer is used in the environment where the temperature is lower or higher than the specified ambient temperature(10 to 32°C, Recommendable temperature : 19 to 25°C), the print density may deteriorate. Therefore, instruct the customer to use the printer within the specified ambient temperature.**

### PREVENTIVE MAINTENANCE RESPONSIBILITY

Table 4-6 provides some guidelines regarding who is responsible for the various preventive maintenance procedures.

#### Symbol Key for PM Tables

**I:** Inspect. Clean, replace, or lubricate as needed.

**C:** Cleaning required.

**R:** Replacement required.

**L:** Lubrication required.

#### Note: Definition of images;

The abbreviation: **Kc**=1,000 number of Drum Rotations.

The abbreviation: **KPics**=1,000 number of Paper Picks.

The abbreviation: **Ki** = 1,000 images.

Table 4-1. PM Parts List (1)

|                    | 500Kc | 1000Kc | 1500Kc | Expected | Note              |
|--------------------|-------|--------|--------|----------|-------------------|
| <b>Drum Unit</b>   |       |        |        |          |                   |
| Drum Unit          | R     | R      | R      |          | 7.1.2.1. (1), 7-4 |
| Inside the Printer | C     | C      | C      |          | 4.4.6, 4-17       |

Table 4-2. PM Parts List (2)

|                                                                    | 600 KPics | 1200 KPics | 1800 KPics | Expected | Note                |
|--------------------------------------------------------------------|-----------|------------|------------|----------|---------------------|
| <b>Paper Pick Assembly<br/>500 Sheet Hopper, 2000 Sheet Hopper</b> |           |            |            |          |                     |
| Pick Roller                                                        | R         | R          | R          |          | 7.1.4.3. (2), 7-171 |

Table 4-2. PM Parts List (2)

|                    | 600<br>KPics | 1200<br>KPics | 1800<br>KPics | Expected | Note                   |
|--------------------|--------------|---------------|---------------|----------|------------------------|
| Separation Roller  | R            | R             | R             |          | 7.1.4.3. (4),<br>7-173 |
| Separator Assembly | R            | R             | R             |          | 7.1.4.3. (3),<br>7-172 |

Table 4-3. PM Parts List (3)

|                                                  | 600<br>KPics | 1200<br>KPics | 1800<br>KPics | Expected | Note         |
|--------------------------------------------------|--------------|---------------|---------------|----------|--------------|
| <b>Paper Pick Assembly<br/>3000 Sheet Hopper</b> |              |               |               |          |              |
| Pick Roller                                      | R            | R             | R             |          | 7.2.2, 7-218 |
| Separation Roller                                | R            | R             | R             |          | 7.2.4, 7-220 |
| Separator Assembly                               | R            | R             | R             |          | 7.2.3, 7-219 |

Table 4-4. PM Parts List (4)

|                    | 320Ki | 640Ki | 960Ki | 1280Ki | 1600Ki | Note               |
|--------------------|-------|-------|-------|--------|--------|--------------------|
| <b>Fuser Unit</b>  |       |       |       |        |        |                    |
| Fuser Cleaning Web | R     | R     | R     | R      |        | 7.1.3.1. (2), 7-69 |
| Fuser Unit         |       |       |       |        | R      | 7.1.3.1. (1), 7-67 |

Table 4-5. PM Parts List (5)

|                                                 | 400Ki | 800Ki | 1200Ki | Expected | Note                                                              |
|-------------------------------------------------|-------|-------|--------|----------|-------------------------------------------------------------------|
| <b>PM Parts</b>                                 |       |       |        |          |                                                                   |
| Paper Hopper / Tray<br>and Finisher area        | C     | C     | C      |          | 4.4.1, 4-11                                                       |
| Toner Bottle Joint area                         | C     | C     | C      |          | 4.4.2, 4-12                                                       |
| Conveyance Belt                                 | C     | C     | C      | 7200Ki   | 4.4.4, 4-15<br>7.1.3.4. (6), 7-99                                 |
| Nip Guide Plate<br>Assembly                     | C     | C     | C      | 7200Ki   | 4.4.5, 4-16<br>7.1.3.4. (3), 7-96                                 |
| Charger Corotron Wire<br>and Grid               | C     | C     | R      |          | 4.4.8, 4-19<br>7.1.2.2. (2), 7-7<br>7.1.2.2. (3), 7-8             |
| Transfer Corona<br>Wire/Separate Corona<br>Wire | C     | C     | R      |          | 4.4.3, 4-13<br>7.1.3.4. (12),<br>7-105<br>7.1.3.4. (13),<br>7-106 |
| Transfer / Separate<br>Corona Cleaner           |       |       | R      |          | 7.1.3.4. (16),<br>7-109<br>7.1.3.4. (15),<br>7-108                |
| Drum Wrap Sensor                                | C     | C     | C      |          | 4.4.7, 4-18                                                       |
| Erase Lamp                                      | C     | C     | C      |          | 4.4.9, 4-21                                                       |
| Developer Unit                                  | C     | C     | C      |          | 4.4.10, 4-22                                                      |

Table 4-5. PM Parts List (5)

|                             | 400Ki | 800Ki | 1200Ki | Expected | Note                 |
|-----------------------------|-------|-------|--------|----------|----------------------|
| Optical Unit Window         | C     | C     | C      |          | 4.4.11, 4-24         |
| Fuser Unit BR Nails         | C     | C     | C      |          | 4.4.12, 4-25         |
| Toner Collector Bottle area | C     | C     | C      |          | 4.4.13, 4-26         |
| Spring Holder (R)           | I     | I     | I      |          | 4.4.14, 4-27         |
| Flip Pressure Roller        | C     | C     | C      |          | 4.4.15, 4-28         |
| Coupling Gear               | C     | C     | C      |          | 4.4.16, 4-29         |
| Ozone Filter                |       |       |        | 1800Ki   | 7.1.5.1. (8), 7-200  |
| Ozone Filter R1             |       |       |        | 1800Ki   | 7.1.5.1. (9), 7-201  |
| Ozone Filter R2             |       |       |        | 1800Ki   | 7.1.5.1. (10), 7-202 |
| Air Filter (1)              |       |       |        | 1800Ki   | 7.1.5.1. (9), 7-201  |
| Air Filter (2)              |       |       |        | 1800Ki   | 7.1.5.1. (9), 7-201  |
| Air Filter (3)              |       |       |        | 1800Ki   | 7.1.5.1. (10), 7-202 |
| Air Filter (4)              |       |       |        | 1800Ki   | 7.1.5.1. (11), 7-203 |
| Front Air Filter            |       |       |        | 1800Ki   | 7.1.5.1. (18), 7-210 |
| Air Filter                  |       |       |        | 1800Ki   | 7.1.5.1. (8), 7-200  |
| Idler Gear (Z28) Assembly   |       |       |        | 10000Ki  | 7.1.2.3. (6), 7-16   |
| Drive Pulley1(A)            |       |       |        | 7200Ki   | 7.1.3.10, 7-141      |
| Mirror Cooling Fan          |       |       | I      |          |                      |
| DEV Cooling Fan             |       |       | I      |          |                      |
| DEV Rear Fan                |       |       | I      |          |                      |
| Charger Fan                 |       |       | I      |          |                      |
| DC Fan (Paper Out)          |       |       | I      |          |                      |
| HR Fan 1                    |       |       | I      |          |                      |
| HR Fan 2                    |       |       | I      |          |                      |
| TH Fan Assembly(1)          |       |       | I      |          |                      |
| TH Fan Assembly(2)          |       |       | I      |          |                      |
| Separating Blower 1         |       |       | I      |          |                      |
| Separating Blower 2         |       |       | I      |          |                      |
| Ozone Blower                |       |       | I      |          |                      |



## 4.1. Operator's Task

The following tasks should be performed by the operator at the following frequencies. Refer to the Operator's Guide for a full description of each item.

Table 4-6. Operator's tasks/checks and cleaning items

|                   | PM ITEM                                          | FREQUENCY                                                  |
|-------------------|--------------------------------------------------|------------------------------------------------------------|
| Tasks             | Turning the power ON/OFF                         | Before and after using                                     |
|                   | Operating the Operator's Panel                   | As needed                                                  |
|                   | Loading and unloading paper (Hopper)             |                                                            |
|                   | Removing paper (Stacker)                         |                                                            |
|                   | Supplying the toner                              |                                                            |
|                   | Exchanging the developer                         |                                                            |
|                   | Exchanging the Fuser Cleaning Web                |                                                            |
|                   | Exchanging the Drum Unit                         |                                                            |
| Checks & Cleaning | Check the print quality                          | Daily and after jam occurs                                 |
|                   | Recovering the paper jams                        |                                                            |
|                   | Cleaning the inside of the printer               | Per Drum Unit replacement                                  |
|                   | Cleaning around the Toner Collector Bottle area  | When the Toner Collector Bottle is exchanged and as needed |
|                   | Cleaning around the Toner Bottle Joint area      | When toner is supplied and as needed                       |
|                   | Cleaning the Paper Hopper/Tray and Finisher area | Daily                                                      |
|                   | Cleaning the Conveyance Belt area                | Daily                                                      |

## 4.2. Periodic check by Customer Engineer

This section describes maintenance items and the frequencies performed by customer engineers.

If any maintenance is noted with plural frequencies, an inspection is to be made on an earlier schedule. Check intervals are based on the standard printer operating conditions described below. Check the operating conditions and make sure that maintenance and checks are performed at intervals appropriate for the actual condition.

1. Standard usage - Printing volume : 300 K Images/month  
Power on time : 200 hrs/month  
Operating time : 60 hrs/month

### 4.2.1. Items and Intervals of Periodical Check

Table 4-7. Items and intervals of periodic check

| Item No. | Inspection maintenance items of periodical check                                                                 | Frequencies      |           | Work Time (Min.) | Maint. Manual |
|----------|------------------------------------------------------------------------------------------------------------------|------------------|-----------|------------------|---------------|
|          |                                                                                                                  | Print Pages (ki) | Period    |                  |               |
| 1.       | Printer conditions                                                                                               |                  |           |                  |               |
|          | (1) Reading printer counter values (To grasp print pages from last maintenance)                                  | -                | Per Visit | 1                | 4.3.1.(1)     |
|          | (2) Printing logged data<br><br>*Number of periodical replacement parts used<br><br>*Troubles<br><br>*Paper Jams | -                | Per Visit | 3                | 4.3.1.(2)     |
|          | (3) Checking the print quality (Test print)                                                                      | -                | Per Visit | 3                | 4.3.1.(3)     |
| 2.       | Checking the mechanism                                                                                           |                  |           |                  | 4.3.1.(4)     |
|          | (1) Checking the fan revolution                                                                                  | 1,200 Ki         | M4        | 2                |               |
|          | (2) Hopper/Tray and Finisher area                                                                                | -                | Per Visit | 5                | -             |
|          | (3) Photoconductor surface                                                                                       | -                | Per Visit |                  | -             |
|          | (4) Drum Wrap Sensor                                                                                             | -                | Per Visit |                  | -             |
|          | (5) Charger Corona Unit                                                                                          | -                | Per Visit |                  | -             |
|          | (6) Transfer/Separating Corona Unit                                                                              | -                | Per Visit |                  | -             |
|          | (7) Fuser Unit                                                                                                   | -                | Per Visit |                  | -             |
|          | (8) Erase Lamp                                                                                                   | -                | Per Visit |                  | -             |
|          | (9) Developer Unit area                                                                                          | -                | Per Visit |                  | -             |
|          | (10) Drum Unit area                                                                                              | -                | Per Visit |                  | -             |
| 3.       | Cleaning                                                                                                         |                  |           |                  | 4.2.2         |
| 4.       | Replacing periodic replacement parts                                                                             |                  |           |                  | 4.2.3         |

**Note:**

Definition of Printed Page; Simplex A4 size is counted as 1 page, A3 size is counted as 2 pages.

The abbreviation:      ki                      = 1,000 images  
                                          M6                      = every six months

## 4.2.2. Items and Intervals of Periodical Cleaning

Table 4-8. Items and intervals of periodic cleaning

| Item No. | Inspection maintenance Items of periodical cleaning | Frequencies      |                      | Work time(Reqd.) (Min.) | Special Tools      | Maint. Ref.            |
|----------|-----------------------------------------------------|------------------|----------------------|-------------------------|--------------------|------------------------|
|          |                                                     | Print Pages (Ki) | Period               |                         |                    |                        |
| 1.       | Paper Hopper/Tray and Finisher area                 | -                | Per Visit            | 1                       | -                  | <a href="#">4.4.1</a>  |
| 2.       | Toner Bottle Joint area                             | -                | Per Visit            | 1                       | -                  | <a href="#">4.4.2</a>  |
| 3.       | Transfer Corona Wire/Separating Corona Wire         | 400              | -                    | 8                       | Wire Cleaning Tool | <a href="#">4.4.3</a>  |
| 4.       | Conveyance Belt area                                | -                | Per Visit            | 5                       | -                  | <a href="#">4.4.4</a>  |
| 5.       | Nip Guide Plate                                     | -                | Per Visit            |                         | -                  | <a href="#">4.4.5</a>  |
| 6.       | Inside the printer                                  | -                | Per Drum replacement |                         | -                  | <a href="#">4.4.6</a>  |
| 7.       | Drum Wrap Sensor                                    | 400              | -                    |                         | -                  | <a href="#">4.4.7</a>  |
| 8.       | Charger Corona Unit                                 | 400              | -                    | 5                       | -                  | <a href="#">4.4.8</a>  |
| 9.       | Erase Lamp                                          | 400              | -                    | 3                       | -                  | <a href="#">4.4.9</a>  |
| 10.      | Developer Unit                                      | 400              | -                    | 3                       | -                  | <a href="#">4.4.10</a> |
| 11.      | Optical Unit Window                                 | 1200             | -                    | 1                       | -                  | <a href="#">4.4.11</a> |
| 12.      | Fuser Unit BR Nails                                 | 400              | -                    | 1                       | -                  | <a href="#">4.4.12</a> |
| 13.      | Toner Collector Bottle area                         | -                | Per Visit            | 1                       | -                  | <a href="#">4.4.13</a> |
| 14.      | Spring Holder (R)                                   | 2400             | -                    | 20                      | Grease             | <a href="#">4.4.14</a> |
| 15.      | Flip Pressure Roller                                | 1200             | -                    | 10                      | -                  | <a href="#">4.4.15</a> |
| 16.      | Coupling Gear                                       | 2400             | -                    | 20                      | -                  | <a href="#">4.4.16</a> |



## 4.2.3. Parts for Periodical Replacements and Frequencies

Table 4-9. Parts for periodical replacements and frequencies

| Item No. | PERIODIC REPLACEMENTS PARTS                        | DWG. No.                                           | Qty / engine | Frequencies  |        | Work time reqd. (Min.) | Maint. Ref.                    |
|----------|----------------------------------------------------|----------------------------------------------------|--------------|--------------|--------|------------------------|--------------------------------|
|          |                                                    |                                                    |              | Print Images | Period |                        |                                |
| 1.       | Drum Unit<br>DDP70/92/184                          | G1501179 *<br>(N000595Q)<br>G1505179<br>(N000595T) | 1            | 500 kc       | -      | 1                      | 7.1.2.1. (1)                   |
| 2.       | Fuser Unit<br>DDP92                                | G1511063 *<br>(N329396A)<br>G1515063<br>(N337007A) | 1            | 1,600 Ki     | -      | 2                      | 7.1.2.3. (1)                   |
| 3.       | Fuser Cleaning Web<br>DDP70/92/184                 | G150310<br>(N212407L)                              | 1            | 320 Ki       | -      | 1                      | 7.1.3.1. (2)                   |
| 4.       | Transfer Corona Wire /Separate Corona Wire         | G1501453<br>(N3228303)                             | 2            | 1,200 Ki     | -      | 12                     | 7.1.3.4. (12)<br>7.1.3.4. (13) |
| 5.       | Transfer/Separating Corona Unit Cleaner            | G1501829<br>(N421608D)<br>G1501830<br>(N421609D)   | 1            | 1,200 Ki     | -      | 12                     | 7.1.3.4. (16)<br>7.1.3.4. (17) |
| 6.       | Conveyance Belt                                    | G1501452<br>(N322824)                              | 1            | 7,200 Ki     | -      | 26                     | 7.1.3.4. (6)                   |
|          | Nip Guide Plate W Assembly                         | G1501391<br>(N213996B)                             | 1            | 7,200 Ki     | -      |                        | 7.1.3.4. (3)                   |
| 7.       | Charger Corotron Wire and Grid                     | G1501750<br>(N420029)<br>G1501529<br>(N323697)     | 1            | 1,200 Ki     | -      | 7                      | 7.1.2.2. (2)<br>7.1.2.2. (3)   |
| 8.       | Paper Pick Assembly 500, 2,000 Sheet Hopper        |                                                    | 1            | 600 kpics    | -      | 5                      |                                |
|          | Pick Roller                                        | G1501549<br>(N324285)                              | 6            |              |        |                        | 7.1.4.3. (2)                   |
|          | Separation Roller                                  | G1501551<br>(N324286)                              | 3            |              |        |                        | 7.1.4.3. (4)                   |
|          | Separator Assembly                                 | G1501712<br>(N413640B)                             | 3            |              |        |                        | 7.1.4.3. (3)                   |
| 9.       | Paper Pick Assembly (3,000 Sheet Hopper(Optional)) |                                                    | 1            | 600 kpics    | -      |                        |                                |
|          | Pick Roller                                        | G1501549<br>(N324285)                              | 2            |              |        |                        | 7.2.2                          |
|          | Separation Roller                                  | G1501551<br>(N324286)                              | 1            |              |        |                        | 7.2.4                          |
|          | Separator Assembly                                 | G1501712<br>(N413640B)                             | 1            |              |        |                        | 7.2.3                          |

\* Do not use these parts for RoHS.

Table 4-9. Parts for periodical replacements and frequencies

| Item No. | PERIODIC REPLACEMENTS PARTS | DWG. No.            | Qty / engine | Frequencies  |        | Work time reqd. (Min.) | Maint. Ref.   |
|----------|-----------------------------|---------------------|--------------|--------------|--------|------------------------|---------------|
|          |                             |                     |              | Print Images | Period |                        |               |
| 10.      | Ozone Filter                | G1501717 (N417348)  | 1            | 1,800 Ki     | -      | 7                      | 7.1.5.1. (8)  |
|          | Ozone Filter R1             | G1501624 (N325866)  | 1            |              |        |                        | 7.1.5.1. (9)  |
|          | Ozone Filter R2             | G1501625 (N325867)  | 1            |              |        |                        | 7.1.5.1. (10) |
| 11.      | Air Filter (1)              | G1501729 (N4199104) | 1            | 1,800 Ki     | M6     |                        | 7.1.5.1. (9)  |
|          | Air Filter (2)              | G1501730 (N4199105) | 1            |              |        |                        | 7.1.5.1. (9)  |
|          | Air Filter (3)              | G1501727 (N4199102) | 1            |              |        |                        | 7.1.5.1. (10) |
|          | Air Filter (4)              | G1501728 (N4199103) | 1            |              |        |                        | 7.1.5.1. (11) |
|          | Front Air Filter            | G1501861 (N423751)  | 1            |              |        |                        | 7.1.5.1. (18) |
|          | Air Filter                  | G1501732 (N4199107) | 1            |              |        |                        | 7.1.5.1. (8)  |
| 12.      | Idler Gear (Z28) Assembly   | G1501775 (N420292A) | 1            | 10,000Ki     | -      | 30                     | 7.1.2.3. (6)  |
| 13.      | Drive Pulley1(A)            | G1501454 (N322837)  | 1            | 7,200Ki      | -      | 20                     | 7.1.3.10      |

**Note:** Frequencies of parts marked \* are counted with a mechanical counter and their life is not displayed on the Operator Panel. Figures of such mechanical counter shall be written down on a memo when replacing the parts in order to know when they should be replaced.

**Note:** Frequencies are based on print condition :  
4.0% image coverage on Xerox 4024 20 lbs letter size paper  
or Hitachi Standard 17 lbs A4 size paper  
Temperature; 19 -25 deg. C(66.2 - 77 deg. F) Humidity; 40- 60 %RH  
80% print utilization

**Note:** The abbreviation kpic=1,000 number of Paper Pick

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## 4.3. Procedures of the Periodical Check

### 4.3.1. Check and Confirmation Procedures

#### 4.3.1. (1) Reading the Printer Counter Values

Definition of the Printed Pages: Simplex, A4 and Letter size is counted as 1 page, B4, A3, Ledger and Legal 8.5x12.4", Legal 13", size is counted as 2 pages.

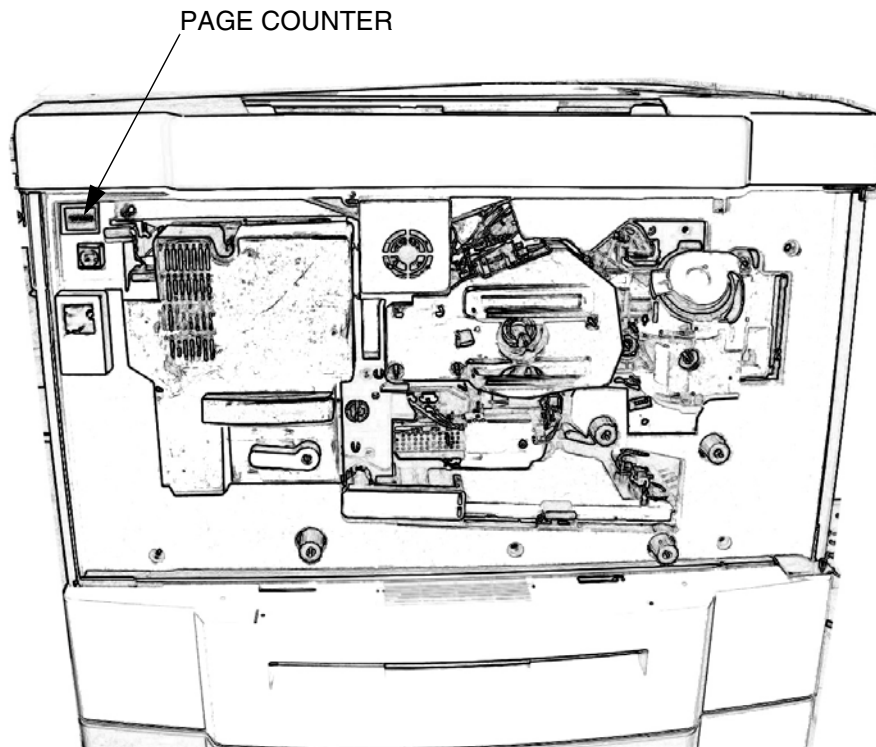


Figure 4-1. Reading the Printer Counter Values

The page counter counts the number of printed pages. The number of the printed pages in the page counter increases by one after 100 pages are printed.

(1-99 printed pages= a page counter value of 0, 100-199 printed pages= a page counter value of 1, 200-299 printed pages= a page value of 2, etc.)

#### 4.3.1. (2) Analyzing the Printer Log

Subject to the controller.

(How to initiate log printing is a controller subject. But, how to analyze is an engine subject.)

### 4.3.1. (3) Checking the Print Quality

#### Test Print

Perform a test print(test print pattern) and check that there is no abnormality such as that of the following in the print quality.

When printing with no print-data

- No black spot exceeding the allowance
- No abnormal background
- No vertical line or smudge

When printing test pattern

- No void exceeding the allowance
- No abnormal uneven printing
- No fusing fault

(Rub the whole surface of the print sample to check it.)

\*If there is any abnormality in the above test print sample, refer to [Chapter 5, "Trouble-shooting," on page 5-1](#) and perform the necessary countermeasures.

### 4.3.1. (4) Checking the Fan Revolution

#### CAUTION:

The checks are performed with the power ON, so it requires the upmost care.

**Applicable jigs and tools: None.**

#### [Checking Procedures]

1. Check that the fan is rotating during test printing, by placing hands to the outlet of the following fans:

| No. | Names               | Direction | During Rotation                                 |
|-----|---------------------|-----------|-------------------------------------------------|
| 1.  | Mirror Cooling Fan  | Inflow    | During power on. (When 24V is ON)               |
| 2.  | DEV Cooling Fan     | Outflow   | At the time of initialization. During printing. |
| 3.  | DEV Rear Fan        | Outflow   | During power on. (When 24V is ON)               |
| 4.  | Charger Fan         | Inflow    | During power on. (When 24V is ON)               |
| 5.  | DC Fan (Paper Out)  | Inflow    | During power on. (When 24V is ON)               |
| 6.  | HR Fan 1            | Outflow   | Except the time of initialization.              |
| 7.  | HR Fan 2            | Outflow   | Except the time of initialization.              |
| 8.  | TH Fan Assembly (1) | Inflow    | At the time of initialization. During printing. |
| 9.  | TH Fan Assembly (2) | Outflow   | At the time of initialization. During printing. |
| 10. | Separating Blower 1 | Inflow    | At the time of initialization. During printing. |
| 11. | Separating Blower 2 | Inflow    | At the time of initialization. During printing. |
| 12. | Ozone Blower        | Outflow   | During power on. (When 24V is ON)               |

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## 4.4. Cleaning Procedures

### 4.4.1. Cleaning of the Paper Hopper / Tray

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools: Lint-Free Cloth.**

**[Cleaning Procedures]**

1. Open the Hopper or the Tray and remove the paper.
2. Clean inside the Hopper or Tray, especially the corners, by wiping any visible toner away with a Lint-Free Cloth.
3. Load the paper back into the Hopper or Tray and close the Hopper or Tray.

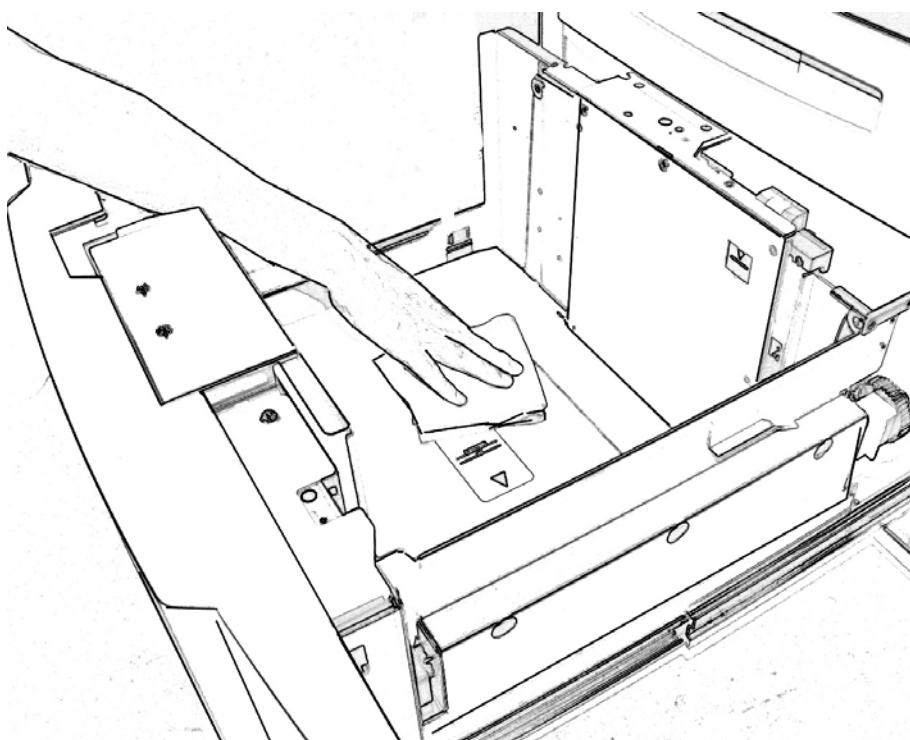


*Figure 4-2. Cleaning of the Paper Hopper / Tray*

**[Assembling Procedures]**

Perform the cleaning procedures in the reverse order.



## 4.4.2. Cleaning of the Toner Bottle Joint

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** Lint-Free Cloth, Vacuum Cleaner.

**Note:** Only toner guaranteed vacuum cleaners can be used for the cleaning.

**[Cleaning Procedures]**

1. Open the Hopper Cover.
2. Clean the Toner Bottle Joint with a vacuum cleaner, and wipe off excess toner with a Lint-Free cloth.
3. Clean up inside of the Hopper Cover with a Lint-Free cloth.
4. Close the Hopper Cover.

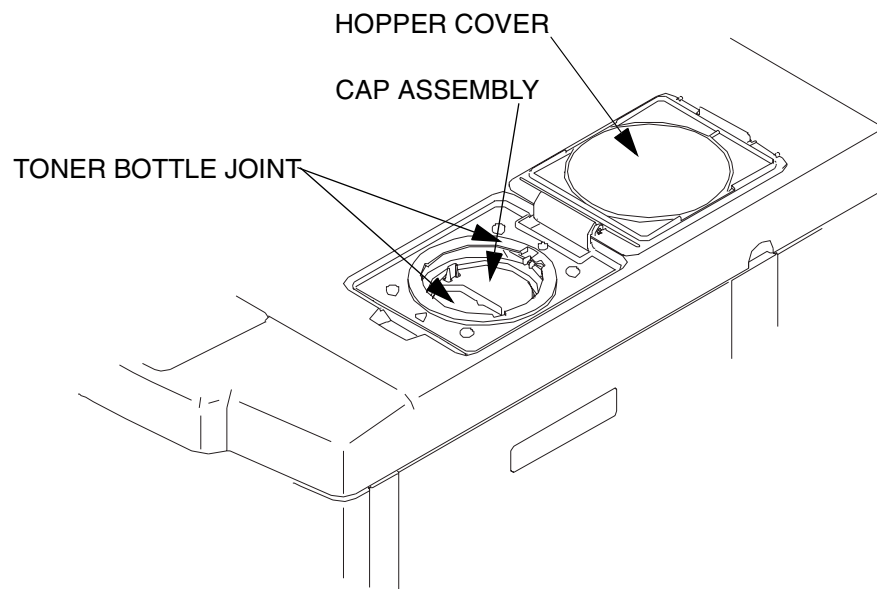


Figure 4-3. Cleaning of the Toner Bottle Joint

**[Checks]**

Make sure that the Cap Assembly is closed after performing the cleaning.

### 4.4.3. Cleaning of the Transfer Corona Wire / Separating Corona Wire

**CAUTION:**  
Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:**Minus Screwdriver, Lint-Free Cloth, Blue Wire Cleaning Tool, White Wire Cleaning Tool.

#### [Cleaning Procedures]

1. Remove the Corotron Assembly. ([Refer to item 7.1.3.4. \(11\) on page 7-104](#))
2. Remove the Cover (F) and the Cover (R) from the Corotron Assembly. ([Refer to item 7.1.3.4. \(12\) on page 7-105](#))
3. Remove the Detach Guide from the twelve hooks.

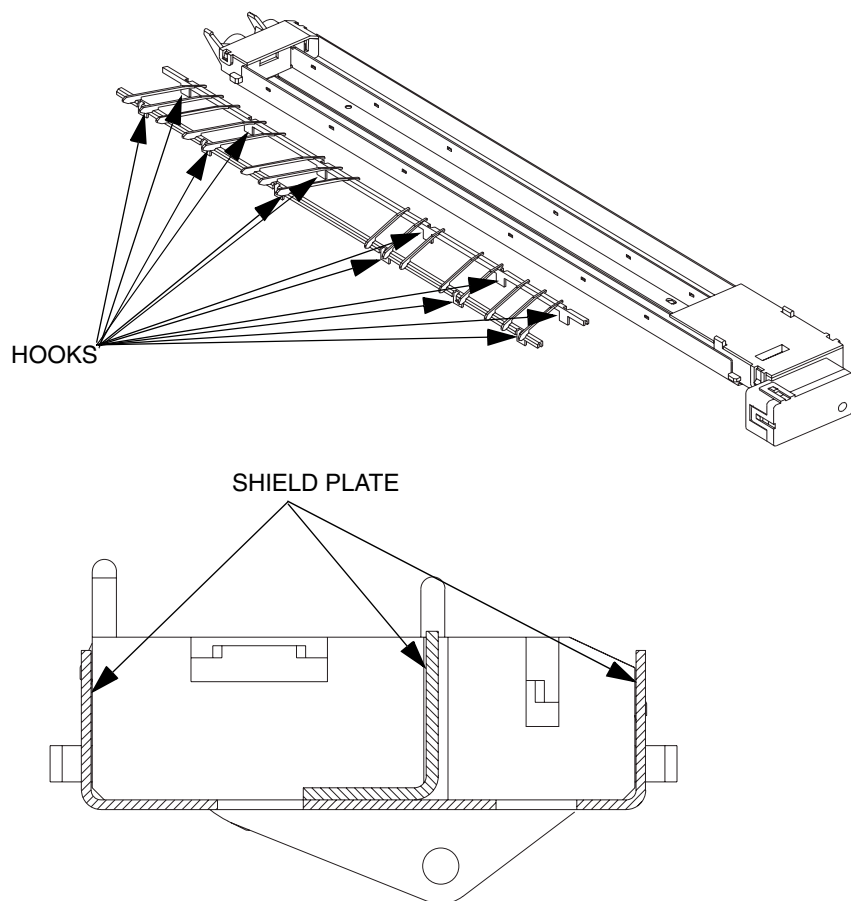


Figure 4-4. -1 Cleaning of the Transfer Corona Wire / Separating Corona Wire

4. Clean the Shield Plate.  
Wipe the inside of the Shield Plate with a clean, Lint-Free Cloth dampened with water.  
Wipe again with a clean, dry, Lint-Free Cloth. (Do not use alcohol instead of water.)

**Note:** Do not apply excessive pressure during cleaning. This could damage the Wire or the Shield Plate.

5. Clean the Transfer Corona Wire and the Separating Corona Wire.  
 Firstly, carefully clamp **the blue** , Wire Cleaning Tool on the Transfer Corona Wire and the Separating Corona Wire and gently wipe along the Wire.  
 Next, carefully clamp **the white**, Wire Cleaning Tool on the Transfer Corona Wire and the Separating Corona Wire and gently wipe along the Wire.

**Note:** Do not apply excessive pressure during cleaning. This could bend or break the Wire.

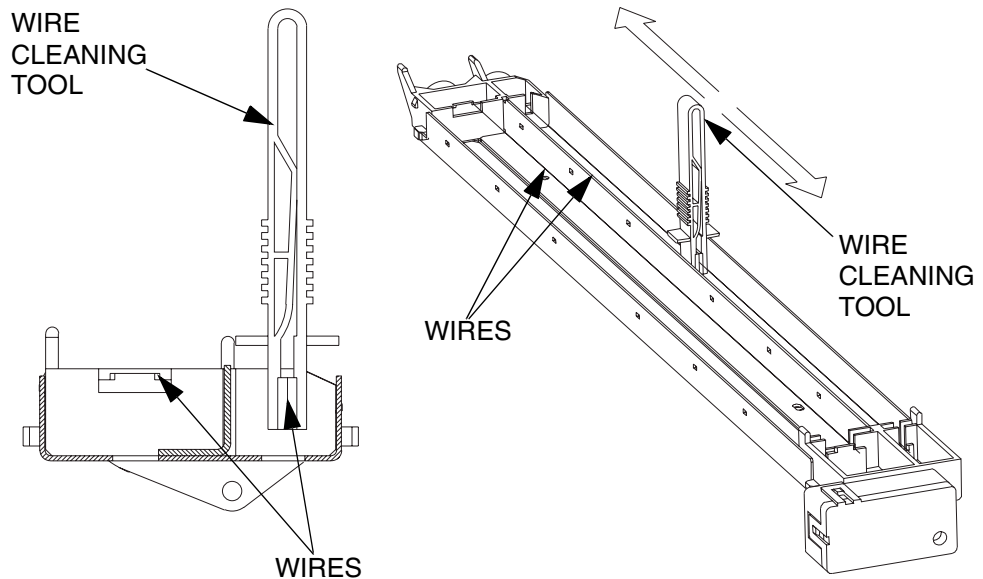


Figure 4-5. -2 Cleaning of the Transfer Corona Wire / Separating Corona Wire

#### [Assembling Procedures]

Perform the cleaning procedures in the reverse order.

Reattach the Detach Guide so that the "Front Side" in the illustration below faces the operator side of the machine.

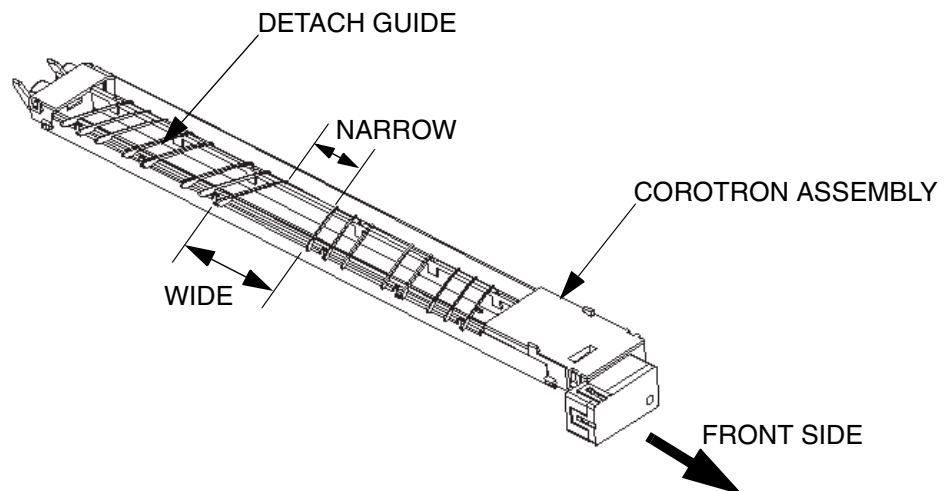


Figure 4-6. -3 Cleaning of the Transfer Corona Wire / Separating Corona Wire

#### 4.4.4. Cleaning of the Conveyance Belt Area

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** Lint-Free Cloth.

**[Cleaning Procedures]**

1. Remove the Drum Unit. (Refer to item 7.1.2.1. (1) on page 7-4)
2. Clean the Conveyance Belt Area with Lint-Free Cloth.

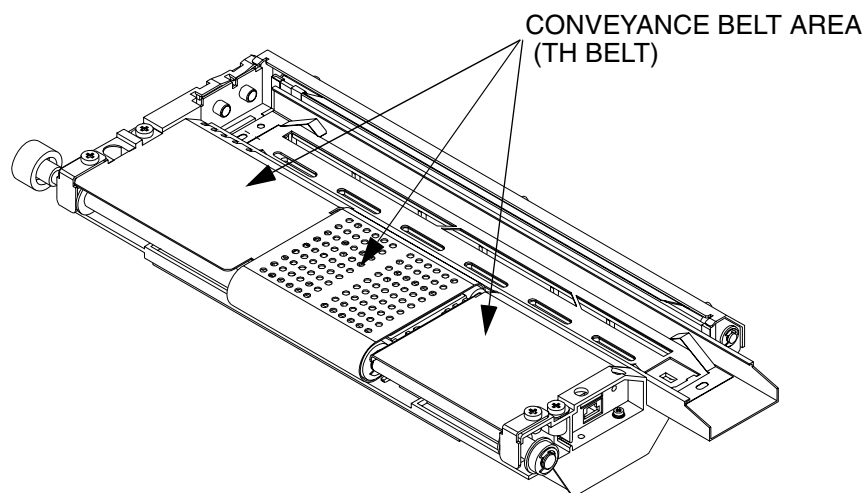


*Figure 4-7. Cleaning of the Conveyance Belt*

**[Assembling Procedures]**

Perform the cleaning procedures in the reverse order.

## 4.4.5. Cleaning of the Nip Guide Plate W Assembly

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

Applicable jigs and tools: Lint-Free Cloth.

**[Cleaning Procedures]**

1. Remove the Drum Unit. (Refer to item 7.1.2.1. (1) on page 7-4)
2. Clean the Nip Guide Plate W Assembly with Lint-Free Cloth.

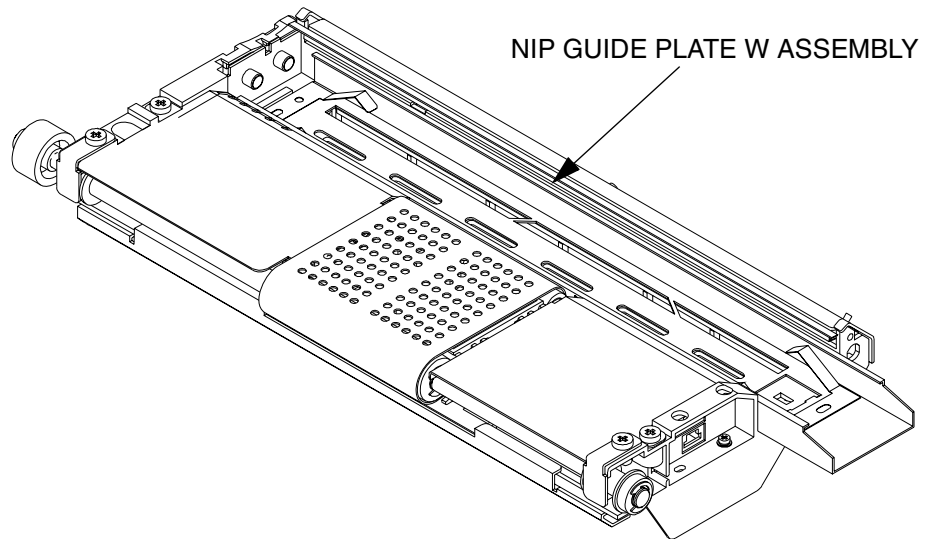


Figure 4-8. Cleaning of the Nip Guide Plate W Assembly

**[Assembling Procedures]**

Perform the cleaning procedures in the reverse order.

## 4.4.6. Cleaning of the Machine Inside

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** Lint-Free Cloth, Vacuum Cleaner.

**Note:**

Only toner guaranteed vacuum cleaners can be used for the cleaning.  
Do not touch the Drum Wrap Sensor and the hook of the Drum Wrap Sensor Holder, when the surrounding of the Drum Wrap Sensor is cleaned.

**[Cleaning Procedures]**

1. Remove the Drum Unit. (Refer to item 7.1.2.1. (1) on page 7-4)
2. Remove the Developer Unit. (Refer to item 7.1.2.3. (1) on page 7-10)
3. Clean up the inside of the machine with Lint-Free Cloth and a Vacuum Cleaner as shown below.

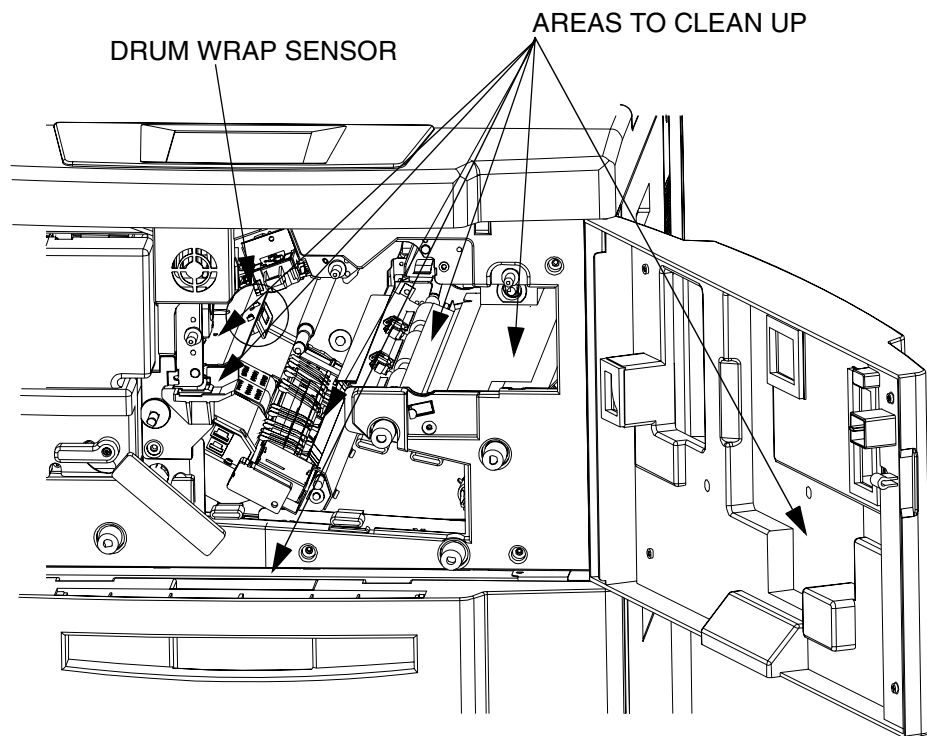


Figure 4-9. Cleaning of the Machine Inside

**[Assembling Procedures]**

Perform the cleaning procedures in the reverse order.

## 4.4.7. Cleaning of the Drum Wrap Sensor

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

Applicable jigs and tools: Lint-Free Cloth.

**[Cleaning Procedures]**

1. Remove the Drum Unit. (Refer to item 7.1.2.1. (1) on page 7-4)
2. Remove the Developer Unit. (Refer to item 7.1.2.3. (1) on page 7-10)
3. Unscrew the two ⊕ screws to remove the Toner Guard Plate.
4. Clean up the Glass Sheet of the Drum Wrap Sensor with Lint-Free Cloth.

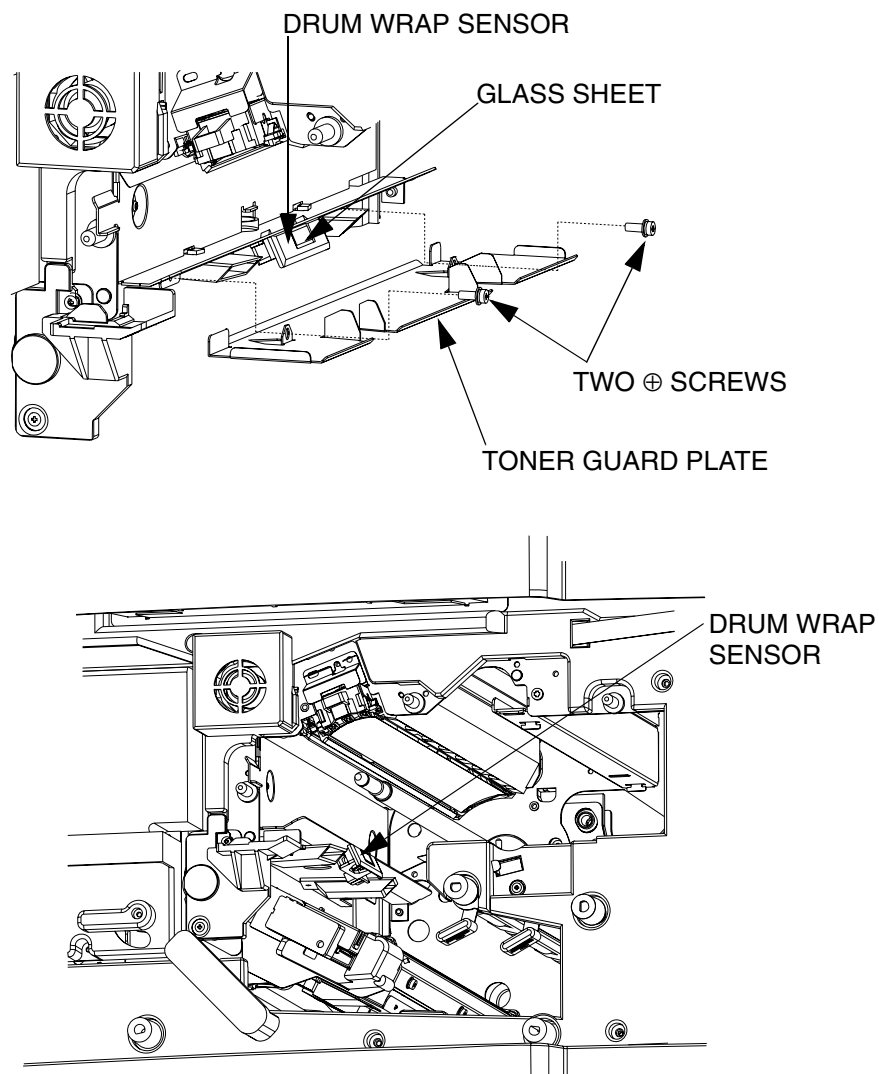


Figure 4-10. Cleaning of the Drum Wrap Sensor

**CAUTION:**

Be careful not to break the Glass Sheet during performing the cleaning.

**[Assembling Procedures]**

Perform the cleaning procedures in the reverse order.

## 4.4.8. Cleaning of the Charger Unit

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**CAUTION:**

Never touch the Corotron Wire during cleaning. If it is touched, there is the fear that streaks may occur by uneven electrical discharge. When Charger Wire is touched, it must be replaced with a new one. (Refer to item 7.1.2.2. (3) on page 7-8) If Corotron Wire is wiped, it's quite possible that streaks will occur more.

**Applicable jigs and tools:** ⊕ Screwdriver, Lint-Free Cloth, Tweezers, Paper.

**[Cleaning Procedures]**

1. Remove the Charger Unit. (Refer to item 7.1.2.2. (1) on page 7-6)
2. Unscrew the ⊕ screw to raise the Grid Tensioner Assembly.
3. Remove the Grid from the three hooks of the Grid Stand (F) and put it on the paper.
4. Remove the Grid Stand (R).

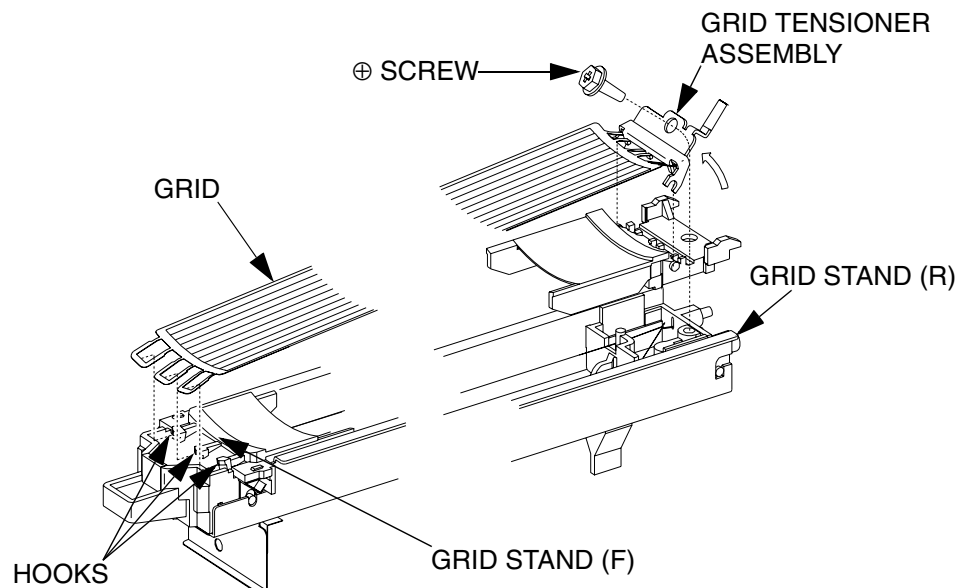


Figure 4-11. Cleaning of the Charger Unit

5. Clean the Shield Plate.  
Hold a clean, Lint-Free Cloth dampened with water in the Tweezers and wipe the four surfaces of Shield Plate in figure.  
Wipe again with a clean, dry, Lint-Free Cloth. (Never use alcohol instead of water.)



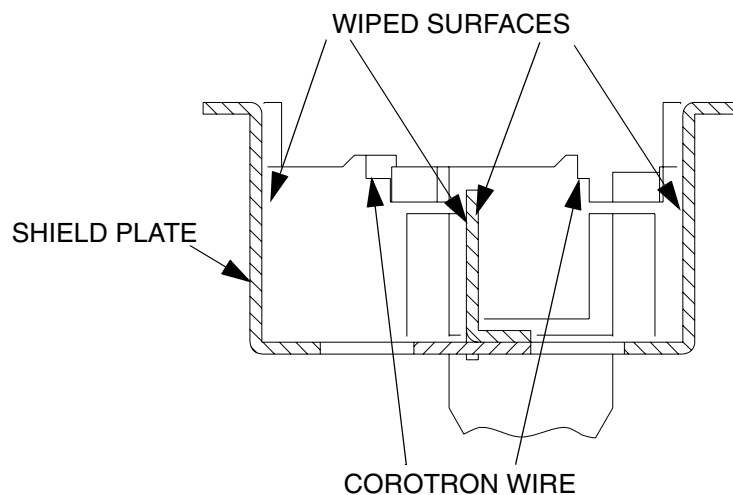


Figure 4-12. Cleaning of the Charger Unit's Shield Plate

6. Clean the Grid.

Wipe both sides of the Grid surface with a clean, Lint-Free Cloth dampened with water.

Wipe both sides again with a clean, dry, Lint-Free Cloth. (Never use alcohol instead of water.)

**Note: Do not apply excessive pressure during cleaning. This could damage the Grid.**

**[Assembling Procedures]**

Perform the cleaning procedures in the reverse order Nos. 4-1.

## 4.4.9. Cleaning of the Erase Lamp

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

Applicable jigs and tools: ⊕ Screwdriver, Lint-Free Cloth.

**[Cleaning Procedures]**

1. Open the Front Cover.
2. Draw out the Drum Unit. (Refer to item 7.1.2.1. (1) on page 7-4)
3. Draw out the Charger Unit. (Refer to item 7.1.2.2. (1) on page 7-6)
4. Disconnect the connector.
5. Draw out the Erase Lamp.

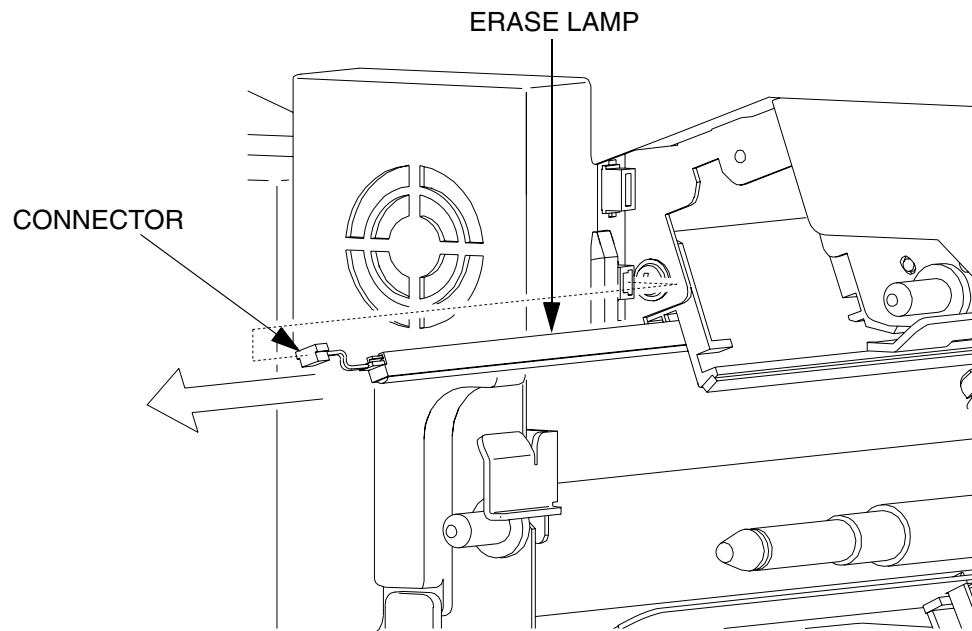


Figure 4-13. Cleaning of the Erase Lamp

6. Wipe the Erase Lamp with a clean, Lint-Free Cloth dampened with water. Wipe again with a clean, dry, Lint-Free Cloth. (Do not use alcohol instead of water.)

**[Assembling Procedures]**

Perform the cleaning procedures in the reverse order Nos. 5-1.

## 4.4.10. Cleaning of the Developer Unit

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** Lint-Free Cloth, (recommend a Vacuum Cleaner).

**Note:** Only toner guaranteed vacuum cleaners can be used for the cleaning.

**[Cleaning Procedures]**

1. Remove the Developer Unit. (Refer to item 7.1.2.3. (1) on page 7-10)
2. Clean the Developer Unit with a Lint-Free Cloth (recommend to use a Vacuum Cleaner).

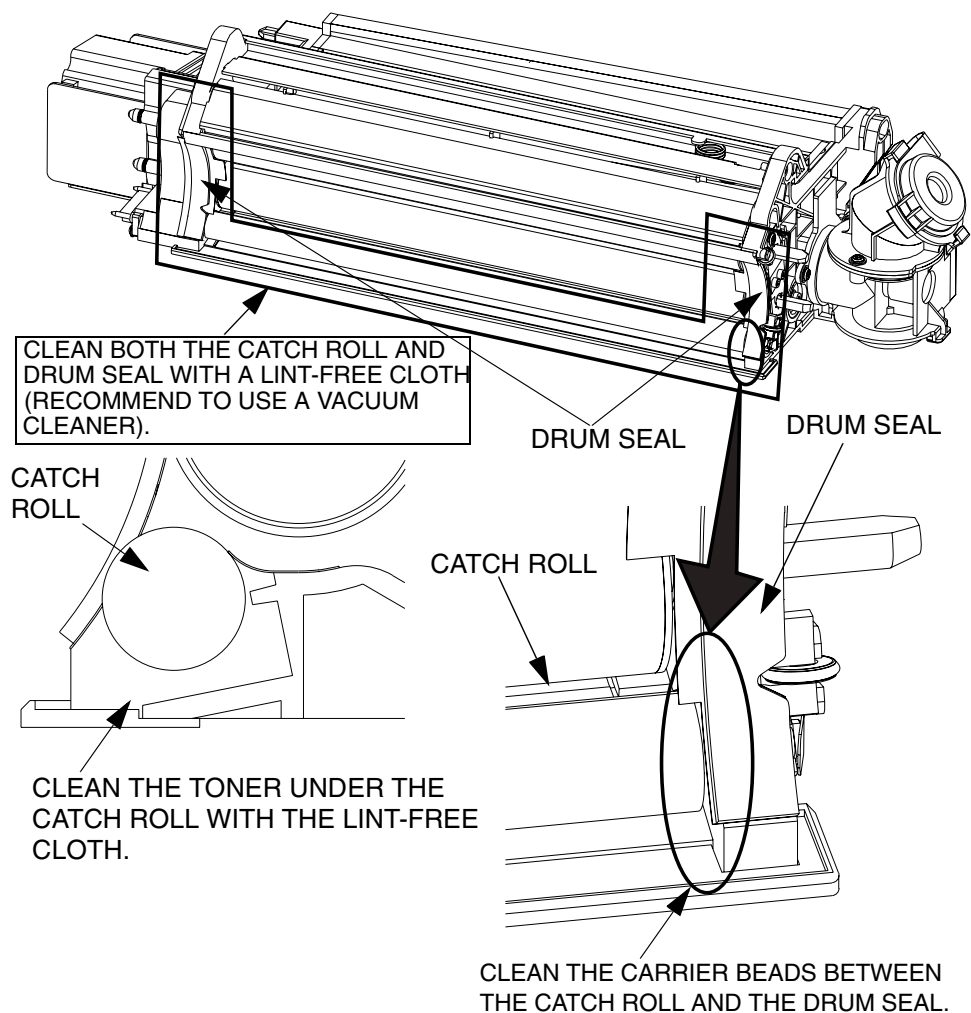


Figure 4-14. Cleaning of the Developer Unit

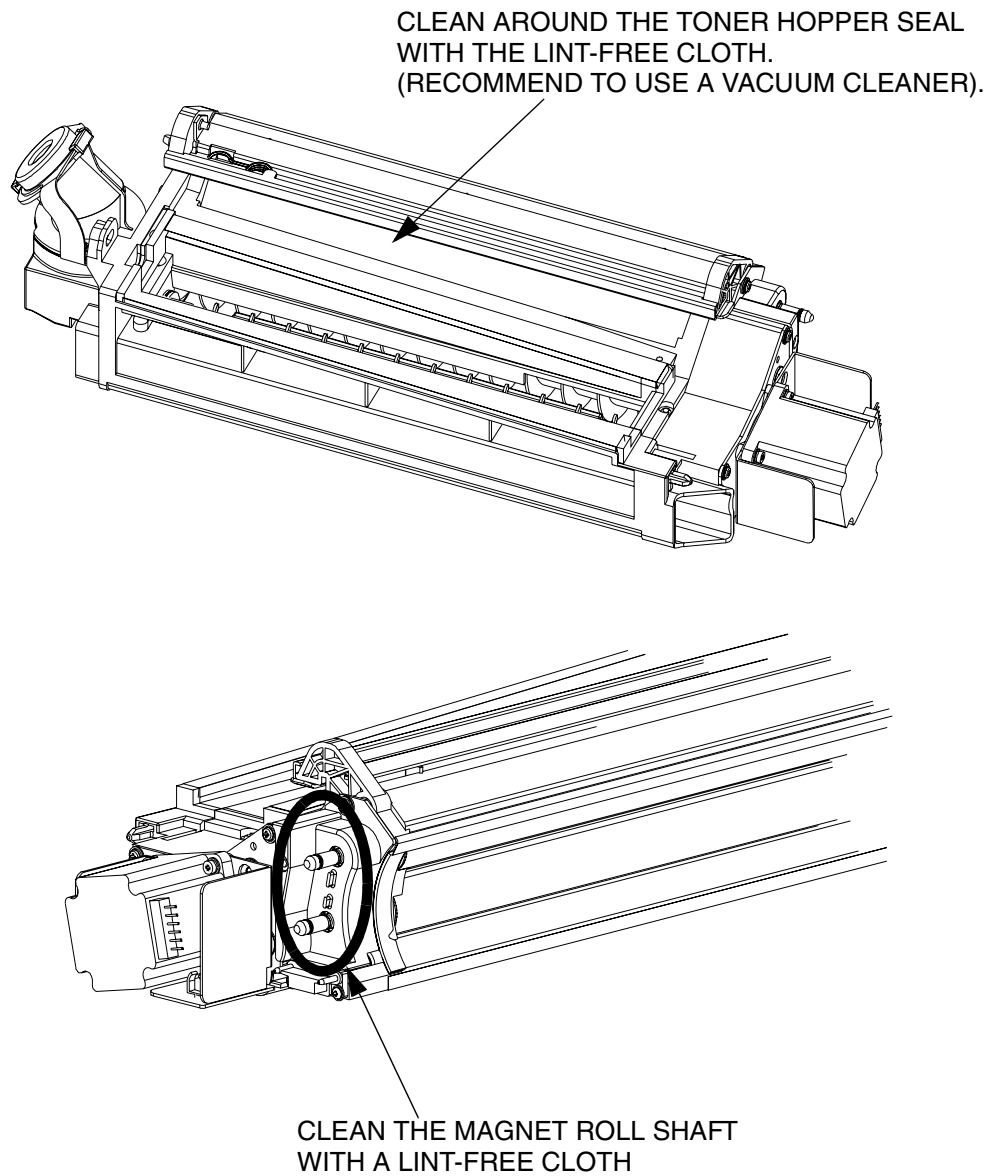


*Figure 4-15. Cleaning of the Developer Unit*

**[Assembling Procedures]**

Perform the cleaning procedures in the reverse order.

**[Checks]**

Make sure that the Cap Assembly is closed after performing the cleaning.

## 4.4.11. Cleaning of the Optical Unit Window

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

Applicable jigs and tools: ⊕ Screwdriver, Lint-Free Cloth.

**[Cleaning Procedures]**

1. Open the Front Cover.
2. Remove the Drum Unit. (Refer to item 7.1.2.1. (1) on page 7-4)
3. Remove the Developer Unit. (Refer to item 7.1.2.3. (1) on page 7-10)
4. Carefully clean the Optical Unit's Window with Lint-Free Cloth.

**CAUTION:**

Prior to cleaning, wash your hands with soap to avoid contamination.

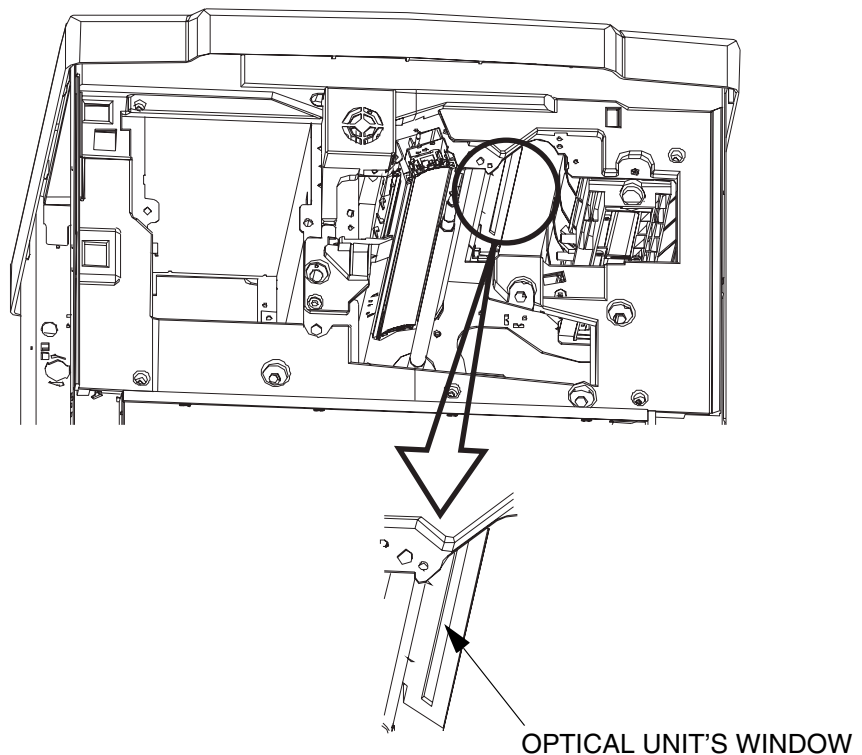


Figure 4-16. Cleaning of the Optical Unit Window

**[Assembling Procedures]**

Perform the cleaning procedures in the reverse order.

## 4.4.12. Cleaning of the Fuser Unit BR Nails

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

The temperature of the Heat Roll in the Fuser Unit is approximately 190C during operation. So let the Fuser Unit cool and be careful not to touch the high temperature parts.

**Applicable jigs and tools: Lint-Free Cloth.**

**[Cleaning Procedures]**

1. Remove the Fuser Unit. (Refer to item 7.1.3.1. (1) on page 7-67)
2. Open the BR Separators Assembly by sliding the right and left latches in the direction of the arrows.
3. Clean the four BR Separators with Lint-Free Cloth.

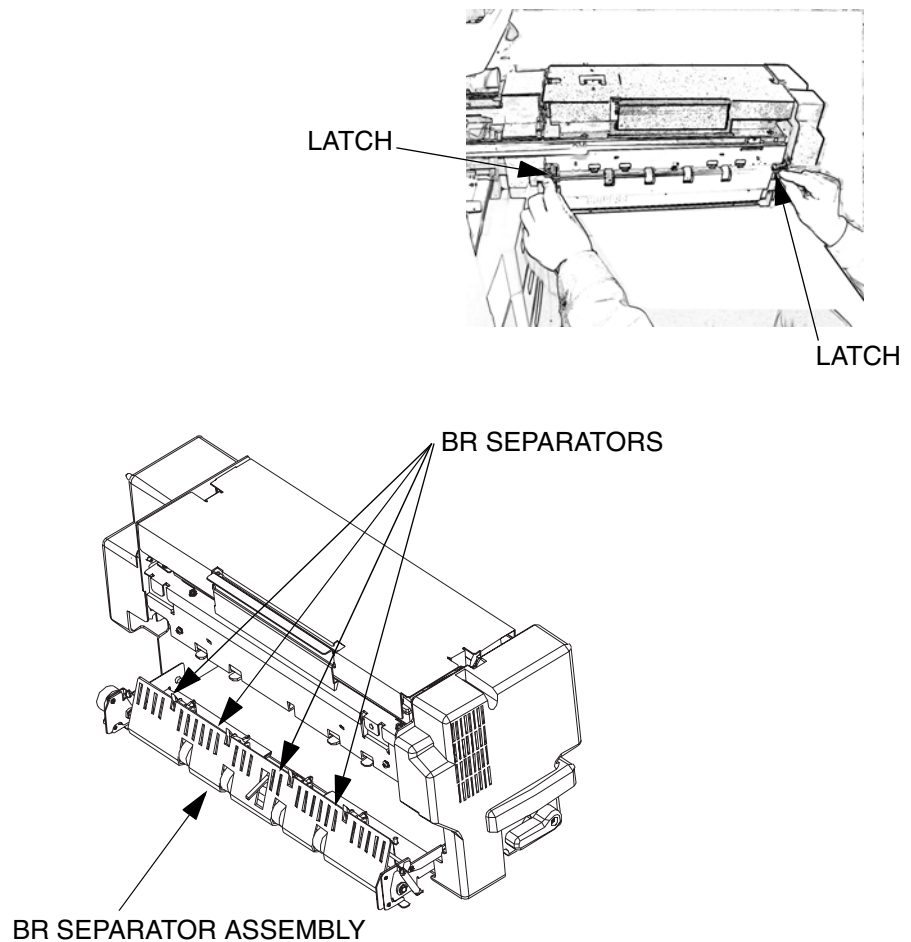


Figure 4-17. Cleaning of the Fuser Unit BR Nails

**[Assembling Procedures]**

Perform the cleaning procedures in the reverse order.

### 4.4.13. Cleaning around the Toner Collector Bottle area

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** Lint-Free Cloth, Vacuum Cleaner.

**Note:** Only toner guaranteed vacuum cleaners can be used for the cleaning.

**[Cleaning Procedures]**

1. Open the Toner Collector Bottle Cover. (Refer to item 3.3.2. (1) on page 3-12)
2. Open the Inner Cover.
3. Remove the Toner Collector Bottle.
4. Clean up inside of the Toner Collector Bottle Box, the surfaces of the Shutter and the Inner Cover with Lint-Free Cloth and a vacuum cleaner.

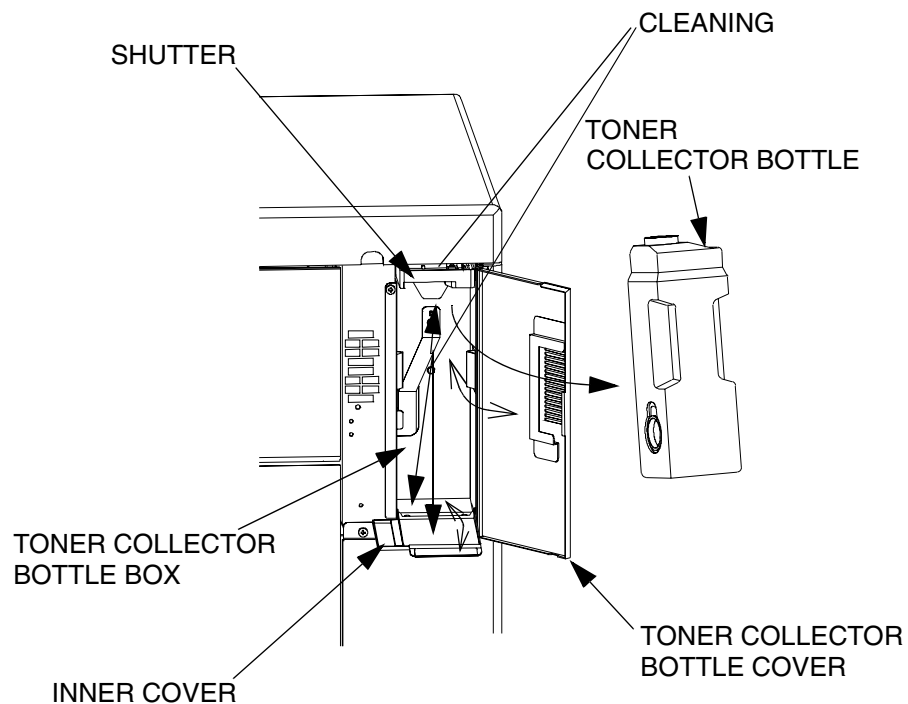


Figure 4-18. Cleaning around the Toner Collector Bottle area

**[Assembling Procedures]**

Perform the cleaning procedures in the reverse order.

## 4.4.14. Cleaning of the Spring Holder (R)

### CAUTION:

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

Applicable jigs and tools: Lint-Free Cloth, ⊕ Screwdriver, Grease.

### [Cleaning Procedures]

1. Draw out the Drum Unit. (Refer to item 7.1.2.1. (1) on page 7-4)
2. Draw out the Developer Unit. (Refer to item 7.1.2.3. (1) on page 7-10)
3. Remove the Cleaner Holder Assembly.
4. Unscrew the two ⊕ screws to remove the Cleaner Holder Base Assembly.
5. Remove the two Roller-Springs of the **A** and **B** parts.
6. Remove the two Spring Holder (R).
7. Cleaning inner area of Spring Holder (R).
8. Apply Grease to the inner area, and in the hole.

### [Lubrication]

Types of Grease

|   |                                                     |
|---|-----------------------------------------------------|
| a | Shell Alvania Grease No.2 or Shell Alvania Grease S |
|---|-----------------------------------------------------|

Registration Area

| No. | Lubrication Point                        | Type of Grease | Notes/Remarks      |
|-----|------------------------------------------|----------------|--------------------|
| 1.  | Inner area and hole of Spring Holder (R) | a              | Frequency: 2,400Ki |

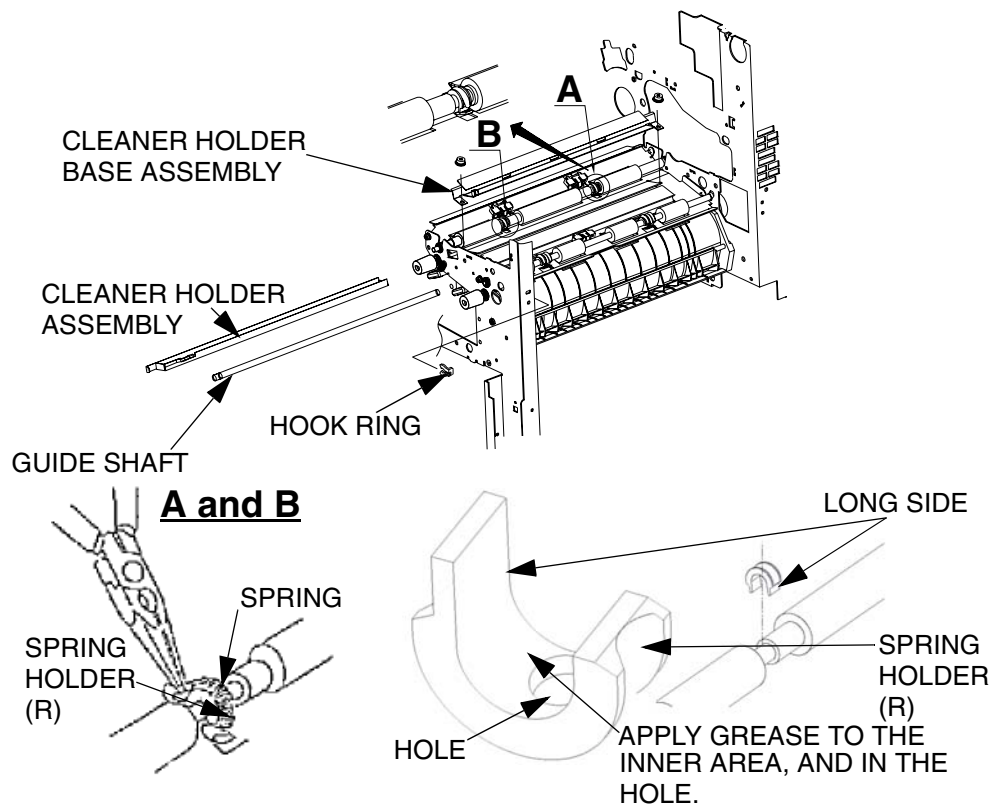


Figure 4-19. Cleaning of the Spring Holder (R)

### [Assembling Procedures]

Perform the cleaning procedures in the reverse order.



## 4.4.15. Cleaning of the Flip Pressure Roller

Applicable jigs and tools: Lint-Free Cloth, Alcohol.

### [Cleaning Procedures]

1. Open the Switch Back Cover.
2. Cleaning the Flip Pressure Roller with alcohol.
3. Close the Switch Back Cover.

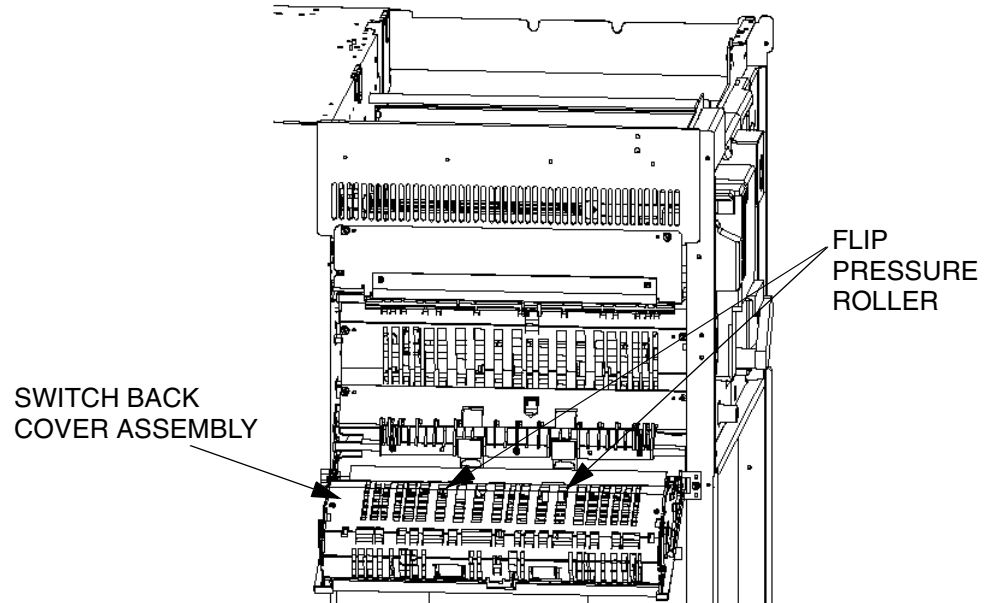


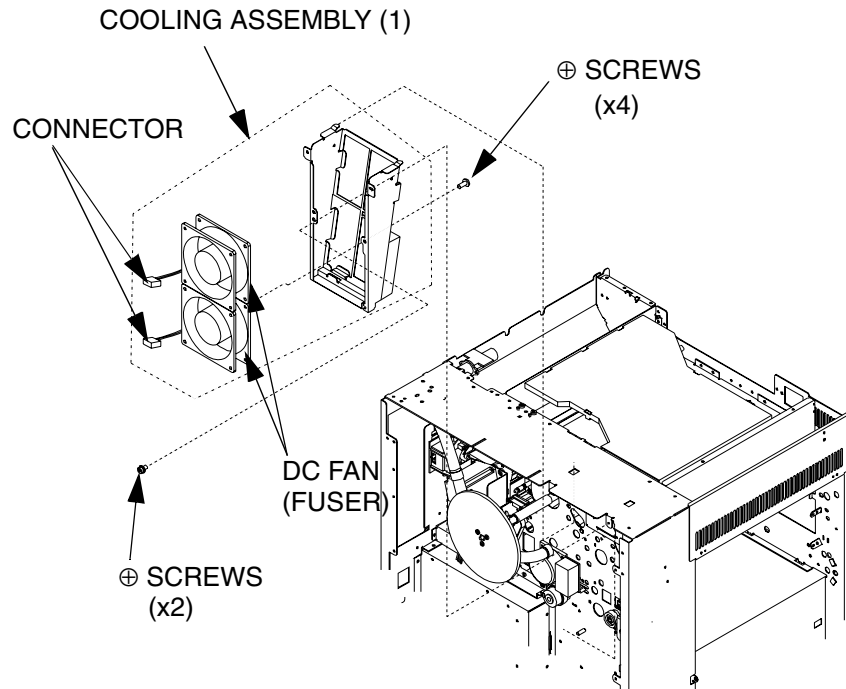
Figure 4-20. Cleaning of the Flip Pressure Roller

## 4.4.16. Cleaning of the Coupling Gear

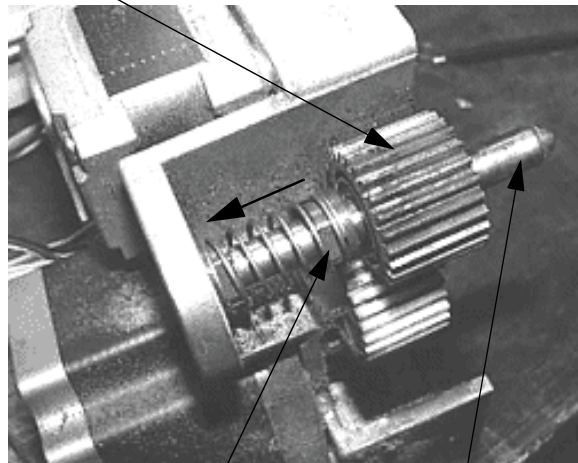
Applicable jigs and tools: Lint-Free Cloth, Alcohol.

### [Cleaning Procedures]

1. Removal of the DC Fan (Fuser). ([Refer to item 7.1.5.1. \(2\) on page 7-194](#))
2. Because the access from a printer rear side to the Coupling Gear becomes possible, the dirt of the surface of the shaft exposed with Lint-Free Cloth to move the Coupling Gear to a rear side, and to contain alcohol is wiped off.
3. Only the Sleeve Bearing is similarly moved, and the dirt of the shaft is wiped off.



### COUPLING GEAR



SLEEVE BEARING

SHAFT

Figure 4-21. Cleaning of the Coupling Gear

### [Assembling Procedures]

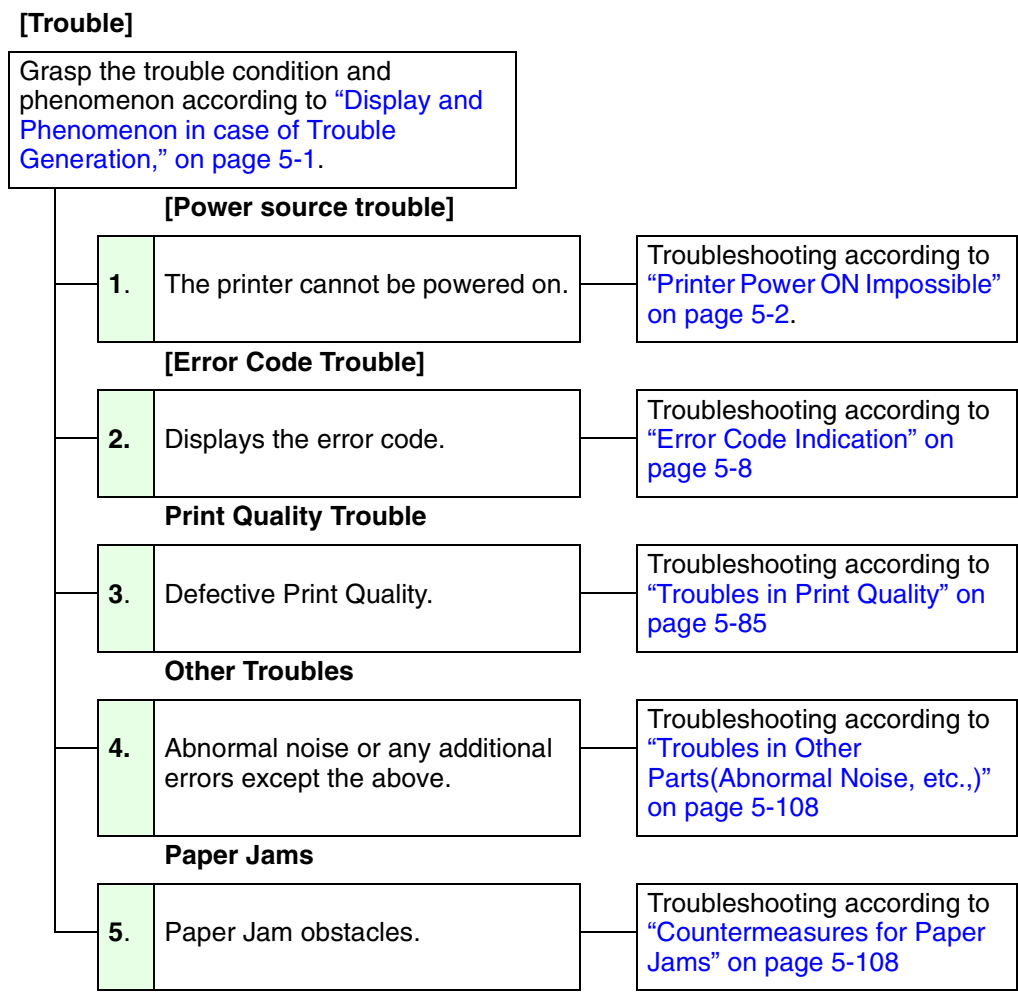
Perform the cleaning procedures in the reverse order.



# Chapter 5. Troubleshooting

## 5.1. Grasping Trouble Phenomenon and Countermeasures

### 5.1.1. Countermeasures



### 5.1.2. Display and Phenomenon in case of Trouble Generation

- (1) Has the trouble generated under a specific job? [a. YES, b. NO]
- (2) In what condition was it before the trouble generated? [a. Just powered on, b. At the start of printing, c. During Printing, d. In non-printing, e. Others.]
- (3) Has the trouble generated at a specific operation? [a. YES, b. NO]
- (4) Has the trouble generated when using special paper? [a. YES, b. NO]

### 5.1.3. Display and Phenomenon in case of Trouble Generation

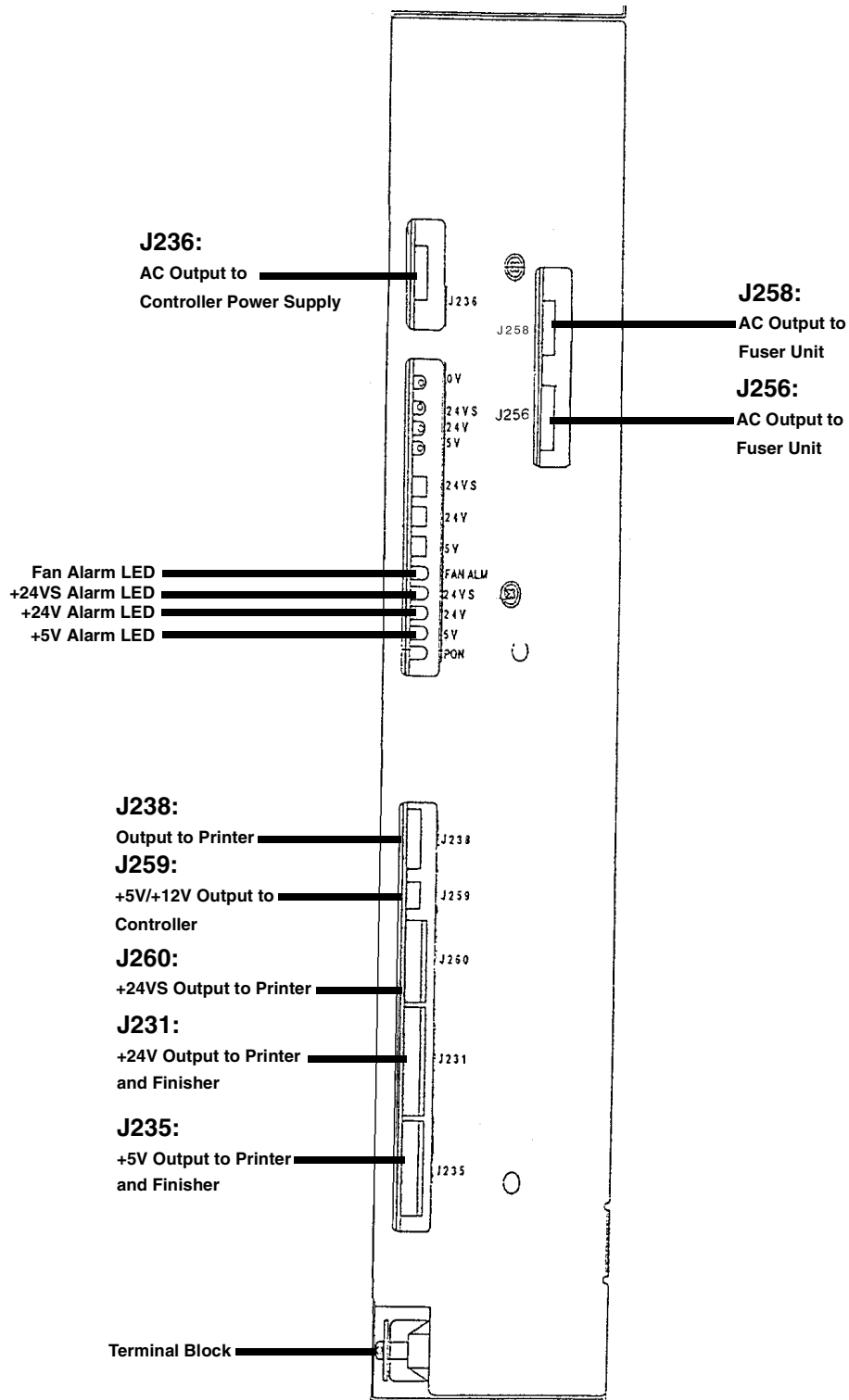
- |                                                                               |                                                                       |
|-------------------------------------------------------------------------------|-----------------------------------------------------------------------|
| (1) Display of Status Code(SC)                                                | [a. Nothing, b. <input type="text"/> displayed]                       |
| (2) Printing Quality<br>[Select samples in case of abnormal printing quality] | [a. Normal, b. Abnormal]                                              |
| (3) Other abnormal conditions                                                 | [a. Nothing special, b. Abnormal noise, c. Damaged parts, d. Others.] |

## 5.2. Troubles

### 5.2.1. Printer Power ON Impossible

| PRIMARY FACTOR;                                                                                                                                                                                      |                                                                                                             |                                                                                                                              |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|
| The printer cannot be powered on.                                                                                                                                                                    |                                                                                                             |                                                                                                                              |
| CAUTION: <b>Perform the maintenance with special care as it is the power supply.</b>                                                                                                                 |                                                                                                             |                                                                                                                              |
| Disconnect AC 200V with a distribution board to replace the low voltage power supply as AC200V is always supplied to the 200V input terminal block even when the printer's main power switch is off. |                                                                                                             |                                                                                                                              |
| PHENOMENON                                                                                                                                                                                           | CAUSES & CHECK POINTS                                                                                       | CORRECTIONS                                                                                                                  |
| 1. The printer cannot be powered on.<br>(+5V alarm LED and Fan alarm LED does not turn on.)                                                                                                          | (1) The MAIN POWER SWITCH is not turned on.                                                                 | Turn on the MAIN POWER SWITCH.                                                                                               |
|                                                                                                                                                                                                      | (2) The CIRCUIT BREAKER CB3 of POWER SUPPLY is not turned on.                                               | Turn on the CIRCUIT BREAKER CB3.                                                                                             |
|                                                                                                                                                                                                      | (3) Supply voltage is insufficient.                                                                         | Check: Supply Voltage                                                                                                        |
|                                                                                                                                                                                                      | (4) PCI signal from the Controller is unusual.                                                              | Check: Measure the voltage of the power on signal (between J259-2 pin and 5 pin)                                             |
|                                                                                                                                                                                                      | (5) Power supply circuit is unusual.                                                                        | Replace: Power Supply                                                                                                        |
| 2. The printer cannot be powered on.<br>(Fan alarm LED turned on.)                                                                                                                                   | (1) Foreign substance block the power supply fan rotation.                                                  | Remove: Foreign substance                                                                                                    |
|                                                                                                                                                                                                      | (2) Power supply fan is unusual.                                                                            | Replace: Power Supply                                                                                                        |
| 3. The printer cannot be powered on.<br>(+5V alarm LED turned on.)                                                                                                                                   | (1) Power supply detects over current or low voltage (in +5V circuit) because of short circuit of the load. | Load isolation from Printer Power Supply. (Refer to <a href="#">"Load Isolation from Printer Power Supply,"</a> on page 5-5) |
|                                                                                                                                                                                                      | (2) Power supply circuit is unusual.                                                                        | Replace: Power Supply                                                                                                        |

|                                                                      |                                                                                                               |                                                                                                                              |
|----------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|
| 4. The printer cannot be powered on.<br>(+24V alarm LED turned on.)  | (1) Power supply detects over current or low voltage (in +24V circuit) because of short circuit of the load.  | Load isolation from Printer Power Supply. (Refer to <a href="#">“Load Isolation from Printer Power Supply,”</a> on page 5-5) |
|                                                                      | (2) Power supply circuit is unusual.                                                                          | Replace: Power Supply                                                                                                        |
| 5. The printer cannot be powered on.<br>(+24VS alarm LED turned on.) | (1) Power supply detects over current or low voltage (in +24VS circuit) because of short circuit of the load. | Load isolation from Printer Power Supply. (Refer to <a href="#">“Load Isolation from Printer Power Supply,”</a> on page 5-5) |
|                                                                      | (2) Power supply circuit is unusual.                                                                          | Replace: Power Supply                                                                                                        |



#### Right Side View

Parts No. G1501337(N2127492)

## 5.2.2. Load Isolation from Printer Power Supply

| <b>PRIMARY FACTOR;</b> +5V/+24V/+24VS alarm has generated due to a load short circuit.                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                 |                                                       |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|-------------------------------------------------------|
| <p>Disconnect the power supply load(Examining method when a load short-circuit occurs)</p> <p><b>CAUTION:</b> <u>Perform maintenance with special care as it is the power supply.</u></p> <p>Disconnect 200VAC with a distribution board prior to replacing the low voltage power supply as 200VAC is always supplied to the 200V input terminal block even when the printer's main switch is off.</p> <p><b>CAUTION:</b> <u>Be sure to turn off the printer prior to connecting/disconnecting connectors.</u></p> |                                                                                 |                                                       |
| Disconnecting +5V load                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                 |                                                       |
| Disconnection Unit                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Connector for Disconnection                                                     | Connector to be disconnected for protecting a circuit |
| High Capacity Hopper                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | HPxxx Assembly - P415                                                           | HPxxx Assembly - P402                                 |
| Finisher                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | FS-108H P/K - CN9, CN10<br>* FS-108R P/K - CN6, CN7<br>* Finisher SR5000 - J820 | -                                                     |
| Transit Pass Unit Type DDP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | ED089 Assembly - P420                                                           | -                                                     |
| Hopper Unit                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | HPxxx Assembly - P403                                                           | HPxxx Assembly - P401                                 |
| Toner Hopper Unit                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | CPxxx Assembly - P710                                                           | -                                                     |
| Developer Unit                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | CPxxx Assembly - P719                                                           | -                                                     |
| TH Unit                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | CPxxx Assembly - P714                                                           | -                                                     |
| Optical Unit                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | CPxxx Assembly - P704                                                           | OCxxx Assembly - P115                                 |
| Fuser Unit                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | CPxxx Assembly - P718                                                           | -                                                     |
| Sensors                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | CPxxx Assembly - P711, P712, P713, P715, P716, P717                             | -                                                     |
| Control Unit                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | CPxxx Assembly - P701                                                           | -                                                     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                 |                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                 |                                                       |

\* Only for RoHS Machine.



Disconnecting +24V load (The printer should be powered on with all load disconnected.)

| Disconnection Unit         | Connector for Disconnection                                 | Connector to be disconnected for protecting a circuit |
|----------------------------|-------------------------------------------------------------|-------------------------------------------------------|
| High Capacity Hopper       | AHxxx Assembly - P420                                       | -                                                     |
| Finisher                   | FS-108H P/K - CN9<br>* FS-108R P/K - CN6<br>* SR5000 - J820 | -                                                     |
| Transit Pass Unit Type DDP | ED089 Assembly - P420                                       | -                                                     |
| Hopper Unit                | HPxxx Assembly - P401                                       | -                                                     |
| Toner Hopper Unit          | CPxxx Assembly - P710                                       | -                                                     |
| Developer Unit             | CPxxx Assembly - P720                                       | -                                                     |
| TH Unit                    | CPxxx Assembly - P714                                       | -                                                     |
| Optical Unit               | OCxxx Assembly - P115                                       | -                                                     |
| Fan/Motor                  | CPxxx Assembly - P725, P726, P727, P729, P730, P731, P733   | -                                                     |
| Control Unit               | CPxxx Assembly - P701                                       | -                                                     |
|                            |                                                             |                                                       |

Disconnecting +24VS load (The printer should be powered on with all load disconnected.)

| Disconnection Unit                            | Connector for Disconnection             | Connector to be disconnected for protecting a circuit |
|-----------------------------------------------|-----------------------------------------|-------------------------------------------------------|
| High Voltage Power Supply (Charger/Grid/Bias) | CPxxx Assembly - P706                   | -                                                     |
| High Voltage Power Supply (Transfer/Detach)   | CPxxx Assembly - P707                   | -                                                     |
| TH Unit                                       | CPxxx Assembly - P714                   | -                                                     |
| Fan/Motor/Solenoid                            | CPxxx Assembly - P728, P715, P732, P734 | -                                                     |
| Control Unit                                  | CPxxx Assembly - P701                   | -                                                     |

\* Only for RoHS Machine.

### 5.2.3. PCB Fault

**PRIMARY FACTOR;** The IC on the CP P/K is faulty.  
The IC on the OC P/K is faulty.

The printer does not operate at all when this trouble occurs.

The following message is displayed on the Maintenance Panel.

"..01": An error of the Ram (D-P RAM/SRAM/nvRAM) occurs at the Master CPU side.

"..10": An error of the Timer occurs at the Master CPU side.

"..02": An error of the Ram (D-P RAM/SRAM/nvRAM) occurs at the Slave CPU side.

"..20": An error of the Timer occurs at the Master CPU side.

".b01": An error of the Bus line occurs between the CP P/K and OC P/K.

| PHENOMENON                                                                  | CAUSES & CHECK POINTS | CORRECTIONS                               | Maintenance<br>Ref + Page                                                    |
|-----------------------------------------------------------------------------|-----------------------|-------------------------------------------|------------------------------------------------------------------------------|
| 1. The following message is displayed.<br>"..01", "..10",<br>"..02", "..20" | 1. PCB fault.         | Replace: CPxxx Assembly                   | <a href="#">7.1.5.1. (13), 7-205</a>                                         |
| 2. The ".b01" message is displayed.                                         | 1. PCB fault.         | Replace: OCxxx Assembly<br>CPxxx Assembly | <a href="#">7.1.5.1. (17), 7-209</a><br><a href="#">7.1.5.1. (13), 7-205</a> |

## 5.3. Error Code Indication

**Note:** MB Tray means the Multi-bypass Tray  
Hopper 5 means the High Capacity Hopper  
Refer to [Part 5.7, “Error Code Indication \(Finisher SR5000\),”](#) on page 5-113  
when the Finisher SR5000 is connected.

| Detail Error Code | Error Name                         | Description                                                       | Page No.             |
|-------------------|------------------------------------|-------------------------------------------------------------------|----------------------|
| 0000              | NORMAL                             |                                                                   |                      |
| E001              | Hopper 1 Paper Empty               | No paper is detected in Hopper 1.                                 | <a href="#">5-18</a> |
| E002              | Hopper 2 Paper Empty               | No paper is detected in Hopper 2.                                 | <a href="#">5-18</a> |
| E003              | Hopper 3 Paper Empty               | No paper is detected in Hopper 3.                                 | <a href="#">5-18</a> |
| E004              | MB Tray Paper Empty                | No paper is detected in Multi-bypass Tray.                        | <a href="#">5-18</a> |
| E005              | Hopper 5 Paper Empty               | No paper is detected in High Capacity Hopper.                     | <a href="#">5-18</a> |
| E008              | FNS Cover Sheet Tray Empty         | The FNS Cover Sheet Tray is empty.                                | Finisher Manual      |
| E009              | Shift Tray Full 1                  | Shift Tray is full of paper.                                      | Finisher Manual      |
| E00A              | Shift Tray Full 2                  | Paper on the Shift Tray is abnormal.                              | Finisher Manual      |
| E010              | Toner Collector Bottle Full        | Toner Collector bottle has reached prearranged replacement.       | <a href="#">5-20</a> |
| E011              | Toner Supply Empty                 | Replenish the toner.                                              | <a href="#">5-22</a> |
| E012              | Developer mix Replacement Required | Developer mix in the developer unit needs to be replaced.         | <a href="#">5-22</a> |
| E013              | Toner Collector Bottle Full 2      | Toner sensor becomes on.                                          | <a href="#">5-20</a> |
| E014              | Felt End                           | Fuser Cleaning Web needs to be replaced.                          | <a href="#">5-23</a> |
| E015              | Fuser Unit End                     | Fuser Unit needs to be replaced.                                  | <a href="#">5-24</a> |
| E016              | PC End                             | Drum Unit needs to be replaced.                                   | <a href="#">5-24</a> |
| E017              | Felt End 2                         | Felt End sensor becomes on.                                       | <a href="#">5-23</a> |
| E018              | Wrap Sensor                        | The Wrap Sensor level is abnormal.                                | <a href="#">5-24</a> |
| E019              | Low Staple (R)                     | Detected no needle of stapler. (Rear)                             | Finisher Manual      |
| E01A              | Low Staple (F)                     | Detected no needle of stapler. (Front)                            | Finisher Manual      |
| E01D              | Toner Collector Bottle Nonset      | Toner Collector bottle is not set correctly.                      | <a href="#">5-25</a> |
| E01E              | Developer Bottle Nonset            | Developer bottle is not set during discharging the Developer Mix. | <a href="#">5-26</a> |
| E020              | Hopper 1 Open                      | Hopper 1 is open.                                                 | <a href="#">5-27</a> |
| E021              | Hopper 2 Open                      | Hopper 2 is open.                                                 | <a href="#">5-27</a> |
| E022              | Hopper 3 Open                      | Hopper 3 is open.                                                 | <a href="#">5-27</a> |
| E023              | Hopper 5 Open                      | High Capacity hopper is open.                                     | <a href="#">5-27</a> |
| E027              | Stacker 4 Table Full               | The Stacker 4 is full.                                            | Finisher Manual      |

| <b>Detail Error Code</b> | <b>Error Name</b>                                  | <b>Description</b>                                                                         | <b>Page No.</b>      |
|--------------------------|----------------------------------------------------|--------------------------------------------------------------------------------------------|----------------------|
| E03E                     | Finisher Top Cover Open                            | The Top Cover of the Finisher is open.                                                     | Finisher Manual      |
| E03F                     | Finisher Front Cover Open                          | The Finisher Front cover is open.                                                          | Finisher Manual      |
| E043                     | Front Cover Open                                   | The Front Cover is open.                                                                   | <a href="#">5-28</a> |
| E044                     | IS Cover Open                                      | The IS cover is open.                                                                      | <a href="#">5-30</a> |
| E045                     | SB Cover Open                                      | The SB cover is open.                                                                      | <a href="#">5-31</a> |
| E046                     | Top Cover Open                                     | The Top Cover of the High Capacity Hopper is open.                                         | <a href="#">5-31</a> |
| E047                     | Developer Error 1                                  | The abnormality was detected when replacing the Developer mix.                             | <a href="#">5-33</a> |
| E048                     | Developer Error 2                                  | Charging the Developer mix was executed though the Developer mix is in the Developer Unit. | <a href="#">5-33</a> |
| E050                     | Paper On Paper Path 1 (IS Feed Sensor 1)           | Paper is detected on the HP1 Pick Sensor or the IS Feed Sensor 1.                          | <a href="#">5-34</a> |
| E051                     | Paper On Paper Path 2 (IS Feed Sensor 2)           | Paper is detected on the HP2 Pick Sensor or the IS Feed Sensor 2.                          | <a href="#">5-34</a> |
| E052                     | Paper On Paper Path 3 (IS Feed Sensor 3)           | Paper is detected on the HP3 Pick Sensor or the IS Feed Sensor 3.                          | <a href="#">5-34</a> |
| E056                     | Paper On Paper Path 4 (Timing Sensor)              | Paper is detected on the Timing Sensor.                                                    | <a href="#">5-34</a> |
| E057                     | Paper On Paper Path 5 (Skew Sensor)                | Paper is detected on the Skew Sensor.                                                      | <a href="#">5-34</a> |
| E05A                     | Paper On Paper Path 6 (Drum Wrap Sensor)           | Paper is detected on the Drum Wrap Sensor.                                                 | <a href="#">5-34</a> |
| E05B                     | Paper On Paper Path 9 (SB Sensor)                  | Paper is detected on the SB Sensor.                                                        | <a href="#">5-34</a> |
| E05C                     | Paper On Paper Path 10 (Return Sensor 1)           | Paper is detected on the Return Sensor 1.                                                  | <a href="#">5-34</a> |
| E05D                     | Paper On Paper Path 11 (Return Sensor 2)           | Paper is detected on the Return Sensor 2.                                                  | <a href="#">5-34</a> |
| E05E                     | Paper On Paper Path 12 (PF Out Sensor)             | Paper is detected on the PF Out Sensor.                                                    | <a href="#">5-34</a> |
| E05F                     | Paper On Paper Path 8 (Flip Sensor)                | Paper is detected on the Flip Sensor.                                                      | <a href="#">5-34</a> |
| E064                     | Paper On Paper Path 14 (FIN Entrance Sensor)       | Paper is detected on the FIN Entrance Sensor.                                              | Finisher Manual      |
| E065                     | Paper On Paper Path 15 (Paper Exit 1 or 2 Sensor)  | Paper is detected on the Paper Exit 1 Sensor or the Paper Exit 2 Sensor.                   | Finisher Manual      |
| E066                     | Paper On Paper Path 16 (Stacker Conveyance Sensor) | Paper is detected on the Stacker Conveyance Sensor.                                        | Finisher Manual      |
| E067                     | Paper On Paper Path 17 (Stacker Paper Sensor)      | Paper is detected on the Stacker Paper Sensor.                                             | Finisher Manual      |
| E068                     | Paper On Paper Path 18 (Sub-Tray Exit Sensor)      | Paper is detected on the Sub-Tray Exit Sensor.                                             | Finisher Manual      |

| <b>Detail Error Code</b> | <b>Error Name</b>                        | <b>Description</b>                                                       | <b>Page No.</b>      |
|--------------------------|------------------------------------------|--------------------------------------------------------------------------|----------------------|
| E069                     | Paper On Paper Path 30                   | A paper on the entrance path of the folding path needs to be removed.    | Finisher Manual      |
| E06A                     | Paper On Paper Path 31                   | A paper on the folding path needs to be removed.                         | Finisher Manual      |
| E06B                     | Paper On Paper Path 32                   | A paper on the exit path of the folding path needs to be removed.        | Finisher Manual      |
| E06C                     | Paper On Paper Path 33                   | A paper on the paper path of the cover sheet feeder needs to be removed. | Finisher Manual      |
| E070                     | Paper On Paper Path 7 (HR Out Sensor)    | Paper is detected on the HR Out Sensor.                                  | <a href="#">5-34</a> |
| E072                     | Paper On Paper Path 19 (HP5 Feed Sensor) | Paper is detected on the HP5 Feed Sensor.                                | <a href="#">5-34</a> |
| E080                     | Erase Lamp Nonset                        | The Erase Lamp is not set correctly                                      | <a href="#">5-35</a> |
| E090                     | Paper Size Unmatch                       | The paper size of the designated hopper is invalid.                      | <a href="#">5-36</a> |
| E09A                     | Lack Toner Recovery                      | Supplying toner to recover Lack toner error.                             | <a href="#">5-37</a> |
| E0A1                     | Developer Charge                         | Replacement of the developer is running.                                 | <a href="#">5-37</a> |
| E0A2                     | Developer Discharge                      | Replacement of the developer is running.                                 | <a href="#">5-37</a> |
| E110                     | Regist jam 1                             | Paper did not arrive at Skew Sensor. (Simplex sheet)                     | <a href="#">5-38</a> |
| E111                     | Regist jam 2                             | Paper did not depart from Skew Sensor. (Simplex sheet)                   | <a href="#">5-38</a> |
| E112                     | Regist jam 3                             | Paper did not arrive at Skew Sensor. (Duplex sheet)                      | <a href="#">5-38</a> |
| E113                     | Regist jam 4                             | Paper did not depart from Skew Sensor. (Duplex sheet)                    | <a href="#">5-38</a> |
| E118                     | Drum Wrap 1                              | Simplex paper is wrapped around the Drum.                                | <a href="#">5-40</a> |
| E119                     | Drum Wrap 2                              | Duplex paper is wrapped around the Drum.                                 | <a href="#">5-40</a> |
| E128                     | HR jam 1                                 | Paper did not arrive at Flip Sensor.                                     | <a href="#">5-42</a> |
| E129                     | HR jam 2                                 | Paper did not depart from Flip Sensor.                                   | <a href="#">5-42</a> |
| E130                     | Switch Back jam 1                        | Paper did not arrive at SB Sensor                                        | <a href="#">5-43</a> |
| E131                     | Switch Back jam 2                        | Paper did not depart from SB Sensor.                                     | <a href="#">5-43</a> |
| E134                     | Paper Out jam 1                          | Paper did not arrive at PF Out Sensor.                                   | <a href="#">5-44</a> |
| E135                     | Paper Out jam 2                          | Paper did not depart from PF Out Sensor.                                 | <a href="#">5-44</a> |
| E138                     | Return Feed jam 1                        | Paper did not arrive at Return Sensor 1.                                 | <a href="#">5-46</a> |

| <b>Detail Error Code</b> | <b>Error Name</b>        | <b>Description</b>                                                                   | <b>Page No.</b>      |
|--------------------------|--------------------------|--------------------------------------------------------------------------------------|----------------------|
| E139                     | Return Feed jam 2        | Paper did not depart from Return Sensor 1.                                           | <a href="#">5-46</a> |
| E13A                     | Return Feed jam 3        | Paper did not arrive at Return Sensor 2.                                             | <a href="#">5-46</a> |
| E13B                     | Return Feed jam 4        | Paper did not depart from Return Sensor 2.                                           | <a href="#">5-46</a> |
| E150                     | Over Skew 1              | Skew of sheet picked from Hopper1 is detected at the Registration Unit.              | <a href="#">5-47</a> |
| E151                     | Over Skew 2              | Skew of sheet picked from Hopper2 is detected at the Registration Unit.              | <a href="#">5-47</a> |
| E152                     | Over Skew 3              | Skew of sheet picked from Hopper3 is detected at the Registration Unit.              | <a href="#">5-47</a> |
| E153                     | Over Skew 4              | Skew of sheet picked from Multi-bypass Tray is detected at the Registration Unit.    | <a href="#">5-47</a> |
| E154                     | Over Skew 5              | Skew of sheet picked from Duplex path is detected at the Registration Unit.          | <a href="#">5-47</a> |
| E155                     | Over Skew 6              | Skew of sheet picked from High Capacity Hopper is detected at the Registration Unit. | <a href="#">5-47</a> |
| E180                     | Pick jam 1               | Paper traveling time from Hopper 1 to IS Feed Sensor 1 is too long.                  | <a href="#">5-50</a> |
| E181                     | Input Station Feed jam 1 | Paper did not depart from IS Feed Sensor 1.                                          | <a href="#">5-54</a> |
| E182                     | Input Station Feed jam 2 | Paper traveling time from IS Feed Sensor 1 to IS Feed Sensor 2 is too long.          | <a href="#">5-54</a> |
| E183                     | Pick jam 2               | Paper traveling time from Hopper 1 to IS Feed Sensor 1 is too short.                 | <a href="#">5-50</a> |
| E184                     | Pick jam 3               | Paper traveling time from Hopper 2 to IS Feed Sensor 2 is too long.                  | <a href="#">5-50</a> |
| E185                     | Input Station Feed jam 3 | Paper did not depart from IS Feed Sensor 2.                                          | <a href="#">5-54</a> |
| E186                     | Input Station Feed jam 4 | Paper traveling time from IS Feed Sensor 2 to IS Feed Sensor 3 is too long.          | <a href="#">5-54</a> |
| E187                     | Pick jam 4               | Paper traveling time from Hopper 2 to IS Feed Sensor 2 is too short.                 | <a href="#">5-50</a> |
| E188                     | Pick jam 5               | Paper traveling time from Hopper 3 to IS Feed Sensor 3 is too long.                  | <a href="#">5-50</a> |
| E189                     | Input Station Feed jam 5 | Paper did not depart from IS Feed Sensor 3.                                          | <a href="#">5-54</a> |
| E18A                     | Input Station Feed jam 6 | Paper traveling time from IS Feed Sensor 3 to Timing Sensor is too long.             | <a href="#">5-54</a> |
| E18B                     | Input Station Feed jam 7 | Paper did not depart from Timing Sensor.                                             | <a href="#">5-54</a> |

| <b>Detail Error Code</b> | <b>Error Name</b>        | <b>Description</b>                                                         | <b>Page No.</b>      |
|--------------------------|--------------------------|----------------------------------------------------------------------------|----------------------|
| E18C                     | Pick jam 7               | Paper traveling time from Multi-bypass Tray to Timing Sensor is too long.  | <a href="#">5-50</a> |
| E18D                     | Pick jam 6               | Paper traveling time from Hopper 3 to IS Feed Sensor 3 is too short.       | <a href="#">5-50</a> |
| E190                     | Pick jam 8               | Paper traveling time from Hopper 5 to HP5 Feed Sensor is too long.         | <a href="#">5-50</a> |
| E191                     | Input Station Feed jam 8 | Paper did not depart from HP5 Feed Sensor.                                 | <a href="#">5-54</a> |
| E192                     | Pick jam 9               | Paper traveling time from Hopper 5 to HP5 Feed Sensor is too short.        | <a href="#">5-50</a> |
| E193                     | Input Station Feed jam 9 | Paper traveling time from HP5 Feed Sensor to IS Feed Sensor 1 is too long. | <a href="#">5-54</a> |
| E194                     | Pick jam 10              | Paper traveling time from Duplex path to Timing Sensor is too long.        | <a href="#">5-50</a> |
| E1C3                     | FNS Lead Jam 6           | The paper did not get to the bypass of the folding path of the Finisher.   | Finisher Manual      |
| E1C4                     | FNS Lead Jam 7           | The paper did not get to the exit of the folding path of the Finisher.     | Finisher Manual      |
| E1C5                     | FNS Lead Jam 8           | The paper did not get to the entrance of the folding path of the Finisher. | Finisher Manual      |
| E1C6                     | FNS Trail Jam 7          | A paper jamming occurred in the exit path of the folding path.             | Finisher Manual      |
| E1C7                     | FNS Inserter Jam 1       | The paper did not get to the sheet path of the Finisher.                   | Finisher Manual      |
| E1C8                     | FNS Inserter Jam 2       | The paper did not get to the bypass of the Finisher.                       | Finisher Manual      |
| E1C9                     | FNS Inserter Jam 3       | The paper did not get to the exit (non staple) of the Finisher.            | Finisher Manual      |
| E1D0                     | FNS 1 Lead jam 1         | Paper did not arrive at FIN Entrance Sensor.                               | Finisher Manual      |
| E1D1                     | FNS 1 Lead jam 2         | Paper did not arrive at Paper Exit 2 Sensor.                               | Finisher Manual      |
| E1D2                     | FNS 1 Lead jam 3         | Paper did not arrive at Stacker Conveyance Sensor.                         | Finisher Manual      |
| E1D3                     | FNS 1 Lead jam 4         | Paper did not arrive at Paper Exit 1 Sensor.                               | Finisher Manual      |
| E1D5                     | FNS 1 Trail jam 2        | Paper did not depart from Paper Exit 2 Sensor.                             | Finisher Manual      |
| E1D6                     | FNS 1 Trail jam 3        | Paper did not depart from Stacker Conveyance Sensor.                       | Finisher Manual      |
| E1D7                     | FNS 1 Trail jam 4        | Paper did not depart from Paper Exit 1 Sensor.                             | Finisher Manual      |
| E1D8                     | FNS 1 Lead jam 5         | Paper did not arrive at Sub-Tray Exit Sensor.                              | Finisher Manual      |
| E1D9                     | FNS 1 Trail jam 5        | Paper did not depart from Sub-Tray Exit Sensor.                            | Finisher Manual      |

| <b>Detail Error Code</b> | <b>Error Name</b>            | <b>Description</b>                                                          | <b>Page No.</b>      |
|--------------------------|------------------------------|-----------------------------------------------------------------------------|----------------------|
| E210                     | Drum Rev. Error              | Drum seal position undetected when drum rotating started.                   | <a href="#">5-56</a> |
| E218                     | Drum Motor Timeout           | Drum motor did not reach its specified speed.                               | <a href="#">5-57</a> |
| E224                     | Dev. Bias Volt               | The output of the Developer bias high voltage power supply is out of order. | <a href="#">5-58</a> |
| E225                     | Charge/Grid Volt             | The output of the Charger/Grid high voltage power supply is out of order.   | <a href="#">5-59</a> |
| E226                     | Transfer Volt                | The output of the Transfer high voltage power supply is out of order.       | <a href="#">5-59</a> |
| E227                     | Detach Volt                  | The output of the Detach high voltage power supply is out of order.         | <a href="#">5-60</a> |
| E228                     | Magroll Rev. Error 1         | Developer motor rotating speed is out of order.                             | <a href="#">5-61</a> |
| E229                     | Magroll Rev. Error 2         | Abnormality was detected in the Toner Control Sensor.                       | <a href="#">5-62</a> |
| E22A                     | Over Toner                   | Toner concentration is abnormally high.                                     | <a href="#">5-63</a> |
| E22B                     | Lack Toner                   | Toner concentration is abnormally low.                                      | <a href="#">5-64</a> |
| E22F                     | Toner Feed Motor Emergency   | Toner Feed Motor locked.                                                    | <a href="#">5-64</a> |
| E231                     | Toner Screw Revolution Error | Toner Screw does not rotate normally.                                       | <a href="#">5-65</a> |
| E233                     | TR Cleaner Error             | Transfer wire cleaner cannot come to its home position.                     | <a href="#">5-65</a> |
| E238                     | BD Time Out                  | BD signal is not detected in the specified time.                            | <a href="#">5-66</a> |
| E239                     | BD Error                     | BD signal period is abnormally long.                                        | <a href="#">5-66</a> |
| E23C                     | Mirror Motor Timeout         | Mirror motor did not reach its specified speed.                             | <a href="#">5-68</a> |
| E23E                     | Mirror Motor Alarm           | Mirror motor speed goes out of its specified range.                         | <a href="#">5-68</a> |
| E23F                     | VD Open 1                    | PR detected the abnormal signal in the CVD1 line.                           | <a href="#">5-69</a> |
| E240                     | VD Open 2                    | PR detected the abnormal signal in the CVD2 line.                           | <a href="#">5-69</a> |
| E241                     | CVD Clock 1 Open Error       | The CVD Clock 1 remains ON.                                                 | <a href="#">5-69</a> |
| E242                     | CVD Clock 2 Open Error       | The CVD Clock 2 remains ON.                                                 | <a href="#">5-69</a> |
| E243                     | CVD Clock 1 Error            | The CVD Clock 1 does not be detected.                                       | <a href="#">5-70</a> |
| E244                     | CVD Clock 2 Error            | The CVD Clock 2 does not be detected.                                       | <a href="#">5-70</a> |
| E251                     | Incorrect Command            | PR received the command when PR condition prohibits CE from issuing.        | <a href="#">5-70</a> |
| E252                     | Pick Count Over              | The number of pick commands before printing exceeded eight sheets.          | <a href="#">5-70</a> |



| Detail Error Code | Error Name                      | Description                                                                                | Page No.             |
|-------------------|---------------------------------|--------------------------------------------------------------------------------------------|----------------------|
| E253              | Invalid Configuration           | PR received the command which is concerned with nonsupported optional feature.             | <a href="#">5-71</a> |
| E254              | Slave CPU Error                 | Master processor cannot receive the status data from the Slave processor.                  | <a href="#">5-71</a> |
| E255              | Insert Pick Count Over          | The insert pick count is over 15 sheets.                                                   | Finisher Manual      |
| E256              | OC Bus Error                    | An error occurs at the Bus line in the OC P/K.                                             | <a href="#">5-71</a> |
| E257              | Signal Trans. Error 3           | Abnormal sequence is detected in the HPxxx Assembly. (Slave CPU)                           | <a href="#">5-72</a> |
| E258              | Signal Trans. Error 4           | Abnormal sequence is detected in the AHxxx Assembly. (Slave CPU)                           | <a href="#">5-72</a> |
| E259              | Configuration Error             | Finisher configuration is changed.                                                         | Finisher Manual      |
| E25B              | CPF/DTP Error                   | An abnormal response was detected in CPF/DTP signal.                                       | <a href="#">5-72</a> |
| E25C              | Signal Trans. Error 5           | Abnormal sequence is detected in the HPxxx Assembly. (Master CPU)                          | <a href="#">5-72</a> |
| E25D              | Signal Trans. Error 6           | Abnormality sequence is detected in the AHxxx Assembly. (Master CPU)                       | <a href="#">5-72</a> |
| E25E              | LNB DT Error                    | An error occurs at the Line Memory in the OC P/K.                                          | <a href="#">5-73</a> |
| E25F              | DLB DT Error                    | An error occurs at the Laser Beam circuit in the OC P/K.                                   | <a href="#">5-73</a> |
| E260              | Finisher 1 CPU Error            | Slave processor cannot receive the status data from the Finisher processor.                | Finisher Manual      |
| E262              | Finisher 1 Incorrect Command    | Finisher received the command when its condition prohibits PR from issuing.                | Finisher Manual      |
| E264              | Finisher 1 Act Timeout          | Finisher does not become an activate condition.                                            | Finisher Manual      |
| E266              | Finisher 1 Dormant Timeout      | Finisher does not become an dormant condition.                                             | Finisher Manual      |
| E268              | Finisher 1 Busy Timeout         | The Busy signal of the Finisher is on more than specified time.                            | Finisher Manual      |
| E26A              | Finisher 1 ST Exit Signal Error | The Stacker exit signal is on more than specified time.                                    | Finisher Manual      |
| E26C              | Finisher 1 Print Timeout        | The Print signal of the Finisher is on more than specified time.                           | Finisher Manual      |
| E270              | Heater Lamp Off                 | Heat Roll temperature does not rise in spite of heater lamp on while non printing.         | <a href="#">5-74</a> |
| E271              | Thermistor Off                  | Thermistor is blown out.                                                                   | <a href="#">5-74</a> |
| E272              | Heater Over Temp                | Heat Roll temperature is too high.                                                         | <a href="#">5-75</a> |
| E274              | Heater ON Timeout               | It takes more than 4 minutes for the Heat Roll temperature rising up to the control level. | <a href="#">5-75</a> |

| Detail Error Code | Error Name                   | Description                                                                                     | Page No.        |
|-------------------|------------------------------|-------------------------------------------------------------------------------------------------|-----------------|
| E275              | Heater Low Temp              | Heat Roll temperature is lower than control level for longer than 1 minute during heater ready. | 5-75            |
| E281              | Erase Lamp Off Error         | The abnormal current is detected in the Erase Lamp.                                             | 5-75            |
| E283              | Sensor Error 1               | The toner level adjustment is failed.                                                           | 5-76            |
| E284              | Sensor Error 2               | Hopper 1 paper size is not specified.                                                           | 5-76            |
| E285              | Sensor Error 3               | Hopper 2 paper size is not specified.                                                           | 5-76            |
| E286              | Sensor Error 4               | Hopper 3 paper size is not specified.                                                           | 5-76            |
| E28C              | SB Gate Pos. On Error        | The signal from the SB gate sensor has been on regardless of the operation.                     | 5-77            |
| E28D              | SB Gate Pos. Off Error       | The signal from the SB gate sensor has been off regardless of the operation.                    | 5-77            |
| E291              | Blower Fan Alarm             | Cooling fan for the TH unit does not rotate.                                                    | 5-78            |
| E292              | OC Fan Alarm                 | Cooling fan for the mirror motor does not rotate.                                               | 5-79            |
| E2A2              | Hopper 1 Table Timeout       | It takes more than the specified time for Hopper 1 table rising up to the ready position.       | 5-79            |
| E2A6              | Hopper 2 Table Timeout       | It takes more than the specified time for Hopper 2 table rising up to the ready position.       | 5-80            |
| E2AA              | Hopper 3 Table Timeout       | It takes more than the specified time for Hopper 3 table rising up to the ready position.       | 5-80            |
| E2AD              | Hopper 5 Table Over Run 1    | The table of the High Capacity Hopper is lower than the specified position.                     | 5-80            |
| E2AE              | Hopper 5 Table Timeout       | It takes more than the specified time for Hopper 5 table rising up to the ready position.       | 5-81            |
| E2AF              | Hopper 5 Table Over Run 2    | The table of the High Capacity Hopper is higher than the specified position.                    | 5-81            |
| E2B1              | FNS Cover Sheet Tray Timeout | The table of the FNS cover sheet tray did not move normally.                                    | Finisher Manual |
| E2C1              | Stapler Position Error       | Abnormality was detected in the Staple Movement HP Sensor.                                      | Finisher Manual |
| E2C2              | Stapling Error               | Both staplers missed to staple.                                                                 | Finisher Manual |
| E2C3              | Stapling F Error             | Stapler (Front) missed to staple.                                                               | Finisher Manual |
| E2C4              | Stapling R Error             | Stapler (Rear) missed to staple.                                                                | Finisher Manual |
| E2C5              | Stapler Rotate Error         | Abnormality was detected in the Staple Rotation HP Sensor. (slant)                              | Finisher Manual |

| Detail Error Code | Error Name                          | Description                                                      | Page No.             |
|-------------------|-------------------------------------|------------------------------------------------------------------|----------------------|
| E2C6              | Shift Tray Timeout                  | The Shift Tray was driven too long time.                         | Finisher Manual      |
| E2C7              | Alignment Plate Position Error      | Abnormality was detected in the Alignment Plate HP Sensor.       | Finisher Manual      |
| E2C8              | Shift Position Error                | Abnormality was detected in the Roller Shift HP Sensor.          | Finisher Manual      |
| E2C9              | Belt Position Error                 | Abnormality was detected in the Paper Exit Belt HP Sensor.       | Finisher Manual      |
| E2CA              | Paper Exit Opening Position Error   | Abnormality was detected in the Paper Exit Opening Sensor.       | Finisher Manual      |
| E2CB              | Stapler Rotate Error 2              | The Stapler did not rotate normally. (parallel)                  | Finisher Manual      |
| E2E0              | CP Driver 1                         | Abnormality was detected in the CP driver. (+24V OFF)            | <a href="#">5-82</a> |
| E2E1              | CP Driver 2                         | Abnormality was detected in the CP driver. (+24VS OFF)           | <a href="#">5-82</a> |
| E2E2              | HP Driver                           | Abnormality was detected in the HP driver.                       | <a href="#">5-83</a> |
| E2E5              | FNS Driver                          | Abnormality was detected in the Finisher driver.                 | Finisher Manual      |
| E2E7              | FNS Conveyance Motor Error          | The FNS conveyance motor did not work correctly.                 | Finisher Manual      |
| E2E8              | Folding Conveyance Motor Error      | The folding conveyance motor did not work correctly.             | Finisher Manual      |
| E2E9              | Alignment Plate/Lower Error         | The error occurred at the alignment plate/lower motor.           | Finisher Manual      |
| E2EA              | Stopper Release M Error             | An error occurred at the stapling/folding stopper release motor. | Finisher Manual      |
| E2EB              | Folding Stopper Error               | An error occurred at the folding stopper motor.                  | Finisher Manual      |
| E2EC              | Folding Knife Pos. Error            | An error occurred at the knife motor.                            | Finisher Manual      |
| E2ED              | Stapling & Folding Stopping M Error | An error occurred at the stapling/folding stopper motor.         | Finisher Manual      |
| E2EE              | FNS Signal Translation Error        | A transfer error occurred in the FNS P/K.                        | Finisher Manual      |
| E2F0              | Master Sum Check Error              | A sum check error occurs in the master rom when the power is on. | <a href="#">5-84</a> |
| E2F1              | Slave Sum Check Error               | A sum check error occurs in the slave rom when the power is on.  | <a href="#">5-84</a> |
| E2F2              | Master Rom Erase Error              | An erase error is detected in the master rom during download.    | <a href="#">5-84</a> |
| E2F3              | Slave Rom Erase Error               | An erase error is detected in the slave rom during download.     | <a href="#">5-84</a> |
| E2F4              | Master Rom Write Error              | A write error is detected in the master rom during download.     | <a href="#">5-84</a> |

| Detail Error Code | Error Name                  | Description                                                 | Page No. |
|-------------------|-----------------------------|-------------------------------------------------------------|----------|
| E2F5              | Slave Rom Write Error       | A write error is detected in the slave rom during download. | 5-84     |
| E2F6              | Fram/ Over Run/Parity Error | An interface error is detected during download.             | 5-84     |

### 5.3.1.

### E001 HOPPER 1 PAPER EMPTY E002 HOPPER 2 PAPER EMPTY E003 HOPPER 3 PAPER EMPTY E004 MB TRAY PAPER EMPTY E005 HOPPER 5 PAPER EMPTY

| PRIMARY FACTOR; Detected that the Hopper Empty Sensor is turned ON.<br>Detected that no paper is loaded in the specified hopper at the time of printing. |                                                                                                                                                    |                                                                                                                                                                                                   |                                                                                                               |
|----------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|
| PHENOMENON                                                                                                                                               | CAUSES & CHECK POINTS                                                                                                                              | CORRECTIONS                                                                                                                                                                                       | Maintenance<br>Ref + Page                                                                                     |
| 1. PAPER EMPTY is detected because the hopper has no paper.                                                                                              | 1. The hopper has no paper.                                                                                                                        | Load the paper into the hopper.                                                                                                                                                                   |                                                                                                               |
| 2. PAPER EMPTY is detected though the hopper is loaded with paper.                                                                                       | 1. The breaking of cables.                                                                                                                         | Repair the cables or rest the connector in the correct position.<br>E001:S408 - P407<br>E002:S414 - P408<br>E003:S418 - P409<br>E004:S306 - P410<br>E005:S426 - P422                              |                                                                                                               |
|                                                                                                                                                          | 2. The empty sensor is not correctly mounted.<br>Check points:<br>Check that the actuator operates when the table rises in the paper-loaded state. | Reset the Empty Sensor correctly.<br>E001:HP1 Empty Sensor (S408)<br>E002:HP2 Empty Sensor (S414)<br>E003:HP3 Empty Sensor (S418)<br>E004:MBF Empty Sensor (S306)<br>E005:HP5 Empty Sensor (S426) |                                                                                                               |
|                                                                                                                                                          | 3. Sensor fault.                                                                                                                                   | Replace:<br>E001:HP1 Empty Sensor (S408)<br>E002:HP2 Empty Sensor (S414)<br>E003:HP3 Empty Sensor (S418)<br>E004:MBF Empty Sensor (S306)<br>E005:HP5 Empty Sensor (S426)                          | 7.1.4.3. (14), 7-183<br>7.1.4.3. (14), 7-183<br>7.1.4.3. (14), 7-183<br>7.1.3.2. (6), 7-76<br>7.2.21, 7-250   |
|                                                                                                                                                          | 4. PCB fault.                                                                                                                                      | Replace:<br>E001/E002/E003: CPxxx Assembly<br>HPxxx Assembly<br>E004 CPxxx Assembly<br>E005 CPxxx Assembly<br>AHxxx Assembly                                                                      | 7.1.5.1. (13), 7-205<br>7.1.4.3. (22), 7-191<br>7.1.5.1. (13), 7-205<br>7.1.5.1. (13), 7-205<br>7.2.10, 7-226 |

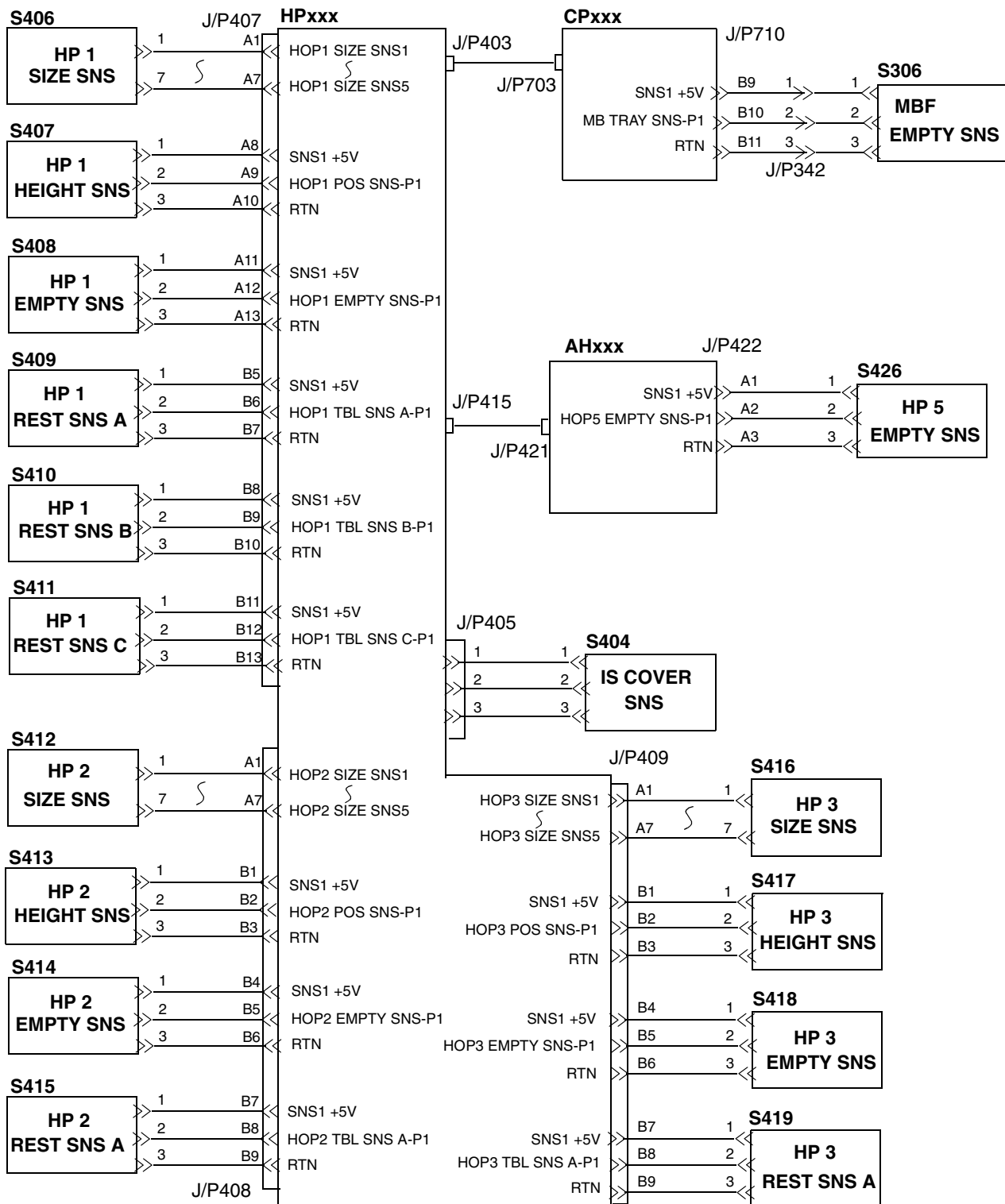


Figure 5-2. Error Codes E001, E002, E003, E004 & E005

### 5.3.2.

## E010 TONER COLLECTOR BOTTLE FULL 1 E013 TONER COLLECTOR BOTTLE FULL 2

| <p><b>PRIMARY FACTOR;</b> E010: The Toner Collector Bottle has reached the prearranged replacement.<br/>E013: The Toner Sensor detected that the Toner Collector Bottle is physically full.</p> <p><b>Note 1:</b> In Recycle mode, the used toner is transferred to the Toner Hopper Unit so that the used toner is not collected in the Toner Collector Bottle.<br/><b>Note 2:</b> In Non-Recycle mode, the used toner is collected in the Toner Collector Bottle. The engine reports this error when the Toner Collector Bottle has reached the prearranged replacement or the Toner sensor is turned on.<br/><b>Note 3:</b> Recycle mode (Refer to item 7.1.2.6. (1) on page 7-59)</p> |                                                                                                                                                                                                        |                                                                                                            |                                              |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|----------------------------------------------|
| PHENOMENON                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | CAUSES & CHECK POINTS                                                                                                                                                                                  | CORRECTIONS                                                                                                | Maintenance Ref + Page                       |
| 1. This phenomenon occurs every other refilling of the Bottle of Toner in Non-Recycle mode.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 1. The Toner Collector Bottle has reached the prearranged replacement.                                                                                                                                 | Replace: Toner Collector Bottle<br><br>Set the Toner Collector Bottle after removing the old Toner Bottle. | Refer to Operator's Guide                    |
| 2. This phenomenon occurs though the Toner Collector Bottle has not reached the prearranged replacement in Non-Recycle mode.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 1. Toner Collector Bottle is physically full.<br>Check points:<br>Check if the Toner Sensor is turned on.                                                                                              | Replace: Toner Collector Bottle<br><br>Set the Toner Collector Bottle after removing the old Toner Bottle. | Refer to Operator's Guide                    |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 2. The breaking of cables or the disconnecting of connectors.                                                                                                                                          | Repair the cable S324-P710, S325-P710 or reset the connector in the correct position.                      |                                              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 3. Sensor fault.<br>(1) The Toner Collector Bottle set sensor is OFF though the Toner Collector Bottle is set.<br>(2) The Toner sensor is ON though the Toner Collector Bottle is not physically full. | Replace: Toner Collector Bottle Set Sensor (S324)<br><br>Replace: Toner sensor (S325)                      | 7.1.2.6. (2), 7-62<br><br>7.1.2.6. (5), 7-65 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 4. PCB fault.                                                                                                                                                                                          | Replace: CPxxx Assembly                                                                                    | 7.1.5.1. (13), 7-205                         |
| 3. This phenomenon occurs though the Printer is in Recycle mode.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 1. Toner Collector Bottle is physically full.<br>(1) The Toner shutter should be closed in Recycle mode.                                                                                               | Check: Toner shutter position                                                                              | 7.1.2.6. (1), 7-59                           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 2. DIP switch is not in Recycle position.<br>(1) The engine detects this error because the DIP switch is in Non-Recycle position.                                                                      | Check: DIP switch position                                                                                 | 7.1.2.6. (1), 7-59                           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 3. Sensor fault.<br>(1) The Toner sensor is ON though the Toner Collector Bottle is not physically full.                                                                                               | Replace: Toner sensor (S325)                                                                               | 7.1.2.6. (5), 7-65                           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 4. PCB fault.                                                                                                                                                                                          | Replace: CPxxx Assembly                                                                                    | 7.1.5.1. (13), 7-205                         |

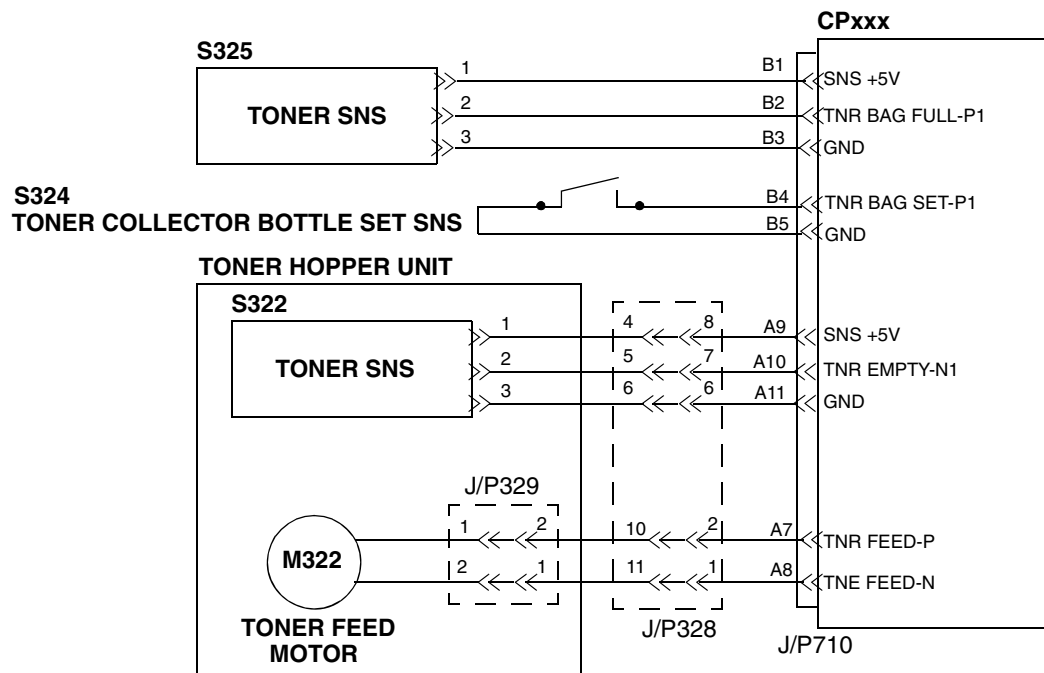


Figure 5-3. Error Code E010, E013



### 5.3.3. E011 TONER SUPPLY EMPTY

| PRIMARY FACTOR; Detected that the Toner Sensor is turned ON.                             |                                                                                                                                                                       |                                                                                                                                         |                                            |
|------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|
| PHENOMENON                                                                               | CAUSES & CHECK POINTS                                                                                                                                                 | CORRECTIONS                                                                                                                             | Maintenance Ref + Page                     |
| 1. This phenomenon occurs.                                                               | 1. No Toner is on the Toner Sensor.                                                                                                                                   | Supply: Toner                                                                                                                           | Refer to Operator's Guide                  |
| 2. TONER SUPPLY EMPTY is detected though the Toner Hopper is filled with enough toner.   | 1. No Toner is on the Toner Sensor.<br>Check points:<br>Check if the toner is stirred evenly.<br>Stir Shaft Assembly fault.<br>Toner Feed Roll fault.<br>Motor fault. | Replace: Toner Hopper Unit                                                                                                              | 7.1.2.4. (1), 7-36                         |
|                                                                                          | 2. Toner is on the Toner Sensor.<br>(1) The breaking of cables or the disconnecting of connectors.<br>(2) PCB fault.                                                  | Repair the cable S322-P710 or reset the connector in the correct position.<br><br>Replace: Toner Hopper Unit<br>Replace: CPxxx Assembly | 7.1.2.4. (1), 7-36<br>7.1.5.1. (13), 7-205 |
| 3. TONER SUPPLY EMPTY is not detected though no toner is found in the Toner Hopper Unit. | 1. The sensor connector is not fixed.                                                                                                                                 | Reset: Connector                                                                                                                        |                                            |
|                                                                                          | 2. The breaking of cables.                                                                                                                                            | Repair the cable. S322-P710                                                                                                             |                                            |
|                                                                                          | 3. Sensor fault.                                                                                                                                                      | Replace: Toner Sensor (S322)                                                                                                            | 7.1.2.4. (3), 7-39                         |
|                                                                                          | 4. PCB fault.                                                                                                                                                         | Replace: CPxxx Assembly                                                                                                                 | 7.1.5.1. (13), 7-205                       |
| Refer to <a href="#">Figure 5-3 on page 5-21</a> .                                       |                                                                                                                                                                       |                                                                                                                                         |                                            |

### 5.3.4. E012 DEV. REP. REQ.

| PRIMARY FACTOR; Detected that the number of print pages of the Developer mix exceeds the standard value of life. |                                                                                                       |                         |                        |
|------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|-------------------------|------------------------|
| PHENOMENON                                                                                                       | CAUSES & CHECK POINTS                                                                                 | CORRECTIONS             | Maintenance Ref + Page |
| 1. This phenomenon occurs because the Developer mix has reached its life.                                        | 1. Developer mix has reached its life.                                                                | Replace: Developer mix  | 3.2.2. (2), 3-5        |
| 2. This phenomenon occurs though the Developer mix has not reached its life.                                     | 1. PCB fault.<br>Check points:<br>Check if the content of memory is correct by using the MD function. | Replace: CPxxx Assembly | 7.1.5.1. (13), 7-205   |

### 5.3.5.

## E014 FELT END 1 E017 FELT END 2

| PRIMARY FACTOR; E014: Detected that the number of print pages of the Felt exceeds the standard value of life.<br>E017: The Felt End Sensor turned ON. |                                                                                                       |                                                                            |                                                 |
|-------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|-------------------------------------------------|
| PHENOMENON                                                                                                                                            | CAUSES & CHECK POINTS                                                                                 | CORRECTIONS                                                                | Maintenance Ref + Page                          |
| 1. This phenomenon occurs because the Felt has reached its life.                                                                                      | 1. Felt has reached its life.                                                                         | Replace: Fuser Cleaning Web                                                | Refer to Operator's Guide<br>7.1.3.1. (2), 7-69 |
| 2. This phenomenon occurs though the Felt has not reached its life.                                                                                   | 1. Sensor fault.                                                                                      | Replace: Fuser Unit                                                        | 7.1.3.1. (1), 7-67                              |
|                                                                                                                                                       | 2. The breaking of cables or the disconnecting of the connector.                                      | Repair the cable P718-S532 or reset the connector in the correct position. |                                                 |
|                                                                                                                                                       | 3. PCB fault.<br>Check points:<br>Check if the content of memory is correct by using the MD function. | Replace: CPxxx Assembly                                                    | 7.1.5.1. (13), 7-205                            |

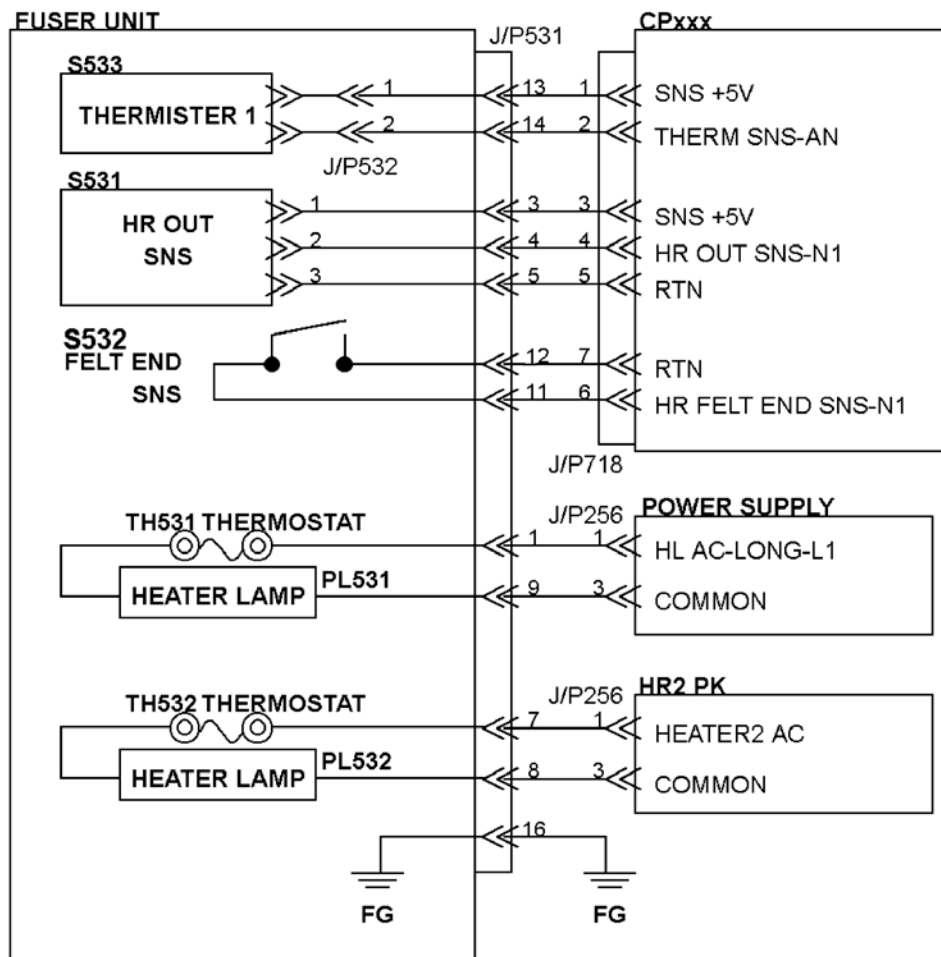


Figure 5-4. Error Code E014, E017

### 5.3.6. E015 FUSER UNIT END

| <b>PRIMARY FACTOR;</b> Detected that the number of print pages of the Fuser Unit reaches the standard value of life. |                                                                                                       |                         |                        |
|----------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|-------------------------|------------------------|
| PHENOMENON                                                                                                           | CAUSES & CHECK POINTS                                                                                 | CORRECTIONS             | Maintenance Ref + Page |
| 1. This phenomenon occurs because the Fuser Unit has reached its life.                                               | 1. Fuser Unit has reached its life.                                                                   | Replace: Fuser Unit     | 7.1.3.1. (1), 7-67     |
| 2. This phenomenon occurs though the Fuser Unit has not reached its life.                                            | 1. PCB fault.<br>Check points:<br>Check if the content of memory is correct by using the MD function. | Replace: CPxxx Assembly | 7.1.5.1. (13), 7-205   |
| Refer to <a href="#">Figure 5-4</a> on page 5-23.                                                                    |                                                                                                       |                         |                        |

### 5.3.7. E016 PC END

| <b>PRIMARY FACTOR;</b> The Drum Unit is due for replacement. This status is generally detected when the usable surface of the Drum is exhausted. |                                                                                                       |                         |                        |
|--------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|-------------------------|------------------------|
| PHENOMENON                                                                                                                                       | CAUSES & CHECK POINTS                                                                                 | CORRECTIONS             | Maintenance Ref + Page |
| 1. This phenomenon occurs because the Drum Unit has reached its life.                                                                            | 1. Drum has reached its life.                                                                         | Replace: Drum Unit      | 7.1.2.1. (1), 7-4      |
|                                                                                                                                                  | 2. Drum is damaged.                                                                                   | Replace: Drum Unit      | 7.1.2.1. (1), 7-4      |
| 2. This phenomenon occurs though the Drum Unit has not reached its life.                                                                         | 1. PCB fault.<br>Check points:<br>Check if the content of memory is correct by using the MD function. | Replace: CPxxx Assembly | 7.1.5.1. (13), 7-205   |

### 5.3.8. E018 WRAP SENSOR

| <b>PRIMARY FACTOR;</b> The Wrap Sensor level is abnormal. |                                                                         |                                                         |                                     |
|-----------------------------------------------------------|-------------------------------------------------------------------------|---------------------------------------------------------|-------------------------------------|
| PHENOMENON                                                | CAUSES & CHECK POINTS                                                   | CORRECTIONS                                             | Maintenance Ref + Page              |
| 1. This phenomenon occurs.                                | 1. The mounting of the Drum Wrap sensor is faulty.                      | Reset the Drum Wrap sensor correctly.                   |                                     |
|                                                           | 2. Sensor fault.                                                        | Cleaning: Drum Wrap Sensor<br>Replace: Drum Wrap Sensor | 4.4.7, 4-18<br>7.1.5.1. (12), 7-204 |
|                                                           | 3. The breaking of cables or disconnecting of connectors.               | Repair the cable P715-S312 or reset the connector.      |                                     |
|                                                           | 4. PCB fault.                                                           | Replace: CPxxx Assembly                                 | 7.1.5.1. (13), 7-205                |
|                                                           | 5. Drum fault.<br>Check if the usable surface of the drum is exhausted. | Replace: Drum Unit                                      | 7.1.2.1. (1), 7-4                   |
| Refer to <a href="#">Figure 5-5</a> .                     |                                                                         |                                                         |                                     |

### 5.3.9.

## E01D TONER COLLECTOR BOTTLE NONSET

| <b>PRIMARY FACTOR;</b> Detected that the Toner Collector Bottle Set Sensor is OFF. This status is generally detected when a Toner Collector Bottle is not set. |                                                                                                                                                                                                                |                                                                                              |                                      |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|--------------------------------------|
| PHENOMENON                                                                                                                                                     | CAUSES & CHECK POINTS                                                                                                                                                                                          | CORRECTIONS                                                                                  | Maintenance Ref + Page               |
| 1. Toner Collector Bottle is not set.                                                                                                                          | 1. Replacing the Toner Collector Bottle.                                                                                                                                                                       | Set the Toner Collector Bottle after removing the old Toner Collector Bottle.                | Refer to the Operator's Guide.       |
|                                                                                                                                                                | 2. Not replacing the Toner Collector Bottle.                                                                                                                                                                   | Set: Toner Collector Bottle.                                                                 | Refer to the Operator's Guide.       |
| 2. Toner Collector Bottle is set.                                                                                                                              | 1. The mounting of the Toner Collector Bottle is faulty.                                                                                                                                                       | Reset the Toner Collector Bottle correctly.                                                  |                                      |
|                                                                                                                                                                | 2. The breaking of cables.                                                                                                                                                                                     | Repair the cable S324-P710.                                                                  |                                      |
|                                                                                                                                                                | 3. The ON/OFF system of the Toner Collector Bottle Set Sensor is faulty.<br>(1)The mounting of the sensor is faulty.<br>(2)The plate does not push the sensor actuator when the Toner Collector Bottle is set. | Reset the Toner Collector Bottle Set Sensor (S324) correctly.<br>Repair the plate operation. |                                      |
|                                                                                                                                                                | 4. Sensor fault.                                                                                                                                                                                               | Replace: Toner Collector Bottle Set Sensor (S324)                                            | <a href="#">7.1.2.6. (2), 7-62</a>   |
|                                                                                                                                                                | 5. PCB fault.                                                                                                                                                                                                  | Replace: CPxxx Assembly                                                                      | <a href="#">7.1.5.1. (13), 7-205</a> |
| Refer to <a href="#">Figure 5-3 on page 5-21</a> .                                                                                                             |                                                                                                                                                                                                                |                                                                                              |                                      |

### 5.3.10.

### E01E DEVELOPER BOTTLE NONSET

| <b>PRIMARY FACTOR;</b> Detected that the Developer Bottle is not set during discharging the Developer Mix. |                                                                                                                                                                            |                                                                |                                      |
|------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|--------------------------------------|
| <b>PHENOMENON</b>                                                                                          | <b>CAUSES &amp; CHECK POINTS</b>                                                                                                                                           | <b>CORRECTIONS</b>                                             | <b>Maintenance Ref + Page</b>        |
| 1. Developer Bottle is not set.                                                                            | 1. Developer Bottle is not set.                                                                                                                                            | Set the Developer Bottle before discharging the Developer mix. |                                      |
| 2. Developer Bottle is set.                                                                                | 1. The breaking of cables.                                                                                                                                                 | Repair the cable S321-P719.                                    |                                      |
|                                                                                                            | 2. The mounting of the Developer Bottle Set sensor is faulty.<br>Check points:<br>Check if the actuator of the sensor operates correctly when the Developer Bottle is set. | Reset the DEV Bottle Set Sensor correctly.                     | <a href="#">7.1.2.3. (2), 7-12</a>   |
|                                                                                                            | 3. Sensor fault.                                                                                                                                                           | Replace: DEV Bottle Set Sensor                                 | <a href="#">7.1.2.3. (2), 7-12</a>   |
|                                                                                                            | 4. PCB fault.                                                                                                                                                              | Replace: CPxxx Assembly                                        | <a href="#">7.1.5.1. (13), 7-205</a> |
| Refer to <a href="#">Figure 5-11 on page 5-62</a> .                                                        |                                                                                                                                                                            |                                                                |                                      |

### 5.3.11.

### E020 HOPPER 1 OPEN E021 HOPPER 2 OPEN E022 HOPPER 3 OPEN E023 HOPPER 5 OPEN

| PRIMARY FACTOR; Detected that the Hopper is Open.                  |                                                                                                                                              |                                                                                                                                                             |                                                                                                                                                       |
|--------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| PHENOMENON                                                         | CAUSES & CHECK POINTS                                                                                                                        | CORRECTIONS                                                                                                                                                 | Maintenance Ref + Page                                                                                                                                |
| 1. HOPPER OPEN is detected because the Hopper is open.             | 1. Hopper is open.                                                                                                                           | Reset the Hopper correctly.                                                                                                                                 |                                                                                                                                                       |
| 2. HOPPER OPEN is detected though the hopper is loaded with paper. | 1. The breaking of a cable.                                                                                                                  | Repair the cable or reset the connector in the correct position.<br>E020:S406-P407<br>E021:S412-P408<br>E022:S416-P409<br>E023:S427-P422                    |                                                                                                                                                       |
|                                                                    | 2. The Sensor is not correctly mounted.<br>Check points.<br>Check that the actuator operates when the table rises in the paper-loaded state. | Reset the Sensor correctly.<br>E020: HP1 Size Sensor (S404)<br>E021: HP2 Size Sensor (S412)<br>E022: HP3 Size Sensor (S416)<br>E023: HP5 Door Sensor (S427) |                                                                                                                                                       |
|                                                                    | 3. Sensor fault.                                                                                                                             | Replace:<br>E020: HP1 Size Sensor (S404)<br>E021: HP2 Size Sensor (S412)<br>E022: HP3 Size Sensor (S416)<br>E023: HP5 Door Sensor (S427)                    | <a href="#">7.1.4.3. (15), 7-184</a><br><a href="#">7.1.4.3. (15), 7-184</a><br><a href="#">7.1.4.3. (15), 7-184</a><br><a href="#">7.2.1, 7-217</a>  |
|                                                                    | 4. PCB fault.                                                                                                                                | Replace:<br>E020/E021/E022:<br>CPxxx Assembly<br>HPxxx Assembly<br>E023:<br>CPxxx Assembly<br>AHxxx Assembly                                                | <a href="#">7.1.5.1. (13), 7-205</a><br><a href="#">7.1.4.3. (22), 7-191</a><br><a href="#">7.1.5.1. (13), 7-205</a><br><a href="#">7.2.10, 7-226</a> |
| Refer to <a href="#">Figure 5-2 on page 5-19.</a>                  |                                                                                                                                              |                                                                                                                                                             |                                                                                                                                                       |

### 5.3.12.

### E043 FRONT COVER OPEN

| <b>PRIMARY FACTOR;</b> Detected that the Push Button Switch is turned OFF.<br>When the Front Cover is open during printing, this status is detected and is not canceled until the Reset Switch is pressed. If the cover is closed when the printer is not in operation, the status is automatically canceled. |                                                                                                                                                                                                                             |                                                                            |                        |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|------------------------|
| PHENOMENON                                                                                                                                                                                                                                                                                                    | CAUSES & CHECK POINTS                                                                                                                                                                                                       | CORRECTIONS                                                                | Maintenance Ref + Page |
| 1. FRONT COVER OPEN is detected because the Front Cover is open.                                                                                                                                                                                                                                              | 1. Front Cover is open.                                                                                                                                                                                                     | Close the Front Cover.                                                     |                        |
| 2. FRONT COVER OPEN is detected though the Front Cover is closed.                                                                                                                                                                                                                                             | 1. The mounting of the Front Cover is faulty.<br>Check points:<br>The protuberance of the cover does not coincide with the hold of the switch.<br>The switch is not pressed deeply enough at the protuberance of the cover. | Reset the Front Cover correctly.                                           |                        |
|                                                                                                                                                                                                                                                                                                               | 2. The protuberance of the Front Cover is faulty.                                                                                                                                                                           | Replace: Front Cover Assembly                                              |                        |
|                                                                                                                                                                                                                                                                                                               | 3. The breaking of cables or the disconnecting of connectors.                                                                                                                                                               | Repair the cable S510-P717 or reset the connector in the correct position. |                        |
|                                                                                                                                                                                                                                                                                                               | 4. Switch fault.                                                                                                                                                                                                            | Replace: Push Button Switch (S510)                                         |                        |
|                                                                                                                                                                                                                                                                                                               | 5. PCB fault.                                                                                                                                                                                                               | Replace: CPxxx Assembly                                                    | 7.1.5.1. (13), 7-205   |

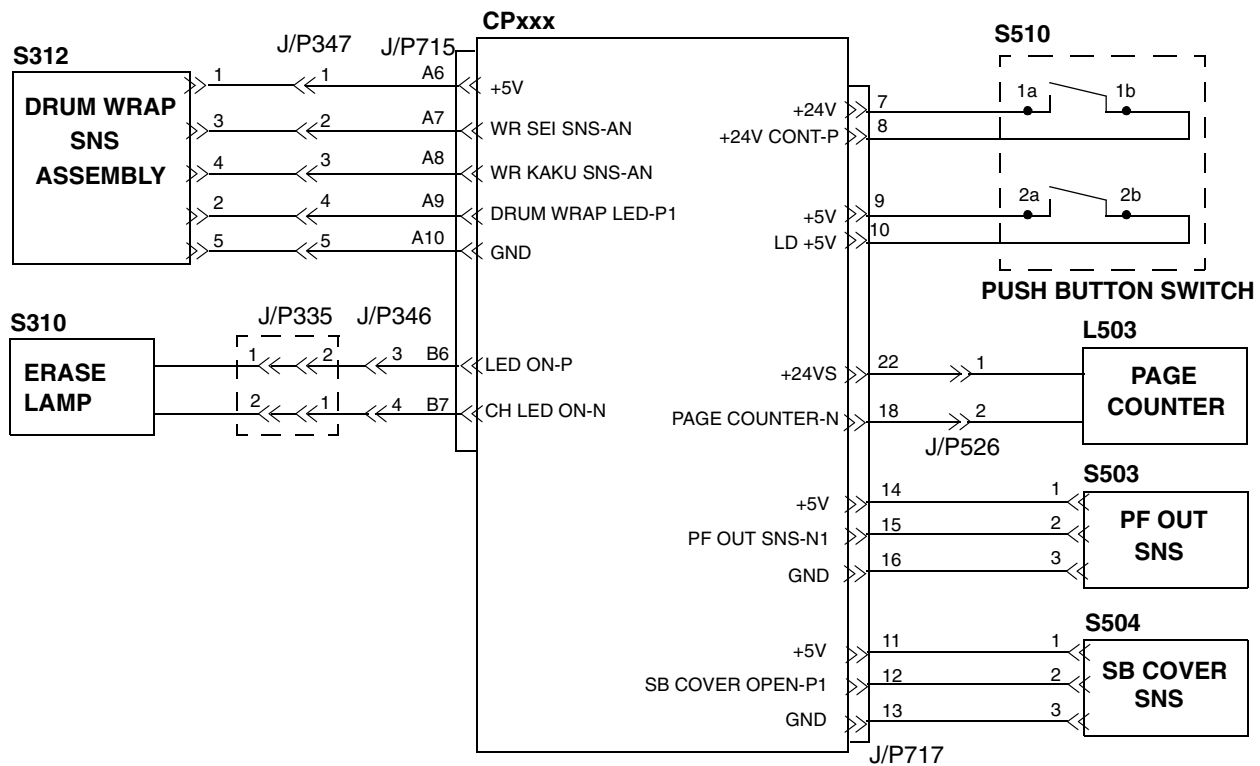


Figure 5-5. Error Code E043



### 5.3.13. E044 IS COVER OPEN

| <b>PRIMARY FACTOR;</b> Detected that the IS Cover Open Sensor is turned OFF.<br>This status is generally detected when the IS Cover is open and is not canceled until the Reset Switch is pressed. If the cover is closed when the printer is not in operation, the status is automatically canceled. |                                                                                                                                           |                                                                            |                           |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|---------------------------|
| PHENOMENON                                                                                                                                                                                                                                                                                            | CAUSES & CHECK POINTS                                                                                                                     | CORRECTIONS                                                                | Maintenance<br>Ref + Page |
| 1. IS COVER OPEN is detected because the IS Cover is open.                                                                                                                                                                                                                                            | 1. IS Cover is open.                                                                                                                      | Close the IS Cover.                                                        |                           |
| 2. IS COVER OPEN is detected though the IS Cover is closed.                                                                                                                                                                                                                                           | 1. The mounting of the IS COVER is faulty.<br>Check point:<br>The protuberance of the cover is not inserted in the sensor detection part. | Reset the IS Cover correctly.                                              |                           |
|                                                                                                                                                                                                                                                                                                       | 2. The protuberance of the IS Cover is faulty.                                                                                            | Replace: IS Cover Assembly                                                 |                           |
|                                                                                                                                                                                                                                                                                                       | 3. The breaking of cables or the disconnecting of connectors.                                                                             | Repair the cable S404-P405 or reset the connector in the correct position. |                           |
|                                                                                                                                                                                                                                                                                                       | 4. The mounting of the IS Cover Open Sensor is faulty.                                                                                    | Reset the IS Cover Open Sensor correctly.                                  | 7.1.4.3. (21), 7-190      |
|                                                                                                                                                                                                                                                                                                       | 5. Sensor fault.                                                                                                                          | Replace: IS Cover Open Sensor                                              | 7.1.4.3. (21), 7-190      |
|                                                                                                                                                                                                                                                                                                       | 6. PCB fault.                                                                                                                             | Replace: HPxxx Assembly                                                    | 7.1.4.3. (22), 7-191      |
| Refer to <a href="#">Figure 5-2 on page 5-19</a> .                                                                                                                                                                                                                                                    |                                                                                                                                           |                                                                            |                           |

### 5.3.14. E045 SB COVER OPEN

| <b>PRIMARY FACTOR;</b> Detected that the SB Cover Sensor is turned OFF.<br>This status is generally detected when the SB Cover is open and is not canceled until the Reset Switch is pressed. If the cover is closed when the printer is not in operation, the status is automatically canceled. |                                                                                                                                           |                                                                            |                        |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|------------------------|
| PHENOMENON                                                                                                                                                                                                                                                                                       | CAUSES & CHECK POINTS                                                                                                                     | CORRECTIONS                                                                | Maintenance Ref + Page |
| 1. SB COVER OPEN is detected because the SB Cover is open.                                                                                                                                                                                                                                       | 1. SB Cover is open.                                                                                                                      | Close the SB Cover.                                                        |                        |
| 2. SB COVER OPEN is detected though the SB Cover is closed.                                                                                                                                                                                                                                      | 1. The mounting of the SB COVER is faulty.<br>Check point:<br>The protuberance of the cover is not inserted in the sensor detection part. | Reset the SB Cover Assembly correctly.                                     | 7.1.3.5. (1), 7-111    |
|                                                                                                                                                                                                                                                                                                  | 2. The protuberance of the SB Cover is faulty.                                                                                            | Replace: SB Cover Assembly                                                 | 7.1.3.5. (1), 7-111    |
|                                                                                                                                                                                                                                                                                                  | 3. The breaking of cables or the disconnecting of connectors.                                                                             | Repair the cable S504-P717 or reset the connector in the correct position. |                        |
|                                                                                                                                                                                                                                                                                                  | 4. The mounting of the SB Cover Sensor is faulty.                                                                                         | Reset the SB Cover Sensor correctly.                                       |                        |
|                                                                                                                                                                                                                                                                                                  | 5. Sensor fault.                                                                                                                          | Replace: SB Cover Sensor                                                   | 7.1.3.5. (9), 7-121    |
|                                                                                                                                                                                                                                                                                                  | 6. PCB fault.                                                                                                                             | Replace: CPxxx Assembly                                                    | 7.1.5.1. (13), 7-205   |
| Refer to <a href="#">Figure 5-5 on page 5-29</a> .                                                                                                                                                                                                                                               |                                                                                                                                           |                                                                            |                        |

### 5.3.15. E046 TOP COVER OPEN

| <b>PRIMARY FACTOR;</b> Detected that the HP5 Top Cover Sensor is ON. (High Capacity Hopper) |                                                                                                                                            |                                                                            |                                       |
|---------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|---------------------------------------|
| PHENOMENON                                                                                  | CAUSES & CHECK POINTS                                                                                                                      | CORRECTIONS                                                                | Maintenance Ref + Page                |
| 1. TOP COVER OPEN is detected because the Top Cover is open.                                | 1. Top Cover is open.                                                                                                                      | Close the Top Cover.                                                       |                                       |
| 2. TOP COVER OPEN is detected though the Top Cover is closed.                               | 1. The mounting of the TOP COVER is faulty.<br>Check point:<br>The protuberance of the cover is not inserted in the sensor detection part. | Reset the Top Cover correctly.                                             |                                       |
|                                                                                             | 2. The breaking of cables or the disconnecting of connectors.                                                                              | Repair the cable S421-P423 or reset the connector in the correct position. |                                       |
|                                                                                             | 3. The mounting of the Top Cover Sensor is faulty.                                                                                         | Reset the Top Cover Sensor correctly.                                      | 7.2.9, 7-225                          |
|                                                                                             | 4. Sensor fault.                                                                                                                           | Replace: Top Cover Sensor (S421)                                           | 7.2.9, 7-225                          |
|                                                                                             | 5. PCB fault.                                                                                                                              | Replace: CPxxx Assembly<br>AHxxx Assembly                                  | 7.1.5.1. (13), 7-205<br>7.2.10, 7-226 |

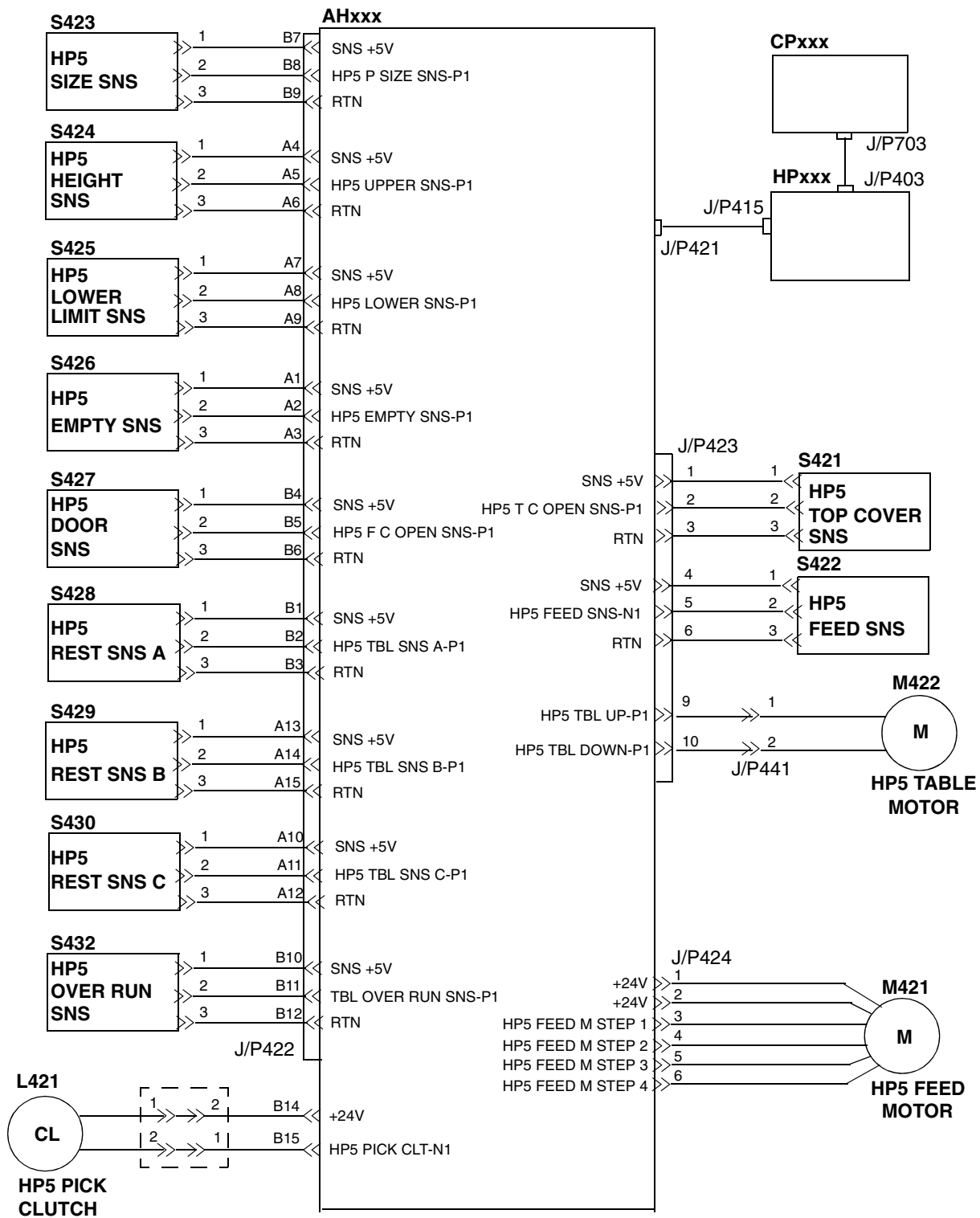


Figure 5-6. Error Code E046

### 5.3.16.

## E047 DEVELOPER ERROR 1 E048 DEVELOPER ERROR 2

| <b>PRIMARY FACTOR;</b> E047: The abnormality of the toner level is detected when charging or discharging the Developer mix.<br>E048: Charging the Developer mix was executed though the Developer mix is in the Developer Unit. |                                                                                                                                                                      |                                                                                           |                           |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|---------------------------|
| PHENOMENON                                                                                                                                                                                                                      | CAUSES & CHECK POINTS                                                                                                                                                | CORRECTIONS                                                                               | Maintenance<br>Ref + Page |
| 1. This phenomenon occurs when charging the Developer mix. (E047)                                                                                                                                                               | 1. Developer mix is old.                                                                                                                                             | Supply new Developer mix                                                                  |                           |
|                                                                                                                                                                                                                                 | 2. The failure of Charging the developer mix.<br>(1) Developer mix remains in the Developer bottle.<br>(2) Developer mix goes into the Developer Unit completely.    | Retry charging after reset.<br><br>Discharge the Developer mix and charge it after reset. |                           |
|                                                                                                                                                                                                                                 | 3. Toner Control Sensor fault.<br>Check if this error occurs continuously.                                                                                           | Replace: Developer Unit                                                                   | 7.1.2.3. (1), 7-10        |
| 2. This phenomenon occurs when discharging the Developer mix. (E047)                                                                                                                                                            | 1. The failure of Discharging the developer mix.<br>(1) Developer mix remains in the Developer Unit.<br>(2) Developer mix goes out of the Developer Unit completely. | Retry discharging after reset.<br><br>Retry discharging after reset.                      |                           |
|                                                                                                                                                                                                                                 | 2. Toner Control Sensor fault.<br>Check if this error occurs continuously.                                                                                           | Replace: Developer Unit                                                                   | 7.1.2.3. (1), 7-10        |
| 3. This phenomenon occurs. (E048)                                                                                                                                                                                               | 1. Developer mix is in the Developer Unit.                                                                                                                           | Charge new Developer mix after discharging old Developer mix.                             |                           |
|                                                                                                                                                                                                                                 | 2. Developer mix is not in the Developer Unit.                                                                                                                       | Retry charging after reset.                                                               |                           |
|                                                                                                                                                                                                                                 | 3. Toner Control Sensor fault.<br>Check if this error occurs continuously though Developer mix is not in the Developer Unit.                                         | Replace: Developer Unit                                                                   | 7.1.2.3. (1), 7-10        |
| Refer to <a href="#">Figure 5-11 on page 5-62</a> .                                                                                                                                                                             |                                                                                                                                                                      |                                                                                           |                           |

**5.3.17. E050 to E052 PAPER ON PAPER PATH 1 to 3  
E056 to E057 PAPER ON PAPER PATH 4 to 5  
E05A PAPER ON PAPER PATH 6  
E05B to E05E PAPER ON PAPER PATH 9 to 12  
E05F PAPER ON PAPER PATH 8  
E070 PAPER ON PAPER PATH 7  
E072 PAPER ON PAPER PATH 19**

| <b>PRIMARY FACTOR;</b> Detected that the sensor of each sensor unit is turned ON. This status is generally detected when paper is in the printer. |                                                               |                                                                           |                                                                      |
|---------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|---------------------------------------------------------------------------|----------------------------------------------------------------------|
| PHENOMENON                                                                                                                                        | CAUSES & CHECK POINTS                                         | CORRECTIONS                                                               | Maintenance Ref + Page                                               |
| 1. This phenomenon occurs.                                                                                                                        | 1. Paper jam occurs.                                          | Remove: Jammed Paper                                                      |                                                                      |
| 2. The Sensor detected the paper jam though a paper jam does not occur.                                                                           | 1. Foreign substances are in the Paper Path.                  | Remove: Foreign substances                                                |                                                                      |
|                                                                                                                                                   | 2. The face of the Sensor is contaminated.                    | Cleaning: Sensor (see the table)                                          |                                                                      |
|                                                                                                                                                   | 3. The breaking of cables or the disconnecting of connectors. | Repair the cable or reset the connector in the correct position.          |                                                                      |
|                                                                                                                                                   | 4. The mounting of the Sensor is faulty.                      | Reset the Sensor correctly.                                               |                                                                      |
|                                                                                                                                                   | 5. Sensor fault.                                              | Replace: Sensor (see the table)                                           |                                                                      |
|                                                                                                                                                   | 6. PCB fault.                                                 | Replace:<br>E05X, E070:CPxxx Assembly<br>E072:CPxxx,<br>or HPxxx Assembly | 7.1.5.1. (13), 7-205<br>7.1.5.1. (13), 7-205<br>7.1.4.3. (22), 7-191 |

| Item | Error Code | Sensor to be specified |                                     | Maintenance Ref + Page                       |
|------|------------|------------------------|-------------------------------------|----------------------------------------------|
|      |            | Sensor Name            | Sensor Description                  |                                              |
| (1)  | E050       | S435 or S401           | HP1 Pick Sensor or IS Feed Sensor 1 | 7.1.4.3. (18), 7-187<br>7.1.4.3. (20), 7-189 |
| (2)  | E051       | S436 or S402           | HP2 Pick Sensor or IS Feed Sensor 2 | 7.1.4.3. (18), 7-187<br>7.1.4.3. (20), 7-189 |
| (3)  | E052       | S437 or S403           | HP3 Pick Sensor or IS Feed Sensor 3 | 7.1.4.3. (18), 7-187<br>7.1.4.3. (20), 7-189 |
| (4)  | E056       | S303                   | Timing Sensor                       | 7.1.3.3. (4), 7-88                           |
| (5)  | E057       | S301 or S302           | Skew Sensor 1 or Skew Sensor 2      | 7.1.3.3. (5), 7-89                           |
| (6)  | E05A       | S312                   | Drum Wrap Sensor                    | 7.1.5.1. (12), 7-204                         |
| (7)  | E070       | S531                   | HR Out Sensor (Fuser Unit)          | 7.1.3.1. (1), 7-67                           |
| (8)  | E05F       | S501                   | Flip Sensor                         | 7.1.3.5. (5), 7-117                          |
| (9)  | E05B       | S502                   | SB Sensor                           | 7.1.3.5. (6), 7-118                          |
| (10) | E05C       | S506                   | Return Sensor 1                     | 7.1.3.6. (6), 7-127                          |
| (11) | E05D       | S305                   | Return Sensor 2                     | 7.1.3.6. (7), 7-128                          |
| (12) | E05E       | S503                   | PF Out Sensor                       | 7.1.3.5. (7), 7-119                          |
| (13) | E072       | S422                   | HP5 Feed Sensor                     | 7.2.8, 7-224                                 |

### 5.3.18. E080 ERASE LAMP NONSET

| <b>PRIMARY FACTOR;</b> The Erase Lamp is not set.            |                                                               |                                                                                           |                                      |
|--------------------------------------------------------------|---------------------------------------------------------------|-------------------------------------------------------------------------------------------|--------------------------------------|
| PHENOMENON                                                   | CAUSES & CHECK POINTS                                         | CORRECTIONS                                                                               | Maintenance<br>Ref + Page            |
| 1. This phenomenon occurs because the Erase Lamp is not set. | 1. The Erase Lamp is not set.                                 | Set the Erase Lamp.                                                                       |                                      |
| 2. This phenomenon occurs though the Erase Lamp is set.      | 1. The breaking of cables or the disconnecting of connectors. | Repair the cable or reset the connector in the correct position.<br>Erase Lamp: P715-S310 |                                      |
|                                                              | 2. Erase Lamp fault.                                          | Replace: Erase Lamp (S310)                                                                | <a href="#">7.1.2.7, 7-66</a>        |
|                                                              | 3. PCB fault.                                                 | Replace: CPxxx Assembly                                                                   | <a href="#">7.1.5.1. (13), 7-205</a> |
| Refer to <a href="#">Figure 5-5 on page 5-29</a> .           |                                                               |                                                                                           |                                      |

### 5.3.19.

## E090 PAPER SIZE UNMATCH

| <b>PRIMARY FACTOR;</b> Detected that the paper sizes from the CE do not match the paper sizes of the designated hoppers. |                                                                                                                                                                                               |                                                                                                                              |                                                              |
|--------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------|
| <b>PHENOMENON</b>                                                                                                        | <b>CAUSES &amp; CHECK POINTS</b>                                                                                                                                                              | <b>CORRECTIONS</b>                                                                                                           | <b>Maintenance Ref + Page</b>                                |
| 1. The size of paper in the hopper is different from that of the paper to be printed.                                    | 1. The size of paper in the Hopper is different from that of the paper to be printed.<br>Check points:<br>Check if the paper size in the Hopper is correct or not.                            | Replace: Paper<br><br>Check: Job program of the Host.                                                                        |                                                              |
| 2. This Phenomenon occurs though the correct paper is set in the Hopper.                                                 | 1. The setting of the Paper Size Plate is faulty.                                                                                                                                             | Set the Paper Guide correctly.                                                                                               |                                                              |
|                                                                                                                          | 2. The paper size is detected by Hopper size sensor incorrectly.<br>(1) Foreign substances such as paper dust are adhered to the size sensor.<br>(2) Size sensor fault.<br><br>(3) PCB fault. | Remove: Foreign substances<br><br>Replace: Size Sensor<br>Hopper 1, 2, 3.<br>High Capacity Hopper<br>Replace: CPxxx Assembly | 7.1.4.3. (15), 7-184<br>7.2.1, 7-217<br>7.1.5.1. (13), 7-205 |
|                                                                                                                          | 3. The breaking of cables or disconnecting of connectors.                                                                                                                                     | Repair the cable or reset the connector in the correct position.                                                             |                                                              |

| <b>Hopper Size Sensor ON/OFF (Hopper 1 to Hopper 3)</b> |                                  |          |          |          |          |
|---------------------------------------------------------|----------------------------------|----------|----------|----------|----------|
| <b>Paper Size</b>                                       | <b>Hopper Size Sensor Signal</b> |          |          |          |          |
|                                                         | <b>1</b>                         | <b>2</b> | <b>3</b> | <b>4</b> | <b>5</b> |
| A4 (LEF)                                                | OFF                              | OFF      | OFF      | ON       | ON       |
| A3 (SEF)                                                | OFF                              | OFF      | ON       | ON       | ON       |
| B4 (SEF)                                                | OFF                              | ON       | ON       | ON       | ON       |
| LT (LEF)                                                | ON                               | ON       | ON       | ON       | OFF      |
| LG (SEF)                                                | ON                               | ON       | ON       | OFF      | ON       |
| LDG (SEF)                                               | ON                               | ON       | OFF      | ON       | OFF      |
| A5 (SEF)                                                | ON                               | OFF      | ON       | OFF      | OFF      |
| B5 (LEF)                                                | OFF                              | ON       | OFF      | OFF      | OFF      |
| valuable size                                           | ON                               | OFF      | OFF      | OFF      | OFF      |
| Hopper unset                                            | OFF                              | OFF      | OFF      | OFF      | OFF      |

\*SEF: Short Edge Feed\*LEF: Long Edge Feed

**NOTE:** Hopper 1 does not support A5 (SEF) size paper.

### 5.3.20. E09A LACK TONER RECOVERY

| PRIMARY FACTOR; Supplying the Toner.                        |                                                           |                                                                  |                        |
|-------------------------------------------------------------|-----------------------------------------------------------|------------------------------------------------------------------|------------------------|
| PHENOMENON                                                  | CAUSES & CHECK POINTS                                     | CORRECTIONS                                                      | Maintenance Ref + Page |
| 1. This phenomenon occurs during supplying of the Toner.    | 1. Supplying the Toner from the order of the Controller.  | Wait till the end of supplying the toner.                        |                        |
| 2. This phenomenon occurs though the Toner is not supplied. | 1. The breaking of cables or disconnecting of connectors. | Repair the cable or reset the connector in the correct position. |                        |
|                                                             | 2. The Toner Sensor is not correctly mounted.             | Reset the Toner Sensor (Toner Hopper) correctly.                 | 7.1.2.4. (3), 7-39     |
|                                                             | 3. Sensor fault.                                          | Replace: Toner Sensor                                            | 7.1.2.4. (3), 7-39     |
|                                                             | 4. PCB fault.                                             | Replace: CPxxx Assembly                                          | 7.1.5.1. (13), 7-205   |

### 5.3.21. E0A1 DEVELOPER CHARGE

| PRIMARY FACTOR; Charging the Developer.                           |                                                             |                                              |                        |
|-------------------------------------------------------------------|-------------------------------------------------------------|----------------------------------------------|------------------------|
| PHENOMENON                                                        | CAUSES & CHECK POINTS                                       | CORRECTIONS                                  | Maintenance Ref + Page |
| 1. This phenomenon occurs during charging of the Developer.       | 1. Charging the Developer from the order of the Controller. | Wait till the end of charging the Developer. |                        |
| 2. This phenomenon occurs though the Developer is not discharged. | 1. PCB fault.                                               | Replace: CPxxx Assembly                      | 7.1.5.1. (13), 7-205   |

### 5.3.22. E0A2 DEVELOPER DISCHARGE

| PRIMARY FACTOR; Discharging the Developer.                        |                                                                |                                                 |                        |
|-------------------------------------------------------------------|----------------------------------------------------------------|-------------------------------------------------|------------------------|
| PHENOMENON                                                        | CAUSES & CHECK POINTS                                          | CORRECTIONS                                     | Maintenance Ref + Page |
| 1. This phenomenon occurs during discharging of the Developer.    | 1. Discharging the Developer from the order of the Controller. | Wait till the end of discharging the Developer. |                        |
| 2. This phenomenon occurs though the Developer is not discharged. | 1. PCB fault.                                                  | Replace: CPxxx Assembly                         | 7.1.5.1. (13), 7-205   |



### 5.3.23.

### E110 to E113 REGIST JAM 1 to 4

| <p><b>PRIMARY FACTOR;</b> E110: Paper did not arrive at the Skew Sensor. (Simplex sheet)<br/>E111: Paper did not depart from the Skew Sensor. (Simplex sheet)<br/>E112: Paper did not arrive at the Skew Sensor. (Duplex sheet)<br/>E113: Paper did not depart from the Skew Sensor. (Duplex sheet)</p> <p><b>Precaution:</b> If the IS Cover is opened after E110 or E112 has occurred, the paper is automatically ejected from the printer. When checking the status of the remaining paper, open the IS Cover in the state that opened the Front Cover. This operation shuts down the +24V line and disables automatic paper ejection.</p> |                                                                                                                                                                                                        |                                                                                       |                                          |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|------------------------------------------|
| PHENOMENON                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | CAUSES & CHECK POINTS                                                                                                                                                                                  | CORRECTIONS                                                                           | Maintenance Ref + Page                   |
| 1. Paper jam occurs.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 1. Paper is skewed.                                                                                                                                                                                    | Remove: Skewed paper                                                                  |                                          |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 2. Foreign substance is on the paper path.                                                                                                                                                             | Remove: Foreign substance                                                             |                                          |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 3. Roller friction or insufficient pressure force of the Idler Roller.                                                                                                                                 | Replace: Registration Roller<br>Timing Drive Roller                                   | 7.1.3.3. (1), 7-83<br>7.1.3.3. (2), 7-85 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 4. The motor step out due to overloading.                                                                                                                                                              | Check: Load of the Regist Motor (M301)<br>Check: Load of the Timing Motor (M302)      |                                          |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 5. Motor fault                                                                                                                                                                                         | Replace: Regist Motor (M301)<br>Timing Motor (M302)                                   | 7.1.3.10, 7-141<br>7.1.3.11, 7-142       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 6. PCB fault                                                                                                                                                                                           | Replace: CPxxx Assembly                                                               | 7.1.5.1. (13), 7-205                     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 7. Regist Buffer Setting fault                                                                                                                                                                         | Check: Regist Buffer data                                                             |                                          |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 8. Spring Holder (R)                                                                                                                                                                                   | Cleaning: Spring Holder (R)                                                           | 7.1.3.3. (3), 7-86                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 9. Multi-Bypass Tray                                                                                                                                                                                   | Check: Guide Frame                                                                    | 7.1.3.2. (3), 7-72                       |
| 2. The Skew Sensor detected the jam though a jam does not occur.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 1. The Skew sensor is contaminated.                                                                                                                                                                    | Cleaning: Skew Sensor 1 (S301)<br>Skew Sensor 2 (S302)                                |                                          |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 2. The breaking of cables or the disconnecting of connectors.                                                                                                                                          | Repair the cable P711-S301, P711-S302 or reset the connector in the correct position. |                                          |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 3. Sensor fault.<br>Check points:<br>Check if the paper on the paper path error occurs on initialization after masking of the sensor window. Error code E057(Skew Sensor) when the sensors are normal. | Replace: Skew Sensor 1 (S301)<br>Skew Sensor 2 (S302)                                 | 7.1.3.3. (5), 7-89<br>7.1.3.3. (5), 7-89 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 4. Multi-fed Sheets                                                                                                                                                                                    | Check: Separation Pad in Pick Tray.                                                   |                                          |

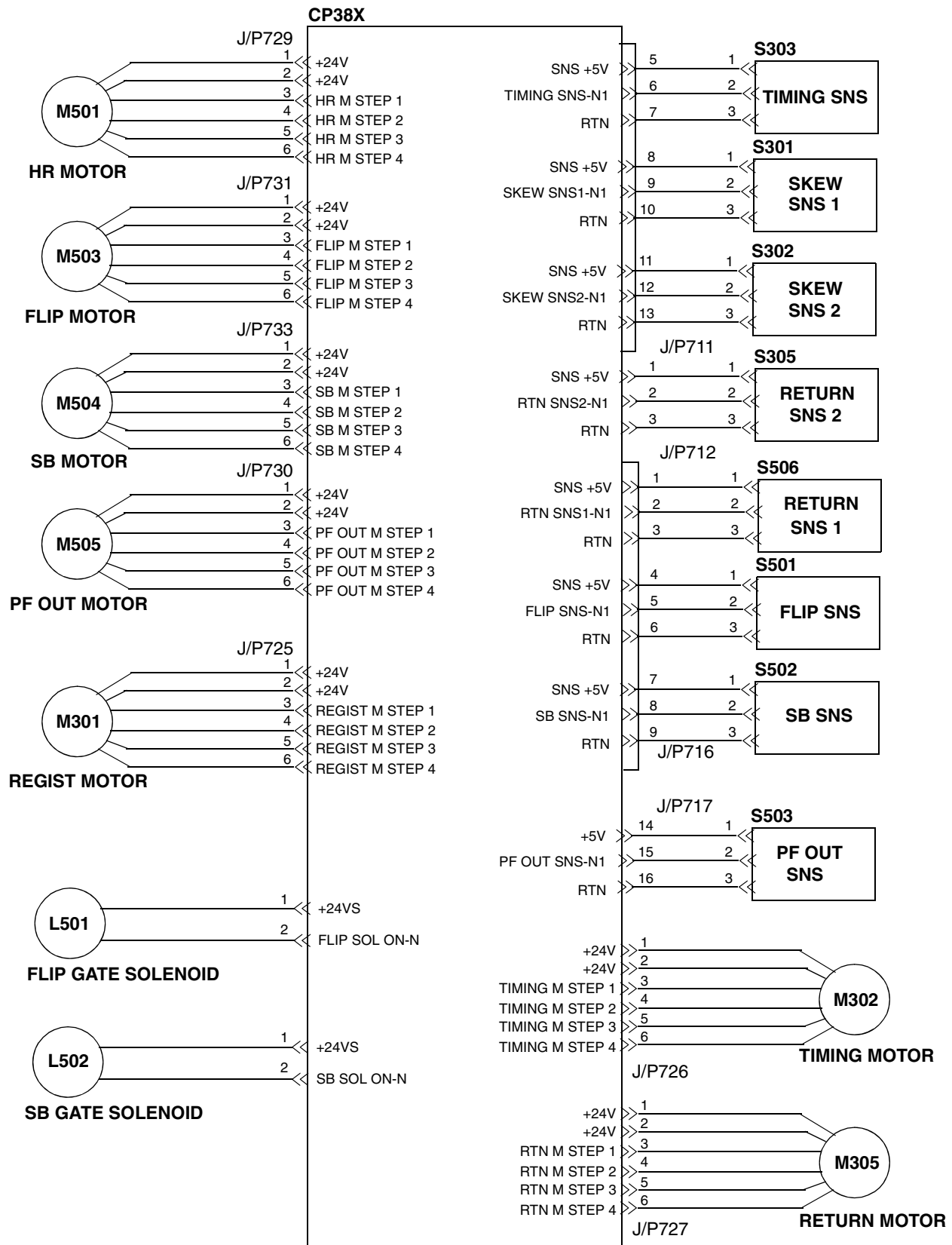


Figure 5-7. Error Code E110 to E113

### 5.3.24.

### E118 DRUM WRAP 1

### E119 DRUM WRAP 2

| <b>PRIMARY FACTOR;</b> E118: Simplex paper was wrapped around the Drum.<br>E119: Duplex paper was wrapped around the Drum. |                                                                                                                                               |                                                                                                                         |                                                                   |
|----------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| PHENOMENON                                                                                                                 | CAUSES & CHECK POINTS                                                                                                                         | CORRECTIONS                                                                                                             | Maintenance Ref + Page                                            |
| 1. Simplex paper is wound around the drum.<br>(Error code:E118)                                                            | 1. Paper fault.<br>Check points: Check if the paper in the Hopper is curled.<br>Check if the leading edge of the paper is excessively burred. | Replace: Paper                                                                                                          |                                                                   |
|                                                                                                                            | 2. Corotron wire fault.<br>(1)Wire is contaminated.<br>(2)Wire is worn out.                                                                   | Cleaning: Separating corona wire<br>Check if Separating Corona Unit is contaminated.<br>Replace: Separating corona wire | 4.4.3, 4-13<br>4.4.4, 4-15<br>4.4.5, 4-16<br>7.1.3.4. (13), 7-106 |
|                                                                                                                            | 3. Detach Volt fault.                                                                                                                         | Check: Detach Volt<br>High Voltage Power Supply (2)                                                                     | 7.1.5.1. (15), 7-207                                              |
|                                                                                                                            | 4. The breaking of cables or the disconnecting of connectors.                                                                                 | Repair the cable P715-S312 or reset the connector in the correct position.                                              |                                                                   |
|                                                                                                                            | 5. PCB fault.                                                                                                                                 | Replace: CPxxx Assembly                                                                                                 | 7.1.5.1. (13), 7-205                                              |
|                                                                                                                            | 6. Blower fault.                                                                                                                              | Replace: Separating Blower 1 (B304)<br>Separating Blower 2 (B305)                                                       | 7.1.3.18. (1), 7-149<br>7.1.3.18. (2), 7-150                      |
|                                                                                                                            | 7. Altitude Setting fault.                                                                                                                    | Check: Detach current data                                                                                              | 8.4.5.7, 8-21                                                     |
|                                                                                                                            | 8. Detach Voltage fault.                                                                                                                      | Set: Detach Voltage                                                                                                     | 8.6, 8-103                                                        |
|                                                                                                                            | 9. TH Drive Roller fault.                                                                                                                     | Replace: TH Unit Assembly                                                                                               | 7.1.3.4. (1), 7-94                                                |
|                                                                                                                            | 10. The damage of TH Drive Roller bearing.                                                                                                    | Replace: TH Unit Assembly                                                                                               | 7.1.3.4. (1), 7-94                                                |
| 2. Duplex paper is wound around the drum.<br>(Error code:E119)                                                             | 1. Corotron wire fault.<br>(1)Wire is contaminated.<br>(2)Wire is worn out.                                                                   | Cleaning: Separating corona wire<br>Check if Separating Corona Unit is contaminated.<br>Replace: Separating corona wire | 4.4.3, 4-13<br>4.4.4, 4-15<br>4.4.5, 4-16<br>7.1.3.4. (13), 7-106 |
|                                                                                                                            | 2. Paper with one side printed is curled toward the unprinted side.                                                                           | Adjust: Reverse the front and back of the paper.<br>Replace: Paper                                                      |                                                                   |
|                                                                                                                            | 3. The decurler does not operate.                                                                                                             | Check if the decurler operates.                                                                                         |                                                                   |
|                                                                                                                            | 4. Altitude Setting fault.                                                                                                                    | Check: Detach current data                                                                                              | 8.4.5.7, 8-21                                                     |
|                                                                                                                            | 5. Detach Voltage fault.                                                                                                                      | Set: Detach Voltage                                                                                                     | 8.6, 8-103                                                        |
|                                                                                                                            | 6. TH Drive Roller fault.                                                                                                                     | Replace: TH Unit Assembly                                                                                               | 7.1.3.4. (1), 7-94                                                |
|                                                                                                                            | 7. The damage of TH Drive Roller bearing.                                                                                                     | Replace: TH Unit Assembly                                                                                               | 7.1.3.4. (1), 7-94                                                |

|                                                                                                                            |                                                                                                                                                                                                                                                           |                                                                                                                                                                                    |                                                                                                  |
|----------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| <b>PRIMARY FACTOR;</b> E118: Simplex paper was wrapped around the Drum.<br>E119: Duplex paper was wrapped around the Drum. |                                                                                                                                                                                                                                                           |                                                                                                                                                                                    |                                                                                                  |
| 3. Drum wrap is detected though the paper does not wrap around the drum.                                                   | 1. Sensor does not detect correctly.<br>(1) The drum is scratched or the Drum is worn out.<br>(2) The surface of the Drum Wrap Sensor(S312) is contaminated.<br>(3) The Drum Wrap Sensor(S312) is mounted loosely.<br>(4) Sensor fault.<br>(5) PCB fault. | Replace: Drum Unit<br><br>Cleaning: Drum Wrap Sensor (S312)<br><br>Reset the Drum Wrap Sensor (S312) correctly.<br><br>Replace: Drum Wrap Sensor (S312)<br>Replace: CPxxx Assembly | 7.1.2.1. (1), 7-4<br><br>4.4.7, 4-18<br><br><br><br>7.1.5.1. (12), 7-204<br>7.1.5.1. (13), 7-205 |
| 4. Drum wrap is not detected though the paper wraps around the drum.                                                       | 1. Sensor does not detect correctly.<br>(1) The surface of the Drum Wrap Sensor is contaminated.<br>(2) Sensor fault.<br><br>(3) PCB fault.                                                                                                               | Cleaning: Drum Wrap Sensor (S312)<br><br>Replace: Drum Wrap Sensor (S312)<br>Replace: CPxxx Assembly                                                                               | 4.4.7, 4-18<br><br>7.1.5.1. (12), 7-204<br>7.1.5.1. (13), 7-205                                  |
| Refer to <a href="#">Figure 5-5 on page 5-29</a> .                                                                         |                                                                                                                                                                                                                                                           |                                                                                                                                                                                    |                                                                                                  |

### 5.3.25.

## E128 HR JAM 1 E129 HR JAM 2



| PRIMARY FACTOR; E128: Paper did not arrive at the Flip Sensor.<br>E129: Paper did not depart from the Flip Sensor. |                                                                                                                                                                                                    |                                                                            |                                            |
|--------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|--------------------------------------------|
| PHENOMENON                                                                                                         | CAUSES & CHECK POINTS                                                                                                                                                                              | CORRECTIONS                                                                | Maintenance<br>Ref + Page                  |
| 1. Paper jam occurs.                                                                                               | 1. Paper is skewed.                                                                                                                                                                                | Remove: Skewed paper                                                       |                                            |
|                                                                                                                    | 2. Foreign substance is on the paper path.                                                                                                                                                         | Remove: Foreign substance                                                  |                                            |
|                                                                                                                    | 3. Paper fault.<br>Check points:<br>Check if the paper is greatly warped or the paper printed on one side is greatly warped.                                                                       | Replace: Paper                                                             |                                            |
|                                                                                                                    | 4. Fuser Unit fault.                                                                                                                                                                               | Replace: Fuser Unit                                                        | 7.1.3.1. (1), 7-67                         |
|                                                                                                                    | 5. Motor fault.                                                                                                                                                                                    | Replace: HR Motor (M501)<br>Flip Motor (M503)                              | 7.1.2.5. (8), 7-53<br>7.1.3.7, 7-138       |
|                                                                                                                    | 6. PCB fault.                                                                                                                                                                                      | Replace: CPxxx Assembly                                                    | 7.1.5.1. (13), 7-205                       |
|                                                                                                                    | 7. Solenoid fault.                                                                                                                                                                                 | Replace: Flip Solenoid (L501)                                              | 7.1.3.15, 7-146                            |
|                                                                                                                    | 8. Fan fault.                                                                                                                                                                                      | Replace: TH Fan (1) (B302)<br>TH Fan (2) (B303)                            | 7.1.3.4. (8), 7-101<br>7.1.3.4. (9), 7-102 |
|                                                                                                                    | 9. Detach Volt fault.                                                                                                                                                                              | Check: Detach Volt<br>High Voltage Power Supply (2)                        | 7.1.5.1. (15), 7-207                       |
|                                                                                                                    | 10. Altitude Setting fault.<br>(only E128)                                                                                                                                                         | Check: Detach current data                                                 | 8.4.5.7, 8-21                              |
|                                                                                                                    | 11. Detach Voltage fault.<br>(only E128)                                                                                                                                                           | Set: Detach Voltage                                                        | 8.6, 8-103                                 |
|                                                                                                                    | 12. TH Drive Roller fault.                                                                                                                                                                         | Replace: TH Unit Assembly                                                  | 7.1.3.4. (1), 7-94                         |
|                                                                                                                    | 13. The damage of TH Drive Roller bearing.                                                                                                                                                         | Replace: TH Unit Assembly                                                  | 7.1.3.4. (1), 7-94                         |
| 2. The Flip Sensor detected the jam though a jam does not occur.                                                   | 1. The Sensor is contaminated.                                                                                                                                                                     | Cleaning: Flip Sensor (S501)                                               |                                            |
|                                                                                                                    | 2. The breaking of cables, or the disconnecting of connectors.                                                                                                                                     | Repair the cable P716-S501 or reset the connector in the correct position. |                                            |
|                                                                                                                    | 3. Sensor fault.<br>Check points:<br>Check if the paper on paper path error occurs on initialization after masking of the sensor window. Error code E05F(Flip Sensor) when the sensors are normal. | Replace: Flip Sensor (S501)                                                | 7.1.3.5. (5), 7-117                        |
| Refer to <a href="#">Figure 5-7 on page 5-39</a> .                                                                 |                                                                                                                                                                                                    |                                                                            |                                            |

### 5.3.26.

## E130 SWITCH BACK JAM 1 E131 SWITCH BACK JAM 2

| <b>PRIMARY FACTOR;</b> E130: Paper did not arrive at the SB Sensor.<br>E131: Paper did not depart from the SB Sensor. |                                                                                                                                                                                                  |                                                                                                                 |                                            |
|-----------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|--------------------------------------------|
| PHENOMENON                                                                                                            | CAUSES & CHECK POINTS                                                                                                                                                                            | CORRECTIONS                                                                                                     | Maintenance<br>Ref + Page                  |
| 1. Paper jam occurs.                                                                                                  | 1. Paper is skewed.                                                                                                                                                                              | Remove: Skewed paper                                                                                            |                                            |
|                                                                                                                       | 2. Foreign substance is on the paper path.                                                                                                                                                       | Remove: Foreign substance                                                                                       |                                            |
|                                                                                                                       | 3. Paper fault.<br>Check points:<br>Check if the paper in the Hopper is warped.<br>Check if the paper which passes through the Fuser Unit is greatly warped or damaged.                          | Replace: Paper                                                                                                  |                                            |
|                                                                                                                       | 4. Gate operation fault.<br>Check point:<br>Check if the Flip Gate or the Flip Solenoid operates correctly.<br>Check if the Switch Back Gate or the SB Solenoid operates correctly.              | Check: Flip Gate<br>Replace: Flip Solenoid (L501)<br><br>Check: Switch Back Gate<br>Replace: SB Solenoid (L502) | 7.1.3.15, 7-146<br><br>7.1.3.16, 7-147     |
|                                                                                                                       | 5. Roller friction or insufficient pressure force of the Idler Roller.                                                                                                                           | Replace: Flip Paper Feed Roller<br>SB Paper Feed Roller                                                         | 7.1.3.5. (2), 7-112<br>7.1.3.5. (3), 7-114 |
|                                                                                                                       | 6. The Motor steps out due to overloading.                                                                                                                                                       | Check: Load of Flip Motor.<br>Load of SB Motor.                                                                 |                                            |
|                                                                                                                       | 7. Motor fault.                                                                                                                                                                                  | Replace: SB Motor (M504)<br>Flip Motor (M503)                                                                   | 7.1.3.8, 7-139<br>7.1.3.7, 7-138           |
|                                                                                                                       | 8. PCB fault.                                                                                                                                                                                    | Replace: CPxxx Assembly                                                                                         | 7.1.5.1. (13), 7-205                       |
| 2. The SB Sensor detected the jam though a jam does not occur.                                                        | 1. The SB Sensor is contaminated.                                                                                                                                                                | Cleaning: SB Sensor (S502)                                                                                      |                                            |
|                                                                                                                       | 2. The breaking of cables or the disconnecting of connectors.                                                                                                                                    | Repair the cable P716-S502 or reset the connector in the correct position.                                      |                                            |
|                                                                                                                       | 3. Sensor fault.<br>Check points:<br>Check if the paper on paper path error occurs on initialization after masking of the sensor window. Error code E05B(SB Sensor) when the sensors are normal. | Replace: SB Sensor (S502)                                                                                       | 7.1.3.5. (6), 7-118                        |
| Refer to <a href="#">Figure 5-7 on page 5-39.</a>                                                                     |                                                                                                                                                                                                  |                                                                                                                 |                                            |

### 5.3.27.

## E134 PF OUT JAM 1 E135 PF OUT JAM 2



| PRIMARY FACTOR; E134: Paper did not arrive at the PF Out Sensor.<br>E135: Paper did not depart from the PF Out Sensor. |                                                                                                                                                                         |                                                                            |                                                    |
|------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|----------------------------------------------------|
| PHENOMENON                                                                                                             | CAUSES & CHECK POINTS                                                                                                                                                   | CORRECTIONS                                                                | Maintenance<br>Ref + Page                          |
| 1. Paper jam occurs.                                                                                                   | 1. Paper is skewed.                                                                                                                                                     | Remove: Skewed paper                                                       |                                                    |
|                                                                                                                        | 2. Foreign substance is on the paper path.                                                                                                                              | Remove: Foreign substance                                                  |                                                    |
|                                                                                                                        | 3. Paper fault.<br>Check points:<br>Check if the paper in the Hopper is warped.<br>Check if the paper which passes through the Fuser Unit is greatly warped or damaged. | Replace: Paper                                                             |                                                    |
|                                                                                                                        | 4. Gate operation fault.<br>Check point:<br>Check if the Flip Gate or Flip Solenoid operates correctly.                                                                 | Check: Flip Gate<br>Replace: Flip Solenoid (L501)                          | 7.1.3.15, 7-146                                    |
|                                                                                                                        | 5. Roller friction or insufficient pressure force of the Idler Roller.                                                                                                  | Replace: Flip Paper Feed Roller<br>PF Out Paper Feed Roller                | 7.1.3.5. (2), 7-112<br>7.1.3.5. (4), 7-115         |
|                                                                                                                        | 6. The Motor steps out due to overloading.                                                                                                                              | Check: Load of Flip Motor (M503)<br>Load of PF Out Motor (M505)            |                                                    |
|                                                                                                                        | 7. Motor fault.                                                                                                                                                         | Replace: SB Motor (M504)<br>Flip Motor (M503)<br>PF Out Motor (M505)       | 7.1.3.8, 7-139<br>7.1.3.7, 7-138<br>7.1.3.9, 7-140 |
|                                                                                                                        | 8. PCB fault.                                                                                                                                                           | Replace: CPxxx Assembly                                                    | 7.1.5.1. (13), 7-205                               |
|                                                                                                                        | 9. Altitude Setting fault.<br>(only E134)                                                                                                                               | Check: Detach current                                                      | 8.4.5.7, 8-21                                      |
|                                                                                                                        | 10. Detach Voltage fault.<br>(only E134)                                                                                                                                | Set: Detach Voltage                                                        | 8.6, 8-103                                         |
|                                                                                                                        | 11. TH Drive Roller fault.                                                                                                                                              | Replace: TH Unit Assembly                                                  | 7.1.3.4. (1), 7-94                                 |
|                                                                                                                        | 12. The damage of TH Drive Roller bearing.                                                                                                                              | Replace: TH Unit Assembly                                                  | 7.1.3.4. (1), 7-94                                 |
| 2. The PF Out Sensor detected the jam though a jam does not occur.                                                     | 1. The Sensor is contaminated.                                                                                                                                          | Cleaning: PF Out Sensor (S503)                                             |                                                    |
|                                                                                                                        | 2. The breaking of cables or the disconnecting of connectors.                                                                                                           | Repair the cable P716-S503 or reset the connector in the correct position. |                                                    |

|                                                                                                                               |                                                                                                                                                                                                    |                                                                                                  |                                                                                                        |
|-------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|
| <b>PRIMARY FACTOR;</b> E134: Paper did not arrive at the PF Out Sensor.<br>E135: Paper did not depart from the PF Out Sensor. |                                                                                                                                                                                                    |                                                                                                  |                                                                                                        |
| 2. Continued.                                                                                                                 | 3. Sensor fault.<br>Check points:<br>Check if the paper on paper path error occurs on initialization after masking of the sensor window. Error code E05E(PF Out Sensor) when the sensor is normal. | Replace: PF Out Sensor (S503)                                                                    | 7.1.3.5. (7), 7-119                                                                                    |
| 3. Finisher fault.                                                                                                            | 1. The Finisher does not operate.<br>(1)Setting of the Dip Switch on CP P/K is faulty.<br>(2)Setting of the Dip Switch on FS108R P/K is faulty.<br>(3)PCB fault.                                   | Set the Dip Switch correctly.<br><br>Replace: FS-108H P/K<br>* FS-108R P/K<br><br>CPxxx Assembly | Refer to the Installation Instruction.<br><br>Refer to the Finisher Manual<br><br>7.1.5.1. (13), 7-205 |
|                                                                                                                               | 2. The paper does not go into the Finisher normally.                                                                                                                                               | Set the Guide Plate of the Finisher correctly.                                                   |                                                                                                        |
| 4. Container Stacker fault.                                                                                                   | 1. The connection of Printer and Container Stacker is wrong.                                                                                                                                       | Replace: Container Stacker                                                                       | Refer to the Installation Instruction.                                                                 |
|                                                                                                                               | 2. L Paper Guide A Assembly is opened.                                                                                                                                                             | Check: L Paper Guide A Assembly                                                                  | Refer to Container Stacker Parts Catalog block 5-13.                                                   |
| Refer to <a href="#">Figure 5-7 on page 5-39</a> .                                                                            |                                                                                                                                                                                                    |                                                                                                  |                                                                                                        |

\* Only for RoHS Machine.



### 5.3.28.

### E138, E139, E13A, E13B RTN FEED JAM 1 to 4

| <b>PRIMARY FACTOR;</b> E138: Paper did not arrive at the ReturnSensor 1.<br>E139: Paper did not depart from the ReturnSensor 1.<br>E13A: Paper did not arrive at the Return Sensor 2.<br>E13B: Paper did not depart from the Return Sensor 2.<br><br><b>Precaution:</b> If the IS Cover is opened after E139, E13A or E13B has occurred, the paper is automatically ejected from the printer. When checking the status of the remaining paper, open the IS Cover in the state that opened the Front Cover. This operation shuts down the +24V line and disables automatic paper ejection. |                                                                                                                                                                                                                                  |                                                                                       |                                                                   |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| PHENOMENON                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | CAUSES & CHECK POINTS                                                                                                                                                                                                            | CORRECTIONS                                                                           | Maintenance<br>Ref + Page                                         |
| 1. Paper jam occurs.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 1. Paper is skewed.                                                                                                                                                                                                              | Remove: Skewed paper                                                                  |                                                                   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 2. Foreign substance is on the paper path.                                                                                                                                                                                       | Remove: Foreign substance                                                             |                                                                   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 3. Paper fault.<br>Check points:<br>Check if the paper in the Hopper is warped.<br>Check if the paper which passes through the Fuser Unit is greatly warped or damaged.                                                          | Replace: Paper                                                                        |                                                                   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 4. Gate operation fault.<br>Check if the Switch Back Gate or SB Gate Motor operates correctly.                                                                                                                                   | Check: Switch Back Gate<br>Replace: SB Gate Motor                                     | 7.1.3.16, 7-147                                                   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 5. Roller friction or insufficient pressure force of the Idler Roller.                                                                                                                                                           | Replace: Return Roller 1<br>Return Roller 2<br>Return Roller 3                        | 7.1.3.6. (3), 7-124<br>7.1.3.6. (4), 7-125<br>7.1.3.6. (5), 7-126 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 6. The Motor steps out due to overloading.                                                                                                                                                                                       | Check: Load of Return Motor (M305)<br>Load of SB Motor (M504)                         |                                                                   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 7. Motor fault.                                                                                                                                                                                                                  | Replace: SB Motor (M504)<br>Return Motor (M305)                                       | 7.1.3.8, 7-139<br>7.1.3.12, 7-143                                 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 8. PCB fault.                                                                                                                                                                                                                    | Replace: CPxxx Assembly                                                               | 7.1.5.1. (13), 7-205                                              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 9. The size of paper in the hopper is different from the paper size setting tab.                                                                                                                                                 | Check & Replace:<br>• Paper size setting tab<br>• Paper size                          |                                                                   |
| 2. The SB Sensor detected the jam though a jam does not occur.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 1. The Return Sensor 1 or Return Sensor 2 is contaminated.                                                                                                                                                                       | Cleaning:<br>Return Sensor 1 (S506)<br>Return Sensor 2 (S305)                         |                                                                   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 2. The breaking of cables or the disconnecting of connectors.                                                                                                                                                                    | Repair the cable P716-S506, P712-S305 or reset the connector in the correct position. |                                                                   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 3. Sensor fault.<br>Check points:<br>Check if the paper on paper path error occurs on initialization after masking of the sensor window. Error codes E05C(Return Sensor 1) or E05D(Return Sensor 2) when the sensors are normal. | Replace: Return Sensor 1 (S506)<br>Return Sensor 2 (S305)                             | 7.1.3.6. (6), 7-127<br>7.1.3.6. (7), 7-128                        |
| Refer to <a href="#">Figure 5-7 on page 5-39.</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                  |                                                                                       |                                                                   |

### 5.3.29.

### E150 to E155 OVER SKEW 1 to 6

| <b>PRIMARY FACTOR;</b> E150: Skew of paper picked from Hopper 1 is detected at the Registration Unit.<br>E151: Skew of paper picked from Hopper 2 is detected at the Registration Unit.<br>E152: Skew of paper picked from Hopper 3 is detected at the Registration Unit.<br>E153: Skew of paper picked from MB Tray is detected at the Registration Unit.<br>E154: Skew of paper picked from Duplex path is detected at the Registration Unit.<br>E155: Skew of paper picked from High Capacity Hopper is detected at the Registration Unit. |                                                                                                                                                                                                                                         |                                                                                                                                                                                  |                                                                                                  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| PHENOMENON                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | CAUSES & CHECK POINTS                                                                                                                                                                                                                   | CORRECTIONS                                                                                                                                                                      | Maintenance<br>Ref + Page                                                                        |
| 1. Paper skew occurs.<br><b>ERROR CODE:</b><br>E150 to E153<br>E155                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 1. The transfer force of the Pick Unit (mechanism) is unbalanced.<br>(1) The Pick Roller or Separator Roller is contaminated.<br>(2) The Pick Roller or Separator Roller is worn out.<br><br>(3) The Separator Roller spring is faulty. | Cleaning: Pick Roller<br>Separator Roller<br><br>Replace: Pick Roller<br>(H1/H2/H3)<br>(MB Tray-H4)<br>(High Capacity Hopper-HP5)<br>Replace: Separator Assembly                 | 7.1.4.3. (2), 7-171<br>7.1.3.2. (2), 7-71<br>7.1.4.3. (3), 7-172<br>7.2.2, 7-218<br>7.2.3, 7-219 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 2. Pick Unit Separator fault.                                                                                                                                                                                                           | Replace: Separator Assembly<br>(H1/H2/H3)<br>(High Capacity Hopper-HP5)                                                                                                          | 7.1.4.3. (3), 7-172<br>7.2.3, 7-219                                                              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 3. The setting of the Hopper Unit is not correct.                                                                                                                                                                                       | Reset the Hopper Unit correctly.                                                                                                                                                 |                                                                                                  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 4. The transfer force of the Vertical Path Unit is unbalanced.<br>(1) The Rubber Roller is contaminated.<br>(2) The Rubber Roller is worn out.<br>(3) The mounting of the Rubber Roller Shaft and bearing is faulty.                    | Cleaning: Rubber Roller<br>Replace: Rubber Roller Assembly<br>Replace: Rubber Roller Assembly<br><br>Reset the Rubber Roller Assembly and bearing correctly.                     | 7.1.4.3. (6), 7-175<br>7.1.4.3. (6), 7-175                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 5. The mounting of the IS Cover is faulty.                                                                                                                                                                                              | Reset the IS Cover correctly.                                                                                                                                                    |                                                                                                  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 6. The transfer force of the Registration is unbalanced.<br>(1) The Registration Roller is contaminated.<br><br>(2) The Registration Roller is worn out.<br>(3) The mounting of the Registration Roller Shaft and bearing is faulty.    | Cleaning: Registration Roller<br>Replace: Registration Roller Assembly<br>Replace: Registration Roller Assembly<br>Reset the Registration Roller Assembly and bearing correctly. | 7.1.3.3. (1), 7-83<br>7.1.3.3. (1), 7-83                                                         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 7. The mounting of the Skew Sensor is faulty.                                                                                                                                                                                           | Reset: Skew Sensor 1 (S301)<br>Skew Sensor 2 (S302)                                                                                                                              | 7.1.3.3. (5), 7-89                                                                               |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |    |                                                                                                                                                                                                                                   |                                                                                                                                                                              |                                                                                          |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
| <b>PRIMARY FACTOR;</b> E150: Skew of paper picked from Hopper 1 is detected at the Registration Unit.<br>E151: Skew of paper picked from Hopper 2 is detected at the Registration Unit.<br>E152: Skew of paper picked from Hopper 3 is detected at the Registration Unit.<br>E153: Skew of paper picked from MB Tray is detected at the Registration Unit.<br>E154: Skew of paper picked from Duplex path is detected at the Registration Unit.<br>E155: Skew of paper picked from High Capacity Hopper is detected at the Registration Unit. |    |                                                                                                                                                                                                                                   |                                                                                                                                                                              |                                                                                          |
| 2. Paper skew occurs.<br>ERROR CODE:<br>E154                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 1. | The transfer force of the Duplex Path is unbalanced.<br>(1) The Pressure Roller or Return Roller is contaminated.<br>(2) The Pressure Roller or Return Roller is worn out.<br><br>(3) The mounting of the Roller Shaft is faulty. | Cleaning: Pressure Roller<br>Return Roller<br><br>Replace: Pressure Roller<br>Return Roller 1<br>Return Roller 2<br>Return Roller 3<br><br>Reset the Roller Shaft correctly. | 7.1.3.6. (8), 7-129<br>7.1.3.6. (3), 7-124<br>7.1.3.6. (4), 7-125<br>7.1.3.6. (5), 7-126 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 2. | The mounting of the Duplex Path is faulty.                                                                                                                                                                                        | Reset the Duplex Path correctly.                                                                                                                                             |                                                                                          |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 3. | The transfer force of the SB Unit is unbalanced.<br>(1) The SB Paper Feed Roller is contaminated.<br>(2) The SB Paper Feed Roller is worn out.<br>(3) The mounting of the SB Paper Feed Roller is faulty.                         | Cleaning: SB Paper Feed Roller<br><br>Replace: SB Paper Feed Roller<br><br>Reset the SB Paper Feed Roller correctly.                                                         | 7.1.3.5. (3), 7-114                                                                      |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 4. | Fuser Unit fault.<br>(1) The Fuser Unit is not set correctly.<br>(2) The Heat Roll or Backup Roll is partially worn out.                                                                                                          | Reset the Fuser Unit<br><br>Replace: Fuser Unit                                                                                                                              | 7.1.3.1. (1), 7-67                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 5. | The transfer force of the Decurler is unbalanced.                                                                                                                                                                                 | Replace: Solenoid (Decurler)                                                                                                                                                 | 7.1.3.6. (14), 7-135                                                                     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 6. | The transfer force of the Timing Pressure Roller is unbalanced.                                                                                                                                                                   | Cleaning: Timing Pressure Roller Shaft Ends and Frame Bushings.<br>(use paint thinner)                                                                                       | 7.1.3.3. (2), 7-85                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 7. | Spring Holder (R)                                                                                                                                                                                                                 | Cleaning: Spring Holder (R)                                                                                                                                                  | 7.1.3.3. (3), 7-86                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 8. | Multi-Bypass Tray                                                                                                                                                                                                                 | Check: Guide Frame                                                                                                                                                           | 7.1.3.2. (3), 7-72                                                                       |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                    |                                                                                       |                                          |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|------------------------------------------|
| <b>PRIMARY FACTOR;</b> E150: Skew of paper picked from Hopper 1 is detected at the Registration Unit.<br>E151: Skew of paper picked from Hopper 2 is detected at the Registration Unit.<br>E152: Skew of paper picked from Hopper 3 is detected at the Registration Unit.<br>E153: Skew of paper picked from MB Tray is detected at the Registration Unit.<br>E154: Skew of paper picked from Duplex path is detected at the Registration Unit.<br>E155: Skew of paper picked from High Capacity Hopper is detected at the Registration Unit. |                                                                                                                                                                                                    |                                                                                       |                                          |
| 3. The Skew Sensor detected the over skew though the paper does not skew.                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 1. There is paper dust and pieces of paper on and around the Skew Sensor Window.                                                                                                                   | Cleaning: Skew Sensor window and its environs.                                        |                                          |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 2. The mounting of the Skew Sensor is faulty.                                                                                                                                                      | Reset the Skew Sensor.                                                                |                                          |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 3. The breaking of cables or the disconnecting of connectors                                                                                                                                       | Repair the cable P711-S301, P711-S302 or reset the connector in the correct position. |                                          |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 4. Sensor fault.<br>Check points:<br>Check if the paper on paper path error occurs on initialization after masking of the sensor window. Error code E057(Skew Sensor) when the sensors are normal. | Replace: Skew Sensor 1 (S301)<br>Skew Sensor 2 (S302)                                 | 7.1.3.3. (5), 7-89<br>7.1.3.3. (5), 7-89 |
| 4. The Skew Sensor does not detected the over skew error though the paper skew occurs.                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 1. Sensor fault.                                                                                                                                                                                   | Replace: Skew Sensor 1 (S301)<br>Skew Sensor 2 (S302)                                 | 7.1.3.3. (5), 7-89<br>7.1.3.3. (5), 7-89 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 2. PCB fault.                                                                                                                                                                                      | Replace: CPxxx Assembly                                                               | 7.1.5.1. (13), 7-205                     |
| Refer to <a href="#">Figure 5-7 on page 5-39</a> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                    |                                                                                       |                                          |

### 5.3.30.

**E180 PICK JAM 1 (HOPPER 1)**  
**E183 PICK JAM 2 (HOPPER 1)**  
**E184 PICK JAM 3 (HOPPER 2)**  
**E187 PICK JAM 4 (HOPPER 2)**  
**E188 PICK JAM 5 (HOPPER 3)**  
**E18D PICK JAM 6 (HOPPER 3)**  
**E18C PICK JAM 7 (MB TRAY)**  
**E190 PICK JAM 8 (HIGH CAPACITY HOPPER)**  
**E192 PICK JAM 9 (HIGH CAPACITY HOPPER)**  
**E194 PICK JAM 10 (DUPLEX)**

| <p><b>PRIMARY FACTOR;</b> E180: Paper traveling time from Hopper 1 to IS Feed Sensor 1 is too long.<br/> E183: Paper traveling time from Hopper 1 to IS Feed Sensor 1 is too short.<br/> E184: Paper traveling time from Hopper 2 to IS Feed Sensor 2 is too long.<br/> E187: Paper traveling time from Hopper 2 to IS Feed Sensor 2 is too short.<br/> E188: Paper traveling time from Hopper 3 to IS Feed Sensor 3 is too long.<br/> E18D: Paper traveling time from Hopper 3 to IS Feed Sensor 3 is too short.<br/> E18C: Paper traveling time from MB Tray to Timing Sensor is too long.<br/> E190: Paper traveling time from High Capacity Hopper to HP5 Feed Sensor is too long.<br/> E192: Paper traveling time from High Capacity Hopper to HP5 Feed Sensor is too short.<br/> E194: Paper traveling time from Duplex Path to Timing Sensor is too long.</p> <p><b>Precaution:</b> If the IS Cover is opened after E110 or E112 has occurred, the paper is automatically ejected from the printer. When checking the status of the remaining paper, open the IS Cover in the state that opened the Front Cover. This operation shuts down the +24V line and disables automatic paper ejection.</p> |                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                             |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PHENOMENON                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | CAUSES & CHECK POINTS                                                                                                                                                | CORRECTIONS                                                                                                                                                                                                                                                                                                                                                                                                                                           | Maintenance<br>Ref + Page                                                                                                                                                                   |
| 1. No paper is picked.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 1. The Pick Roller is worn out or faulty.                                                                                                                            | Replace: Pick Roller                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 2. The Pick Roller does not operate.<br>(1) The disconnecting of connectors.<br><br>(2) Pick Clutch fault.<br><br>(3) Motor fault.<br><br>(4) Gear engagement fault. | Reset the connector.<br>E180: J/P406, J/P434<br>E184: J/P406, J/P435<br>E188: J/P406, J/P436<br>E18C: J/P726, J/P330, J/P342<br>E190: J/P424, J/P440<br>E194: J/P727<br>Replace: HP1 Pick Clutch (L401)<br>HP2 Pick Clutch (L402)<br>HP3 Pick Clutch (L403)<br>MB Pick Clutch (L301)<br>HP5 Pick Clutch (L421)<br>Replace: Hopper Feed Motor (M401)<br>Timing Motor (M302)<br>Return Motor (M305)<br>HP5 Feed Motor (M421)<br>Adjust: Gear engagement | 7.1.4.3. (7), 7-176<br>7.1.4.3. (7), 7-176<br>7.1.4.3. (7), 7-176<br>7.1.3.2. (7), 7-77<br>7.2.23, 7-253<br><br>7.1.4.3. (11), 7-180<br>7.1.3.11, 7-142<br>7.1.3.12, 7-143<br>7.2.15, 7-231 |

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|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|
| <p><b>PRIMARY FACTOR;</b> E180: Paper traveling time from Hopper 1 to IS Feed Sensor 1 is too long.<br/>E183: Paper traveling time from Hopper 1 to IS Feed Sensor 1 is too short.<br/>E184: Paper traveling time from Hopper 2 to IS Feed Sensor 2 is too long.<br/>E187: Paper traveling time from Hopper 2 to IS Feed Sensor 2 is too short.<br/>E188: Paper traveling time from Hopper 3 to IS Feed Sensor 3 is too long.<br/>E18D: Paper traveling time from Hopper 3 to IS Feed Sensor 3 is too short.<br/>E18C: Paper traveling time from MB Tray to Timing Sensor is too long.<br/>E190: Paper traveling time from High Capacity Hopper to HP5 Feed Sensor is too long.<br/>E192: Paper traveling time from High Capacity Hopper to HP5 Feed Sensor is too short.<br/>E194: Paper traveling time from Duplex Path to Timing Sensor is too long.</p> <p><b>Precaution:</b> If the IS Cover is opened after E110 or E112 has occurred, the paper is automatically ejected from the printer. When checking the status of the remaining paper, open the IS Cover in the state that opened the Front Cover. This operation shuts down the +24V line and disables automatic paper ejection.</p> |                                                                                                                                |                                                                                                                                                                                   |                                                                                                                            |
| 1. <b>Continued</b><br><br>No paper is picked.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 3. Inclination of the Hopper Table. (Defective levels)                                                                         | Adjust: Table levels                                                                                                                                                              |                                                                                                                            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 4. Separator fault.<br>(1)Separator Assembly mounting fault.<br>(2)Separator Roller fault.<br><br>(3)Separator Assembly fault. | Reset: Separator Assembly<br><br>Replace: Separator Roller<br><br>High Capacity Hopper Separator Roller<br>Replace: Separator Assembly<br>High Capacity Hopper Separator Assembly | 7.1.3.2. (3), 7-72<br>7.1.4.3. (4), 7-173<br><br>7.2.4, 7-220<br>7.1.4.3. (3), 7-172<br>7.2.3, 7-219                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 5. Paper fault.                                                                                                                | Replace: Paper                                                                                                                                                                    |                                                                                                                            |
| 2. The paper does not reach the paper path or is not transferred on the paper path.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 1. The Guide Plate is dislocated.                                                                                              | Reset the Guide Plate correctly.                                                                                                                                                  |                                                                                                                            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2. Foreign substances are mixed in the paper path.                                                                             | Remove: Foreign substance                                                                                                                                                         |                                                                                                                            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 3. The transfer force of the Pick Roller or the Separator Roller is insufficient.                                              | Replace: Pick Roller<br><br>High Capacity Hopper Pick Roller<br>Separator Roller<br>High Capacity Hopper Separator Roller                                                         | 7.1.3.2. (2), 7-71<br>7.1.4.3. (2), 7-171<br><br>7.2.2, 7-218<br>7.1.3.2. (3), 7-72<br>7.1.4.3. (4), 7-173<br>7.2.4, 7-220 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 4. The transfer force of the Duplex Path Unit Roller is insufficient.                                                          | Replace: Return Roller 3<br>Return Motor (M305)                                                                                                                                   | 7.1.3.6. (5), 7-126<br>7.1.3.12, 7-143                                                                                     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 5. Pick Clutch fault.                                                                                                          | Replace: HP1 Pick Clutch (L401)<br>HP2 Pick Clutch (L402)<br>HP3 Pick Clutch (L403)<br>MB Pick Clutch (L301)<br>HP5 Pick Clutch (L421)                                            | 7.1.4.3. (7), 7-176<br>7.1.4.3. (7), 7-176<br>7.1.4.3. (7), 7-176<br>7.1.3.2. (7), 7-77<br>7.2.23, 7-253                   |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                    |
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| <p><b>PRIMARY FACTOR;</b> E180: Paper traveling time from Hopper 1 to IS Feed Sensor 1 is too long.<br/>E183: Paper traveling time from Hopper 1 to IS Feed Sensor 1 is too short.<br/>E184: Paper traveling time from Hopper 2 to IS Feed Sensor 2 is too long.<br/>E187: Paper traveling time from Hopper 2 to IS Feed Sensor 2 is too short.<br/>E188: Paper traveling time from Hopper 3 to IS Feed Sensor 3 is too long.<br/>E18D: Paper traveling time from Hopper 3 to IS Feed Sensor 3 is too short.<br/>E18C: Paper traveling time from MB Tray to Timing Sensor is too long.<br/>E190: Paper traveling time from High Capacity Hopper to HP5 Feed Sensor is too long.<br/>E192: Paper traveling time from High Capacity Hopper to HP5 Feed Sensor is too short.<br/>E194: Paper traveling time from Duplex Path to Timing Sensor is too long.</p> <p><b>Precaution:</b> If the IS Cover is opened after E110 or E112 has occurred, the paper is automatically ejected from the printer. When checking the status of the remaining paper, open the IS Cover in the state that opened the Front Cover. This operation shuts down the +24V line and disables automatic paper ejection.</p> |                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                    |
| 3. The Pick Jam Sensor detects the paper jam though a paper jam does not occur.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 1. The breaking of cables or the disconnecting of connector.                                                                                                                                                                                                                                                                                                                                                                                | Repair the cable or reset the connector in the correct position.<br>E180: J/P404-S401<br>E184: J/P404-S402<br>E188: J/P404-S403<br>E18C: J/P711-S303<br>E190: J/P423-S422<br>E194: J/P711-S303                   |                                                                                                                                                                                                                                                                                                                                    |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2. The surface of the Pick Jam Sensor is contaminated.                                                                                                                                                                                                                                                                                                                                                                                      | Cleaning: Pick Jam Sensor                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                    |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 3. Sensor fault.<br>Check points:<br>Check if the paper on paper path error occurs on initialization after masking of the sensor window.<br>Error codes when the sensors are normal.<br><br>Sensor Name-Error Code<br><br>Pick Jam Sensor1-E050<br>Pick Jam Sensor2-E051<br>Pick Jam Sensor3-E052<br>IS Feed Sensor1-E050<br>IS Feed Sensor2-E051<br>IS Feed Sensor3-E052<br>Feed Sensor of High Capacity Hopper-E072<br>Timing Sensor-E056 | Replace: Pick Sensor 1 (S435)<br>Pick Sensor 2 (S435)<br>Pick Sensor 3 (S435)<br>IS Feed Sensor 1 (S401)<br>IS Feed Sensor 2 (S402)<br>IS Feed Sensor 3 (S403)<br>HP5 Feed Sensor (S422)<br>Timing Sensor (S303) | <a href="#">7.1.4.3. (18), 7-187</a><br><a href="#">7.1.4.3. (18), 7-187</a><br><a href="#">7.1.4.3. (18), 7-187</a><br><a href="#">7.1.4.3. (20), 7-189</a><br><br><a href="#">7.1.4.3. (20), 7-189</a><br><br><a href="#">7.1.4.3. (20), 7-189</a><br><br><a href="#">7.2.8, 7-224</a><br><br><a href="#">7.1.3.3. (4), 7-88</a> |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 4. PCB fault.                                                                                                                                                                                                                                                                                                                                                                                                                               | Replace: CPxxx Assembly<br>HPxxx Assembly<br>AHxxx Assembly                                                                                                                                                      | <a href="#">7.1.5.1. (13), 7-205</a><br><a href="#">7.1.4.3. (22), 7-191</a><br><a href="#">7.2.10, 7-226</a>                                                                                                                                                                                                                      |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 5. The leading edge of paper is dogeared. (E194)                                                                                                                                                                                                                                                                                                                                                                                            | Check: MBT Guide Plate                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                    |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 6. The transfer force of the Timing Pressure Roller is unbalanced.                                                                                                                                                                                                                                                                                                                                                                          | Cleaning: Timing Pressure Roller shaft ends and frame bushings.                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                    |

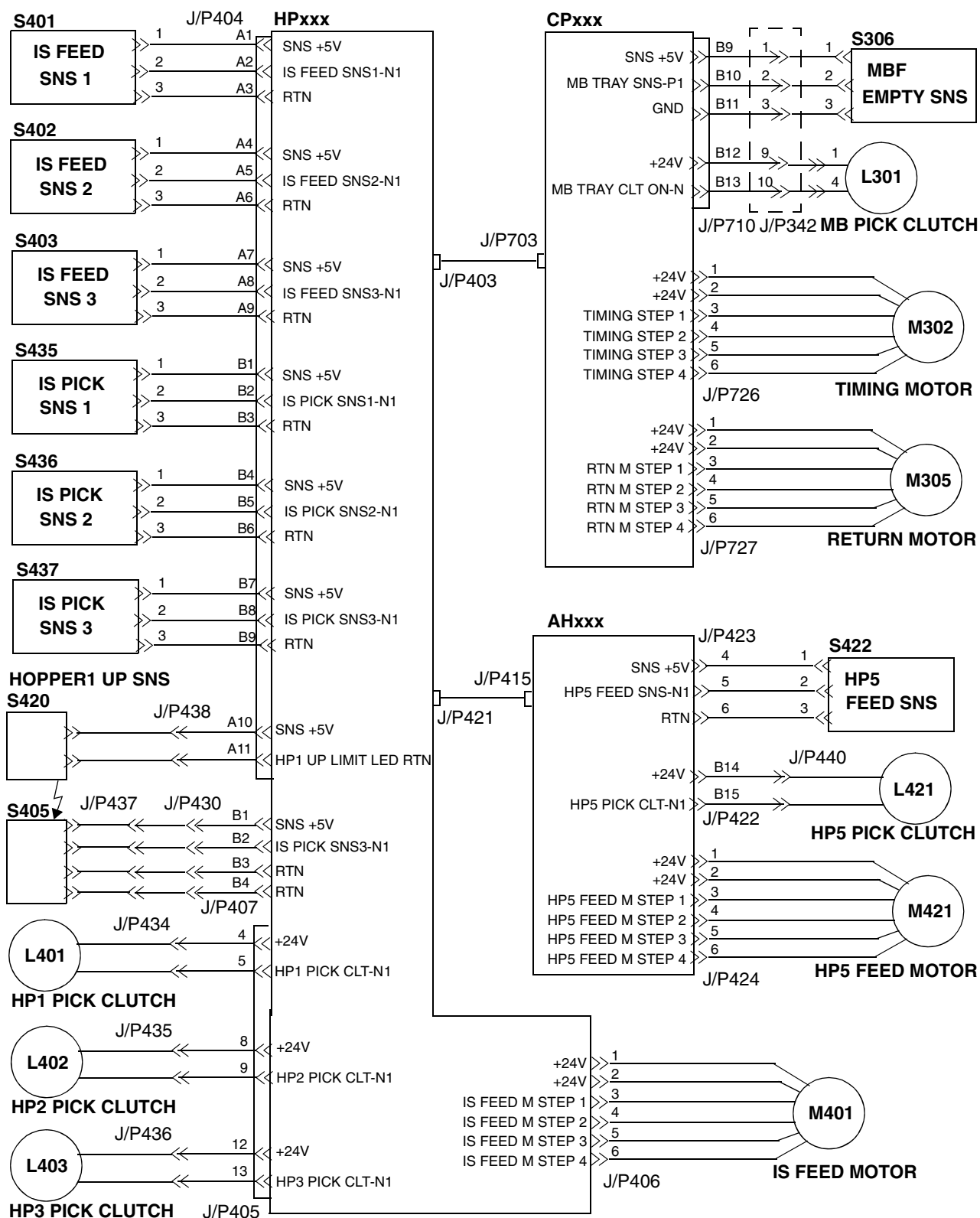


Figure 5-8. Error Code E180, E183, E184, E187, E188, E18D, E18C, E190, E192, & E194



### 5.3.31.

### E181 INPUT STATION FEED JAM 1 E182 INPUT STATION FEED JAM 2 E185 INPUT STATION FEED JAM 3 E186 INPUT STATION FEED JAM 4 E189 INPUT STATION FEED JAM 5 E18A INPUT STATION FEED JAM 6 E18B INPUT STATION FEED JAM 7 E191 INPUT STATION FEED JAM 8 E193 INPUT STATION FEED JAM 9

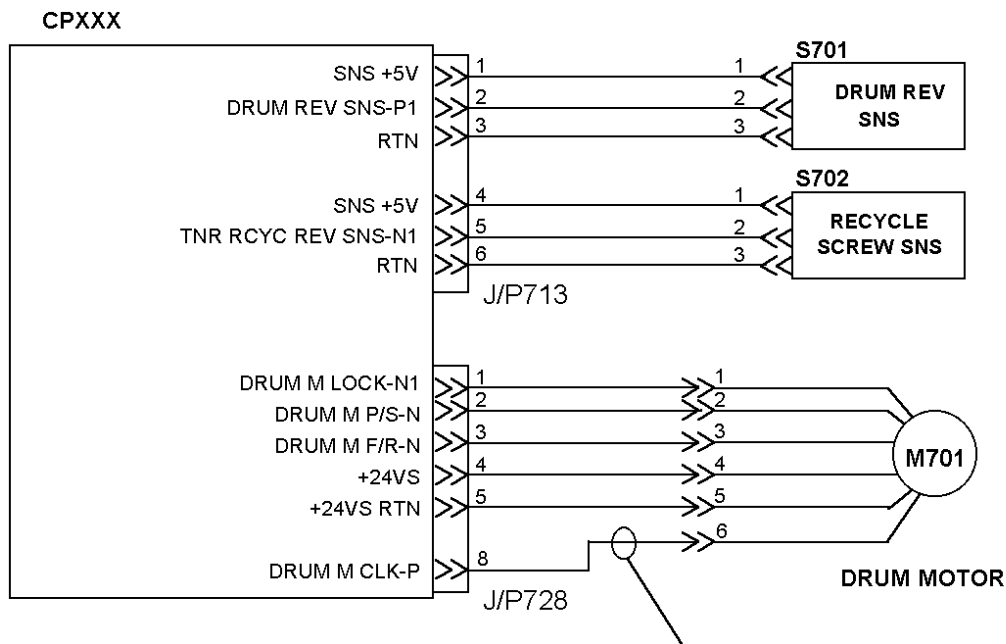
| <p><b>PRIMARY FACTOR;</b> E181: Paper did not depart from the IS Feed Sensor 1.<br/>E182: Paper traveling time from the IS Feed Sensor 1 to the IS Feed Sensor 2 is too long.<br/>E185: Paper did not depart from the IS Feed Sensor 2.<br/>E186: Paper traveling time from the IS Feed Sensor 2 to the IS Feed Sensor 3 is too long.<br/>E189: Paper did not depart from the IS Feed Sensor 3.<br/>E18A: Paper traveling time from the IS Feed Sensor 3 to the Timing Sensor is too long.<br/>E18B: Paper did not depart from the Timing Sensor.<br/>E191: Paper did not depart from the HP5 Feed Sensor.<br/>E193: Paper traveling time from the HP5 Feed Sensor to the IS Feed Sensor 1 is too long.</p> <p><b>Precaution;</b> If the IS Cover is opened after E181 to E18B has occurred, the paper is automatically ejected from the printer. When checking the status of the remaining paper, open the IS Cover in the state that opened the Front Cover. This operation shuts down the +24V line and disables automatic paper ejection.</p> |                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                 |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PHENOMENON                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | CAUSES & CHECK POINTS                                                                                                                                                                                                                                                                                             | CORRECTIONS                                                                                                                                                                                                                                | Maintenance<br>Ref + Page                                                                                                                                                                                                                       |
| 1. Paper jam occurs.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 1. Paper is skewed.                                                                                                                                                                                                                                                                                               | Remove: Skewed paper                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2. Paper fault.<br>Check points:<br>Check if the paper folded or warped.                                                                                                                                                                                                                                          | Replace: Paper                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 3. Foreign substance is on the paper path.                                                                                                                                                                                                                                                                        | Remove: Foreign substance                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 4. Paper Path fault.<br>(1) IS Cover Unit is loosely mounted.<br>(2) The Timing Belt is loose or faulty.<br>(3) Rubber Roller Assembly is faulty.<br>(4) Pressure Roller is faulty.<br>(5) Registration Roller Assembly is faulty.<br>(6) Timing Drive Roller Assembly is faulty.<br>(7) Spring Holder is faulty. | Reset the IS Cover<br><br>Replace: Timing Belt<br><br>Replace: Rubber Roller Assembly<br><br>Replace: Pressure Roller Assembly<br>Replace: Registration Roller Assembly<br>Replace: Timing Drive Roller Assembly<br>Replace: Spring Holder | <br><br><br><a href="#">7.1.4.3. (5), 7-174</a><br><a href="#">7.1.4.3. (6), 7-175</a><br><a href="#">7.1.4.3. (9), 7-178</a><br><a href="#">7.1.3.3. (1), 7-83</a><br><a href="#">7.1.3.3. (2), 7-85</a><br><a href="#">7.1.3.3. (3), 7-86</a> |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 5. Paper Path fault.<br>(High Capacity Hopper)<br>(1) Pressure Roller Assembly is faulty.<br>(2) Rubber Roller Assembly is faulty.                                                                                                                                                                                | Replace: Pressure Roller Assembly<br>Replace: Rubber Roller Assembly                                                                                                                                                                       | <a href="#">7.2.6, 7-222</a><br><a href="#">7.2.17, 7-234</a>                                                                                                                                                                                   |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                 |                                                                                                            |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|
| <b>PRIMARY FACTOR;</b> E181: Paper did not depart from the IS Feed Sensor 1.<br>E182: Paper traveling time from the IS Feed Sensor 1 to the IS Feed Sensor 2 is too long.<br>E185: Paper did not depart from the IS Feed Sensor 2.<br>E186: Paper traveling time from the IS Feed Sensor 2 to the IS Feed Sensor 3 is too long.<br>E189: Paper did not depart from the IS Feed Sensor 3.<br>E18A: Paper traveling time from the IS Feed Sensor 3 to the Timing Sensor is too long.<br>E18B: Paper did not depart from the Timing Sensor.<br>E191: Paper did not depart from the HP5 Feed Sensor.<br>E193: Paper traveling time from the HP5 Feed Sensor to the IS Feed Sensor 1 is too long.<br><br><b>Precaution;</b> If the IS Cover is opened after E181 to E18B has occurred, the paper is automatically ejected from the printer. When checking the status of the remaining paper, open the IS Cover in the state that opened the Front Cover. This operation shuts down the +24V line and disables automatic paper ejection. |                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                 |                                                                                                            |
| 1. Continued                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 6. Motor fault.<br>(1) Hopper Feed Motor (M401)<br>(2) Timing Motor (M302)<br>(3) Return Motor (M305)<br>(4) HP5 Feed Motor (M421)                                                                                                                                                                                                               | Replace: Hopper Feed Motor (M401)<br>Replace: Timing Motor (M302)<br>Replace: Return Motor (M305)<br>Replace: HP5 Feed Motor (M421)                                                                                                                                                             | 7.1.4.3. (11), 7-180<br>7.1.3.11, 7-142<br>7.1.3.12, 7-143<br>7.2.15, 7-231                                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 7. PCB fault.                                                                                                                                                                                                                                                                                                                                    | Replace: CPxxx Assembly                                                                                                                                                                                                                                                                         | 7.1.5.1. (13), 7-205                                                                                       |
| 2. Paper jam is detected though jam does not occur.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 1. The sensor is contaminated.                                                                                                                                                                                                                                                                                                                   | Cleaning: Sensors                                                                                                                                                                                                                                                                               |                                                                                                            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 2. The breaking of cables or the disconnecting of connector.                                                                                                                                                                                                                                                                                     | Repair the cable or reset the connector in the correct position.<br>E181: P404-S401<br>E182: P404-S401 or P404-S402<br>E185: P404-S402<br>E186: P404-S402 or P404-S403<br>E189: P404-S403<br>E18A: P404-S403 or P711-S303<br>E18B: P711-S303<br>E191: P423-S422<br>E193: P423-S422 or P404-S401 |                                                                                                            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 3. Senor fault.<br>Check points:<br>Check if the paper on paper path error occurs on initialization after masking of the sensor window.<br>The following error code is displayed when the sensors are normal.<br>E050 (IS Feed Sensor 1)<br>E051 (IS Feed Sensor 2)<br>E052 (IS Feed Sensor 3)<br>E056 (Timing Sensor)<br>E072 (HP5 Feed Sensor) | Replace: IS Feed Sensor 1<br>Replace: IS Feed Sensor 2<br>Replace: IS Feed Sensor 3<br>Replace: Timing Sensor<br>Replace: HP5 Feed Sensor                                                                                                                                                       | 7.1.4.3. (20), 7-189<br>7.1.4.3. (20), 7-189<br>7.1.4.3. (20), 7-189<br>7.1.3.3. (4), 7-88<br>7.2.8, 7-224 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 4. PCB fault.                                                                                                                                                                                                                                                                                                                                    | Replace: CPxxx Assembly                                                                                                                                                                                                                                                                         | 7.1.5.1. (13), 7-205                                                                                       |
| Refer to <a href="#">Figure 5-7 on page 5-39</a> and <a href="#">Figure 5-8 on page 5-53</a> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                 |                                                                                                            |

### 5.3.32.

## E210 DRUM REV ERROR

| PRIMARY FACTOR; During the Activate operation, the Drum REV Sensor is not turned ON. |                                                                                                                       |                                                                            |                        |
|--------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|------------------------|
| PHENOMENON                                                                           | CAUSES & CHECK POINTS                                                                                                 | CORRECTIONS                                                                | Maintenance Ref + Page |
| 1. This phenomenon occurs because the Drum does not rotate normally.                 | 1. The drive system for the Drum Unit is faulty.<br>(1) The Timing Belt is loose.<br>(2) The Timing Belt is worn out. | Reset the Timing Belt correctly.<br>Replace: Timing Belt                   | 7.1.2.5. (6), 7-51     |
|                                                                                      | 2. Motor fault.                                                                                                       | Replace: Drum Motor (M701)                                                 | 7.1.2.5. (7), 7-52     |
|                                                                                      | 3. The breaking of cables or the disconnecting of connectors.                                                         | Repair the cable P728-M701 or reset the connector in the correct position. |                        |
|                                                                                      | 4. PCB fault.                                                                                                         | Replace: CPxxx Assembly                                                    | 7.1.5.1. (13), 7-205   |
| 2. This phenomenon occurs though the Drum rotates.                                   | 1. The sensor is contaminated.<br>Check if the sensor is contaminated.                                                | Cleaning: Drum REV Sensor (S701) and its environs.                         |                        |
|                                                                                      | 2. The mounting sensor is faulty.                                                                                     | Reset the sensor (S701).                                                   |                        |
|                                                                                      | 3. The breaking of cables or the disconnecting of connectors.                                                         | Repair the cable P713-S701 or reset the connector in the correct position. |                        |
|                                                                                      | 4. Sensor fault.                                                                                                      | Replace: Drum REV Sensor (S701)                                            | 7.1.2.5. (3), 7-48     |
|                                                                                      | 5. PCB fault.                                                                                                         | Replace: CPxxx Assembly                                                    | 7.1.5.1. (13), 7-205   |



This wiring exist only when Drum Motor type DR-6236-200(Parts No. N219005) is installed.

Figure 5-9. Error Code E210

### 5.3.33.

## E218 DRUM MOTOR TIME OUT

| <b>PRIMARY FACTOR;</b> During the Activate operation, the Drum Lock Signal is detected. |                                                               |                                                                            |                                      |
|-----------------------------------------------------------------------------------------|---------------------------------------------------------------|----------------------------------------------------------------------------|--------------------------------------|
| <b>PHENOMENON</b>                                                                       | <b>CAUSES &amp; CHECK POINTS</b>                              | <b>CORRECTIONS</b>                                                         | <b>Maintenance Ref + Page</b>        |
| 1. This phenomenon occurs because the drum does not rotate normally.                    | 1. Drum Unit fault.                                           | Replace: Drum Unit                                                         | <a href="#">7.1.2.1. (1), 7-4</a>    |
|                                                                                         | 2. Motor fault.                                               | Replace: Drum Motor (M701)                                                 | <a href="#">7.1.2.5. (7), 7-52</a>   |
|                                                                                         | 3. The breaking of cables or the disconnecting of connectors. | Repair the cable P728-M701 or reset the connector in the correct position. |                                      |
|                                                                                         | 4. PCB fault.                                                 | Replace: CPxxx Assembly                                                    | <a href="#">7.1.5.1. (13), 7-205</a> |
|                                                                                         | 5. Setting of the DIP SW on CP P/K is faulty.                 | Set the DIP SW correctly.                                                  | <a href="#">3.15, 3-46</a>           |
|                                                                                         | 6. Improper use of CPxxx Assembly (Non RoHS machine)          | Replace: CPxxx Assembly (G1511211)                                         | <a href="#">7.1.5.1. (13), 7-205</a> |
|                                                                                         | 7. Old ROM version of CPxxx Assembly                          | Upgrade: Engine firmware G1511179A Ver. B or higher                        |                                      |
| 2. This phenomenon occurs though the drum rotates.                                      | 1. Motor fault.                                               | Replace: Drum Motor (M701).                                                | <a href="#">7.1.2.5. (7), 7-52</a>   |
|                                                                                         | 2. The breaking of cables or the disconnecting of connectors. | Repair the cable P728-M701 or reset the connector in the correct position. |                                      |
|                                                                                         | 3. PCB fault.                                                 | Replace: CPxxx Assembly                                                    | <a href="#">7.1.5.1. (13), 7-205</a> |
| Refer to <a href="#">Figure 5-9</a> .                                                   |                                                               |                                                                            |                                      |

### 5.3.34. E224 DEV BIAS VOLT

| PRIMARY FACTOR; An error occurs in the DEV Bias high voltage power supply. |                                                               |                                                                                |                                              |
|----------------------------------------------------------------------------|---------------------------------------------------------------|--------------------------------------------------------------------------------|----------------------------------------------|
| PHENOMENON                                                                 | CAUSES & CHECK POINTS                                         | CORRECTIONS                                                                    | Maintenance Ref + Page                       |
| 1. This phenomenon occurs.                                                 | 1. DEV. BIAS VOLT leak to the Drum surface.                   | Cleaning: Developer Unit                                                       | 4.4.10, 4-22                                 |
|                                                                            | 2. High-voltage supply control system error.                  | Replace: High Voltage Power Supply (1)<br>Replace: CPxxx Assembly              | 7.1.5.1. (14), 7-206<br>7.1.5.1. (13), 7-205 |
|                                                                            | 3. The breaking of cables or the disconnecting of connectors. | Repair the cable P706-DEV BIAS or reset the connector in the correct position. |                                              |
|                                                                            | 4. The Power Supply fault.                                    | Replace: Power Supply.                                                         | 7.1.5.1. (16), 7-208                         |

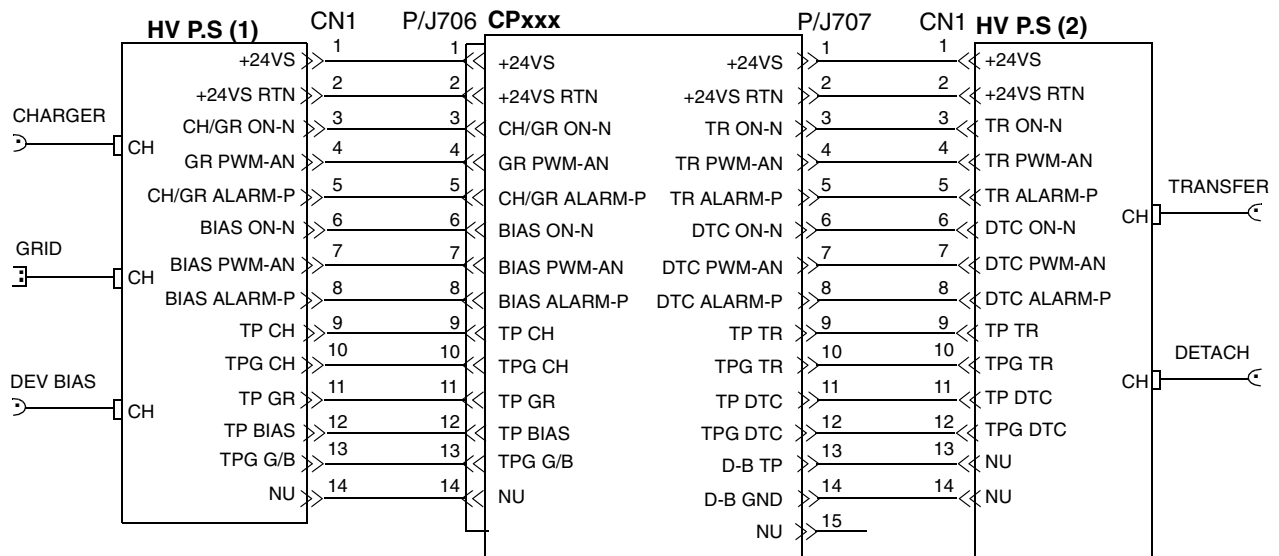


Figure 5-10. Error Code E224

### 5.3.35. E225 CHARGER/GRID VOLT

| PRIMARY FACTOR; An error occurs in the Charger/Grid high voltage power supply. |                                                                                                                          |                                                                                    |                                                                     |
|--------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|---------------------------------------------------------------------|
| PHENOMENON                                                                     | CAUSES & CHECK POINTS                                                                                                    | CORRECTIONS                                                                        | Maintenance Ref + Page                                              |
| 1. This phenomenon occurs.                                                     | 1. The mounting of the Charger Unit is faulty.                                                                           | Reset the Charger Unit correctly.                                                  | 7.1.2.2. (1), 7-6                                                   |
|                                                                                | 2. Charger Unit fault.<br>(1) The wire is contaminated.<br>(2) The grid or corotron wire is damaged, deformed, or loose. | Replace: Charger Unit<br><br>Replace: Charger Wire<br><br>Replace: Charger Grid    | 7.1.2.2. (1), 7-6<br><br>7.1.2.2. (3), 7-8<br><br>7.1.2.2. (2), 7-7 |
|                                                                                | 3. High-voltage supply control system error.                                                                             | Replace: High Voltage Power Supply (1)<br>Replace: CPxxx Assembly                  | 7.1.5.1. (14), 7-206<br>7.1.5.1. (13), 7-205                        |
|                                                                                | 4. The breaking of cables.                                                                                               | Repair the cable P706-Charger/Grid or reset the connector in the correct position. |                                                                     |
|                                                                                | 5. The Power Supply fault.                                                                                               | Replace: Power Supply.                                                             | 7.1.5.1. (16), 7-208                                                |
| Refer to <a href="#">Figure 5-10</a> .                                         |                                                                                                                          |                                                                                    |                                                                     |

### 5.3.36. E226 TRANSFER VOLT



| PRIMARY FACTOR; An error occurs in the Transfer high voltage power supply. |                                                                                                                   |                                                                                |                                              |
|----------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|----------------------------------------------|
| PHENOMENON                                                                 | CAUSES & CHECK POINTS                                                                                             | CORRECTIONS                                                                    | Maintenance Ref + Page                       |
| 1. This phenomenon occurs.                                                 | 1. The mounting of the Transfer Unit is faulty.                                                                   | Reset the Corotron Assembly correctly.                                         | 7.1.3.4. (11), 7-104                         |
|                                                                            | 2. Transfer Unit fault.<br>(1) The wire is contaminated.<br>(2) The corotron wire is damaged, deformed, or loose. | Replace: Corotron Assembly                                                     | 7.1.3.4. (11), 7-104                         |
|                                                                            | 3. High-voltage supply control system error.                                                                      | Replace: High Voltage Power Supply (2)<br>Replace: CPxxx Assembly              | 7.1.5.1. (15), 7-207<br>7.1.5.1. (13), 7-205 |
|                                                                            | 4. The breaking of cables.                                                                                        | Repair the cable P707-Transfer or reset the connector in the correct position. |                                              |
|                                                                            | 5. TH Unit fault.                                                                                                 | Replace: TH Unit                                                               | 7.1.3.4. (1), 7-94                           |
|                                                                            | 6. The Power Supply fault.                                                                                        | Replace: Power Supply.                                                         | 7.1.5.1. (16), 7-208                         |
| Refer to <a href="#">Figure 5-10</a> .                                     |                                                                                                                   |                                                                                |                                              |

### 5.3.37. E227 DETACH VOLT



| PRIMARY FACTOR; An error occurs in the Detach high voltage power supply. |                                                                                                                   |                                                                              |                                              |
|--------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|----------------------------------------------|
| PHENOMENON                                                               | CAUSES & CHECK POINTS                                                                                             | CORRECTIONS                                                                  | Maintenance Ref + Page                       |
| 1. This phenomenon occurs.                                               | 1. The mounting of the Corotron Assembly is faulty.                                                               | Reset the Corotron Assembly correctly.                                       | 7.1.3.4. (13), 7-106                         |
|                                                                          | 2. Corotron Assembly fault.<br>(1) The wire is contaminated.<br>(2) Corotron wire is damaged, deformed, or loose. | Replace: Corotron Assembly                                                   | 7.1.3.4. (13), 7-106                         |
|                                                                          | 3. High-voltage power supply control system error.                                                                | Replace: High Voltage Power Supply (2)<br>Replace: CPxxx Assembly            | 7.1.5.1. (15), 7-207<br>7.1.5.1. (13), 7-205 |
|                                                                          | 4. The breaking of cables.                                                                                        | Repair the cable P707-Detach or reset the connector in the correct position. |                                              |
|                                                                          | 5. The Power Supply fault.                                                                                        | Replace: Power Supply.                                                       | 7.1.5.1. (16), 7-208                         |
| Refer to <a href="#">Figure 5-10</a> .                                   |                                                                                                                   |                                                                              |                                              |

### 5.3.38.

### E228 MAGROLL REV. ERROR 1

| PRIMARY FACTOR; The Developer Motor does not rotate. |                                                                                                                |                                                                            |                        |
|------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|------------------------|
| PHENOMENON                                           | CAUSES & CHECK POINTS                                                                                          | CORRECTIONS                                                                | Maintenance Ref + Page |
| 1. The Magnet Roll is rotating.                      | 1. Overload<br>(1) When the Developer Unit is removed, the Magnet Roll overloads so it cannot rotate.          | Replace: Developer Unit<br>Check: Gear                                     | 7.1.2.3. (1), 7-10     |
|                                                      | 2. Motor fault.<br>(1) When the Developer Unit is removed, the Magnet Roll overloads so it cannot rotate.      | Replace: Dev. Motor Assembly (M321)                                        | 7.1.2.3. (3), 7-13     |
|                                                      | 3. PCB fault.                                                                                                  | Replace: CPxxx Assembly                                                    | 7.1.5.1. (13), 7-205   |
|                                                      | 4. The breaking of cables or the disconnecting of connectors.                                                  | Repair the cable P719-S313 or reset the connector in the correct position. |                        |
|                                                      | 5. Sensor fault.                                                                                               | Replace: MG Sensor (S313)                                                  | 7.1.2.5. (4), 7-49     |
|                                                      | 6. The sensor is contaminated.                                                                                 | Cleaning: MG Sensor (S313)                                                 |                        |
|                                                      | 7. Both ends of the MG Roll are dirty.                                                                         | Cleaning: Both ends of the MG Roll                                         |                        |
| 2. The Magnet Roll does not rotate.                  | 1. Overload<br>(1) When the Magnet Roll of the Developer Unit is locked.<br>(2) The gear is damaged or locked. | Replace: Developer Unit<br><br>Check: Gear                                 | 7.1.2.3. (1), 7-10     |
|                                                      | 2. Motor fault.                                                                                                | Replace: Dev. Motor Assembly (M321)                                        | 7.1.2.3. (3), 7-13     |
|                                                      | 3. PCB fault.                                                                                                  | Replace: CPxxx Assembly                                                    | 7.1.5.1. (13), 7-205   |
|                                                      | 4. The breaking of cables or the disconnecting of connectors.                                                  | Repair the cable P720-M321 or reset the connector in the correct position. |                        |



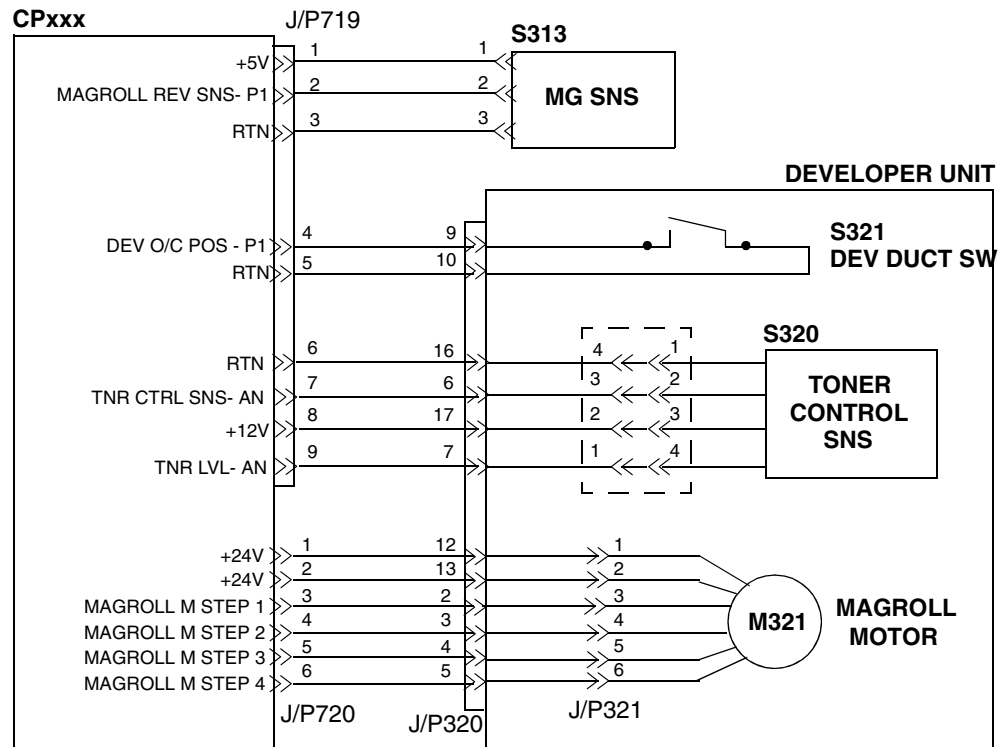


Figure 5-11. Error Code E228

### 5.3.39. E229 MAGROLL REV. ERROR 2

| PRIMARY FACTOR; Abnormality is detected at the Toner Control Sensor. |                                                               |                                                                            |                        |
|----------------------------------------------------------------------|---------------------------------------------------------------|----------------------------------------------------------------------------|------------------------|
| PHENOMENON                                                           | CAUSES & CHECK POINTS                                         | CORRECTIONS                                                                | Maintenance Ref + Page |
| 1. This phenomenon occurs.                                           | 1. Toner Control fault.                                       | Check: Developer Unit                                                      |                        |
|                                                                      | 2. PCB fault.                                                 | Replace: CPxxx Assembly                                                    | 7.1.5.1. (13), 7-205   |
|                                                                      | 3. The breaking of cables or the disconnecting of connectors. | Repair the cable P719-S320 or reset the connector in the correct position. |                        |
|                                                                      | 4. Toner Control Sensor fault.                                | Replace: Developer Unit                                                    | 7.1.2.3. (1), 7-10     |
| Refer to <a href="#">Figure 5-11</a> .                               |                                                               |                                                                            |                        |

### 5.3.40.

### E22A OVER TONER

| PRIMARY FACTOR; The toner concentration in abnormally high.                                   |                                                                                                                                                                                                                                                                                 |                                                                                                                                                               |                                                                  |
|-----------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------|
| PHENOMENON                                                                                    | CAUSES & CHECK POINTS                                                                                                                                                                                                                                                           | CORRECTIONS                                                                                                                                                   | Maintenance Ref + Page                                           |
| 1. The printing density is higher than that of the print sample before the OVER TONER occurs. | 1. A large quantity of toner is contained in the Developer Unit.                                                                                                                                                                                                                | Replace: Developer mix.                                                                                                                                       | 3.2.2. (2), 3-5                                                  |
|                                                                                               | 2. Developer mix fault.<br>(1) When the Developer mix is replaced, check whether some of the new Developer mix remains in the bottle.<br>(2) Toner is accumulated near the outlet of the Developer Unit.<br>(3) The value of the Developer mix is less than the standard value. | Replace: Developer mix<br><br>Replace: Developer Unit<br><br>Replace: Developer mix                                                                           | 3.2.2. (2), 3-5<br><br>7.1.2.3. (1), 7-10<br><br>3.2.2. (2), 3-5 |
|                                                                                               | 3. Control fault.<br>Toner feed control is out of order.                                                                                                                                                                                                                        | Check: Cable<br>Replace: CPxxx Assembly<br>Replace: Developer Unit                                                                                            | 7.1.5.1. (13), 7-205<br>7.1.2.3. (1), 7-10                       |
| 2. Although the density remains unchanged, the OVER TONER occurs.                             | 1. Control fault.<br>(1) The breaking of cables or disconnecting of connectors.<br>(2) PCB fault.<br>(3) The Toner Sensor in the Developer Unit is out of order.                                                                                                                | Reset: Developer Unit<br>Repair the cable P720-P320 or reset the connector in the correct position.<br><br>Replace: CPxxx Assembly<br>Replace: Developer Unit | <br><br><br>7.1.5.1. (13), 7-205<br>7.1.2.3. (1), 7-10           |
| Refer to <a href="#">Figure 5-11</a> .                                                        |                                                                                                                                                                                                                                                                                 |                                                                                                                                                               |                                                                  |

### 5.3.41. E22B LACK TONER

| <b>PRIMARY FACTOR;</b> The toner concentration in abnormally low.                               |                                                                                                                                                   |                                                                                                                                           |                                                                          |
|-------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|
| <b>PHENOMENON</b>                                                                               | <b>CAUSES &amp; CHECK POINTS</b>                                                                                                                  | <b>CORRECTIONS</b>                                                                                                                        | <b>Maintenance Ref + Page</b>                                            |
| 1. The print density is lower than that before the status LACK TONER occurs.                    | 1. Toner Sensor fault.<br>The toner empty status cannot be detected.                                                                              | Replace: Toner Hopper Unit<br>Repair the cable P710-P328 or reset the connector in the correct position.                                  | 7.1.2.4. (1), 7-36                                                       |
|                                                                                                 | 2. Toner Feed Motor fault.<br>(1) The breaking of cables.<br>(2) The disconnecting of connector.<br>(3) Toner Feed Motor fault.<br>(4) PCB fault. | Replace: Toner Hopper Unit<br><br>Reset the connector in the correct position.<br>Replace: Toner Feed Motor<br><br>Replace CPxxx Assembly | 7.1.2.4. (1), 7-36<br><br>7.1.2.4. (2), 7-37<br><br>7.1.5.1. (13), 7-205 |
| 2. The print density is not lower than that before the status LACK TONER occurs.                | 1. Toner Control Sensor fault.                                                                                                                    | Replace: Developer Unit                                                                                                                   | 7.1.2.3. (1), 7-10                                                       |
|                                                                                                 | 2. PCB fault.                                                                                                                                     | Replace: CPxxx Assembly                                                                                                                   | 7.1.5.1. (13), 7-205                                                     |
| Refer to <a href="#">Figure 5-3 on page 5-21</a> and <a href="#">Figure 5-11 on page 5-62</a> . |                                                                                                                                                   |                                                                                                                                           |                                                                          |

### 5.3.42. E22F TONER FEED MOTOR EMERGENCY

| <b>PRIMARY FACTOR;</b> The Toner Feed Motor locked.                              |                                                 |                                                                                                          |                               |
|----------------------------------------------------------------------------------|-------------------------------------------------|----------------------------------------------------------------------------------------------------------|-------------------------------|
| <b>PHENOMENON</b>                                                                | <b>CAUSES &amp; CHECK POINTS</b>                | <b>CORRECTIONS</b>                                                                                       | <b>Maintenance Ref + Page</b> |
| 1. This phenomenon occurs because the Toner Feed Motor does not rotate normally. | 1. Motor fault.                                 | Replace: Toner Feed Motor (M322)                                                                         | 7.1.2.4. (2), 7-37            |
|                                                                                  | 2. The breaking of cables.                      | Repair the cable P710-P328 or reset the connector in the correct position.<br>Replace: Toner Feed Motor  | 7.1.2.4. (2), 7-37            |
|                                                                                  | 3. PCB fault.                                   | Replace CPxxx Assembly                                                                                   | 7.1.5.1. (13), 7-205          |
|                                                                                  | 4. The toner is overloaded in the Toner Hopper. | Put out the toner.                                                                                       |                               |
| 2. This phenomenon occurs though the Toner Feed Motor rotates.                   | 1. The breaking of cables.                      | Repair the cable P710-P328 or reset the connector in the correct position.<br>Replace: Toner Hopper Unit | 7.1.2.4. (1), 7-36            |
|                                                                                  | 2. Motor fault.                                 | Replace: Toner Feed Motor (M322)                                                                         | 7.1.2.4. (2), 7-37            |
|                                                                                  | 3. PCB fault.                                   | Replace: CPxxx Assembly                                                                                  | 7.1.5.1. (13), 7-205          |
| Refer to <a href="#">Figure 5-3 on page 5-21</a> .                               |                                                 |                                                                                                          |                               |

### 5.3.43.

## E231 TONER SCREW REVOLUTION ERROR

| <b>PRIMARY FACTOR;</b> The toner screw does not operate normally.          |                                                                          |                                                                            |                        |
|----------------------------------------------------------------------------|--------------------------------------------------------------------------|----------------------------------------------------------------------------|------------------------|
| <b>NOTE:</b> The Drum Motor drives the toner screw.                        |                                                                          |                                                                            |                        |
| PHENOMENON                                                                 | CAUSES & CHECK POINTS                                                    | CORRECTIONS                                                                | Maintenance Ref + Page |
| 1. This phenomenon occurs because the Drum Motor does not rotate normally. | 1. The toner is overloaded in the Recycle tube.                          | Cleaning: Recycle tube                                                     |                        |
|                                                                            | 2. Motor fault.                                                          | Replace: Drum Motor (M701)                                                 | 7.1.2.5. (7), 7-52     |
|                                                                            | 3. The breaking of cables.                                               | Repair the cable P713-S702 or reset the connector in the correct position. |                        |
|                                                                            | 4. PCB fault.                                                            | Replace: CPxxx Assembly                                                    | 7.1.5.1. (13), 7-205   |
| 2. This phenomenon occurs though the Drum Motor rotates.                   | 1. The sensor is contaminated. Check if the Sensor is contaminated, etc. | Cleaning: Recycle Sensor(S702) and its environs.                           |                        |
|                                                                            | 2. The mounting of the sensor is faulty.                                 | Reset the sensor in the correct position.                                  |                        |
|                                                                            | 3. The breaking of cables.                                               | Repair the cable P713-S702 or reset the connector in the correct position. |                        |
|                                                                            | 4. Sensor fault.                                                         | Replace: Recycle REV Sensor (S702)                                         | 7.1.2.6. (4), 7-64     |
|                                                                            | 5. PCB fault.                                                            | Replace: CPxxx Assembly                                                    | 7.1.5.1. (13), 7-205   |
|                                                                            | 6. Coming apart of the Recycle Path Ass'y structure.                     | Replace: Recycle Path Ass'y                                                | 7.1.2.6. (1), 7-59     |
| Refer to <a href="#">Figure 5-9</a> .                                      |                                                                          |                                                                            |                        |

### 5.3.44.

## E233 TR CLEANER ERROR

| <b>PRIMARY FACTOR;</b> TR Cleaner is not detected in time.         |                                          |                                                                            |                        |
|--------------------------------------------------------------------|------------------------------------------|----------------------------------------------------------------------------|------------------------|
| PHENOMENON                                                         | CAUSES & CHECK POINTS                    | CORRECTIONS                                                                | Maintenance Ref + Page |
| 1. This phenomenon occurs because the TR Cleaner does not operate. | 1. Corotron Assembly fault.              | Replace: Corotron Assembly                                                 | 7.1.3.4. (11), 7-104   |
|                                                                    | 2. The breaking of cables.               | Repair the cable P714-S309 or reset the connector in the correct position. |                        |
|                                                                    | 3. PCB fault.                            | Replace: CPxxx Assembly                                                    | 7.1.5.1. (13), 7-205   |
| 2. This phenomenon occurs though the TR Cleaner operates.          | 1. TR Cleaner Pos. Sensor fault.         | Replace: Corotron Cleaner Position Sensor (S309)                           | 7.1.3.4. (15), 7-108   |
|                                                                    | 2. The mounting of the sensor is faulty. | Reset the sensor. (S309)                                                   |                        |
|                                                                    | 3. The breaking of cables.               | Repair the cable P714-S309 or reset the connector in the correct position. |                        |
|                                                                    | 4. PCB fault.                            | Replace: CPxxx Assembly                                                    | 7.1.5.1. (13), 7-205   |

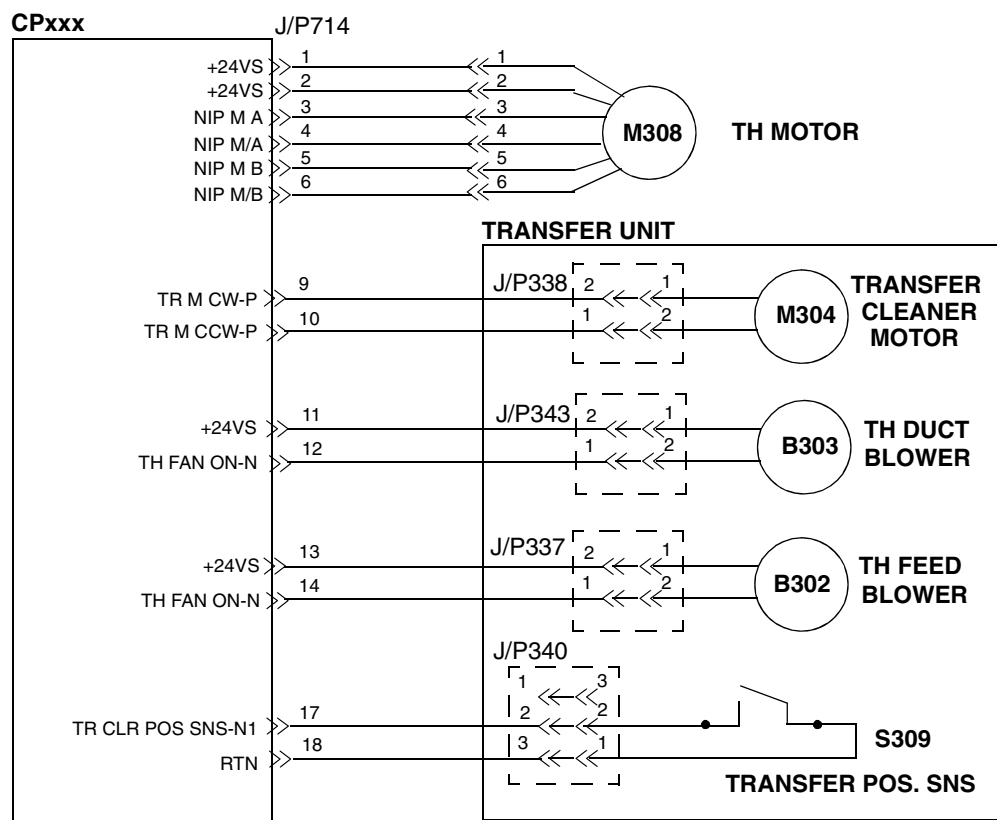


Figure 5-12. Error Code E233

### 5.3.45. E239 BD ERROR E238 BD TIME OUT

| PRIMARY FACTOR; E238: The BD Signal is not detected in time.<br>E239: The BD Signal interval is not detected in time. |                                                                     |                                                                                                   |                                    |
|-----------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|------------------------------------|
| PHENOMENON                                                                                                            | CAUSES & CHECK POINTS                                               | CORRECTIONS                                                                                       | Maintenance Ref + Page             |
| 1. This phenomenon occurs.                                                                                            | 1. The breaking of cables or the disconnecting of connectors.       | Repair the cables P114-P104, P111-P101, P113-P103 or reset the connector in the correct position. |                                    |
|                                                                                                                       | 2. Optical Unit fault.<br>(1) PCB fault.<br>(2) Optical Unit fault. | Replace: OCxxx Assembly<br>Replace: Optical Unit                                                  | 7.1.5.1. (17), 7-209<br>7.1.1, 7-1 |
|                                                                                                                       | 3. Sensor fault.                                                    | Replace: Optical Unit                                                                             | 7.1.1, 7-1                         |
|                                                                                                                       | 4. Laser fault.                                                     | Replace: Optical Unit                                                                             | 7.1.1, 7-1                         |
|                                                                                                                       | 5. Motor fault.                                                     | Replace: Optical Unit                                                                             | 7.1.1, 7-1                         |
|                                                                                                                       | 6. CE fault.                                                        | Check: CE                                                                                         |                                    |
|                                                                                                                       | 7. Noise check                                                      |                                                                                                   |                                    |
|                                                                                                                       | 8. TH Unit broken.                                                  | Check: Bearing Stopper position or TH Unit Frame is broken.                                       |                                    |
|                                                                                                                       | 9. TH Drive Roller fault.                                           | Replace: TH Unit Assembly                                                                         | 7.1.3.4. (1), 7-94                 |
|                                                                                                                       | 10. The damage of TH Drive Roller bearing.                          | Replace: TH Unit Assembly                                                                         | 7.1.3.4. (1), 7-94                 |

OPTICAL UNIT

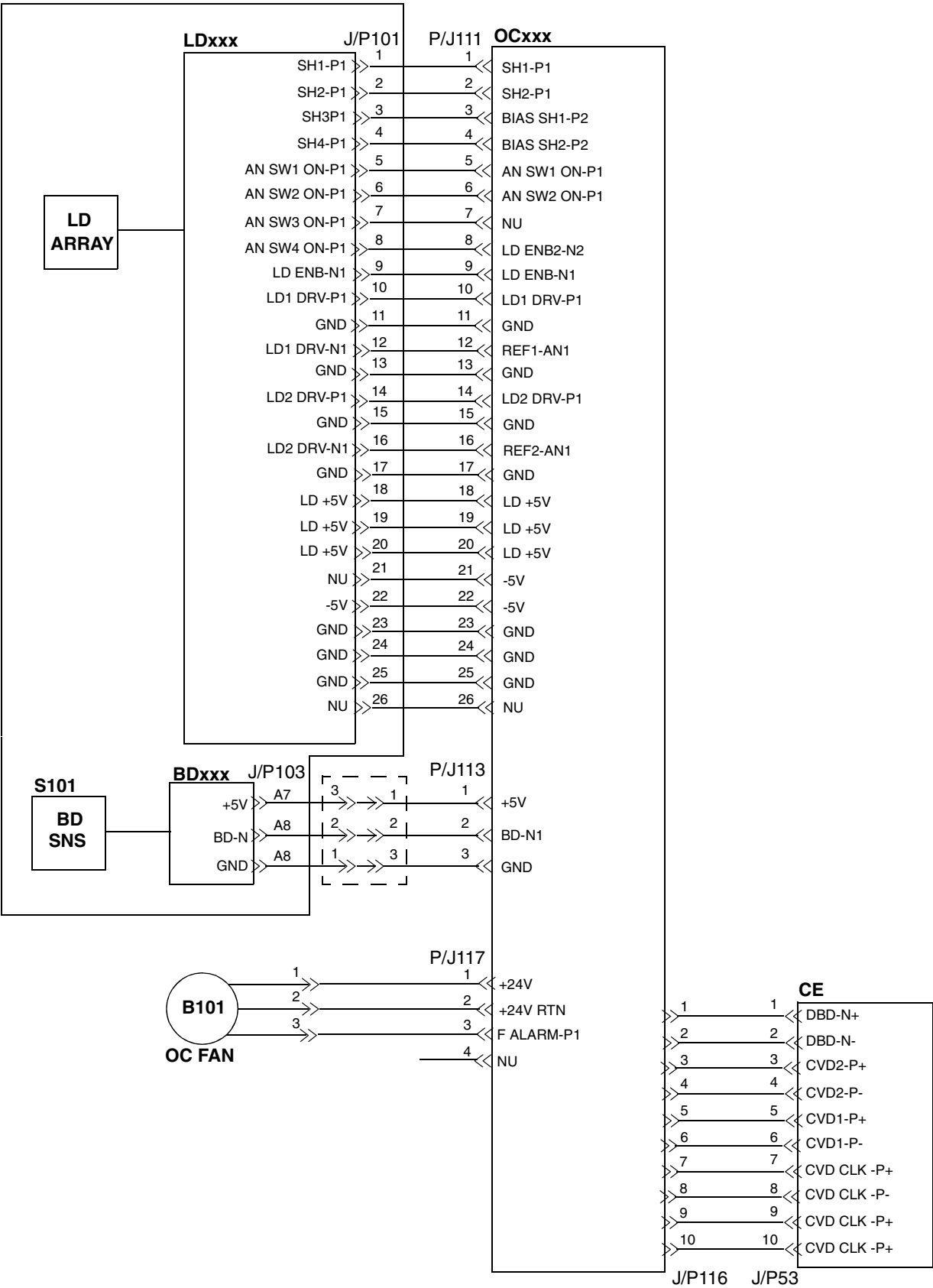


Figure 5-13. Error Code E238 & E239

### 5.3.46.

## E23C MIRROR MOTOR TIME OUT E23E MIRROR MOTOR ALARM

| PRIMARY FACTOR; E23C: The Mirror Motor speed does not reach its specified speed.<br>E23E: A rotation error of the Mirror Motor is detected. |                                                               |                                                                                                              |                                                            |
|---------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|
| PHENOMENON                                                                                                                                  | CAUSES & CHECK POINTS                                         | CORRECTIONS                                                                                                  | Maintenance Ref + Page                                     |
| 1. This phenomenon occurs.                                                                                                                  | 1. Mirror Motor fault.                                        | Replace: Optical Unit                                                                                        | 7.1.1, 7-1                                                 |
|                                                                                                                                             | 2. Optical unit fault.                                        | Replace: Optical Unit                                                                                        | 7.1.1, 7-1                                                 |
|                                                                                                                                             | 3. The breaking of cables or the disconnecting of connectors. | Repair the cables P104-P114, P118-P704, P112-P705, P115-P231 or reset the connector in the correct position. |                                                            |
|                                                                                                                                             | 4. PCB fault.                                                 | Replace: OCxxx Assembly<br>CPxxx Assembly<br>Optical Unit                                                    | 7.1.5.1. (17), 7-209<br>7.1.5.1. (13), 7-205<br>7.1.1, 7-1 |

#### OPTICAL UNIT

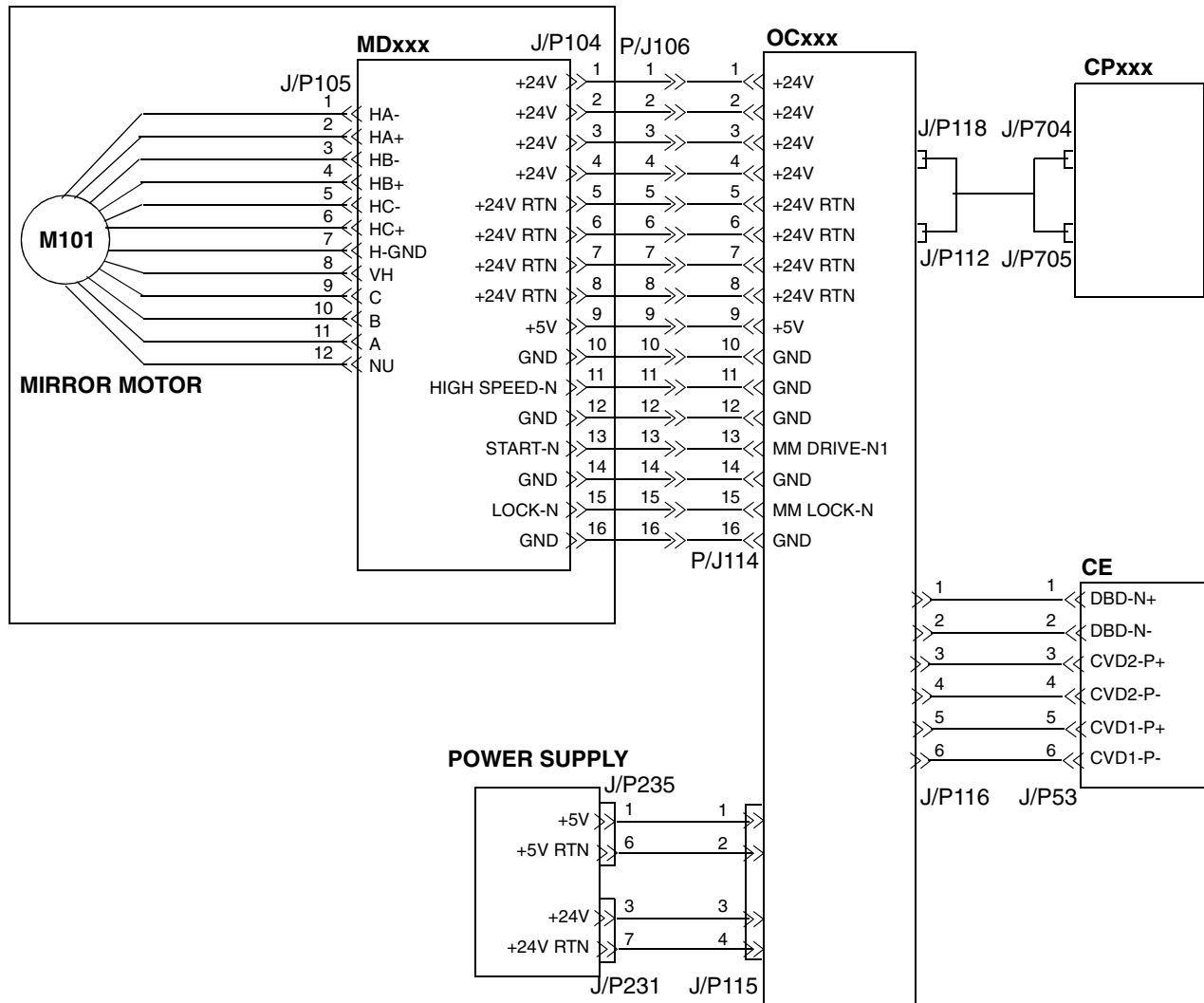


Figure 5-14. Error Codes E23C & E23E

### 5.3.47. E23F VIDEO OPEN 1 E240 VIDEO OPEN 2

| <b>PRIMARY FACTOR;</b> E23F: An error is found in the CVD 1 signal from the CE.<br>E240: An error is found in the CVD 2 signal from the CE. |                                                                                                                                |                                                                                            |                                                            |
|---------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|------------------------------------------------------------|
| <b>PHENOMENON</b>                                                                                                                           | <b>CAUSES &amp; CHECK POINTS</b>                                                                                               | <b>CORRECTIONS</b>                                                                         | <b>Maintenance Ref + Page</b>                              |
| 1. This phenomenon occurs.                                                                                                                  | 1. No CVD signal is sent from the CE.<br>(1) The breaking of the cable or the disconnecting of the connector.<br>(2) CE fault. | Repair the cable P53-P116 or reset the connector in the correct position.<br><br>Check: CE |                                                            |
| 2. This phenomenon occurs though the CVD signal is sent from the CE.                                                                        | 1. PCB fault.                                                                                                                  | Replace: OCxxx Assembly<br>CPxxx Assembly<br>Optical Unit                                  | 7.1.5.1. (17), 7-209<br>7.1.5.1. (13), 7-205<br>7.1.1, 7-1 |
|                                                                                                                                             | 2. Noise check.                                                                                                                |                                                                                            |                                                            |
| Refer to <a href="#">Figure 5-14</a> .                                                                                                      |                                                                                                                                |                                                                                            |                                                            |

### 5.3.48. E241 VIDEO CLOCK OPEN 1 E242 VIDEO CLOCK OPEN 2

| <b>PRIMARY FACTOR;</b> E241: An error is detected that the CVD 1 Clock signal remains ON.<br>E242: An error is detected that the CVD 2 Clock signal remains ON. |                                                                                                                                      |                                                                                            |                                              |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|----------------------------------------------|
| <b>PHENOMENON</b>                                                                                                                                               | <b>CAUSES &amp; CHECK POINTS</b>                                                                                                     | <b>CORRECTIONS</b>                                                                         | <b>Maintenance Ref + Page</b>                |
| 1. This phenomenon occurs.                                                                                                                                      | 1. No CVD Clock signal is sent from the CE.<br>(1) The breaking of the cable or the disconnecting of the connector.<br>(2) CE fault. | Repair the cable P741-P52 or reset the connector in the correct position.<br><br>Check: CE |                                              |
| 2. This phenomenon occurs though the CVD Clock signal is sent from the CE.                                                                                      | 1. PCB fault.                                                                                                                        | Replace: OCxxx Assembly<br>CPxxx Assembly                                                  | 7.1.5.1. (17), 7-209<br>7.1.5.1. (13), 7-205 |
|                                                                                                                                                                 | 2. Noise check.                                                                                                                      |                                                                                            |                                              |
|                                                                                                                                                                 | 3. TH Drive Roller fault.                                                                                                            | Replace: TH Unit Assembly                                                                  | 7.1.3.4. (1), 7-94                           |
|                                                                                                                                                                 | 4. The damage of TH Drive Roller bearing.                                                                                            | Replace: TH Unit Assembly                                                                  | 7.1.3.4. (1), 7-94                           |
| Refer to <a href="#">Figure 5-13</a> .                                                                                                                          |                                                                                                                                      |                                                                                            |                                              |



### 5.3.49. E243 VIDEO CLOCK 1 ERROR E244 VIDEO CLOCK 2 ERROR

| <b>PRIMARY FACTOR;</b> E243: The CVD Clock 1 does not be detected.<br>E244: The CVD Clock 2 does not be detected. |                       |                                           |                                                                              |
|-------------------------------------------------------------------------------------------------------------------|-----------------------|-------------------------------------------|------------------------------------------------------------------------------|
| PHENOMENON                                                                                                        | CAUSES & CHECK POINTS | CORRECTIONS                               | Maintenance Ref + Page                                                       |
| 1. This phenomenon occurs.                                                                                        | 1. CE fault.          | Check: CE                                 |                                                                              |
| 2. This phenomenon occurs though the CVD Clock signal is sent from the CE.                                        | 1. PCB fault.         | Replace: OCxxx Assembly<br>CPxxx Assembly | <a href="#">7.1.5.1. (17), 7-209</a><br><a href="#">7.1.5.1. (13), 7-205</a> |
|                                                                                                                   | 2. Noise check.       |                                           |                                                                              |
| Refer to <a href="#">Figure 5-13</a> .                                                                            |                       |                                           |                                                                              |

### 5.3.50. E251 INCORRECT COMMAND

| <b>PRIMARY FACTOR;</b> E251: Detected that the CE issued a command on an undefined condition. |                                                                         |                                                                                     |                                      |
|-----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------|
| PHENOMENON                                                                                    | CAUSES & CHECK POINTS                                                   | CORRECTIONS                                                                         | Maintenance Ref + Page               |
| 1. This phenomenon occurs continually.                                                        | 1. CE fault.                                                            | Check: CE                                                                           |                                      |
|                                                                                               | 2. Interface fault.<br>Check the interface cable between the CE and PR. | Replace: If the cable is damaged, replace it, otherwise replace the CPxxx Assembly. | <a href="#">7.1.5.1. (13), 7-205</a> |
| 2. This phenomenon is eliminated by pressing the Reset Switch.                                | 1. CE fault.                                                            | Check: CE                                                                           |                                      |

### 5.3.51. E252 PICK COUNT OVER

| <b>PRIMARY FACTOR;</b> Detected that the number of pick commands before printing exceeded eight. |                       |                         |                                      |
|--------------------------------------------------------------------------------------------------|-----------------------|-------------------------|--------------------------------------|
| PHENOMENON                                                                                       | CAUSES & CHECK POINTS | CORRECTIONS             | Maintenance Ref + Page               |
| 1. This phenomenon occurs continually.                                                           | 1. CE fault.          | Check: CE               |                                      |
|                                                                                                  | 2. PCB fault.         | Replace: CPxxx Assembly | <a href="#">7.1.5.1. (13), 7-205</a> |
| 2. This phenomenon is eliminated by pressing the Reset Switch.                                   | 1. CE fault.          | Check: CE               |                                      |
|                                                                                                  | 2. PCB fault.         | Replace: CPxxx Assembly | <a href="#">7.1.5.1. (13), 7-205</a> |

### 5.3.52. E253 INVALID CONFIGURATION

| <b>PRIMARY FACTOR;</b> A command relating to an unmounted option is received. |                                                    |                       |                        |
|-------------------------------------------------------------------------------|----------------------------------------------------|-----------------------|------------------------|
| PHENOMENON                                                                    | CAUSES & CHECK POINTS                              | CORRECTIONS           | Maintenance Ref + Page |
| 1. This phenomenon occurs continually.                                        | 1. An unmounted option is specified by the system. | Check: Program        |                        |
|                                                                               | 2. CE fault.                                       | Check: CE             |                        |
|                                                                               | 3. PCB fault.                                      | Check: CPxxx Assembly | 7.1.5.1. (13), 7-205   |
| 2. This phenomenon is eliminated by pressing the Reset Switch.                | 1. CE fault.                                       | Check: CE             |                        |
|                                                                               | 2. PCB fault.                                      | Check: CPxxx Assembly | 7.1.5.1. (13), 7-205   |

### 5.3.53. E254 SLAVE CPU ERROR

| <b>PRIMARY FACTOR;</b> Detected that the interface error between the MASTER CPU and the SLAVE CPU.<br><b>Precaution:</b> The way of this error reset is power off. |                       |                         |                        |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|-------------------------|------------------------|
| PHENOMENON                                                                                                                                                         | CAUSES & CHECK POINTS | CORRECTIONS             | Maintenance Ref + Page |
| 1. This phenomenon occurs.                                                                                                                                         | 1. PCB fault.         | Replace: CPxxx Assembly | 7.1.5.1. (13), 7-205   |
|                                                                                                                                                                    | 2. Noise check.       |                         |                        |

### 5.3.54. E256 OC BUS ERROR

| <b>PRIMARY FACTOR;</b> Detected that OC bus line gets out of control. |                                                               |                                                                                       |                                              |
|-----------------------------------------------------------------------|---------------------------------------------------------------|---------------------------------------------------------------------------------------|----------------------------------------------|
| PHENOMENON                                                            | CAUSES & CHECK POINTS                                         | CORRECTIONS                                                                           | Maintenance Ref + Page                       |
| 1. This phenomenon occurs.                                            | 1. The breaking of cables or the disconnecting of connectors. | Repair the cable P704, P705-P118, P112 or reset the connector in the correct position |                                              |
|                                                                       | 2. PCB fault.                                                 | Replace: OCxxx Assembly<br>CPxxx Assembly                                             | 7.1.5.1. (17), 7-209<br>7.1.5.1. (13), 7-205 |
| Refer to <a href="#">Figure 5-13</a> .                                |                                                               |                                                                                       |                                              |

### 5.3.55. E257, E258, E25C, E25D SIGNAL TRANS. ERROR 3 TO 6

| <b>PRIMARY FACTOR;</b> E257: Detected that the interface error between the SLAVE CPU and the HPxxx.<br>E258: Detected that the interface error between the SLAVE CPU and the AHxxx.<br>E25C: Detected that the interface error between the MASTER CPU and the HPxxx.<br>E25D: Detected that the interface error between the MASTER CPU and the AHxxx. |                                                               |                                                                                                                                                                                                                               |                                                                                                                                                                                                                                |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PHENOMENON                                                                                                                                                                                                                                                                                                                                            | CAUSES & CHECK POINTS                                         | CORRECTIONS                                                                                                                                                                                                                   | Maintenance<br>Ref + Page                                                                                                                                                                                                      |
| 1. This phenomenon occurs.                                                                                                                                                                                                                                                                                                                            | 1. The breaking of cables or the disconnecting of connectors. | Repair the cables or reset the connector in the correct position.<br>E257: J703-J403<br>E258: J703-J403, J415-J421<br>E25C: J703-J403<br>E25D: J703-J403, J415-J421                                                           |                                                                                                                                                                                                                                |
|                                                                                                                                                                                                                                                                                                                                                       | 2. Setting of the DIP SW of Option Hopper is faulty.          | Set the DIP SW correctly.                                                                                                                                                                                                     |                                                                                                                                                                                                                                |
|                                                                                                                                                                                                                                                                                                                                                       | 3. PCB fault.                                                 | Replace:<br>E257: CPxxx Assembly, or HPxxx Assembly.<br>E258: CPxxx Assembly, or HPxxx Assembly, or AHxxx Assembly.<br>E25C: CPxxx Assembly, or HPxxx Assembly<br>E25D: CPxxx Assembly, or HPxxx Assembly, or AHxxx Assembly. | 7.1.5.1. (13), 7-205<br>7.1.4.3. (22), 7-191<br>7.1.5.1. (13), 7-205<br>7.1.4.3. (22), 7-191<br>7.2.10, 7-226<br>7.1.5.1. (13), 7-205<br>7.1.4.3. (22), 7-191<br>7.1.5.1. (13), 7-205<br>7.1.4.3. (22), 7-191<br>7.2.10, 7-226 |
| Continued.                                                                                                                                                                                                                                                                                                                                            | 4. Noise check.                                               |                                                                                                                                                                                                                               |                                                                                                                                                                                                                                |
| Refer to <a href="#">Figure 5-2 on page 5-19</a>                                                                                                                                                                                                                                                                                                      |                                                               |                                                                                                                                                                                                                               |                                                                                                                                                                                                                                |

### 5.3.56. E25B CPF/DTP ERROR

| <b>PRIMARY FACTOR;</b> The CPF Signal is left OFF. |                                |                                      |                           |
|----------------------------------------------------|--------------------------------|--------------------------------------|---------------------------|
| PHENOMENON                                         | CAUSES & CHECK POINTS          | CORRECTIONS                          | Maintenance<br>Ref + Page |
| 1. This phenomenon occurs.                         | 1. The CPF Signal is left OFF. | Check: CE<br>Check: cable (J52-J741) |                           |
|                                                    | 2. The CPF Signal has changed. | Replace: CPxxx Assembly              | 7.1.5.1. (13), 7-205      |

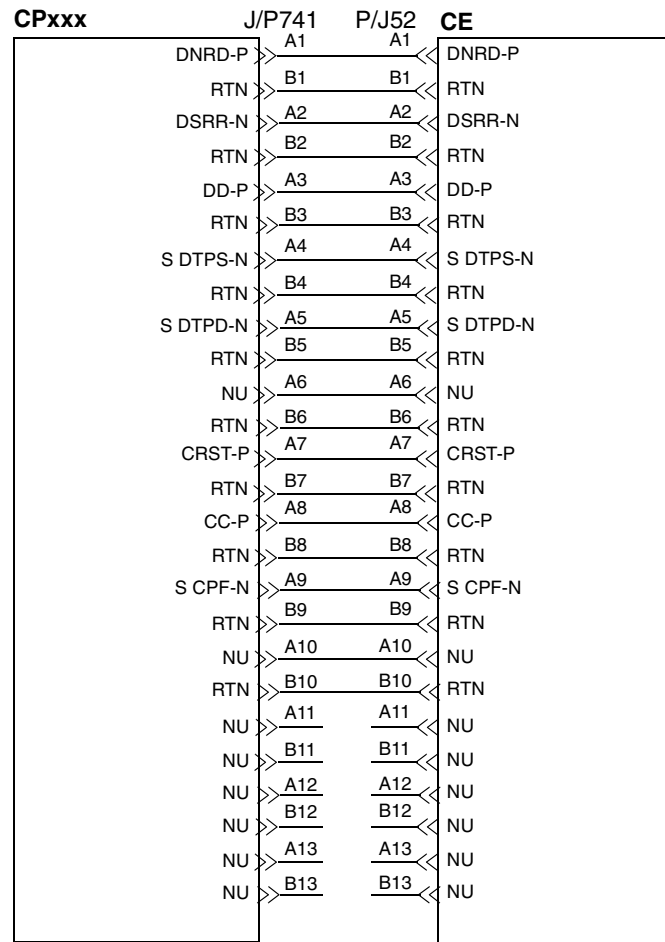


Figure 5-15. Error Code E25B

### 5.3.57. E25E LNB DT ERROR E25F DLB DT ERROR

| <b>PRIMARY FACTOR;</b> E25E: An error occurs at LNB memory in the OC P/K.<br>E25F: An error occurs at DLB memory in the OC P/K. |                                           |                                           |                                              |
|---------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|-------------------------------------------|----------------------------------------------|
| PHENOMENON                                                                                                                      | CAUSES & CHECK POINTS                     | CORRECTIONS                               | Maintenance Ref + Page                       |
| 1. This phenomenon occurs.                                                                                                      | 1. PCB fault.                             | Replace: OCxxx Assembly<br>CPxxx Assembly | 7.1.5.1. (17), 7-209<br>7.1.5.1. (13), 7-205 |
|                                                                                                                                 | 2. TH Drive Roller fault.                 | Replace: TH Unit Assembly                 | 7.1.3.4. (1), 7-94                           |
|                                                                                                                                 | 3. The damage of TH Drive Roller bearing. | Replace: TH Unit Assembly                 | 7.1.3.4. (1), 7-94                           |
| Refer to <a href="#">Figure 5-13</a> .                                                                                          |                                           |                                           |                                              |

### 5.3.58. E270 HEATER LAMP OFF

| PRIMARY FACTOR; The heater lamp in the Fuser Unit does not light. |                                                                                                                            |                                                                            |                                                                        |
|-------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|------------------------------------------------------------------------|
| PHENOMENON                                                        | CAUSES & CHECK POINTS                                                                                                      | CORRECTIONS                                                                | Maintenance Ref + Page                                                 |
| 1. This phenomenon occurs.                                        | 1. Fuser Unit is incorrectly set.                                                                                          | Reset: Fuser Unit                                                          |                                                                        |
|                                                                   | 2. Check the cable and connector.                                                                                          | Repair the connection or the cable. (P256-P531, P718-P531)                 |                                                                        |
|                                                                   | 3. Fuser Unit fault.<br>(1) The thermistor is faulty.<br>(2) The Thermostat is blown out<br>(3) The Heater Lamp is faulty. | Replace: Fuser Unit<br><br>Replace: Fuser Unit<br><br>Replace: Fuser Unit  | 7.1.3.1. (1), 7-67<br><br>7.1.3.1. (1), 7-67<br><br>7.1.3.1. (1), 7-67 |
|                                                                   | 4. Control system fault.                                                                                                   | Replace: CPxxx Assembly<br>Replace: Fuser Unit<br>Check: 200V power source | 7.1.5.1. (13), 7-205<br>7.1.3.1. (1), 7-67<br>7.1.5.1. (16), 7-208     |
| Refer to <a href="#">Figure 5-4</a> .                             |                                                                                                                            |                                                                            |                                                                        |

### 5.3.59. E271 THERMISTOR OFF

| PRIMARY FACTOR; Thermistor is blown out. |                                                               |                                                                            |                        |
|------------------------------------------|---------------------------------------------------------------|----------------------------------------------------------------------------|------------------------|
| PHENOMENON                               | CAUSES & CHECK POINTS                                         | CORRECTIONS                                                                | Maintenance Ref + Page |
| 1. This phenomenon occurs.               | 1. The breaking of cables or the disconnecting of connectors. | Repair the cable P718-P531 or reset the connector in the correct position. |                        |
|                                          | 2. Thermistor fault.                                          | Replace: Fuser Unit                                                        | 7.1.3.1. (1), 7-67     |
|                                          | 3. PCB fault.                                                 | Replace: CPxxx Assembly                                                    | 7.1.5.1. (13), 7-205   |
| Refer to <a href="#">Figure 5-4</a> .    |                                                               |                                                                            |                        |

### 5.3.60. E272 HEATER OVER TEMP E274 HEATER ON TIME OUT E275 HEATER LOW TEMP

| <b>PRIMARY FACTOR;</b> E272: The Heat Roll is overheated.(210×C)<br>E274: The temperature of the Heat Roll does not reach the specified 1 minute after. The heater - ON time out is too long.<br>E275: The Heat Roll temperature is less than 160×C after in a heater ready condition.<br>When a thermal error is detected, the 200V power source is turned off and the printing is stopped in emergency. |                                                       |                                                                     |                        |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|---------------------------------------------------------------------|------------------------|
| PHENOMENON                                                                                                                                                                                                                                                                                                                                                                                                | CAUSES & CHECK POINTS                                 | CORRECTIONS                                                         | Maintenance Ref + Page |
| 1. This phenomenon occurs.                                                                                                                                                                                                                                                                                                                                                                                | 1. Check the cable and connector.                     | Repair the connection or the cable. (P718-P531)                     |                        |
|                                                                                                                                                                                                                                                                                                                                                                                                           | 2. Fuser Unit fault.<br>(1) The thermistor is faulty. | Replace: Fuser Unit                                                 | 7.1.3.1. (1), 7-67     |
|                                                                                                                                                                                                                                                                                                                                                                                                           | 3. Control system fault.                              | Replace: CPxxx Assembly<br>Power Supply<br>Check: 200V power source | 7.1.5.1. (13), 7-205   |
| Refer to <a href="#">Figure 5-4</a> .                                                                                                                                                                                                                                                                                                                                                                     |                                                       |                                                                     |                        |

### 5.3.61. E281 ERASE LAMP OFF ERROR

| <b>PRIMARY FACTOR;</b> The abnormal current is detected in the Erase Lamp. |                                                               |                                                                   |                              |
|----------------------------------------------------------------------------|---------------------------------------------------------------|-------------------------------------------------------------------|------------------------------|
| PHENOMENON                                                                 | CAUSES & CHECK POINTS                                         | CORRECTIONS                                                       | Maintenance Ref + Page       |
| 1. This phenomenon occurs.                                                 | 1. Erase Lamp fault.                                          | Cleaning:Erase Lamp<br>Replace: Erase Lamp (S310)                 | 4.4.9, 4-21<br>7.1.2.7, 7-66 |
|                                                                            | 2. The breaking of cables or the disconnecting of connectors. | Repair the cable or reset the connector.<br>Erase Lamp: P715-S310 |                              |
|                                                                            | 3. PCB fault.                                                 | Replace: CPxxx Assembly                                           | 7.1.5.1. (13), 7-205         |
| Refer to <a href="#">Figure 5-5</a> .                                      |                                                               |                                                                   |                              |

### 5.3.62. E283 SENSOR ERROR 1

| <b>PRIMARY FACTOR;</b> The toner level adjustment has failed.  |                                                               |                                                    |                        |
|----------------------------------------------------------------|---------------------------------------------------------------|----------------------------------------------------|------------------------|
| PHENOMENON                                                     | CAUSES & CHECK POINTS                                         | CORRECTIONS                                        | Maintenance Ref + Page |
| 1. This phenomenon occurs.                                     | 1. No execution after supplying the developer.                | Execute the toner level adjustment.                | 8.4.5.4, 8-18          |
| 2. This phenomenon occurs after adjustment of the toner level. | 1. Toner Control Sensor fault.                                | Replace: Developer Unit                            | 7.1.2.3. (1), 7-10     |
|                                                                | 2. The breaking of cables or the disconnecting of connectors. | Repair the cable P719-S320 or reset the connector. |                        |
|                                                                | 3. PCB fault.                                                 | Replace: CPxxx Assembly                            | 7.1.5.1. (13), 7-205   |
| Refer to <a href="#">Figure 5-11</a> .                         |                                                               |                                                    |                        |

### 5.3.63. E284 to E286 SENSOR ERROR 2 to 4

| <b>PRIMARY FACTOR;</b> E284: The signal of the HP1 Size sensor is not specified.<br>E285: The signal of the HP2 Size sensor is not specified.<br>E286: The signal of the HP3 Size sensor is not specified.<br>The combination of sensor signal is shown in <a href="#">5.3.19, 5-36</a> (E090). |                                                               |                                                                                                   |                                                                      |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|---------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|
| PHENOMENON                                                                                                                                                                                                                                                                                      | CAUSES & CHECK POINTS                                         | CORRECTIONS                                                                                       | Maintenance Ref + Page                                               |
| 1. This phenomenon occurs.                                                                                                                                                                                                                                                                      | 1. Sensor fault.                                              | Replace: Sensor<br>E284: HP1 Size Sensor<br>E285: HP2 Size Sensor<br>E286: HP3 Size Sensor        | 7.1.4.3. (15), 7-184<br>7.1.4.3. (15), 7-184<br>7.1.4.3. (15), 7-184 |
|                                                                                                                                                                                                                                                                                                 | 2. The sensor plate of the Hopper is faulty.                  | Replace: Hopper<br>E284: Hopper 1<br>E285: Hopper 2<br>E286: Hopper 3                             | 7.1.4.2, 7-153<br>7.1.4.1, 7-152<br>7.1.4.1, 7-152                   |
|                                                                                                                                                                                                                                                                                                 | 3. The breaking of cables or the disconnecting of connectors. | Repair the cable or reset the connector.<br>E284: P407-S406<br>E285: P408-S412<br>E286: P409-S416 |                                                                      |
|                                                                                                                                                                                                                                                                                                 | 4. PCB fault.                                                 | Replace: HPxxx Assembly                                                                           | 7.1.4.3. (22), 7-191                                                 |
| Refer to <a href="#">Figure 5-2</a> .                                                                                                                                                                                                                                                           |                                                               |                                                                                                   |                                                                      |

### 5.3.64. E28C SB GATE POS. ON ERROR

| PRIMARY FACTOR; The SB Gate Sensor has been "on" more than the specified time. |                                                         |                                 |                        |
|--------------------------------------------------------------------------------|---------------------------------------------------------|---------------------------------|------------------------|
| PHENOMENON                                                                     | CAUSES & CHECK POINTS                                   | CORRECTIONS                     | Maintenance Ref + Page |
| 1. When the KPDG routine "5C" is executed the SB Gate Motor moves.             | 1. The SB Gate actuator alignment needs to be adjusted. | Check: Gate Link SB(M) Assembly |                        |
|                                                                                | 2. SB Gate Sensor fault                                 | Replace: SB Gate Sensor (S521)  | 7.1.3.17, 7-148        |
|                                                                                | 3. The breaking of cables.                              | Repair the cable P737-S521      |                        |
|                                                                                | 4. PCB fault.                                           | Replace: CPxxx Assembly         | 7.1.5.1. (13), 7-205   |
| 2. When the KPDG routine "5C" is executed the SB Gate Motor does not move.     | 1. The breaking of cables.                              | Repair the cable M506-J737      |                        |
|                                                                                | 2. Motor fault.                                         | Replace: SB Gate Motor Assembly | 7.1.3.16, 7-147        |
|                                                                                | 3. PCB fault.                                           | Replace: CPxxx Assembly         | 7.1.5.1. (13), 7-205   |
| Refer to <a href="#">Figure 5-16</a> .                                         |                                                         |                                 |                        |

### 5.3.65. E28D SB GATE POS. OFF ERROR

| PRIMARY FACTOR; The SB Gate Sensor has been "off" more than the specified time. |                                                         |                                 |                        |
|---------------------------------------------------------------------------------|---------------------------------------------------------|---------------------------------|------------------------|
| PHENOMENON                                                                      | CAUSES & CHECK POINTS                                   | CORRECTIONS                     | Maintenance Ref + Page |
| 1. When the KPDG routine "5C" is executed the SB Gate Motor moves.              | 1. The SB Gate actuator alignment needs to be adjusted. | Check: Gate Link SB(M) Assembly |                        |
|                                                                                 | 2. SB Gate Sensor fault                                 | Replace: SB Gate Sensor (S521)  | 7.1.3.17, 7-148        |
|                                                                                 | 3. The breaking of cables.                              | Repair the cable P737-S521      |                        |
|                                                                                 | 4. PCB fault.                                           | Replace: CPxxx Assembly         | 7.1.5.1. (13), 7-205   |
| 2. When the KPDG routine "5C" is executed the SB Gate Motor does not move.      | 1. The breaking of cables.                              | Repair the cable M506-J737      |                        |
|                                                                                 | 2. Motor fault.                                         | Replace: SB Gate Motor Assembly | 7.1.3.16, 7-147        |
|                                                                                 | 3. PCB fault.                                           | Replace: CPxxx Assembly         | 7.1.5.1. (13), 7-205   |
| Refer to <a href="#">Figure 5-16</a> .                                          |                                                         |                                 |                        |

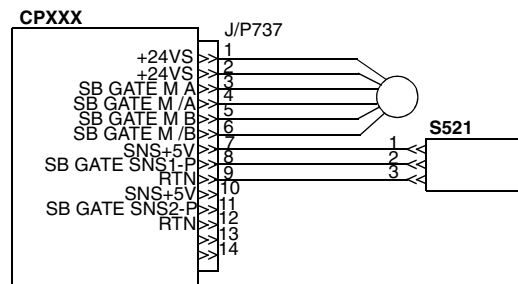


Figure 5-16. Error Code E28C & E28D



## 5.3.66. E291 BLOWER FAN ALARM

| PRIMARY FACTOR; The Ozone Blower detects a rotation error. |                                                               |                                                                            |                        |
|------------------------------------------------------------|---------------------------------------------------------------|----------------------------------------------------------------------------|------------------------|
| PHENOMENON                                                 | CAUSES & CHECK POINTS                                         | CORRECTIONS                                                                | Maintenance Ref + Page |
| 1. This phenomenon occurs.                                 | 1. The breaking of cables or the disconnecting of connectors. | Repair the cable P715-P348 or reset the connector in the correct position. |                        |
|                                                            | 2. Fan fault.                                                 | Replace: Ozone Blower (B311)                                               | 7.1.5.1. (7), 7-199    |
|                                                            | 3. The duct of the Ozone Blower is blocked.                   | Remove: The substance which blocks the duct.                               |                        |
|                                                            | 4. PCB fault.                                                 | Replace: CPxxx Assembly                                                    | 7.1.5.1. (13), 7-205   |

### CPxxx

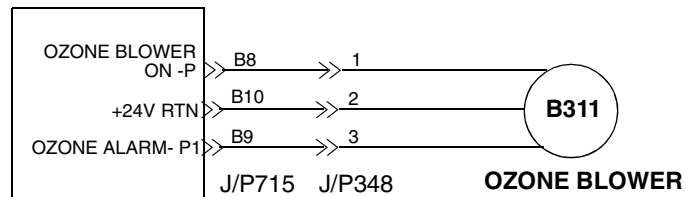


Figure 5-17. Error Code E291

### 5.3.67. E292 OC FAN ALARM

| <b>PRIMARY FACTOR;</b> The Mirror Cooling Fan has stopped. |                                                               |                                                                            |                        |
|------------------------------------------------------------|---------------------------------------------------------------|----------------------------------------------------------------------------|------------------------|
| PHENOMENON                                                 | CAUSES & CHECK POINTS                                         | CORRECTIONS                                                                | Maintenance Ref + Page |
| 1. This phenomenon occurs.                                 | 1. The breaking of cables or the disconnecting of connectors. | Repair the cable P117-B101 or reset the connector in the correct position. |                        |
|                                                            | 2. Fan fault.                                                 | Replace: Fan Assembly (B101)                                               | 7.1.5.1. (1), 7-193    |
|                                                            | 3. PCB fault.                                                 | Replace: OCxxx Assembly                                                    | 7.1.5.1. (17), 7-209   |
| Refer to <a href="#">Figure 5-13</a> .                     |                                                               |                                                                            |                        |

### 5.3.68. E2A2 HOPPER 1 TABLE TIMEOUT

| <b>PRIMARY FACTOR;</b> Even if the HP1 Table Motor is driven for 35 seconds, the HP1 Height Sensor is not turned on. |                                                                                                                                                                               |                                                                                                                                                    |                                                                     |
|----------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|
| PHENOMENON                                                                                                           | CAUSES & CHECK POINTS                                                                                                                                                         | CORRECTIONS                                                                                                                                        | Maintenance Ref + Page                                              |
| 1. This phenomenon occurs because the Hopper Table does not operate.                                                 | 1. Overload.<br>(1) Gear fault.<br>Check if the gear is not rotating correctly.<br><br>(2) The breaking of the Table wire.<br>(3) The mounting of the Hopper Table is faulty. | Check: Motor Gear<br>Idler Gear<br>Replace: Motor Gear<br>Idler Gear<br>Replace: Table wire<br><br>Reset the Hopper Table in the correct position. | 7.1.4.3. (23), 7-192<br>7.1.4.3. (23), 7-192<br>7.1.4.2. (6), 7-161 |
|                                                                                                                      | 2. The breaking of cables or the disconnecting of connectors.                                                                                                                 | Repair the cable P407-S407, P405-P431 or reset the connector in the correct position.                                                              |                                                                     |
|                                                                                                                      | 3. Sensor fault.                                                                                                                                                              | Replace: HP1 Height Sensor (S407)                                                                                                                  | 7.1.4.3. (17), 7-186                                                |
|                                                                                                                      | 4. Motor fault.                                                                                                                                                               | Replace: HP1 Table Motor Assembly (M402)                                                                                                           | 7.1.4.3. (12), 7-181                                                |
|                                                                                                                      | 5. PCB fault.                                                                                                                                                                 | Replace: HPxxx Assembly                                                                                                                            | 7.1.4.3. (22), 7-191                                                |
| 2. Hopper Table does not move up completely to top. 5 to 10 sheets are on the table.                                 | 1. Hopper Table is bent down in center front.                                                                                                                                 | Correct Table flatness.<br>Make sure Table operates up and down smoothly.                                                                          |                                                                     |
| 3. Table does not go up when loaded with ledger paper.                                                               | 1. Gear Motor does not lift Table in time.                                                                                                                                    | Replace: HP1 Table Motor Assembly (M402)                                                                                                           | 7.1.4.3. (12), 7-181                                                |
| Refer to <a href="#">Figure 5-2</a> .                                                                                |                                                                                                                                                                               |                                                                                                                                                    |                                                                     |

### 5.3.69.

## E2A6 HOPPER 2 TABLE TIMEOUT E2AA HOPPER 3 TABLE TIMEOUT

| <b>PRIMARY FACTOR;</b> Even if the Table Motor of Hopper 2 or 3 is driven for 25 seconds, the Height Sensor is not turned on. |                                                                                                                                        |                                                                                                                                                  |                                              |
|-------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|
| PHENOMENON                                                                                                                    | CAUSES & CHECK POINTS                                                                                                                  | CORRECTIONS                                                                                                                                      | Maintenance Ref + Page                       |
| 1. This phenomenon occurs because the Hopper Table does not operate.                                                          | 1. Overload.<br>(1) Gear fault.<br>Check if the gear is not rotating correctly.<br><br>(2) The mounting of the Table Hopper is faulty. | Check: Motor Gear<br>Coupling Gear<br>Replace: Motor Gear<br>Coupling Gear<br>Reset the Hopper Table in the correct position.                    | 7.1.4.3. (23), 7-192<br>7.1.4.3. (23), 7-192 |
|                                                                                                                               | 2. The breaking of cables or the disconnecting of connectors.                                                                          | Repair the cable or reset the connector in the correct position.<br>(1) Hopper 2<br>P408-S413, P405-P403<br>(2) Hopper 3<br>P409-S417, P405-M404 |                                              |
|                                                                                                                               | 3. Sensor fault.                                                                                                                       | Replace: HP2 Height Sensor (S413)<br>Replace: HP3 Height Sensor (S417)                                                                           | 7.1.4.3. (17), 7-186<br>7.1.4.3. (17), 7-186 |
|                                                                                                                               | 4. Motor fault.                                                                                                                        | Replace: HP2 Table Motor (M403)<br>Replace: HP3 Table Motor (M404)                                                                               | 7.1.4.3. (13), 7-182<br>7.1.4.3. (13), 7-182 |
|                                                                                                                               | 5. PCB fault.                                                                                                                          | Replace: HPxxx Assembly                                                                                                                          | 7.1.4.3. (22), 7-191                         |
| Refer to <a href="#">Figure 5-2</a> .                                                                                         |                                                                                                                                        |                                                                                                                                                  |                                              |

### 5.3.70.

## E2AD HOPPER 5 TABLE OVER RUN 1

| <b>PRIMARY FACTOR;</b> During the Table of the High Capacity Hopper goes down, the table is lower than the specified position.<br>This error is detected when the HP5 Over Run Sensor is turned on. |                                                               |                                                                            |                        |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|----------------------------------------------------------------------------|------------------------|
| PHENOMENON                                                                                                                                                                                          | CAUSES & CHECK POINTS                                         | CORRECTIONS                                                                | Maintenance Ref + Page |
| 1. This phenomenon occurs.                                                                                                                                                                          | 1. The breaking of cables or the disconnecting of connectors. | Repair the cable P422-S432 or reset the connector in the correct position. |                        |
|                                                                                                                                                                                                     | 2. Sensor fault.                                              | Replace: HP5 Over Run Sensor assembly (S432)                               | 7.2.13, 7-229          |
|                                                                                                                                                                                                     | 3. Motor fault.                                               | Replace: HP5 Table Motor Assembly (M422)                                   | 7.2.18, 7-237          |
|                                                                                                                                                                                                     | 4. PCB fault.                                                 | Replace: AHxxx Assembly                                                    | 7.2.10, 7-226          |
| Refer to <a href="#">Figure 5-6</a> .                                                                                                                                                               |                                                               |                                                                            |                        |

### 5.3.71. E2AE HOPPER 5 TABLE TIMEOUT

| <b>PRIMARY FACTOR;</b> Even if the HP5 Table Motor is driven for 30 seconds, the HP5 Height Sensor is not turned on. |                                                                                                        |                                                                                       |                                    |
|----------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|------------------------------------|
| PHENOMENON                                                                                                           | CAUSES & CHECK POINTS                                                                                  | CORRECTIONS                                                                           | Maintenance Ref + Page             |
| 1. This phenomenon occurs.                                                                                           | 1. Overload.<br>(1) The breaking of the Table wire.<br>(2) The mounting of the Hopper Table is faulty. | Replace: Table wire<br><br>Reset the Hopper Table in the correct position.            | 7.2.19.1, 7-239<br>7.2.19.2, 7-243 |
|                                                                                                                      | 2. The breaking of cables or the disconnecting of connectors.                                          | Repair the cable P422-S424, P423-M422 or reset the connector in the correct position. |                                    |
|                                                                                                                      | 3. Sensor fault.                                                                                       | Replace: HP5 Height Sensor assembly (S424)                                            | 7.2.22, 7-251                      |
|                                                                                                                      | 4. Motor fault.                                                                                        | Replace: HP5 Table Motor Assembly (M422)                                              | 7.2.18, 7-237                      |
|                                                                                                                      | 5. PCB fault.                                                                                          | Replace: AHxxx Assembly                                                               | 7.2.10, 7-226                      |
| Refer to <a href="#">Figure 5-6</a> .                                                                                |                                                                                                        |                                                                                       |                                    |

### 5.3.72. E2AF HOPPER 5 TABLE OVER RUN 2

| <b>PRIMARY FACTOR;</b> During the Table of the High Capacity Hopper goes up, the Table is higher than the specified position.<br>This error is detected by the combination of the HP5 Rest Sensor A, B, C. |                                                                            |                                                                                                   |                        |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|------------------------|
| PHENOMENON                                                                                                                                                                                                 | CAUSES & CHECK POINTS                                                      | CORRECTIONS                                                                                       | Maintenance Ref + Page |
| 1. This phenomenon occurs.                                                                                                                                                                                 | 1. The sensor is contaminated. Check if the sensors are contaminated, etc. | Cleaning: HP5 Rest Sensors (S428, S429, S430) and its environs.                                   |                        |
|                                                                                                                                                                                                            | 2. The breaking of cables or the disconnecting of connectors.              | Repair the cable P422-S428, S429, S430, P423-M422 or reset the connector in the correct position. |                        |
|                                                                                                                                                                                                            | 3. Sensor fault.                                                           | Replace: HP5 Rest Sensors assembly. (S428, S429, S430)                                            | 7.2.11, 7-227          |
|                                                                                                                                                                                                            | 4. Motor fault.                                                            | Replace: HP5 Table Motor Assembly (M422)                                                          | 7.2.18, 7-237          |
|                                                                                                                                                                                                            | 5. PCB fault.                                                              | Replace: AHxxx Assembly                                                                           | 7.2.10, 7-226          |
| Refer to <a href="#">Figure 5-6</a> .                                                                                                                                                                      |                                                                            |                                                                                                   |                        |

The combination of the HP5 Rest Sensor A, B, C roughly shows the number of paper in the High Capacity Hopper (ON: The sensor is interrupted).

| HP5 Rest Sensor |     |     | The number of paper or the Error detection.    |
|-----------------|-----|-----|------------------------------------------------|
| A               | B   | C   |                                                |
| OFF             | OFF | OFF | 3000 sheets to 2250 sheets (100% to 75%)       |
| ON              | OFF | OFF | 2250 sheets to 1500 sheets (75% to 50%)        |
| ON              | ON  | OFF | 1500 sheets to 750 sheets (50% to 25%)         |
| ON              | ON  | ON  | 750 sheets to 0 sheets (25% to 0%)             |
| OFF             | ON  | ON  | "Hopper 5 Table Over Run 2" error is detected. |

### 5.3.73.

## E2E0 CP DRIVER 1 E2E1 CP DRIVER 2

| PRIMARY FACTOR; E2E0: Detected that an error occurs in the power system of the CPxxx Assembly. (+24V)<br>E2E1: Detected that an error occurs in the power system of the CPxxx Assembly. (+24VS) |                                                                                           |                                                                                                        |                                      |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|--------------------------------------|
| PHENOMENON                                                                                                                                                                                      | CAUSES & CHECK POINTS                                                                     | CORRECTIONS                                                                                            | Maintenance<br>Ref + Page            |
| 1. This phenomenon occurs.                                                                                                                                                                      | 1. The breaking of cables or the disconnecting of connectors.                             | Repair the cable or reset the connector in the correct position.<br>E2E0: P701-P231<br>E2E1: P701-P260 |                                      |
|                                                                                                                                                                                                 | 2. PCB fault.                                                                             | Replace: CPxxx Assembly                                                                                | <a href="#">7.1.5.1. (13), 7-205</a> |
|                                                                                                                                                                                                 | 3. Power Supply fault.                                                                    | Replace: Power Supply                                                                                  | <a href="#">7.1.5.1. (16), 7-208</a> |
|                                                                                                                                                                                                 | 4. The drive line is faulty.<br>Check if the motor/solenoid etc. drive line is exhausted. | Repair or replace the exhausted points.<br>Replace: CPxxx Assembly                                     | <a href="#">7.1.5.1. (13), 7-205</a> |
|                                                                                                                                                                                                 | 5. Switch fault.                                                                          | Replace: Push Button Switch (S510)                                                                     | <a href="#">3.11.1, 3-25</a>         |

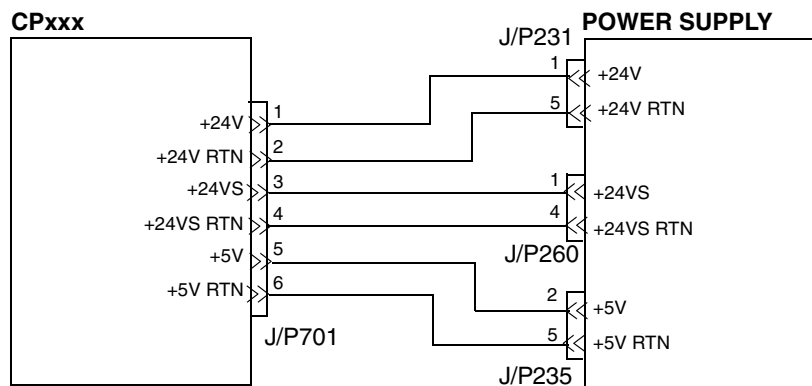


Figure 5-18. Error Codes E2E0 & E2E1

### 5.3.74. E2E2 HP DRIVER

| PRIMARY FACTOR; Detected that an error occurs in the power system of the HPxxxAssembly. |                                                               |                                                                            |                                              |
|-----------------------------------------------------------------------------------------|---------------------------------------------------------------|----------------------------------------------------------------------------|----------------------------------------------|
| PHENOMENON                                                                              | CAUSES & CHECK POINTS                                         | CORRECTIONS                                                                | Maintenance Ref + Page                       |
| 1. This phenomenon occurs because the Power Supply line is faulty.                      | 1. The breaking of cables or the disconnecting of connectors. | Repair the cable P231-P401 or reset the connector in the correct position. |                                              |
|                                                                                         | 2. +24V load of HPxxx Assembly is faulty.                     | Check the Power Supply line.                                               |                                              |
|                                                                                         | 3. PCB fault.                                                 | Replace: HPxxx Assembly                                                    | 7.1.4.3. (22), 7-191                         |
|                                                                                         | 4. Power Supply fault.                                        | Replace: Power Supply                                                      | 7.1.5.1. (16), 7-208                         |
| 2. This phenomenon occurs because the Power Supply line is not faulty                   | 1. PCB fault.                                                 | Replace: CPxxx Assembly<br>HPxxx Assembly                                  | 7.1.5.1. (13), 7-205<br>7.1.4.3. (22), 7-191 |
|                                                                                         | 2. The Motor drive line from HPxxx is faulty.                 | Check the Motor line.                                                      |                                              |

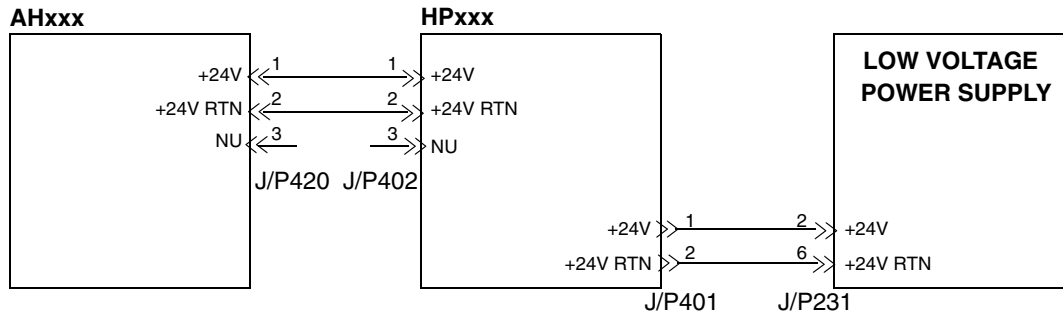


Figure 5-19. Error Code E2E2

### 5.3.75. E2E3 HP5 DRIVER

| PRIMARY FACTOR; Detected that an error occurs in the power system of the AHxxx Assembly. |                                                               |                                                                            |                                       |
|------------------------------------------------------------------------------------------|---------------------------------------------------------------|----------------------------------------------------------------------------|---------------------------------------|
| PHENOMENON                                                                               | CAUSES & CHECK POINTS                                         | CORRECTIONS                                                                | Maintenance Ref + Page                |
| 1. This phenomenon occurs because the Power Supply line is faulty.                       | 1. The breaking of cables or the disconnecting of connectors. | Repair the cable P402-P420 or reset the connector in the correct position. |                                       |
|                                                                                          | 2. PCB fault.                                                 | Replace: AHxxx Assembly<br>HPxxx Assembly                                  | 7.2.10, 7-226<br>7.1.4.3. (22), 7-191 |
| 2. This phenomenon occurs because the Power Supply line is not faulty.                   | 1. PCB fault.                                                 | Replace: HPxxx Assembly                                                    | 7.1.4.3. (22), 7-191                  |
|                                                                                          | 2. The Motor drive line from AHxxx is faulty.                 | Check the Motor line.                                                      |                                       |

Refer to [Figure 5-19](#).

### 5.3.76.

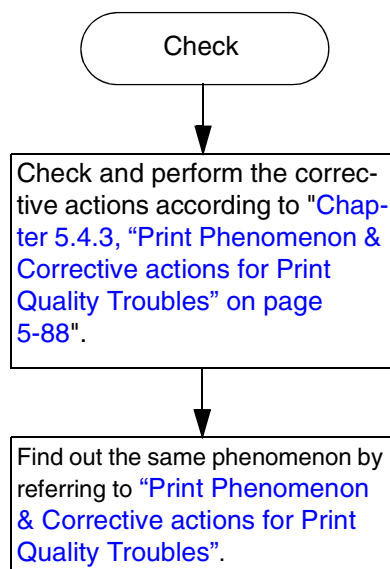
## E2F0 MASTER SUM CHECK ERROR E2F1 SLAVE SUM CHECK ERROR E2F2 MASTER ROM ERASE ERROR E2F3 SLAVE ROM ERASE ERROR E2F4 MASTER ROM WRITE ERROR E2F5 SLAVE ROM WRITE ERROR E2F6 FRAM/OVER RUN/PARITY ERROR

| <b>PRIMARY FACTOR;</b> E2F0: A sum check error occurs in the master rom when the power is on.<br>E2F1: A sum check error occurs in the slave rom when the power is on.<br>E2F2: An erase error is detected in the master rom during download.<br>E2F3: An erase error is detected in the slave rom during download.<br>E2F4: A write error is detected in the master rom during download.<br>E2F5: A write error is detected in the slave rom during download.<br>E2F5: An interface error is detected during download. |                                                                |                                                                           |                                      |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|---------------------------------------------------------------------------|--------------------------------------|
| PHENOMENON                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | CAUSES & CHECK POINTS                                          | CORRECTIONS                                                               | Maintenance<br>Ref + Page            |
| 1. This phenomenon occurs.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 1. The breaking of cables or the disconnecting of connectors.  | Repair the cable P741-P52 or reset the connector in the correct position. |                                      |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 2. PCB fault.                                                  | Replace: CPxxx Assembly                                                   | <a href="#">7.1.5.1. (13), 7-205</a> |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 3. Noise Check<br>Check the noise when the E2F6 error occurs.. |                                                                           |                                      |
| Refer to <a href="#">Figure 5-15</a> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                |                                                                           |                                      |

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## 5.4. Troubles in Print Quality

Inspection should be carried out in accordance with the following procedure.



### 5.4.1. Print Samples

Ascertain which sample of the print phenomenon is best suited to your print referring to and after the next page and then see item ["Print Phenomenon & Corrective actions for Print Quality Troubles" on page 5-88](#). As these examples are produced from **"photocopying"** they may not necessarily be the same as the real ones.



## 5.4.2. Problems in Print Quality

**NOTE:**Drum rotating cycle:The interaction between the OPC Drum rotating cycle and the paper.  
HR rotating cycle:The interaction between the HR rotating cycle and the paper.  
(There is a fluctuation by  $3\pm\text{mm}$  from the paper leading edge.)

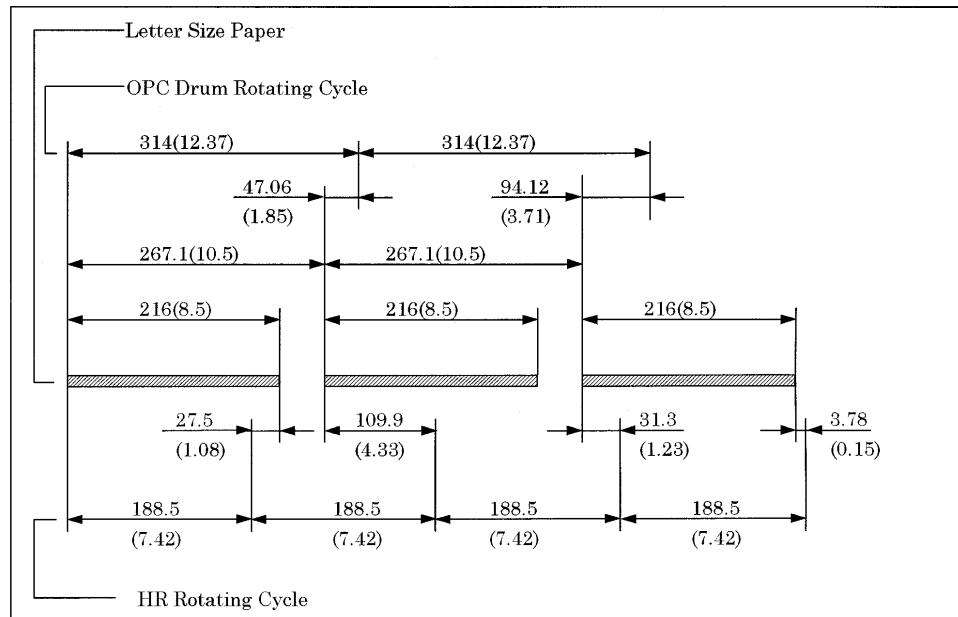


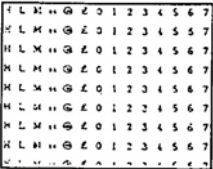
Figure 5-20. Relationship between letter Sized paper and the HR/OPC rotating cycle

Table 5-1. List of Printing Quality Problems

| Kinds of Phenomenon          | Reference Phenomenon           |                                           |             |             |                                           |              | G                                            | H            | I            |
|------------------------------|--------------------------------|-------------------------------------------|-------------|-------------|-------------------------------------------|--------------|----------------------------------------------|--------------|--------------|
|                              | A                              | B                                         | C           | D           | E                                         | F            |                                              |              |              |
| Print contrast is too dark.  | 1.<br>5-88                     |                                           |             |             |                                           |              |                                              |              |              |
| Print contrast is too light. | 2.<br>5-89                     |                                           |             |             |                                           |              |                                              |              |              |
| Background                   | 3.<br>5-90                     |                                           |             |             |                                           |              |                                              |              |              |
| Wavy Printing                | 4.<br>5-91<br>5.<br>5-91       |                                           |             |             |                                           |              |                                              |              |              |
| Poor Fusing                  | 6.<br>5-91                     | 13.<br>5-95                               |             |             |                                           | 25.<br>5-101 |                                              |              |              |
| White Defect                 | 7.<br>5-92<br><br>36.<br>5-106 | 14.<br>5-95<br>15.<br>5-96<br>16.<br>5-96 |             | 19.<br>5-98 | 20.<br>5-98<br>21.<br>5-99<br>22.<br>5-99 |              | 31.<br>5-104<br>32.<br>5-104<br>33.<br>5-105 |              | 29.<br>5-103 |
| Black Streak                 |                                | 17.<br>5-97                               |             |             | 23.<br>5-100                              | 26.<br>5-101 |                                              |              |              |
| Offset                       |                                |                                           |             |             | 24.<br>5-100                              | 27.<br>5-102 |                                              |              |              |
| Toner Defect                 | 8.<br>5-92                     |                                           |             |             |                                           |              |                                              |              |              |
| Wide Streak                  | 9.<br>5-93                     |                                           | 18.<br>5-97 |             |                                           |              | 34.<br>5-105<br>35.<br>5-106                 | 28.<br>5-102 | 30.<br>5-103 |
| Skew                         | 10.<br>5-93                    |                                           |             |             |                                           |              |                                              |              |              |
| Bleeding                     | 11.<br>5-94                    |                                           |             |             |                                           |              |                                              |              |              |
| Trailing Edge Too Light      | 12.<br>5-94                    |                                           |             |             |                                           |              |                                              |              |              |
| Smudging                     |                                |                                           |             |             |                                           |              |                                              | 37.<br>5-107 |              |
| Jitter                       |                                |                                           |             |             |                                           |              |                                              | 38.<br>5-107 |              |

A: Covering the entire surface    B: In the vertical direction    C: Paper leading edge  
 D: Paper trailing edge    E: Drum related phenomenon    F: Heat Roll related phenomenon  
 G: Random phenomenon    H: Other related phenomenon    I: Paper feed direction

### 5.4.3. Print Phenomenon & Corrective actions for Print Quality Troubles

| Phenomenon 1. - Print contrast is too dark (Too much toner consumed) (Covering the entire surface)                                                                     |                                                                                                                                                      |                                                                   |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|
|                                                                                      |                                                                                                                                                      |                                                                   |
| Cause and Inspection Area                                                                                                                                              | Remedy                                                                                                                                               | Maintenance Ref. + Page                                           |
| 1. Dark background exists. The contact point for bias voltage does not touch between the High Voltage Power Supply and the Developer Roller. Bias voltage is too high. | Check the contact point. Repair or change it.<br>The contact may be loose.<br><br>Bias voltage is high.<br>Change the High Voltage Power Supply (1). | 7.1.5.1. (14), 7-206                                              |
| 2. The surface voltage of the drum is too high.                                                                                                                        | Clean or replace the Charger Unit.<br><br>Clean or replace the Erase Lamp.                                                                           | 4.4.8, 4-19<br>7.1.2.2. (1), 7-6<br>4.4.9, 4-21<br>7.1.2.7, 7-66  |
| 3. The developer gap or the doctor gap do not satisfy the specified value. Refer to <b>Note</b> below.                                                                 | Doctor gap - Replace the Developer Unit.<br><br>Developer gap - Replace the Drum Unit and the Developer Unit.                                        | 7.1.2.3. (1), 7-10<br><br>7.1.2.1. (1), 7-4<br>7.1.2.3. (1), 7-10 |
| 4. Toner control is incorrect.                                                                                                                                         | Replace the Developer mix.                                                                                                                           | 3.2.2. (2), 3-5                                                   |

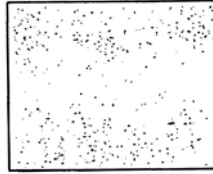
**Note:** Too narrow developer gap and too wide doctor gap has a tendency to cause dark print.

**Phenomenon 2.** - Print contrast is too light (Too little toner consumed) (Covering the entire surface)



| Cause and Inspection Area                                                                           | Remedy                                                                                                                                                      | Maintenance Ref. + Page                                       |
|-----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|
| 1. Bias voltage is too low.                                                                         | Bias voltage is low.<br>Check the contact point.<br>- The Developer Unit and the High Voltage Power Supply (1)<br>Change the High Voltage Power Supply (1). | 7.1.5.1. (14), 7-206                                          |
| 2. The developer gap and the doctor gap do not satisfy the specified value.                         | Doctor gap - Replace the Developer Unit.<br>Developer gap - Replace the Drum Unit and the Developer Unit.                                                   | 7.1.2.3. (1), 7-10<br>7.1.2.1. (1), 7-4<br>7.1.2.3. (1), 7-10 |
| 3. The Transfer Corona is stained.                                                                  | Cleaning the Transfer Corona Wire.<br>Replace the Nip Guide Plate W Assembly.<br>Check Power Supply - Change the High Voltage Power Supply (2).             | 4.4.3, 4-13<br>7.1.3.4. (3), 7-96<br>7.1.5.1. (15), 7-207     |
| 4. Contamination around Optical Window.                                                             | Clean the Optical Window.                                                                                                                                   | 4.4.11, 4-24                                                  |
| 5. The life of the developer mix is over.                                                           | Replace the Developer mix.                                                                                                                                  | 3.2.2. (2), 3-5                                               |
| 6. The surface voltage is too low.                                                                  | Clean or replace the Charger Unit.                                                                                                                          | 4.4.8, 4-19<br>7.1.2.2. (1), 7-6                              |
| 7. The life of the OPC is over.                                                                     | Replace the Drum Unit.                                                                                                                                      | 7.1.2.1. (1), 7-4                                             |
| 8. Lack of the Developer mixture volume.<br>The Developer mixture leaked out of the Developer Unit. | Replace the Developer Unit                                                                                                                                  | 7.1.2.3. (1), 7-10                                            |

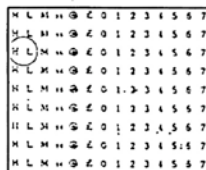
**Phenomenon 3. - Background (Covering the entire surface)**



| Cause and Inspection Area                                                     | Remedy                                                                                                                              | Maintenance Ref. + Page                                                             |
|-------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| 1. Outside light penetrates into the printer.                                 | Operate the printer with all covers closed.                                                                                         |                                                                                     |
| 2. The surface voltage of the drum does not satisfy with the specified value. | Clean or replace the Charger Unit<br>Clean or replace the Erase Lamp                                                                | 4.4.8, 4-19<br>7.1.2.2. (1), 7-6<br>4.4.9, 4-21<br>7.1.2.7, 7-66                    |
| 3. The developer gap and the doctor gap do not satisfy the specified value.   | Doctor gap - Replace the Developer Unit<br>Developer gap - Replace the Drum Unit<br>the Developer Unit,<br>and the Drum Drive Unit. | 7.1.2.3. (1), 7-10<br>7.1.2.1. (1), 7-4<br>7.1.2.3. (1), 7-10<br>7.1.2.5. (1), 7-46 |
| 4. Toner control is incorrect.                                                | Replace the Developer mix.                                                                                                          | 3.2.2. (2), 3-5                                                                     |
| 5. The life of the developer mix is over.                                     | Replace the Developer mix.                                                                                                          | 3.2.2. (2), 3-5                                                                     |
| 6. The drum is stained.                                                       | Replace the Drum Unit.                                                                                                              | 7.1.2.1. (1), 7-4                                                                   |
| 7. The life of the Cleaning Blade is over.                                    | Replace the Drum Unit.                                                                                                              | 7.1.2.1. (1), 7-4                                                                   |
| 8. Print contrast is too dark. Refer to <b>Note</b> below.                    |                                                                                                                                     |                                                                                     |
| 9. Heatroll temperature is not set correctly.                                 | Replace the Fuser Unit.                                                                                                             | 7.1.3.1. (1), 7-67                                                                  |

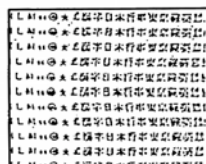
**Note:** Too narrow a developer gap and too wide a doctor gap has a tendency to cause dark print.

#### Phenomenon 4. - Edge Roughness (Covering the entire surface)



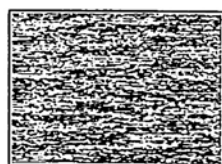
| Cause and Inspection Area                     | Remedy                    | Maintenance Ref. + Page |
|-----------------------------------------------|---------------------------|-------------------------|
| 1. The voltage of the BD sensor is incorrect. | Replace the Optical Unit. | 7.1.1, 7-1              |
| 2. The life of the laser is over.             | Replace the Optical Unit. | 7.1.1, 7-1              |

#### Phenomenon 5. - Wavy Printing (Covering the entire surface)

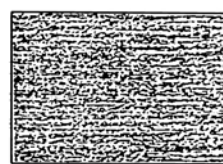


| Cause and Inspection Area    | Remedy                    | Maintenance Ref. + Page |
|------------------------------|---------------------------|-------------------------|
| 1. Faulty Scanner operation. | Replace the Optical Unit. | 7.1.1, 7-1              |

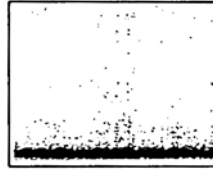
#### Phenomenon 6. - Poor Fusing (Covering the entire surface)



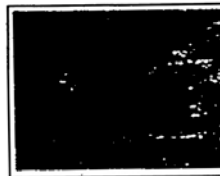
BY APPLYING  
LINT-FREE  
CLOTH.



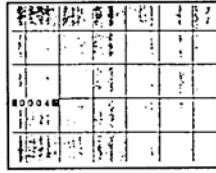
| Cause and Inspection Area                         | Remedy                                                  | Maintenance Ref. + Page |
|---------------------------------------------------|---------------------------------------------------------|-------------------------|
| 1. The nip width is incorrect.                    | Replace the Fuser Unit.                                 | 7.1.3.1. (1), 7-67      |
| 2. Paper absorbed too much water and became damp. | Improve the paper storage condition.                    |                         |
| 3. The temperature of the Fuser Unit is low.      | Faulty thermistor detection.<br>Replace the Fuser Unit. | 7.1.3.1. (1), 7-67      |

**Phenomenon 7. - White Defect (Covering the entire surface)**

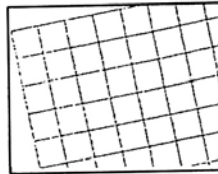
| Cause and Inspection Area                                                                            | Remedy                                                                                                        | Maintenance Ref. + Page                                            |
|------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------|
| 1. The Developer bias is low.<br>The bias voltage supply is broken.<br>Incorrect bias contact point. | Replace the High Voltage Power Supply (1)<br>- Developer bias<br>Replace the Developer Unit.                  | 7.1.5.1. (14), 7-206<br>7.1.2.3. (1), 7-10                         |
| 2. The Nip Guide Plate W Assembly is stained.                                                        | Clean or replace the Nip Guide Plate W Assembly                                                               | 7.1.3.4. (3), 7-96                                                 |
| 3. The doctor gap is too narrow.                                                                     | Replace the Developer Unit.                                                                                   | 7.1.2.3. (1), 7-10                                                 |
| 4. The developer gap is too wide.                                                                    | Replace the Drum Unit,<br>the Developer Unit,<br>and the Drum Drive Unit.                                     | 7.1.2.1. (1), 7-4<br>7.1.2.3. (1), 7-10<br>7.1.2.5. (1), 7-46      |
| 5. The developer mix needs replacement.                                                              | Replace the Developer mix.                                                                                    | 3.2.2. (2), 3-5                                                    |
| 6. Faulty Scanner operation                                                                          | Replace the Optical Unit.                                                                                     | 7.1.1, 7-1                                                         |
| 7. The failure to ground the Drum Unit.                                                              | Replace the Drum Unit.                                                                                        | 7.1.2.1. (1), 7-4                                                  |
| 8. The printer installation area is incorrect.<br>The printer inside air cannot flow to outside.     | Check the printer installation area.<br>Leave a specific area behind the printer.<br>Replace the Ozone Filter | 7.1.5.1. (8), 7-200<br>7.1.5.1. (9), 7-201<br>7.1.5.1. (10), 7-202 |

**Phenomenon 8. - Toner Defect (Covering the entire surface)**

| Cause and Inspection Area                                       | Remedy                                                    | Maintenance Ref. + Page                                     |
|-----------------------------------------------------------------|-----------------------------------------------------------|-------------------------------------------------------------|
| 1. The Transfer/Separating Corona wires are stained.            | Cleaning or replace the Transfer/Separating Corona wires. | 4.4.3, 4-13<br>7.1.3.4. (12), 7-105<br>7.1.3.4. (13), 7-106 |
| 2. The gap of the Nip Guide Plate W Assembly is incorrect.      | Replace the Nip Guide Plate W Assembly.                   | 7.1.3.4. (3), 7-96                                          |
| 3. The paper does not comply with the consumable specification. | Replace the paper.                                        |                                                             |

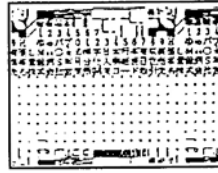
**Phenomenon 9. - Wide Streak (Covering the entire surface)**


| Cause and Inspection Area                                                                                                                                                      | Remedy                                                                                                                              | Maintenance Ref. + Page                                                                                    |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|
| 1. The surface voltage is too low.<br>The Charger Unit (grid, wire) is stained.<br>The Charger wire's current is abnormal.<br>Characteristics of the photoconductor get worse. | Clean or replace the Charger Unit.<br><br>Replace the High Voltage Power Supply (1)<br>-Charger Grid<br><br>Replace the Drum Unit.  | 4.4.8, 4-19<br>7.1.2.2. (1), 7-6<br><br>7.1.5.1. (14), 7-206<br>7.1.2.2. (2), 7-7<br><br>7.1.2.1. (1), 7-4 |
| 2. The developer bias is not constant.<br>Faulty developer bias voltage.                                                                                                       | Replace the bias voltage power supply (1).<br>Change the point of contact.<br>Replace the Developer Unit.<br>Replace the Drum Unit. | 7.1.5.1. (14), 7-206<br><br>7.1.2.3. (1), 7-10<br>7.1.2.1. (1), 7-4                                        |
| 3. Heat Roll temperature is not set correctly.                                                                                                                                 | Replace the Fuser Unit.                                                                                                             | 7.1.3.1. (1), 7-67                                                                                         |

**Phenomenon 10. - Skew (Covering the entire surface)**


| Cause and Inspection Area                             | Remedy                                                                                                                                                                                           | Maintenance Ref. + Page                                       |
|-------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|
| 1. Paper has skewed.<br>(Simplex side or Duplex side) | Paper has skewed from one of the hoppers.<br>Replace the Pick Roller.<br>500 Sheet Hopper (Hopper 2 and 3)<br>2000 Sheet Hopper (Hopper 1)<br>Multi-bypass Tray<br>High Capacity Hopper (option) | 7.1.4.3. (2), 7-171<br><br>7.1.3.2. (1), 7-70<br>7.2.2, 7-218 |



**Phenomenon 11. - Bleeding (Covering the entire surface)**


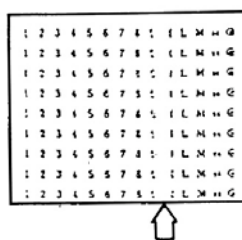
| Cause and Inspection Area                                                                      | Remedy                                                                                | Maintenance Ref. + Page                                       |
|------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------|
| 1. The toner control is incorrect.                                                             | Replace the Developer mix.                                                            | 3.2.2. (2), 3-5                                               |
| 2. The surface voltage is too low.<br>Charged characteristics of the photoconductor get worse. | Clean or replace the Charger Unit.<br>Replace the Drum Unit.                          | 4.4.8, 4-19<br>7.1.2.2. (1), 7-6<br>7.1.2.1. (1), 7-4         |
| 3. The developer bias is high.                                                                 | Replace the High Voltage Power Supply (1)<br>-Developer Bias                          | 7.1.5.1. (14), 7-206                                          |
| 4. The developer gap is too narrow.                                                            | Replace the Developer Unit.<br>Replace the Drum Unit.<br>Replace the Drum Drive Unit. | 7.1.2.3. (1), 7-10<br>7.1.2.1. (1), 7-4<br>7.1.2.5. (1), 7-46 |
| 5. The doctor gap is too wide.                                                                 | Replace the Developer Unit.                                                           | 7.1.2.3. (1), 7-10                                            |

**Phenomenon 12. - Trailing Edge Too Light (Covering the entire surface)**

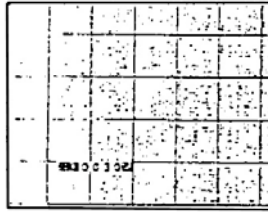

| Cause and Inspection Area                                                                                                                                                       | Remedy                                                                                                                                                | Maintenance Ref. + Page                                                                                       |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|
| 1. The surface voltage is too high.<br>The Charger Unit (wire, grid) is stained.<br>The Erase Lamp is stained.<br><br>The input current of the Charger Unit is abnormally high. | Clean or replace the Charger Unit.<br>Replace the Charger Grid.<br>Clean or replace the Erase Lamp.<br><br>Replace the High Voltage Power Supply (1). | 4.4.8, 4-19<br>7.1.2.2. (1), 7-6<br>4.4.9, 4-21<br>7.1.2.7, 7-66<br>7.1.5.1. (14), 7-206<br>7.1.2.2. (2), 7-7 |
| 2. The Developer mix needs replenishing.                                                                                                                                        | Replace the Developer mix.                                                                                                                            | 3.2.2. (2), 3-5                                                                                               |
| 3. The doctor gap is too narrow.                                                                                                                                                | Replace the Developer Unit.                                                                                                                           | 7.1.2.3. (1), 7-10                                                                                            |
| 4. The developer gap is too wide.                                                                                                                                               | Replace the Developer Unit.<br>Replace the Drum Unit.<br>Replace the Drum Drive Unit.                                                                 | 7.1.2.3. (1), 7-10<br>7.1.2.1. (1), 7-4<br>7.1.2.5. (1), 7-46                                                 |
| 5. The developer bias voltage is low.                                                                                                                                           | Replace the High Voltage Power Supply (1).                                                                                                            | 7.1.5.1. (14), 7-206                                                                                          |

**Phenomenon 13. - Poor Fusing (In the Vertical Direction)**

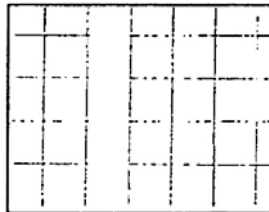

| Cause and Inspection Area                                                       | Remedy                               | Maintenance Ref. + Page |
|---------------------------------------------------------------------------------|--------------------------------------|-------------------------|
| 1. The Heat Roll is damaged.                                                    | Replace the Fuser Unit.              | 7.1.3.1. (1), 7-67      |
| 2. The Backup Roll is worn out.                                                 | Replace the Fuser Unit.              | 7.1.3.1. (1), 7-67      |
| 3. Paper wrinkles exist.<br>Paper absorbed too much water and thus became damp. | Improve the paper storage condition. |                         |

**Phenomenon 14. - White Streak (One Position - irregular) (In the Vertical Direction)**


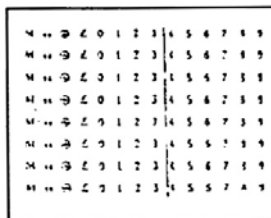
| Cause and Inspection Area                         | Remedy                                                                                                                                      | Maintenance Ref. + Page                                                                 |
|---------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1. The Optical Unit's window is contaminated.     | Clean the Optical Unit's window.                                                                                                            | 4.4.11, 4-24                                                                            |
| 2. The Transfer Corona is stained.                | Clean or replace the Transfer Corona Wire.<br>Clean the Conveyance Belt area.<br>Clean the Machine inside.<br>Clean or replace the TH Unit. | 4.4.3, 4-13<br>7.1.3.4. (12), 7-105<br>4.4.4, 4-15<br>4.4.6, 4-17<br>7.1.3.4. (1), 7-94 |
| 3. The developer mix is incorrectly transferred.  | Replace the Developer mix.<br>Replace the Developer Unit.                                                                                   | 3.2.2. (2), 3-5<br>7.1.2.3. (1), 7-10                                                   |
| 4. Foreign substances entered the Developer Unit. | Replace the Developer mix.<br>Replace the Developer Unit.                                                                                   | 3.2.2. (2), 3-5<br>7.1.2.3. (1), 7-10                                                   |
| 5. The drum is stained.                           | Replace the Drum Unit.                                                                                                                      | 7.1.2.1. (1), 7-4                                                                       |
| 6. Faulty Scanner operation.                      | Replace the Optical Unit.                                                                                                                   | 7.1.1, 7-1                                                                              |

**Phenomenon 15. - Partial Poor Transferring or Developing (In the Vertical Direction)**

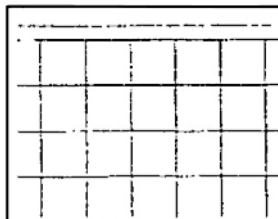
| Cause and Inspection Area                                                                                               | Remedy                                                                     | Maintenance Ref. + Page                                              |
|-------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|----------------------------------------------------------------------|
| 1. The surface voltage is too high.<br>The Charger Unit's grid's voltage is too abnormal.<br>The Erase Lamp is stained. | Clean or replace the Charger Unit.<br><br>Clean or replace the Erase Lamp. | 4.4.8, 4-19<br>7.1.2.2. (1), 7-6<br><br>4.4.9, 4-21<br>7.1.2.7, 7-66 |
| 2. The toner control is incorrect.                                                                                      | Replace the Developer mix.                                                 | 3.2.2. (2), 3-5                                                      |
| 3. The Developer mix needs replenishing.                                                                                | Replace the Developer mix.                                                 | 3.2.2. (2), 3-5                                                      |

**Phenomenon 16. - White Streak (In the Vertical Direction)**

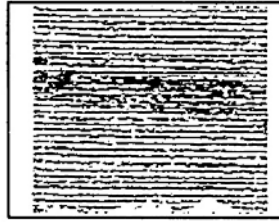
| Cause and Inspection Area                                            | Remedy                                                | Maintenance Ref. + Page                 |
|----------------------------------------------------------------------|-------------------------------------------------------|-----------------------------------------|
| 1. Foreign material attaches between the Developer Unit and the drum | Replace the Developer Unit.<br>Replace the Drum Unit. | 7.1.2.3. (1), 7-10<br>7.1.2.1. (1), 7-4 |

**Phenomenon 17. - Black Streak (In the Vertical Direction)**


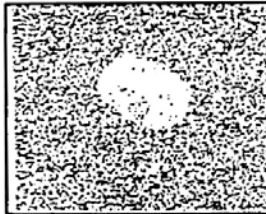
| Cause and Inspection Area                                                                              | Remedy                                   | Maintenance Ref. + Page          |
|--------------------------------------------------------------------------------------------------------|------------------------------------------|----------------------------------|
| 1. The Charger Unit is stained.                                                                        | Clean or replace the Charger Unit.       | 4.4.8, 4-19<br>7.1.2.2. (1), 7-6 |
| 2. The drum is damaged.                                                                                | Replace the Drum Unit.                   | 7.1.2.1. (1), 7-4                |
| 3. The charge surface voltage of the photoconductor is low.                                            | Replace the Drum Unit.                   | 7.1.2.1. (1), 7-4                |
| 4. The diffused reflection of the Optical Unit.                                                        | Replace the Optical Unit.                | 7.1.1, 7-1                       |
| 5. The OPC surface in contact with foreign substances between the Charger Unit and the Developer Unit. | Clean or replace the foreign substances. |                                  |

**Phenomenon 18. - Streak (Horizontal) (Paper Leading Edge)**


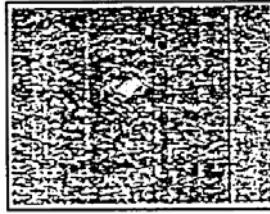
| Cause and Inspection Area              | Remedy                                                                                | Maintenance Ref. + Page                                              |
|----------------------------------------|---------------------------------------------------------------------------------------|----------------------------------------------------------------------|
| 1. Paper curls up too much.            | Use paper which complies with the Consumable Specification.                           |                                                                      |
| 2. Background on the drum is too high. | Clean or replace the Charger Unit.<br>Clean the Erase Lamp.<br>Replace the Drum Unit. | 4.4.8, 4-19<br>7.1.2.2. (1), 7-6<br>4.4.9, 4-21<br>7.1.2.1. (1), 7-4 |

**Phenomenon 19. - White Defect (Paper Trailing Edge)**

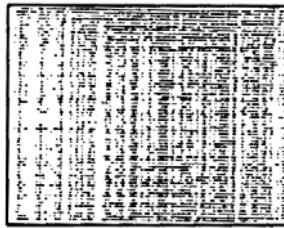
| Cause and Inspection Area                                  | Remedy                                                                                              | Maintenance Ref. + Page |
|------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|-------------------------|
| 1. The gap of the Nip Guide Plate W Assembly is incorrect. | Replace the Nip Guide Plate W Assembly.                                                             | 7.1.3.4. (3), 7-96      |
| 2. Paper deformed too much.                                | Improve the paper storage condition.<br>Use paper which complies with the Consumable Specification. |                         |

**Phenomenon 20. - Drum Contamination (Drum related Phenomenon)**

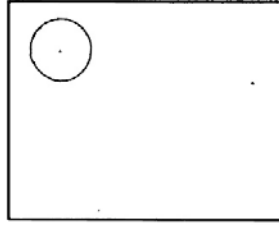
| Cause and Inspection Area                                                                                                                      | Remedy                                                                                                                                                                                                      | Maintenance Ref. + Page                                                                 |
|------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1. The surface of the drum is contaminated.                                                                                                    | Wipe the foreign material off with Lint-Free cloth.<br>Replace the Drum Unit.                                                                                                                               | 7.1.2.1. (1), 7-4                                                                       |
| 2. Printer installation area is incorrect.<br>The Printer inside air cannot flow to outside.<br><br>The drum is damaged by ozone or dew drops. | Check the Printer installation area.<br>Leave sufficient space behind the Printer.<br>(Refer to the Printer Installation Specification for details.)<br>Replace the Drum Unit.<br>Replace the Ozone Filter. | 7.1.2.1. (1), 7-4<br>7.1.5.1. (8), 7-200<br>7.1.5.1. (9), 7-201<br>7.1.5.1. (10), 7-202 |

**Phenomenon 21. - White Defect (Perfectly White) (Drum related Phenomenon)**

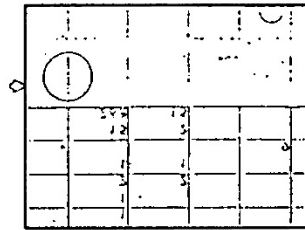
| Cause and Inspection Area           | Remedy                                                                        | Maintenance Ref. + Page |
|-------------------------------------|-------------------------------------------------------------------------------|-------------------------|
| 1. The drum is partially damaged.   | Replace the Drum unit.                                                        | 7.1.2.1. (1), 7-4       |
| 2. Foreign material is on the drum. | Wipe the foreign material off with Lint-Free cloth.<br>Replace the Drum Unit. | 7.1.2.1. (1), 7-4       |

**Phenomenon 22. - Poor Developing (Drum related Phenomenon)**

| Cause and Inspection Area         | Remedy                 | Maintenance Ref. + Page |
|-----------------------------------|------------------------|-------------------------|
| 1. The drum is partially damaged. | Replace the Drum unit. | 7.1.2.1. (1), 7-4       |
| 2. The life of the drum is over.  | Replace the Drum unit. | 7.1.2.1. (1), 7-4       |

**Phenomenon 23. - Black Spot (Drum related Phenomenon)**

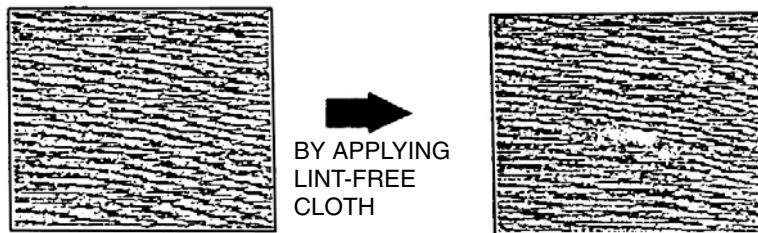
| Cause and Inspection Area                                                                             | Remedy                                                                 | Maintenance Ref. + Page                                          |
|-------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|------------------------------------------------------------------|
| 1. The surface of the drum is contaminated.<br>The drum is partially damaged.                         | Replace the Drum Unit.                                                 | 7.1.2.1. (1), 7-4                                                |
| 2. Something occurred after replacing the Drum Unit.                                                  | Replace the Drum Unit.                                                 | 7.1.2.1. (1), 7-4                                                |
| 3. Black spot occurred.<br>The surface voltage is too high.<br>The Charger Unit is partially stained. | Clean or replace the Charger Unit.<br>Clean or replace the Erase Lamp. | 4.4.8, 4-19<br>7.1.2.2. (1), 7-6<br>4.4.9, 4-21<br>7.1.2.7, 7-66 |

**Phenomenon 24. - Offset (Drum related Phenomenon)**

| Cause and Inspection Area                                                                                                                               | Remedy                                                                                                 | Maintenance Ref. + Page                                       |
|---------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|
| 1. The Erase Lamp is stained.                                                                                                                           | Clean or replace the Erase Lamp.                                                                       | 4.4.9, 4-21<br>7.1.2.7, 7-66                                  |
| 2. The life of the OPC cleaner is over.                                                                                                                 | Replace the Drum Unit.                                                                                 | 7.1.2.1. (1), 7-4                                             |
| 3. Toner control is incorrect.                                                                                                                          | Replace the Developer mix.                                                                             | 3.2.2. (2), 3-5                                               |
| 4. Too much toner (faulty transfer movement)<br>The Developer gap and the doctor gap do not satisfy the specified value.<br>Refer to <b>Note</b> below. | Doctor gap-Replace the Developer Unit.<br>Developer gap-Replace the Drum Unit, and the Developer Unit. | 7.1.2.3. (1), 7-10<br>7.1.2.1. (1), 7-4<br>7.1.2.3. (1), 7-10 |

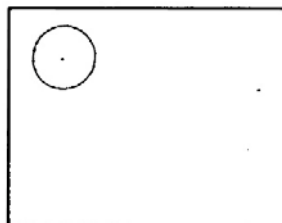
**Note:** Too narrow developer gap and too wide doctor gap has a tendency to cause dark print.

**Phenomenon 25. - Partial Poor Fusing (Heat Roll related Phenomenon)**



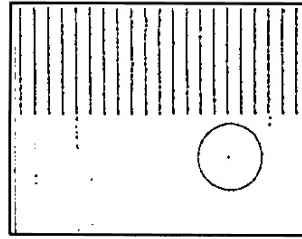
| Cause and Inspection Area      | Remedy                  | Maintenance Ref. + Page |
|--------------------------------|-------------------------|-------------------------|
| 1. The Heat Roll is damaged.   | Replace the Fuser Unit. | 7.1.3.1. (1), 7-67      |
| 2. The Backup Roll is damaged. | Replace the Fuser Unit. | 7.1.3.1. (1), 7-67      |

**Phenomenon 26. - Black Spot (Heat Roll related Phenomenon)**



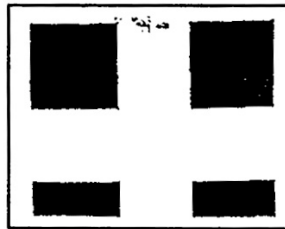
| Cause and Inspection Area                           | Remedy                                           | Maintenance Ref. + Page            |
|-----------------------------------------------------|--------------------------------------------------|------------------------------------|
| 1. Attaching parts for the Heat Roll are stained.   | Clean attaching parts or replace the Fuser Unit. | 4.4.12, 4-25<br>7.1.3.1. (1), 7-67 |
| 2. Attaching parts for the Backup Roll are stained. | Clean BR Nails or replace the Fuser Unit.        | 4.4.12, 4-25<br>7.1.3.1. (1), 7-67 |



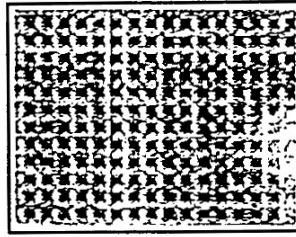
**Phenomenon 27. - Offset (Heat Roll related Phenomenon)**

← HR TONER CONTAMINATION  
(FUSER CLEANING WEB)

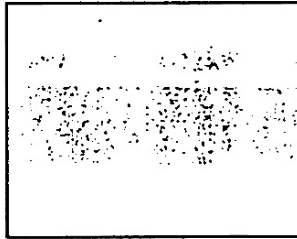
| Cause and Inspection Area                              | Remedy                                    | Maintenance Ref. + Page |
|--------------------------------------------------------|-------------------------------------------|-------------------------|
| 1. Paper absorbed too much water and thus became damp. | Improve the paper storage condition.      |                         |
| 2. The temperature of the Fuser Unit is incorrect.     | Faulty thermistor-Replace the Fuser Unit. | 7.1.3.1. (1), 7-67      |
| 3. Incorrect load at the nip position.                 | Replace the Fuser Unit.                   | 7.1.3.1. (1), 7-67      |
| 4. Toner control is incorrect.                         | Replace the Developer mix.                | 3.2.2. (2), 3-5         |

**Phenomenon 28. - Smudge (Contamination) (Other related Phenomenon)**

| Cause and Inspection Area                       | Remedy                                                                                                                                                           | Maintenance Ref. + Page                                   |
|-------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|
| 1. The paper feeding roller is stained.         | Replace the Pick Rollers in the Vertical Path Unit, and the Pick Rollers in the Multi-bypass Tray.<br>Replace the Pick Rollers in the High Capacity Hopper Unit. | 7.1.4.3. (2), 7-171<br>7.1.3.2. (2), 7-71<br>7.2.2, 7-218 |
| 2. The Registration is contaminated with toner. | Clean the paper path.<br>Clean the Conveyance Belt area.<br>Clean the Nip Guide Plate W Assembly.<br>Clean the Machine inside.                                   | 4.4.4, 4-15<br>4.4.5, 4-16<br>4.4.6, 4-17                 |

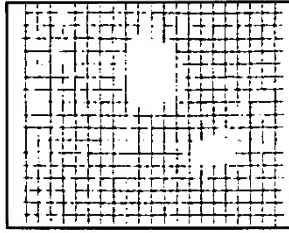
**Phenomenon 29. - White Defect (Paper Feed Direction)**

| Cause and Inspection Area                                  | Remedy                                  | Maintenance Ref. + Page |
|------------------------------------------------------------|-----------------------------------------|-------------------------|
| 1. The gap of the Nip Guide Plate W Assembly is incorrect. | Replace the Nip Guide Plate W Assembly. | 7.1.3.4. (3), 7-96      |

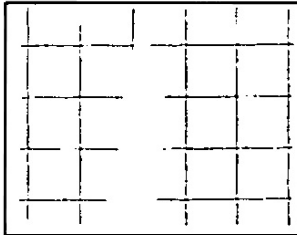
**Phenomenon 30. - Smear (Simplex) (Paper Feed Direction) (Back side of paper contaminated in the case of Simplex.)**

| Cause and Inspection Area                                      | Remedy                                           | Maintenance Ref. + Page           |
|----------------------------------------------------------------|--------------------------------------------------|-----------------------------------|
| 1. Toner Control is incorrect.                                 | Replace the Developer mix.                       | 3.2.2. (2), 3-5                   |
| 2. The Nip Guide Plate W Assembly is contaminated.             | Clean or replace the Nip Guide Plate W Assembly. | 4.4.5, 4-16<br>7.1.3.4. (3), 7-96 |
| 3. The life of the Backup Roll or the Discharge Brush is over. | Replace the Fuser Unit.                          | 7.1.3.1. (1), 7-67                |

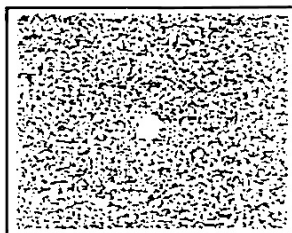
**Note:** Too much toner has a tendency to cause back side contamination.

**Phenomenon 31. - White Spot (Large) (Random Phenomenon)**

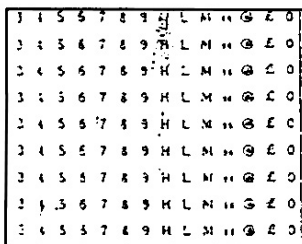
| Cause and Inspection Area                                                                                 | Remedy                                                                       | Maintenance Ref. + Page |
|-----------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|-------------------------|
| 1. The surface of the paper is not smooth. (The paper is damp.)                                           | Improve the paper storage condition.                                         |                         |
| 2. Water drops are inside the paper feed mechanism.<br>High humidity.<br>Poor ventilation of the printer. | Improve the environmental condition.<br>Check if the fans operate correctly. |                         |

**Phenomenon 32. - White Spot (Long) (Random Phenomenon)**

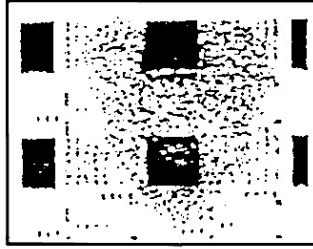
| Cause and Inspection Area                                       | Remedy                                  | Maintenance Ref. + Page |
|-----------------------------------------------------------------|-----------------------------------------|-------------------------|
| 1. The surface of the paper is not smooth. (The paper is damp.) | Improve the paper storage condition.    |                         |
| 2. Paper wrinkles exist.                                        | Improve the paper storage condition.    |                         |
| 3. The gap of the Nip Guide Plate W Assembly is incorrect.      | Replace the Nip Guide Plate W Assembly. | 7.1.3.4. (3), 7-96      |

**Phenomenon 33. - White Spot (B.C.O. - Bead Carrier Out) (Small) (Random Phenomenon)**


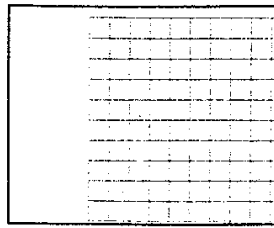
| Cause and Inspection Area                   | Remedy                                                                 | Maintenance Ref. + Page                                          |
|---------------------------------------------|------------------------------------------------------------------------|------------------------------------------------------------------|
| 1. The surface voltage is too high.         | Clean or replace the Charger Unit.                                     | 4.4.8, 4-19<br>7.1.2.2. (1), 7-6                                 |
| 2. The grid of the Charger Unit is stained. | Clean or replace the Charger Unit.<br>Clean or replace the Erase Lamp. | 4.4.8, 4-19<br>7.1.2.2. (1), 7-6<br>4.4.9, 4-21<br>7.1.2.7, 7-66 |
| 3. The toner control is incorrect.          | Replace the Developer mix.                                             | 3.2.2. (2), 3-5                                                  |

**Phenomenon 34. - Smear Defect (Random Phenomenon)**


| Cause and Inspection Area                             | Remedy                                             | Maintenance Ref. + Page           |
|-------------------------------------------------------|----------------------------------------------------|-----------------------------------|
| 1. Paper jammed in the Drum Unit or the Charger Unit. | Remove the paper.<br>Replace the Drum Wrap Sensor. | 7.1.5.1. (12), 7-204              |
| 2. The temperature of the Heat Roll is low.           | Replace the Fuser Unit.                            | 7.1.3.1. (1), 7-67                |
| 3. The Backup Roll is stained.                        | Replace the Fuser Unit.                            | 7.1.3.1. (1), 7-67                |
| 4. The Nip Guide Plate W Assembly is stained.         | Clean or replace the Nip Guide Plate W Assembly.   | 4.4.5, 4-16<br>7.1.3.4. (3), 7-96 |

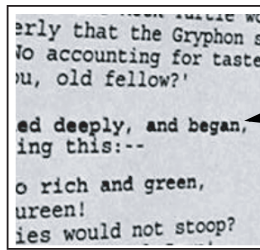
**Phenomenon 35. - Smear Defect (Random Phenomenon)**

| Cause and Inspection Area                                                                                     | Remedy                                                                                       | Maintenance Ref. + Page                                      |
|---------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|--------------------------------------------------------------|
| 1. Foreign material such as chad is between the developer and the photoconductor.<br>The carrier has dropped. | Remove the foreign material and clean the Developer Unit, the Drum Unit, and the paper path. | <a href="#">4.4.10, 4-22</a><br><a href="#">4.4.12, 4-25</a> |
| 2. Faulty Drum Wrap Sensor.                                                                                   | Replace the Drum Wrap Sensor.                                                                | <a href="#">7.1.5.1. (12), 7-204</a>                         |

**Phenomenon 36. - White Defect (Print area unmatched)**

| Cause and Inspection Area                                                                                       | Remedy                                                                                                                                                    | Maintenance Ref. + Page    |
|-----------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|
| 1. Multi-bypass Tray setting is incorrect.<br>(The printing area shifted to horizontal direction or unmatched). | Check the Multi-bypass Tray.<br>Adjust the size guide on the Multi-bypass Tray according to the paper size.<br>Input the paper size to the Control Panel. |                            |
| 2. Faulty scanner operation.                                                                                    | Replace the Optical Unit.                                                                                                                                 | <a href="#">7.1.1, 7-1</a> |

**Phenomenon 37. - Smudging ( Character or Half-tone) ( Other related phenomenon)**



Smudging

| Cause and Inspection Area                                          | Remedy                                                                                                               | Maintenance Ref. + Page            |
|--------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|------------------------------------|
| 1. When generating with Thick paper.                               | The gap of a drum and a NIP Guide Plate W Assembly is extended.                                                      | <a href="#">7.1.3.4. (3), 7-96</a> |
| 2. When generation with long paper.<br>(for example: Ledger paper) | Replace: the Registration Roller.<br>Check: Interference with the Registration Roller and the Lower Paper Guide (A). | <a href="#">7.1.3.3. (1), 7-83</a> |

**Phenomenon 38. - Jitter ( Horizontal-line or Half-tone) ( Other related phenomenon)**



Jitter

| Cause and Inspection Area                   | Remedy                                      | Maintenance Ref. + Page                                                    |
|---------------------------------------------|---------------------------------------------|----------------------------------------------------------------------------|
| 1. Drum Motor is fault.                     | Replace: Drum Motor.                        | <a href="#">7.1.2.5. (7), 7-52</a>                                         |
| 2. The tension of the Timing belt is loose. | Check: The tension of the Timing Belt.      | <a href="#">7.1.2.5. (6), 7-51</a>                                         |
| 3. Wear of the pulley.                      | Replace: Pulley (Drum) 40 or Pulley (Drum). | <a href="#">7.1.2.5. (10), 7-55</a><br><a href="#">7.1.2.5. (11), 7-56</a> |

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## 5.5. Troubles in Other Parts(Abnormal Noise, etc.,)

If any trouble other than “Troubles” on page 5-2 to “Troubles in Print Quality” on page 5-85 such as abnormal noise, rough movement of the operable parts and the like occurs, replace the abnormal part.

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## 5.6. Countermeasures for Paper Jams

### 5.6.1. Corrective Actions for Paper Jams

Check the jammed paper. Check specially if the leading edge of the paper is damaged or not. If damaged, check if there is any fragment of paper or burr (small projection) in the paper feeding system at the corresponding portion of the damage. There are following two kinds of detail error codes of the printer;

1. The leading edge of paper does not reach the sensor.
2. The trailing edge of paper does not pass through the sensor.

Check the paper jamming condition according to the above information. If the paper jams again, check the paper jamming condition. Record the space between papers. If the vertical path cover is opened when paper jam occurs, the jammed paper automatically ejects from the printer. When checking the status of the remaining paper, open the front cover. This operation shuts down the +24V line and disables automatic paper ejection. then open the other covers.

(1) Paper jammed

- (a) Check if the jammed paper is damaged or not.

(2) Does the paper jam again?

- (a) If jammed, check the paper jamming condition.

(3) Paper jam in the Vertical Path Unit.

- (a) Is the pick roller worn out?
- (b) Is there too much paper dust or adhered to the roller?
- (c) Does the table tilt? Check the tilt when the table is rising.
- (d) Does the last paper jam? Check if the paper is damaged or not.
- (e) Does the paper jam occur right after papers are supplied?

(4) Paper jam in the Registration.

- (a) Check the space between the papers.
- (b) Check the transfer force of the roller in the Vertical Path Unit. When opening the Vertical Path Cover in the status of remaining paper, the roller starts to rotate and the transfer force can be checked.

(5) Skewed paper jams.

- (a) Does a paper jam occur in the specific hopper?
- (b) In which does the paper jam occur in simplex printing or duplex printing?
- (c) Does the paper skew at the Vertical Path Unit?
- (d) Where is the folded paper edge?

(6) Overlapped papers jam.

- (a) Is the Conveyance Belt contaminated?
- (b) Is the leading edge of the paper burred?

(7) Paper jam in the Fuser Unit.

Are there any scratches on the Heat Roll and the Backup Roll?

- (a) Is the jammed paper still remaining in the Fuser Unit?
  - (b) Is the Fuser Unit set at the correct position?
  - (c) Is the lock lever of the Fuser Unit set at the correct position?
  - (d) Is there too much toner or paper dust on the separators of the Fuser Unit?
- (8) Paper jam in the switch back part.
- (a) Check if the paper is largely curled or not.
  - (b) Check if the paper edge is folded or not.
  - (c) Check the damaged portion of the paper.
- (9) Paper jam in the DUPLEX path.
- (a) Does the path gate move smoothly?
  - (b) Does the solenoid move smoothly in the DUPLEX path when moving it manually?
  - (c) Check if the edge of the gate is hidden by the metal plate when the path gate is in operation.
  - (d) Check the stop position of the paper.
  - (e) Check if the paper folded or not.

### 5.6.2. Corrective Actions for Dog-eared Paper

- (1) Check which side of the paper is folded, back side or front side?
- (2) Check which side of the paper is folded, the operator's side or the rear side?
- (3) When the paper edge of the operator's side is folded, check if the hopper is inserted to the end or not.
- (4) Is the paper edge folded before printing?  
Is the paper edge folded before or after fusing?  
Is the paper edge folded while DUPLEX transporting?

### 5.6.3. Corrective Actions for Wrinkled Paper

- (1) Is the Fuser Unit set at the correct position?
- (2) Are the heat roll and backup roll contaminated?
- (3) Check which side of paper is wrinkled, front side or back side?
- (4) Is the wrinkled paper type specific? Are long papers such as A3 and B4 sized papers wrinkled?
- (5) Is the paper wrinkled only at the trailing edge of the paper?
- (6) Is the paper edge folded before fusing or is the paper skewed?



#### 5.6.4. Corrective Actions for Black Streak

- (1) Scratching a paper after fusing.
  - (a) Is the paper scratched by the peeling pawl of the heat roll or backup roll? If scratched, the paper surface becomes uneven and the toner cannot melt evenly. (The image may not be sharp.)
- (2) Paper is scratched only at the sample tray.
  - (a) Is the roller position at the exit of the sample tray lowered? Is the paper waved too much?

#### 5.6.5. Corrective Actions When the Paper is Stained with Silicon Oil

Silicone oil sometimes adheres to the first several papers when printing wide papers(A4, A3 or Tabstock size) right after printing a large amount of narrow papers(B4 size).

#### 5.6.6. Corrective Actions When the Reverse Side of the Paper is Stained at the Start of Printing

- (1) Only the back of the first paper is contaminated and the following papers are not contaminated.
  - (a) Check the contamination on the surface of the Conveyance Belt. If the contamination still occurs even the surface of the Conveyance Belt is cleaned, replace the Conveyance Belt.
- (2) The rear side of the first several papers are sometimes contaminated, when printing wide papers(A4, A3 or Tabstock size) right after printing a large amount of narrow papers(B4 size).
  - (a) Check if the guide for the Conveyance Belt or the guide before fusing is contaminated or not. If contaminated, clean it.





## 5.7. Error Code Indication (Finisher SR5000)

**Note:** These error codes are concerning to the Finisher SR5000.  
Finisher SR5000: Refer to Finisher SR5000 Users Guide or Supplement 8 for each measure.

| Detail Error Code | Display Message                                   | Error Name                                      | Description                                      | Page No.                    |
|-------------------|---------------------------------------------------|-------------------------------------------------|--------------------------------------------------|-----------------------------|
| E009              | Elevator Tray Paper Full<br>Remove Paper          | Shift Tray Full 1                               | Shift Tray is full of paper.                     | Finisher SR5000 Users Guide |
| E082              | Staple Trimmings Hopper<br>Check Trimmings Hopper | Staple Trimmings Hopper Full / Non-set          | Staple Trimmings Hopper is Full or not set.      |                             |
| E00D              | Upper Tray Paper Full<br>Remove Paper             | Proof Tray Full                                 | Proof Tray is full.                              |                             |
| E01A              | Low Staple (F)                                    | Low Staple (F)                                  | Detected no needle of stapler. (front)           |                             |
| E03F              | Finisher Front Cover Open<br>Close Cover          | Finisher Front Cover Open                       | The finisher front door is open.                 |                             |
| E04A              | Transit Pass Unit Cover Open<br>Close Cover       | Transit Pass Front Cover Open                   | The transit pass front cover is open.            | 5-116                       |
| E060              | Paper in Transit Pass<br>Remove Paper             | Paper On Paper Path 13 (Transit Pass Sensor)    | Paper is detected on the transit pass sensor.    | 5-117                       |
| E064              | Paper in Finisher<br>Remove Paper                 | Paper On Paper Path 14 (Entrance Sensor)        | Paper is detected on the entrance sensor.        | Finisher SR5000 Users Guide |
| E065              | Paper in Finisher<br>Remove Paper                 | Paper On Paper Path 15 (Stapler Exit Sensor)    | Paper is detected on the stapler exit sensor.    |                             |
| E066              | Paper in Finisher<br>Remove Paper                 | Paper On Paper Path 16 (Jam Detection Sensor)   | Paper is detected on the jam detection sensor.   |                             |
| E067              | Paper in Finisher<br>Remove Paper                 | Paper On Paper Path 17 (Staple Tray Sensor)     | Paper is detected on the staple tray sensor.     |                             |
| E068              | Paper in Finisher<br>Remove Paper                 | Paper On Paper Path 18 (Upper Tray Exit Sensor) | Paper is detected on the upper tray exit sensor. |                             |
| E06E              | Paper in Finisher<br>Remove Paper                 | Paper On Paper Path 58 (Shift Exit Sensor)      | Paper is detected on the shift exit sensor.      |                             |
| E136              | Paper Jam in Transit Pass<br>Remove Paper         | Transit Pass Unit Type DDP Jam 1                | Paper did not arrive at transit pass sensor.     | 5-118                       |
| E137              | Paper Jam in Transit Pass<br>Remove Paper         | Transit Pass Unit Type DDP Jam 2                | Paper did not depart from transit pass sensor.   | 5-118                       |
| E1C1              | Paper Jam Finisher<br>Remove Paper                | Drive Jam                                       | Drive jam occurred.                              | Finisher SR5000 Users Guide |
| E1C2              | Paper Jam Finisher<br>Remove Paper                | Shift Tray Lift Jam                             | Shift tray lift jam occurred.                    |                             |
| E1D0              | Paper Jam Finisher<br>Remove Paper                | FNS Lead Jam 1                                  | Paper did not arrive at entrance sensor.         |                             |
| E1D1              | Paper Jam Finisher<br>Remove Paper                | FNS Lead Jam 2                                  | Paper did not arrive at shift tray exit sensor.  |                             |
| E1D2              | Paper Jam Finisher<br>Remove Paper                | FNS Lead Jam 3                                  | Paper did not arrive at pre-stack sensor.        |                             |
| E1D3              | Paper Jam Finisher<br>Remove Paper                | FNS Lead Jam 4                                  | Paper did not arrive at stapler tray sensor.     |                             |

| Detail Error Code | Display Message                 | Error Name                     | Description                                                     | Page No.                    |
|-------------------|---------------------------------|--------------------------------|-----------------------------------------------------------------|-----------------------------|
| E1D4              | Paper Jam Finisher Remove Paper | FNS Trail Jam 1                | Paper did not depart from entrance sensor.                      | Finisher SR5000 Users Guide |
| E1D5              | Paper Jam Finisher Remove Paper | FNS Trail Jam 2                | Paper did not depart from shift exit sensor.                    |                             |
| E1D6              | Paper Jam Finisher Remove Paper | FNS Trail Jam 3                | Paper did not depart from pre-stack paper sensor.               |                             |
| E1D7              | Paper Jam Finisher Remove Paper | FNS Trail Jam 4                | Paper did not depart from stapler tray exit sensor.             |                             |
| E1D8              | Paper Jam Finisher Remove Paper | FNS Trail Jam 5                | Paper did not arrive at upper tray exit sensor.                 |                             |
| E1D9              | Paper Jam Finisher Remove Paper | FNS Trail Jam 5                | Paper did not depart from upper tray exit sensor.               |                             |
| E1DA              | Paper Jam Finisher Remove Paper | FNS Trail Jam 6                | Paper jam occurred in the stack feed-out.                       |                             |
| E1DB              | Paper Jam Finisher Remove Paper | Jogger Jam                     | Jogger jam occurred.                                            |                             |
| E1DC              | Paper Jam Finisher Remove Paper | Shift Tray Jam                 | Shift tray jam occurred.                                        |                             |
| E1DD              | Paper Jam Finisher Remove Paper | Staple Jam                     | Staple jam occurred.                                            |                             |
| E1DE              | Paper Jam Finisher Remove Paper | Stack Feed-Out Jam             | Stack feed-out jam occurred.                                    |                             |
| E1DF              | Paper Jam Finisher Remove Paper | Pre-Stack Jam                  | Pre-stack jam occurred.                                         |                             |
| E260              | Call for Service E260           | Finisher 1 CPU Error           | SR5000 did not respond to a command.                            |                             |
| E262              | Call for Service E262           | Finisher 1 Incorrect Command   | SR5000 detected an interface error.                             |                             |
| E2C0              | Call for Service E2C0           | Upper Transport Motor          | Abnormality was detected in the Upper Transport Motor.          | Sup. 8 SC720                |
| E2C1              | Call for Service E2C1           | Lower Transport Motor          | Abnormality was detected in the Lower Transport Motor.          | Sup. 8 SC730                |
| E2C2              | Call for Service E2C2           | Staple Movement Motor          | Abnormality was detected in the Staple Movement Motor.          | Sup. 8 SC742                |
| E2C3              | Call for Service E2C3           | Stapler Rotation Motor         | Abnormality was detected in the Stapler Rotation Motor.         | Sup. 8 SC741                |
| E2C4              | Call for Service E2C4           | Stapler Hammer Motor           | Abnormality was detected in the Stapler Hammer Motor.           | Sup. 8 SC740                |
| E2C5              | Call for Service E2C5           | Upper Tray Exit Motor          | Abnormality was detected in the Upper Tray Exit Motor.          | Sup. 8 SC731                |
| E2C7              | Call for Service E2C7           | Shift Tray Exit Motor          | Abnormality was detected in the Shift Tray Exit Motor.          | Sup. 8 SC732                |
| E2C8              | Call for Service E2C8           | Upper Tray Junction Gate Motor | Abnormality was detected in the Upper Tray Junction Gate Motor. | Sup. 8 SC734                |
| E2C9              | Call for Service E2C9           | Pre-Stack Junction Gate Motor  | Abnormality was detected in the Pre-Stack Junction Gate Motor.  | Sup. 8 SC736                |

| Detail Error Code | Display Message       | Error Name                         | Description                                                                        | Page No.     |
|-------------------|-----------------------|------------------------------------|------------------------------------------------------------------------------------|--------------|
| E2CA              | Call for Service E2CA | Pre-Stack Transport Motor          | Abnormality was detected in the Pre-Stack Transport Motor.                         | Sup. 8 SC737 |
| E2CB              | Call for Service E2CB | Pre-Stack Stopper Motor            | Abnormality was detected in the Pre-Stack Stopper Motor.                           | Sup. 8 SC738 |
| E2CC              | Call for Service E2CC | Drag Roller Motor                  | Abnormality was detected in the Drag Roller Motor.                                 | Sup. 8 SC754 |
| E2CD              | Call for Service E2CD | Drag Drive Motor                   | Abnormality was detected in the Drag Drive Motor.                                  | Sup. 8 SC753 |
| E2CE              | Call for Service E2CE | Stack Plate Motor (Center)         | Abnormality was detected in the Stack Plate Motor (Center).                        | Sup. 8 SC746 |
| E2CF              | Call for Service E2CF | Stack Plate Motor (Front)          | Abnormality was detected in the Stack Plate Motor (Front).                         | Sup. 8 SC747 |
| E2D0              | Call for Service E2D0 | ED089 PK Driver                    | Abnormality was detected on the ED089 PK driver in the Transit Pass Unit Type DDP. | 5-119        |
| E2D1              | Call for Service E2D1 | Stack Plate Motor (Rear)           | Abnormality was detected in the Stack Plate Motor (Rear).                          | Sup. 8 SC748 |
| E2D2              | Call for Service E2D2 | Jogger Motor                       | Abnormality was detected in the Jogger Motor.                                      | Sup. 8 SC721 |
| E2D3              | Call for Service E2D3 | Stack Feed-Out Belt Motor          | Abnormality was detected in the Stack Feed-Out Belt Motor.                         | Sup. 8 SC745 |
| E2D4              | Call for Service E2D4 | Top Fence Motor                    | Abnormality was detected in the Top Fence Motor.                                   | Sup. 8 SC775 |
| E2D5              | Call for Service E2D5 | Bottom Fence Motor                 | Abnormality was detected in the Bottom Fence Motor.                                | Sup. 8 SC776 |
| E2D6              | Call for Service E2D6 | Exit Guide Motor                   | Abnormality was detected in the Exit Guide Motor.                                  | Sup. 8 SC725 |
| E2E7              | Call for Service E2E7 | Stapler Exit Motor                 | Abnormality was detected in the Stapler Exit Motor.                                | Sup. 8 SC733 |
| E2E8              | Call for Service E2E8 | Stapler Junction Gate Motor        | Abnormality was detected in the Stapler Junction Gate Motor.                       | Sup. 8 SC735 |
| E2E9              | Call for Service E2E9 | Shift Motor                        | Abnormality was detected in the Shift Motor.                                       | Sup. 8 SC755 |
| E2EA              | Call for Service E2EA | Positioning Roller Motor           | Abnormality was detected in the Positioning Roller Motor.                          | Sup. 8 SC723 |
| E2EB              | Call for Service E2EB | Positioning Drive Motor            | Abnormality was detected in the Positioning Drive Motor.                           | Sup. 8 SC724 |
| E2EC              | Call for Service E2EC | Stapler Tray Lift                  | Abnormality was detected in the Stapler Tray Lift.                                 | Sup. 8 SC754 |
| E2ED              | Call for Service E2ED | Shift Tray Jogger Motor            | Abnormality was detected in the Shift Tray Jogger Motor.                           | Sup. 8 SC726 |
| E2EE              | Call for Service E2EE | Shift Tray Jogger Retraction Motor | Abnormality was detected in the Shift Tray Jogger Retraction Motor.                | Sup. 8 SC728 |

## 5.7.1. E04A TRANSIT PASS UNIT COVER OPEN

| <b>PRIMARY FACTOR;</b> Detected that the Push Button Switch is turned OFF.<br>When the Front Cover is open during printing, this status is detected and is not canceled until the Reset Switch is pressed. If the cover is closed when the printer is not in operation, the status is automatically canceled. |                                                                                                                                                                                                                                                        |                                                                            |                        |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|------------------------|
| PHENOMENON                                                                                                                                                                                                                                                                                                    | CAUSES & CHECK POINTS                                                                                                                                                                                                                                  | CORRECTIONS                                                                | Maintenance Ref + Page |
| 1. FRONT COVER OPEN is detected because the Front Cover is open.                                                                                                                                                                                                                                              | 1. Transit Pass Unit Type DDP Front Cover is open.                                                                                                                                                                                                     | Close the Transit Pass Unit Type DDP Front Cover.                          |                        |
| 2. FRONT COVER OPEN is detected though the Front Cover is closed.                                                                                                                                                                                                                                             | 1. The mounting of the Transit Pass Unit Type DDP Front Cover is faulty.<br>Check points:<br>The protuberance of the cover does not coincide with the hold of the switch.<br>The switch is not pressed deeply enough at the protuberance of the cover. | Reset the Transit Pass Unit Type DDP Front Cover correctly.                |                        |
|                                                                                                                                                                                                                                                                                                               | 2. The protuberance of the Transit Pass Unit Type DDP Front Cover is faulty.                                                                                                                                                                           | Replace: Transit Pass Unit Type DDP Front Cover Assembly                   |                        |
|                                                                                                                                                                                                                                                                                                               | 3. The breaking of cables or the disconnecting of connectors.                                                                                                                                                                                          | Repair the cable S802-J420 or reset the connector in the correct position. |                        |
|                                                                                                                                                                                                                                                                                                               | 4. Switch fault.                                                                                                                                                                                                                                       | Replace: Push Button Switch (S802)                                         | 7.3.11, 7-279          |
|                                                                                                                                                                                                                                                                                                               | 5. PCB fault.                                                                                                                                                                                                                                          | Replace: EDxxx Assembly                                                    | 7.3.7, 7-275           |

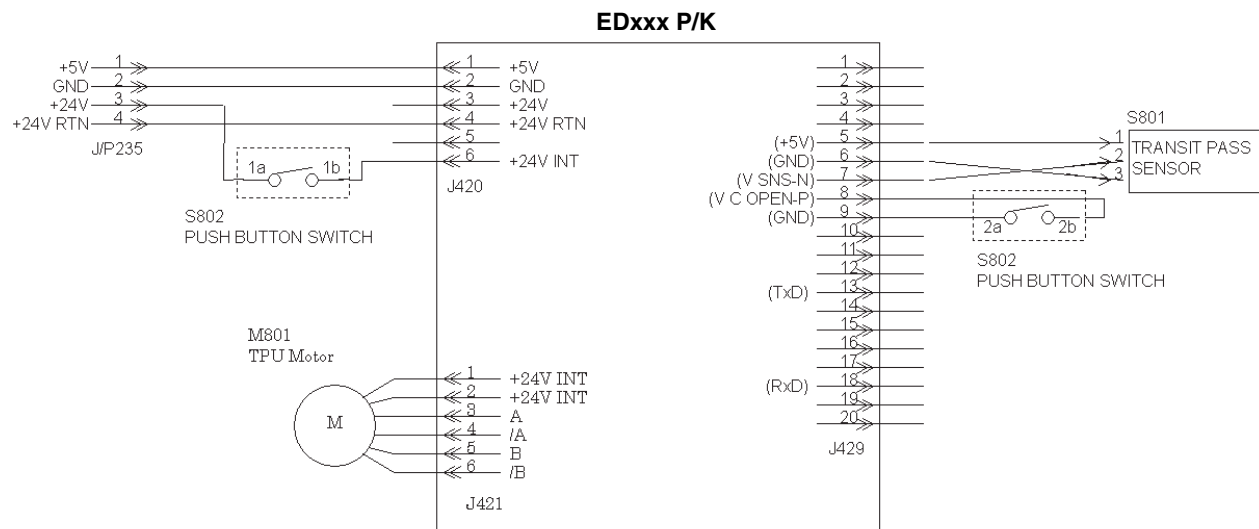


Figure 5-21. Error Code E04A

## 5.7.2. E060 PAPER ON PAPER PATH 13

| PRIMARY FACTOR; Detected that the sensor is turned ON. This status is generally detected when paper is in the finisher. |                                                               |                                                                  |                        |
|-------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|------------------------------------------------------------------|------------------------|
| PHENOMENON                                                                                                              | CAUSES & CHECK POINTS                                         | CORRECTIONS                                                      | Maintenance Ref + Page |
| 1. This phenomenon occurs.                                                                                              | 1. Paper jam occurs.                                          | Remove: Jammed Paper                                             |                        |
| 2. The Sensor detected the paper jam though a paper jam does not occur.                                                 | 1. Foreign substances are in the Paper Path.                  | Remove: Foreign substances                                       |                        |
|                                                                                                                         | 2. The face of the Sensor is contaminated.                    | Cleaning: Sensor (S801)                                          |                        |
|                                                                                                                         | 3. The breaking of cables or the disconnecting of connectors. | Repair the cable or reset the connector in the correct position. |                        |
|                                                                                                                         | 4. The mounting of the Sensor is faulty.                      | Reset the Sensor correctly.                                      |                        |
|                                                                                                                         | 5. Sensor fault.                                              | Replace: Transit Pass Sensor (S801)                              | 7.3.10, 7-278          |
|                                                                                                                         | 6. PCB fault.                                                 | Replace: EDxxx P/K                                               | 7.3.7, 7-275           |

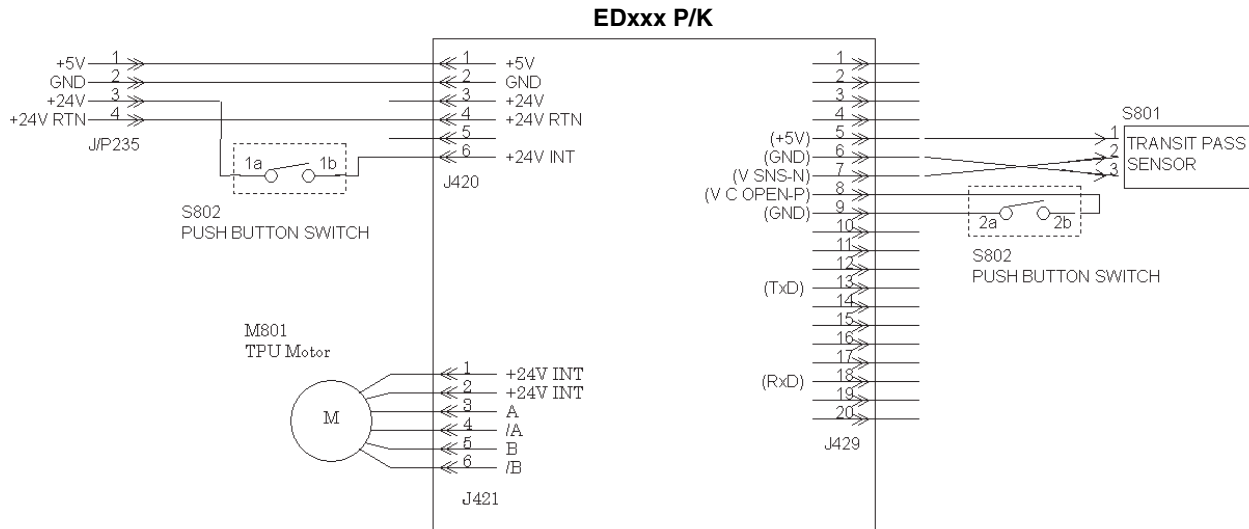


Figure 5-22. Error Code E060



### 5.7.3.

## E136 PAPER TRANSIT PASS UNIT JAM 1 E137 PAPER TRANSIT PASS UNIT JAM 2

| PRIMARY FACTOR; E136: Paper did not arrive at the Transit Pass Sensor.<br>E137: Paper did not depart from the Transit Pass Sensor. |                                                                                                                                                           |                                                                            |                                      |
|------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|--------------------------------------|
| PHENOMENON                                                                                                                         | CAUSES & CHECK POINTS                                                                                                                                     | CORRECTIONS                                                                | Maintenance Ref + Page               |
| 1. Paper jam occurs.                                                                                                               | 1. Paper is skewed.                                                                                                                                       | Remove: Skewed paper                                                       |                                      |
|                                                                                                                                    | 2. Foreign substance is on the paper path.                                                                                                                | Remove: Foreign substance                                                  |                                      |
|                                                                                                                                    | 3. Roller friction or insufficient pressure force of the Idler Roller.                                                                                    | Replace: Transit Pass Roller                                               | 7.3.6, 7-274                         |
|                                                                                                                                    | 4. The motor steps out due to overloading.                                                                                                                | Check: Load of the TPU Motor (M801)                                        |                                      |
|                                                                                                                                    | 5. Motor fault.                                                                                                                                           | Replace: TPU Motor (M801)                                                  | 7.3.4, 7-272                         |
|                                                                                                                                    | 6. PCB fault.                                                                                                                                             | Replace: CPxxx Assembly<br>EDxxx Assembly                                  | 7.1.5.1. (13), 7-205<br>7.3.7, 7-275 |
|                                                                                                                                    | 7. Paper guide is not closed properly.                                                                                                                    | Close the paper guide properly.                                            |                                      |
|                                                                                                                                    | 8. Transit Pass Unit Type DDP is not exactly connected with Engine.                                                                                       | Check connection of Engine and Transit Pass Unit Type DDP.                 |                                      |
| 2. The Transit Pass Sensor detected the jam though a jam does not occur.                                                           | 1. The Sensor is contaminated.                                                                                                                            | Cleaning: Transit Pass Sensor (S801)                                       |                                      |
|                                                                                                                                    | 2. The breaking of cables, or the disconnecting of connectors.                                                                                            | Repair the cable P429-S801 or reset the connector in the correct position. |                                      |
|                                                                                                                                    | 3. Sensor fault.<br>Check if the E060 error occurs on initialization after masking of the Transit Pass Sensor window. Then Transit Pass Sensor is normal. | Replace: Transit Pass Sensor (S801)                                        | 7.3.10, 7-278                        |

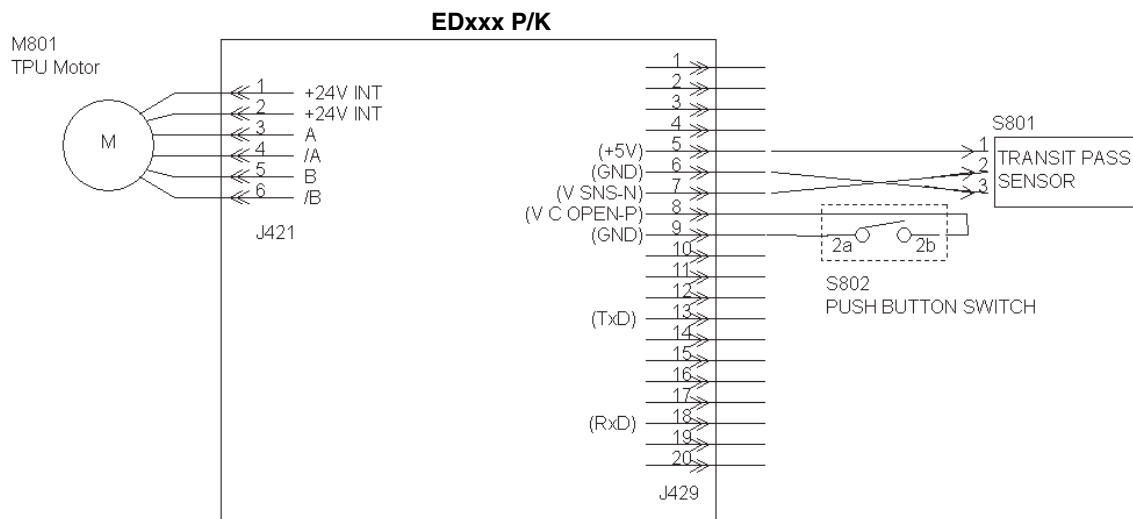


Figure 5-23. Error Code E136, E137

## 5.7.4. E2D0 TRANSIT PASS UNIT DRIVER ERROR



| <b>PRIMARY FACTOR;</b> Abnormal drive power supply is detected on the ED089 P/K of the Transit Pass Unit Type DDP. |                                                                |                                                                                                                                                                                                               |                                                              |
|--------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------|
| <b>PHENOMENON</b>                                                                                                  | <b>CAUSES &amp; CHECK POINTS</b>                               | <b>CORRECTIONS</b>                                                                                                                                                                                            | <b>Maintenance<br/>Ref + Page</b>                            |
| 1. White pin of the +24V circuit breaker (CB1) on the EDxxx P/K is not protruded.                                  | 1. The breaking of cables, or the disconnecting of connectors. | Repair the cable or reset the connector in the correct position.<br>Power supply (CN1)-RB301 P/K<br>Power supply (CN2)-EDxxx P/K<br>Power supply (CN2)-P820<br>Power supply (CN3)-EDxxx P/K<br>P621-RB301 P/K | <a href="#">3.13, 3-33</a>                                   |
|                                                                                                                    | 2. PCB fault.                                                  | Replace: EDxxx Assembly<br>RB301 Assembly                                                                                                                                                                     | <a href="#">7.3.7, 7-275</a><br><a href="#">7.3.8, 7-276</a> |
|                                                                                                                    | 3. Power Supply fault.                                         | Replace: Power supply                                                                                                                                                                                         | <a href="#">7.1.5.1. (16), 7-208</a>                         |
| 2. White pin of the +24V circuit breaker (CB1) on the EDxxx P/K is protruded.                                      | 1. +24V is over current because of short circuit of the load.  | Load isolation from Power Supply.<br>Power supply (CN2)-P822<br>J421-M801                                                                                                                                     | <a href="#">3.13, 3-33</a>                                   |
|                                                                                                                    | 2. Power supply circuit is unusual.                            | Replace: Power supply                                                                                                                                                                                         | <a href="#">7.1.5.1. (16), 7-208</a>                         |



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# Chapter 6. Maintenance Diagnostics

Subject to the controller.



## Chapter 7. Disassembling, Assembling & Adjustment

### 7.1. Engine Parts

#### 7.1.1. Removal of the Optical Unit

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**CAUTION:**

When you remove the Optical Unit, only remove the parts mentioned in the procedure below. DO NOT remove any other parts, because this can damage the Optical Unit.

**Applicable jigs and tools:** ⊕ Screwdriver, ⊕ Screwdriver(Short).

**[Disassembling Procedures]**

1. Open the Front Cover. (Refer to item 3.3.1 on page 3-9)
2. Remove the Top Cover.
3. Unscrew the six ⊕ screws to remove the Opt. Cover.
4. Unscrew the two ⊕ screws to remove the Panel Holder Assembly.
5. Pull the two Shaft Holders.
6. Disconnect the three connectors from the Optical Unit.
7. Hold up the right side of the Optical Unit on the Operator's side (on the opposite side of the Stacker) and remove the Optical Unit by sliding it to the right. (Perform the operation in the direction of arrow **A** and then in the direction of arrow **B**.)

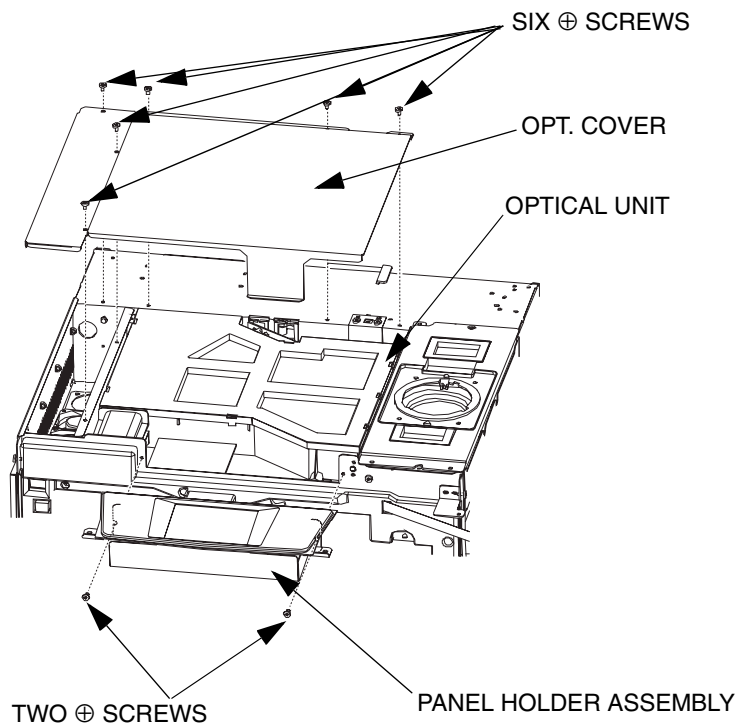


Figure 7-1. Removal of the Optical Unit

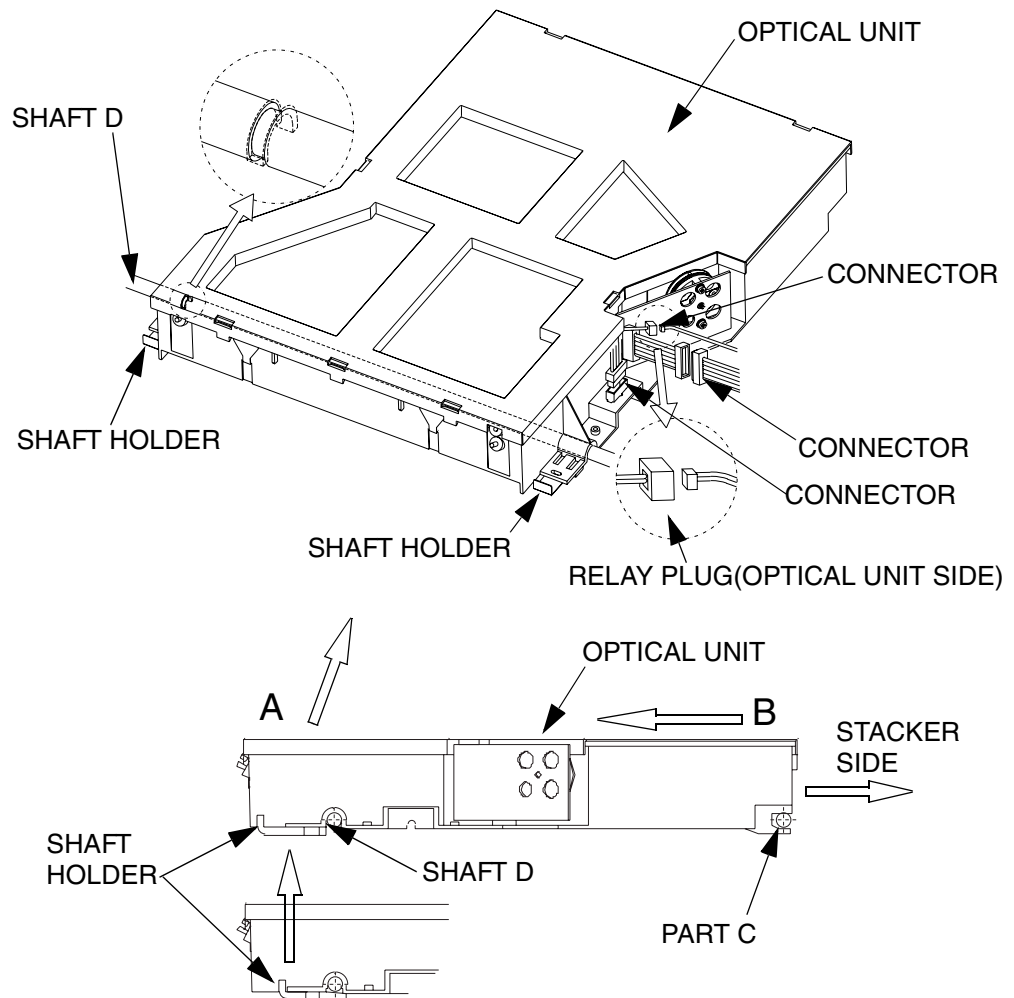


Figure 7-2. Removal of the Optical Unit  
[Assembling Procedures]

1. Insert the mounting section C of the Optical Unit into the Shaft on the left (shaft on the Stacker side) as viewed from the front.
2. By holding up the right side of the Optical Unit (on the opposite side of the Stacker) a little, insert the Optical Unit in place by moving it in the longitudinal direction so that the position protrusion of the Optical unit fits into the ditch of Shaft D.
3. When the fitting position is determined, press in the Optical Unit until the mounting section of the Optical Unit securely fits into the Shaft D.
4. Insert the Shaft Holders until they stop.
5. Then, perform the disassembling procedures in the reverse order from 4.
6. Adjust the Laser Power to value of attached data. (Refer to item 8.4.5.1 on page 8-13)

(ATTACHMENT DATA SHEET)

After changing the laser unit, please input the value of Laser Power shown below with the maintenance panel, by using the diagnostic routine.

S/N of laser unit:

|          |    |    |    |    |    |    |
|----------|----|----|----|----|----|----|
| KPDG No. | 8B | 8C | 90 | 91 | 92 | 93 |
|----------|----|----|----|----|----|----|

|  |       |    |    |    |    |    |    |  |
|--|-------|----|----|----|----|----|----|--|
|  | Value | XX | XX | XX | XX | XX | XX |  |
|--|-------|----|----|----|----|----|----|--|



## 7.1.2. Removal of the EP Block

### 7.1.2.1. Removal of the Drum Unit Parts

#### 7.1.2.1. (1) Removal of the Drum Unit

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

Applicable jigs and tools: ⊕ Screwdriver, Lint-Free Cloth.

**[Disassembling Procedures]**

1. Open the Front Cover.
2. Open the TH Unit.
3. Remove the Drum Center Lock.  
(Push the Tab and take the Drum Center Lock out.)

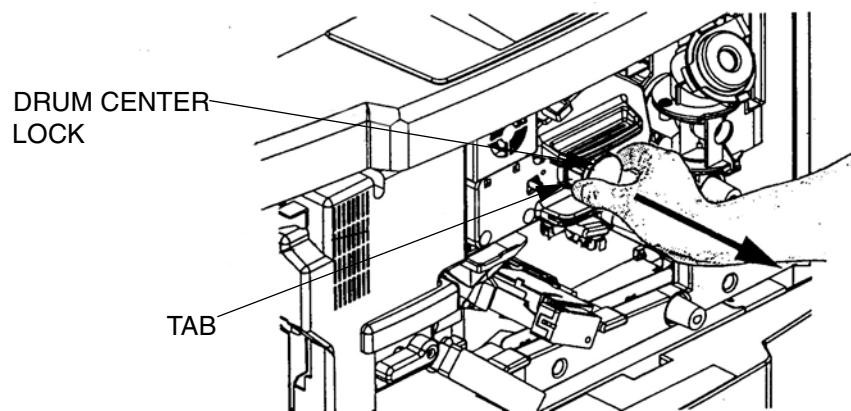


Figure 7-3. Removal of the Drum Unit

4. Draw out the Drum Unit, then hold the Handle and lift the Drum Unit to release the catch and take the Drum Unit out.

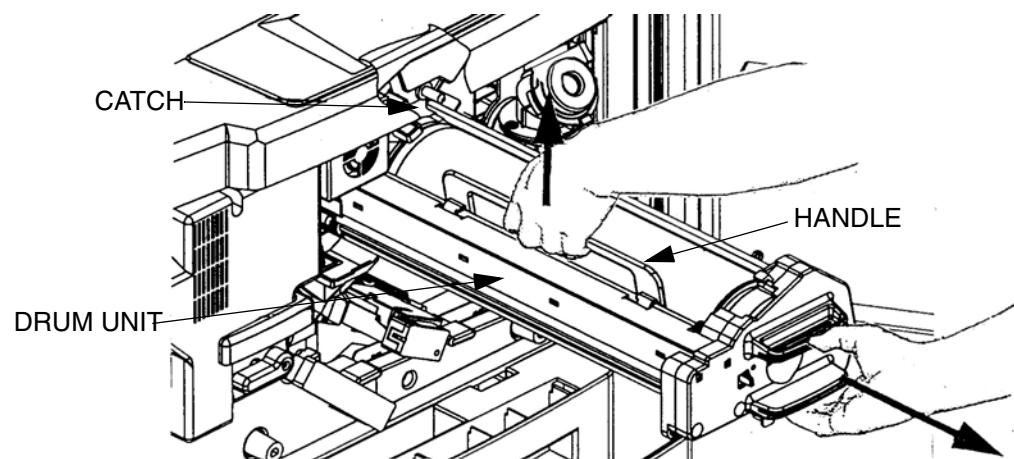


Figure 7-4. Removal of the Drum Unit

**CAUTION:**

When the Drum Unit is out, do not expose the drum surface to the sun and take care not to make any scratches on the drum surface.

### [Assembling Procedures]

1. Align the groove on both sides of the Drum Unit onto the Drum Unit Front Guide located on the front side of the Console Frame.
2. Push the front grip of the Drum Unit until the Drum Unit is set in the proper position.
3. Perform the disassembling procedures in the reverse order.

**Note:** Make sure that the Drum Center Lock is latched on the Center Shaft properly.

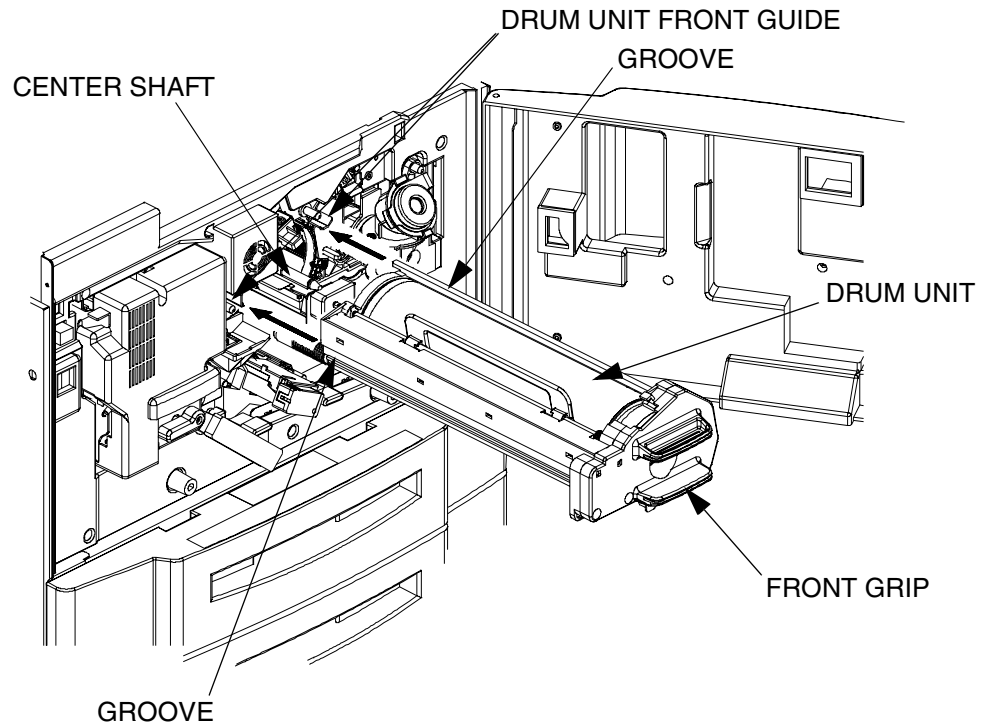


Figure 7-5. Removal of the Drum Unit

**Note:** Reset the Drum usage counter in case Drum Unit is replaced in the procedure.

**CAUTION:**  
Disposal of the Drum Unit is the customer's responsibility.  
Dispose of it in accordance with the state's industrial waste law.

**WARNING:**  
Never attempt to burn the used Drum Unit. Risk of explosion if exposed to fire.

## 7.1.2.2. Removal of the Charger Unit Parts

### 7.1.2.2. (1) Removal of the Charger Unit

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Open the Front Cover.
2. Draw out the Drum Unit. ([Refer to item 7.1.2.1. \(1\) on page 7-4](#))
3. Loosen the ⊕ screw.
4. Remove the Charger Stopper.
5. Draw out the Charger Unit.

**Note:** Keep the slit part of the Grid away from hands and objects to prevent it from fingerprints, scratches, and dust.

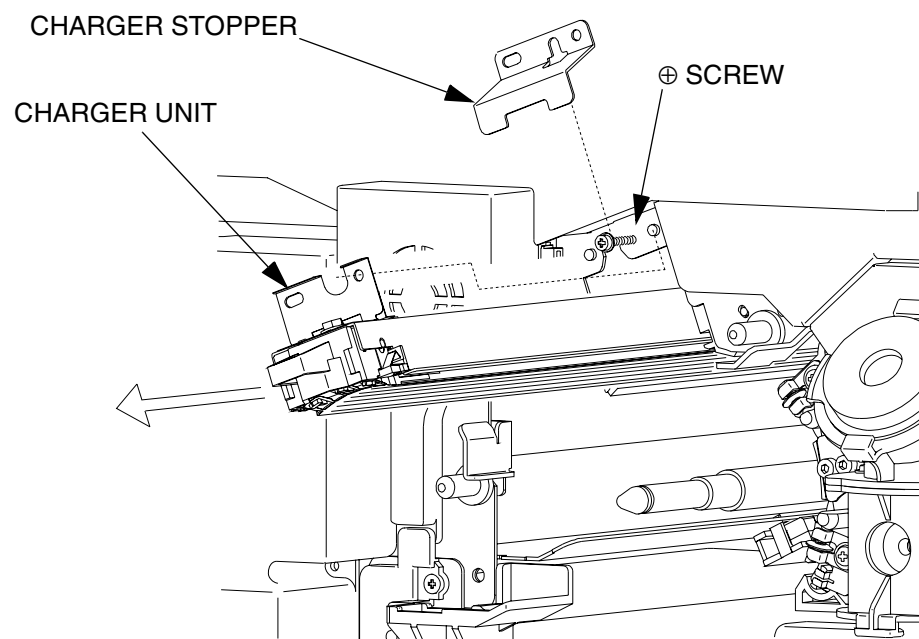


Figure 7-6. Removal of the Charger Unit

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

**[Checks]**

Make sure that the Holes of the Charger Unit are put into the half blank on the Frame.

### 7.1.2.2. (2) Removal of the Grid

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Remove the Charger Unit. (Refer to item 7.1.2.2. (1) on page 7-6).
2. Unscrew the ⊕ screw to raise the Grid Tensioner Assembly.
3. Remove the Grid from the three hooks of the Grid Stand (F).
4. Remove the Grid from the three hooks of the Grid Tensioner Assembly.

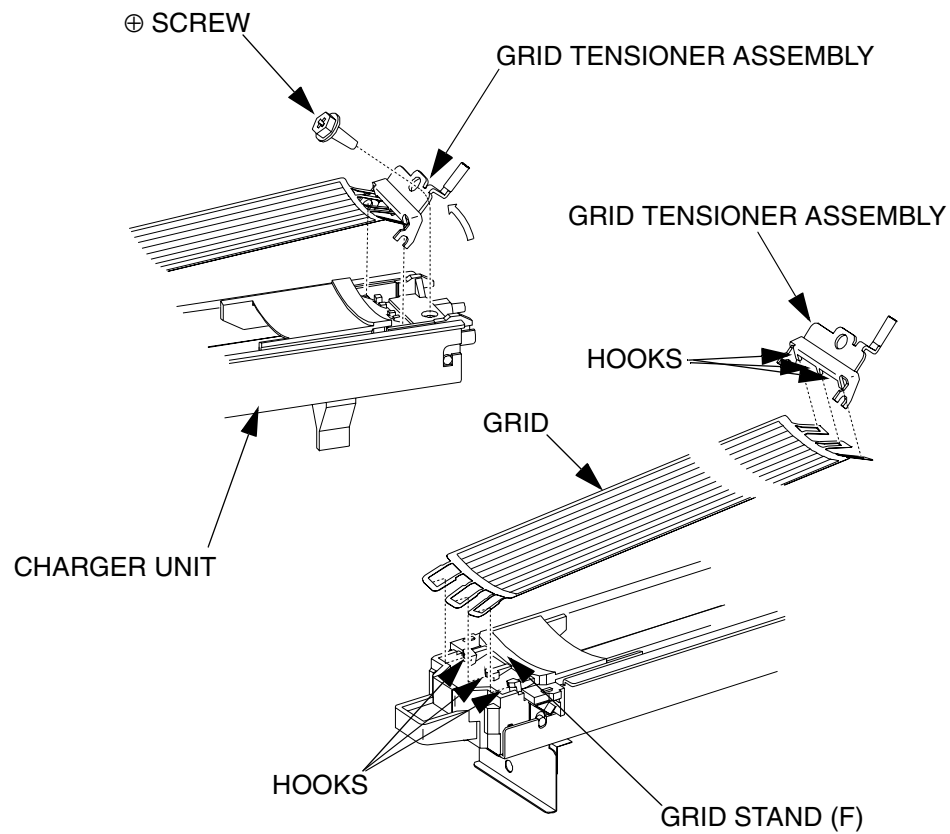


Figure 7-7. Removal of the Grid

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

**Note:** Keep the slit part of the Grid away from hands and objects to prevent it from fingerprints, scratches, and dust.

### 7.1.2.2. (3) Removal of the Corotron Wire

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver, Tweezers, Lint-Free Cloth.

**[Disassembling Procedures]**

1. Remove the Charger Unit. (Refer to item 7.1.2.2. (1) on page 7-6)
2. Remove the Grid. (Refer to item 7.1.2.2. (2) on page 7-7)
3. Remove the Grid Stand (R) and then unscrew the ⊕ screw to remove the Grid Stand (F).
4. Remove the two Dampers from the Corotron Wire.
5. Remove the Wire Tension Spring by using the tweezers and raise it with the Corotron Wire.
6. Remove the Corotron Wire from the Wire Contact Spring.
7. Remove the Wire Tension Spring from the Corotron Wire.
8. Clean the Shield Plate and Grid. (Refer to item 4.4.8 on page 4-19)

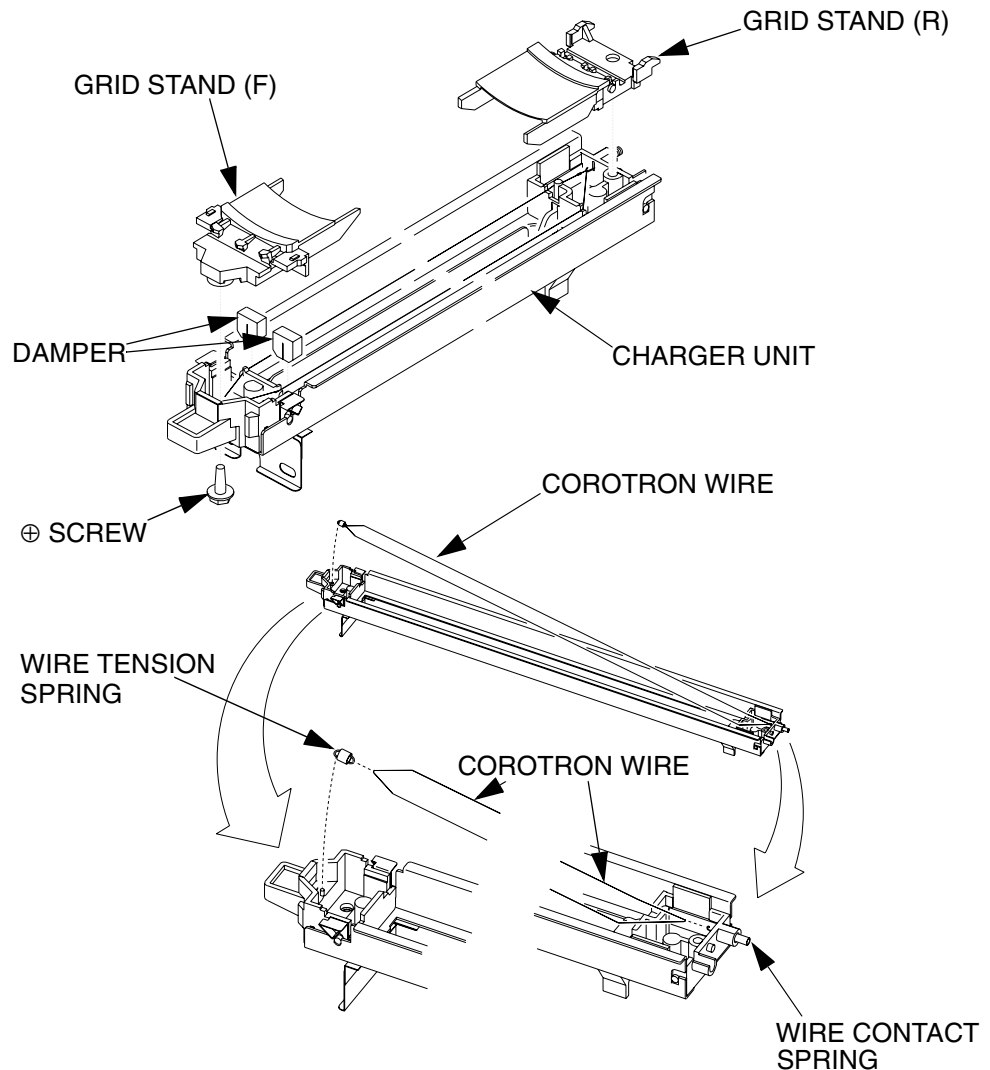


Figure 7-8. Removal of the Corotron Wire

## [Assembling Procedures]

1. Perform the disassembling procedures in the reverse order Nos. 7-4.

### Note:

- Locate the clamp of the Corotron Wire in the appointed location.
- Locate the Corotron Wire correctly in the appointed fillets of the Holder (R) and Holder (L).
- Do not touch the Corotron Wire within the area indicated in the figure below.
- If the Corotron Wire was touched, gently wipe the Corotron Wire with a clean, Lint-Free Cloth dampened with water. Wipe again with a clean, dry, Lint-Free Cloth. (Only the new Corotron Wire can be wiped. Never use alcohol instead of water.)
- Locate the two Dampers in the appointed location.

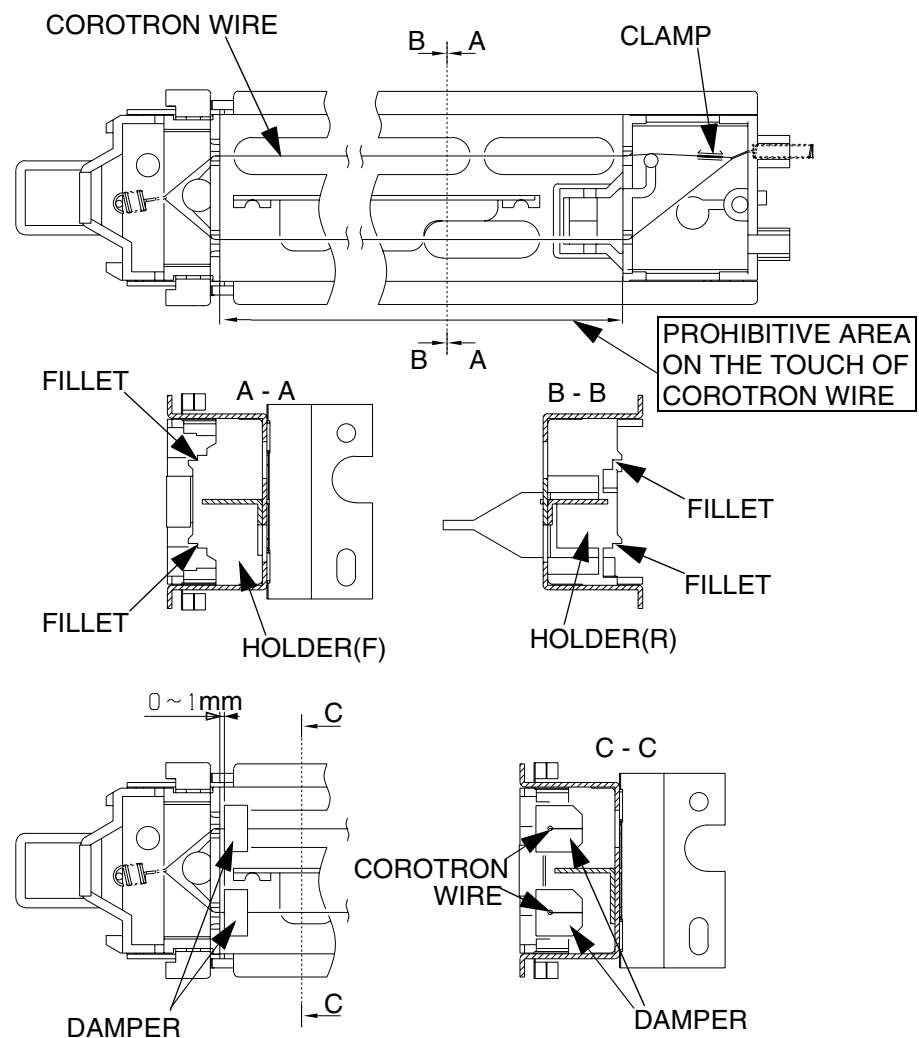


Figure 7-9. Assembling of the Corotron Wire

2. Perform the disassembling procedures in the reverse order Nos. 3-1.

**Note:** Keep the slit part of the Grid and Corotron Wire away from hands and objects to prevent them from fingerprints, scratches, and dust.

### 7.1.2.3. Removal of the Developer Unit Parts

#### 7.1.2.3. (1) Removal of the Developer Unit

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

Applicable jigs and tools: ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Open the Front Cover.
2. Draw out the Drum Unit. ([Refer to item 7.1.2.1. \(1\) on page 7-4](#))
3. Unscrew the ⊕ screw to remove the Dev. Support Plate Assembly.

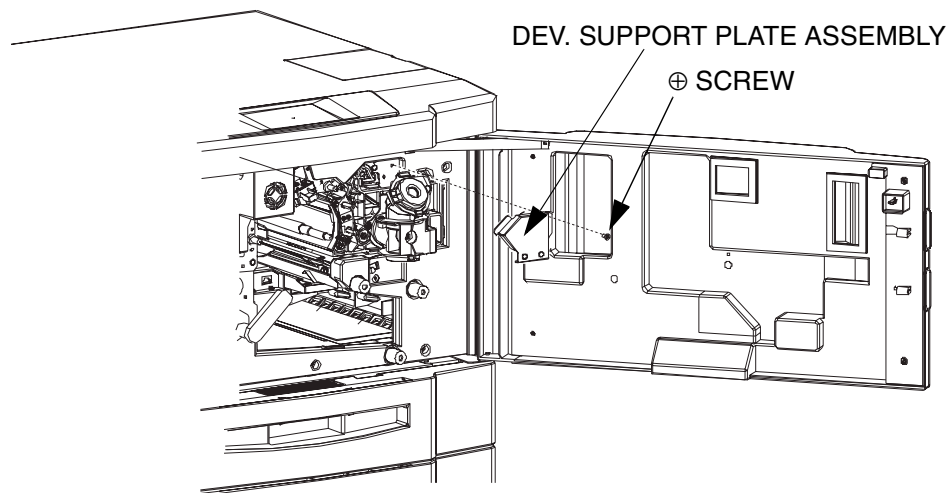


Figure 7-10. Removal of the Developer Unit

4. Draw out the Developer Unit.

**Note:** When the Developer unit is inclined, some developer may be spilled.

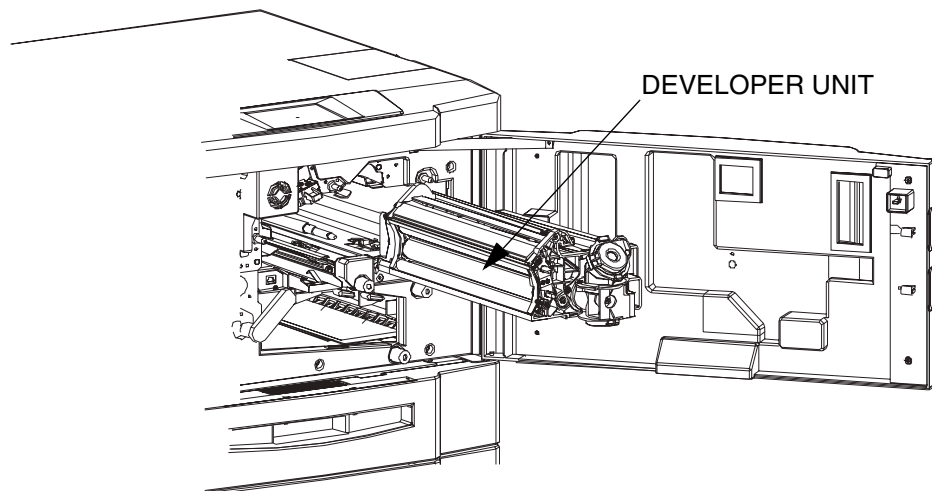


Figure 7-11. Removal of the Developer Unit

### [Assembling Procedures]

Perform the disassembling procedures in the reverse order.

**CAUTION:**

Be sure to use the exclusive Developer Unit (P/N N000603B) for this printer.  
It becomes the cause of failure when the other Developer Unit is used.

**Note:** Insert the Dev. Support Plate Assembly behind the frame.

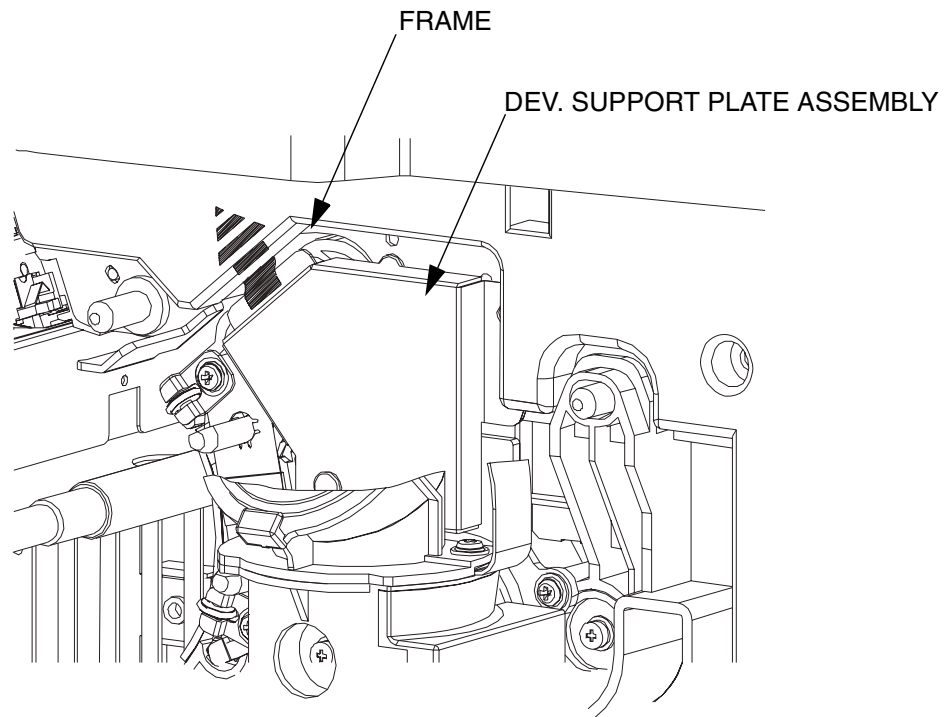


Figure 7-12. Removal of the Developer Unit



### 7.1.2.3. (2) Removal of the Bottle Set Sensor

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Open the Front Cover.
2. Draw out the Drum Unit. (Refer to item 7.1.2.1. (1) on page 7-4)
3. Draw out the Developer Unit. (Refer to item 7.1.2.3. (1) on page 7-10)
4. Unscrew the two ⊕ screws to remove the Dev. Duct Assembly.
5. Remove the Dev. Duct SW Cover.
6. Remove the Faston terminal of the Dev. Cable to remove the Bottle Set Sensor.

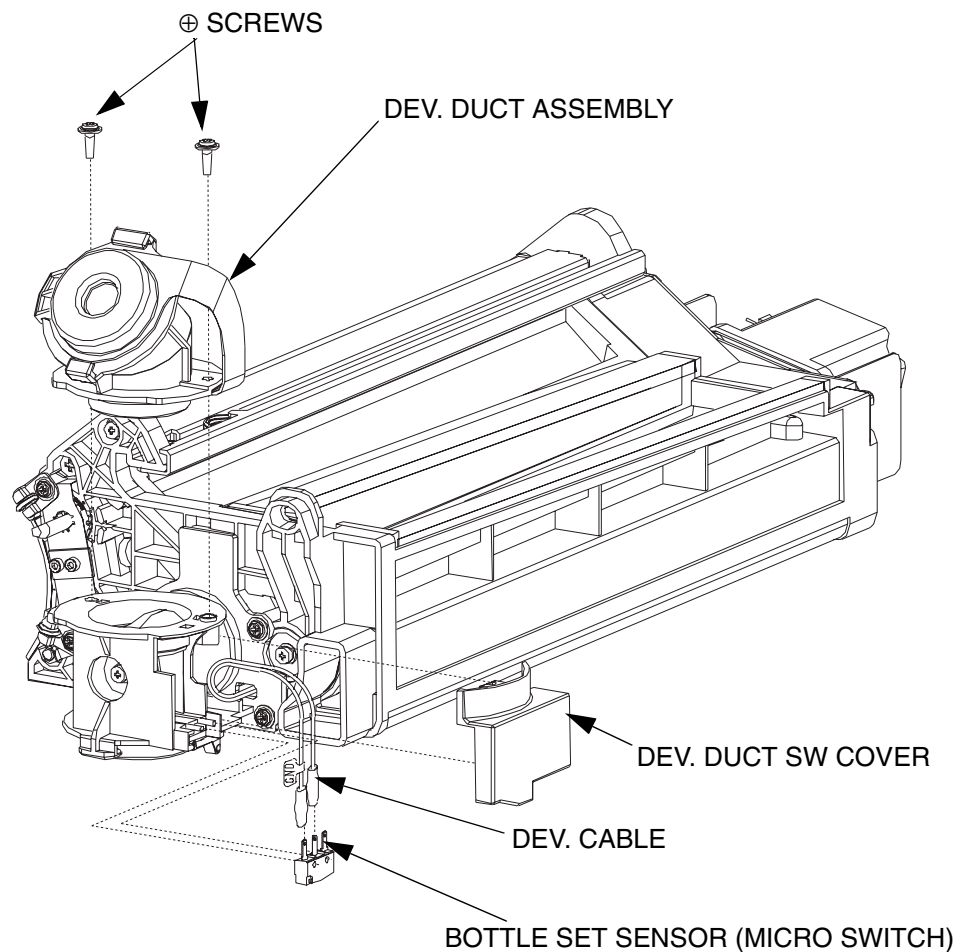


Figure 7-13. Removal of the Bottle Set Sensor

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

**[Checks]**

Make sure that the Faston terminal is correctly connected.

### 7.1.2.3. (3) Removal of the Dev. Motor Assembly

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

Applicable jigs and tools: ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Open the Front Cover.
2. Draw out the Drum Unit. (Refer to item 7.1.2.1. (1) on page 7-4)
3. Draw out the Developer Unit. (Refer to item 7.1.2.3. (1) on page 7-10)
4. Disconnect the connector.
5. Unscrew the three ⊕ screws to remove the Dev. Motor Assembly.

**Note:** When removing the Dev. Motor Assembly, the Motor Shim and the Motor Cooling Plate come off.

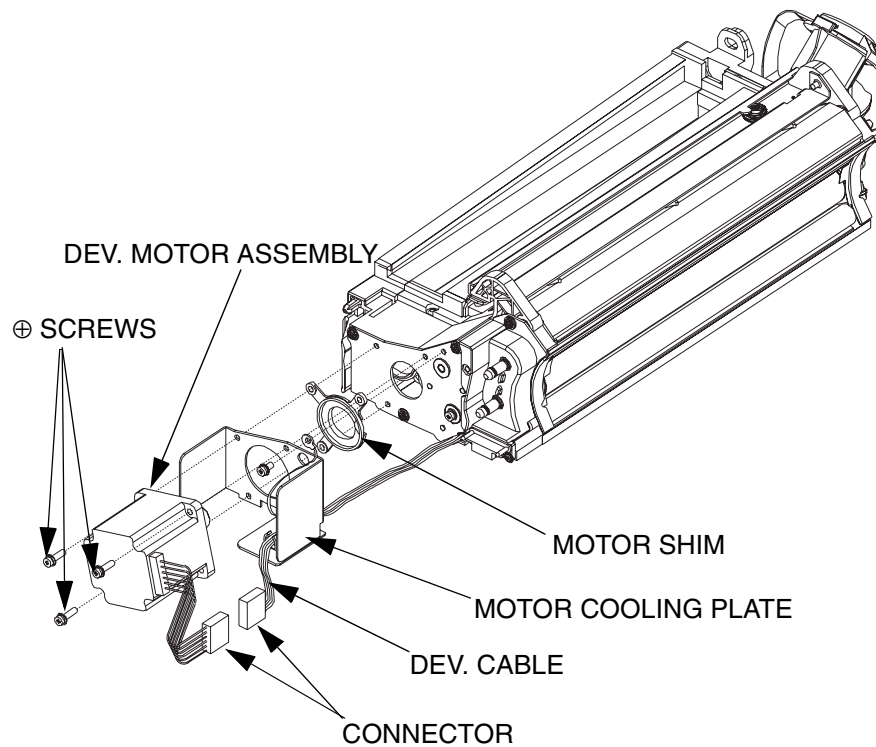


Figure 7-14. Removal of the Dev. Motor Assembly

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

#### 7.1.2.3. (4) Removal of the O-ring

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver, Lint-Free Cloth.

**[Disassembling Procedures]**

1. Open the Front Cover.
2. Draw out the Drum Unit. (Refer to item 7.1.2.1. (1) on page 7-4)
3. Draw out the Developer Unit. (Refer to item 7.1.2.3. (1) on page 7-10)
4. Remove the two O-rings from the Magnet Roll Shaft.

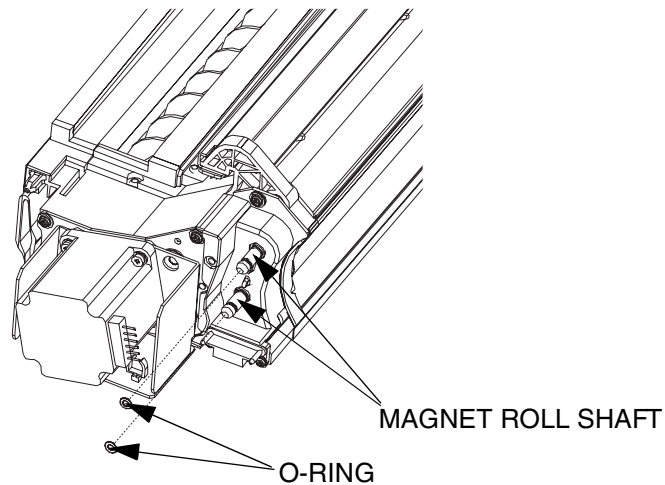


Figure 7-15. Removal of the O-ring

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

**Note:** Clean the O-rings with Lint-Free Cloth.

### 7.1.2.3. (5) Removal of the Drum Guide Roller

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

Applicable jigs and tools: ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Open the Front Cover.
2. Draw out the Drum Unit. (Refer to item 7.1.2.1. (1) on page 7-4)
3. Draw out the Developer Unit. (Refer to item 7.1.2.3. (1) on page 7-10)
4. Unscrew the two ⊕ screws to remove the two Drum Roller Holders and the two Drum Guide Roller.

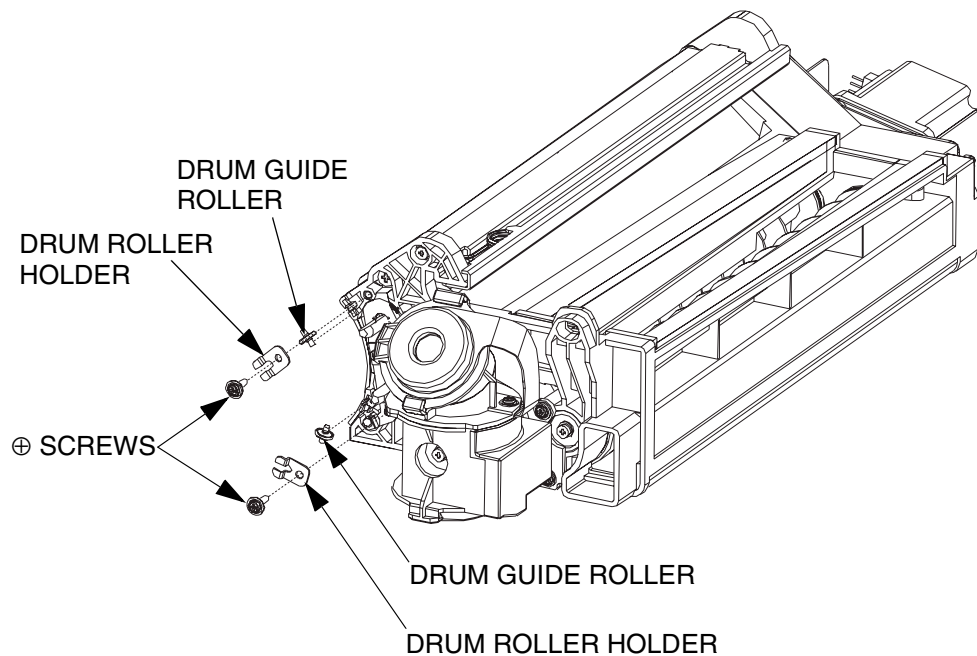


Figure 7-16. Removal of the Drum Guide Roller

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

**[Checks]**

Make sure that the two Drum Guide Roller Assemblies rotate smoothly.

### 7.1.2.3. (6) Removal of the Idler Gear (Z28) Assembly

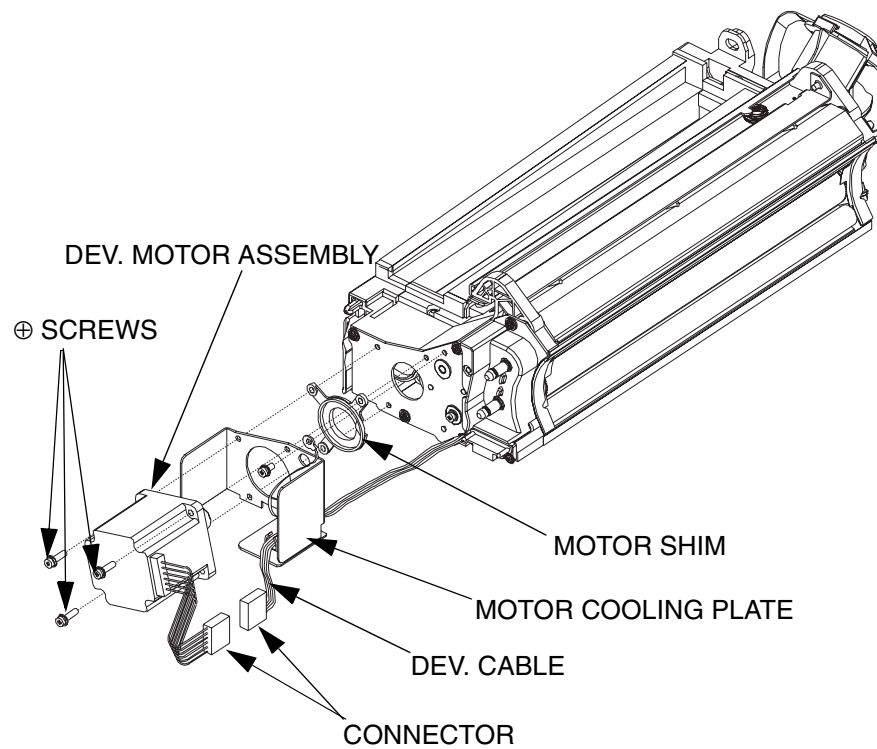
**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

Applicable jigs and tools: ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Open the Front Cover.
2. Draw out the Drum Unit. (Refer to item 7.1.2.1. (1) on page 7-4)
3. Draw out the Developer Unit. (Refer to item 7.1.2.3. (1) on page 7-10)
4. Remove the Dev. Motor Assembly. (Refer to item 7.1.2.3. (3) on page 7-13)
5. Unscrew the ⊕ screw to remove the Ground Cable.
6. Remove the Motor Cooling Plate and the Motor Shim.



#### VIEW FROM OPPOSITE THE OPERATOR'S SIDE

Figure 7-17. Removal of the Idler Gear (Z28) Assembly

7. Unscrew the ⊕ screw to remove the Dev. Gear Cover.

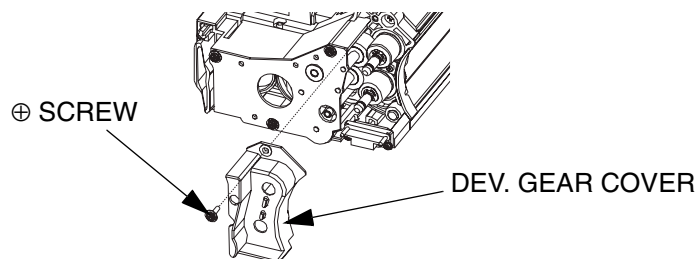


Figure 7-18. Removal of the Idler Gear (Z28) Assembly

8. Unscrew the three ⊕ screws to remove the Motor Plate Weld Assembly.
9. Remove the Snap Ring E to remove the Idler Gear (Z28) Assembly.

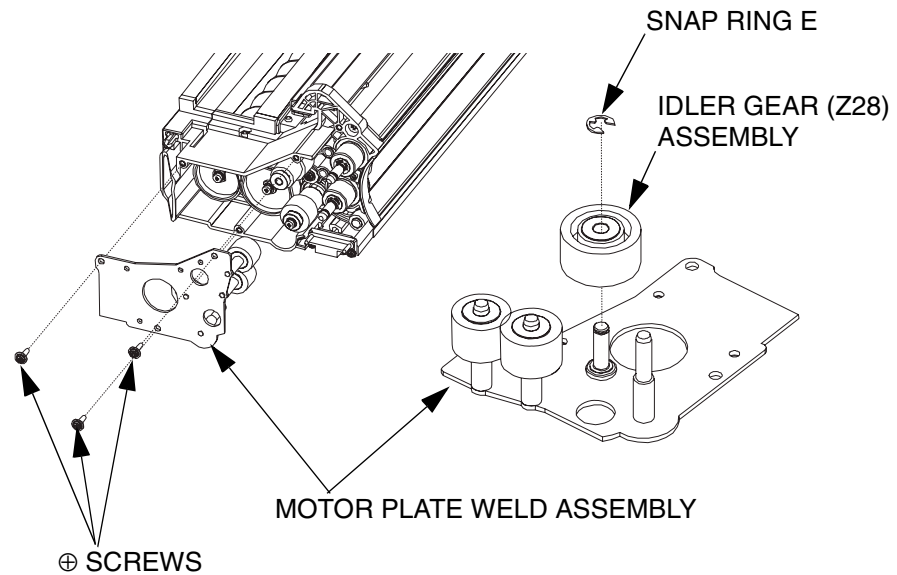


Figure 7-19. Removal of the Idler Gear (Z28) Assembly

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

### 7.1.2.3. (7) Removal of the Idler Gear (Z21) Assembly

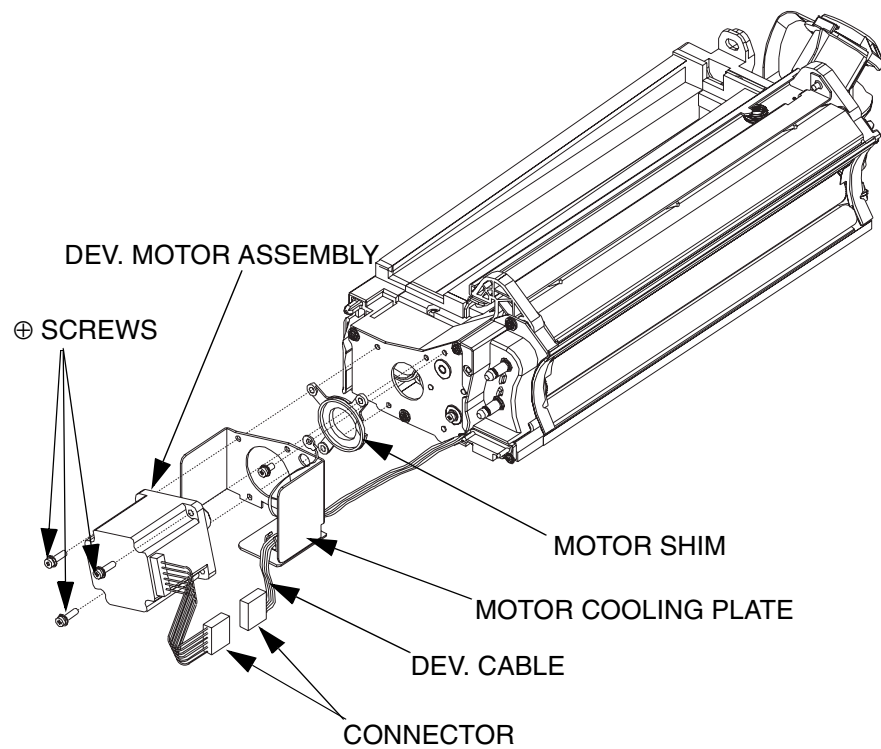
**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

Applicable jigs and tools: ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Open the Front Cover.
2. Draw out the Drum Unit. (Refer to item 7.1.2.1. (1) on page 7-4)
3. Draw out the Developer Unit. (Refer to item 7.1.2.3. (1) on page 7-10)
4. Remove the Dev. Motor Assembly. (Refer to item 7.1.2.3. (3) on page 7-13)
5. Unscrew the ⊕ screw to remove the Ground Cable.
6. Remove the Motor Cooling Plate and the Motor Shim.



VIEW FROM OPPOSITE THE OPERATOR'S SIDE

Figure 7-20. Removal of the Idler Gear (Z21) Assembly

7. Unscrew the ⊕ screw to remove the Dev. Gear Cover.

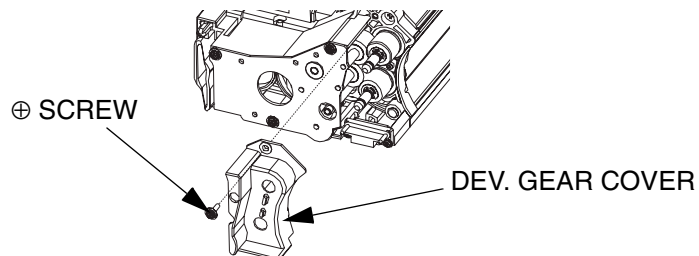


Figure 7-21. Removal of the Idler Gear (Z21) Assembly

8. Unscrew the three ⊕ screws to remove the Motor Plate Weld Assembly.
9. Draw out the Idler Gear (Z21) Assembly.

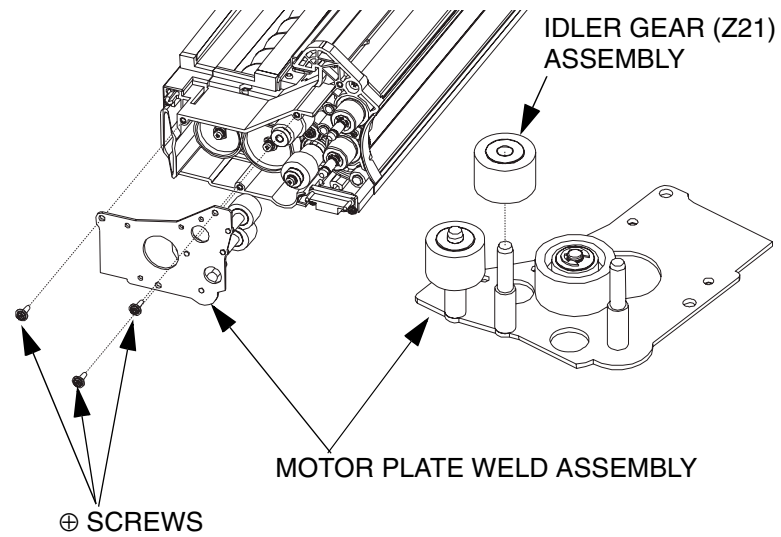


Figure 7-22. Removal of the Idler Gear (Z21) Assembly

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.



### 7.1.2.3. (8) Removal of the Idler Gear (Z20-L) Assembly

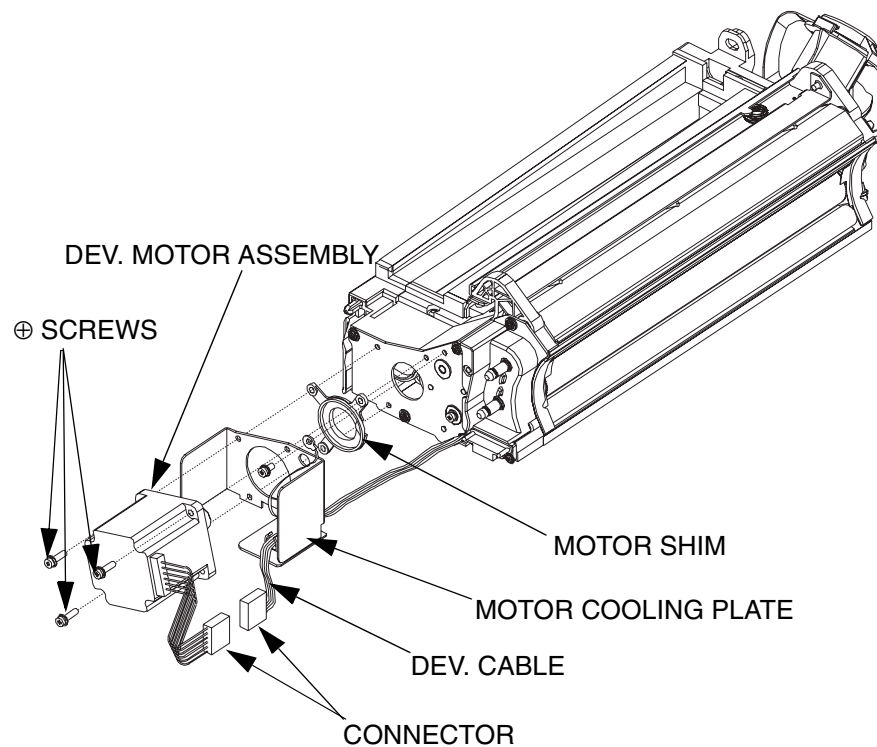
**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

Applicable jigs and tools: ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Open the Front Cover.
2. Draw out the Drum Unit. (Refer to item 7.1.2.1. (1) on page 7-4)
3. Draw out the Developer Unit. (Refer to item 7.1.2.3. (1) on page 7-10)
4. Remove the Dev. Motor Assembly. (Refer to item 7.1.2.3. (3) on page 7-13)
5. Unscrew the ⊕ screw to remove the Ground Cable.
6. Remove the Motor Cooling Plate and the Motor Shim.



#### VIEW FROM OPPOSITE THE OPERATOR'S SIDE

Figure 7-23. Removal of the Idler Gear (Z20-L) Assembly

7. Unscrew the ⊕ screw to remove the Dev. Gear Cover.

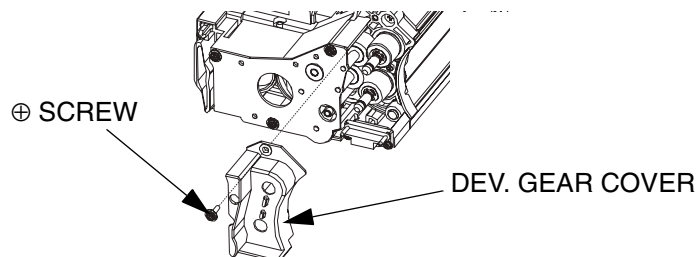


Figure 7-24. Removal of the Idler Gear (Z20-L) Assembly

8. Unscrew the three ⊕ screws to remove the Motor Plate Weld Assembly.
9. Draw out the Idler Gear (Z20-L) Assembly.

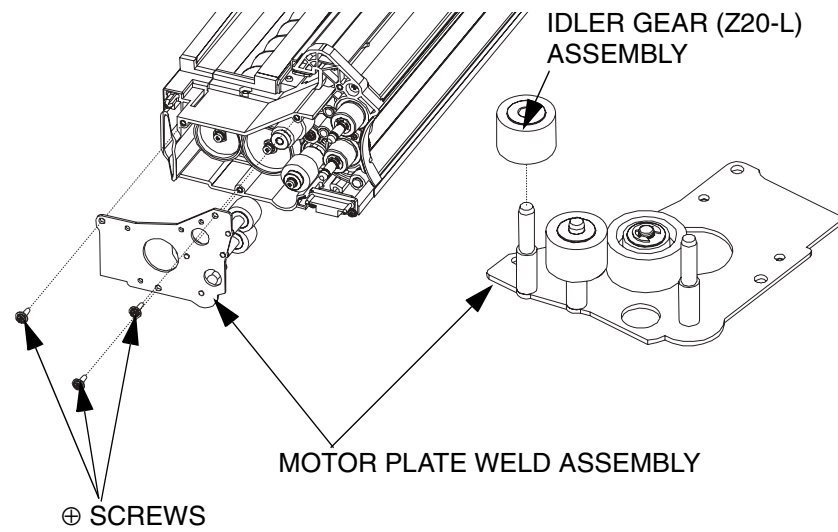


Figure 7-25. Removal of the Idler Gear (Z20-L) Assembly

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

### 7.1.2.3. (9) Removal of the Idler Gear (Z17/22) Assembly

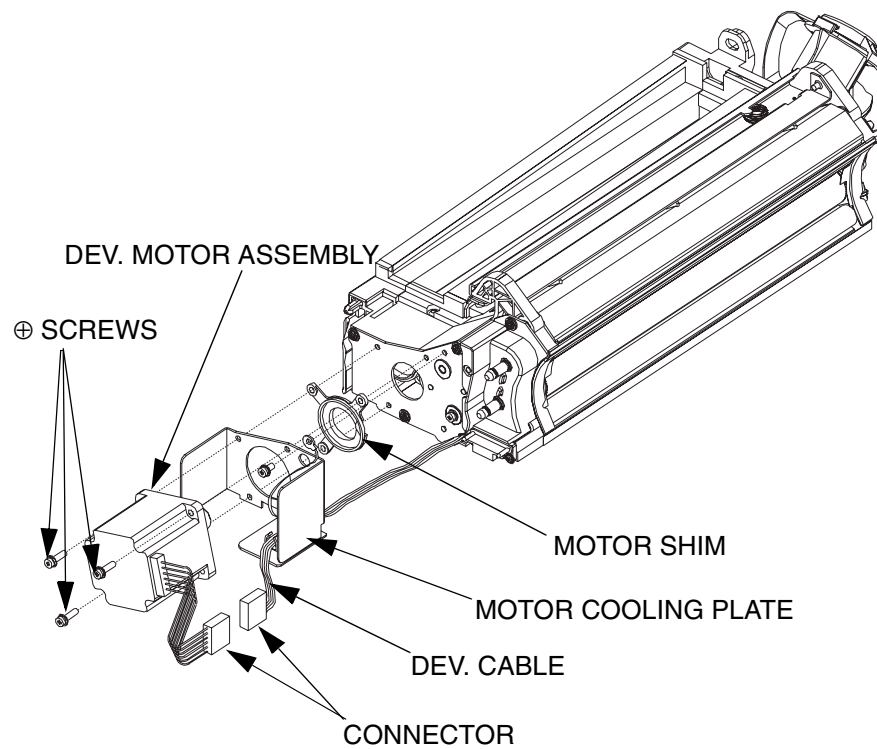
**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

Applicable jigs and tools: ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Open the Front Cover.
2. Draw out the Drum Unit. (Refer to item 7.1.2.1. (1) on page 7-4)
3. Draw out the Developer Unit. (Refer to item 7.1.2.3. (1) on page 7-10)
4. Remove the Dev. Motor Assembly. (Refer to item 7.1.2.3. (3) on page 7-13)
5. Unscrew the ⊕ screw to remove the Ground Cable.
6. Remove the Motor Cooling Plate and the Motor Shim.



#### VIEW FROM OPPOSITE THE OPERATOR'S SIDE

Figure 7-26. Removal of the Idler Gear (Z17/22) Assembly

7. Unscrew the ⊕ screw to remove the Dev. Gear Cover.

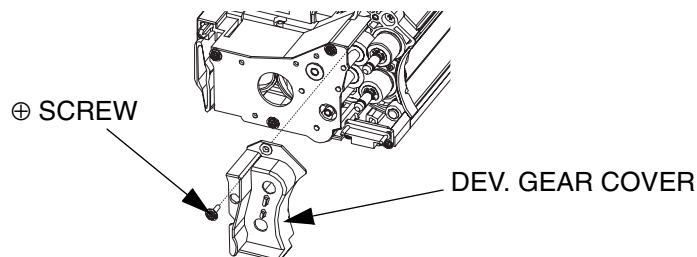


Figure 7-27. Removal of the Idler Gear (Z17/22) Assembly

8. Unscrew the three ⊕ screws to remove the Motor Plate Weld Assembly.

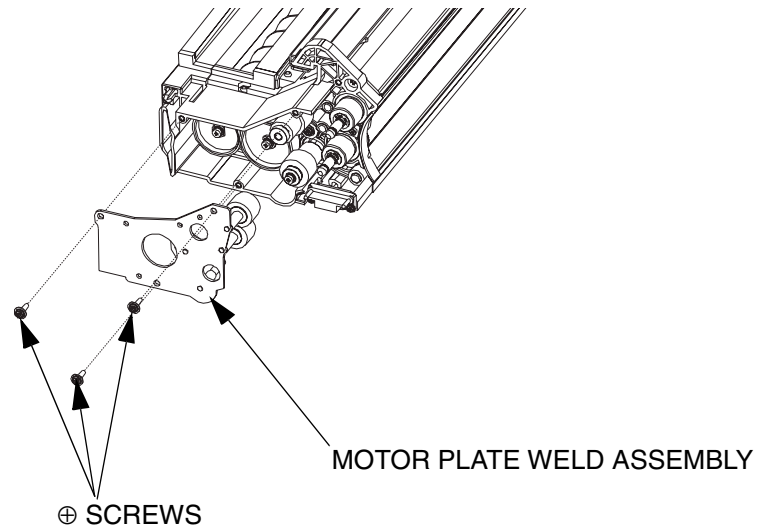


Figure 7-28. Removal of the Idler Gear (Z17/22) Assembly

9. Draw out the Idler Gear (Z17/22) Assembly.

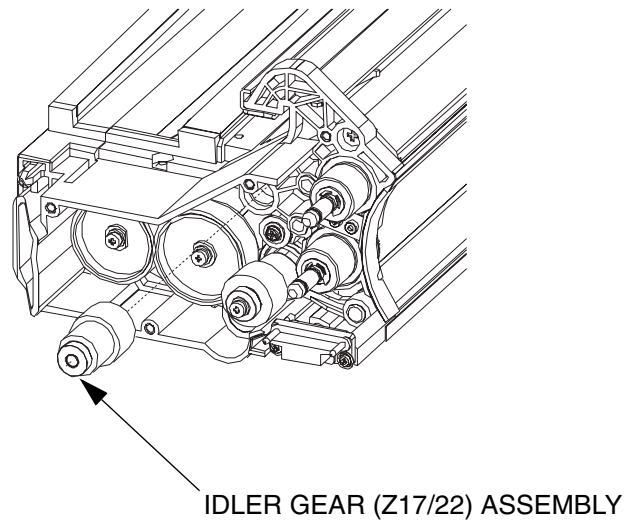


Figure 7-29. Removal of the Idler Gear (Z17/22) Assembly

#### [Assembling Procedures]

Perform the disassembling procedures in the reverse order.

### 7.1.2.3. (10) Removal of the TR Gear M

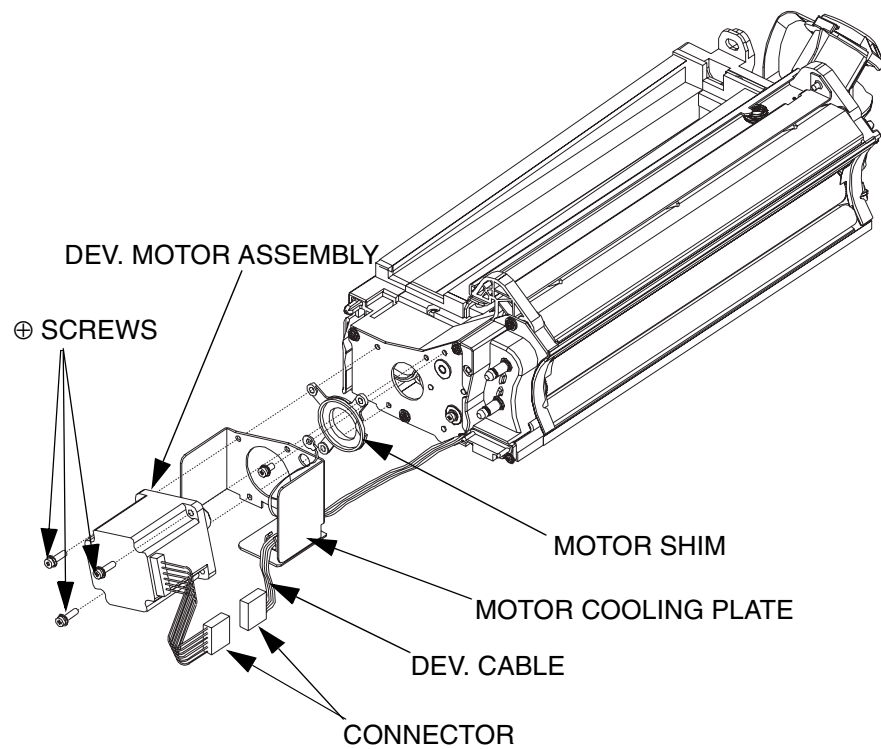
**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

Applicable jigs and tools: ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Open the Front Cover.
2. Draw out the Drum Unit. (Refer to item 7.1.2.1. (1) on page 7-4)
3. Draw out the Developer Unit. (Refer to item 7.1.2.3. (1) on page 7-10)
4. Remove the Dev. Motor Assembly. (Refer to item 7.1.2.3. (3) on page 7-13)
5. Unscrew the ⊕ screw to remove the Ground Cable.
6. Remove the Motor Cooling Plate and the Motor Shim.



VIEW FROM OPPOSITE THE OPERATOR'S SIDE

Figure 7-30. Removal of the TR Gear M

7. Unscrew the ⊕ screw to remove the Dev. Gear Cover.

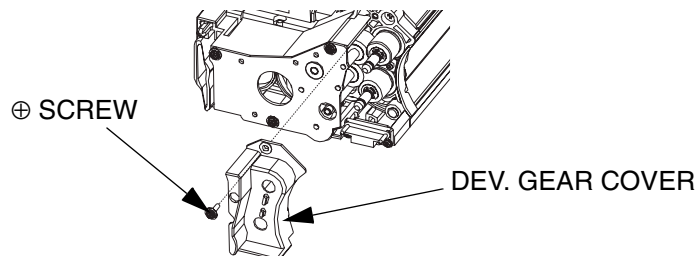


Figure 7-31. Removal of the TR Gear M

8. Unscrew the three ⊕ screws to remove the Motor Plate Weld Assembly.

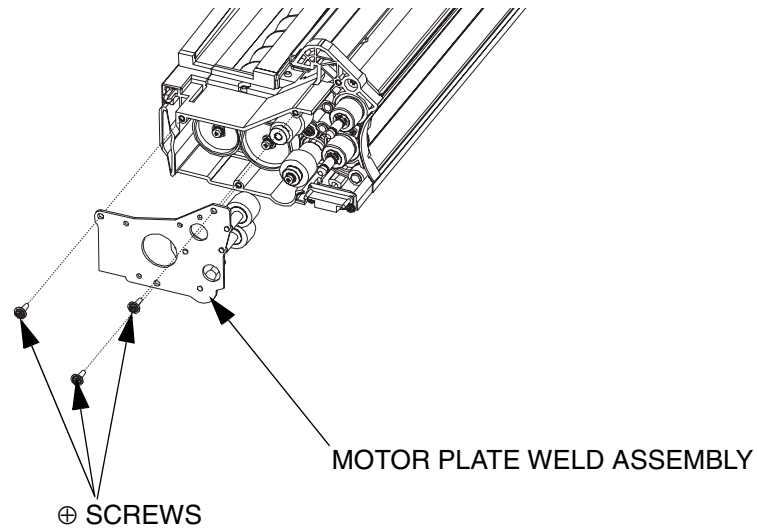


Figure 7-32. Removal of the TR Gear M

9. Unscrew the ⊕ screws to remove the B.B and the TR Gear M.

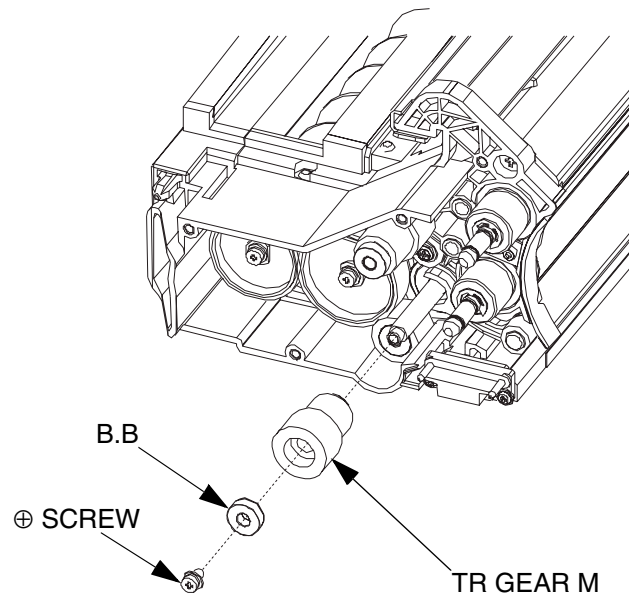


Figure 7-33. Removal of the TR Gear M

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

### 7.1.2.3. (11) Removal of the CR Clutch Arm

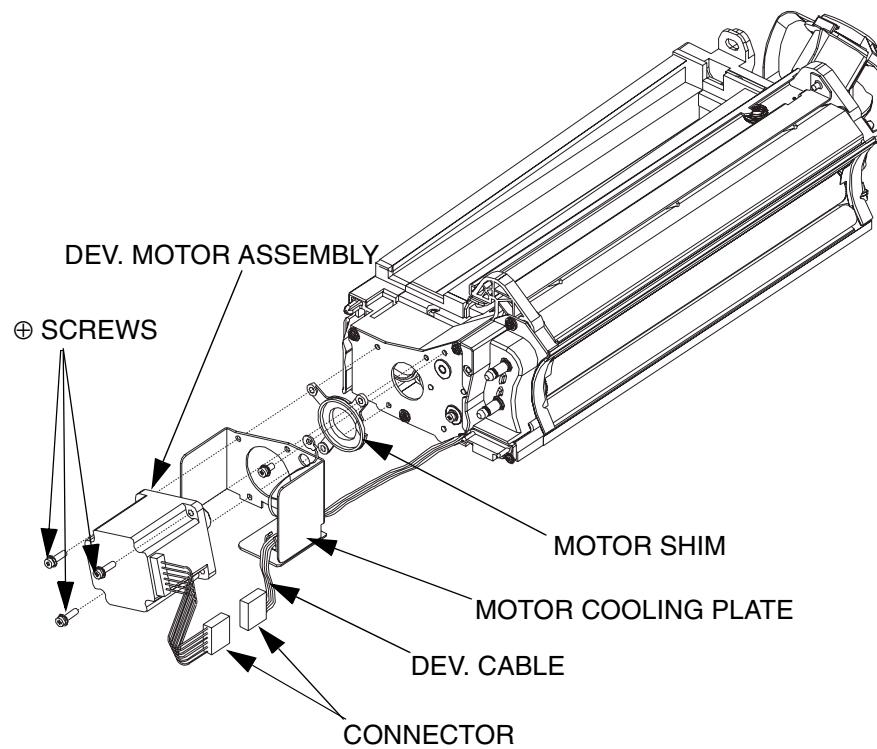
**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

Applicable jigs and tools: ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Open the Front Cover.
2. Draw out the Drum Unit. (Refer to item 7.1.2.1. (1) on page 7-4)
3. Draw out the Developer Unit. (Refer to item 7.1.2.3. (1) on page 7-10)
4. Remove the Dev. Motor Assembly. (Refer to item 7.1.2.3. (3) on page 7-13)
5. Unscrew the ⊕ screw to remove the Ground Cable.
6. Remove the Motor Cooling Plate and the Motor Shim.



VIEW FROM OPPOSITE THE OPERATOR'S SIDE

Figure 7-34. Removal of the CR Clutch Arm

7. Unscrew the ⊕ screw to remove the Dev. Gear Cover.

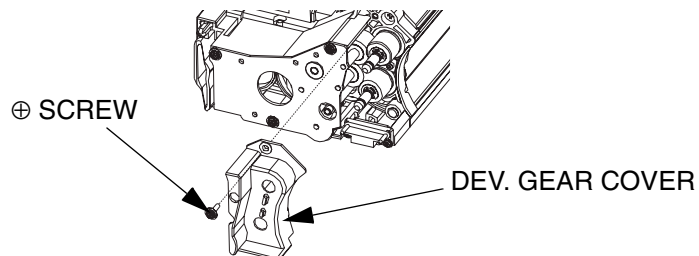


Figure 7-35. Removal of the CR Clutch Arm

8. Unscrew the three ⊕ screws to remove the Motor Plate Weld Assembly.

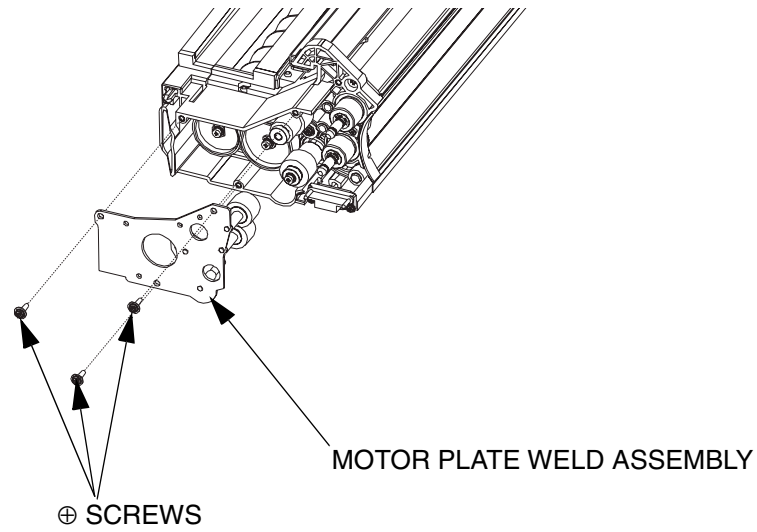


Figure 7-36. Removal of the CR Clutch Arm

9. Remove the TR Gear M. ([Refer to item 7.1.2.3. \(10\) on page 7-24](#))

10. Remove the CR Clutch Arm.

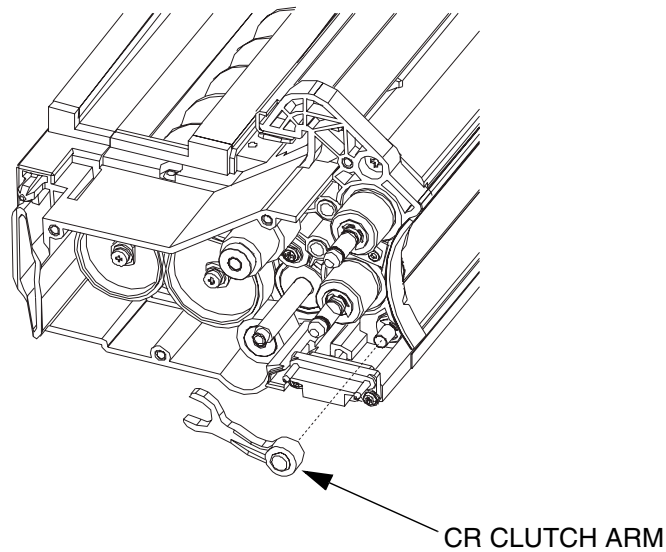


Figure 7-37. Removal of the CR Clutch Arm

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.



### 7.1.2.3. (12) Removal of the Idler Gear (Z20) Assembly

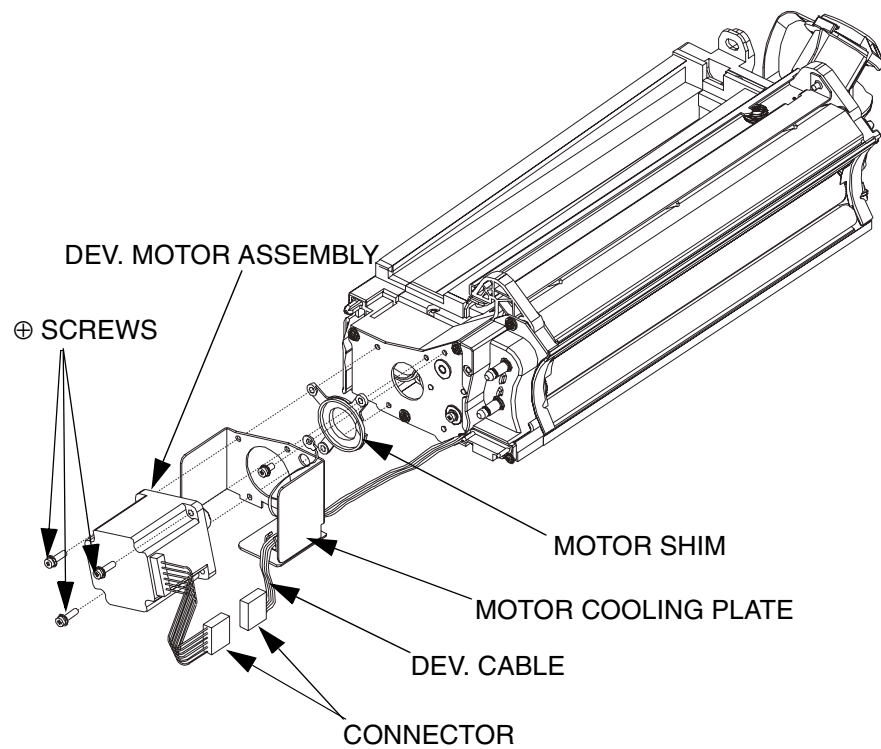
**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

Applicable jigs and tools: ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Open the Front Cover.
2. Draw out the Drum Unit. (Refer to item 7.1.2.1. (1) on page 7-4)
3. Draw out the Developer Unit. (Refer to item 7.1.2.3. (1) on page 7-10)
4. Remove the Dev. Motor Assembly. (Refer to item 7.1.2.3. (3) on page 7-13)
5. Unscrew the ⊕ screw to remove the Ground Cable.
6. Remove the Motor Cooling Plate and the Motor Shim.



VIEW FROM OPPOSITE THE OPERATOR'S SIDE

Figure 7-38. Removal of the Idler Gear (Z20) Assembly

7. Unscrew the ⊕ screw to remove the Dev. Gear Cover.

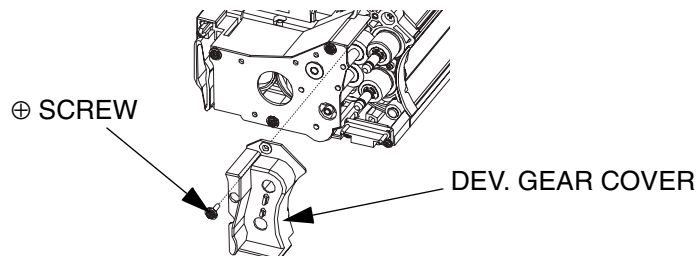


Figure 7-39. Removal of the Idler Gear (Z20) Assembly

8. Unscrew the three ⊕ screws to remove the Motor Plate Weld Assembly.

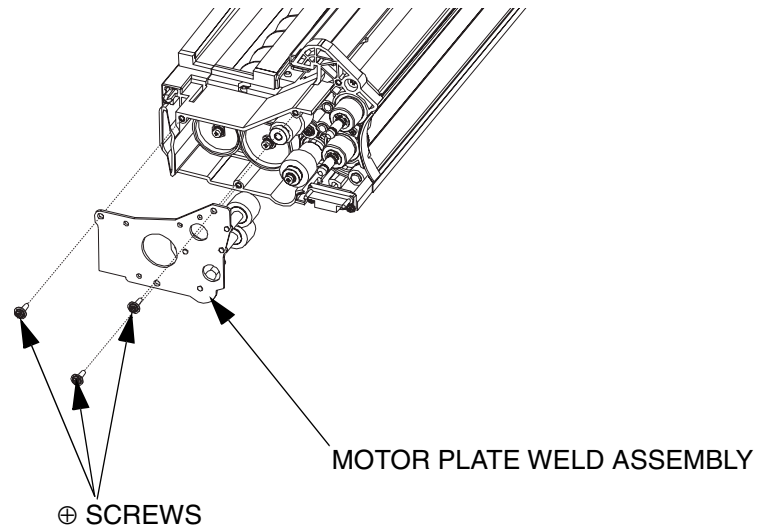


Figure 7-40. Removal of the Idler Gear (Z20) Assembly

9. Remove the TR Gear M. ([Refer to item 7.1.2.3. \(10\) on page 7-24](#))
10. Remove the Idler Gear (Z20) Assembly.

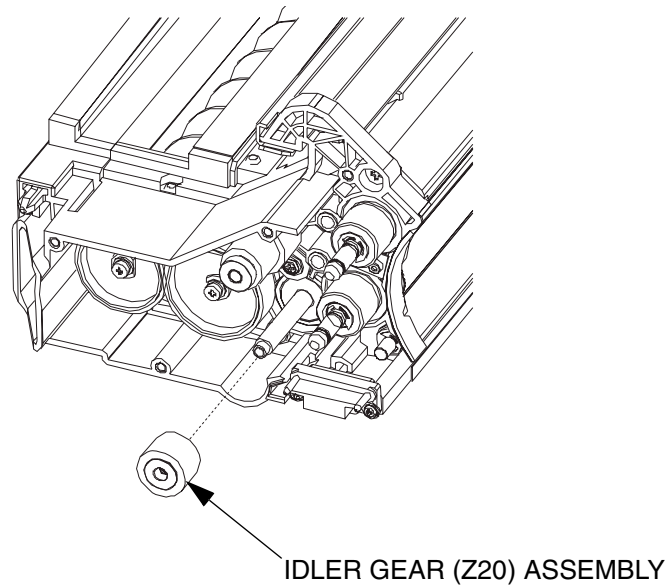


Figure 7-41. Removal of the Idler Gear (Z20) Assembly

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

### 7.1.2.3. (13) Removal of the Auger Gear (Z44)

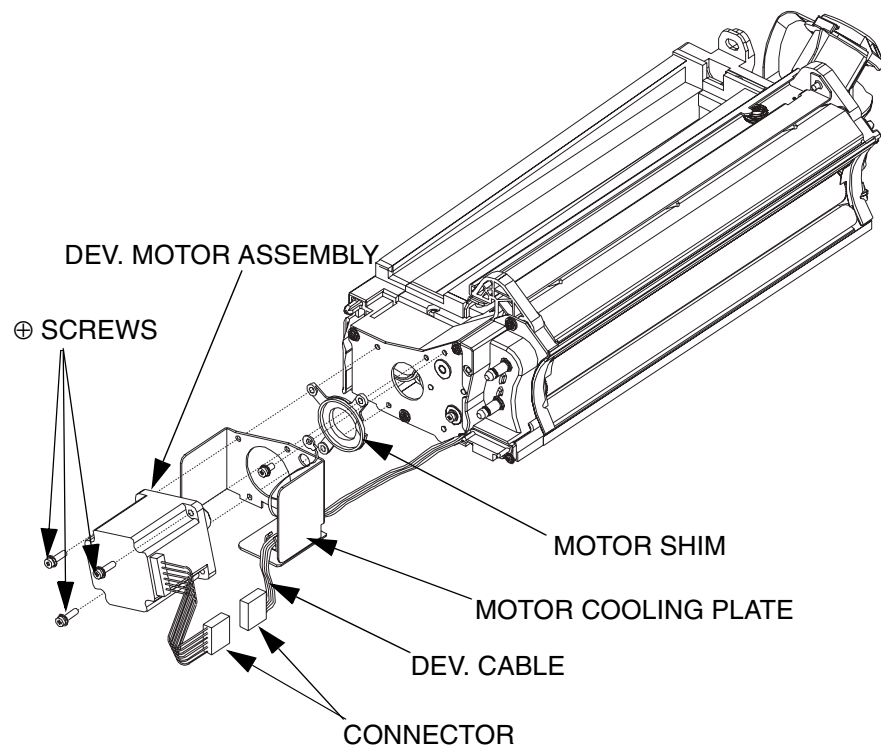
**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

Applicable jigs and tools: ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Open the Front Cover.
2. Draw out the Drum Unit. (Refer to item 7.1.2.1. (1) on page 7-4)
3. Draw out the Developer Unit. (Refer to item 7.1.2.3. (1) on page 7-10)
4. Remove the Dev. Motor Assembly. (Refer to item 7.1.2.3. (3) on page 7-13)
5. Unscrew the ⊕ screw to remove the Ground Cable.
6. Remove the Motor Cooling Plate and the Motor Shim.



VIEW FROM OPPOSITE THE OPERATOR'S SIDE

Figure 7-42. Removal of the Auger Gear (Z44)

7. Unscrew the ⊕ screw to remove the Dev. Gear Cover.

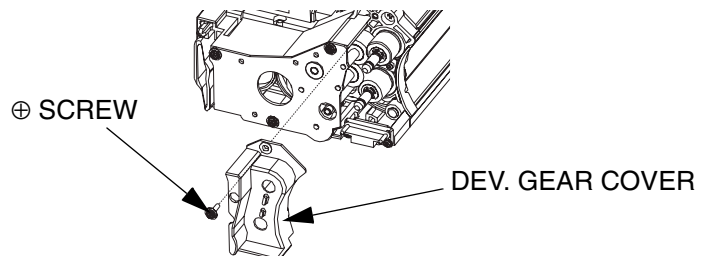


Figure 7-43. Removal of the Auger Gear (Z44)

8. Unscrew the three ⊕ screws to remove the Motor Plate Weld Assembly.

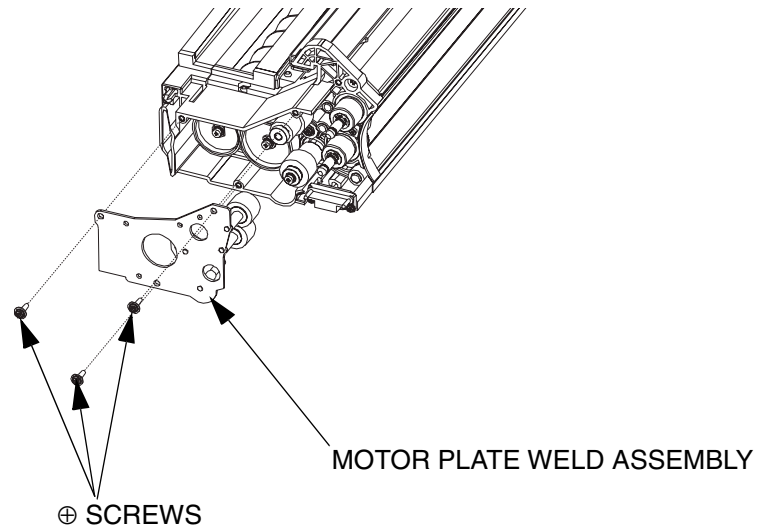


Figure 7-44. Removal of the Auger Gear (Z44)

9. Remove the TR Gear M. ([Refer to item 7.1.2.3. \(10\) on page 7-24](#))
10. Unscrew the ⊕ screw to remove the Auger Gear (Z44).

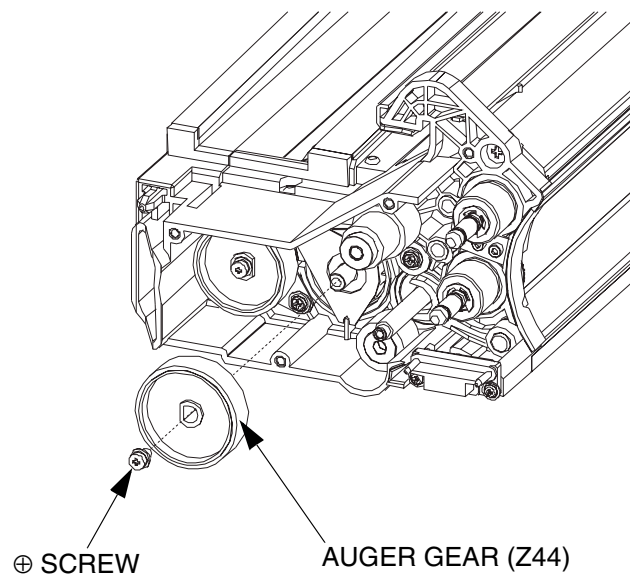


Figure 7-45. Removal of the Auger Gear (Z44)

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

### 7.1.2.3. (14) Removal of the Auger Gear (Z40)

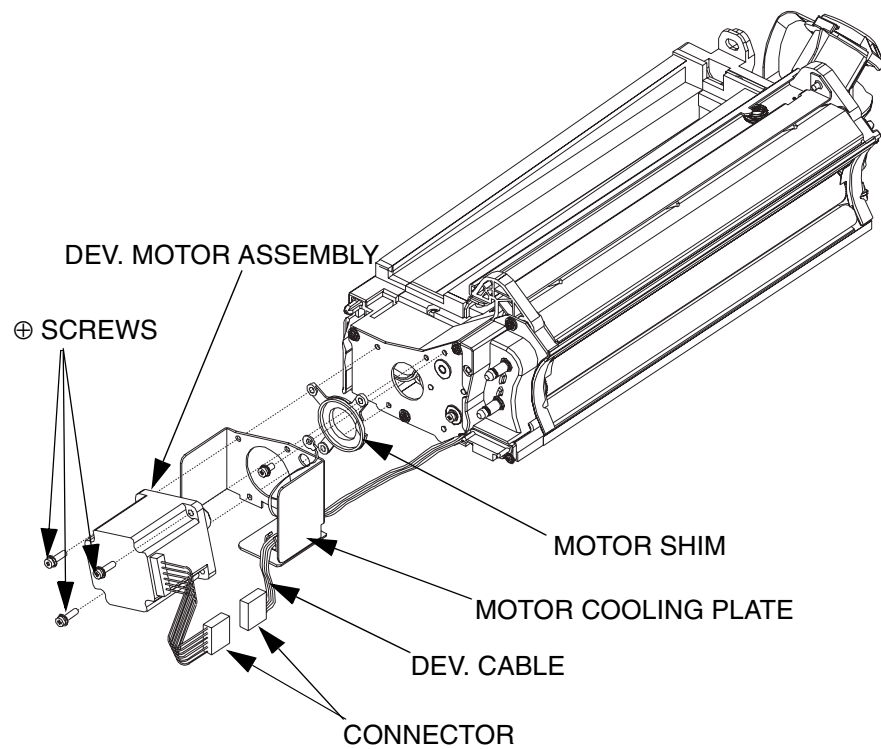
**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

Applicable jigs and tools: ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Open the Front Cover.
2. Draw out the Drum Unit. (Refer to item 7.1.2.1. (1) on page 7-4)
3. Draw out the Developer Unit. (Refer to item 7.1.2.3. (1) on page 7-10)
4. Remove the Dev. Motor Assembly. (Refer to item 7.1.2.3. (3) on page 7-13)
5. Unscrew the ⊕ screw to remove the Ground Cable.
6. Remove the Motor Cooling Plate and the Motor Shim.



VIEW FROM OPPOSITE THE OPERATOR'S SIDE

Figure 7-46. Removal of the Auger Gear (Z40)

7. Unscrew the ⊕ screw to remove the Dev. Gear Cover.

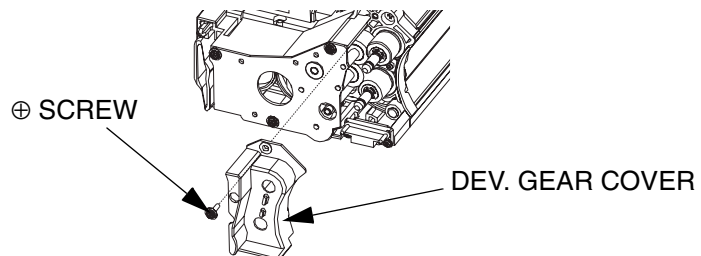


Figure 7-47. Removal of the Auger Gear (Z40)

8. Unscrew the three ⊕ screws to remove the Motor Plate Weld Assembly.

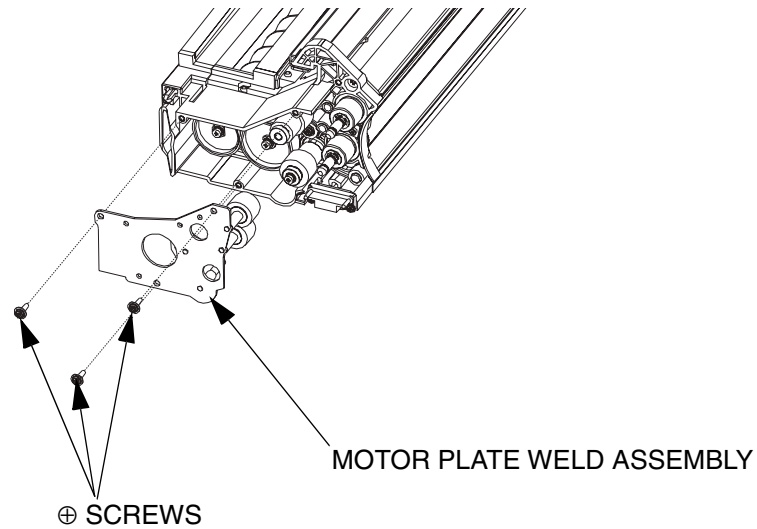


Figure 7-48. Removal of the Auger Gear (Z40)

9. Remove the TR Gear M. ([Refer to item 7.1.2.3. \(10\) on page 7-24](#))
10. Unscrew the ⊕ screw to remove the Auger Gear (Z40).

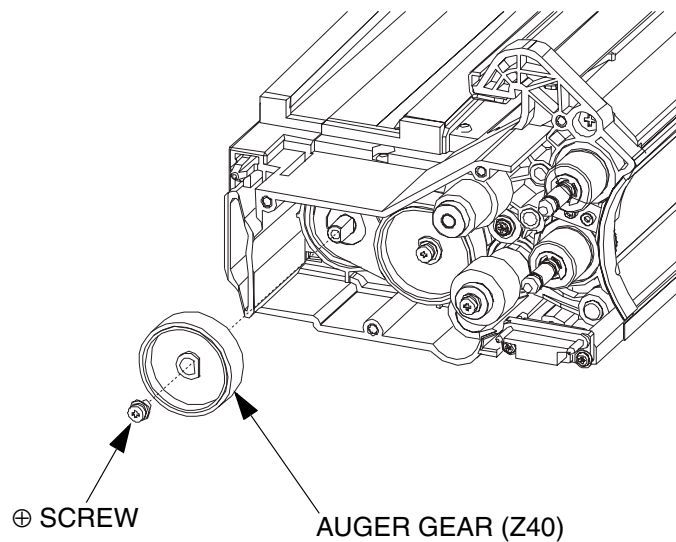


Figure 7-49. Removal of the Auger Gear (Z40)

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

### 7.1.2.3. (15) Removal of the MGR Gear (P/N G1501703 (N335270A))

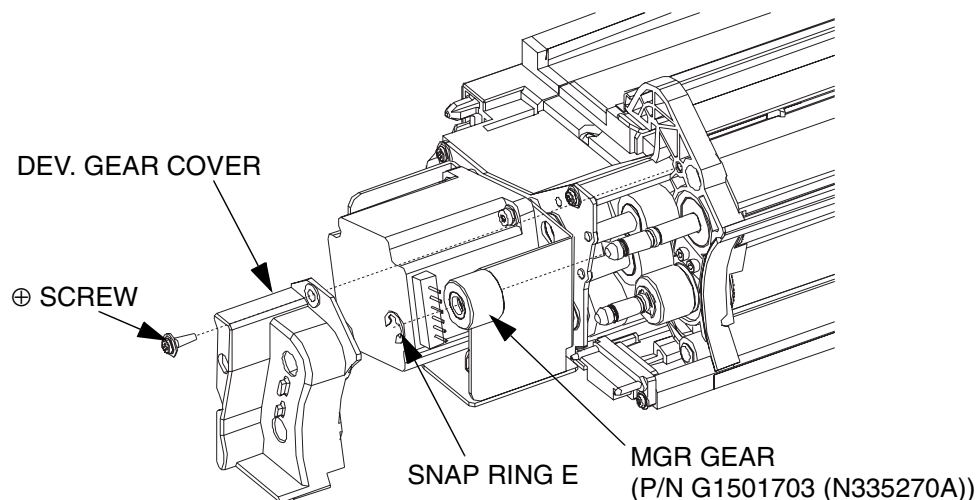
**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

Applicable jigs and tools: ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Open the Front Cover.
2. Draw out the Drum Unit. (Refer to item 7.1.2.1. (1) on page 7-4)
3. Draw out the Developer Unit. (Refer to item 7.1.2.3. (1) on page 7-10)
4. Unscrew the ⊕ screw to remove the Dev. Gear Cover.
5. Remove the Snap Ring E to remove the MGR Gear.



#### VIEW FROM OPPOSITE THE OPERATOR'S SIDE

Figure 7-50. Removal of the MGR Gear (P/N G1501703 (N335270A))

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

**Note:** Make sure that the MGR Gear is stamped "●".

Confirm that the MGR Gear is able to rotate CW without rotation and rotate CCW with shaft from view of Motor side.

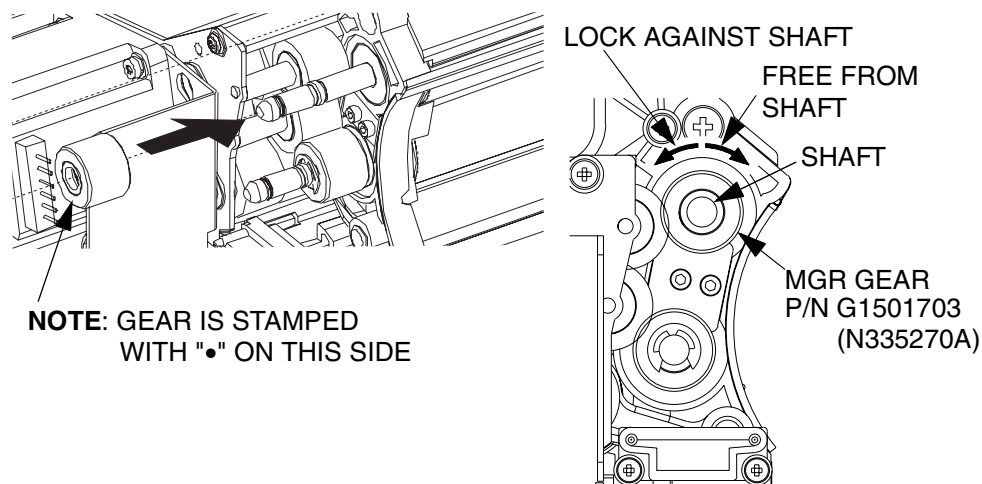


Figure 7-51. Removal of the MGR Gear (P/N G1501703 (N335270A))

### 7.1.2.3. (16) Removal of the MGR Gear (P/N G1501704 (N335270B))

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

Applicable jigs and tools: ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Open the Front Cover.
2. Draw out the Drum Unit. (Refer to item 7.1.2.1. (1) on page 7-4)
3. Draw out the Deve loper Unit. (Refer to item 7.1.2.3. (1) on page 7-10)
4. Unscrew the ⊕ screw to remove the Dev. Gear Cover.
5. Remove the Snap Ring E to remove the MGR Gear.

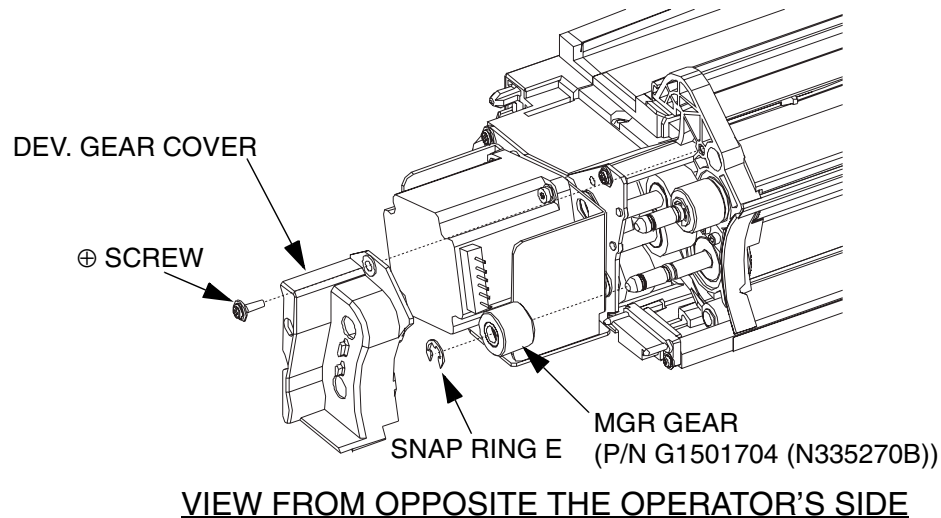


Figure 7-52. Removal of the MGR Gear (P/N G1501704 (N335270B))

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

**Note:** Make sure that the MGR Gear is stamped "●●".

Confirm that the MGR Gear is able to rotate CCW without rotation and rotate CW with shaft from view of Motor side.

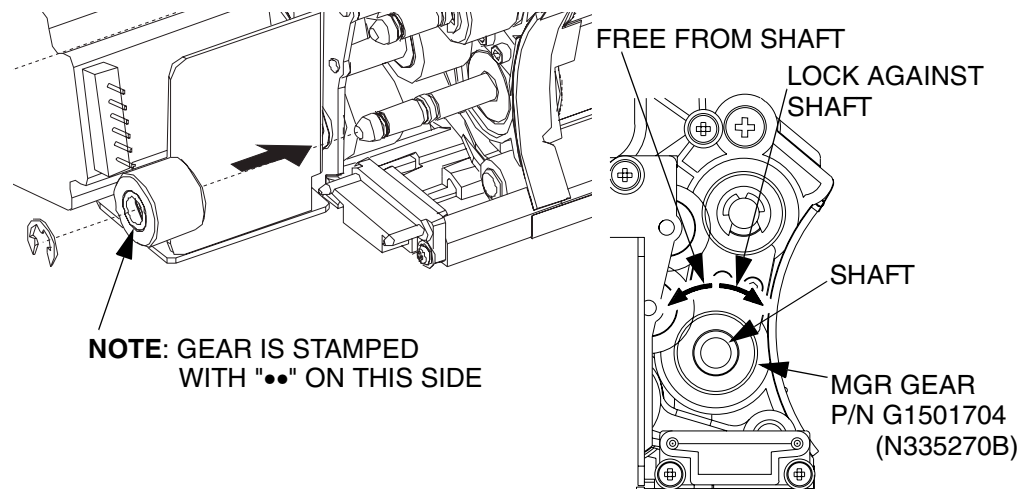


Figure 7-53. Removal of the MGR Gear (P/N G1501704 (N335270B))



## 7.1.2.4. Removal of the Toner Hopper Unit Parts

### 7.1.2.4. (1) Removal of the Toner Hopper Unit

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver, Vacuum cleaner, ⊕ Screwdriver (Short).

**[Disassembling Procedures]**

1. Remove the Top Cover.
2. Remove the Panel Cover.
3. Remove the Rear Cover.
4. Remove the Recycle Tube Assembly. (Refer to item 7.1.2.6. (1) on page 7-59)
5. Remove the four ⊕ screws (M4x10).
6. Lift the Toner Hopper Unit up till the Toner Hopper Sensor Cable Connector appears.
7. Disconnect the Toner Hopper Sensor Cable Connector P/J328.
8. Remove the Toner Hopper Unit.

**Note:** Put a sheet of plastic underneath the removed Toner Hopper Unit. Some Toner may be spilled.

**CAUTION:**

To avoid toner spilling, handle the Toner Hopper Unit with care and do not tilt it.

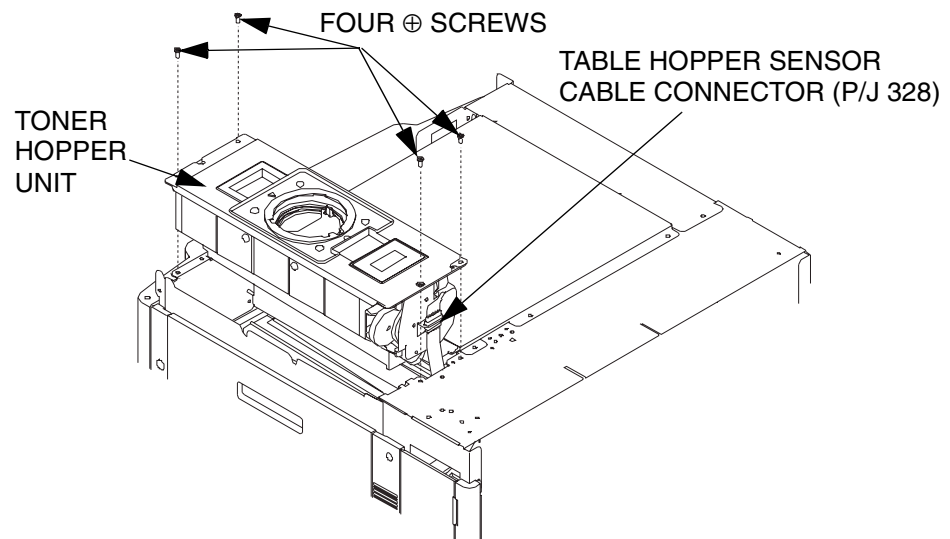


Figure 7-54. Removal of the Toner Hopper Unit

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

#### 7.1.2.4. (2) Removal of the Toner Feed Motor

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Magnetized Screwdriver, Vacuum cleaner.

**[Disassembling Procedures]**

1. Remove the Toner Hopper Unit. (Refer to item 7.1.2.4. (1) on page 7-36)
2. Remove the two ⊕ screws (M4x12).
3. Remove the Idler Gear Holder Assembly.
4. Remove the Idler Gear (A), Idler Gear (B), and the Idler Gear (C).
5. Disconnect the Motor Connector.
6. Remove the ⊕ screw (M4x12).
7. Remove the Feed Motor Holder.
8. Remove the Toner Feed Motor.

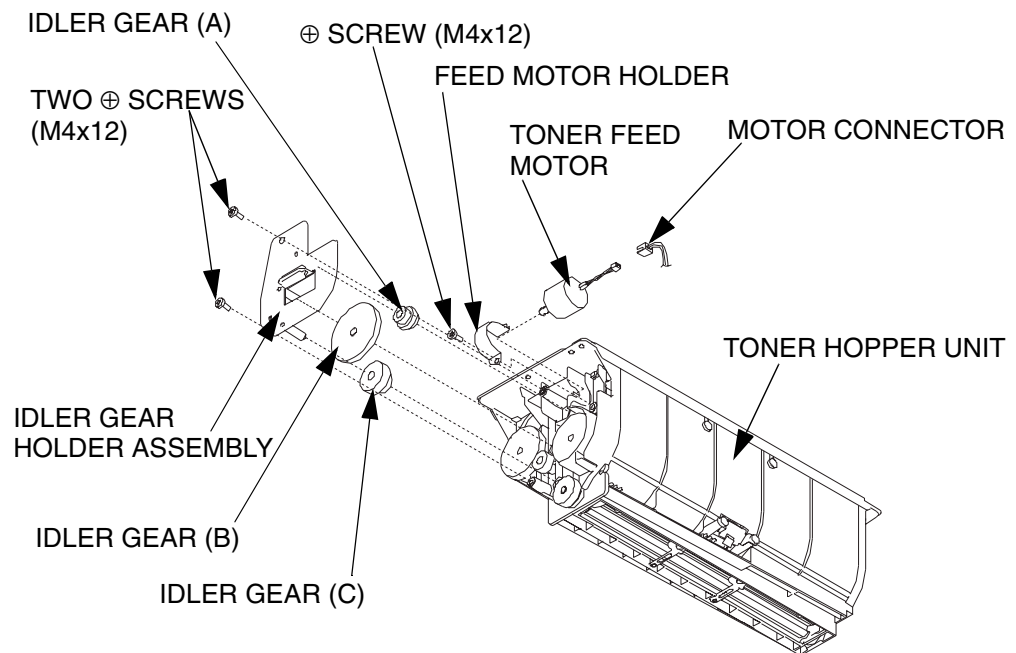


Figure 7-55. Removal of the Toner Feed Motor

### [Assembling Procedures]

1. Remove the four ⊕ screws (M4x12)
2. Remove the Cover.
3. Make sure that the Stir Plates face the same horizontal direction by turning the Stir Gears.
4. Perform the disassembling procedures in the reverse order.

**Note:** Be careful not to lose the O Ring behind the Cover when it is removed.  
If the O Ring comes off, fit the O Ring to the Top Cover before assembling.

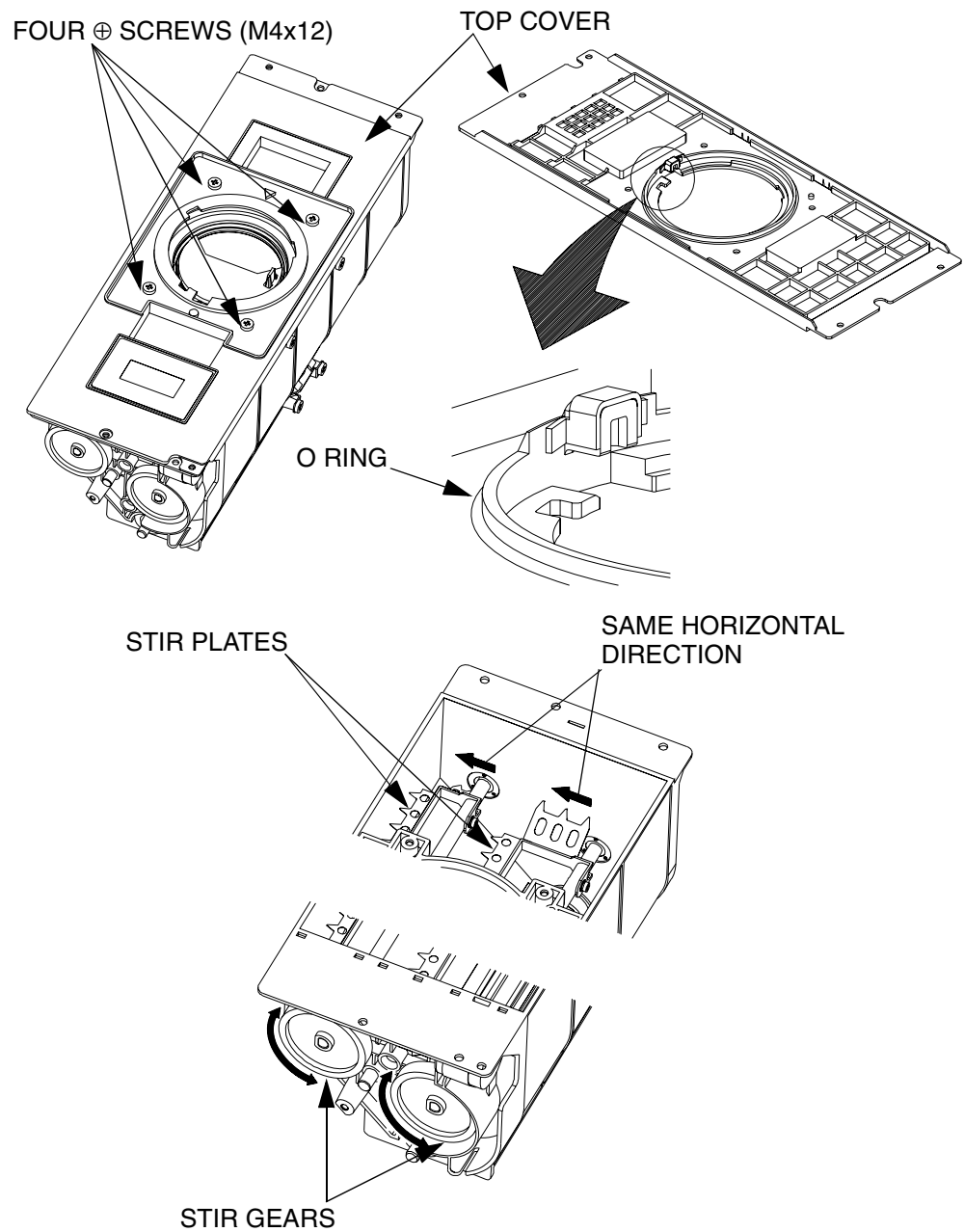


Figure 7-56. Removal of the Toner Feed Motor

#### 7.1.2.4. (3) Removal of the Toner Sensor

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**CAUTION:**

Pay attention since toner may be spilled. The Sensor Side must be facing up for this procedure.

Applicable jigs and tools: ⊕ Screwdriver, Vacuum cleaner.

**[Disassembling Procedures]**

1. Remove the Toner Hopper Unit. (Refer to item 7.1.2.4. (1) on page 7-36)
2. Put a stopper or seal on the hole (Avoiding toner leakage).
3. Remove the two ⊕ screws (M4x8).
4. Remove the Toner Empty Sensor Holder.
5. Disconnect the connector.
6. Remove the Toner Sensor.

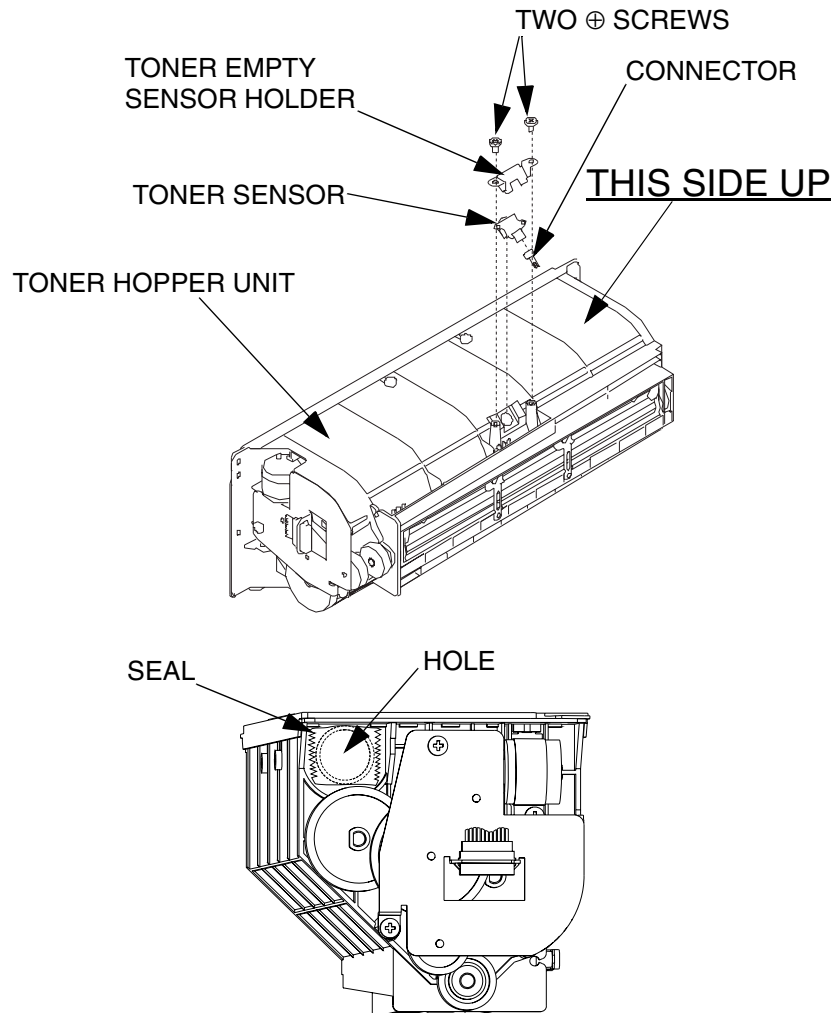


Figure 7-57. Removal of the Toner Sensor

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

#### 7.1.2.4. (4) Removal of the Idler Gear (A)

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

Applicable jigs and tools: ⊕ Screwdriver, Vacuum cleaner.

**[Disassembling Procedures]**

1. Remove the Toner Hopper Unit. (Refer to item 7.1.2.4. (1) on page 7-36)
2. Remove the two ⊕ screws (M4x12).
3. Disconnect the Toner Hopper connector.
4. Remove the Idler Gear Holder Assembly (with Idler Gear (A), Idler Gear (B) and Idler Gear (C)).
5. Remove Idler Gear (A).

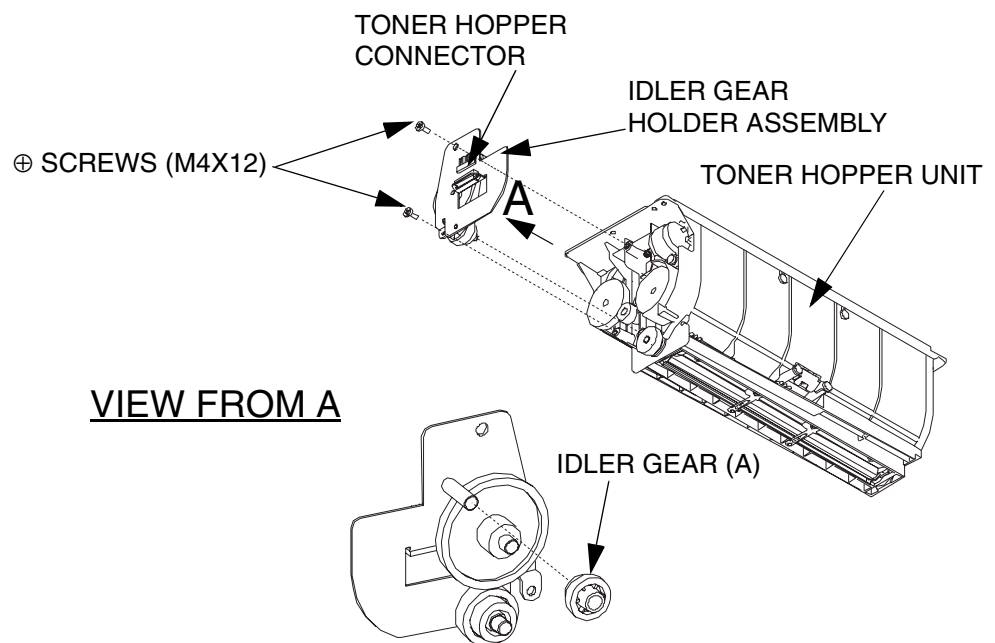


Figure 7-58. Removal of the Idler Gear (A)

**[Assembling Procedures]**

1. Make sure that the Stir Plates face the same horizontal direction by turning the Stir Gears. (Refer to item 7.1.2.4. (2) on page 7-37)
2. Perform the disassembling procedures in the reverse order.

#### 7.1.2.4. (5) Removal of the Idler Gear (B)

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver, Vacuum cleaner.

**[Disassembling Procedures]**

1. Remove the Toner Hopper Unit. (Refer to item 7.1.2.4. (1) on page 7-36)
2. Remove the two ⊕ screws (M4x12).
3. Disconnect the Toner Hopper connector.
4. Remove the Idler Gear Holder Assembly (with Idler Gear (A), Idler Gear (B) and Idler Gear (C)).
5. Remove Idler Gear (A).
6. Remove Idler Gear (B).

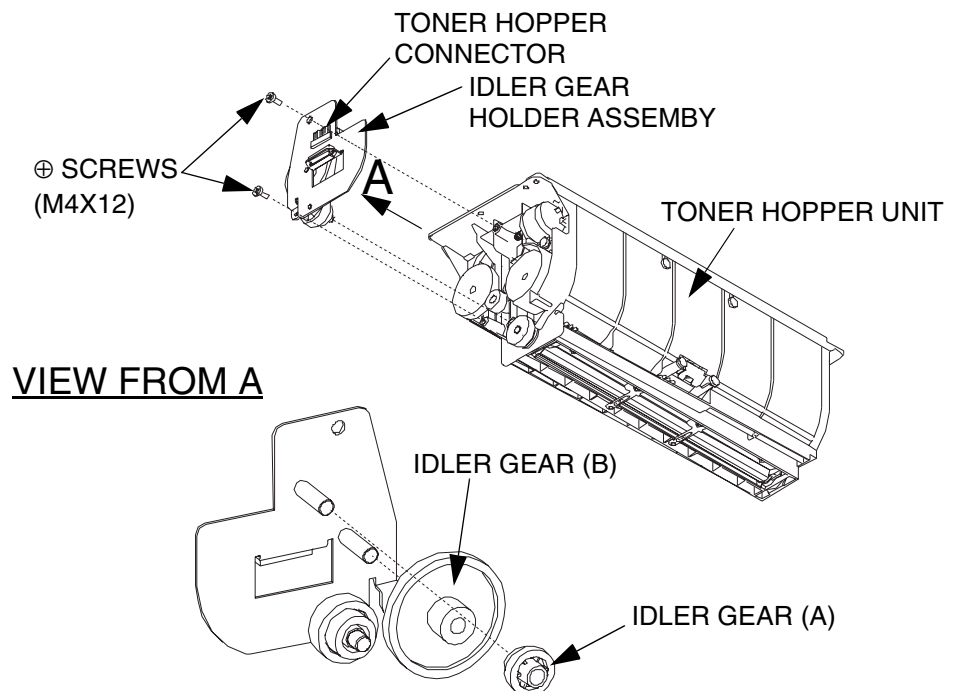


Figure 7-59. Removal of the Idler Gear (B)

**[Assembling Procedures]**

1. Make sure that the Stir Plates face the same horizontal direction by turning the Stir Gears. (Refer to item 7.1.2.4. (2) on page 7-37)
2. Perform the disassembling procedures in the reverse order.

#### 7.1.2.4. (6) Removal of the Idler Gear (C)

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

Applicable jigs and tools: ⊕ Screwdriver, Vacuum cleaner.

**[Disassembling Procedures]**

1. Remove the Toner Hopper Unit. (Refer to item 7.1.2.4. (1) on page 7-36)
2. Remove the two ⊕ screws (M4x12).
3. Disconnect the Toner Hopper connector.
4. Remove the Idler Gear Holder Assembly (with Idler Gear (A), Idler Gear (B) and Idler Gear (C)).
5. Remove Idler Gear (C).

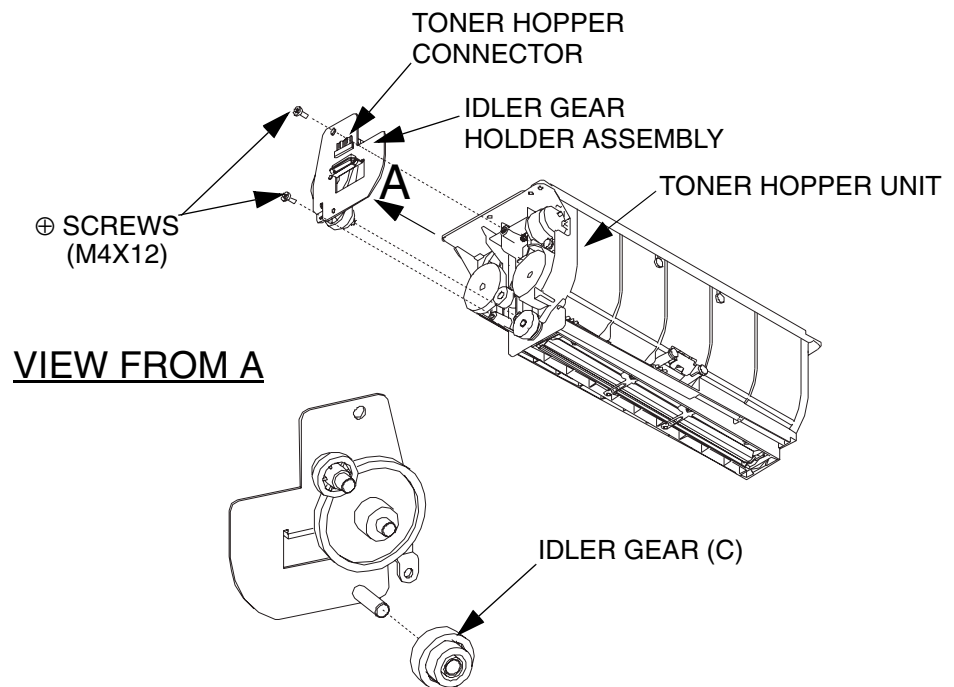


Figure 7-60. Removal of the Idler Gear (C)

**[Assembling Procedures]**

1. Make sure that the Stir Plates face the same horizontal direction by turning the Stir Gears. (Refer to item 7.1.2.4. (2) on page 7-37)
2. Perform the disassembling procedures in the reverse order.

#### 7.1.2.4. (7) Removal of the Idler Gear (D)

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver, Vacuum cleaner.

**[Disassembling Procedures]**

1. Remove the Toner Hopper Unit. (Refer to item 7.1.2.4. (1) on page 7-36)
2. Remove the two ⊕ screws (M4x12).
3. Disconnect the Toner Hopper connector.
4. Remove the Idler Gear Holder Assembly (with Idler Gear (A), Idler Gear (B) and Idler Gear (C)).
5. Remove Idler Gear (D).

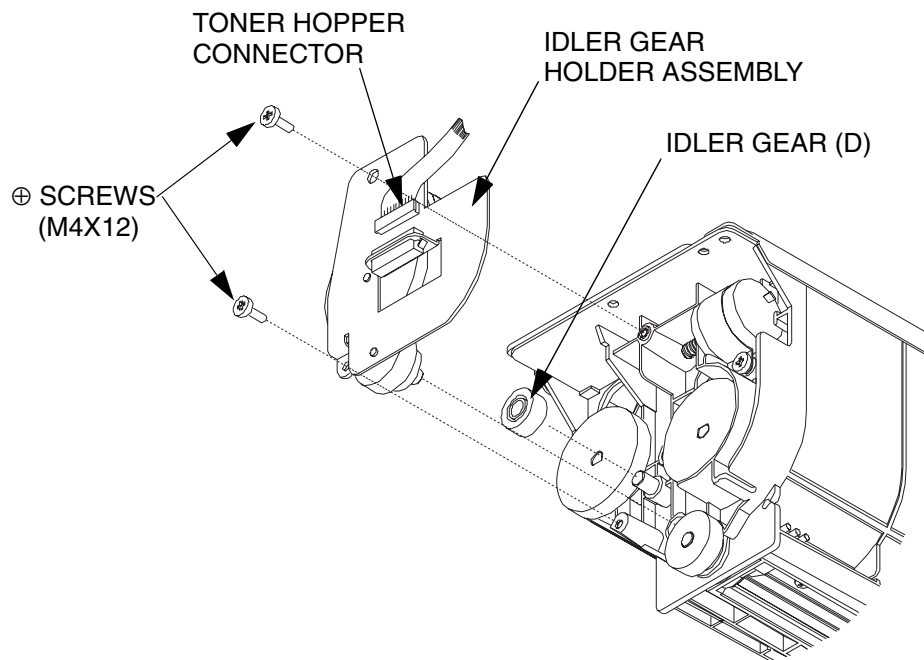


Figure 7-61. Removal of the Idler Gear (D)

**[Assembling Procedures]**

1. Make sure that the Stir Plates face the same horizontal direction by turning the Stir Gears. (Refer to item 7.1.2.4. (2) on page 7-37)
2. Perform the disassembling procedures in the reverse order.



#### 7.1.2.4. (8) Removal of the Stir Gear

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver, Vacuum cleaner.

**[Disassembling Procedures]**

1. Remove the Toner Hopper Unit. (Refer to item 7.1.2.4. (1) on page 7-36)
2. Remove the two ⊕ screws (M4x12).
3. Disconnect the Toner Hopper connector.
4. Remove the Idler Gear Holder Assembly (with Idler Gear (A), Idler Gear (B) and Idler Gear (C)).
5. Remove the Stir Gears.

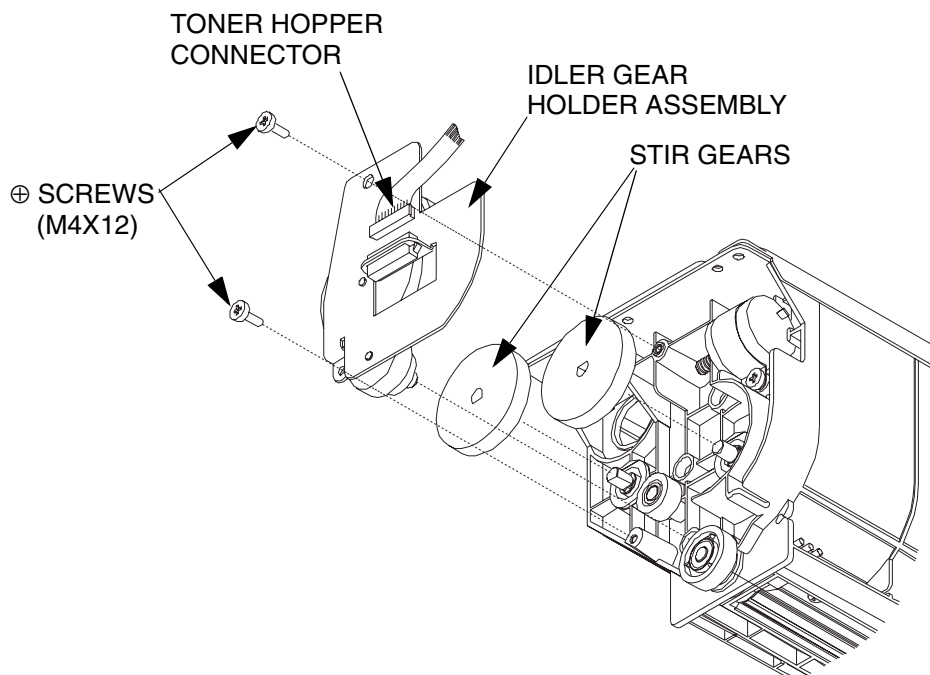


Figure 7-62. Removal of the Stir Gear

**[Assembling Procedures]**

1. Make sure that the Stir Plates face the same horizontal direction by turning the Stir Gears. (Refer to item 7.1.2.4. (2) on page 7-37)
2. Perform the disassembling procedures in the reverse order.

#### 7.1.2.4. (9) Removal of the Feed Gear

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver, Vacuum cleaner.

**[Disassembling Procedures]**

1. Remove the Toner Hopper Unit. (Refer to item 7.1.2.4. (1) on page 7-36)
2. Remove the two ⊕ screws (M4x12).
3. Disconnect the Toner Hopper connector.
4. Remove the Idler Gear Holder Assembly (with Idler Gear (A), Idler Gear (B) and Idler Gear (C)).
5. Remove the Feed Gear by turning it clockwise.

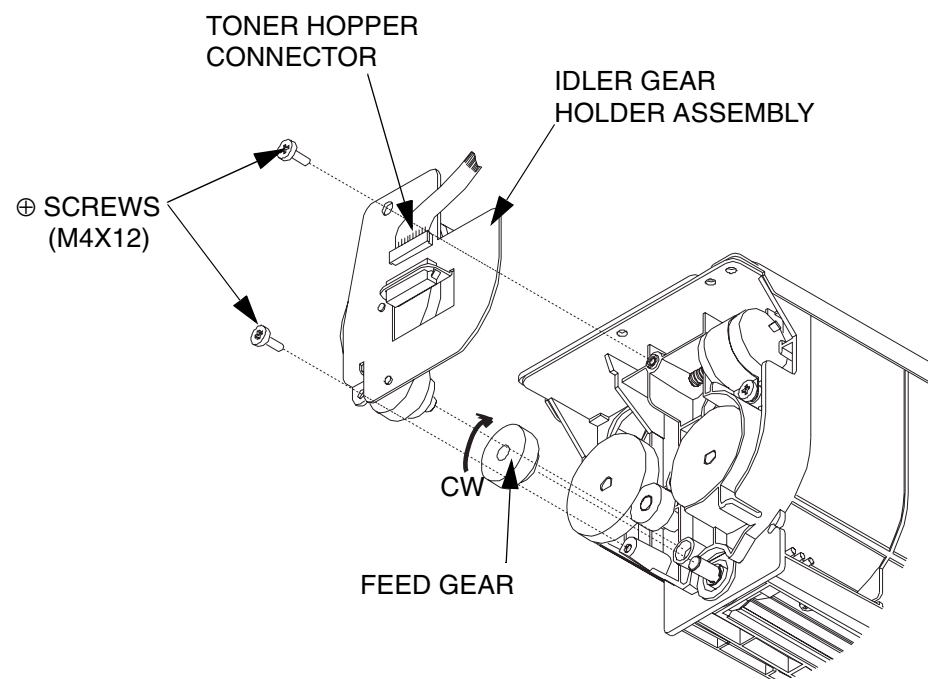


Figure 7-63. Removal of the Feed Gear

**[Assembling Procedures]**

1. Make sure that the Stir Plates face the same horizontal direction by turning the Stir Gears. (Refer to item 7.1.2.4. (2) on page 7-37)
2. Perform the disassembling procedures in the reverse order.

## 7.1.2.5. Removal of the Drum Drive Unit Parts

### 7.1.2.5. (1) Removal of the Drum Drive Unit

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver, Spanner (M6).

**[Disassembling Procedures]**

1. Open the Front Cover.
2. Remove the Drum Unit. (Refer to item 7.1.2.1. (1) on page 7-4)
3. Remove the Developer Unit. (Refer to item 7.1.2.3. (1) on page 7-10)
4. Remove the Charger Corona Unit. (Refer to item 7.1.2.2. (1) on page 7-6)
5. Remove the Rear Cover Assembly. (Refer to item 3.3.2. (1) on page 3-12)
6. Remove the M6 Nut to remove the Fly Wheel.
7. Remove the Recycle Tube Assembly. (Refer to item 7.1.2.4. (1) on page 7-36)
8. Disconnect the six connectors. (P/J719, 720, 728, 729, 736, MG Sensor and the Drum Sensor Connector.)
9. Remove the Ozone Chamber Assembly. (Refer to item 7.1.5.1. (7) on page 7-199)
10. Remove the four Faston Terminals.
11. Unscrew the four ⊕ screws to remove the Cooling Assembly (1). (Refer to item 7.1.5.1. (5) on page 7-197)
12. Unscrew the three ⊕ screws to remove the Drum Drive Unit.

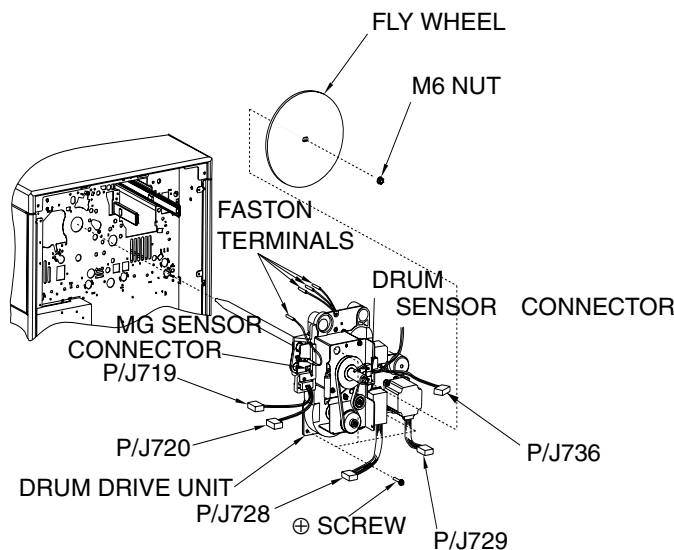


Figure 7-64. Removal of the Drum Drive Unit

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

**Note:** For exchange of the Drum Drive Unit of non RoHS machine.

(1) In case the Drum Drive Unit(Spare parts) without Drum Motor.  
Divert the Drum Motor and Drum Cable from the old unit.

(2) In case the Drum Drive Unit(Spare parts) with Drum Motor.  
Confirm the Drum Motor type indicated on Drum Motor Rotor. When motor type is different between new and original Drum Drive Unit, exchange the Drum Motor of new Drum Drive Unit to original motor installed in original Drum Drive Unit.  
(Refer to item 7.1.2.5. (7) on page 7-52)

#### 7.1.2.5. (2) Removal of the Drum Drive Gears

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Remove the Drum Drive Unit. (Refer to item 7.1.2.5. (1) on page 7-46)
2. Unscrew the ⊕ screw to remove the Shaft Hold Plate.
3. Remove the Gears.

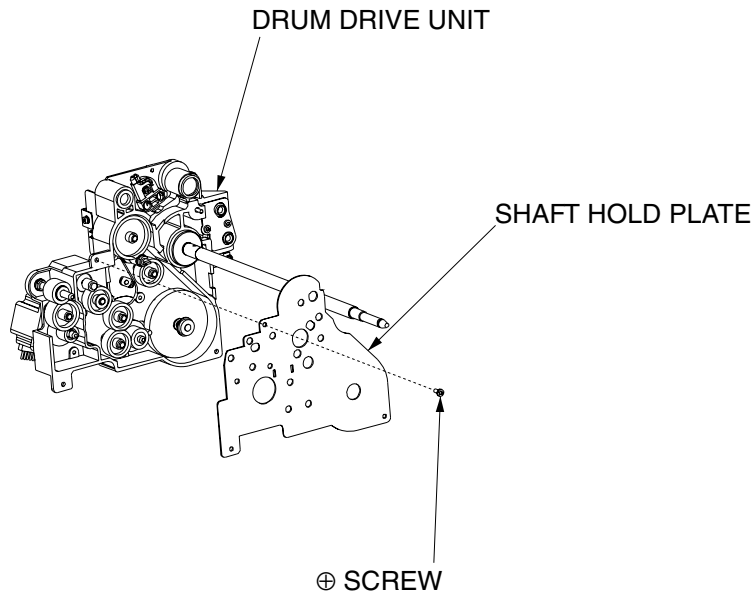


Figure 7-65. Removal of the Drum Drive Gears

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

### 7.1.2.5. (3) Removal of the Drum REV Sensor

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

Applicable jigs and tools: ⊕ Screwdriver, Spanner (M6).

**[Disassembling Procedures]**

1. Remove the Rear Cover Assembly. (Refer to item 3.3.2. (1) on page 3-12)
2. Remove the M6 Nut to remove the Fly Wheel.
3. Unscrew the ⊕ screw to remove the Drum GND Holder.
4. Disconnect the Connector from the Drum REV Sensor.
5. Remove the Drum REV Sensor from the Pulley Holder.

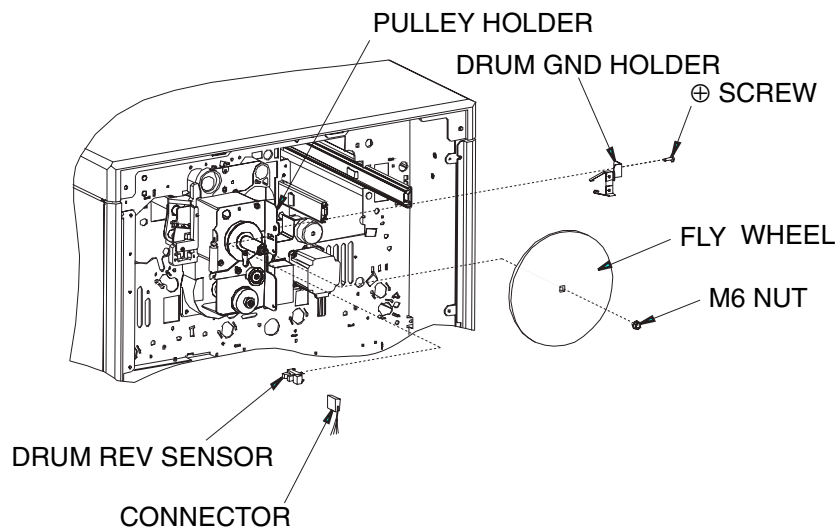


Figure 7-66. Removal of the Drum REV Sensor

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

#### 7.1.2.5. (4) Removal of the MG Sensor

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

Applicable jigs and tools: ⊕ Screwdriver, Spanner (M6).

**[Disassembling Procedures]**

1. Remove the Rear Cover Assembly. (Refer to item 3.3.2. (1) on page 3-12)
2. Remove the M6 Nut to remove the Fly Wheel.
3. Unscrew the two ⊕ screws to remove the MG BIAS Terminal Assembly.
4. Disconnect the Connector from the MG Sensor.
5. Remove the MG Sensor from the Sensor Plate.

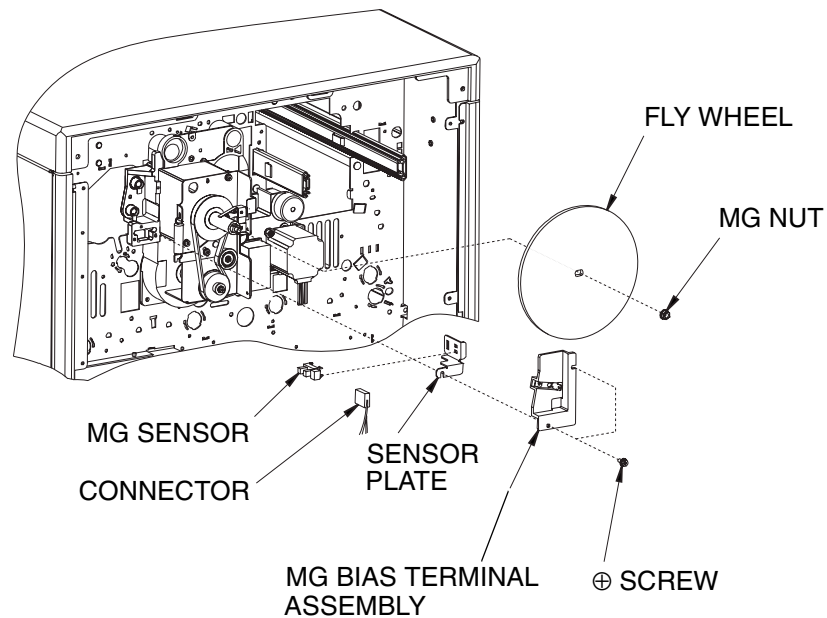


Figure 7-67. Removal of the MG Sensor

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

#### 7.1.2.5. (5) Removal of the MG Insulator

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

Applicable jigs and tools: ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Open the Front Cover.
2. Remove the Drum Unit. (Refer to item 7.1.2.1. (1) on page 7-4)
3. Remove the Developer Unit. (Refer to item 7.1.2.3. (1) on page 7-10)
4. Unscrew the two ⊕ screws to remove the MGINS Holder.
5. Remove the MG Insulator.

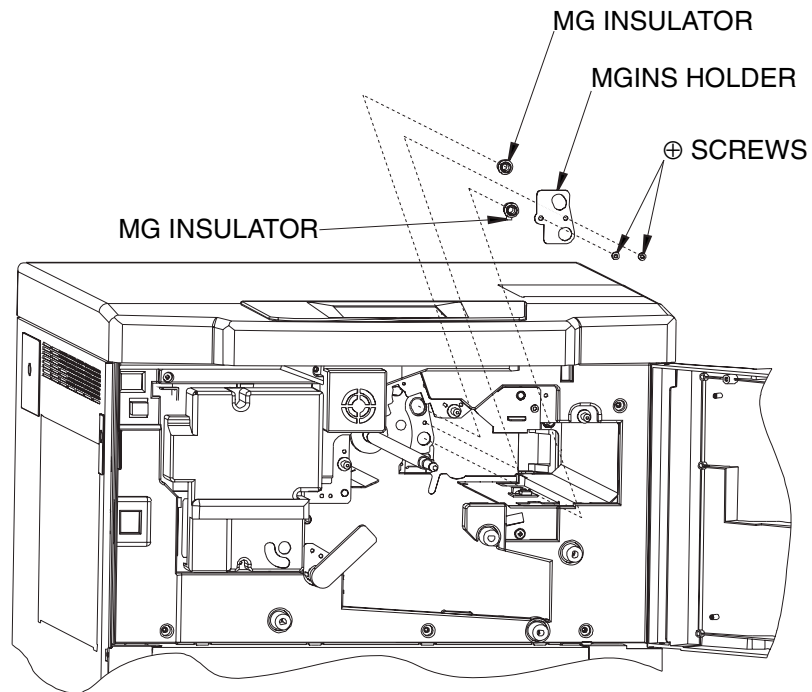


Figure 7-68. Removal of the MG Insulator

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

#### 7.1.2.5. (6) Removal of the Timing Belt

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

Applicable jigs and tools: ⊕ Screwdriver, Spanner (M6).

**[Disassembling Procedures]**

1. Remove the Rear Cover Assembly. (Refer to item 3.3.2. (1) on page 3-12)
2. Remove the M6 Nut to remove the Fly Wheel.
3. Remove the Recycle Tube Assembly. (Refer to item 7.1.2.4. (1) on page 7-36)
4. Unscrew the ⊕ screw to remove the Drum GND Holder.
5. Loosen the ⊕ screw of the Tension Roller Base Assembly.
6. Remove the Timing Belt.

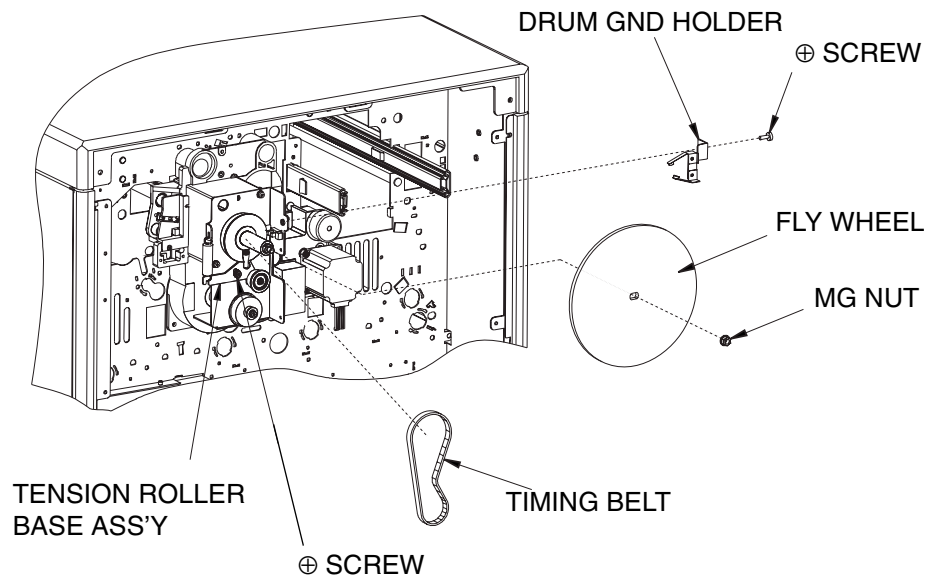


Figure 7-69. Removal of the Timing Belt

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

**Note:** Be sure to tighten the Timing Belt.



#### 7.1.2.5. (7) Removal of the Drum Motor

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver, Spanner (M6).

**[Disassembling Procedures]**

1. Remove the Rear Cover Assembly. (Refer to item 3.3.2. (1) on page 3-12)
2. Remove the M6 Nut to remove the Fly Wheel.
3. Disconnect the connector.
4. Unscrew the three ⊕ screws to remove the Drum Motor.

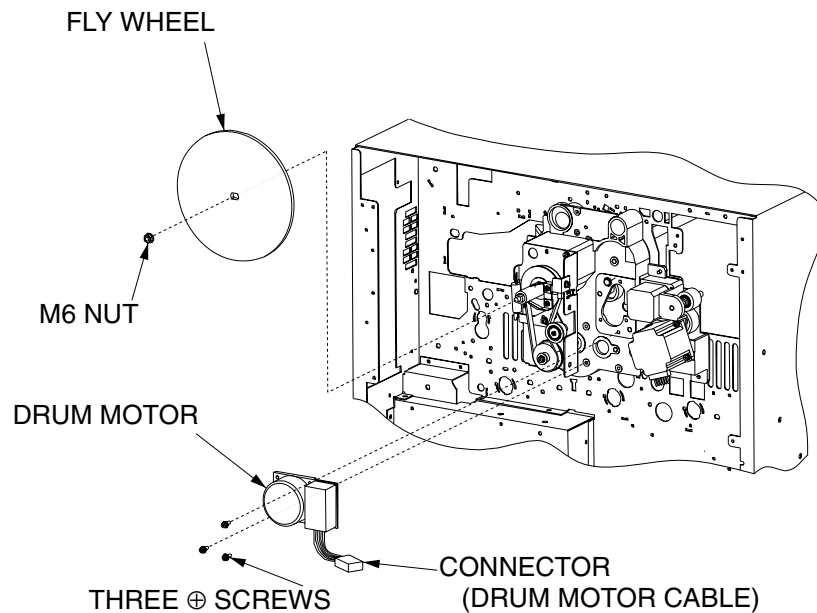


Figure 7-70. Removal of the Drum Motor

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

**CAUTION FOR DRUM MOTOR IN EXCHANGE**

1. RoHS machine  
Exchange only the Drum Motor.
2. non RoHS machine  
Before conducting component replacement, check the Drum Motor name indicated on the rotor of the Drum Motor installed in the printer, and exchange according to the Drum Motor name as shown in the table below.
  - 1) DNQ18Axxxxx  
It is necessary to also exchange an enclosed CP531 Assembly and Drum Motor Cable in the Drum Motor Kit together.  
Paint out "W1" of machine rev. label with the black marker.
  - 2) DR-6236-200 (with machine rev. "W1")  
Exchange only the Drum Motor.

#### 7.1.2.5. (8) Removal of the HR Motor

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Remove the Rear Cover Assembly. (Refer to item 3.3.2. (1) on page 3-12)
2. Disconnect the connector.
3. Unscrew the three ⊕ screws to remove the HR Motor.

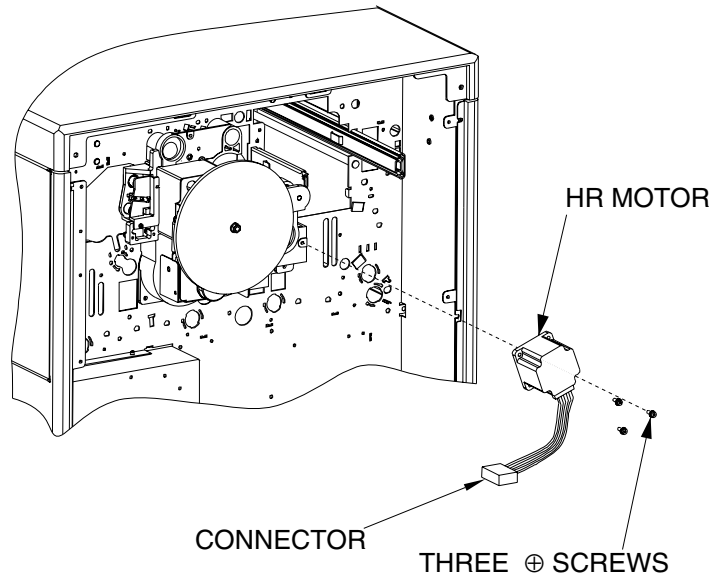


Figure 7-71. Removal of the HR Motor

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

#### 7.1.2.5. (9) Removal of the TH Motor

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Remove the Drum Drive Unit. (Refer to item 7.1.2.5. (1) on page 7-46)
2. Disconnect the connector.
3. Unscrew the three ⊕ screws to remove the TH Motor.

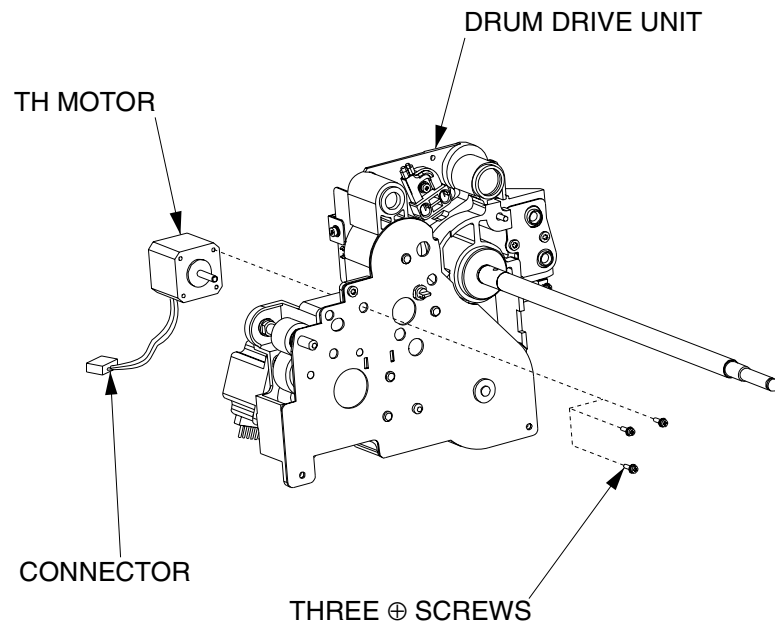


Figure 7-72. Removal of the TH Motor

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

#### 7.1.2.5. (10) Removal of the Pulley (Drum) 40

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

Applicable jigs and tools: ⊕ Screwdriver, Spanner (M6).

**[Disassembling Procedures]**

1. Remove the Rear Cover Assembly. (Refer to item 3.3.2. (1) on page 3-12)
2. Remove the Timing Belt. (Refer to item 7.1.2.5. (6) on page 7-51)
3. Unscrew the ⊕ screw to remove the Pulley (Drum) 40.

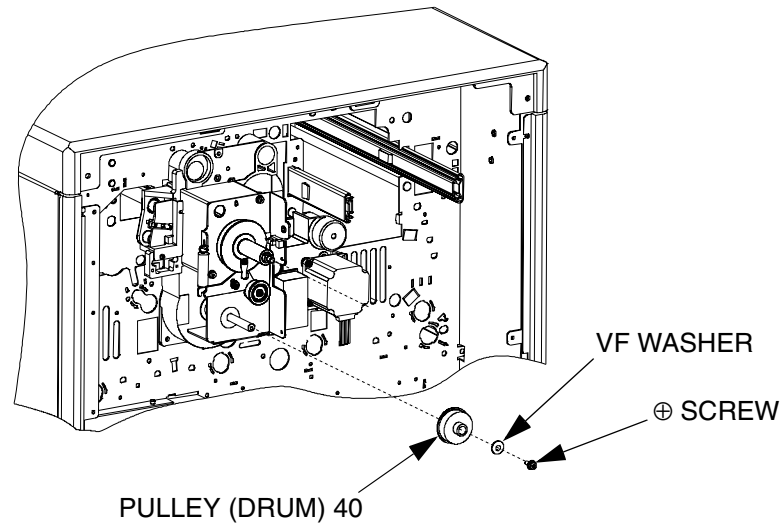


Figure 7-73. Removal of the Pulley (Drum) 40

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

#### 7.1.2.5. (11) Removal of the Pulley (Drum)

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver, Spanner (M6).

**[Disassembling Procedures]**

1. Remove the Rear Cover Assembly. (Refer to item 3.3.2. (1) on page 3-12)
2. Remove the Timing Belt. (Refer to item 7.1.2.5. (6) on page 7-51)
3. Remove the FW Holder.
4. Remove the Pulley (Drum).

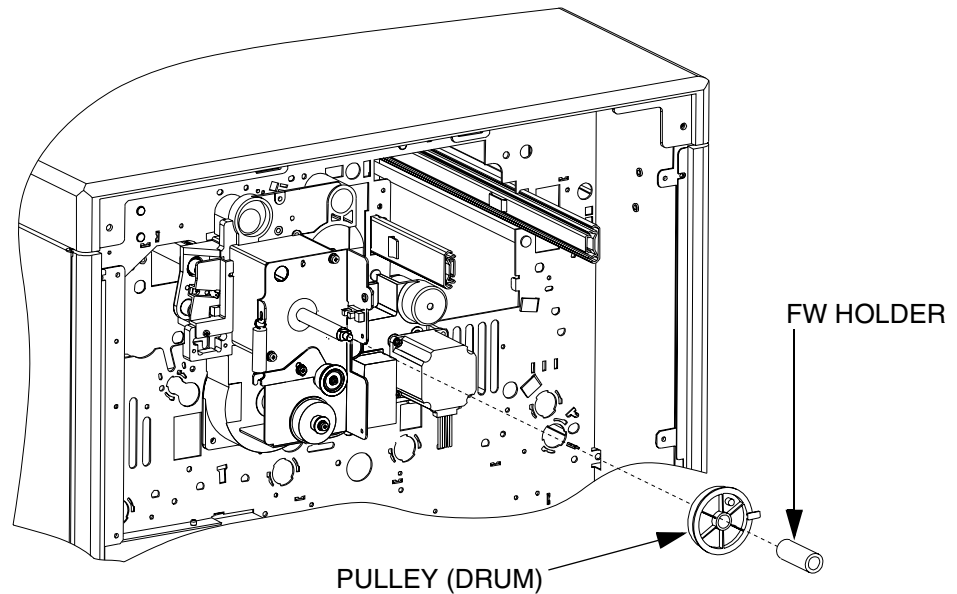


Figure 7-74. Removal of the Pulley (Drum)

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

#### 7.1.2.5. (12) Removal of the CP-DEV Cable Assembly

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Remove the Drum Drive Unit. (Refer to item 7.1.2.5. (1) on page 7-46)
2. Unscrew the two ⊕ screws to remove the CP-DEV Cable Assembly.

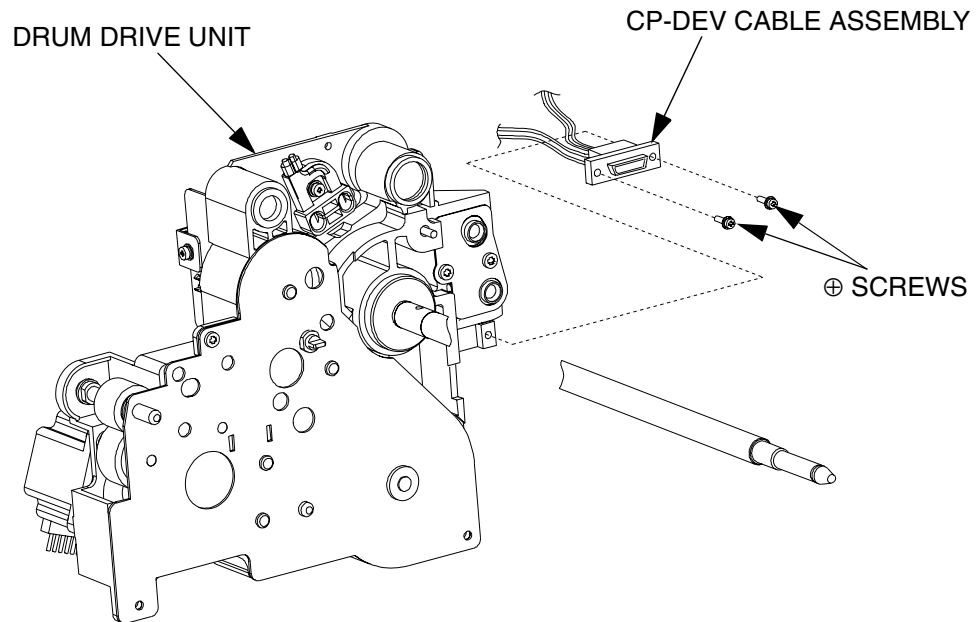


Figure 7-75. Removal of the CP-DEV Cable Assembly

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

### 7.1.2.5. (13) Removal of the DEV Bias Terminal

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Remove the MG Bias Terminal Assembly. (Refer to item 7.1.2.5. (4) on page 7-49)
2. Remove the Rivet to remove the DEV Bias Terminal.

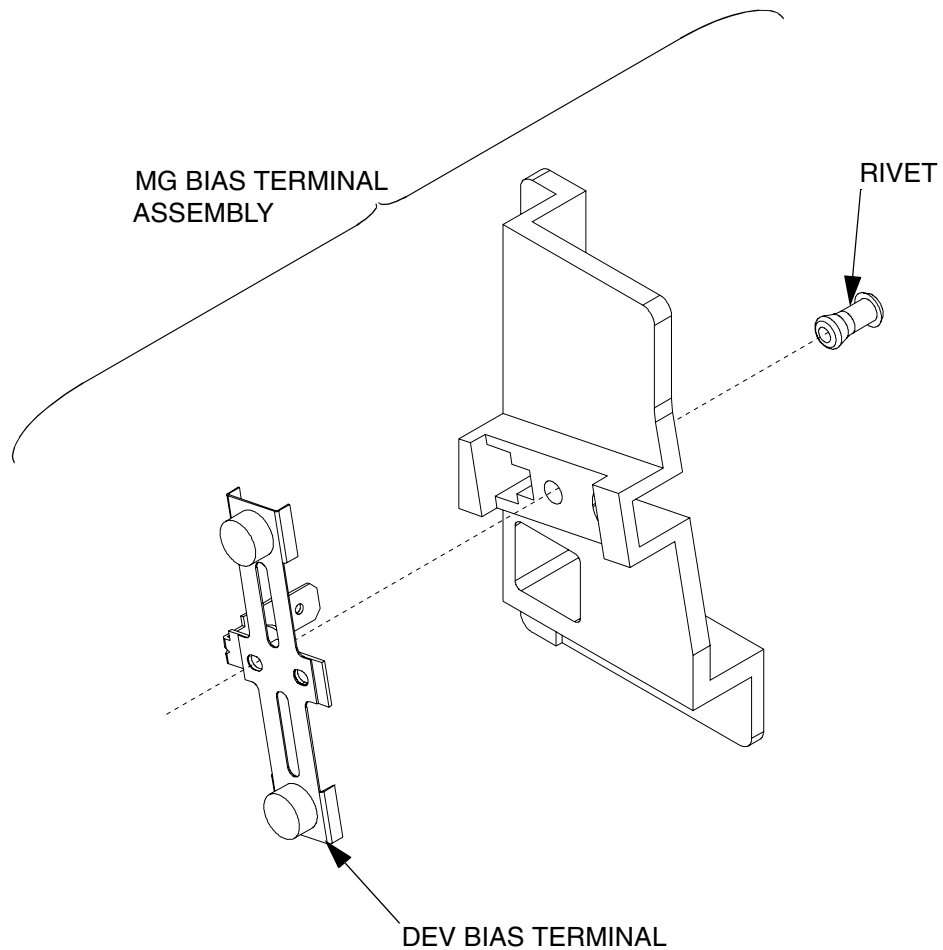


Figure 7-76. Removal of the DEV Bias Terminal

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

## 7.1.2.6. Removal of the Recycle Unit Parts

### 7.1.2.6. (1) Removal of the Recycle Path Assembly

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Note:** Take care to avoid spilling toner during the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver, - Jewel Screwdriver, M6 Spanner, Lint-Free Cloth, Vacuum Cleaner, ⊕ Screwdriver (Short).

**[Disassembling Procedures]**

1. Remove the Rear Cover.
2. Remove the Top Cover.
3. Unscrew the two ⊕ screws to remove the TC Holder.
4. Loosen the two tap screws. (no need to remove them).
5. Disconnect the connector.
6. Slide up then unfix the Cooling (DEV) Ass'y.
7. Unscrew the M6 Nut and remove the Fly Wheel.
8. Tap the Recycle Tube about 30 times (use the grip of the screwdriver).

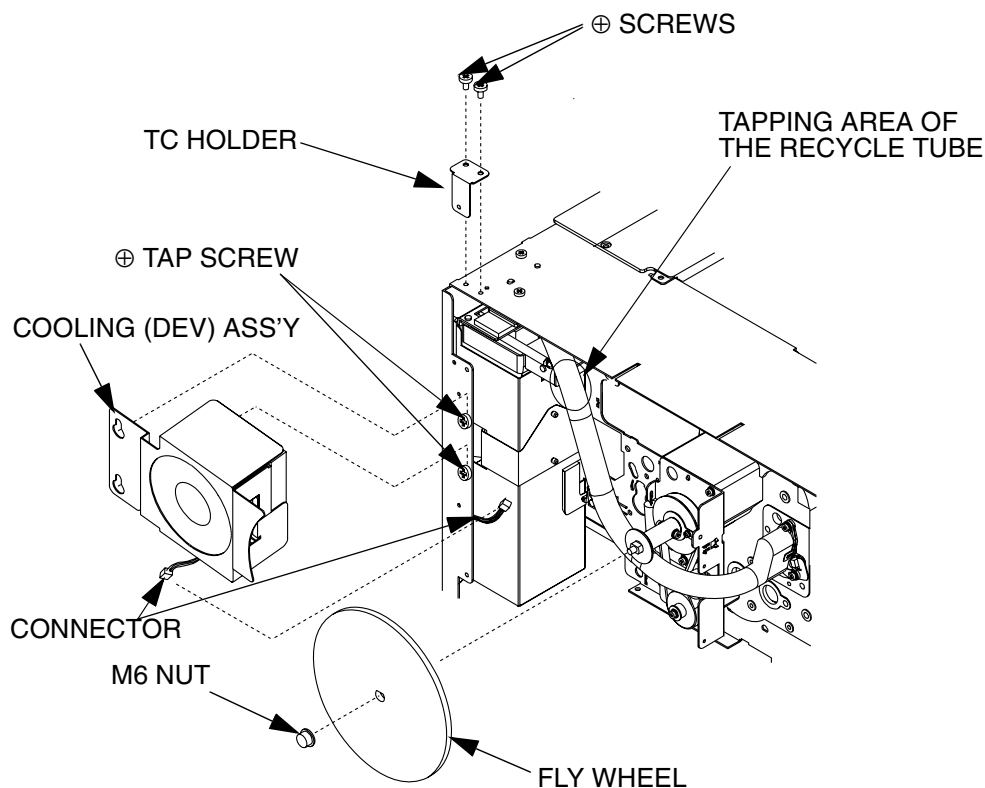


Figure 7-77. Removal of the Recycle Path Assembly



9. Open the Bottle Cover. (Refer to item 3.3.2. (1) on page 3-12)
10. Open the Inner Cover and remove the Toner Collector Bottle.

**Note:** Take care to avoid spilling toner when the Bottle Shutter Assembly is removed.

11. Remove the Rivet, then the Bottle Shutter Spring and then the Bottle Shutter Assembly.
12. Remove the connector of the Photo Interrupter.
13. Remove the connector of the Toner Sensor.
14. Unscrew the three ⊕ screws.
15. Unscrew the two ⊕ tap screws.
16. Remove the Recycle Path Assembly.

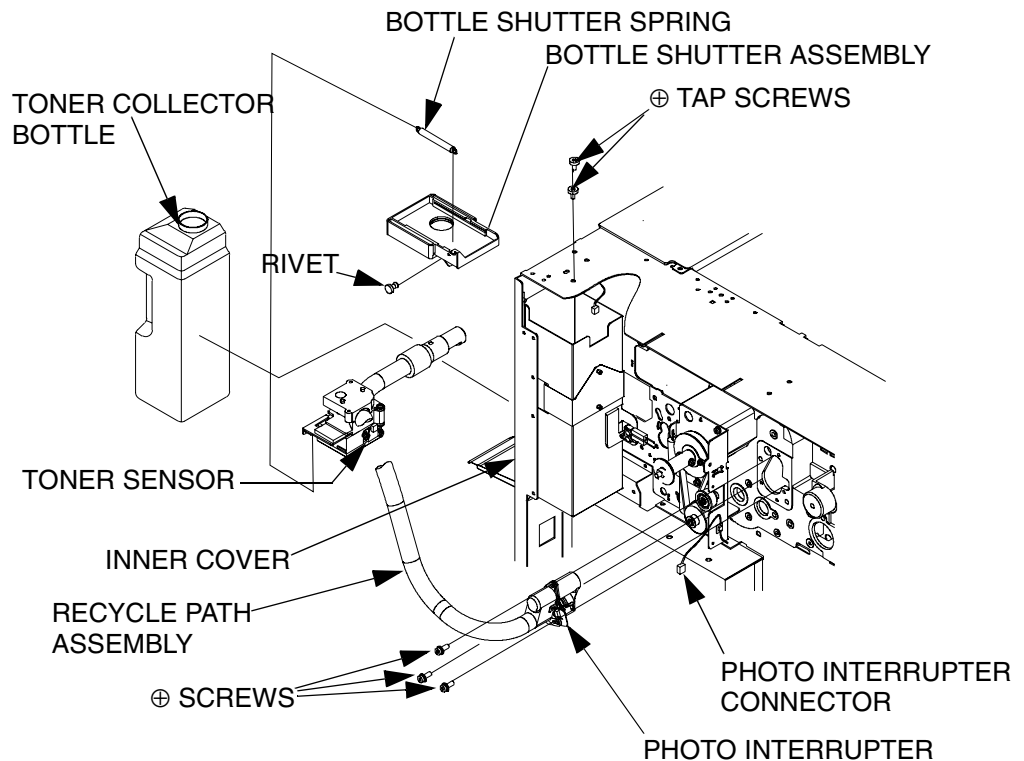


Figure 7-78. Removal of the Recycle Path Assembly  
[Assembling Procedures]

Confirm the position of the Toner Shutter as follows:

The Dip Switch 1 is ON (Refer to Figure 7-79)

The position of the Toner Shutter should be as shown in Figure 7-79.

**Note:** The position of the Dip Switch and the Toner Shutter should be one-to-one correspondence with each other.

Perform the disassembling procedures in the reverse order.

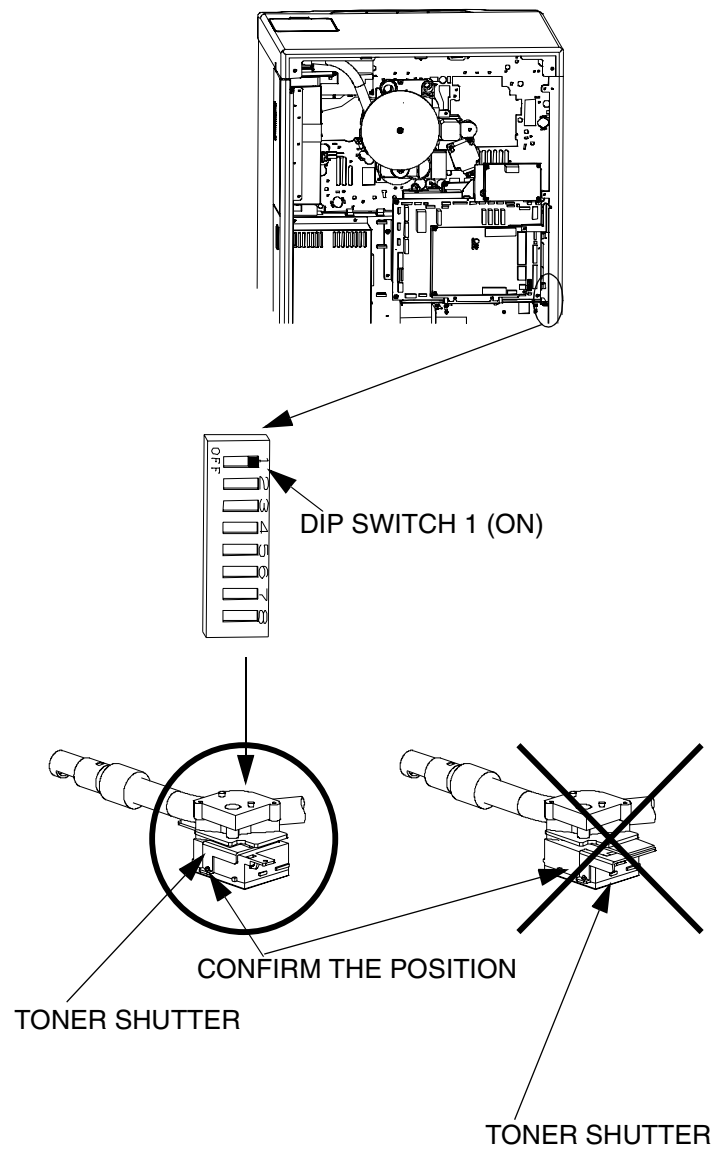


Figure 7-79. Removal of the Recycle Path Assembly

#### 7.1.2.6. (2) Removal of the Toner Collector Bottle Set Sensor

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver, ⊕ Jewel Screwdriver.

**[Disassembling Procedures]**

1. Remove the Rear Cover. (Refer to item 3.3.2. (1) on page 3-12)
2. Remove the connector of the Toner Collector Bottle Set Sensor.
3. Unscrew the two ⊕ screws.
4. Remove the Toner Collector Bottle Set Sensor.

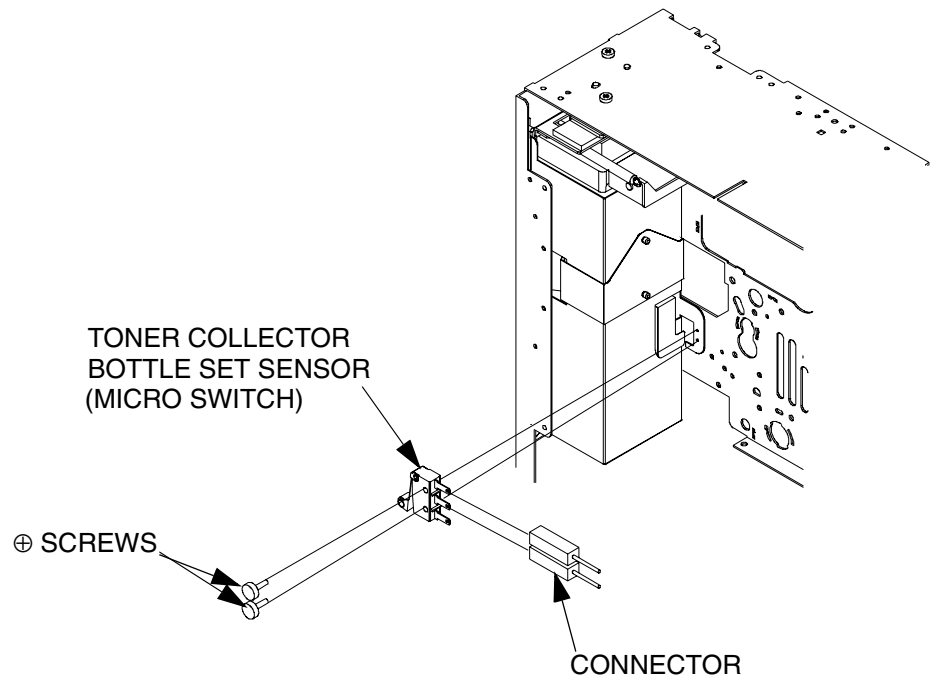


Figure 7-80. Removal of the Toner Collector Bottle Set Sensor

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

### 7.1.2.6. (3) Removal of the Bottle Box Assembly

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver, - Jewel Screwdriver, Lint-Free Cloth, Vacuum Cleaner.

**[Disassembling Procedures]**

1. Remove the Rear Cover. (Refer to item 3.3.2. (1) on page 3-12)
2. Remove the Top Cover. (Refer to item 3.3.2. (1) on page 3-12)
3. Remove the RH Rear Side Cover. (Refer to item 3.3.2. (1) on page 3-12)

**Note:** Take care to avoid spilling toner when the Bottle Shutter Assembly is removed.

4. Tap the Recycle Tube about 30 times (use the grip of the screwdriver).
5. Open the Inner Cover and remove the Toner Collector Bottle.
6. Remove the Rivet, then the Bottle Shutter Spring and then the Bottle Shutter Assembly.
7. Remove the connector of the Toner Collector Bottle Set Sensor. (Refer to item 7.1.2.6. (2) on page 7-62)
8. Unscrew the two ⊕ screws and remove the Bottle Box Assembly.

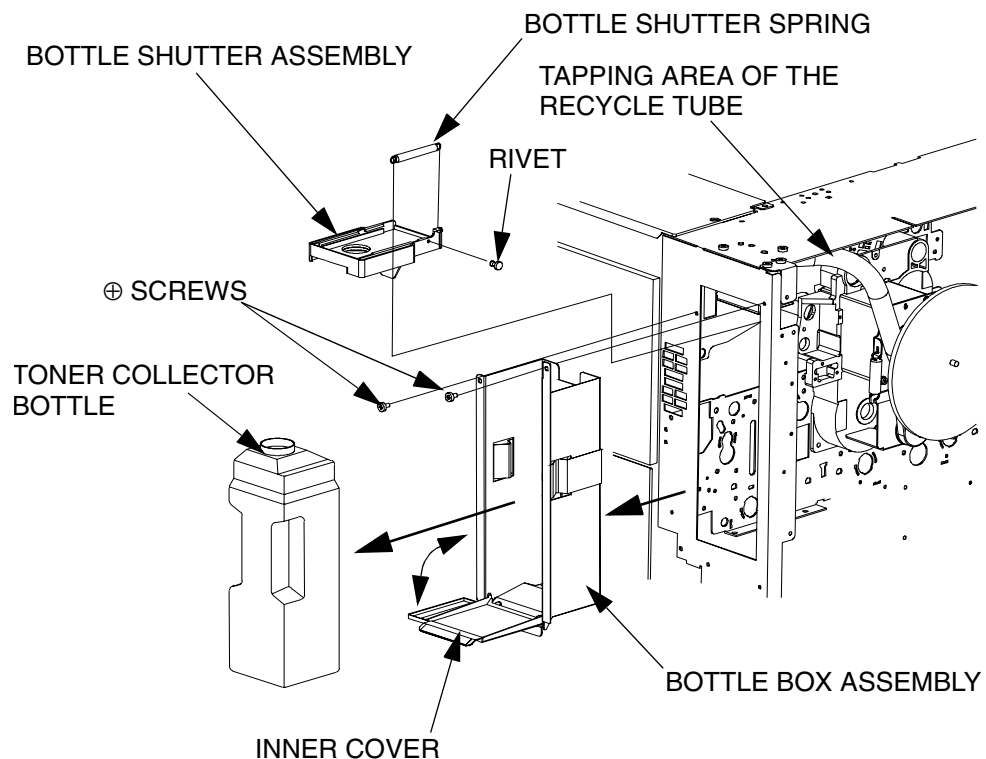


Figure 7-81. Removal of the Bottle Box Assembly

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

#### 7.1.2.6. (4) Removal of the Photo Interrupter

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver, - Jewel Screwdriver, M6 Spanner, Lint-Free Cloth, Vacuum Cleaner.

**[Disassembling Procedures]**

1. Remove the Recycle Path Assembly. ([Refer to item 7.1.2.6. \(1\) on page 7-59](#))
2. Clean up inside of the Recycle Path Assembly with a vacuum cleaner.
3. Unfasten the two snaps of the Recycle Joint (CL).
4. Remove the Sensor Holder.
5. Unfasten the four snaps.
6. Remove the Photo Interrupter.

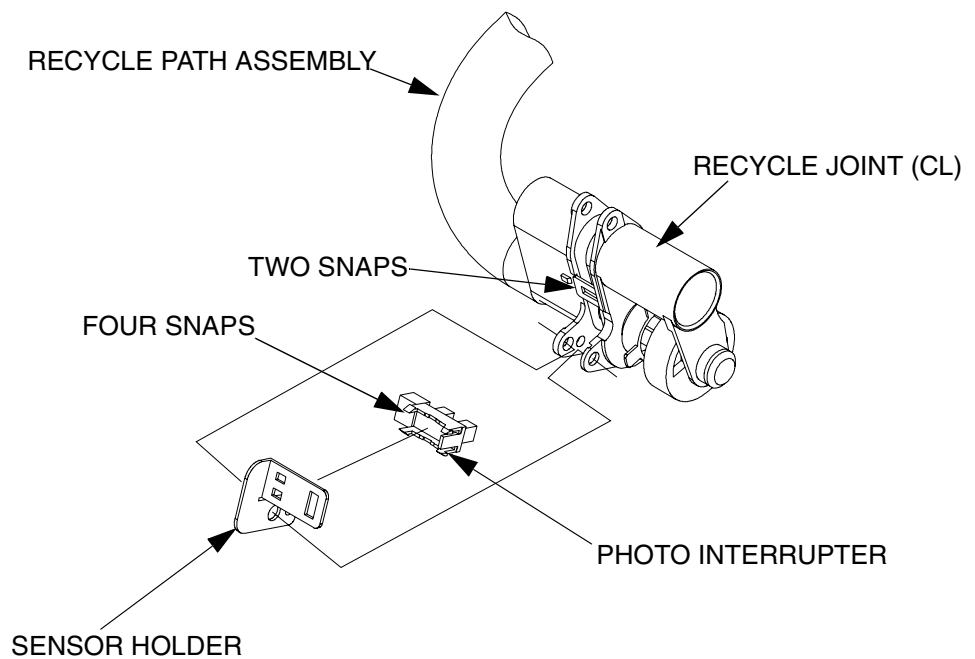


Figure 7-82. Removal of the Photo Interrupter

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

#### 7.1.2.6. (5) Removal of the Toner Sensor

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Note:** Take care to avoid spilling toner during the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver, - Jewel Screwdriver, M6 Spanner, Lint-Free Cloth, Vacuum Cleaner.

**[Disassembling Procedures]**

1. Remove the Recycle Path Assembly. (Refer to item 7.1.2.6. (1) on page 7-59)
2. Clean up inside of the Recycle Path Assembly with a vacuum cleaner.
3. Unscrew the two ⊕ screws to remove the Toner Sensor.

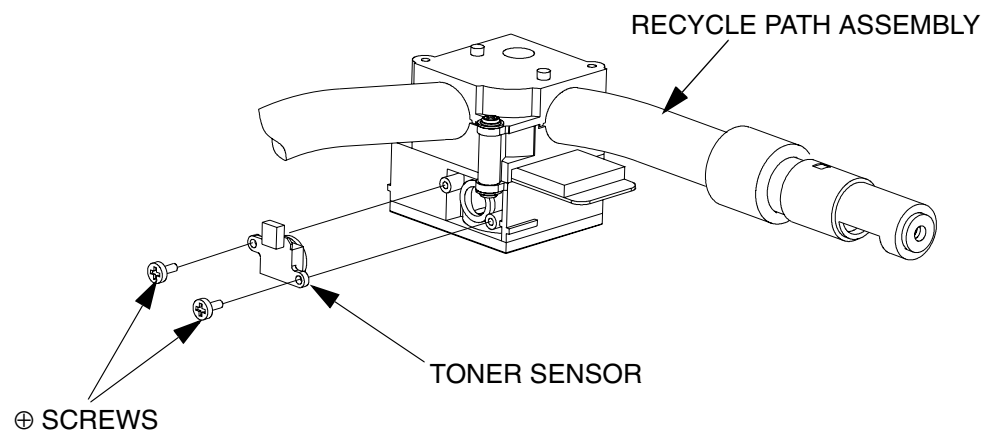


Figure 7-83. Removal of the Toner Sensor

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

### 7.1.2.7. Removal of the Erase Lamp

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Open the Front Cover.
2. Draw out the Drum Unit. (Refer to item 7.1.2.1. (1) on page 7-4)
3. Draw out the Charger Unit. (Refer to item 7.1.2.2. (1) on page 7-6)
4. Disconnect the connector.
5. Draw out the Erase Lamp.

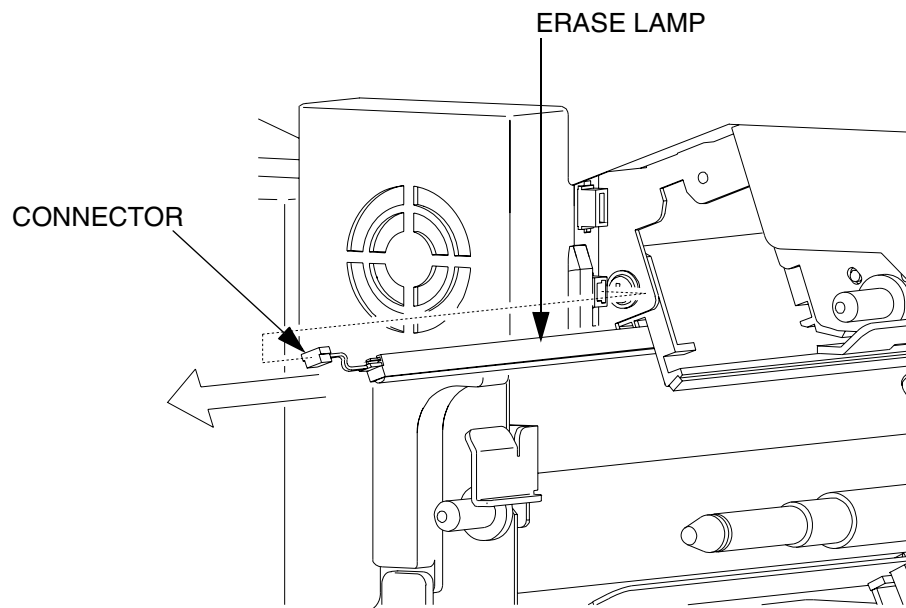


Figure 7-84. Removal of the Erase Lamp

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

## 7.1.3. Removal of the Paper Feed Block

### 7.1.3.1. Removal of the Fuser Unit Parts

#### 7.1.3.1. (1) Removal of the Fuser Unit

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

The Fuser Unit may be very hot. Turn the printer off and allow the Fuser Unit Assembly to cool for 30 minutes before attempting to remove it.

**Applicable jigs and tools:** ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Open the Front Cover. (Refer to item 3.3.1 on page 3-9)
2. Hold up the Fuser Latch, then pull forward the Fuser Unit in the direction of arrow **A**.
3. Unscrew the ⊕ screw to remove the Slide Rail.
4. Remove the Fuser Unit Assembly.

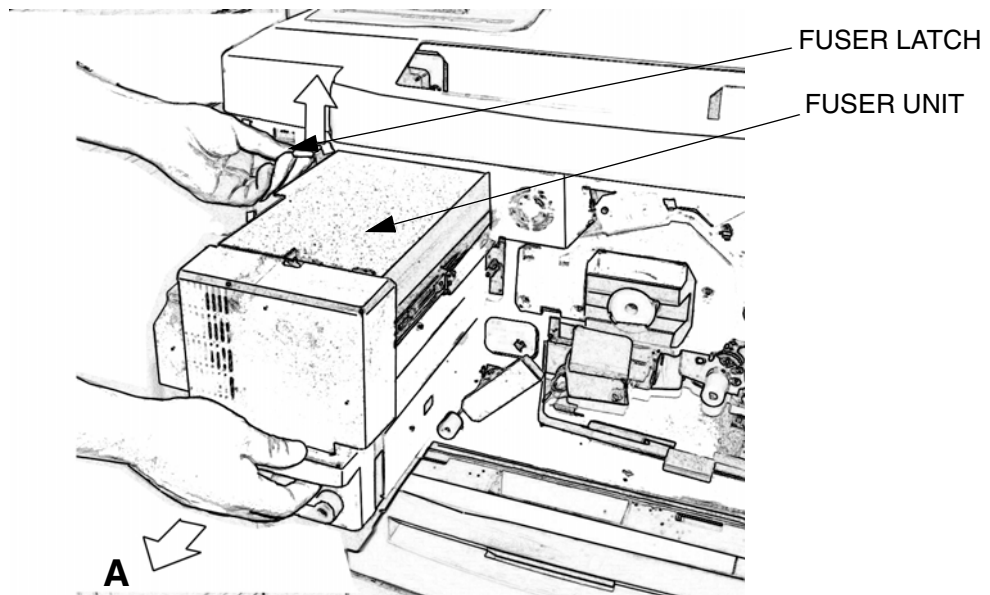


Figure 7-85. -1 Removal of the Fuser Unit



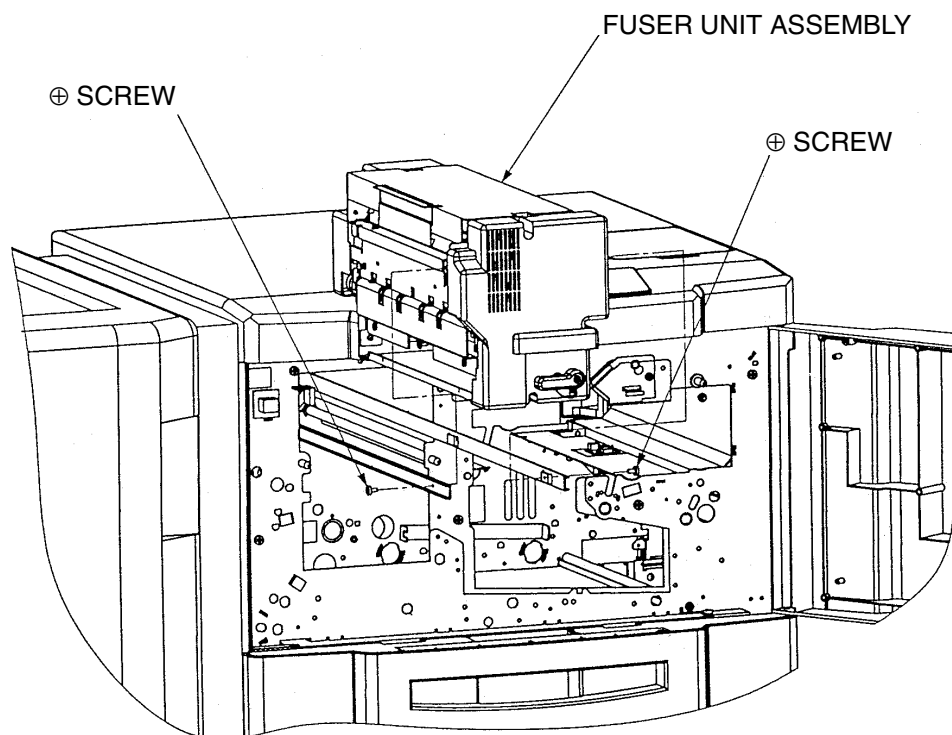


Figure 7-86. -2 Removal of the Fuser Unit

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

### 7.1.3.1. (2) Removal of the Fuser Cleaning Web

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

The Fuser Unit may be very hot. Turn the printer off and allow the Fuser Unit Assembly to cool for 30 minutes before attempting to remove it.

Applicable jigs and tools: ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Open the Front Cover. (Refer to item 3.3.1 on page 3-9)
2. Hold up the Fuser Latch, then pull forward the Fuser Unit in the direction of the arrow **A**.
3. Open the Web Holder Plate in the direction of the arrow **B**.
4. Turn the handle and lift the Fuser Cleaning Web upwards in the direction of the arrow **C**.

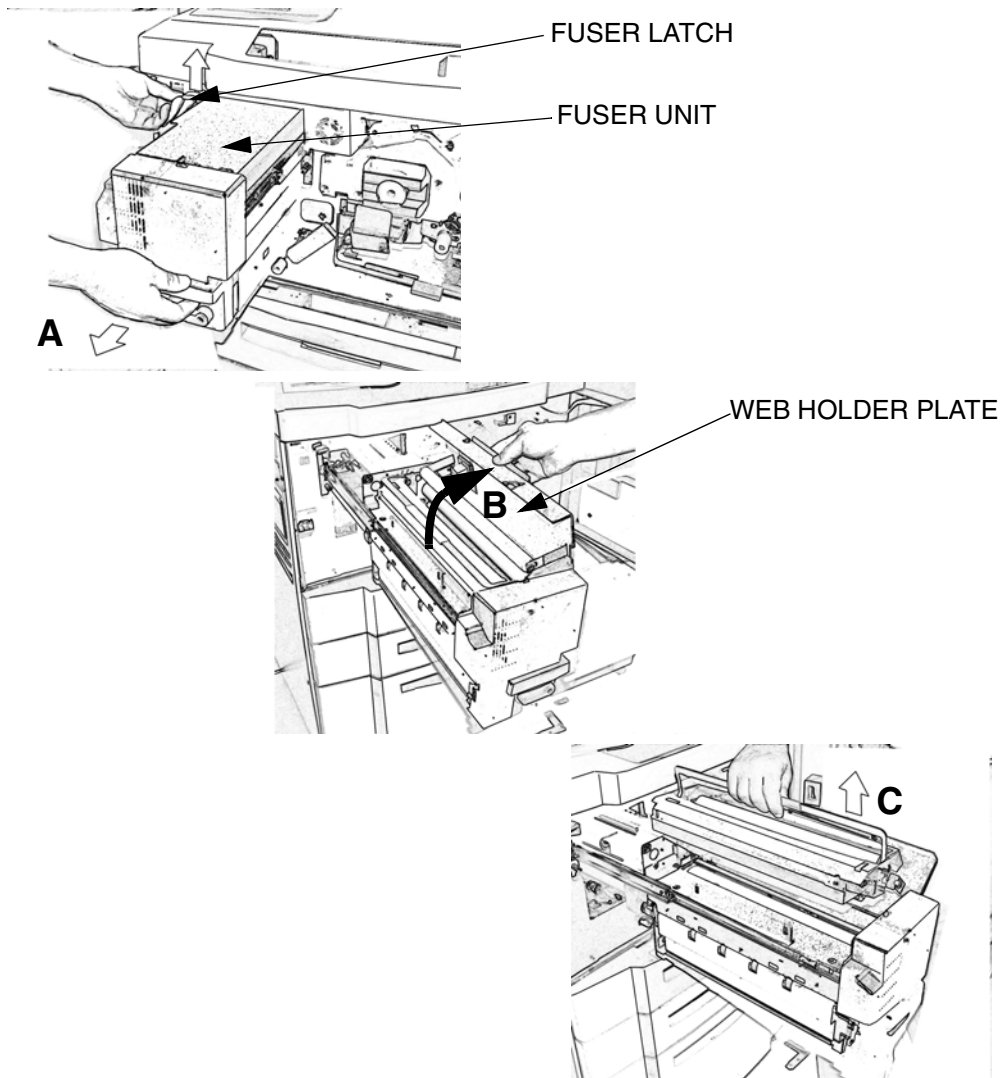


Figure 7-87. Removal of the Fuser Cleaning Web

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

## 7.1.3.2. Removal of the Multi-bypass Tray Unit Parts

### 7.1.3.2. (1) Removal of the Multi-bypass Tray Unit

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Remove the RH Cover.
2. Open the Bottle Cover.
3. Unscrew the two ⊕ screws.
4. Open the IS Cover, turn the Multi-bypass Tray Unit in the direction of the arrow **A** and pull it off in the direction of arrow **B**.
5. Disconnect the connector.

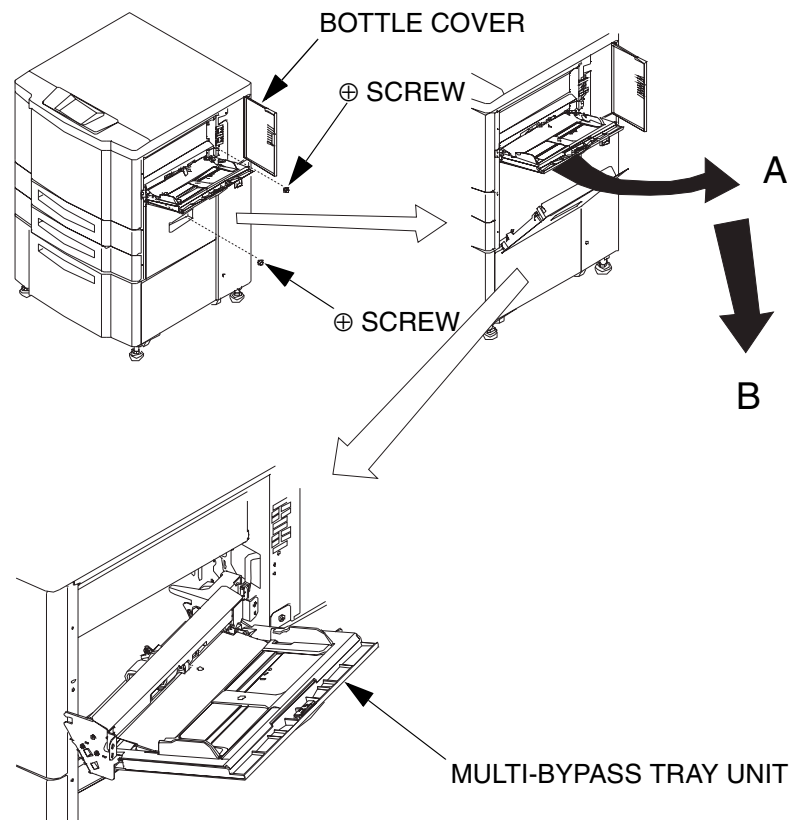


Figure 7-88. Removal of the Multi-bypass Tray Unit

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

### 7.1.3.2. (2) Removal of the Pick Rollers

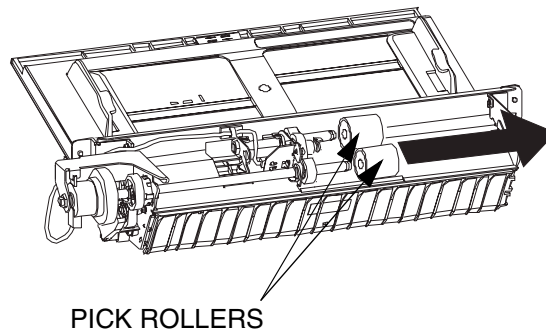
**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Remove the Multi-bypass Tray Unit. (Refer to item 7.1.3.2. (1) on page 7-70)
2. Pull off the Pick Rollers in the direction of the arrow **A**.



**NOTE:** THIS ROLLER CLUTCH COLOR

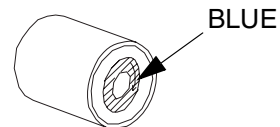


Figure 7-89. Removal of the Pick Rollers

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

### 7.1.3.2. (3) Removal of the Separator Roller

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver, - Screwdriver.

**[Disassembling Procedures]**

1. Remove the Multi-bypass Tray Unit. (Refer to item 7.1.3.2. (1) on page 7-70)
2. Unscrew the ⊕ screw.
3. Push the two Locks of the Guide Frame in the direction of the arrow **A** with a - screwdriver and remove the Guide Frame.
4. Pull the Separation Holder in the direction of the arrow **B** and pull off the Separator Roller in the direction of the arrow **C**.

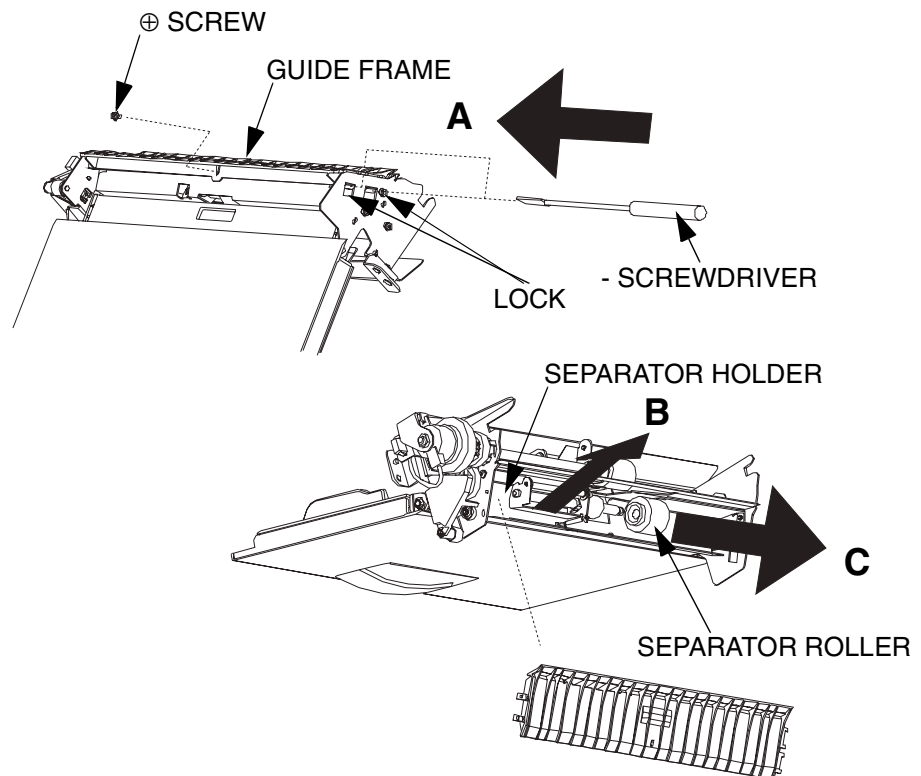


Figure 7-90. Removal of the Separator Roller

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

#### 7.1.3.2. (4) Removal of the Torque Limiter

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver, - Screwdriver.

**[Disassembling Procedures]**

1. Remove the Multi-bypass Tray Unit. (Refer to item 7.1.3.2. (1) on page 7-70)
2. Unscrew the ⊕ screw.
3. Push the two Locks of the Guide Frame in the direction of the arrow **A** with a - screwdriver and remove the Guide Frame.
4. Remove the Hook Ring A.
5. Pull the Separation Holder in the direction of the arrow **B** and pull off the Torque Limiter in the direction of the arrow **C**.
6. Pull off the Separator Roller in the direction of the arrow **D**.

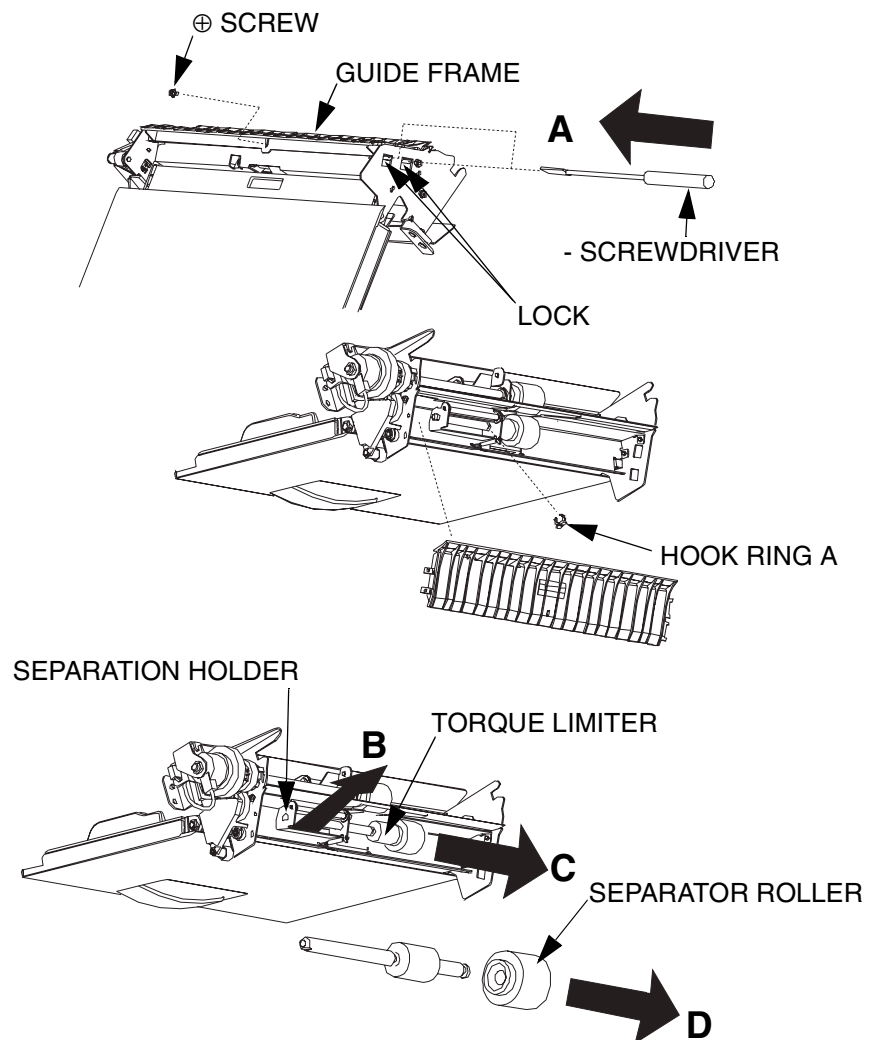


Figure 7-91. Removal of the Torque Limiter

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

### 7.1.3.2. (5) Removal of the Multi-bypass Tray Gear

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Remove the Multi-bypass Tray Unit. ([Refer to item 7.1.3.2. \(1\) on page 7-70](#))
2. Unscrew the two ⊕ screws.
3. Remove the Rack Holder and the Tray Gear.

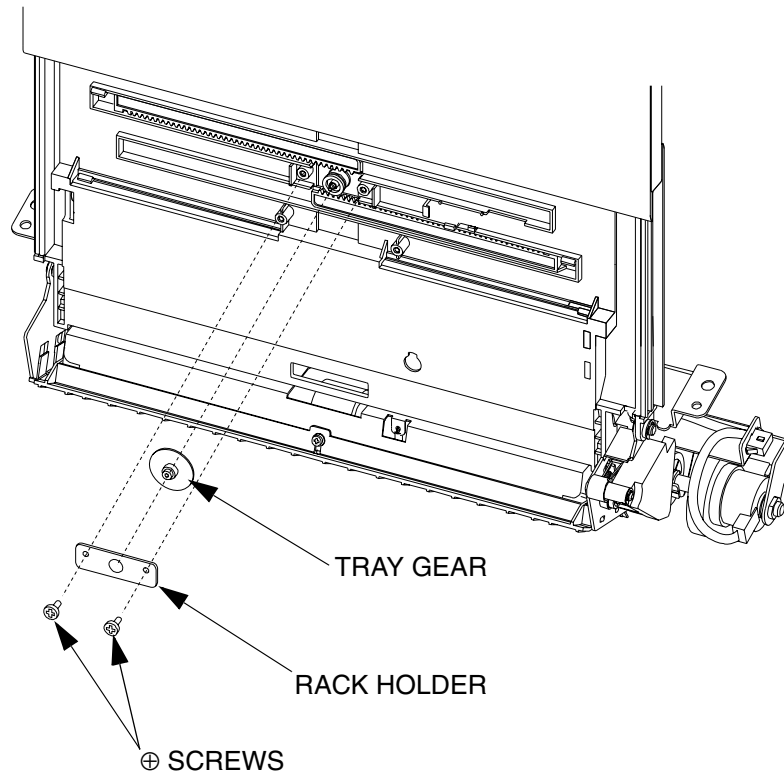


Figure 7-92. Removal of the Multi-bypass Tray Gear

### [Assembling Procedures]

Perform the disassembling procedures in the reverse order.

**Note:**

1. Pull the Paper Guide L in the direction of the arrow **A** and pull the Paper Guide R in the direction of the arrow **B**.
2. Install the Tray Gear, the Rack Holder with  $\oplus$  screws.

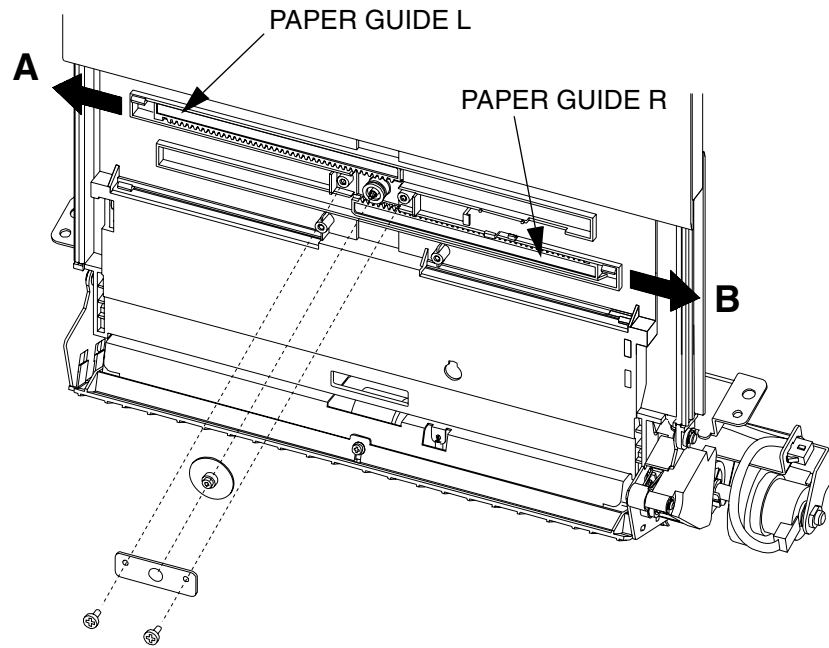


Figure 7-93. Removal of the Multi-bypass Tray Gear



### 7.1.3.2. (6) Removal of the Paper Empty Sensor

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Unscrew the ⊕ screw.
2. Remove the Paper Empty Sensor with Bracket.
3. Disconnect the connector and remove the Paper Empty Sensor from the Bracket.

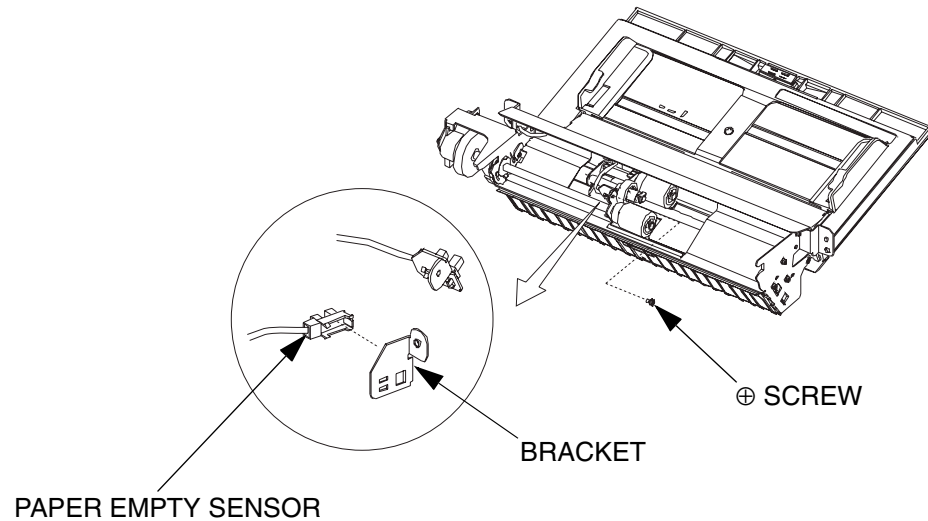


Figure 7-94. Removal of the Paper Empty Sensor

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

**Note:** Align the convex of the Bracket to the mortise of the Frame.

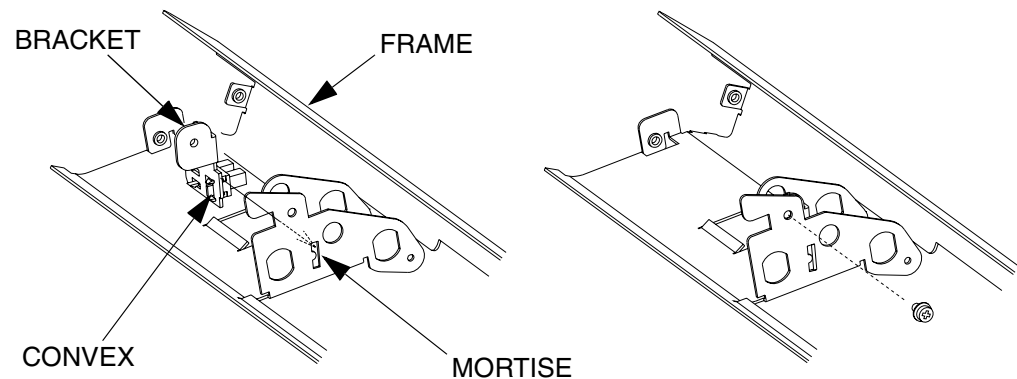


Figure 7-95. Removal of the Paper Empty Sensor

### 7.1.3.2. (7) Removal of the Pick Clutch

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools: None.**

**[Disassembling Procedures]**

1. Remove the two Hook Ring A.
2. Pull the Gear in the direction of arrow **A** and remove the Pin.
3. Disconnect the connector.
4. Pull the Drive Shaft in the direction of the arrow **B** and remove the Pick Clutch.

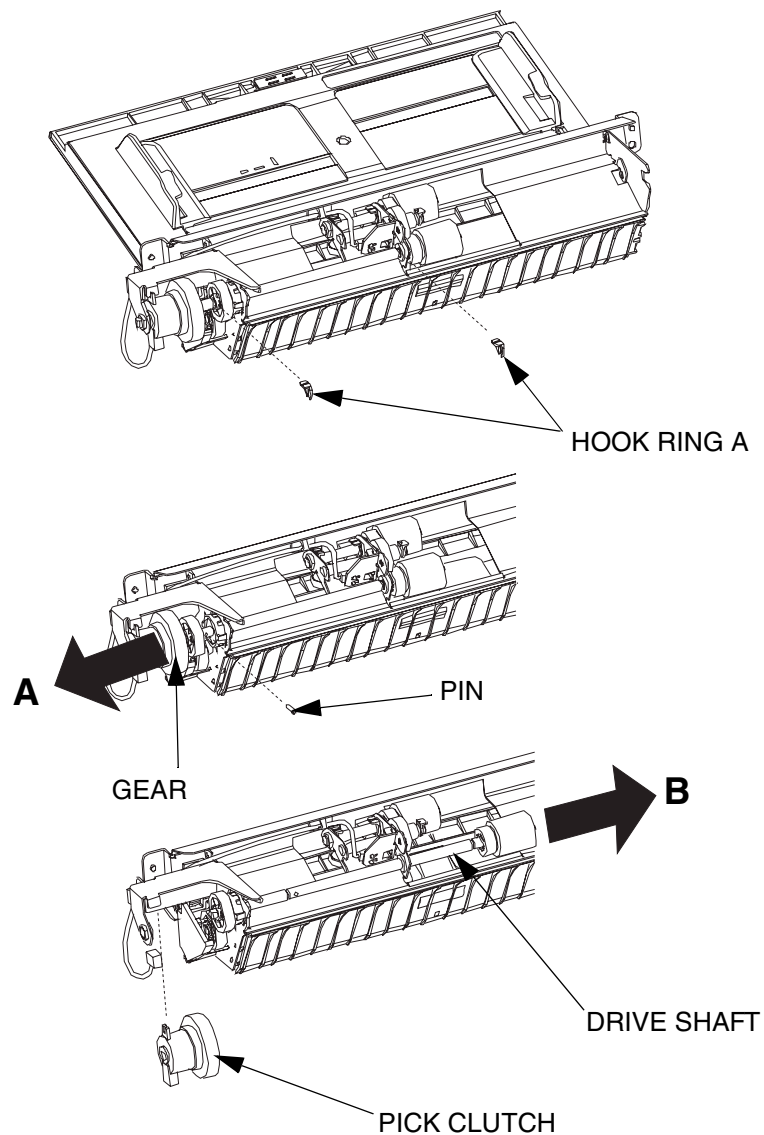


Figure 7-96. Removal of the Pick Clutch

### [Assembling Procedures]

Perform the disassembling procedures in the reverse order.

**Note:** Align the dent of the Pick Clutch to the convex part of the Frame.

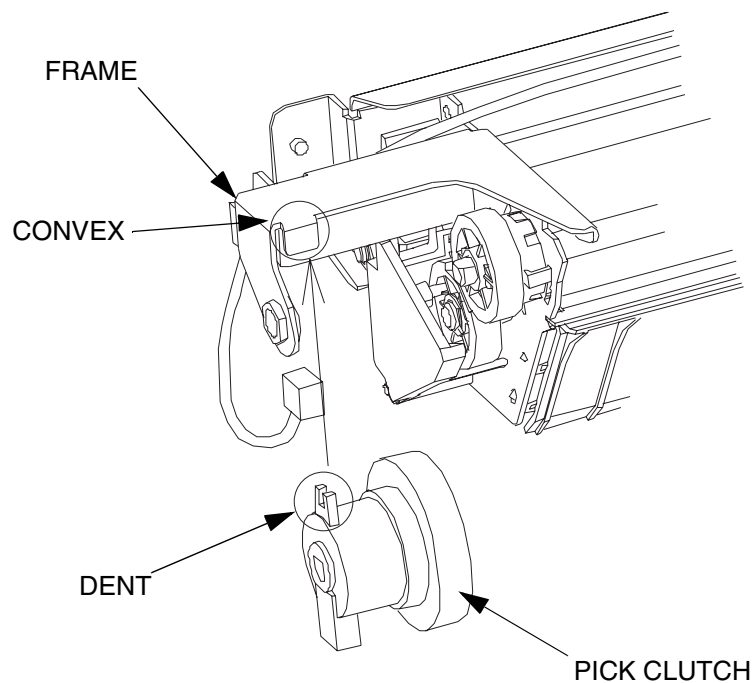


*Figure 7-97. Removal of the Pick Clutch*

### 7.1.3.2. (8) Removal of the Empty Sensor Actuator

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools: - Screwdriver.**

**[Disassembling Procedures]**

1. Remove the Multi-bypass Tray Unit. (Refer to item 7.1.3.2. (1) on page 7-70)
2. Push the Paper Tray in the direction of the arrow **A**.
3. Pull off the Retaining Ring with a - Screwdriver.
4. Pull off the Shaft.
5. Pull off the Empty Sensor Actuator and the Coil Spring.

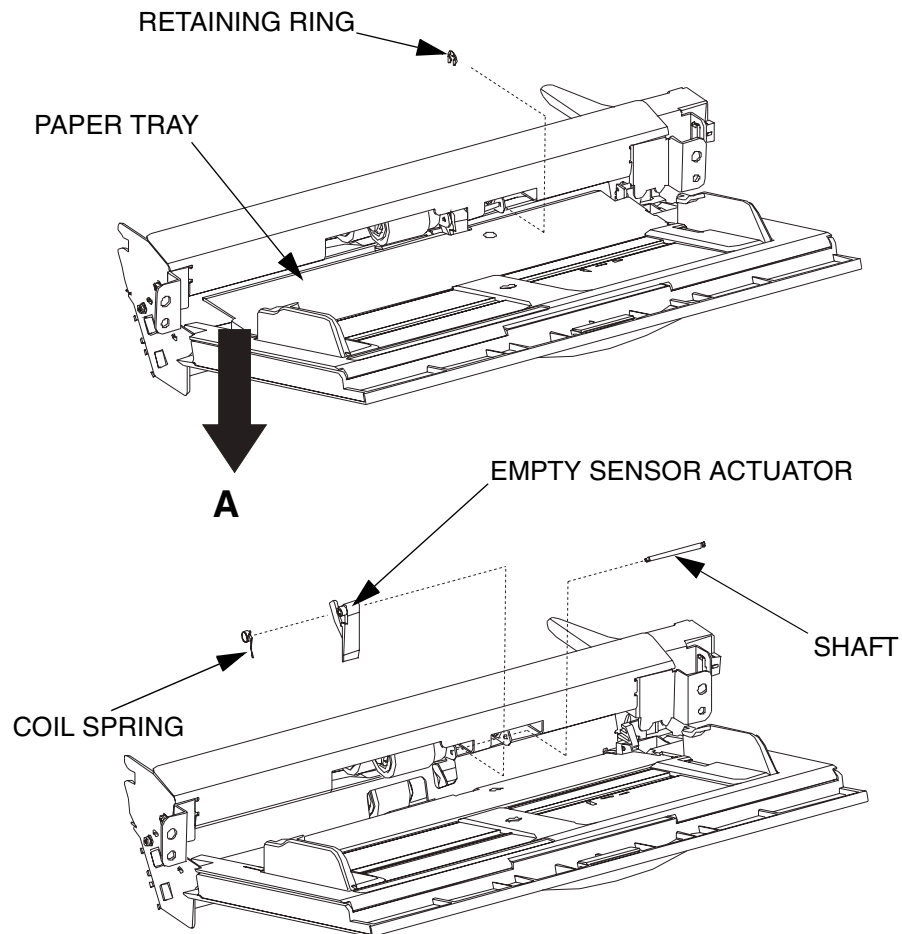


Figure 7-98. Removal of the Empty Sensor Actuator

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

### 7.1.3.2. (9) Removal of the Cam Gear

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools: - Screwdriver.**

**[Disassembling Procedures]**

1. Remove the Multi-bypass Tray Unit. (Refer to item 7.1.3.2. (1) on page 7-70)
2. Pull off the Retaining Ring with a - Screwdriver
3. Pull off the Triangle Arm and the Coil Spring.
4. Pull off the Retaining Ring with the - Screwdriver.
5. Pull off the Cam Gear.

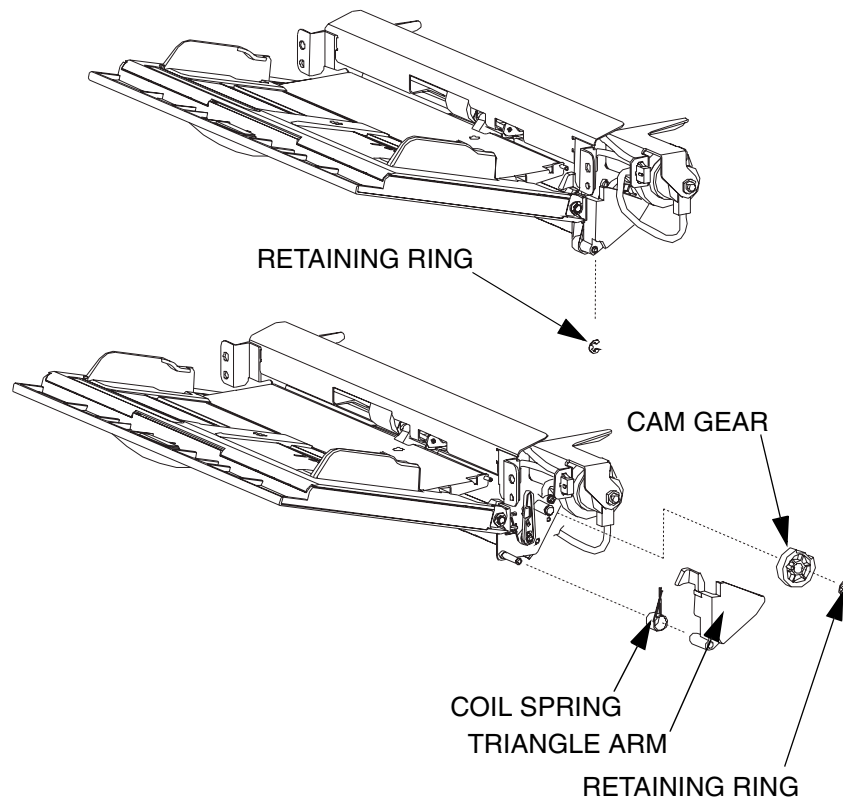


Figure 7-99. Removal of the Cam Gear

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

### 7.1.3.2. (10) Removal of the Gear A

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

Applicable jigs and tools: None.

**[Disassembling Procedures]**

1. Remove the two Hook Ring A.
2. Pull the Gear in the direction of arrow **A** and remove the Pin.
3. Disconnect the connector.
4. Pull the Drive Shaft in the direction of the arrow **B** and remove the Pick Clutch.
5. Pull the Gear A.

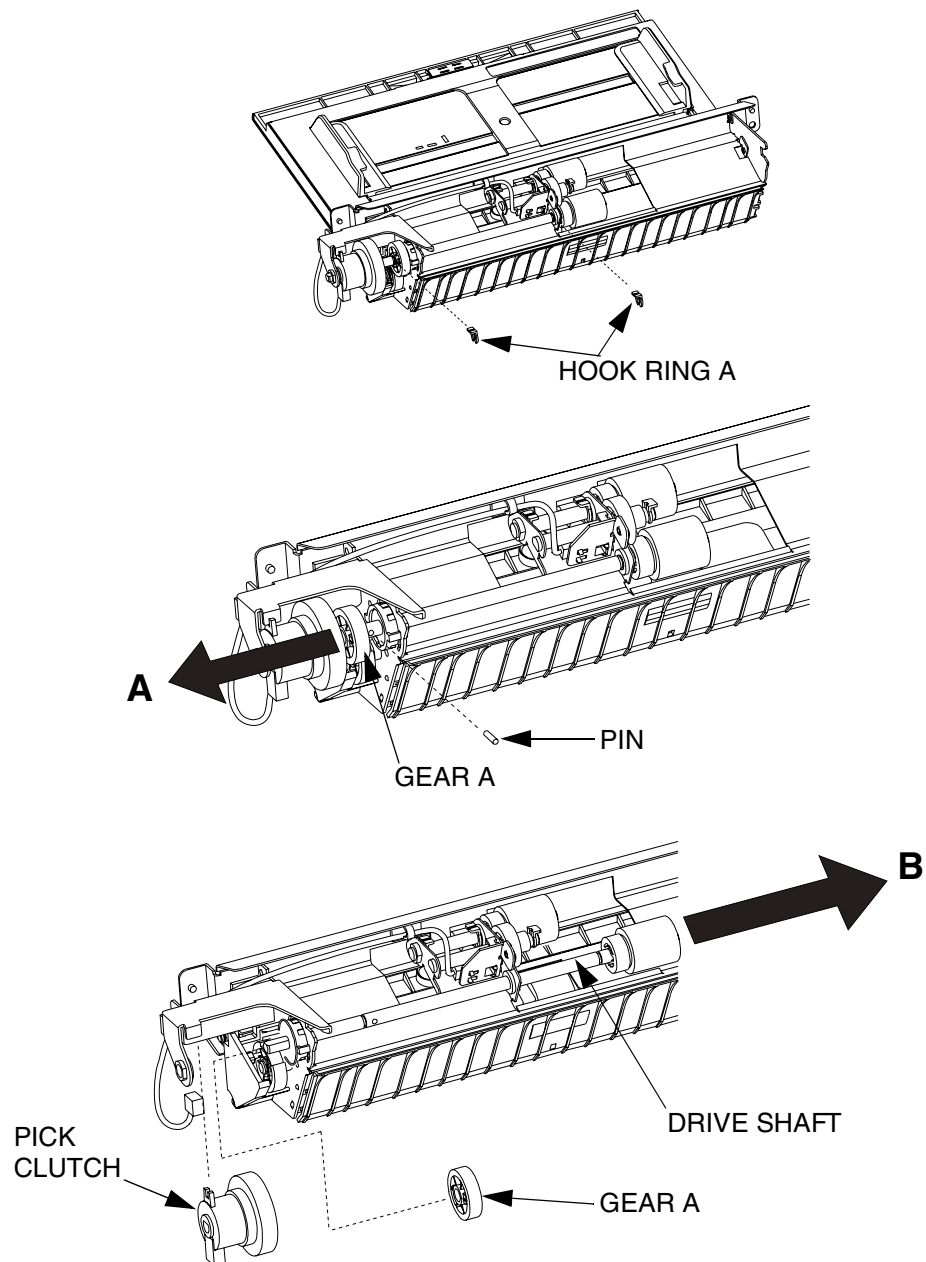


Figure 7-100. Removal of the Gear A

### [Assembling Procedures]

Perform the disassembling procedures in the reverse order.

**Note:** Align the dent of the Pick Clutch to the convex part of the Frame.

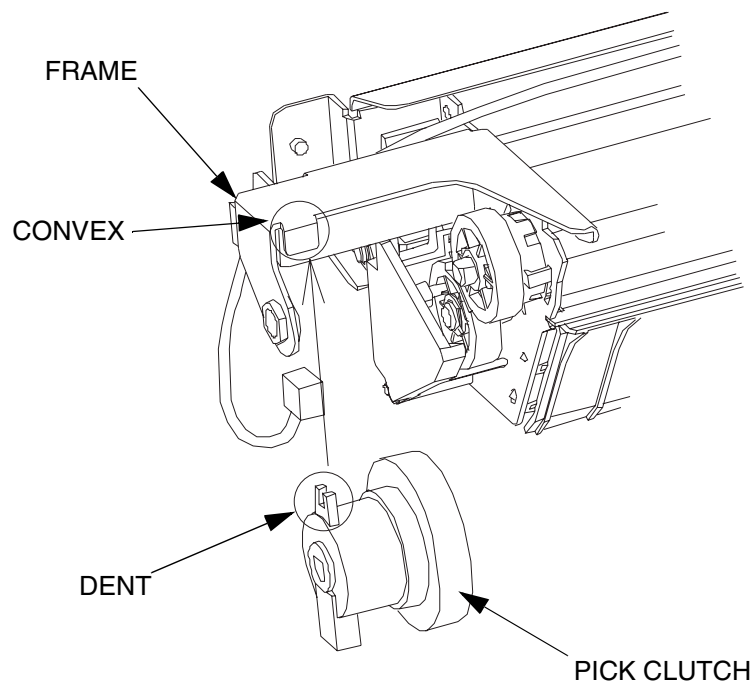


Figure 7-101. Removal of the Gear A

### 7.1.3.3. Removal of the Registration Parts

#### 7.1.3.3. (1) Removal of the Registration Roller Assembly

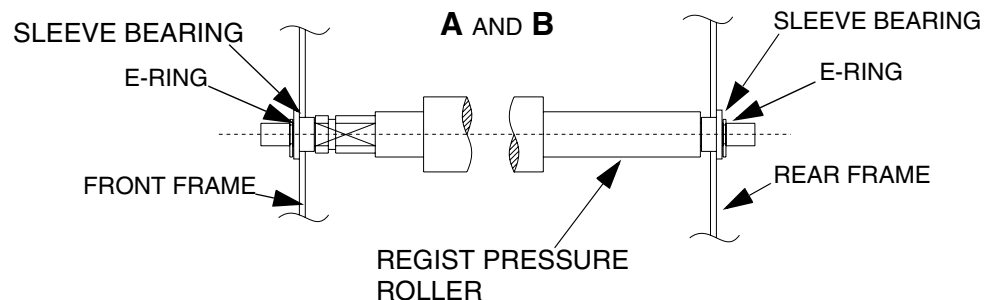
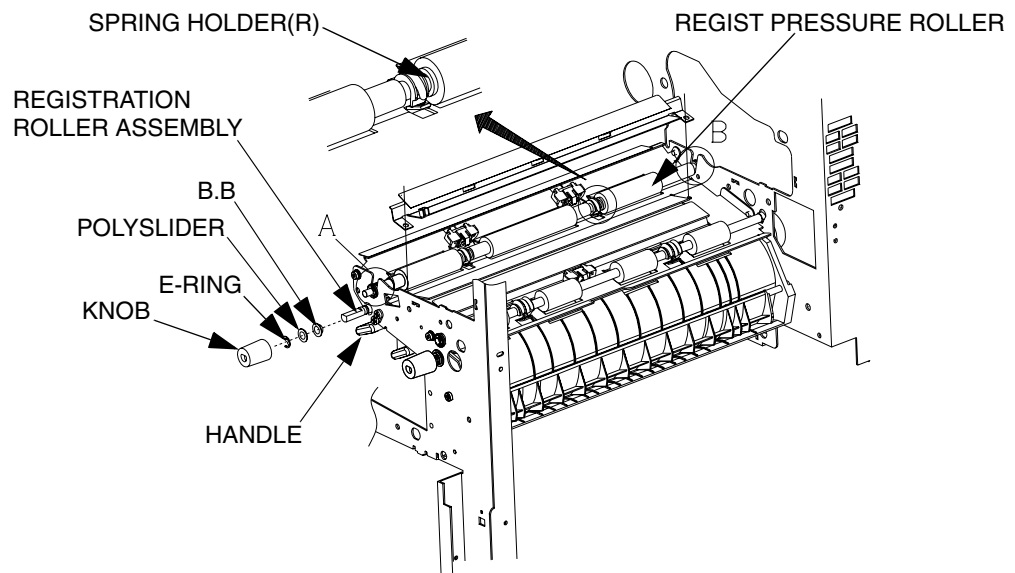
**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver, - Screwdriver.

**[Disassembling Procedures]**

1. Draw out the Drum Unit. (Refer to item 7.1.2.1. (1) on page 7-4)
2. Draw out the Developer Unit. (Refer to item 7.1.2.3. (1) on page 7-10)
3. Unscrew the seven ⊕ screws to remove the Inner Cover. (Refer to item 7.1.5.1. (3) on page 7-195) - Procedures 1 to 7.
4. Remove the PF Motor Assembly. (Refer to item 7.1.3.12 on page 7-143) - Procedures 1 to 3.
5. Remove the two Spring Holder (R). (Refer to item 7.1.3.3. (3) on page 7-86) - Procedures 6 to 9.
6. Remove the Regist Pressure Roller by lifting upward.
7. Remove the Drive Pulley.
8. Remove the Knob, the E-Ring, the Polyslider and the B.B.
9. Remove the B.B Holder by turning counterclockwise.
10. Remove the Registration Roller Assembly while lowering the Handle.





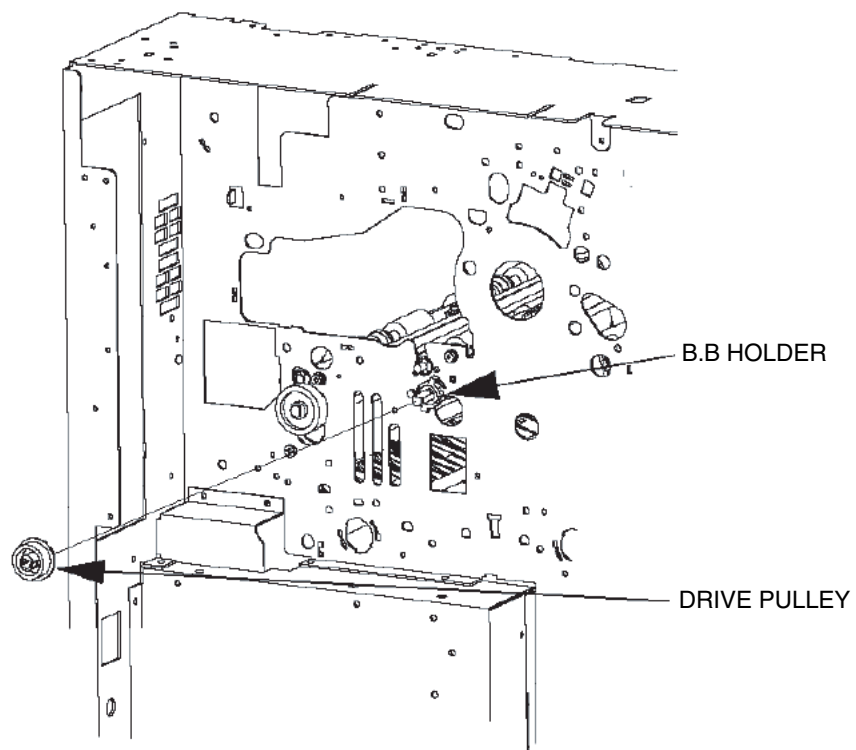


*Figure 7-102. Removal of the Registration Roller Assembly*

**[Assembling Procedures]**

Perform the disassembling procedures in reverse order.

### 7.1.3.3. (2) Removal of the Timing Drive Roller Assembly

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver, - Screwdriver.

**[Disassembling Procedures]**

1. Draw out the Drum Unit. (Refer to item 7.1.2.1. (1) on page 7-4)
2. Draw out the Developer Unit. (Refer to item 7.1.2.3. (1) on page 7-10)
3. Unscrew the seven ⊕ screws to remove the Inner Cover. (Refer to item 7.1.5.1. (3) on page 7-195) - Procedures 1 to 7.
4. Remove the PF Motor Assembly. (Refer to item 7.1.3.12 on page 7-143)
5. Remove the two Spring Holders (Refer to item 7.1.3.3. (3) on page 7-86) - Procedures 1 to 5.
6. Remove the two E-Ring and the two Sleeve Bearing.
7. Remove the Timing Pressure Roller by lifting upward.
8. Remove the E-Ring to remove the Drive Gear.
9. Remove the Knob, the E-Ring, the Polyslider and the B.B.
10. Remove the B.B. Holder by turning clockwise.
11. Remove the Timing Drive Roller Assembly.

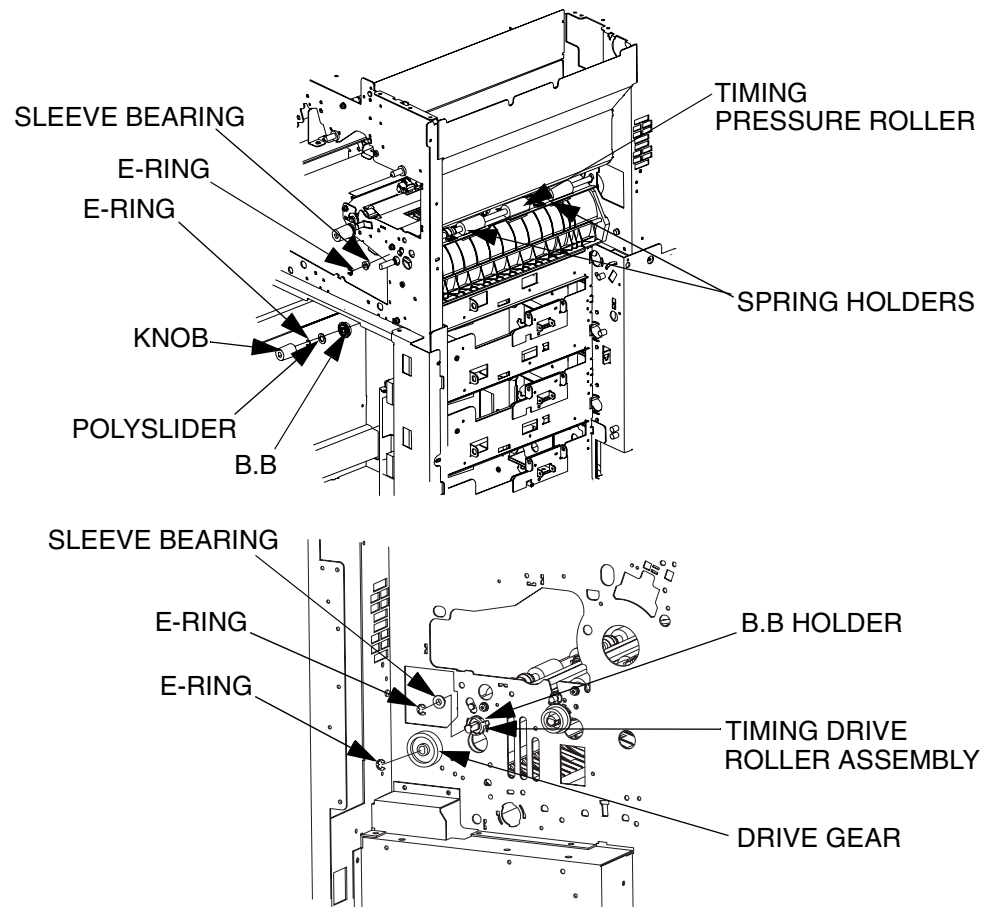


Figure 7-103. Removal of the Timing Drive Roller Assembly

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

### 7.1.3.3. (3) Removal of the Spring Holder

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ **Screwdriver.**

**[Disassembling Procedures]**

1. Remove the Multi-bypass Tray Unit. [\(Refer to item 7.1.3.2. \(1\) on page 7-70\)](#)
2. Unscrew the seven ⊕ screws to remove the Inner Cover. [\(Refer to item 7.1.5.1. \(3\) on page 7-195\)](#) - *Procedures 1 to 7.*
3. Remove the Hook Ring and the Guide Shaft.
4. Remove the four Springs of the **A** and **B** parts.
5. Remove the two Spring Holders.
6. Remove the Cleaner Holder assembly.
7. Unscrew the two ⊕ screws to remove the Cleaner Holder Base assembly.
8. Remove the two Roller-Springs of the **C** and **D** parts.
9. Remove the two Spring Holders(R).

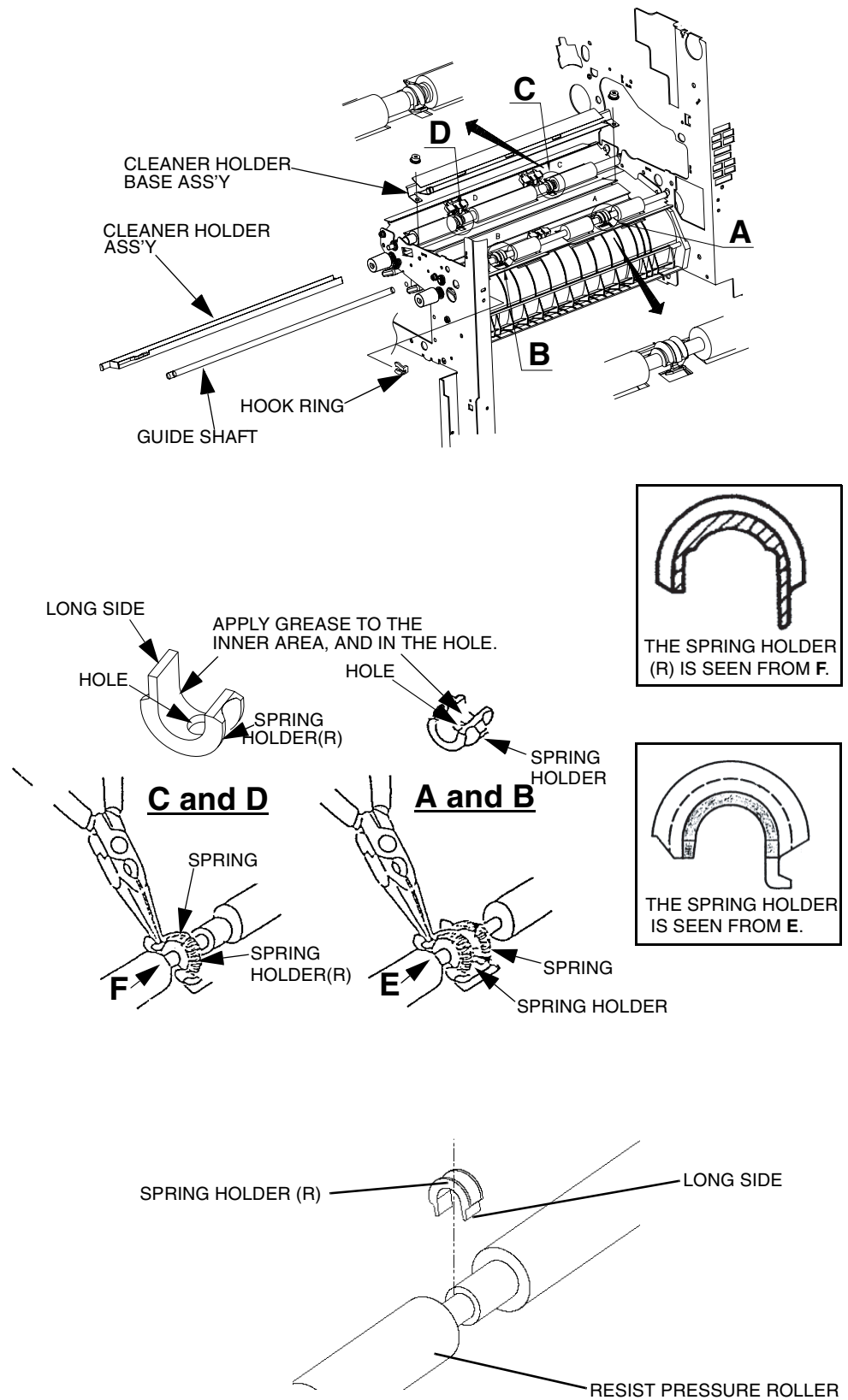


Figure 7-104. Removal of the Spring Holder

**[Assembling Procedures]**

1. Smear the Spring Holder with grease.
2. Perform the disassembling procedures in the reverse order.

#### 7.1.3.3. (4) Removal of the Timing Sensor

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Remove the Multi-bypass Tray Unit. (Refer to item 7.1.3.2. (1) on page 7-70)
2. Unscrew the seven ⊕ screws to remove the Inner Cover. (Refer to item 7.1.5.1. (3) on page 7-195) - Procedures 1 to 7.
3. Remove the Hook Ring and the Guide Shaft.
4. Remove the Timing Sensor (S303).
5. Remove the Sensor Holder from the Timing Sensor.
6. Disconnect the connector P/J.

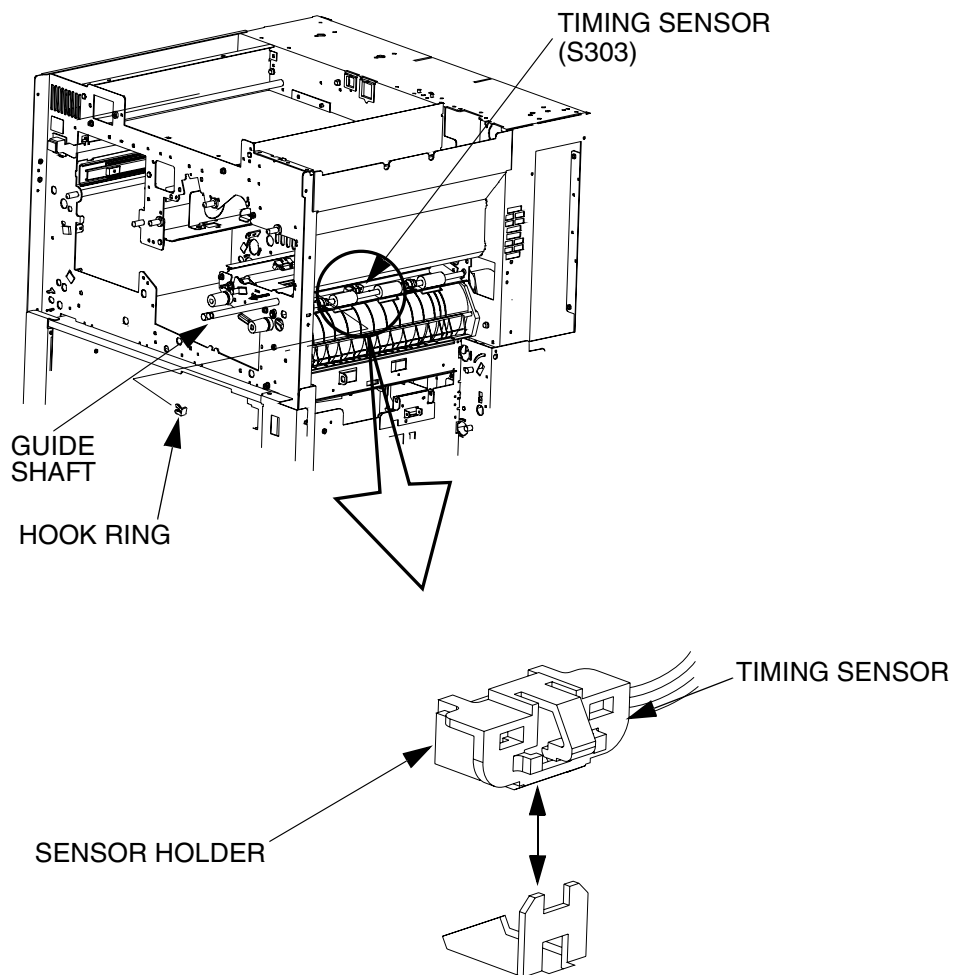


Figure 7-105. Removal of the Timing Sensor

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

**[Checks]**

Make sure that the Sensor Holder snap-fit parts are correctly fastened.

### 7.1.3.3. (5) Removal of the Skew Sensor

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Open the Front Cover. (Refer to item 3.3.1 on page 3-9)
2. Remove the Drum Drive Unit. (Refer to item 7.1.2.5. (1) on page 7-46)
3. Remove the Developer Unit. (Refer to item 7.1.2.3. (1) on page 7-10)
4. Remove the Skew Sensor 1 and 2 (S301 / S302).
5. Remove the Sensor Holder from the Skew Sensor.
6. Disconnect the connector P/J.

SKEW SENSOR 2 (S302)

SKEW SENSOR 1 (S301)

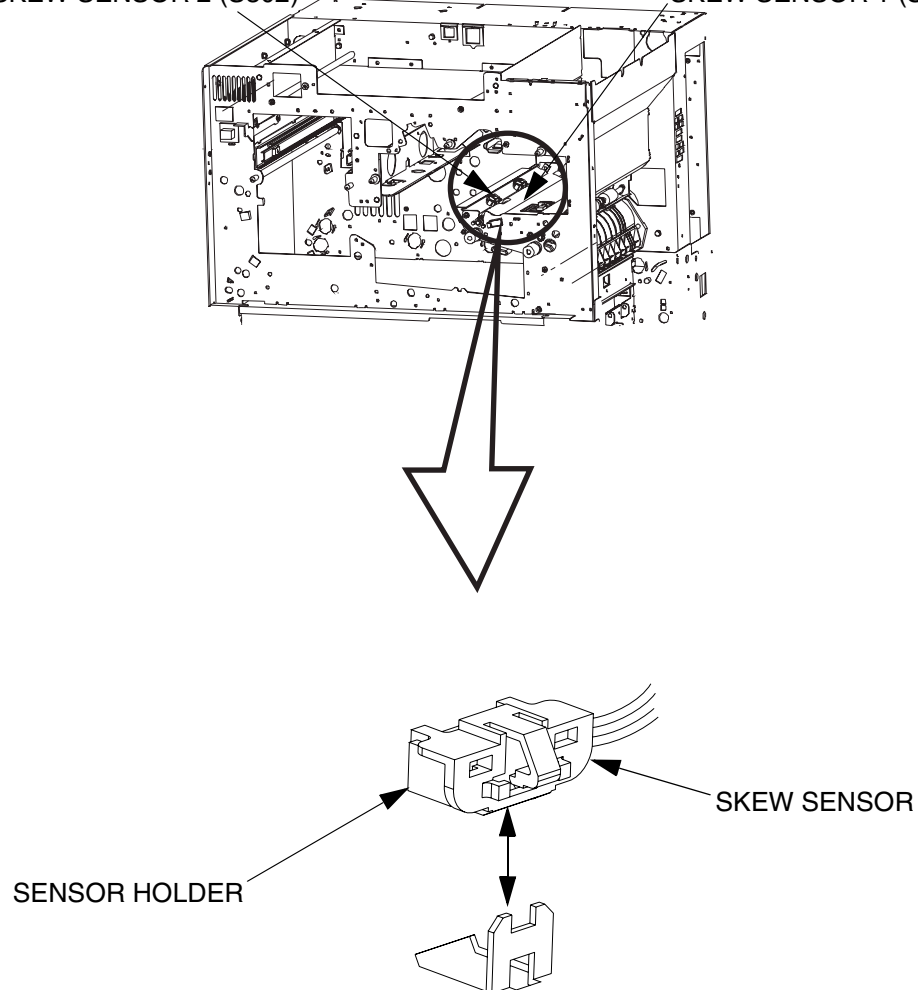


Figure 7-106. Removal of the Skew Sensor 1 and 2(S301 / S302)

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

**[Checks]**

Make sure that the Sensor Holder snap-fit parts are correctly fastened.

### 7.1.3.3. (6) Removal of the S Paper Guide Assembly

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Open the Front Cover.
2. Draw out the Drum Unit. (Refer to item 7.1.2.1. (1) on page 7-4)
3. Draw out the Developer Unit. (Refer to item 7.1.2.3. (1) on page 7-10)
4. Unscrew the seven ⊕ screws to remove the Inner Cover. (Refer to item 7.1.5.1. (19) on page 7-211)
5. Remove the two screws and the hinge plate.
6. Release the hook of the spring, slide the Lower Paper Guide (A) assembly to the direction of arrow A, pull out the one hinge shaft from the frame, pull the assembly in the direction of arrow B and remove it.  
(When removing the assembly, keep the Lower Paper Guide (1) open.).
7. Unscrew the two ⊕ screws and remove the S Paper Guide Assembly.

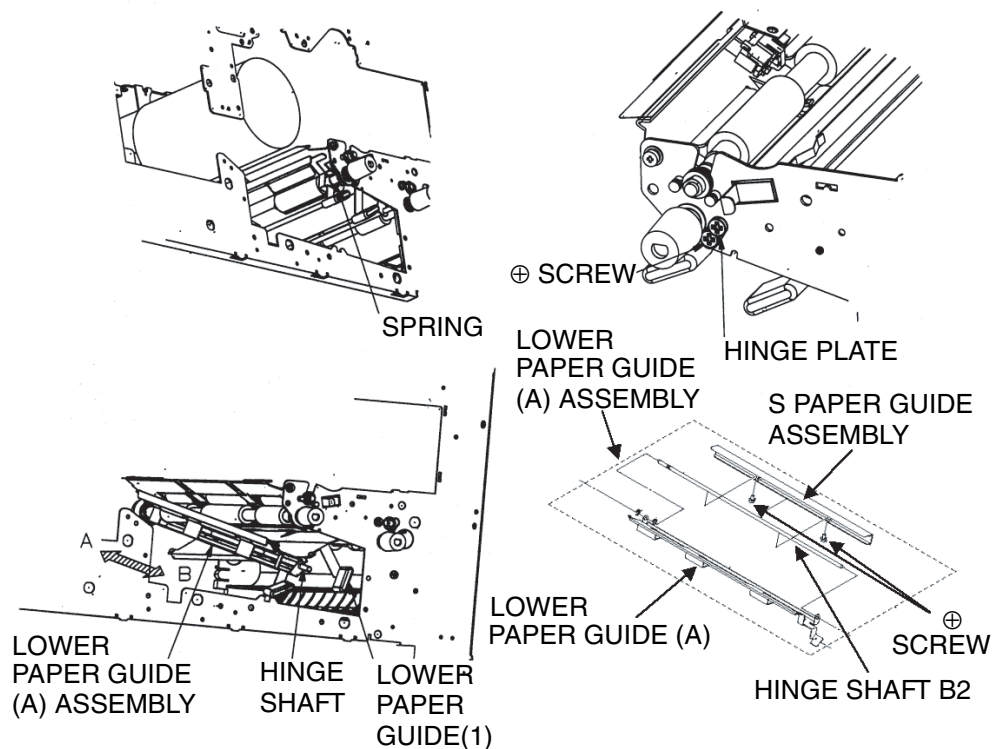


Figure 7-107. Removal of the S Paper Guide Assembly

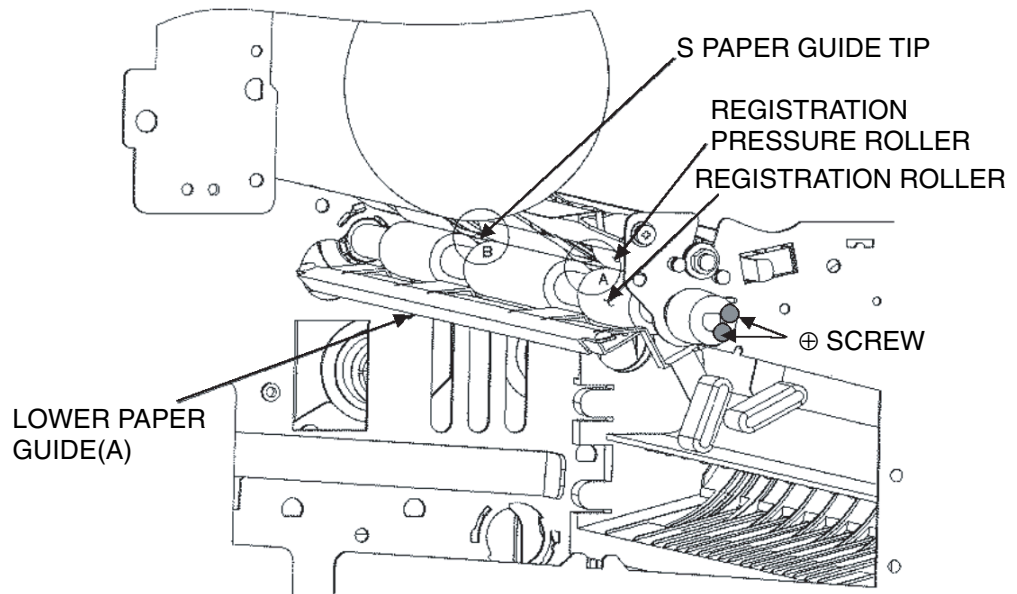


Figure 7-108. Removal of the S Paper Guide Assembly

#### [Assembling Procedures]

1. Perform the disassembling procedures in the reverse order Nos. 7-5.
2. Adjust the S Paper Guide Assembly. ([Refer to item 7.1.3.3. \(7\) on page 7-92](#))
3. Perform the disassembling procedures in the reverse order Nos. 4-1.



### 7.1.3.3. (7) Adjustment of the S Paper Guide Assembly

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Note:** The objective of this adjustment is to set the S Paper Guide tip as close as possible to the registration drive roller without touching it. This will ensure that the paper will travel over the top of the S Paper Guide regardless of the paper travel direction.

**Applicable jigs and tools:** ⊕ **Screwdriver.**

**[Disassembling Procedures]**

1. Open the Front Cover.
2. Remove the Drum Unit. (Refer to item 7.1.2.1. (1) on page 7-4)
3. Remove the Developer Unit. (Refer to item 7.1.2.3. (1) on page 7-10)
4. Remove the Inner Cover. (Refer to item 7.1.5.1. (19) on page 7-211)

**[Preparation]**

1. Open the Lower Paper Guide (1) fully and tape it to the frame to keep it open.
2. Cut a piece of 20lb paper to a measurement of 2" x 11". Fold the paper in half lengthwise. Place the folded paper on a table and run a hard, flat object along the crease to completely flatten the folded edge. The goal is to achieve an even thickness of 2 sheets of 20lb paper.

**[Adjustment]**

1. Open the Lower Paper Guide (A) and use the Drum Lock Knob as a prop to hold the guide open.
2. Carefully sight the S Paper Guide tip edge position in relation to the Registration Drive Roller and adjust the hinge plate position to open the gap.

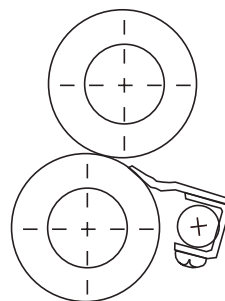
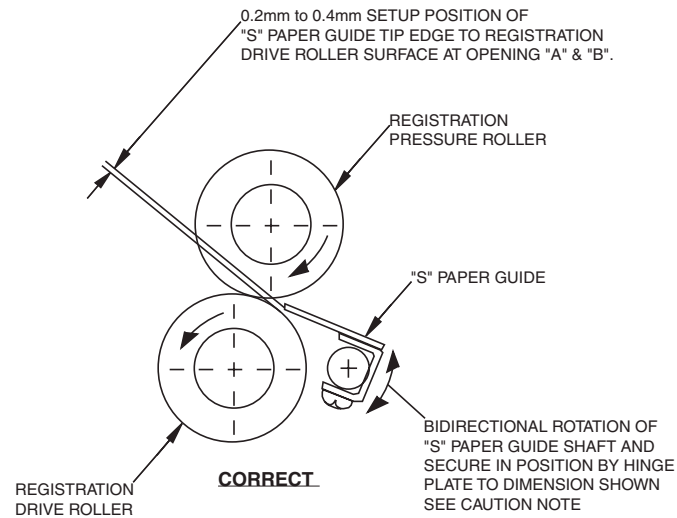
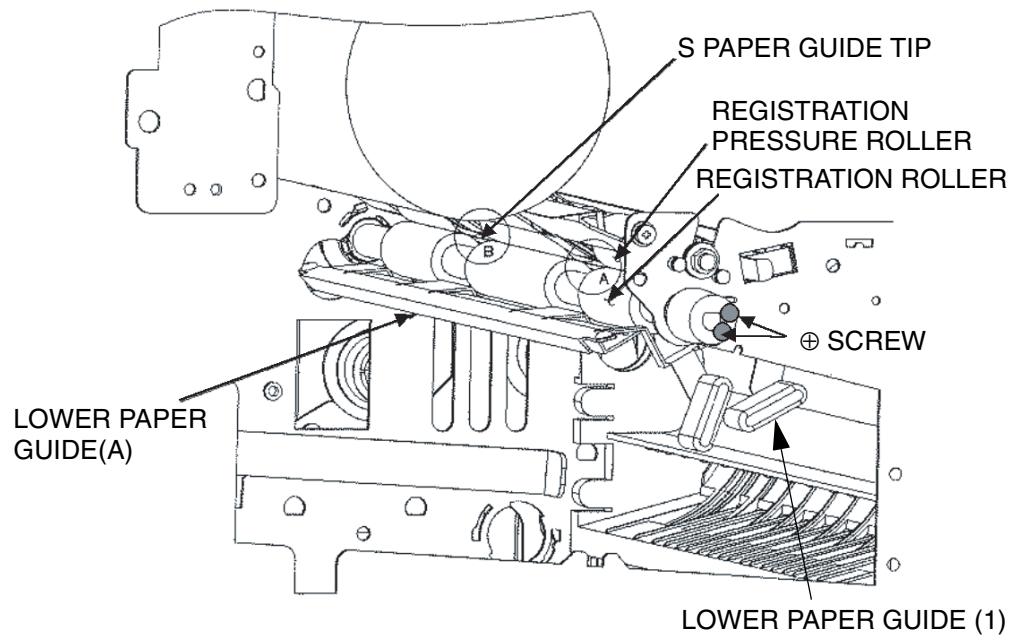
**Note:** Remove the registration roller knob, if necessary, to gain better clearance to the adjustment hinge plate.

3. From the drum side, carefully insert the folded paper into the registration roller approximately 1/16". While observing the S Paper Guide Tip, adjust the hinge plate until the S Paper Guide tip contacts the paper. Secure the hinge plate adjustment screw and remove the folded paper. Refer to "Adjustment of the S Paper Guide Assembly", Figure 7-109.

**CAUTION:**

After adjustment is made, carefully rotate the registration roller knob clockwise and make sure the roller does not contact the S Paper Guide tip edge. If contact is made, the gap is set too close. Readjust the S Paper Guide hinge plate and double check the gap setting.

4. Double check the adjustment by inserting the folded paper into the registration roller NIP from the drum side. Rotate the Registration Drive Roller Knob clockwise while observing to ensure the paper travels over the top of the S Paper Guide.



TIP EDGE OF "S" PAPER GUIDE  
WILL CUT INTO REGISTRATION  
ROLLER WHEN ROTATED CLOCKWISE.

Figure 7-109. Adjustment of the S Paper Guide Assembly

### [Assembling Procedures]

Perform the disassembling procedures in the reverse order.

## 7.1.3.4. Removal of the TH Unit Parts

### 7.1.3.4. (1) Removal of the TH Unit

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Open the Front Cover. (Refer to item 3.3.1 on page 3-9)
2. Open the Rear Cover. (Refer to item 3.3.1 on page 3-9)
3. Disconnect the Faston Terminal of the TR Cable and the Faston Terminal of the DT Cable. (Refer to item 7.1.5.1. (14) on page 7-206)
4. Unscrew the ⊕ screw and disconnect the TR Earth Cable Terminal.
5. Remove the Drum Unit. (Refer to item 7.1.2.1. (1) on page 7-4)
6. Remove the Fuser Unit. (Refer to item 7.1.3.1. (1) on page 7-67)
7. Unscrew the two ⊕ screws to remove the TH Hinge Plate.
8. Remove the TH Unit.

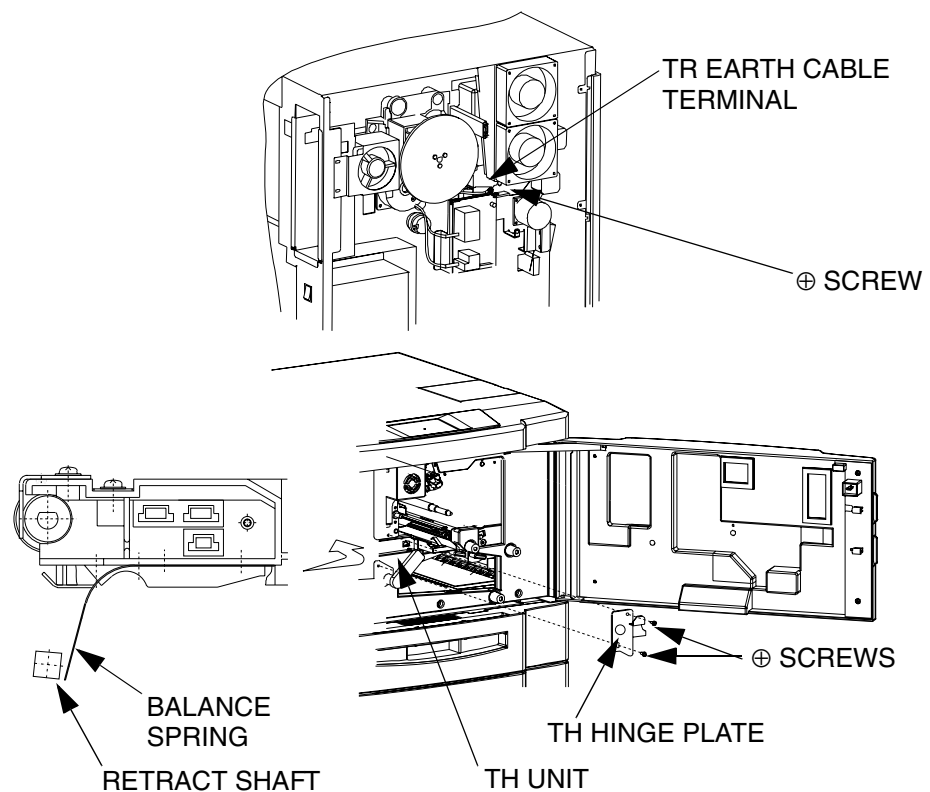


Figure 7-110. Removal of the TH Unit

**Note:** Balance Spring assemble after drawing location.

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

#### 7.1.3.4. (2) Removal of the TR Guide

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver, Hex Wrench.

**[Disassembling Procedures]**

1. Remove the TH Unit. (Refer to item 7.1.3.4. (1) on page 7-94)
2. Unscrew the Hex Bolt to remove the TR Guide.

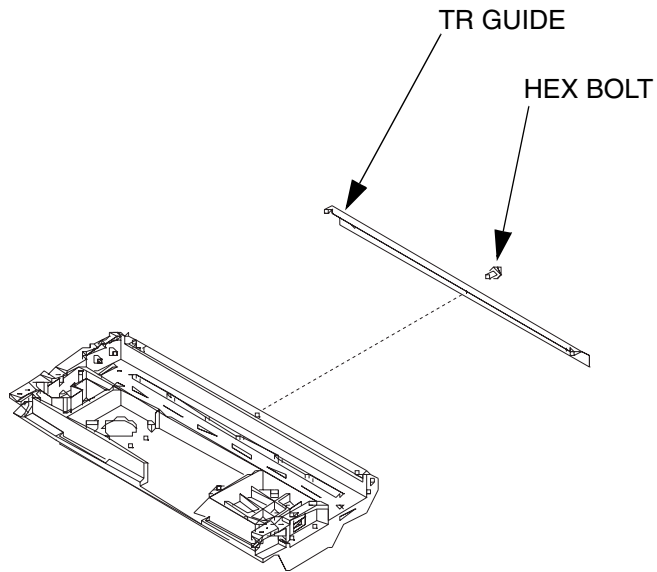


Figure 7-111. Removal of the TR Guide

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

#### 7.1.3.4. (3) Removal of the Nip Guide Plate W Assembly

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver, - Precision Screwdriver.

**[Disassembling Procedures]**

1. Remove the Drum Unit. (Refer to item 7.1.2.1. (1) on page 7-4)
2. Remove the TR Guide. (Refer to item 7.1.3.4. (2) on page 7-95)
3. Unscrew the two ⊕ screws, the two spring washers and the four washers to remove the Nip Guide Plate W Assembly.

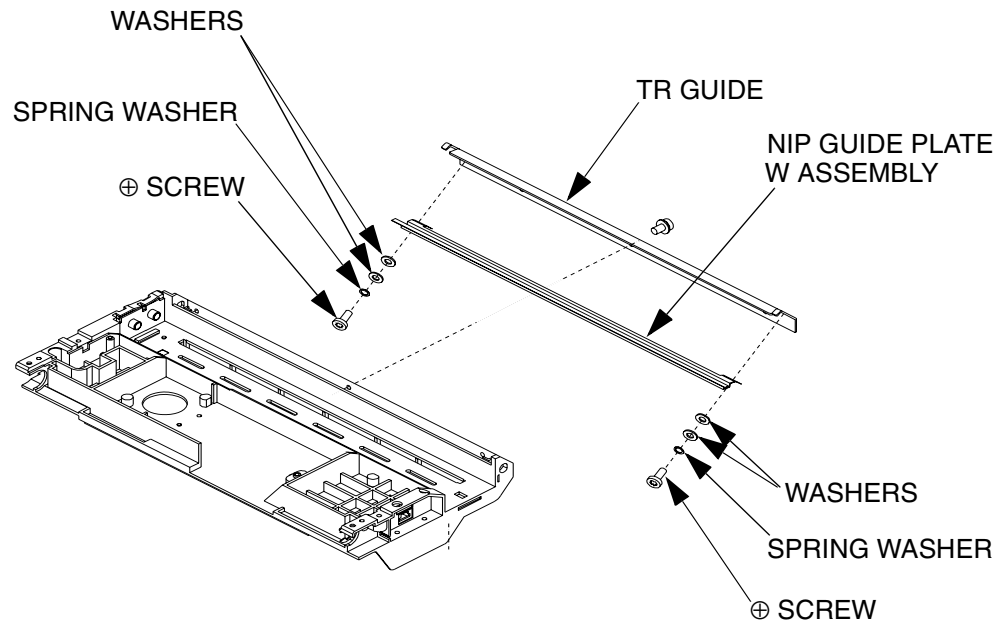


Figure 7-112. Removal of the Nip Guide Plate W Assembly

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

#### 7.1.3.4. (4) Removal of the TH Drive Gear

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools: - Precision Screwdriver.**

**[Disassembling Procedures]**

1. Remove the TH Unit. (Refer to item 7.1.3.4. (1) on page 7-94)
2. Remove the Snap Ring-E and the TH Drive Gear.

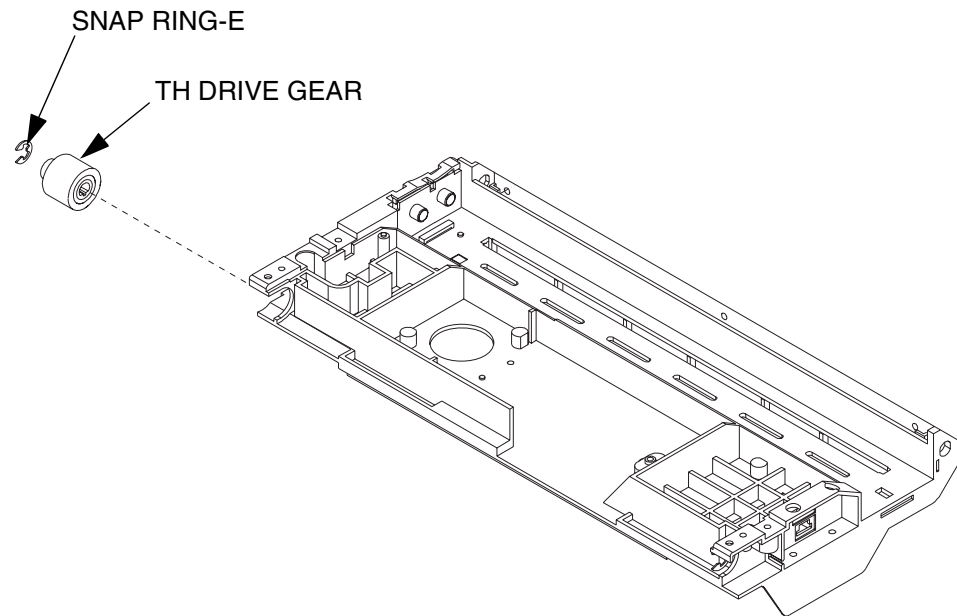


*Figure 7-113. Removal of the TH Drive Gear*

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

#### 7.1.3.4. (5) Removal of the TH Belt Pulleys

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver, - Precision Screwdriver.

**[Disassembling Procedures]**

1. Remove the TH Unit. (Refer to item 7.1.3.4. (1) on page 7-94)
2. Unscrew the ⊕ screw to remove the Paper Guide (F).
3. Unscrew the ⊕ screw to remove the Paper Guide (R).
4. Unscrew the two ⊕ screws to remove the B.B Stopper.
5. Unscrew the three ⊕ screws to remove the TH Belt Frame with the TH Drive Shaft, the TH Belt and the Belt Pulley.
6. Remove the Belt Pulley by sliding the TH Belt.

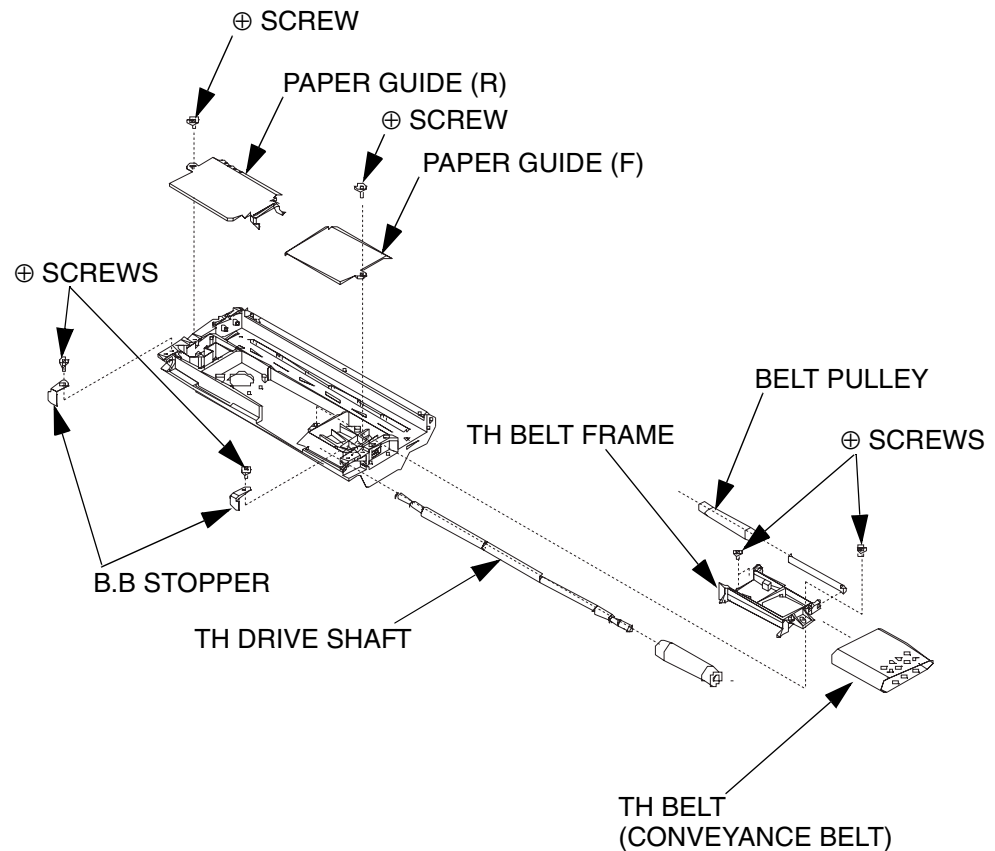


Figure 7-114. Removal of the TH Belt Pulleys

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

#### 7.1.3.4. (6) Removal of the Conveyance Belt

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver, - Precision Screwdriver.

**[Disassembling Procedures]**

1. Remove the TH Unit. (Refer to item 7.1.3.4. (1) on page 7-94)
2. Remove the TH Belt Pulleys. (Refer to item 7.1.3.4. (5) on page 7-98)
3. Remove the Conveyance Belt.

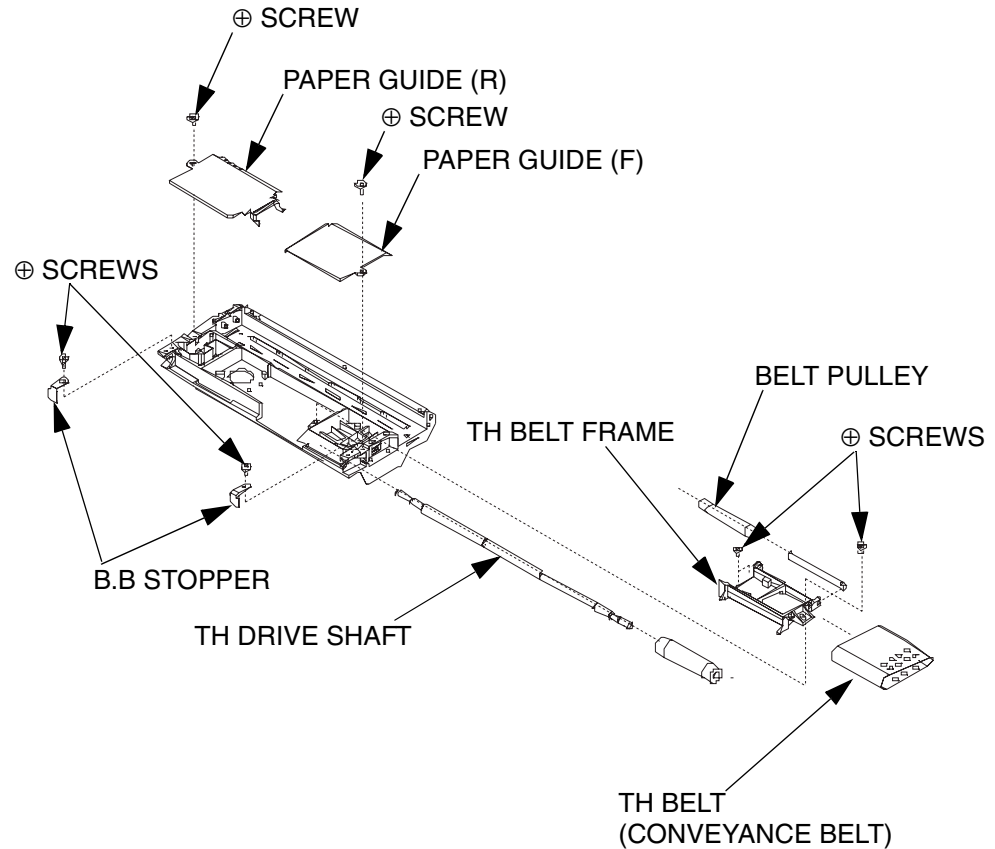


Figure 7-115. Removal of the Conveyance Belt

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.



#### 7.1.3.4. (7) Removal of the Temperature Humidity Sensor

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Remove the TH Unit. (Refer to item 7.1.3.4. (1) on page 7-94)
2. Unscrew the two ⊕ screws to remove the Frame Support.
3. Remove the TH Duct Assembly. (Refer to item 7.1.3.4. (10) on page 7-103)
4. Unscrew the two ⊕ screws to remove the Fan Base.
5. Disconnect the connector from the TH Cable.
6. Unscrew the ⊕ screw to remove the Temperature Humidity Sensor.

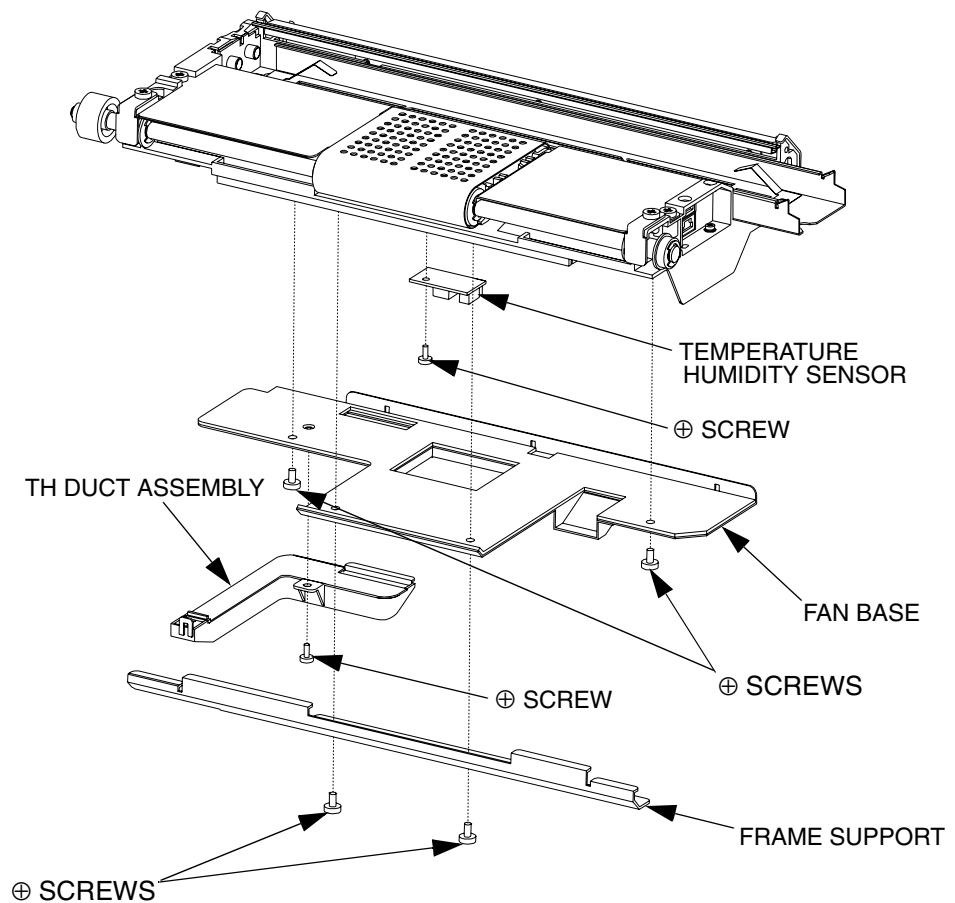


Figure 7-116. Removal of the Temperature Humidity sensor

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

#### 7.1.3.4. (8) Removal of the TH Fan Assembly (1)

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Remove the TH Unit. (Refer to item 7.1.3.4. (1) on page 7-94)
2. Remove the Frame Support. (Refer to item 7.1.3.4. (7) on page 7-100)
3. Disconnect the connector from the TH Cable.
4. Unscrew the two ⊕ screws to remove the TH Fan Assembly (1).

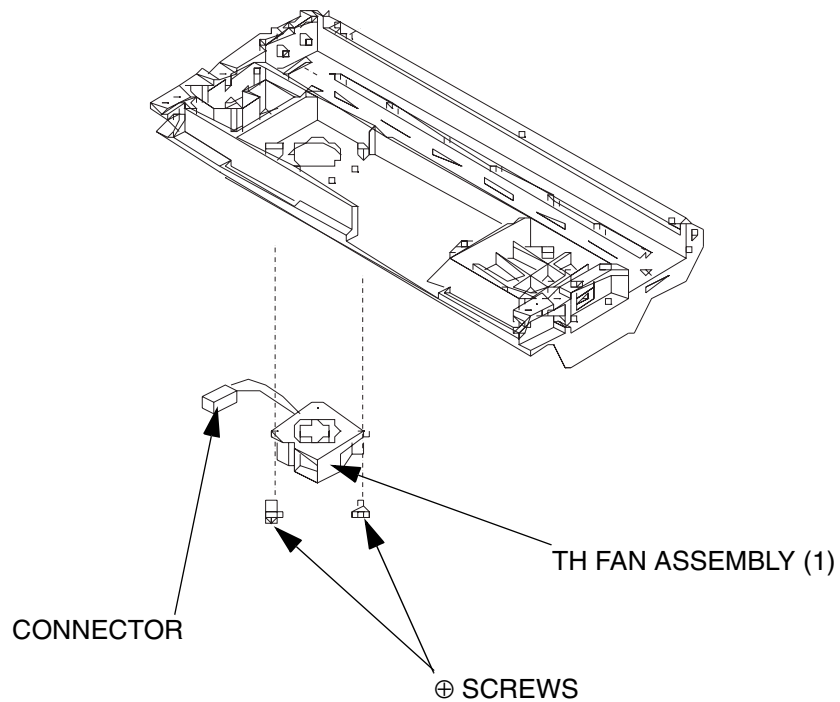


Figure 7-117. Removal of the TH Fan Assembly (1)

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

#### 7.1.3.4. (9) Removal of the TH Fan Assembly (2)

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Remove the TH Unit. (Refer to item 7.1.3.4. (1) on page 7-94)
2. Remove the Frame Support. (Refer to item 7.1.3.4. (7) on page 7-100)
3. Disconnect the connector from the TH Cable.
4. Unscrew the two ⊕ screws to remove the TH Fan Assembly (2).

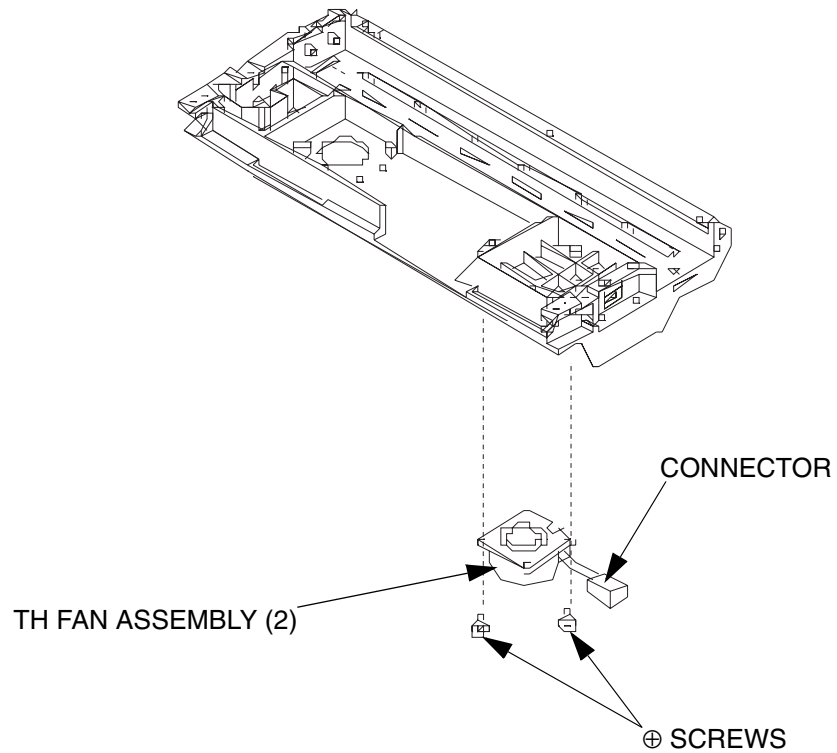


Figure 7-118. Removal of the TH Fan Assembly (2)

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

#### 7.1.3.4. (10) Removal of the TH Duct Assembly

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Remove the TH Unit. (Refer to item 7.1.3.4. (1) on page 7-94)
2. Remove the Frame Support. (Refer to item 7.1.3.4. (7) on page 7-100)
3. Unfasten the snap-fit parts of the TH Duct Assembly.
4. Unscrew the ⊕ screw to remove the TH Duct Assembly.

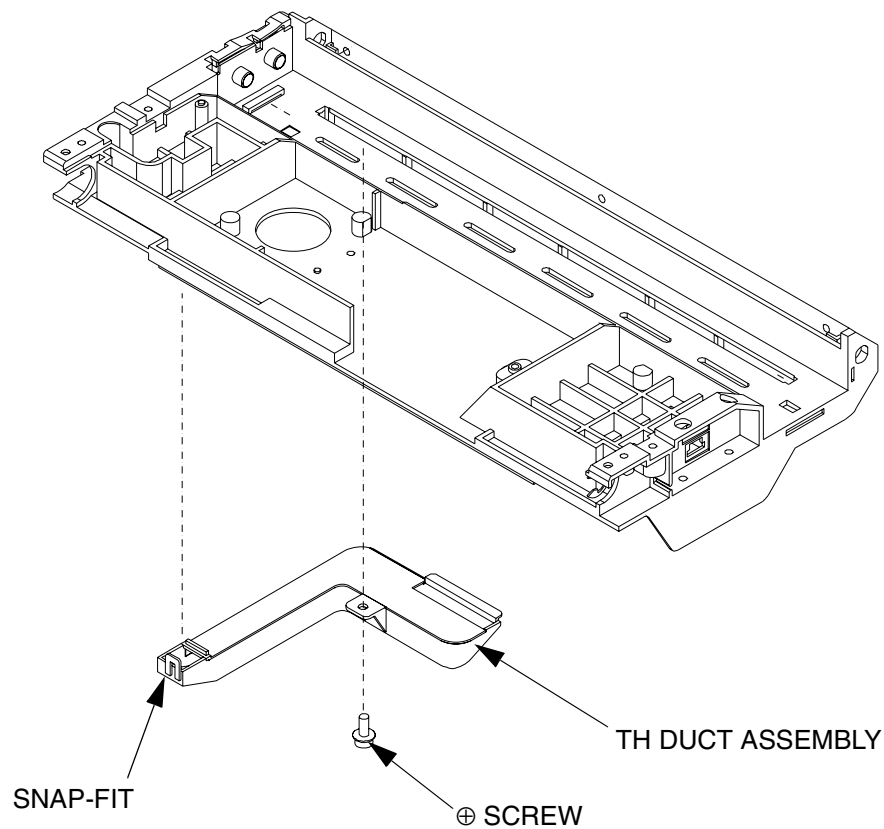


Figure 7-119. Removal of the TH Duct Assembly

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

**[Checks]**

Make sure that the snap-fit parts of the TH Duct Assembly are correctly fastened.

#### 7.1.3.4. (11) Removal of the Corotron Assembly

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Open the Front Cover.
2. Retract the TH Unit by the TH handle.
3. Unscrew the two ⊕ screws to remove the TH Cable Cover from the TH Unit.
4. Disconnect the Motor Cable and the Sensor Cable.
5. Draw out the Corotron Assembly from the TH Unit.

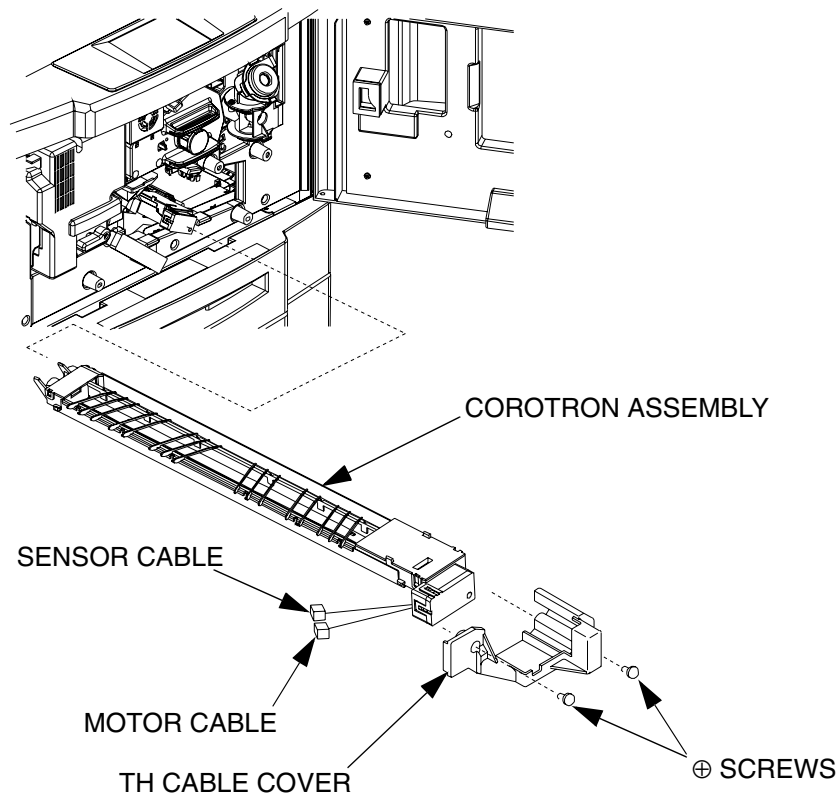


Figure 7-120. Removal of the Corotron Assembly

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

**[Checks]**

1. Make sure that the connectors are correctly connected.
2. Make sure that the Corotron Assembly projections are contacting to the Drum Housing correctly.
3. Make sure that the Drum projections are set to the hole of the Cover (F).

#### 7.1.3.4. (12) Removal of the Transfer Corona Wire

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver, Minus Screwdriver.

**[Disassembling Procedures]**

1. Open the Front Cover.
2. Remove the Corotron Assembly from the TH Unit. ([Refer to item 7.1.3.4. \(11\) on page 7-104](#))
3. Remove the Cover (F) and the Cover (R) from the Corotron Assembly.
4. Remove the T Corotron Spring from the Case (F).
5. Remove the Transfer Corona Wire from the Wire Contact Spring.

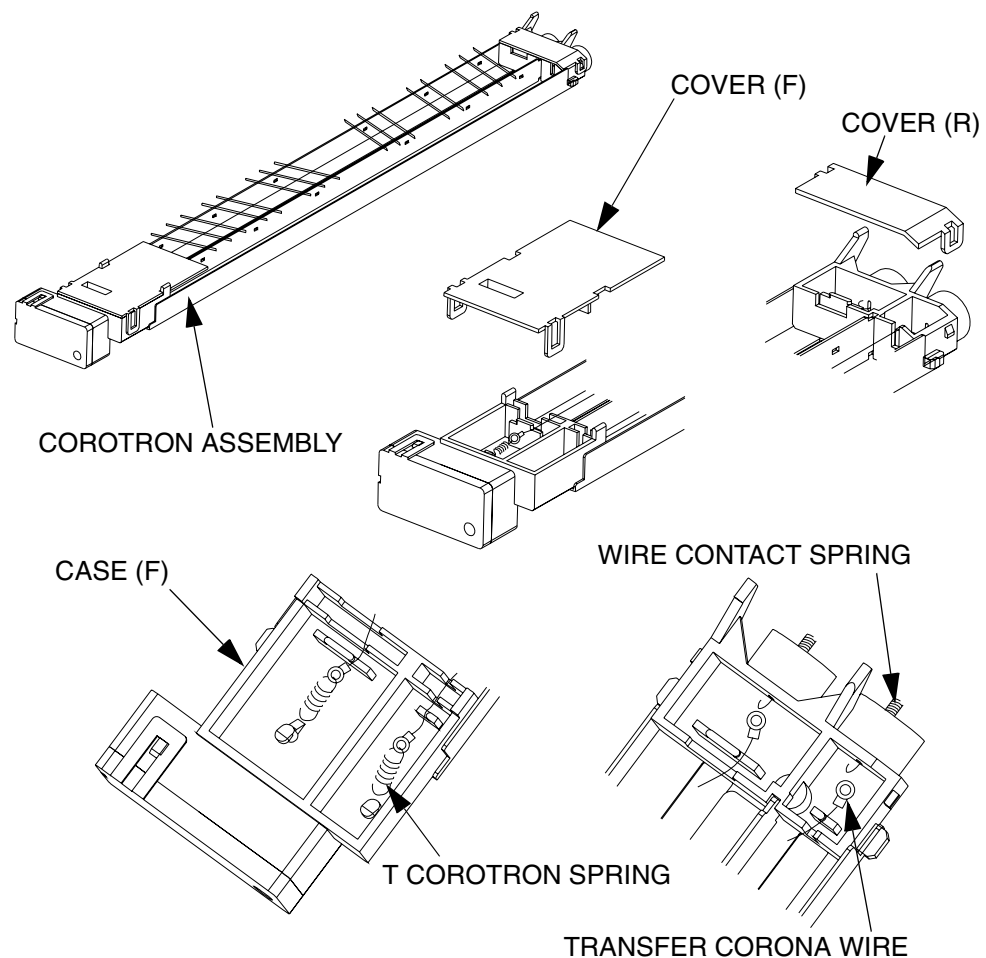


Figure 7-121. Removal of the Transfer Corona Wire

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

#### 7.1.3.4. (13) Removal of the Separating Corona Wire

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver, Minus Screwdriver.

**[Disassembling Procedures]**

1. Open the Front Cover.
2. Remove the Corotron Assembly from the TH Unit. (Refer to item 7.1.3.4. (11) on page 7-104)
3. Remove the Cover (F) and the Cover (R) from the Corotron Assembly.
4. Remove the T Corotron Spring from the Case (F).
5. Remove the Separating Corona Wire from the Wire Contact Spring.

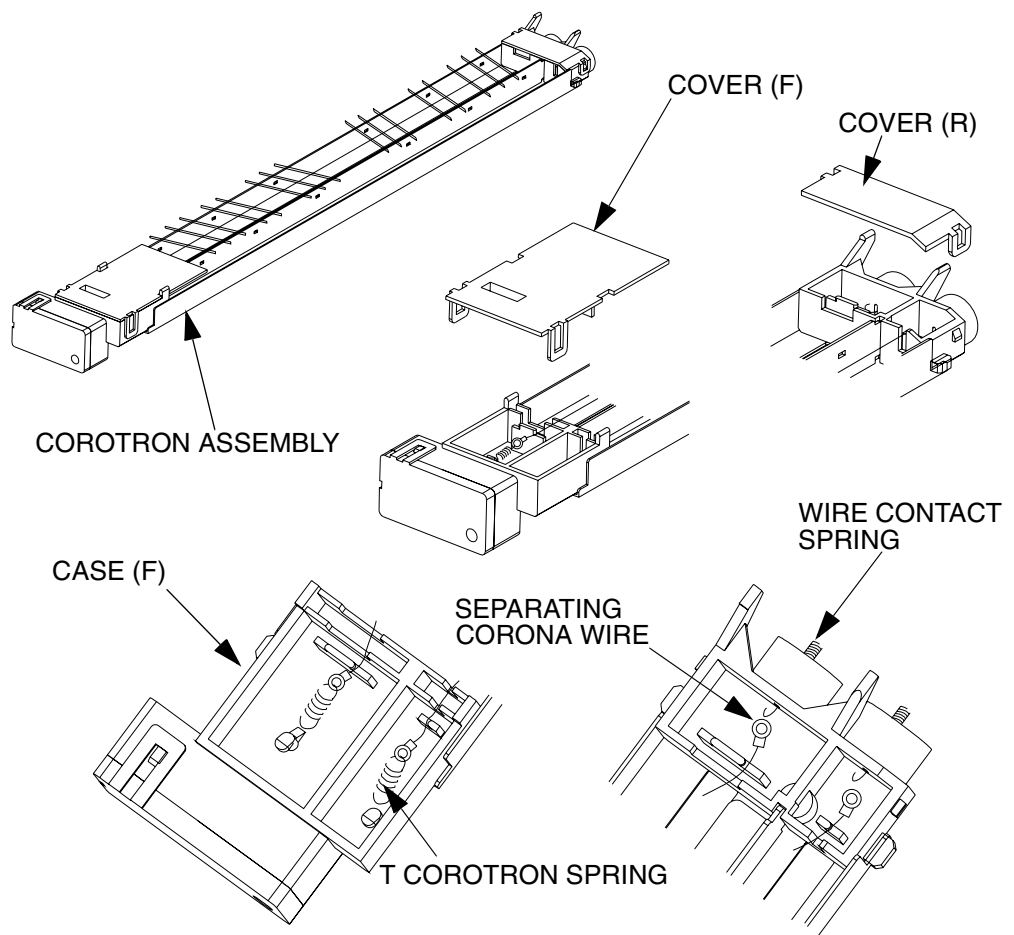


Figure 7-122. Removal of the Separating Corona Wire

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

#### 7.1.3.4. (14) Removal of the Corotron Cleaner Motor

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools: None.**

**[Disassembling Procedures]**

1. Open the Front Cover.
2. Remove the Corotron Assembly from the TH Unit. ([Refer to item 7.1.3.4. \(11\) on page 7-104](#))
3. Remove the Motor Cover from the Corotron Assembly.
4. Remove the Corotron Cleaner Motor from the Corotron Assembly.

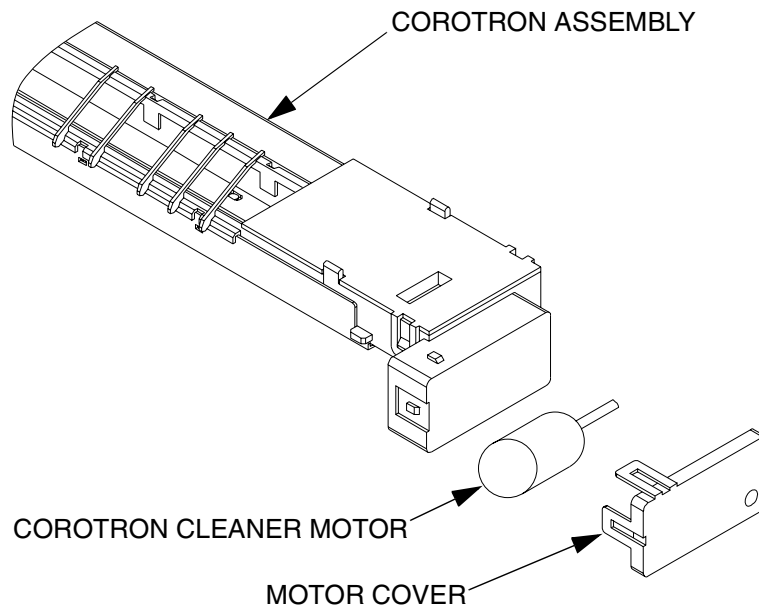


*Figure 7-123. Removal of the Corotron Cleaner Motor*

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

**[Checks]**

1. Make sure that the Cleaner Motor is correctly in the Corotron Housing (F).
2. Make sure that the Corotron Assembly projections are contacting to the Drum Housing correctly.
3. Make sure that the Drum projections are set to the hole of the Cover (F).



#### 7.1.3.4. (15) Removal of the Corotron Cleaner Position Sensor

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Precision Screwdriver.

**[Disassembling Procedures]**

1. Open the Front Cover.
2. Draw out the Corotron Assembly from the TH Unit. (Refer to item 7.1.3.4. (11) on page 7-104)
3. Unscrew the ⊕ screw to remove the Cleaner Position Sensor and the Cleaner Plate A from the Corotron Assembly.

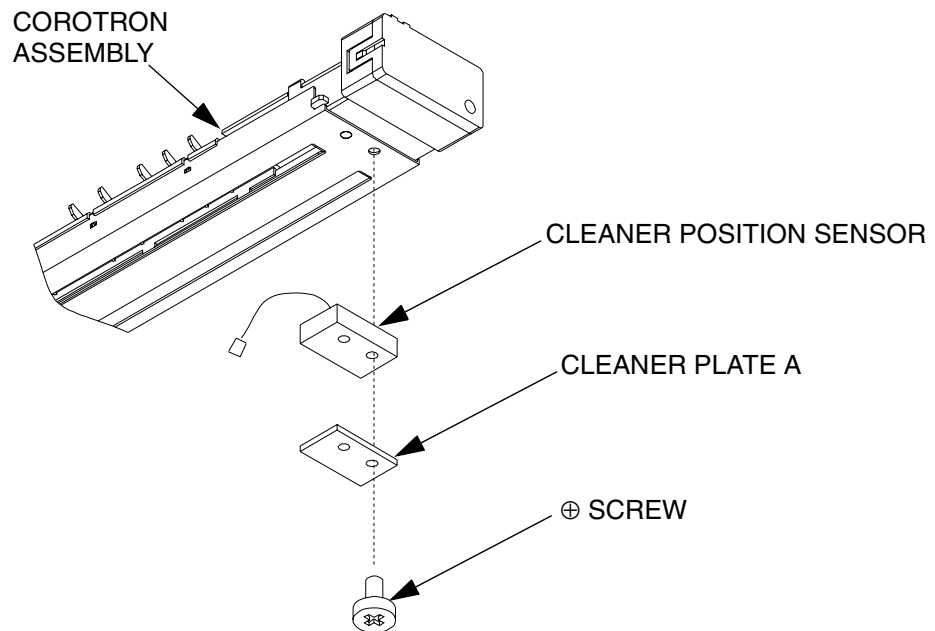


Figure 7-124. Removal of the Corotron Cleaner Position Sensor

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

**[Checks]**

1. Make sure that the Cleaner drives and stops at the home position correctly on "Power on".
2. Make sure that the Corotron Assembly projections are contacting to the Drum Housing correctly.
3. Make sure that the Drum projections are set to the hole of the Cover (F).

#### 7.1.3.4. (16) Removal of the Transfer Corona Unit Cleaner

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools: Minus Precision Screwdriver.**

**[Disassembling Procedures]**

1. Open the Front Cover.
2. Draw out the Corotron Assembly from the TH Unit. (Refer to item 7.1.3.4. (11) on page 7-104)
3. Remove the Transfer Corona Wire from the Corotron Assembly. (Refer to item 7.1.3.4. (12) on page 7-105)
4. Remove the Snap Ring-E from the Transfer Corona Unit Cleaner.
5. Remove the Transfer Corona Unit Cleaner from the Corotron Assembly.

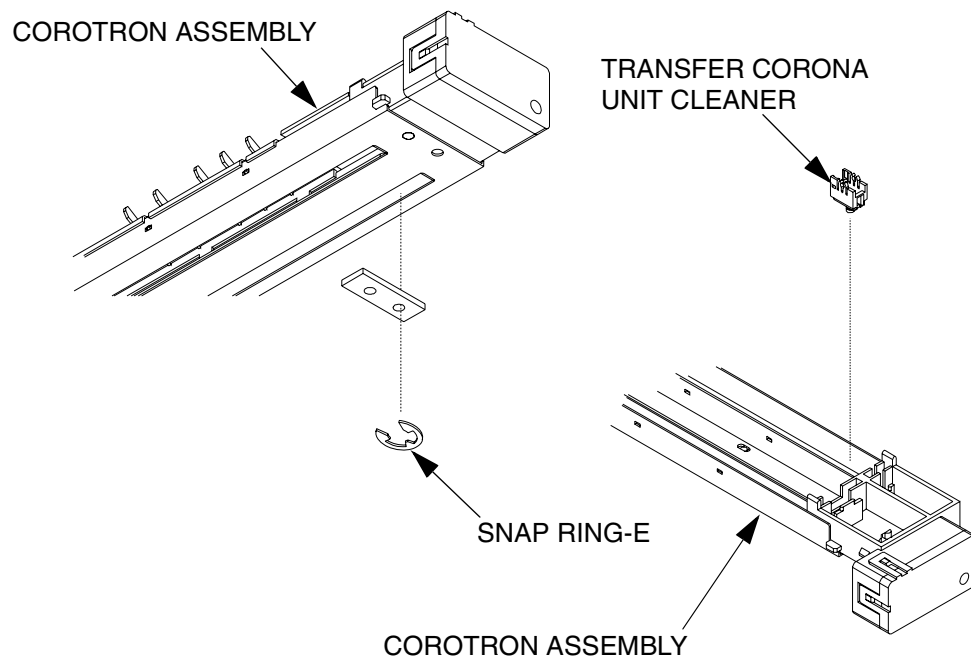


Figure 7-125. Removal of the Transfer Corona Unit Cleaner

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

**[Checks]**

1. Make sure that the Cleaner drives and stops at the home position correctly on "Power on".
2. Make sure that the Corotron Assembly projections are contacting to the Drum Housing correctly.
3. Make sure that the Drum projections are set to the hole of the Cover (F).

#### 7.1.3.4. (17) Removal of the Separating Corona Unit Cleaner

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools: Minus Precision Screwdriver.**

**[Disassembling Procedures]**

1. Open the Front Cover.
2. Draw out the Corotron Assembly from the TH Unit. (Refer to item 7.1.3.4. (11) on page 7-104)
3. Remove the Separating Corona Wire from the Corotron Assembly. (Refer to item 7.1.3.4. (13) on page 7-106)
4. Remove the Snap Ring-E from the Separating Corona Unit Cleaner.
5. Remove the Separating Corona Unit Cleaner from the Corotron Assembly.

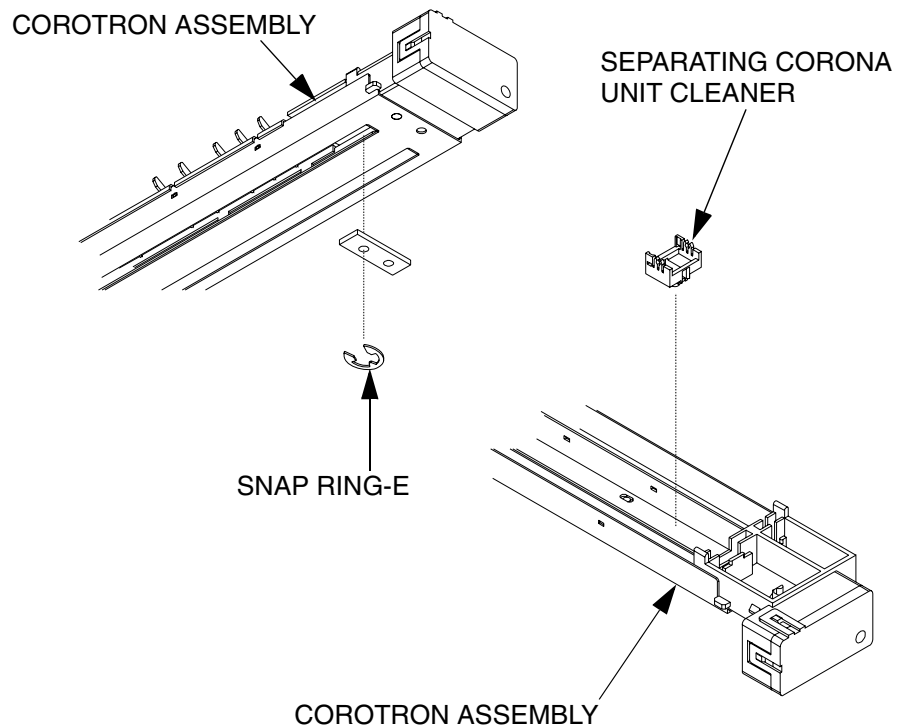


Figure 7-126. Removal of the Separating Corona Unit Cleaner

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

**[Checks]**

1. Make sure that the Cleaner drives and stops at the home position correctly on "Power on".
2. Make sure that the Corotron Assembly projections are contacting to the Drum Housing correctly.
3. Make sure that the Drum projections are set to the hole of the Cover (F).

### 7.1.3.5. Removal of the Switch Back Unit Parts

**Note:** Disconnect the option unit before the maintenance of this part.

#### 7.1.3.5. (1) Removal of the Switch Back Cover Assembly

**CAUTION:**  
Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver, Radio Pincers.

##### [Disassembling Procedures]

1. Remove the Rear Cover Assembly. (Refer to item 3.3.2. (1) on page 3-12)
2. Remove the Side Cover Assembly. (Refer to item 3.3.2. (1) on page 3-12)
3. Remove the SB Cover Spring.
4. Unscrew the ⊕ screw.
5. Remove the SB Pin Holder and remove the Switch Back Cover Assembly.

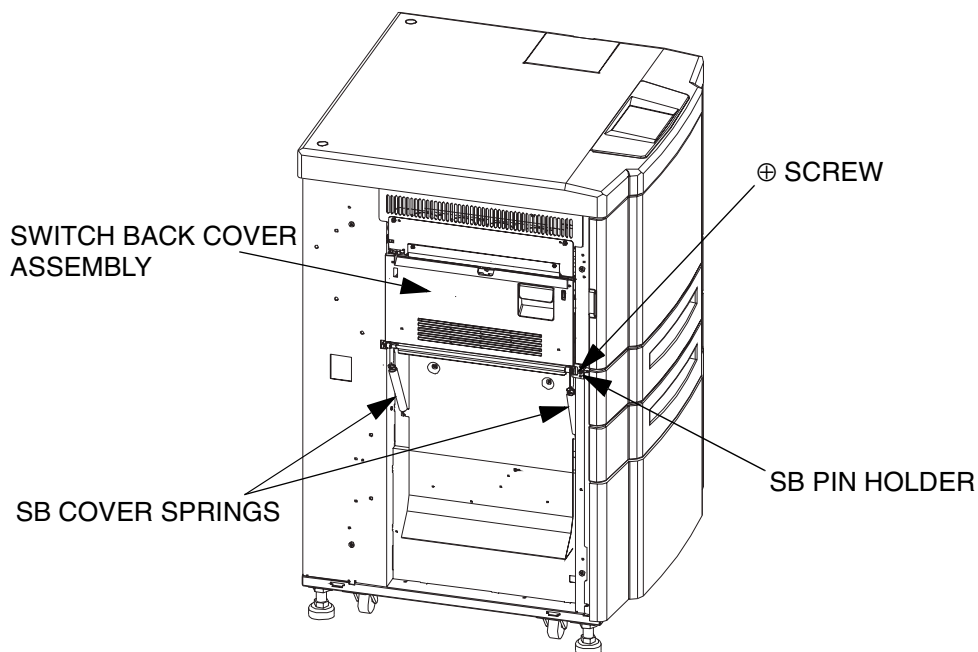


Figure 7-127. Removal of the Switch Back Cover Assembly

##### [Assembling Procedures]

Perform the disassembling procedures in the reverse order.

### 7.1.3.5. (2) Removal of the Flip Paper Feed Roller Assembly

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver, - Screwdriver, Radio Pincers.

**[Disassembling Procedures]**

1. Open the Front Cover.
2. Remove the Inner Cover. (Refer to item 3.3.2. (1) on page 3-12)
3. Remove the Rear Cover Assembly. (Refer to item 3.3.2. (1) on page 3-12)
4. Remove the DC Fan(Fuser). (Refer to item 7.1.5.1. (2) on page 7-194)
5. Remove the Switch Back Cover Assembly. (Refer to item 7.1.3.5. (1) on page 7-111)
6. Remove the Fuser Unit. (Refer to item 7.1.3.1. (1) on page 7-67)
7. Unscrew the ⊕ screw to remove the SB Gate.
8. Disconnect the connector.
9. Remove the SB Sensor Holder.
10. Unscrew the four screws to remove the SB Paper Guide (IN).
11. Remove the CPxxx Assembly. (Refer to item 7.1.5.1. (13) on page 7-205)
12. Unscrew the three ⊕ screws to remove the CP Holder.
13. Remove the two Springs.
14. Remove the Retaining Ring-E to remove the Link A.
15. Remove the Retaining Ring-E to remove the Link B.
16. Unscrew the three ⊕ screws to remove the SB Drive Holder (92).
17. Remove the Retaining Ring-E to remove the Drive Roller Gear(SB).
18. Remove the Retaining Ring-E to remove the Sleeve Bearing.
19. Remove the Flip Paper Feed Roller Assembly.

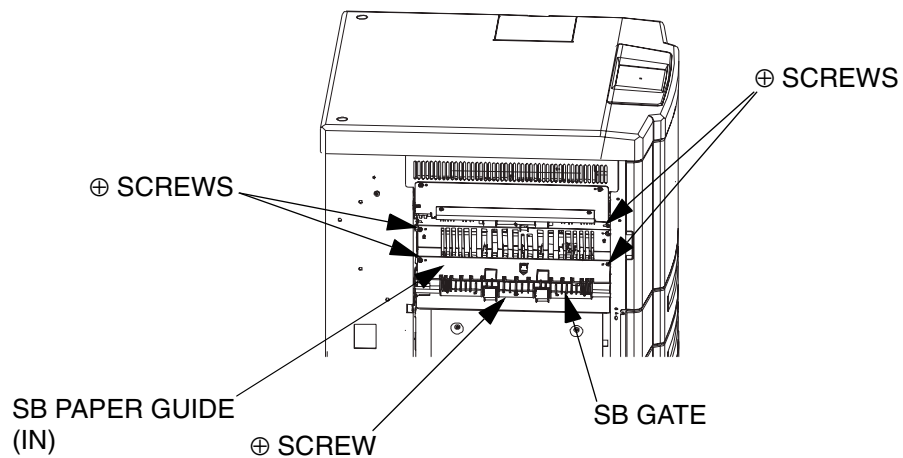


Figure 7-128. -1 Removal of the Flip Paper Feed Roller Assembly

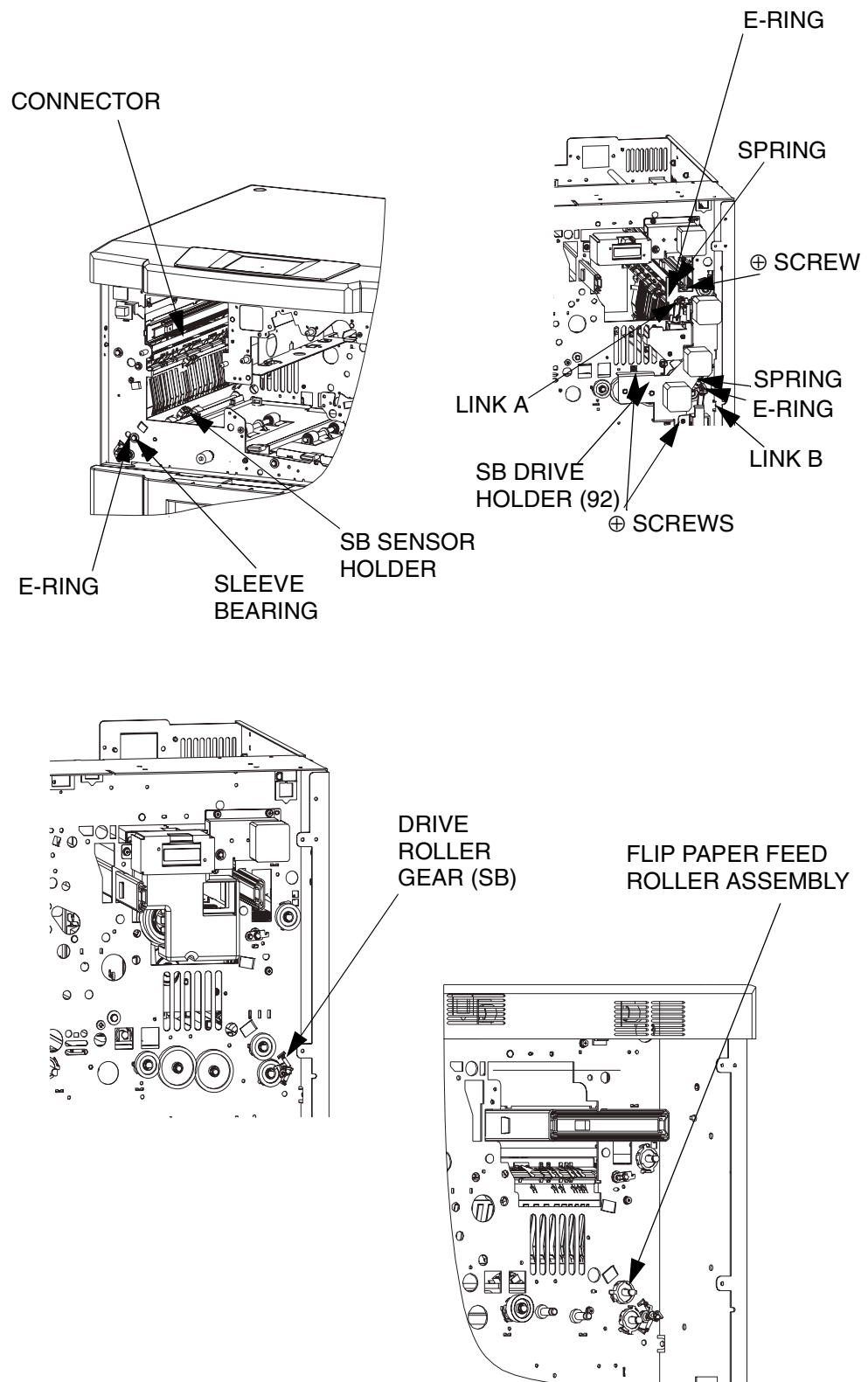


Figure 7-129. -2 Removal of the Flip Paper Feed Roller Assembly

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

### 7.1.3.5. (3) Removal of the SB Paper Feed Roller Assembly

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver, - Screwdriver, Radio Pliers.

**[Disassembling Procedures]**

1. Remove the SB Drive Holder (92) (Procedures 1 to 16). ([Refer to item 7.1.3.5. \(2\) on page 7-112](#))
2. Remove the two Retaining Ring-E to remove the Idler Gear A.
3. Unscrew the four ⊕ screws to raise the DPX Low Paper Guide (1) slightly up.
4. Remove the Retaining Ring-E to remove the Drive Roller Gear (SB).
5. Remove the Retaining Ring-E to remove the Sleeve Bearing.
6. Remove the SB Paper Feed Roller Assembly.

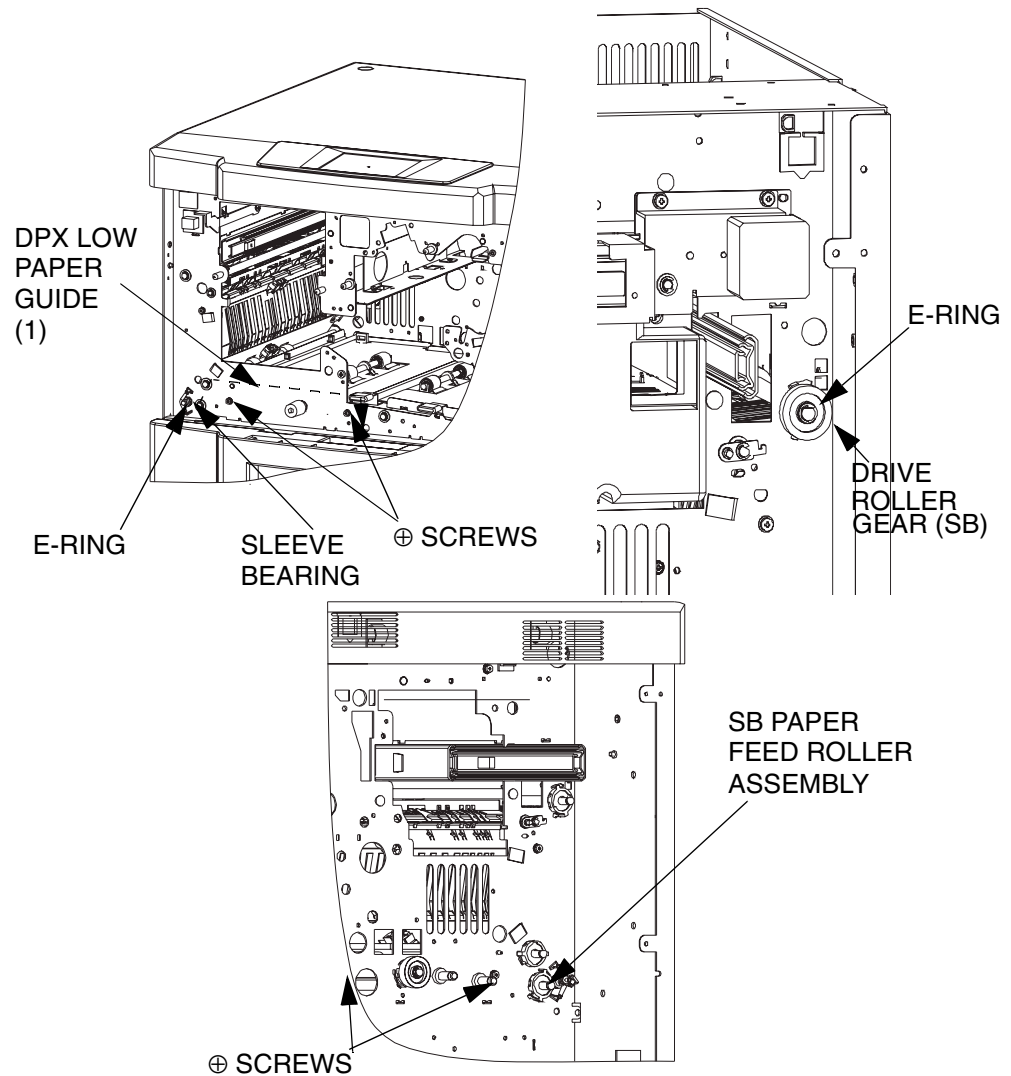


Figure 7-130. Removal of the SB Paper Feed Roller Assembly

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

#### 7.1.3.5. (4) Removal of the PF Out Paper Feed Roller Assembly

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver, - Screwdriver, Radio Pincers.

**[Disassembling Procedures]**

1. Open the Front Cover. (Refer to item 3.3.1 on page 3-9)
2. Remove the Inner Cover. (Refer to item 3.3.2. (1) on page 3-12)
3. Remove the Rear Cover Assembly. (Refer to item 3.3.2. (1) on page 3-12)
4. Remove the Side Cover Assembly. (Refer to item 3.3.2. (1) on page 3-12)
5. Open the Switch Back Cover Assembly.
6. Unscrew the two ⊕ screws to move the Upper SB Paper Guide.
7. Disconnect the two connectors.
8. Remove the Upper SB Paper Guide.
9. Remove the DC Fan(Fuser). (Refer to item 7.1.5.1. (2) on page 7-194)
10. Remove the Fuser Unit. (Refer to item 7.1.3.1. (1) on page 7-67)
11. Remove the CPxxx Assembly. (Refer to item 7.1.5.1. (13) on page 7-205)
12. Unscrew the three ⊕ screws to remove the CP Holder.
13. Remove the two Springs.
14. Remove the Retaining Ring-E to remove the Link A.
15. Remove the Retaining Ring-E to remove the Link B.
16. Unscrew the three screws to remove the SB Drive Holder (92).
17. Remove the Retaining Ring-E to remove the Drive Roller Gear (SB).
18. Remove the Retaining Ring-E to remove the Sleeve Bearing.
19. Remove the PF Out Paper Feed Roller Assembly.

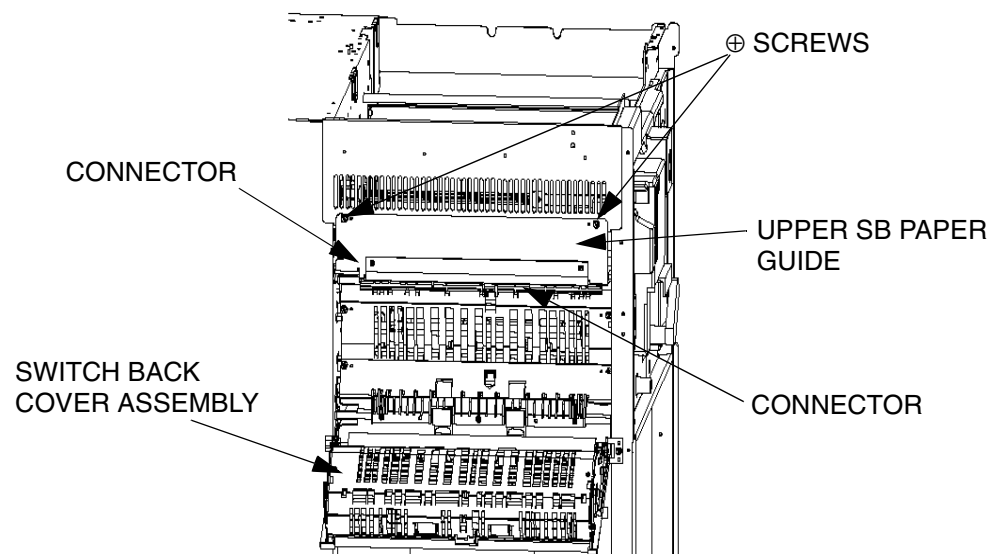


Figure 7-131. -1 Removal of the PF Out Paper Feed Roller Assembly



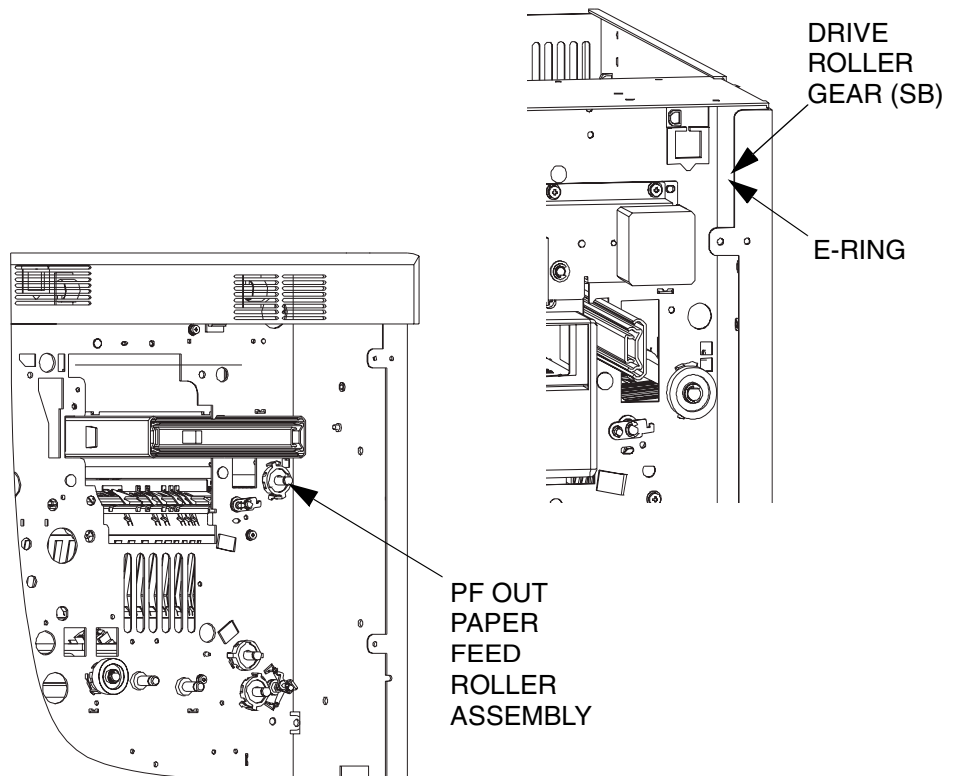
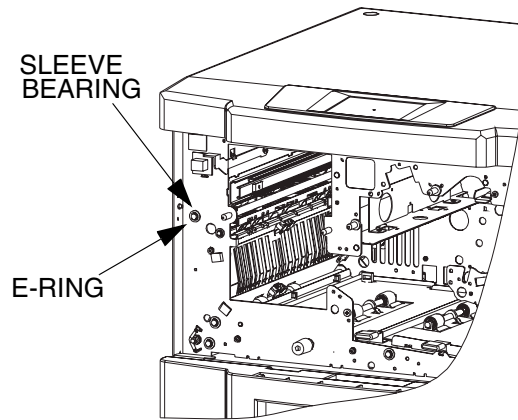


Figure 7-132. -2 Removal of the PF Out Paper Feed Roller Assembly  
**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

#### 7.1.3.5. (5) Removal of the Flip Sensor

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Open the Front Cover. (Refer to item 3.3.1 on page 3-9)
2. Remove the Fuser Unit. (Refer to item 7.1.3.1. (1) on page 7-67)
3. Disconnect the connector.
4. Remove the Sensor Holder.
5. Remove the Flip Sensor.

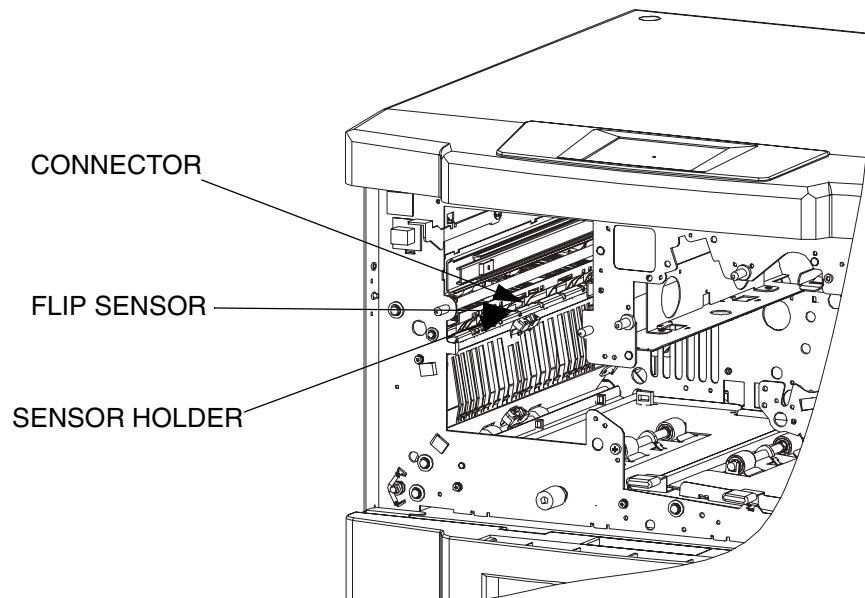


Figure 7-133. Removal of the Flip sensor

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

#### 7.1.3.5. (6) Removal of the SB Sensor

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Open the Front Cover. (Refer to item 3.3.1 on page 3-9)
2. Remove the Fuser Unit. (Refer to item 7.1.3.1. (1) on page 7-67)
3. Disconnect the connector.
4. Remove the Sensor Holder.
5. Remove the SB Sensor.

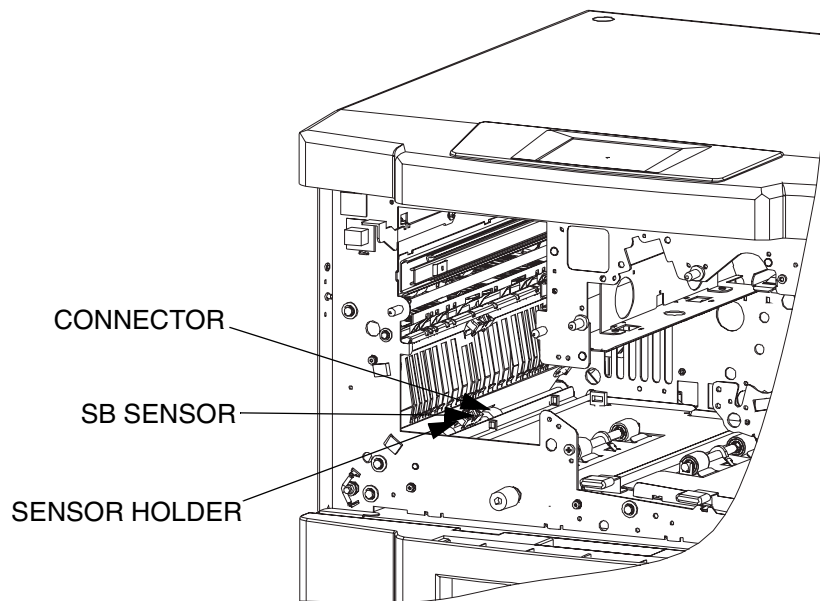


Figure 7-134. Removal of the SB Sensor

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

### 7.1.3.5. (7) Removal of the PF Out Sensor

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Open the Front Cover. (Refer to item 3.3.1 on page 3-9)
2. Remove the Inner Cover. (Refer to item 3.3.2. (1) on page 3-12)
3. Remove the Rear Cover Assembly. (Refer to item 3.3.2. (1) on page 3-12)
4. Remove the Side Cover Assembly. (Refer to item 3.3.2. (1) on page 3-12)
5. Open the Switch Back Cover Assembly.
6. Unscrew the two screws to move the Upper SB Paper Guide.
7. Disconnect the connector.
8. Remove the Upper SB Paper Guide.
9. Unscrew the ⊕ screw to remove the PF Out Sensor.

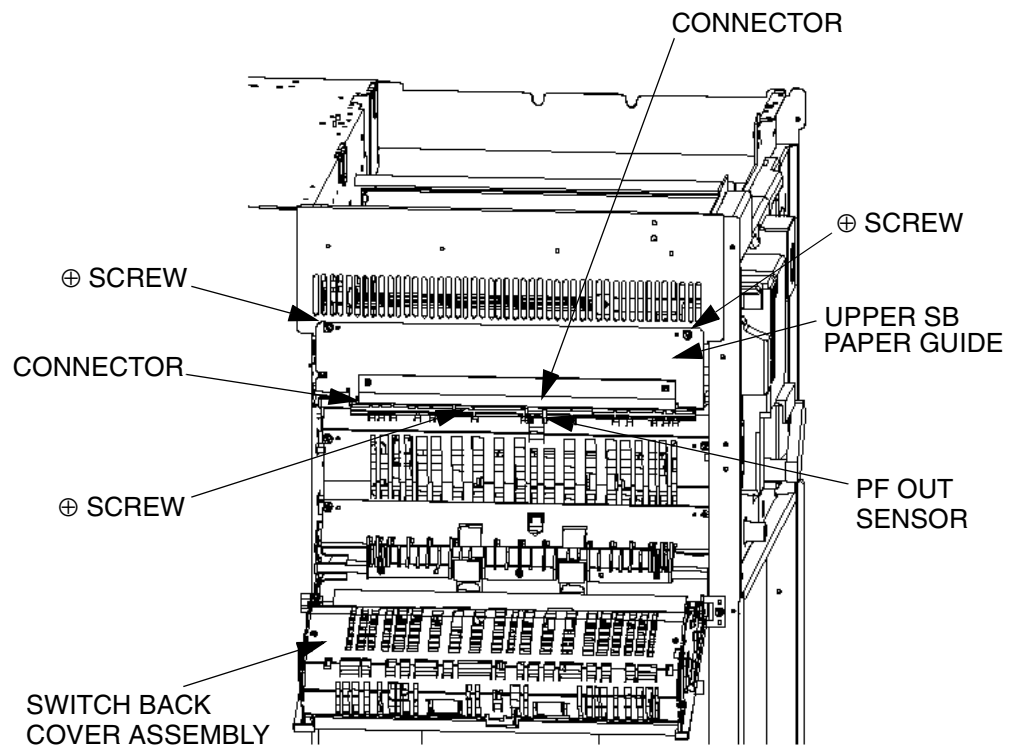


Figure 7-135. Removal of the PF Out Sensor

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

#### 7.1.3.5. (8) Removal of the Drive Roller Gear (SB)

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver, - Screwdriver, Radio Pliers.

**[Disassembling Procedures]**

1. Remove the Rear Cover Assembly. (Refer to item 3.3.2. (1) on page 3-12)
2. Remove the DC Fan(Fuser). (Refer to item 7.1.5.1. (2) on page 7-194)
3. Remove the CPxxx Assembly. (Refer to item 7.1.5.1. (13) on page 7-205)
4. Unscrew the three ⊕ screws to remove the CP Holder.
5. Remove the two Springs.
6. Remove the Retaining Ring-E to remove the Link A.
7. Remove the Retaining Ring-E to remove the Link B.
8. Unscrew the three ⊕ screws to remove the SB Drive Holder (92).
9. Remove the Retaining Ring-E to remove the Drive Roller Gear (SB).

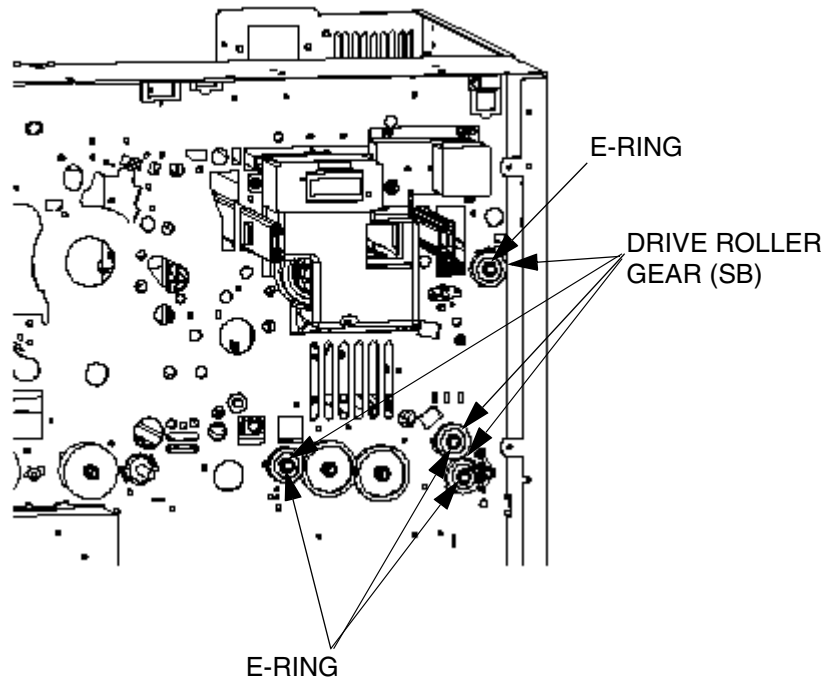


Figure 7-136. Removal of the Drive Roller Gear (SB)

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

### 7.1.3.5. (9) Removal of the SB Cover Sensor

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Open the Front Cover. (Refer to item 3.3.1 on page 3-9)
2. Remove the Inner Cover. (Refer to item 3.3.2. (1) on page 3-12)
3. Remove the Rear Cover Assembly. (Refer to item 3.3.2. (1) on page 3-12)
4. Remove the Side Cover Assembly. (Refer to item 3.3.2. (1) on page 3-12)
5. Open the Switch Back Cover Assembly.
6. Unscrew the two screws to move the Upper SB Paper Guide.
7. Disconnect the connectors.
8. Remove the Upper SB Paper Guide.
9. Remove the SB Cover Sensor.

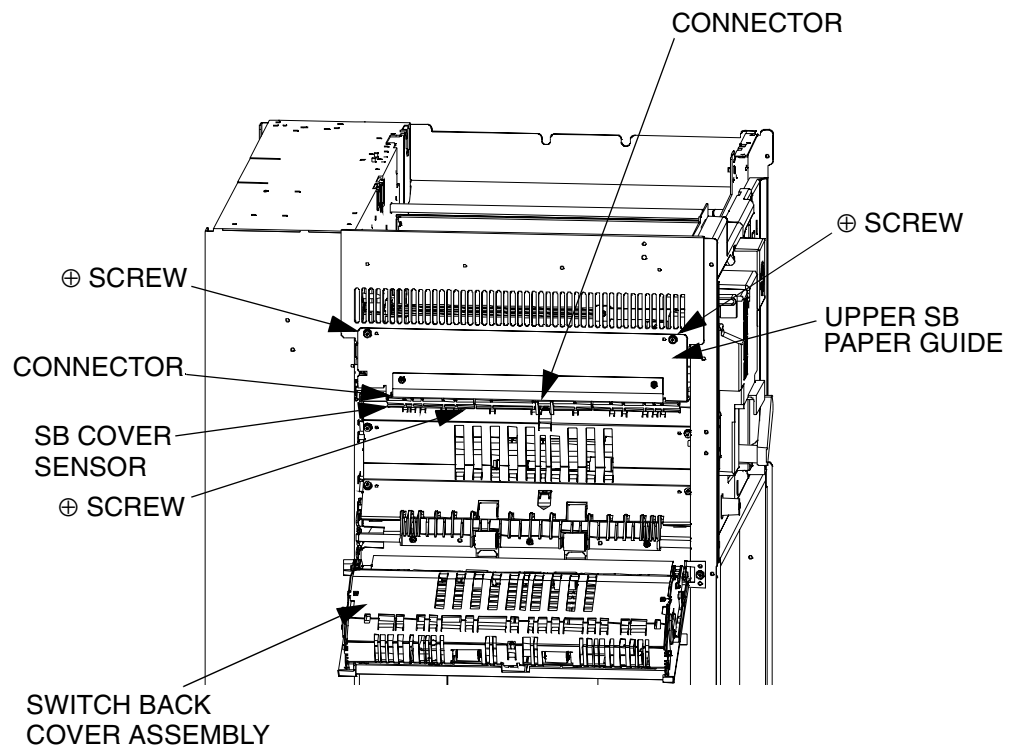


Figure 7-137. Removal of the SB Cover Sensor

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

## 7.1.3.6. Removal of the Duplex Path Parts

### 7.1.3.6. (1) Removal of the U Paper Guide (L) Assembly

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools: None.**

**[Disassembling Procedures]**

1. Open the Front Cover.
2. Remove the Hook Ring B from the Hinge Shaft (L).
3. Disconnect the connector from the Locking Wire Saddle.
4. Remove the Cable from the frame.
5. Remove the Hinge Shaft (L) from the frame.
6. Remove the U Paper Guide (L) Assembly from the frame.

**Note:** Be careful not to cut the TH Cable, the TR Cable, the DT Cable and the TR Earth Cable.

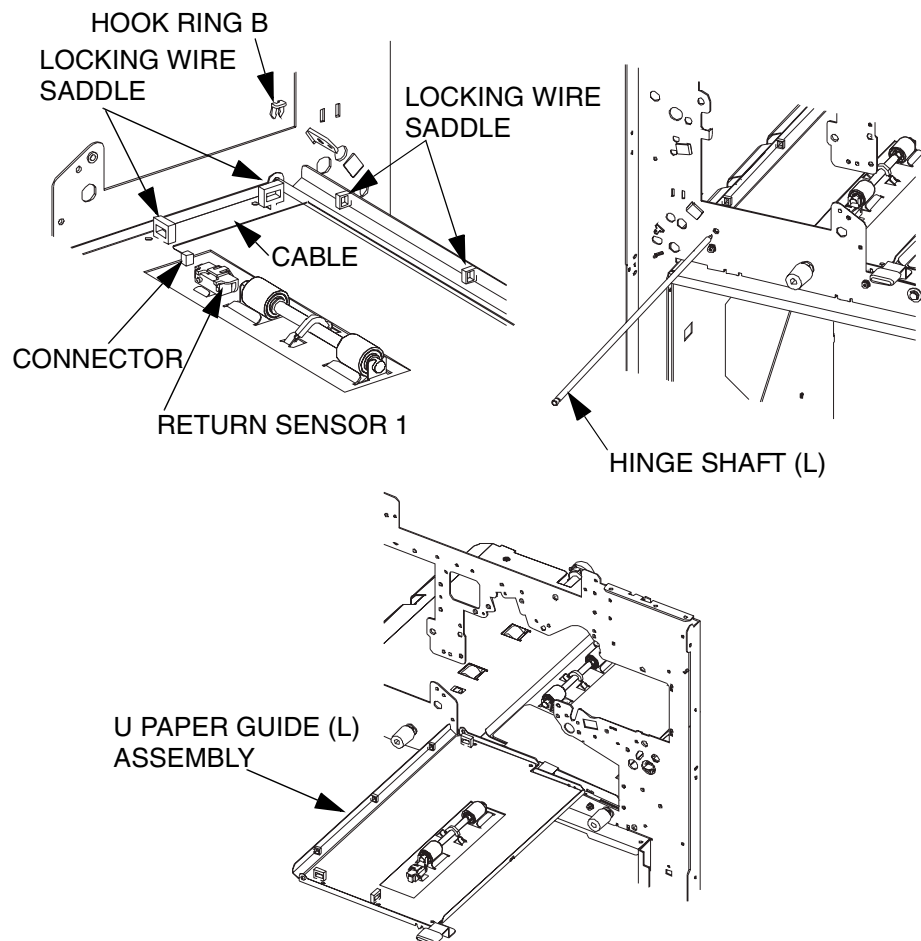


Figure 7-138. Removal of the U Paper Guide (L) Assembly

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

### 7.1.3.6. (2) Removal of the U Paper Guide (R) Assembly

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Open the Front Cover.
2. Disconnect the Connector from the Printed Wiring Board.
3. Unscrew the two ⊕ screws to remove the U Paper Guide (R) Assembly.
4. Remove the U Paper Guide (R) Assembly from the frame.

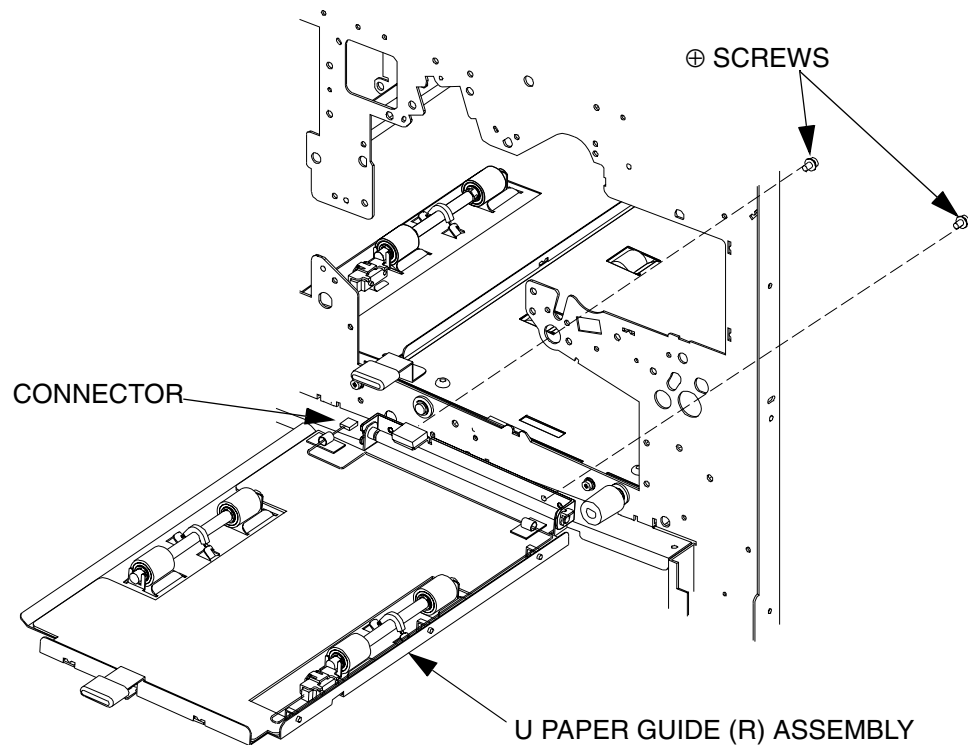


Figure 7-139. Removal of the U Paper Guide (R) Assembly

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

**[Checks]**

Determine location with half blank and make sure that the half blanks of the U Paper Guide (R) Assembly are correctly fastened.



### 7.1.3.6. (3) Removal of the Return Roller 1 Assembly

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools: - Screwdriver.**

**[Disassembling Procedures]**

1. Open the Front Cover.
2. Remove the Feed Roller Knob, the Snap Ring E and the Sleeve Bearing.
3. Open the Rear Cover.
4. Remove the Snap Ring E to remove the Drive Roller Gear (SB).
5. Remove the B.B Housing by turning it clockwise, then remove the Return Roller 1 Assembly.

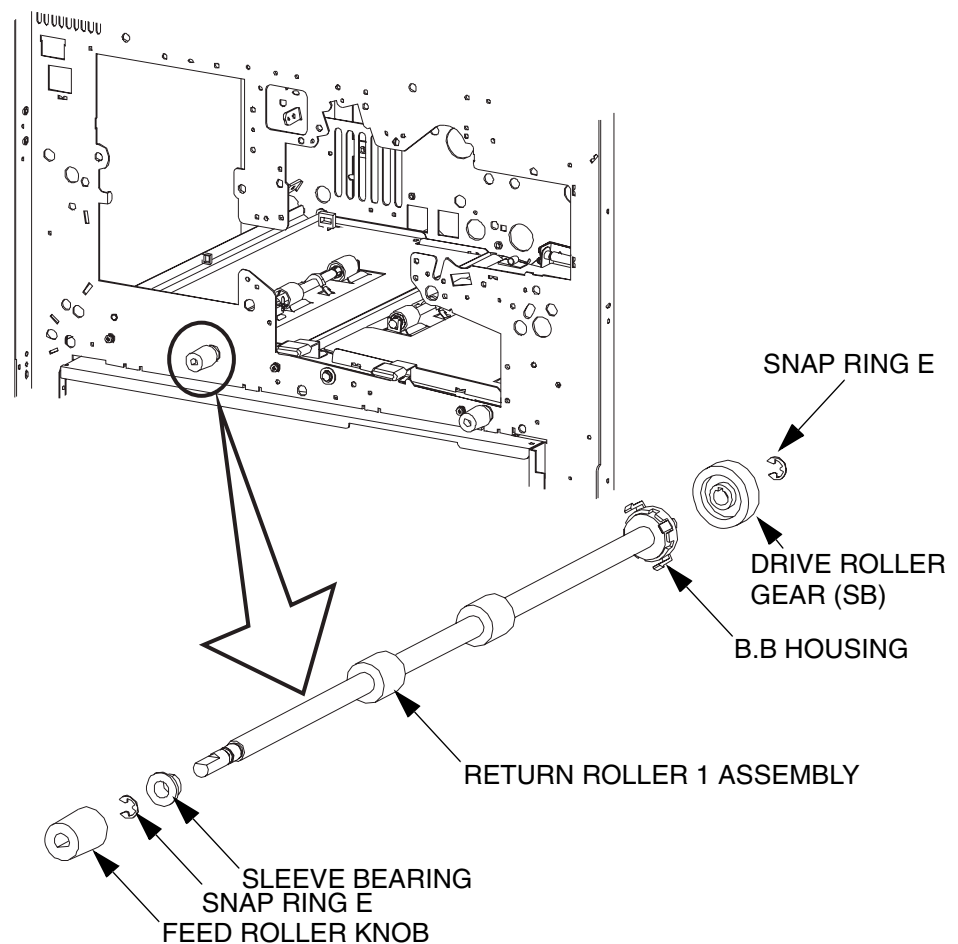


Figure 7-140. Removal of the Return Roller 1 Assembly

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

#### 7.1.3.6. (4) Removal of the Return Roller 2 Assembly

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools: - Screwdriver.**

**[Disassembling Procedures]**

1. Open the Front Cover.
2. Remove the Feed Roller Knob, the Snap Ring E and the Sleeve Bearing.
3. Open the Rear Cover.
4. Remove the Snap ring E to remove the Drive Roller Gear (DPX).
5. Remove the B. B Housing by turning it clockwise, then remove the Return Roller 2 Assembly.

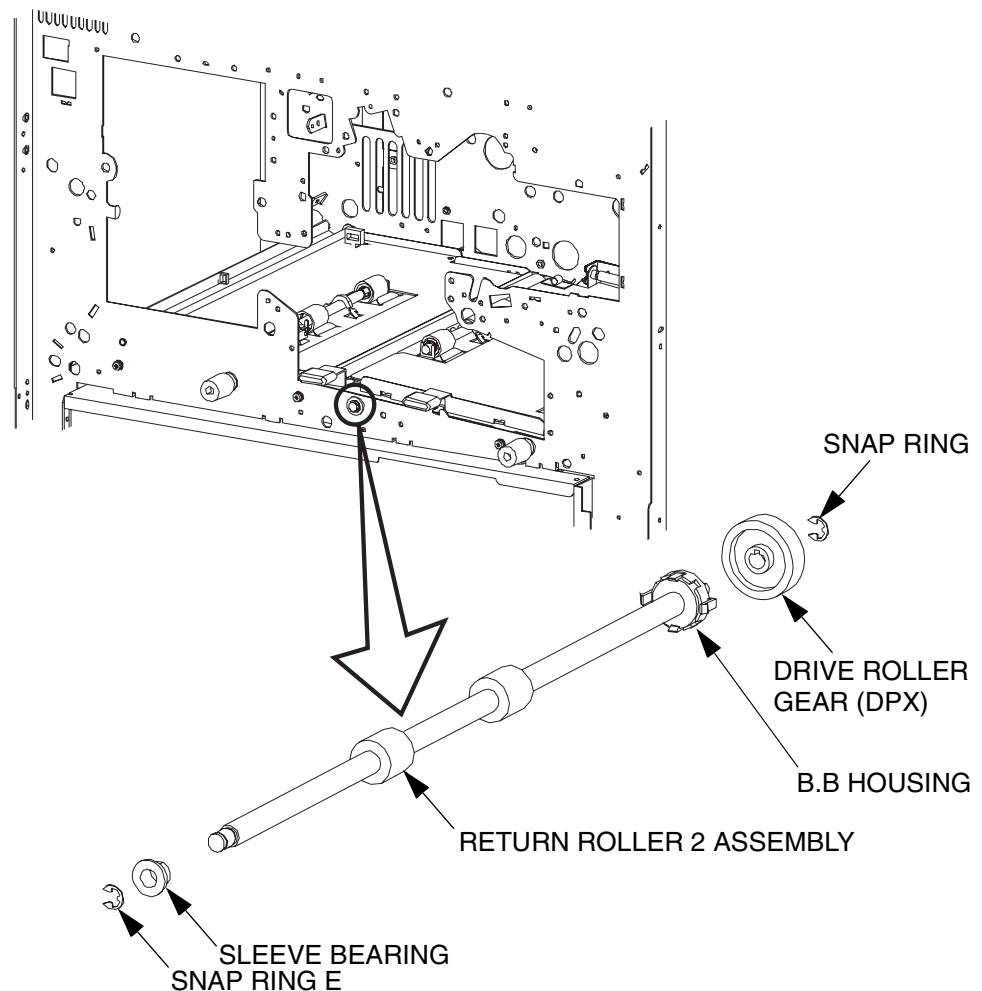


Figure 7-141. Removal of the Return Roller 2 Assembly

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

#### 7.1.3.6. (5) Removal of the Return Roller 3 Assembly.

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools: - Screwdriver.**

**[Disassembling Procedures]**

1. Open the Front Cover.
2. Remove the Feed Roller Knob, the Snap Ring E and the Sleeve Bearing.
3. Open the Rear Cover.
4. Remove the Snap ring E to remove the Drive Roller Gear (DPX).
5. Remove the B. B Housing by turning it clockwise, then remove the Return Roller 3 Assembly.

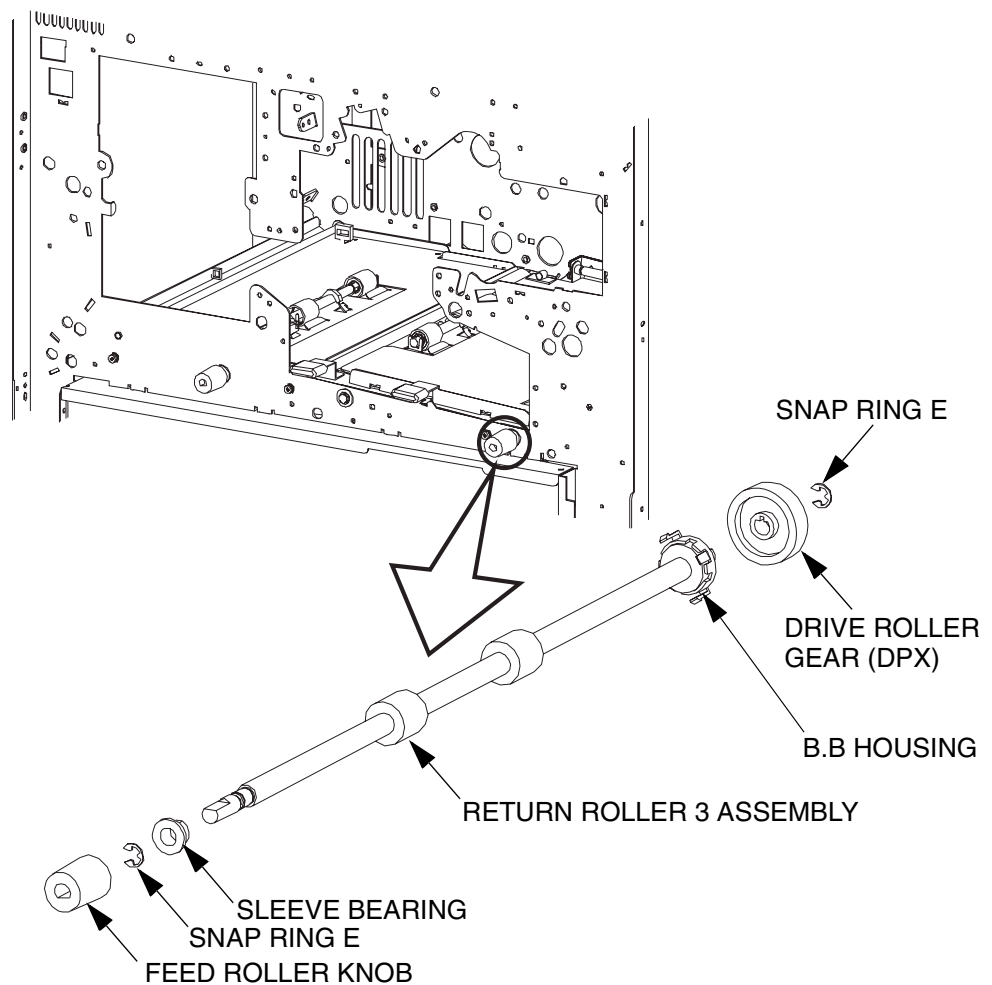


Figure 7-142. Removal of the Return Roller 3 Assembly

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

#### 7.1.3.6. (6) Removal of the Return Sensor 1

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools: - Screwdriver.**

**[Disassembling Procedures]**

1. Open the Front Cover.
2. Remove the Sensor Holder.
3. Disconnect the connector from the Return Sensor 1.
4. Remove the Return Sensor 1 from the Sensor Holder.

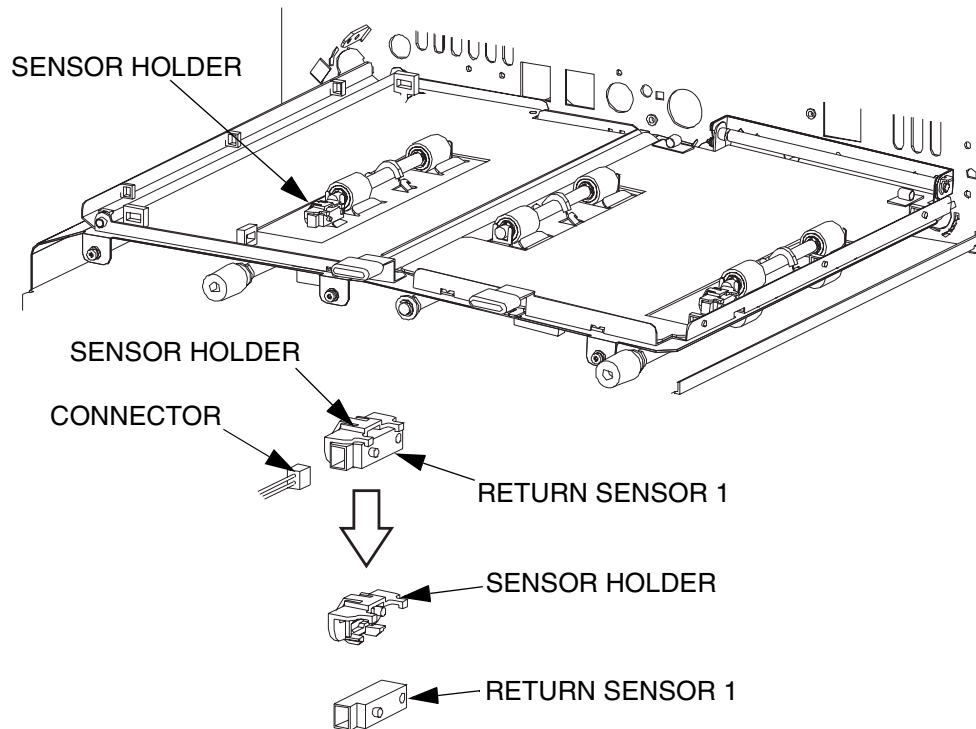


Figure 7-143. Removal of the Return Sensor 1

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

**[Checks]**

Make sure that the snap-fit parts of the Sensor Holder are correctly fastened.

### 7.1.3.6. (7) Removal of the Return Sensor 2

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools: - Screwdriver.**

**[Disassembling Procedures]**

1. Open the Front Cover.
2. Remove the Sensor Holder.
3. Disconnect the connector from the Return Sensor 2.
4. Remove the Return Sensor 2 from the Sensor holder.

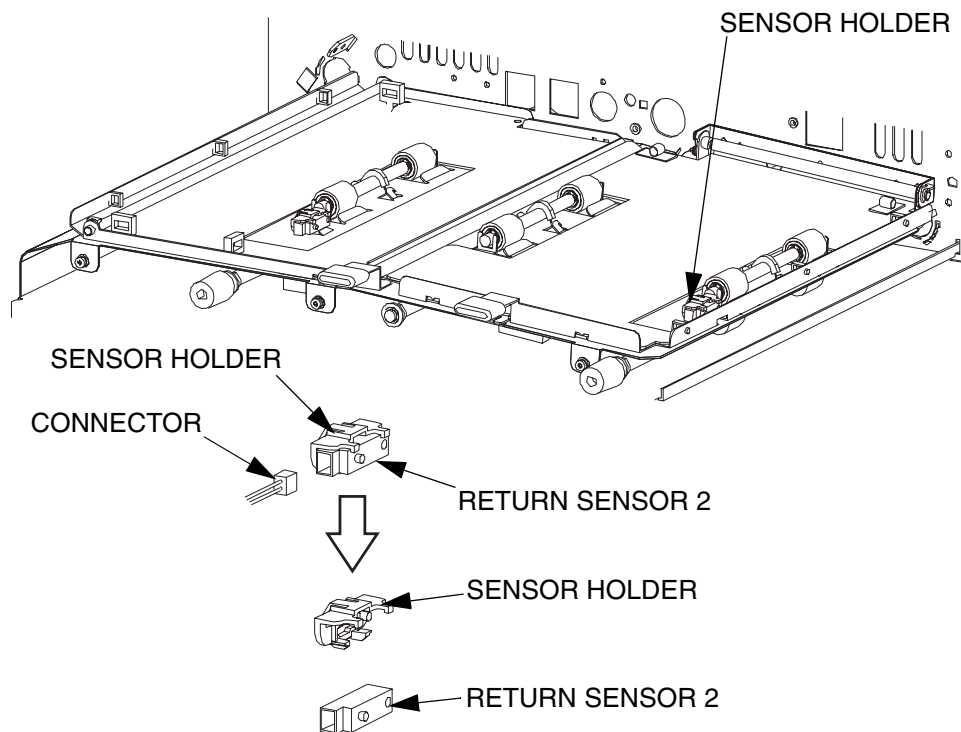


Figure 7-144. Removal of the Return Sensor 2

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

**[Checks]**

Make sure that the snap-fit parts of the Sensor Holder are correctly fastened.

#### 7.1.3.6. (8) Removal of the Pressure Roller Assembly

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools: - Screwdriver.**

**[Disassembling Procedures]**

1. Open the Front Cover.
2. Release the extension Spring to remove the Pressure Roller Assembly.

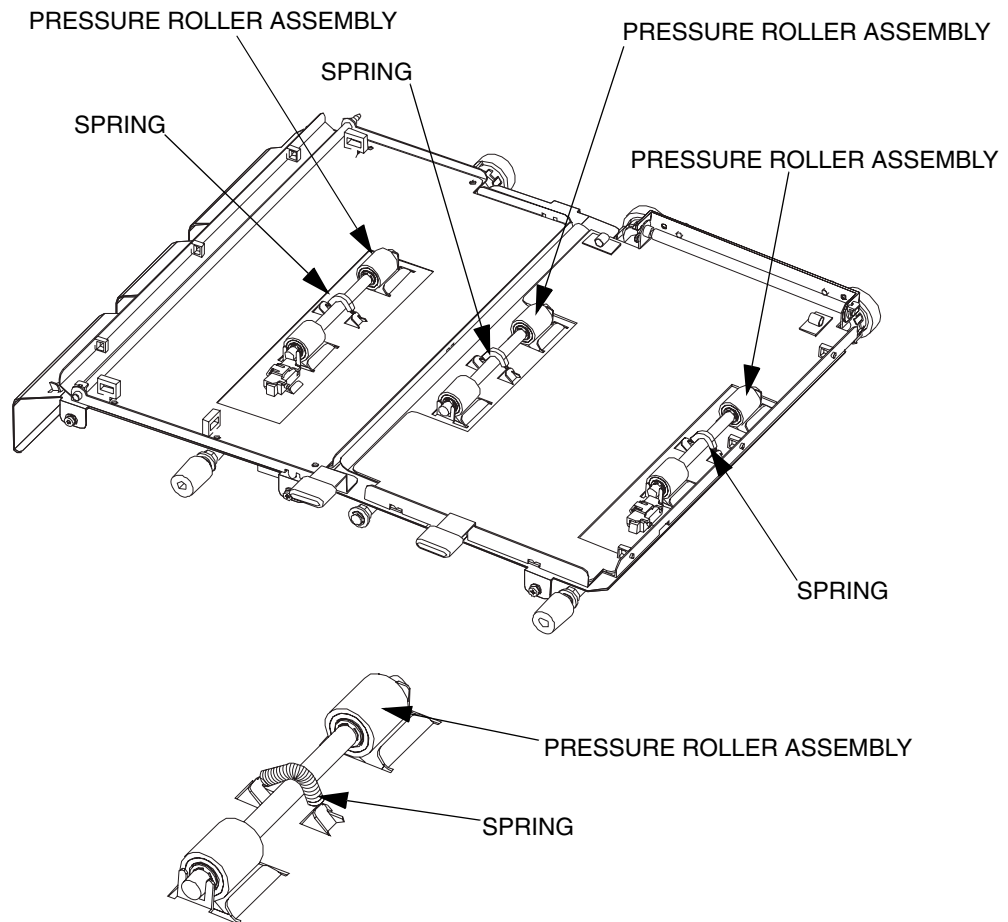


Figure 7-145. Removal of the Pressure Roller Assembly

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

### 7.1.3.6. (9) Removal of the Sleeve Bearing

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools: - Screwdriver.**

**[Disassembling Procedures]**

1. Open the Front Cover.
2. Remove the Feed Roller Knob and the Snap Ring E.
3. Remove the Sleeve Bearing.

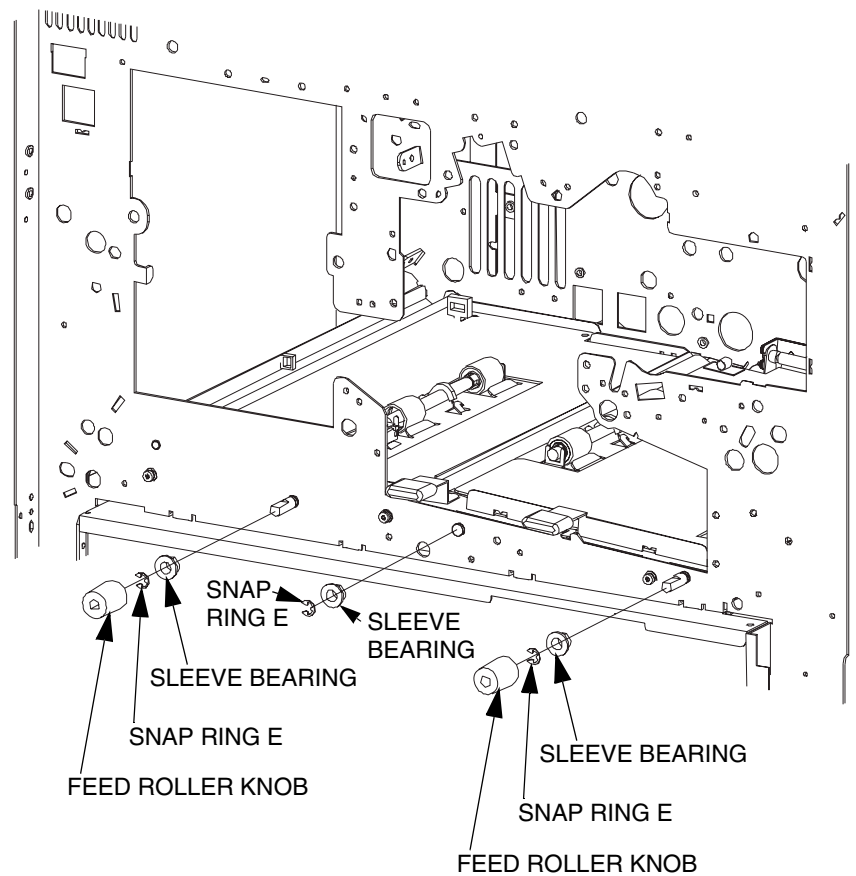


*Figure 7-146. Removal of the Sleeve Bearing*

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

#### 7.1.3.6. (10) Removal of the Drive Roller Gear (DPX)

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver, - Screwdriver, Radio Pincers.

**[Disassembling Procedures]**

1. Remove the Rear Cover Assembly. (Refer to item 3.3.2. (1) on page 3-12)
2. Remove the PF Motor Assembly. (Refer to item 7.1.3.12 on page 7-143)
3. Remove the Printed Circuit Board Holder. (Refer to item 7.1.3.6. (11) on page 7-132)
4. Remove the Retaining Ring-E to remove the Drive Roller Gear (DPX).

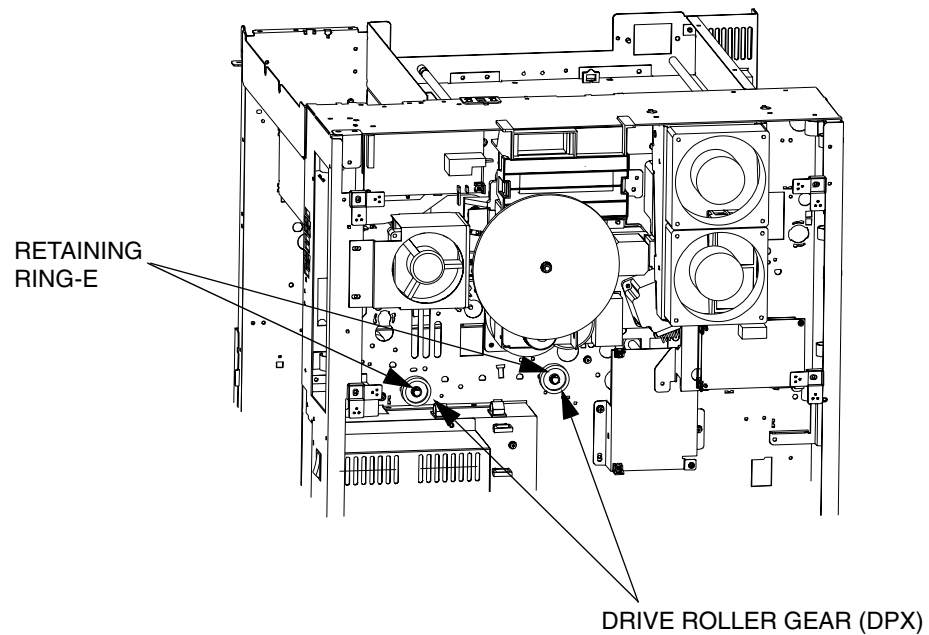


Figure 7-147. Removal of the Drive Roller Gear (DPX)

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.



#### 7.1.3.6. (11) Removal of the Drive Roller Gear.

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver, - Screwdriver.

**[Disassembling Procedures]**

1. Remove the Rear Cover. (Refer to item 3.3.2. (1) on page 3-12)
2. Remove the Print Circuit Board Holder.
3. Pull off the Retaining Ring with the - Screwdriver and pull off the Driver Roller Gear.

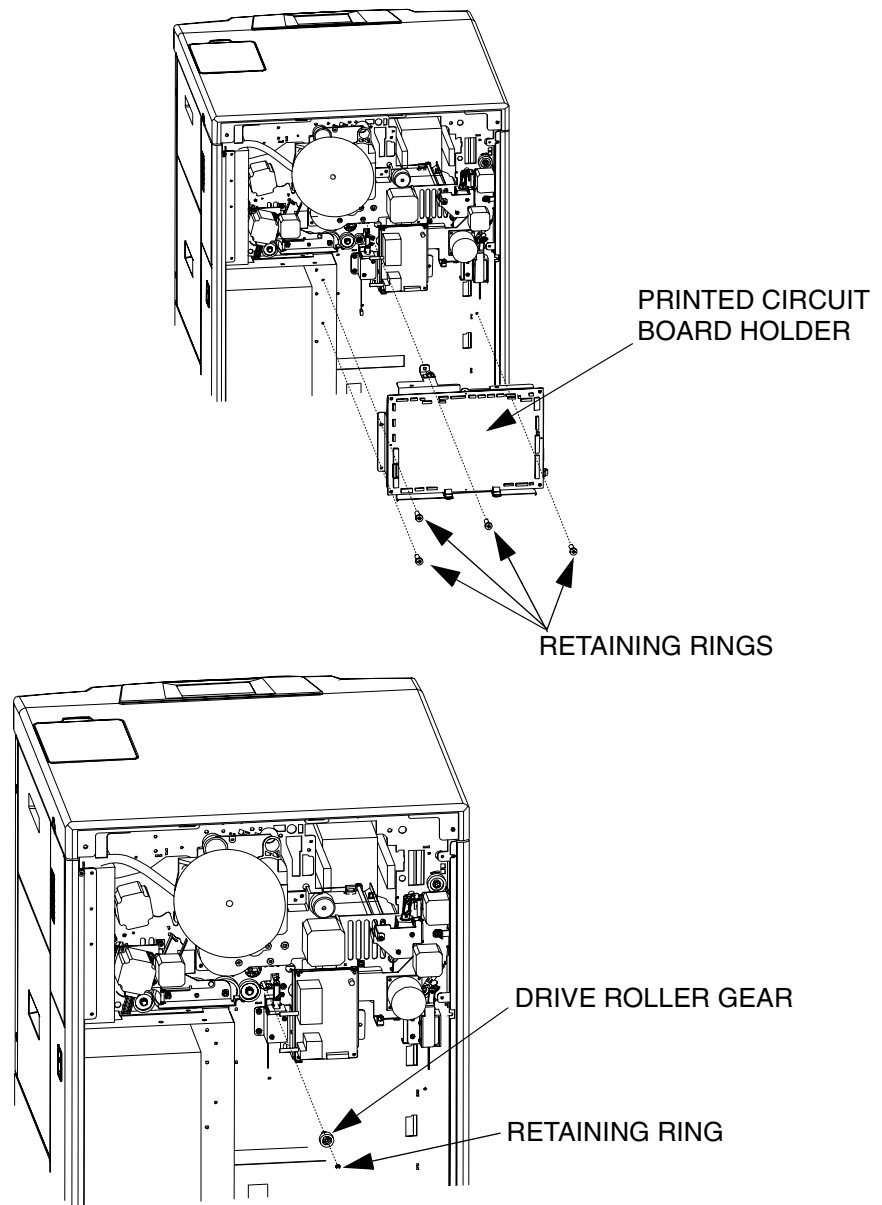


Figure 7-148. Removal of the Drive Roller Gear

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

### 7.1.3.6. (12) Removal of the Sleeve Bearing

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver, - Screwdriver.

**[Disassembling Procedures]**

1. Remove the Drive Roller Gear. (Refer to item 7.1.3.6. (11) on page 7-132)
2. Remove the Sleeve Bearing on the **Rear** side.
3. Open the Front Cover.
4. Remove the Inner Cover. (Refer to item 3.3.2. (1) on page 3-12)
5. Pull off the Retaining Ring and remove the Sleeve Bearing on the **Front** side.

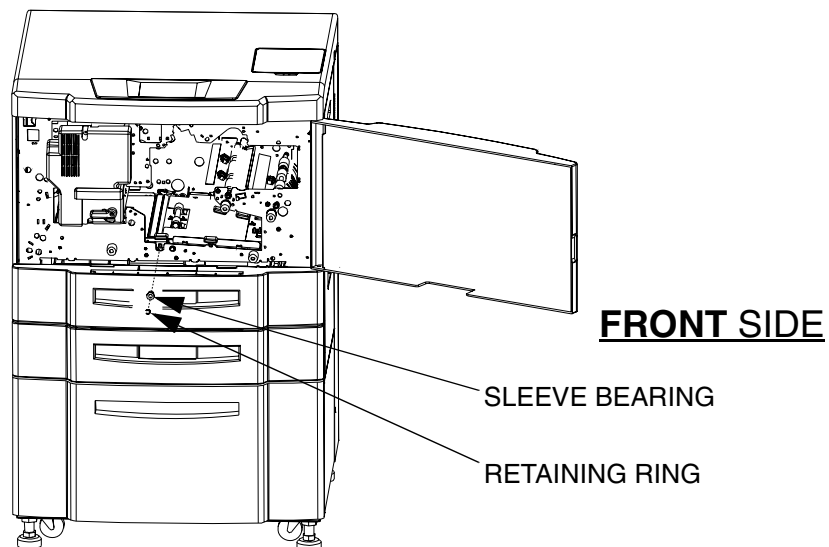
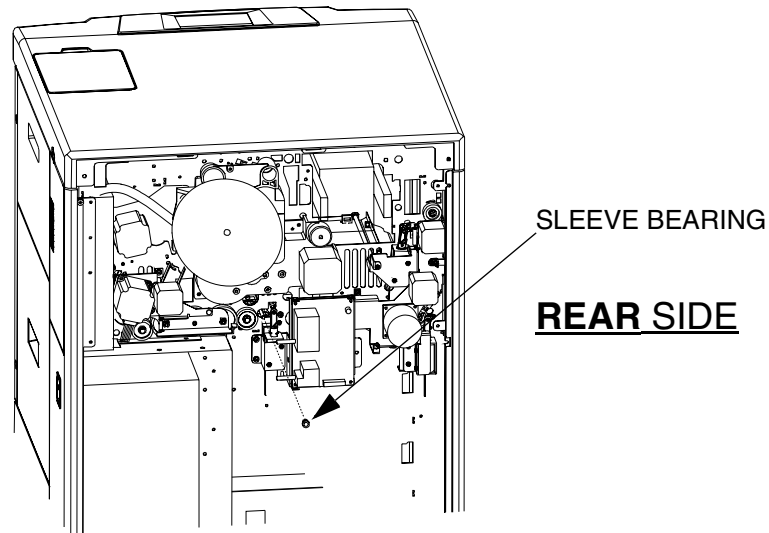


Figure 7-149. Removal of the Sleeve Bearing

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

### 7.1.3.6. (13) Removal of the Drive Roller Shaft

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver, - Screwdriver.

**[Disassembling Procedures]**

1. Remove the two Sleeve Bearings. ([Refer to item 7.1.3.6. \(12\) on page 7-133](#))
2. Lift the Upper Paper Guide L and the Upper Paper Guide R in the direction of the arrow **A**.
3. Pull the Drive Roller Shaft in the direction of the arrow **B** at first and pull off in the direction of the arrow **C**.

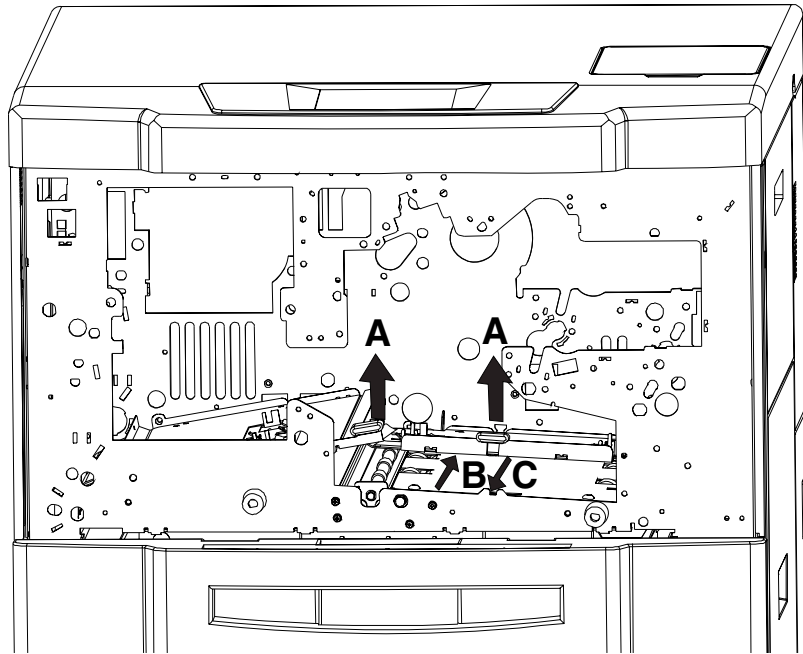


Figure 7-150. Removal of the Drive Roller Shaft

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

#### 7.1.3.6. (14) Removal of the Solenoid

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Remove the Rear Cover. (Refer to item 3.3.2. (1) on page 3-12)
2. Remove the Printed Circuit Board Holder. (Refer to item 7.1.3.6. (11) on page 7-132)
3. Unscrew the two ⊕ screws and remove the Solenoid Frame.
4. Pull the Gate Link in the direction of the arrow **A** and pull off the Solenoid Plunger in the direction of the arrow **B**.

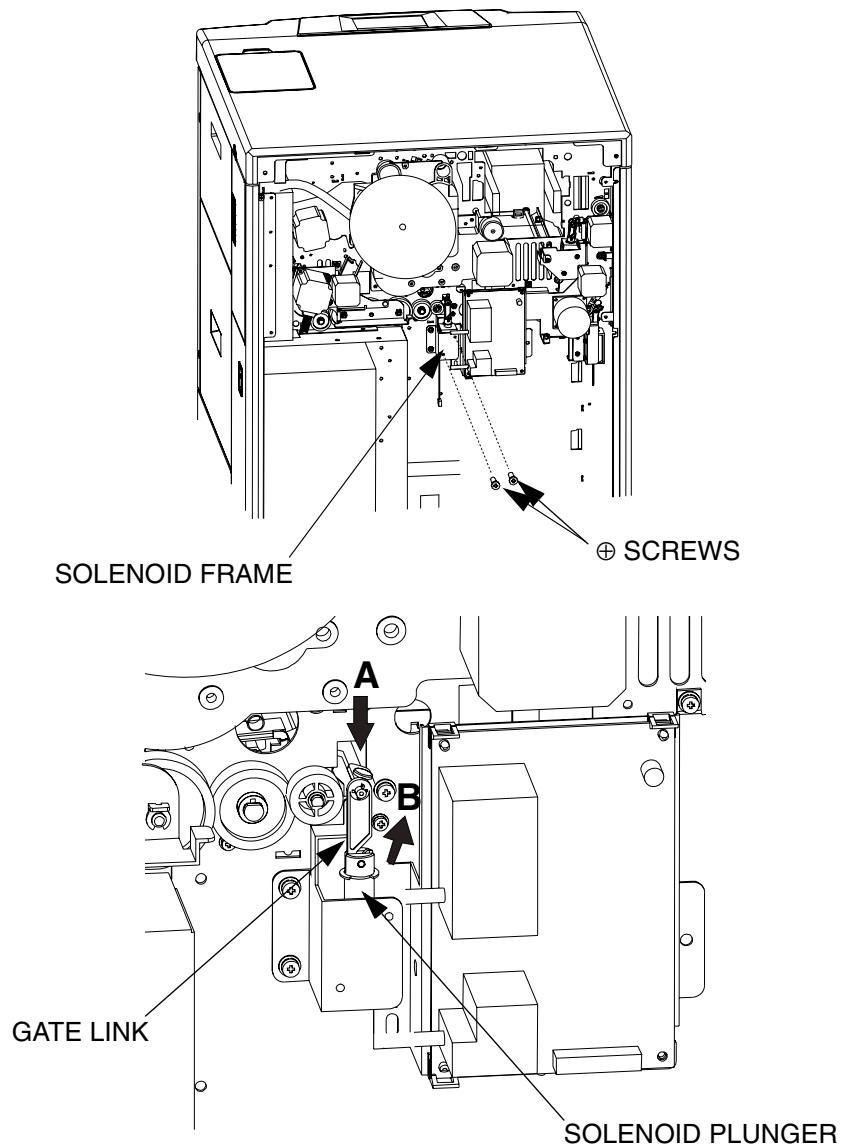


Figure 7-151. Removal of the Solenoid

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

#### 7.1.3.6. (15) Removal of the Gate Link

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Remove the Solenoid. (Refer to item 7.1.3.6. (14) on page 7-135)
2. Turn the Gate Link in the direction of the arrow **A** and pull off in the direction of the arrow **B**.

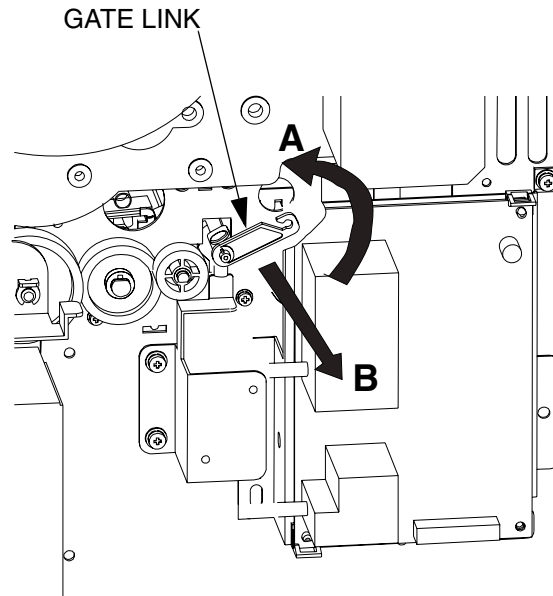


*Figure 7-152. Removal of the Gate Link*

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

### 7.1.3.6. (16) Removal of the Gate Actuator

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Remove the Gate Link. ([Refer to item 7.1.3.6. \(15\) on page 7-136](#))
2. Remove the Compression Spring and the Rivet.
3. Remove the Gate Actuator.

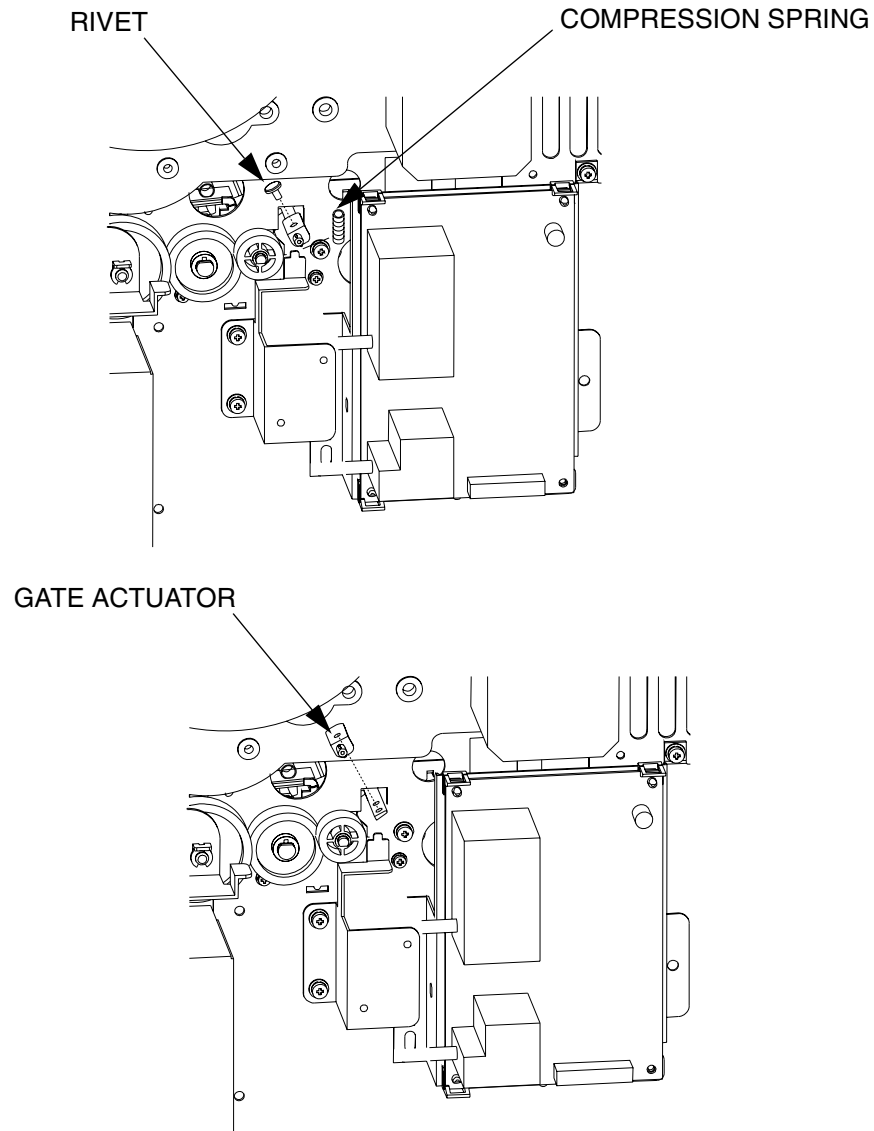


Figure 7-153. Removal of the Gate Actuator

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

### 7.1.3.7. Removal of the Flip Motor

**CAUTION:**  
Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver, - Screwdriver, Radio Pliers.

#### [Disassembling Procedures]

1. Remove the SB Drive Holder (92) (Procedures 1 to 8). ([Refer to item 7.1.3.5. \(8\) on page 7-120](#))
2. Remove the Motor Gear (SB).
3. Unscrew the two ⊕ screws to remove the Flip Motor.

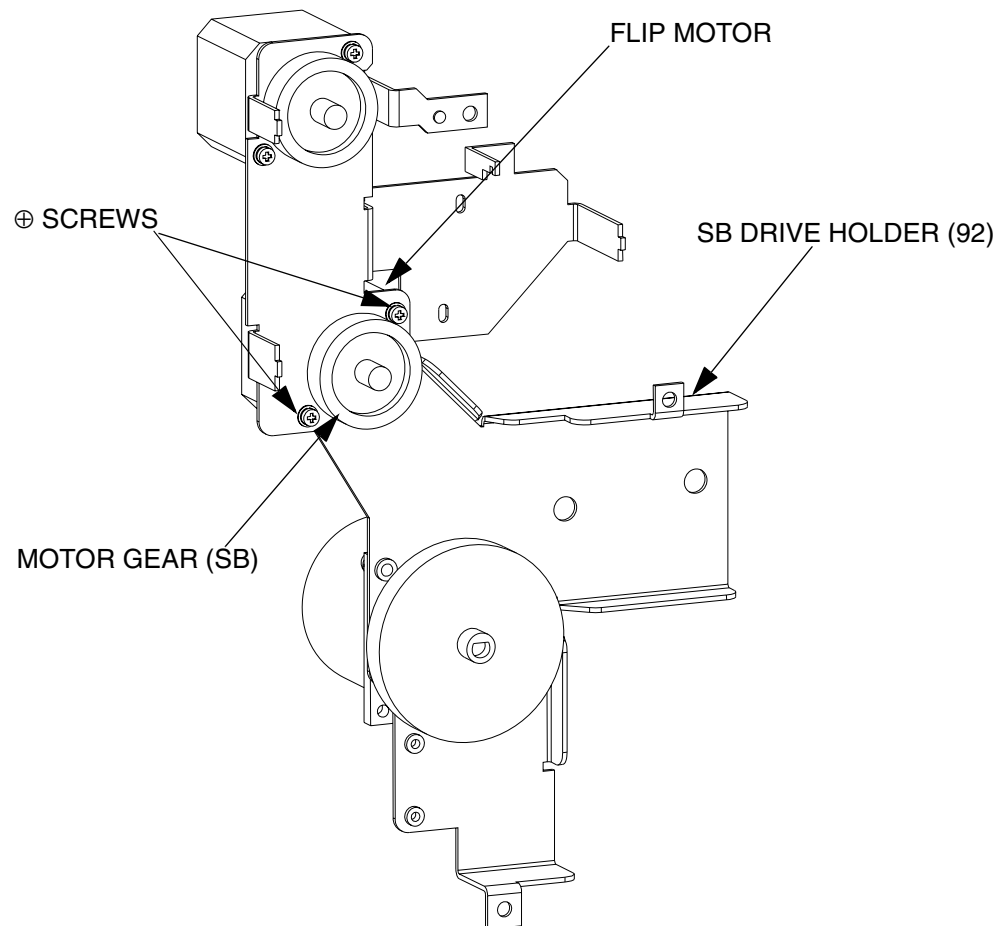


Figure 7-154. Removal of the Flip Motor

#### [Assembling Procedures]

Perform the disassembling procedures in the reverse order.

### 7.1.3.8. Removal of the SB Motor

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver, - Screwdriver, Radio Pliers.

**[Disassembling Procedures]**

1. Remove the SB Drive Holder (92) (Procedures 1 to 8). ([Refer to item 7.1.3.5. \(8\) on page 7-120](#))
2. Remove the Motor Gear (SB).
3. Unscrew the two ⊕ screws to remove the SB Motor.

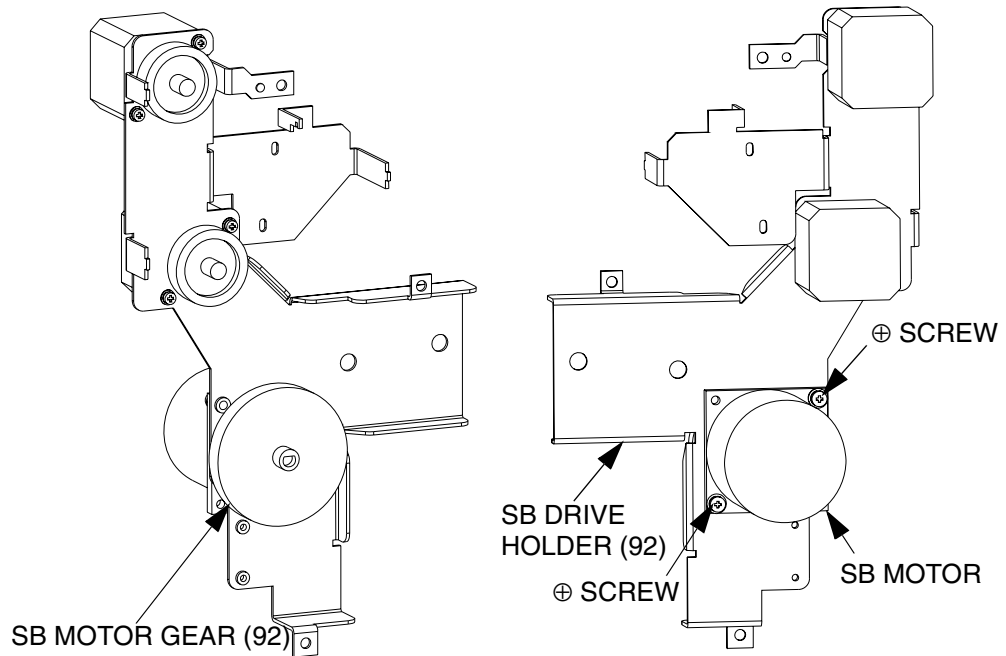


Figure 7-155. Removal of the SB Motor

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.



### 7.1.3.9. Removal of the PF Out Motor

**CAUTION:**  
Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver, - Screwdriver, Radio Pincers.

#### [Disassembling Procedures]

1. Remove the SB Drive Holder (92) (Procedures 1 to 8). ([Refer to item 7.1.3.5. \(8\) on page 7-120](#))
2. Remove the Motor Gear (SB).
3. Unscrew the two ⊕ screws to remove the PF Out Motor.

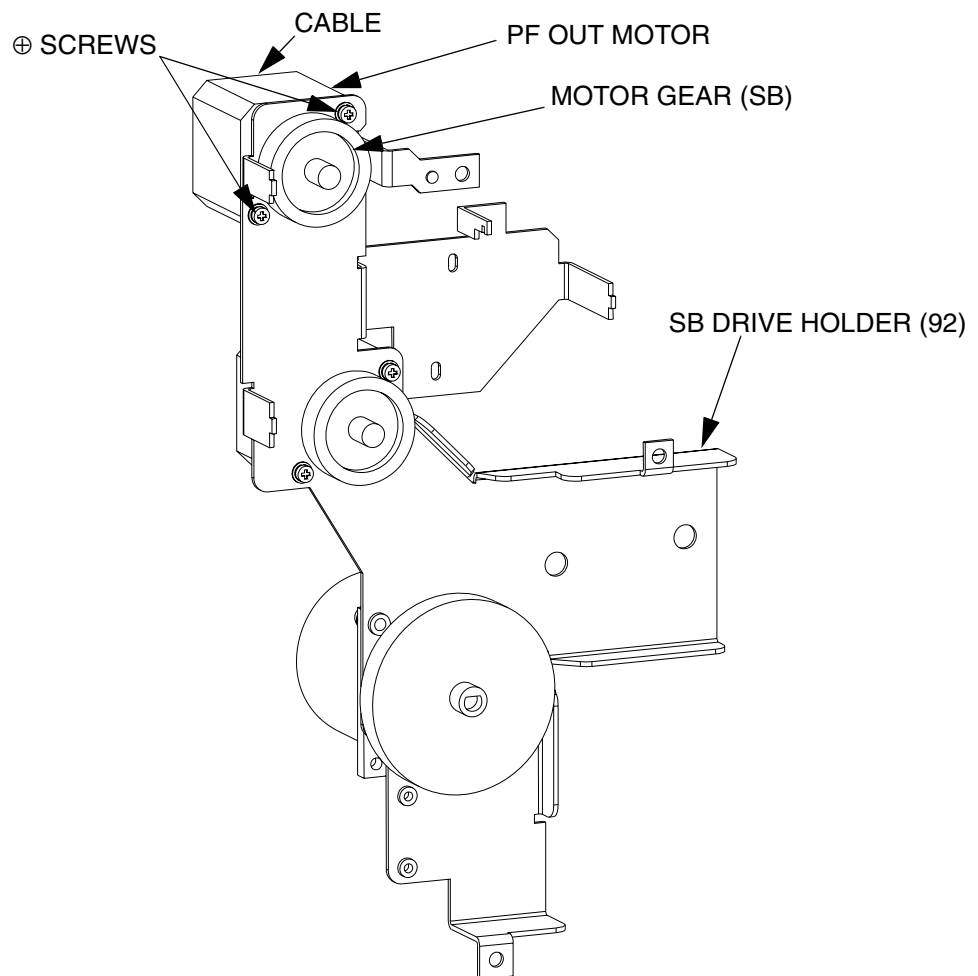


Figure 7-156. Removal of the PF Out Motor

#### [Assembling Procedures]

Perform the disassembling procedures in the reverse order.

**Note:** Install the cable to turn up like the figure above in motor installation.

### 7.1.3.10. Removal of the Registration Motor

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Remove the Rear Cover. (Refer to item 3.3.2. (1) on page 3-12)
2. Loosen the ⊕ **screws** to loosen the Timing Belt.
3. Binding the Registration Motor by lifting upward.
4. Unscrew the two motor ⊕ screws to remove the Registration Motor.
5. Remove the Drive Pulley.

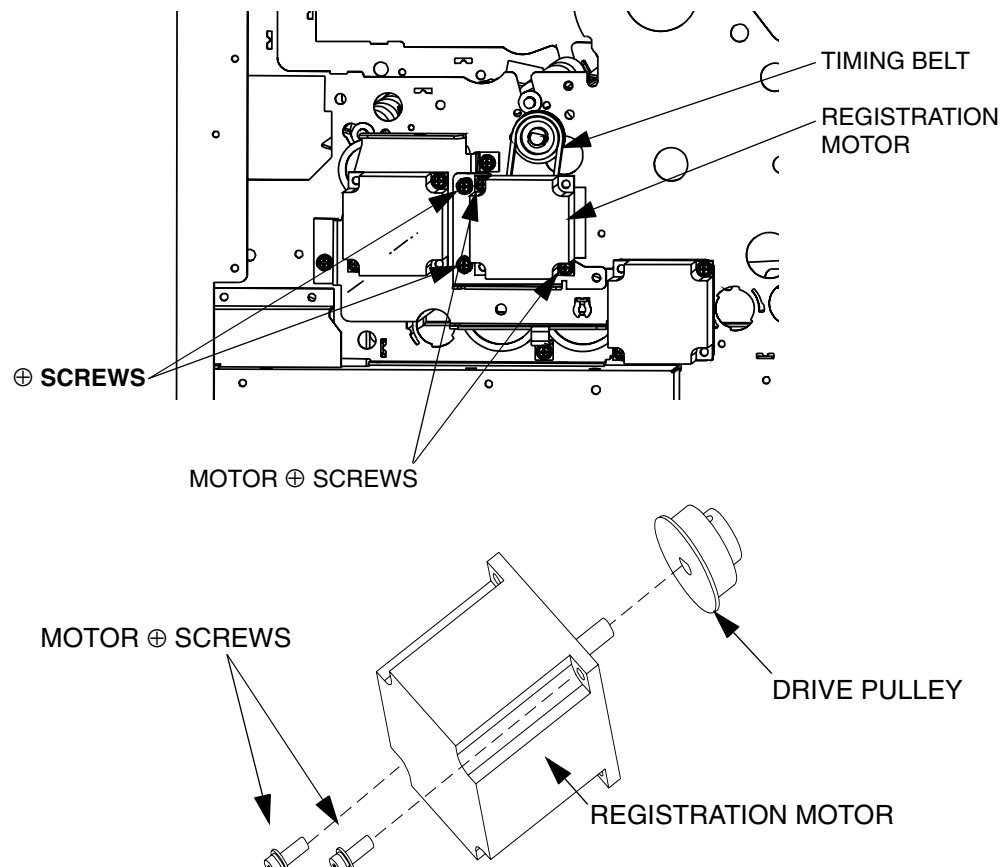


Figure 7-157. Removal of the Registration Motor

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

**Note:** On setting the Timing Belt, screw the ⊕ **screws** when the Timing Belt has a proper tension by the weight of the Registration Motor.

### 7.1.3.11. Removal of the Timing Motor

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Remove the Rear Cover. (Refer to item 3.3.2. (1) on page 3-12)
2. Unscrew the two motor ⊕ screws to remove the Timing Motor.
3. Remove the Drive Gear (92).

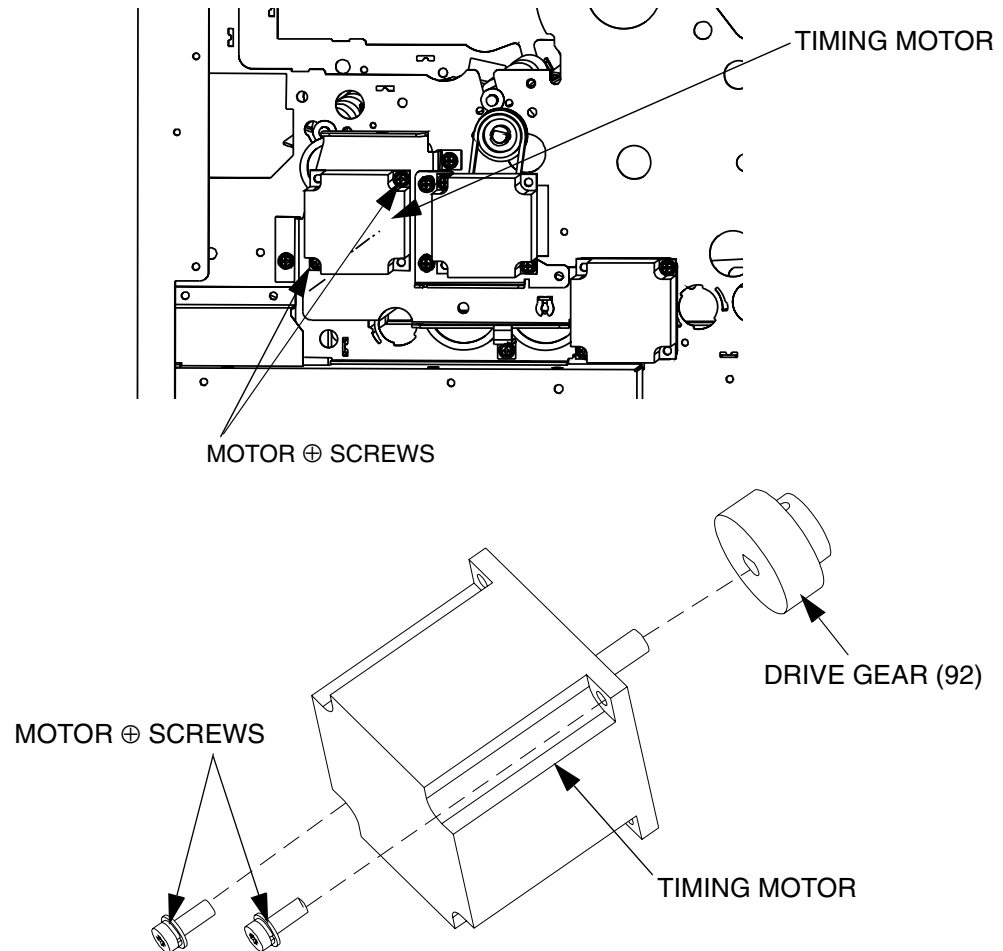


Figure 7-158. Removal of the Timing Motor

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

### 7.1.3.12. Removal of the Return Motor

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Remove the Bottle Box Assembly. (Refer to item 7.1.2.6. (3) on page 7-63)
2. Remove the Hook Rings B and loosen the ⊕ screws.
3. Unscrew the two ⊕ screws to remove the PF Motor Assembly.
4. Remove the RTN Motor Gear.
5. Unscrew the two ⊕ screws to remove the Return Motor.

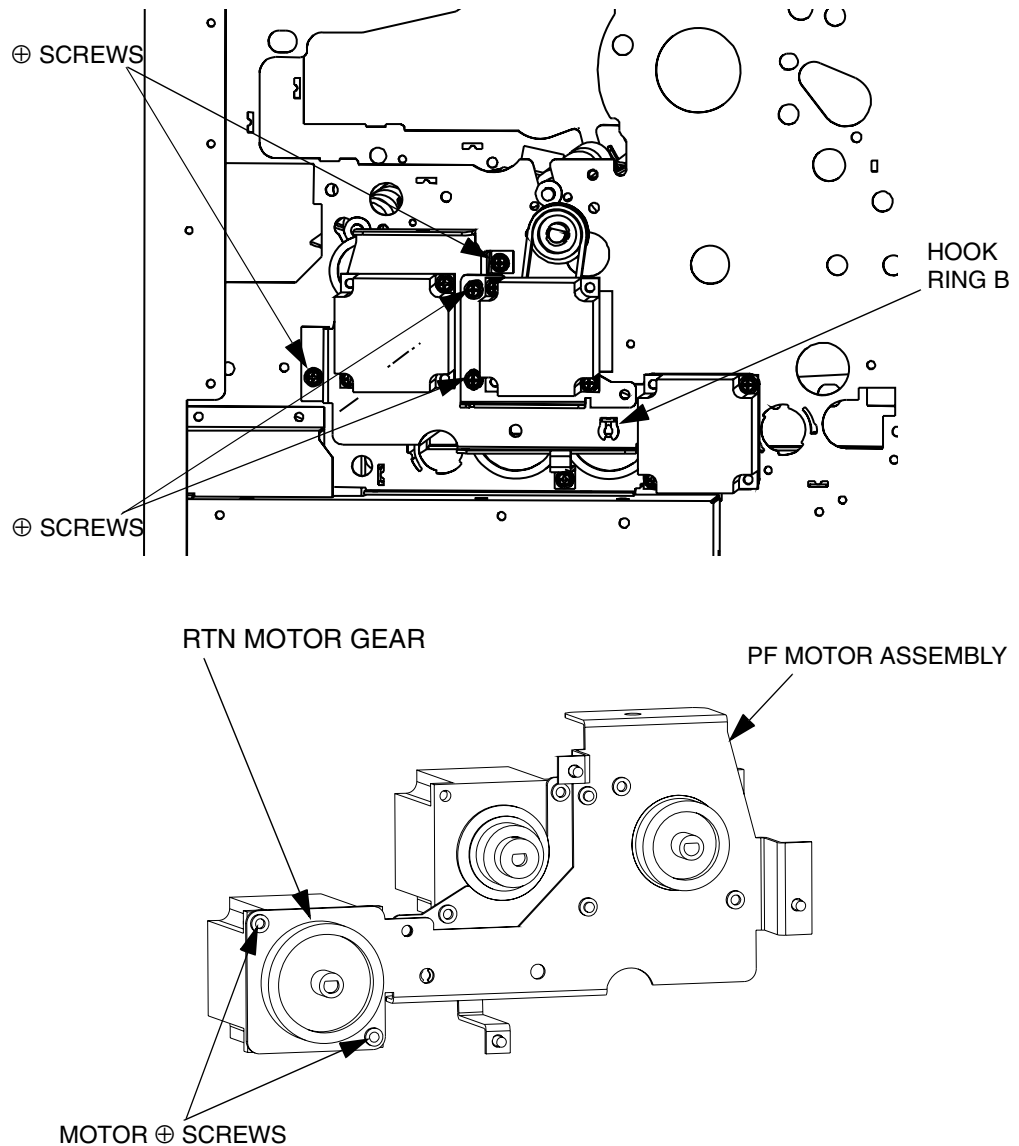


Figure 7-159. Removal of the Return Motor

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

### 7.1.3.13. Removal of the CW Drive Unit Assembly

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Remove the Cooling Assembly (1). (Refer to item 7.1.5.1. (2) on page 7-194)
2. Disconnect the Connector.
3. Unscrew the two ⊕ screws to remove the CW Drive Unit.
4. Unscrew the two ⊕ screws to remove the AC Cable Assembly.

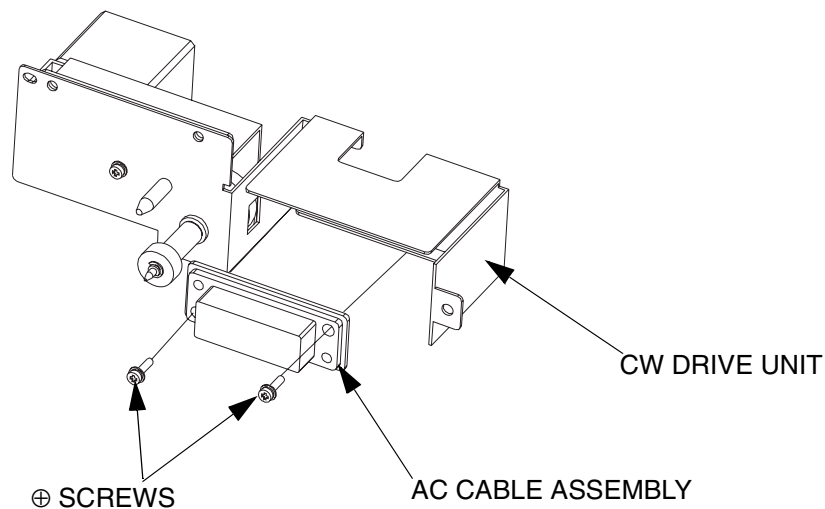
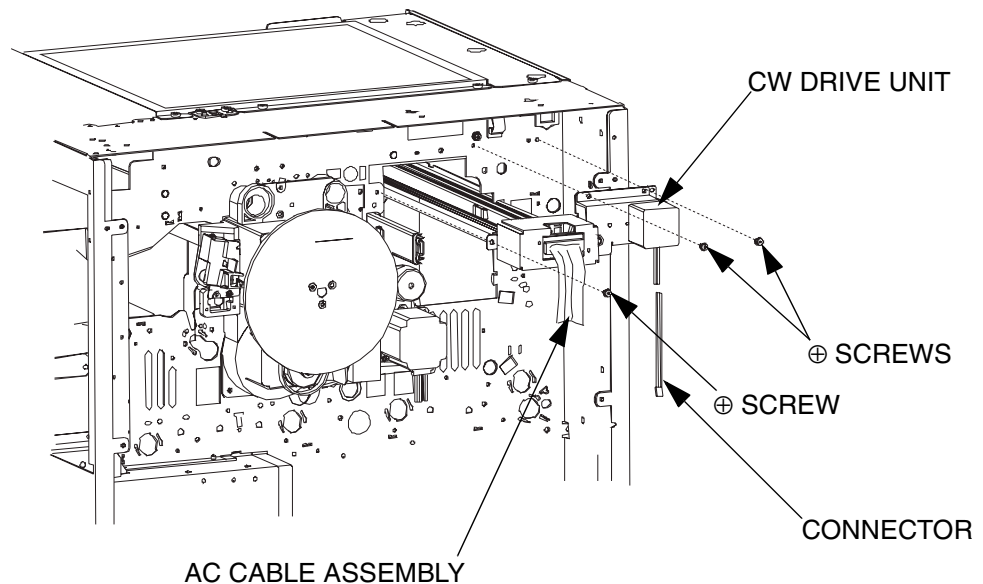


Figure 7-160. Removal of the CW Drive Unit Assembly

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

### 7.1.3.14. Removal of the CW Motor

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver, - Screwdriver.

**[Disassembling Procedures]**

1. Remove the CW Drive Unit Assembly. (Refer to item 7.1.3.13 on page 7-144)
2. Remove the two Retaining Ring to remove the CW Drive Gear 6, the Spring and the Sleeve Bearing.
3. Unscrew the screw to remove the CW Holder and the CW Drive Gear 1.
4. Unscrew the two ⊕ screws to remove the CW Motor.

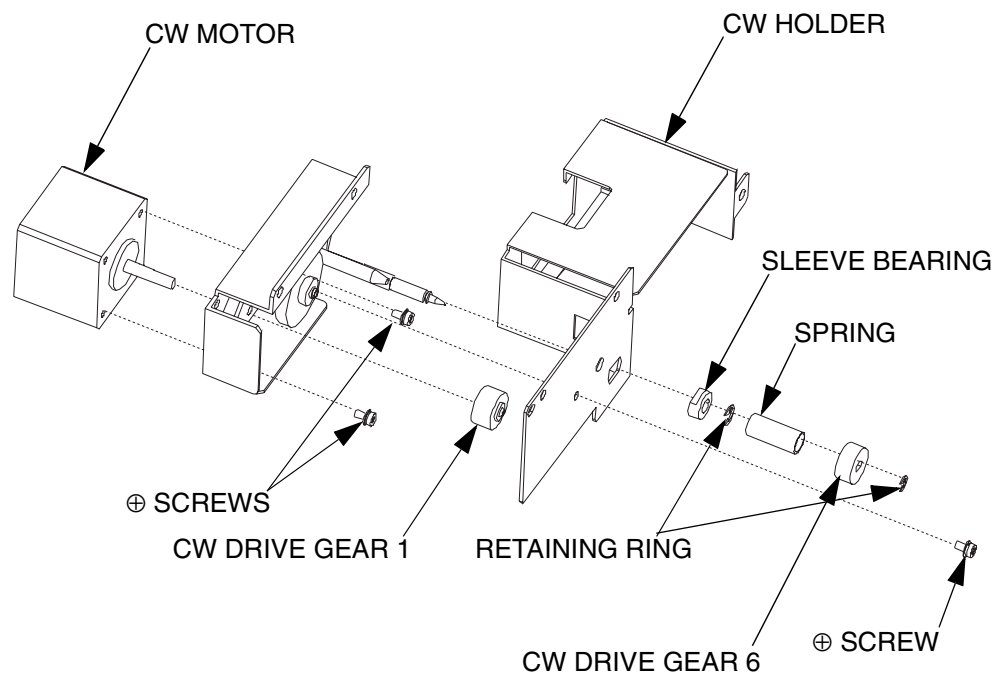


Figure 7-161. Removal of the CW Motor

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

### 7.1.3.15. Removal of the Flip Solenoid Assembly

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver, - Screwdriver, Radio Pincers.

**[Disassembling Procedures]**

1. Remove the Rear Cover Assembly. (Refer to item 3.3.2. (1) on page 3-12)
2. Remove the DC Fan(Fuser). (Refer to item 7.1.5.1. (2) on page 7-194)
3. Remove the CPxxx Assembly. (Refer to item 7.1.5.1. (13) on page 7-205)
4. Unscrew the three ⊕ screws to remove the CP Holder.
5. Remove the Spring.
6. Remove the Retaining Ring-E to remove the Gate Link (FL).
7. Unscrew the two ⊕ screws to remove the Flip Solenoid Assembly.
8. Remove the Link B (FL).

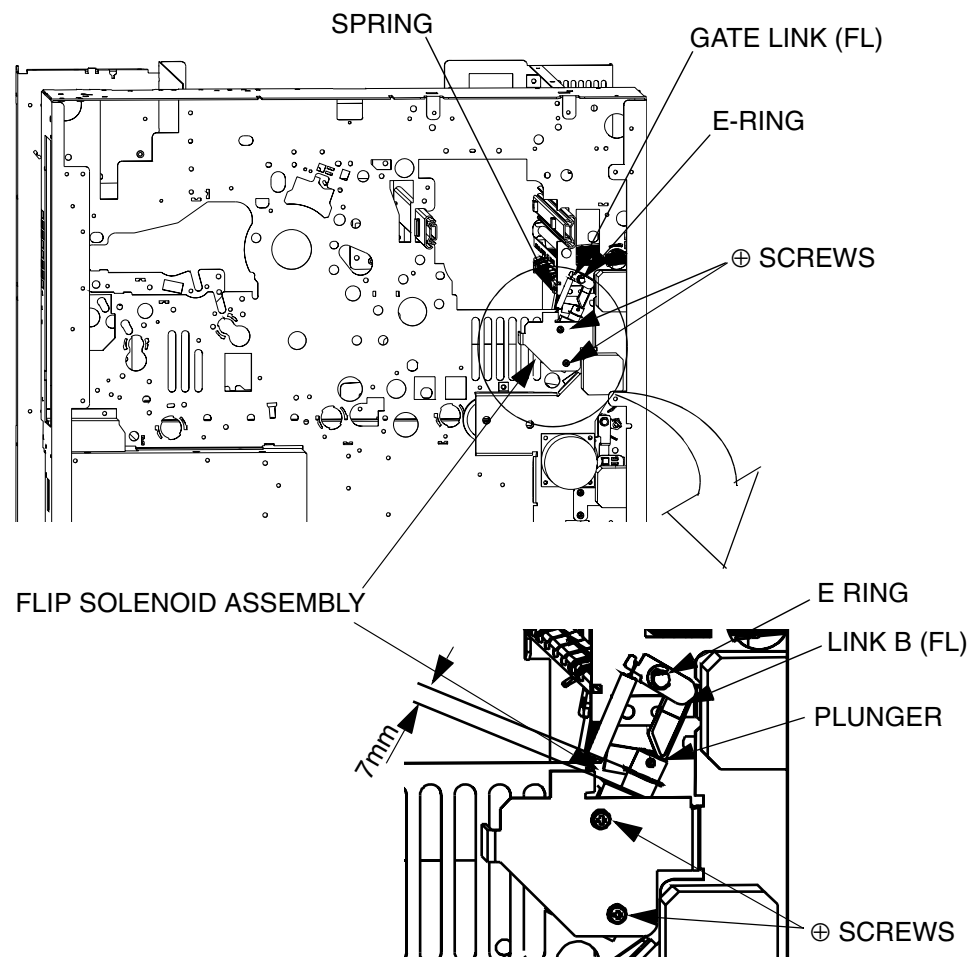


Figure 7-162. Removal of the Flip Solenoid Assembly

**[Assembling Procedures]**

1. Perform the disassembling procedures in the reverse order.
2. Loosen the two ⊕ screws and move the Flip Solenoid Assembly and adjust it to 7mm movement volume of the Plunger.

### 7.1.3.16. Removal of the SB Gate Motor

**CAUTION:**  
Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver, - Screwdriver, Radio Pliers, Thickness Gauge.

#### [Disassembling Procedures]

1. Remove the Rear Cover Assembly. (Refer to item 3.3.2. (1) on page 3-12)
2. Remove the DC Fan(Fuser). (Refer to item 7.1.5.1. (2) on page 7-194)
3. Remove the CPxxx Assembly. (Refer to item 7.1.5.1. (13) on page 7-205)
4. Unscrew the three ⊕ screws to remove the CP Holder.
5. Remove the Retaining Ring-E and unscrew the two ⊕ screws to remove the SB Gate Motor Assembly.
6. Unscrew the M3 Hex. Socket Screw to remove the SB Gate Link(M) Ass'y with the SB Gate Link(M)B Assembly.
7. Unscrew the two ⊕ screws to remove the SB Gate Motor.

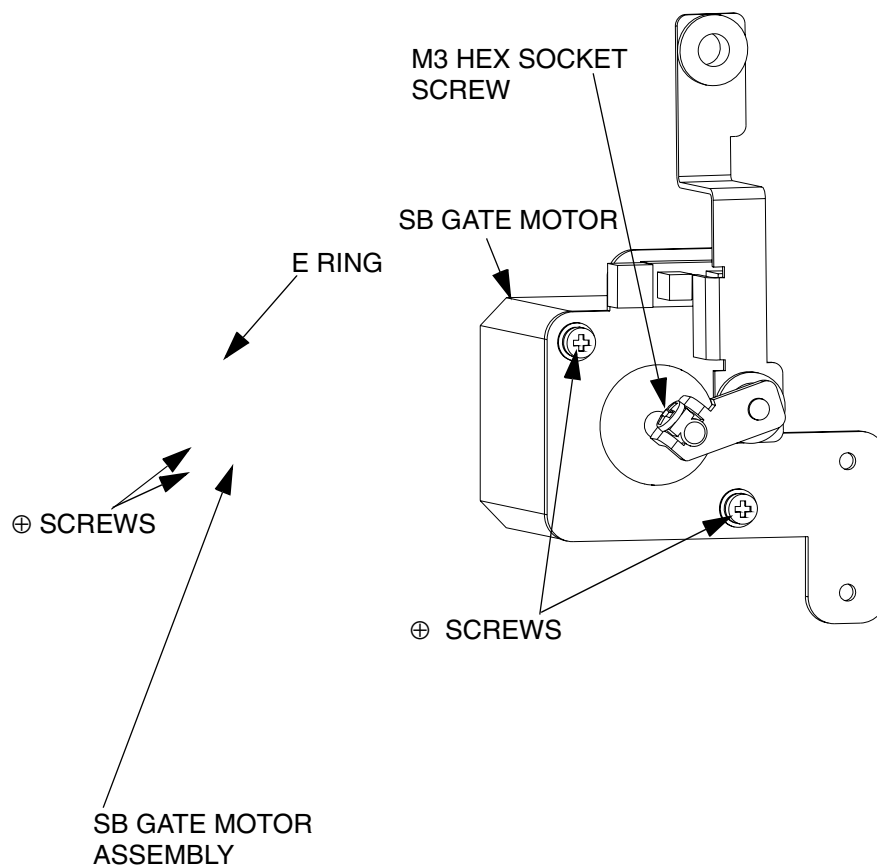


Figure 7-163. Removal of the SB Gate Motor

#### [Assembling Procedures]

1. Perform the disassembling procedures in the reverse order.



### 7.1.3.17. Removal of the SB Gate Sensor

**CAUTION:**  
Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver, - Screwdriver, Radio Pincers, Thickness Gauge.

#### [Disassembling Procedures]

1. Remove the Rear Cover Assembly. (Refer to item 3.3.2. (1) on page 3-12)
2. Remove the DC Fan(Fuser). (Refer to item 7.1.5.1. (2) on page 7-194)
3. Remove the CPxxx Assembly. (Refer to item 7.1.5.1. (13) on page 7-205)
4. Unscrew the three ⊕ screws to remove the CP Holder.
5. Remove the Retaining Ring-E and unscrew the two ⊕ screws to remove the SB Gate Motor Assembly.
6. Remove the SB Gate Sensor.

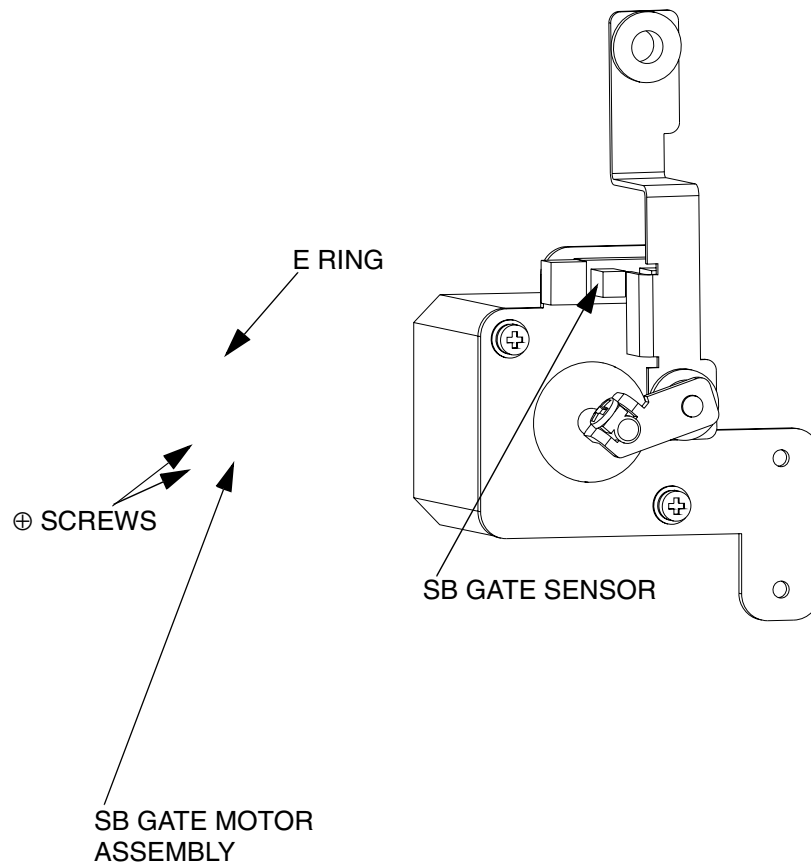


Figure 7-164. Removal of the SB Gate Sensor

#### [Assembling Procedures]

1. Perform the disassembling procedures in the reverse order.

## 7.1.3.18. Removal of the Separating Blower

### 7.1.3.18. (1) Removal of the Separating Blower 1

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

Applicable jigs and tools: ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Open the Front Cover.
2. Remove the Rear Cover Assembly. (Refer to item 3.3.2. (1) on page 3-12)
3. Remove the Drum Unit. (Refer to item 7.1.2.1. (1) on page 7-4)
4. Unscrew the two ⊕ screws to remove the Shield Plate Assembly.
5. Disconnect the connector J/P715 from the Printed Wiring Board.
6. Unscrew the two ⊕ screws to remove the Toner Guard Plate.
7. Unscrew the two ⊕ screws to remove the Fan Holder Assembly.
8. Unscrew the two ⊕ screws to remove the Separating Blower 1.

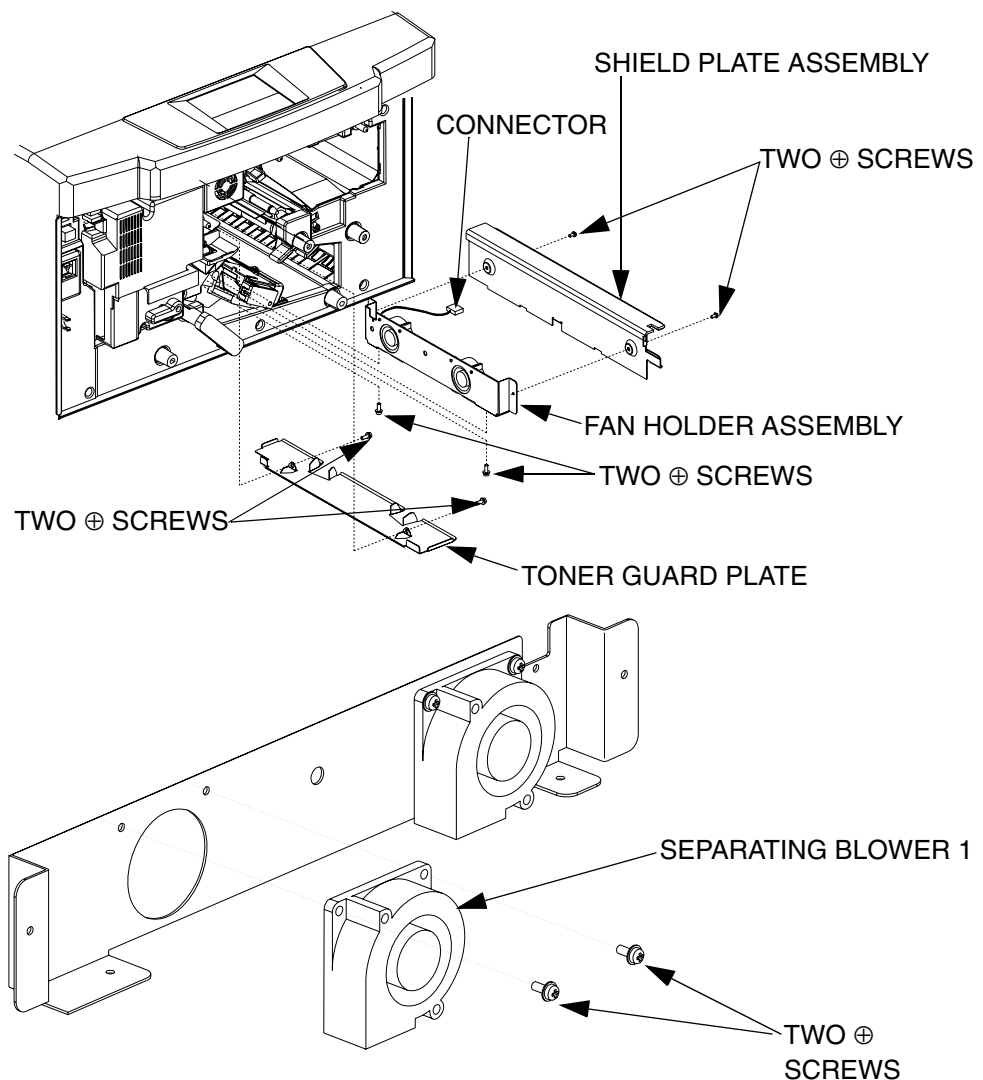


Figure 7-165. Removal of the Separating Blower 1

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

### 7.1.3.18. (2) Removal of the Separating Blower 2

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Open the Front Cover.
2. Remove the Rear Cover Assembly. (Refer to item 3.3.2. (1) on page 3-12)
3. Remove the Drum Unit. (Refer to item 7.1.2.1. (1) on page 7-4)
4. Unscrew the two ⊕ screws to remove the Shield Plate Assembly.
5. Disconnect the connector J/P715 from the Printed Wiring Board.
6. Unscrew the two ⊕ screws to remove the Toner Guard Plate.
7. Unscrew the two ⊕ screws to remove the Fan Holder Assembly.
8. Unscrew the two ⊕ screws to remove the Separating Blower 2.

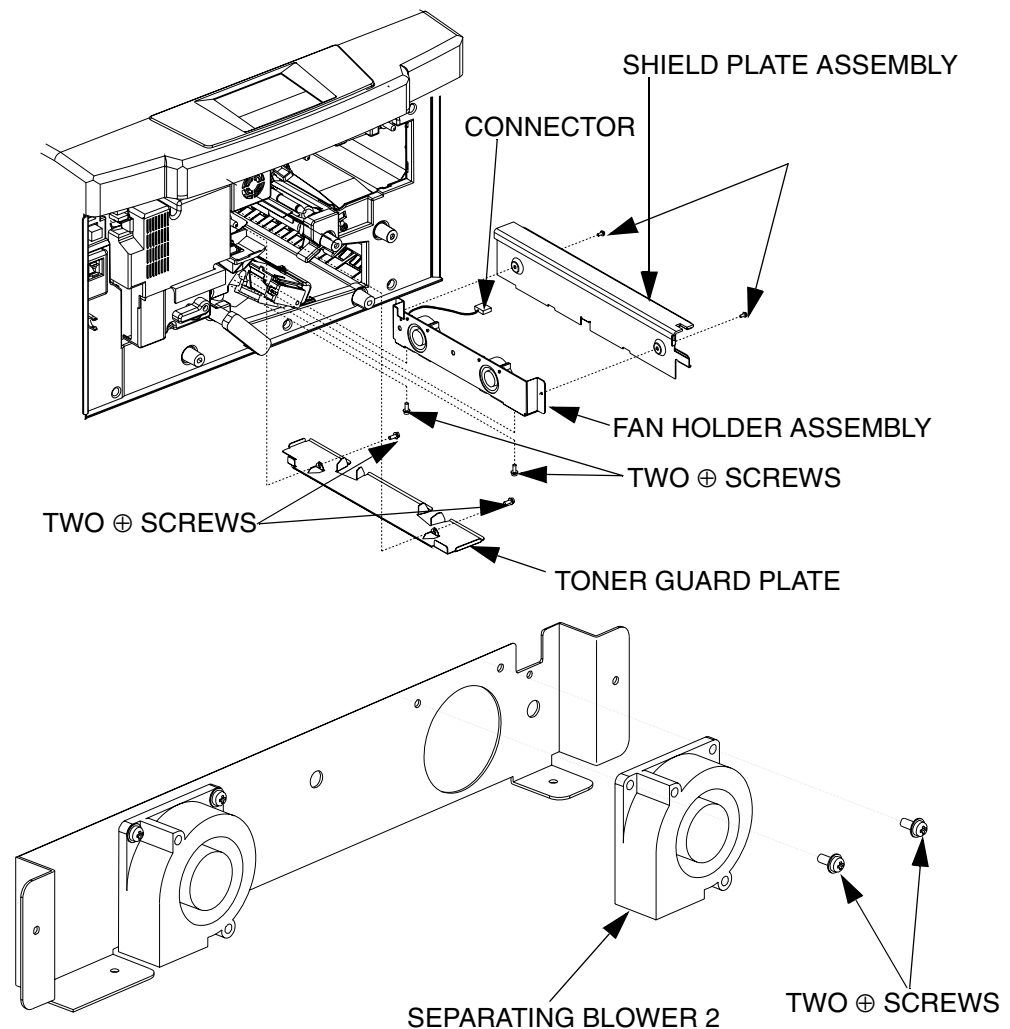


Figure 7-166. Removal of the Separating Blower 2

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

### 7.1.3.19. Removal of the Detouch Duct Assembly

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Open the Front Cover.
2. Remove the Drum Unit. (Refer to item 7.1.2.1. (1) on page 7-4)
3. Remove the Developer Unit. (Refer to item 7.1.2.3. (1) on page 7-10)
4. Unscrew the two ⊕ screws to remove the Toner Guard Plate.
5. Remove the Rivets to remove the Detouch Duct Assembly.

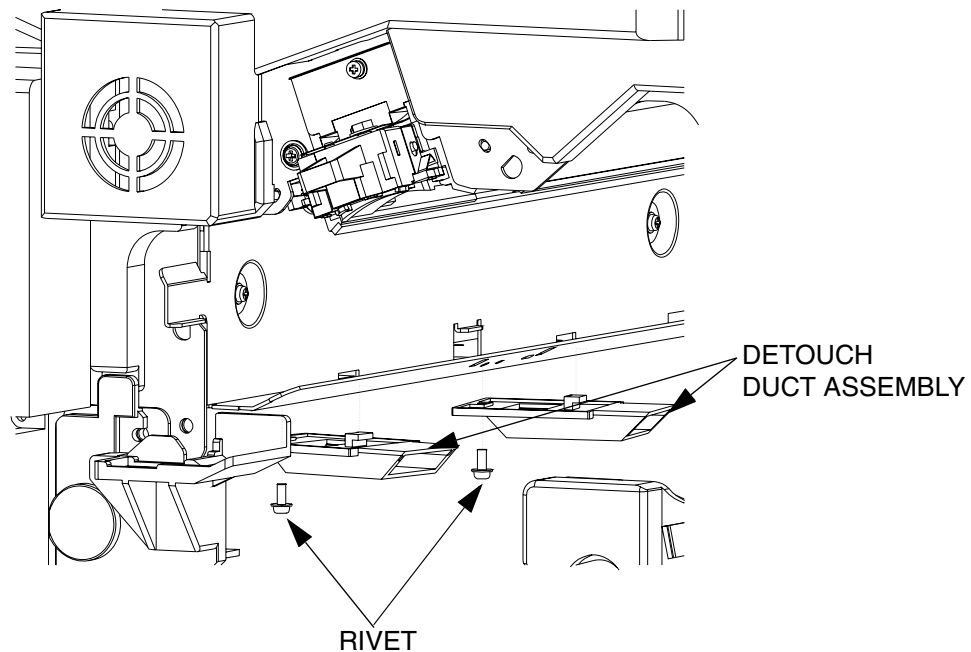
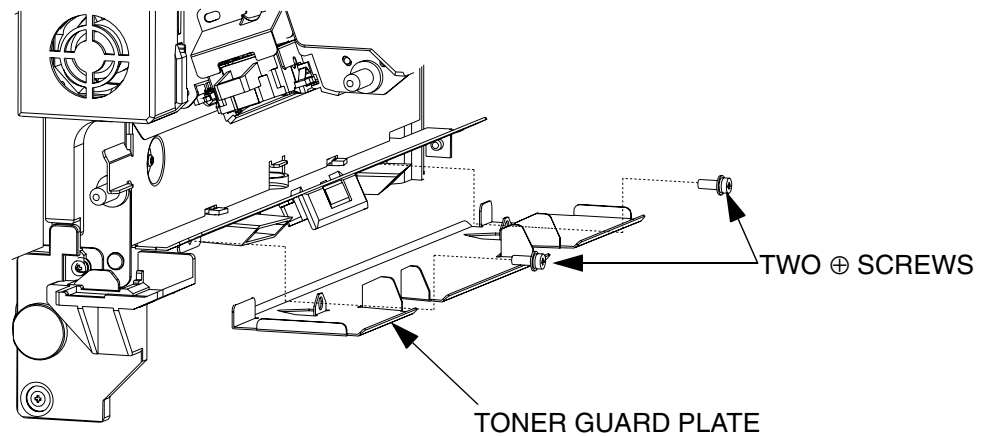


Figure 7-167. Removal of the Detouch Duct Assembly

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

## 7.1.4. Removal of the Paper Supply Block

### 7.1.4.1. Removal of the 500 Sheet Hopper(Hopper 2 & 3)

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Pull out the 500 Sheet Hopper Unit.
2. Remove the 500 Sheet Hopper Unit in the direction of the arrow.

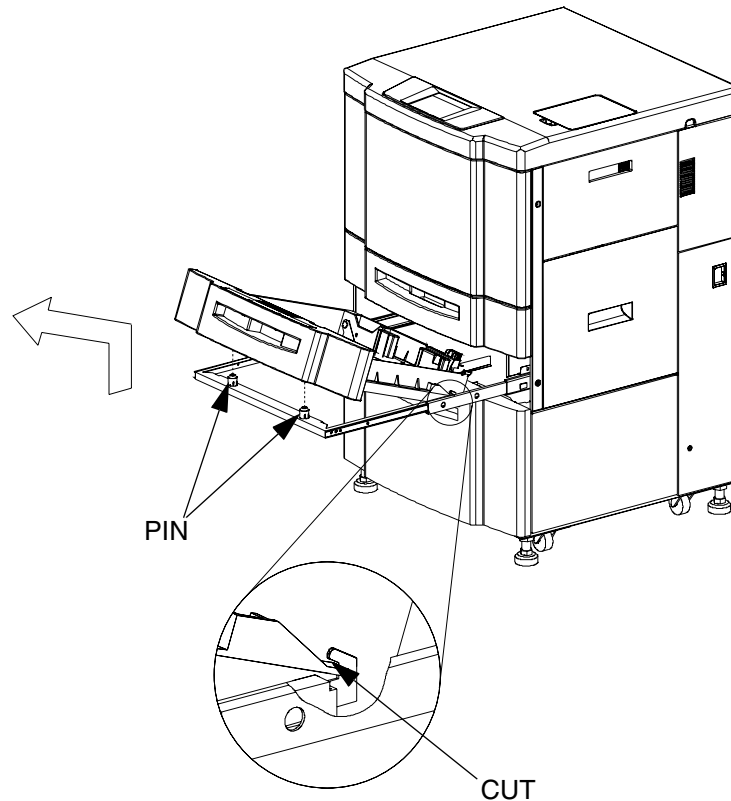


Figure 7-168. Removal of the 500 Sheet Hopper(Hopper 2 & 3)

**[Assembling Procedures]**

1. Insert the side plate edge of the Hopper Unit to the cut of the slide rail, holding the slide rail with a hand not to move it.
2. Set the Hopper Unit with installing the Pin on the slide rail to the hole of the Hopper Unit.

Perform the disassembling procedures in the reverse order.

## 7.1.4.2. Removal of the 2000 Sheet Hopper (Hopper 1) Parts

### 7.1.4.2. (1) Removal of the 2000 Sheet Hopper (Hopper 1)

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Pull out the 2000 Sheet Hopper Unit.
2. Unscrew the ⊕ screw and set the Paper Guide to the 8.5" position.
3. Lift and remove the entire assembly.

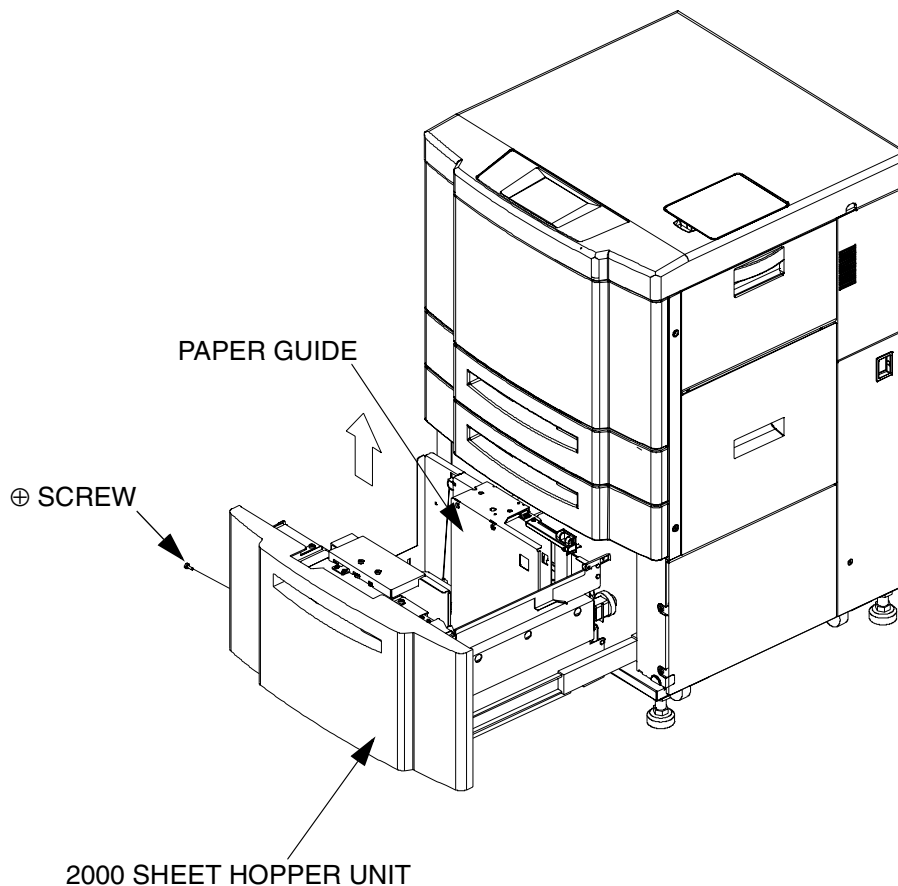


Figure 7-169. Removal of the 2000 Sheet Hopper (Hopper 1)

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

#### 7.1.4.2. (2) Removal of the Idler Gear

##### CAUTION:

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

Applicable jigs and tools: ⊕ Screwdriver.

##### [Disassembling Procedures]

1. Remove the 2000 Sheet Hopper. (Refer to item 7.1.4.2. (1) on page 7-153)
2. Unscrew the two ⊕ screws to remove the Idler Gear Plate.
3. Remove the E-Ring (1) and the Wire Roll Drum (1) with the Table Wire (1).
4. Remove the E-Ring (2) and the Idler Gear.

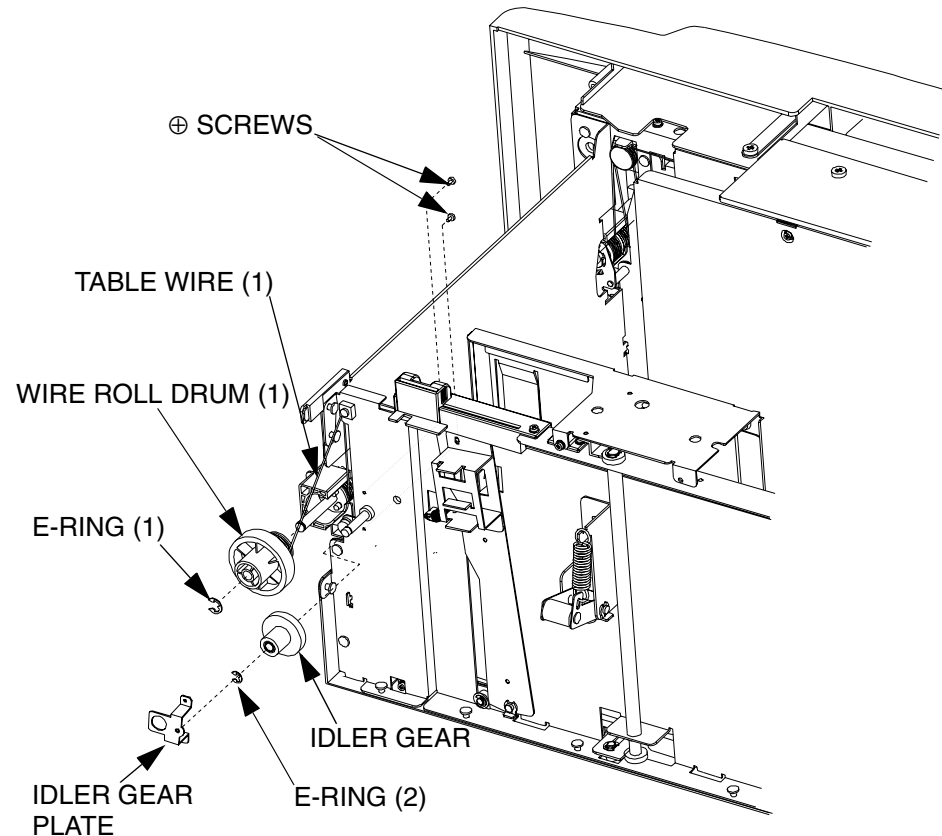


Figure 7-170. Removal of the Idler Gear

##### [Assembling Procedures]

Perform the disassembling procedures in the reverse order.

**Note:** Keep the gap between the Wire Roll Drum(1) and the Idler Gear Plate.

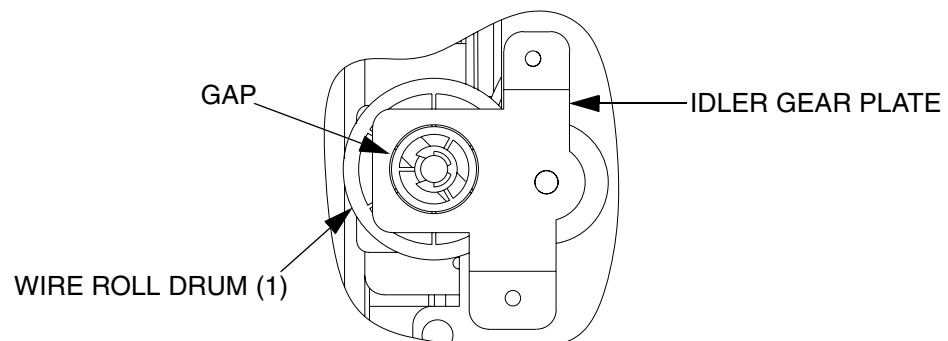


Figure 7-171. Removal of the Idler Gear

#### 7.1.4.2. (3) Removal of the Damper Gear

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

Applicable jigs and tools: ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Remove the 2000 Sheet Hopper. (Refer to item 7.1.4.2. (1) on page 7-153)
2. Unscrew the four ⊕ screws to remove the Front Case.
3. Unscrew the ⊕ screw to remove the Shaft Holder and the Damper Gear.

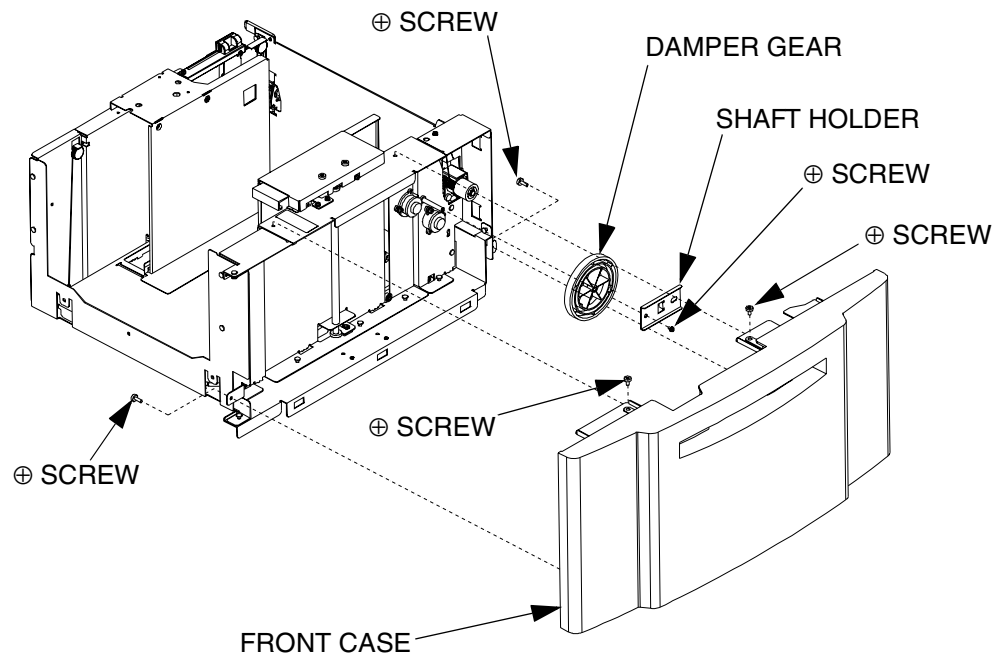


Figure 7-172. Removal of the Damper Gear



### [Assembling Procedures]

Perform the disassembling procedures in the reverse order.

**Note:** Align the Circle Mark of the Damper Gear to the one of the Wire Roll Drum (2).

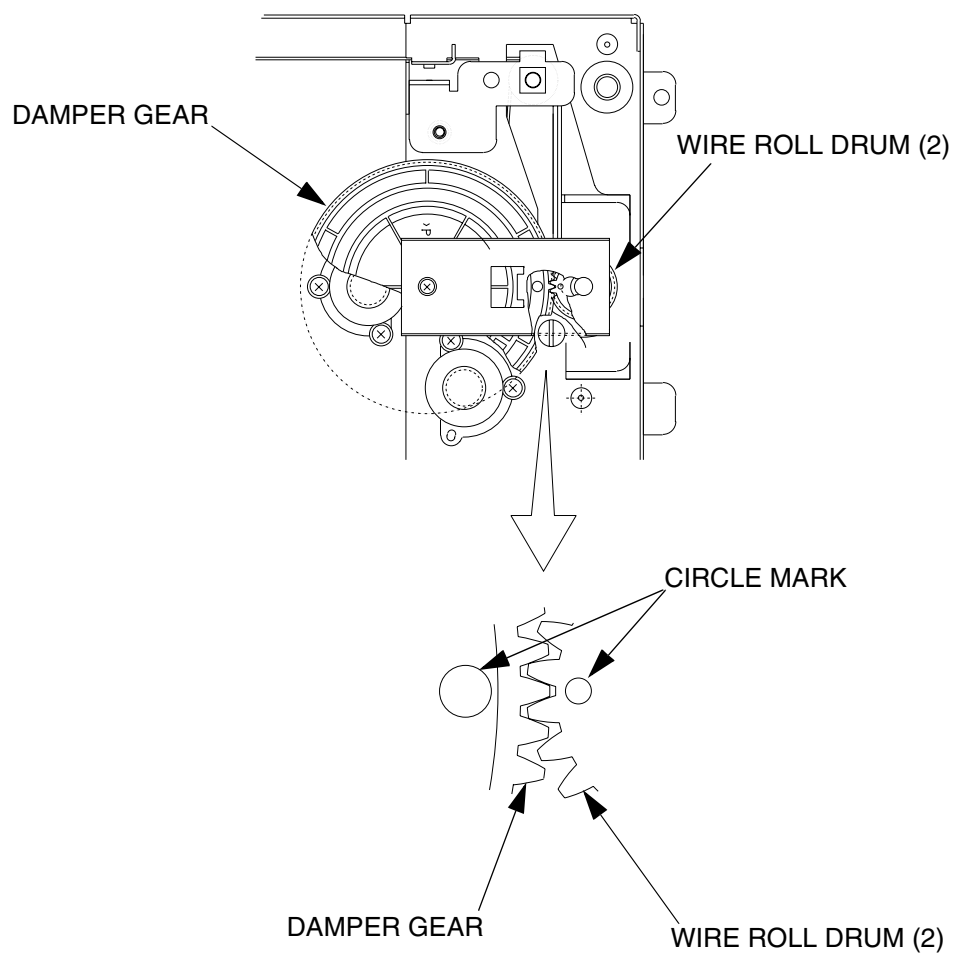


Figure 7-173. -2 Removal of the Damper Gear

#### 7.1.4.2. (4) Removal of the Rotary Damper

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

Applicable jigs and tools: ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Remove the Damper Gear. (Refer to item 7.1.4.2. (3) on page 7-155)
2. Unscrew the four ⊕ screws to remove the two Rotary Damper.

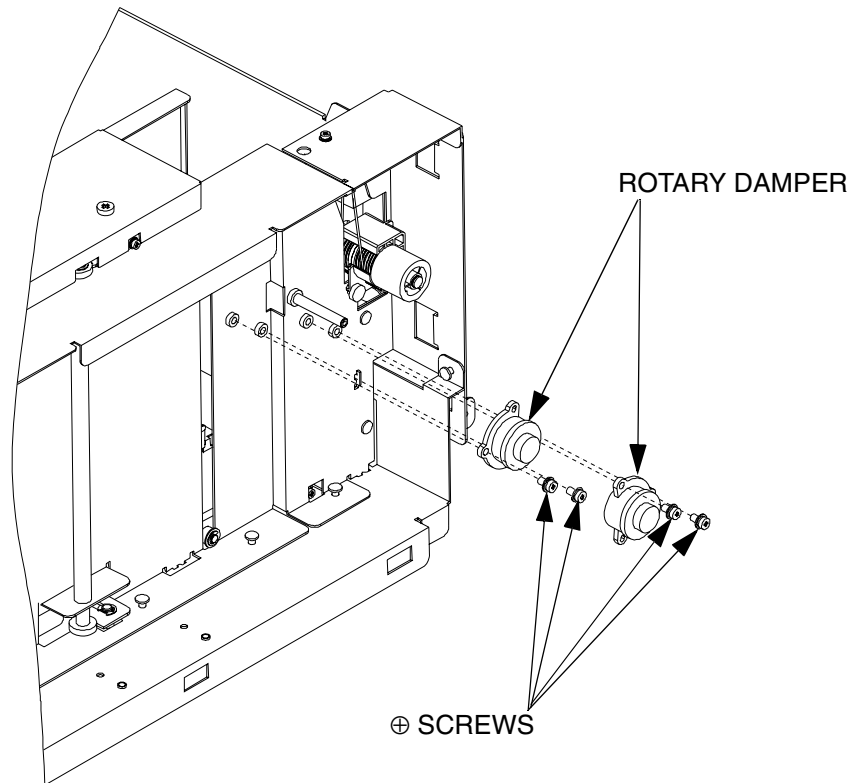


Figure 7-174. Removal of the Rotary Damper

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

#### 7.1.4.2. (5) Removal of the Derlin Bearing

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver, Spanner (M6), Shim (Thickness 0.2 to 0.6mm).

**[Disassembling Procedures]**

1. Remove the 2000 Sheet Hopper. (Refer to item 7.1.4.2. (1) on page 7-153)
2. Unscrew the four ⊕ screws to remove the Front Case.
3. Unscrew the four ⊕ screws of the Derlin Bearings to remove them and the two Nuts.

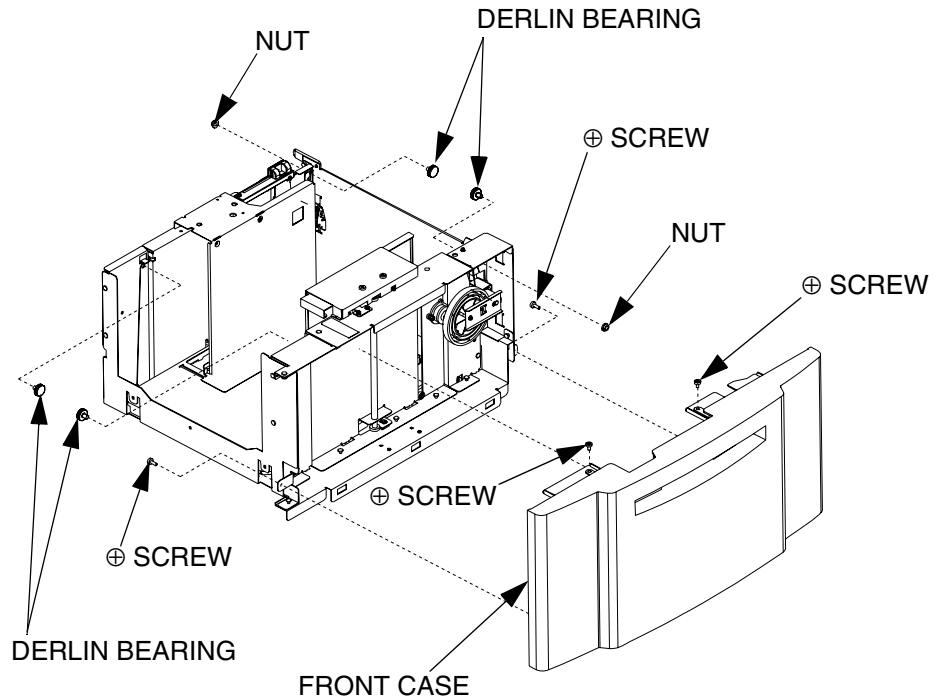


Figure 7-175. Removal of the Derlin Bearing

### [Assembling Procedures]

Perform the disassembling procedures in the reverse order.

**Note:** Lead each Table Wire into the correct groove at each Derlin Bearing.

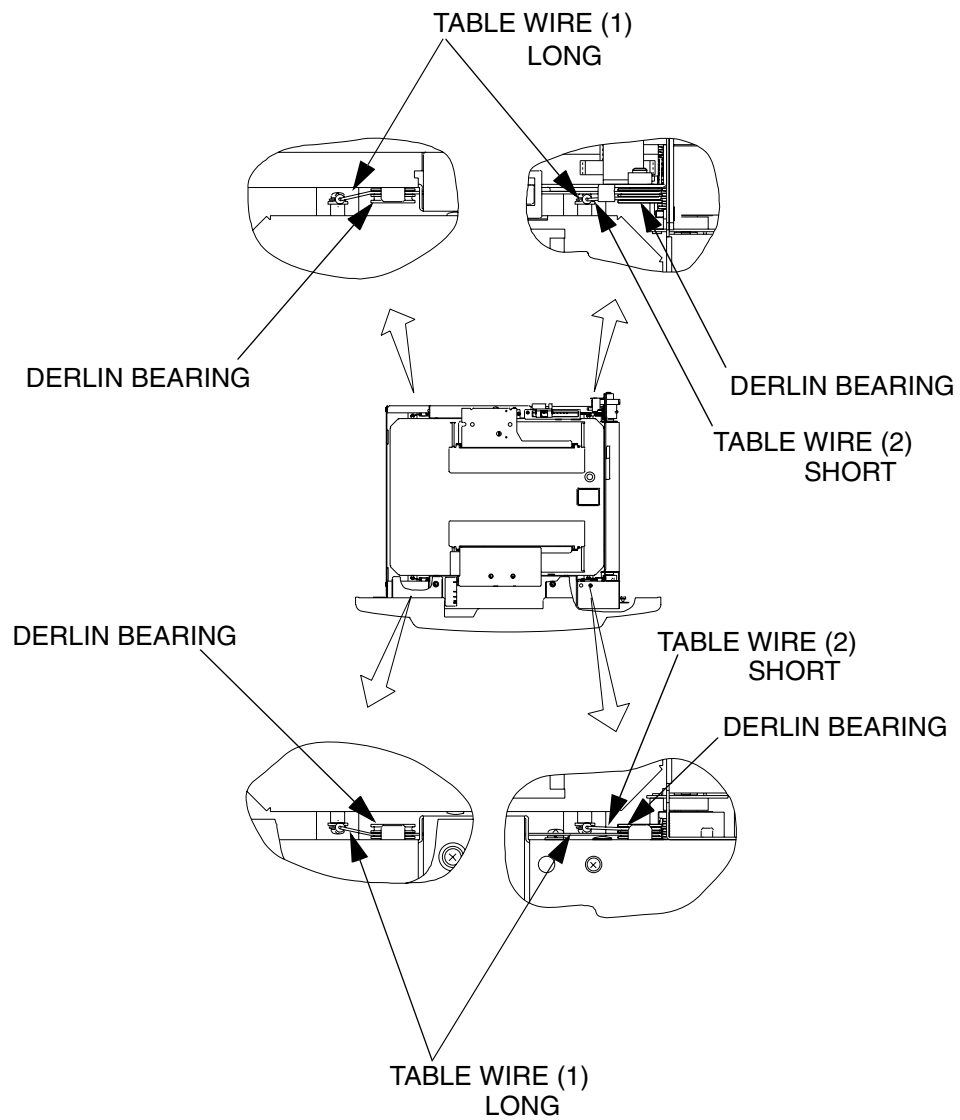


Figure 7-176. -2 Removal of the Derlin Bearing

**Note:** Adjust the distance between the Derlin Bearing and the Frame Inside to 0.2mm to 0.6mm.

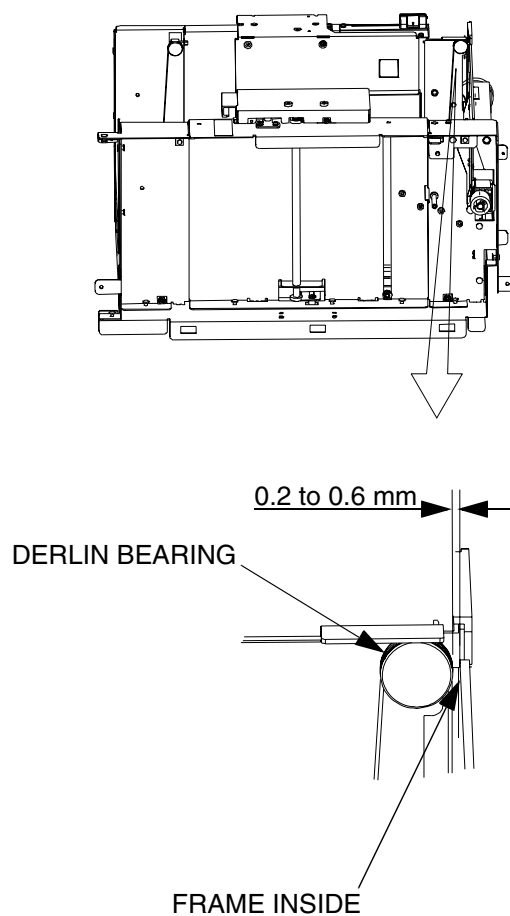


Figure 7-177. -3 Removal of the Derlin Bearing

#### 7.1.4.2. (6) Removal of the Table Wire

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

Applicable jigs and tools: ⊕ Screwdriver, - Screwdriver, Spanner (M6), Cloth or equivalent.

**[Disassembling Procedures]**

1. Remove the Damper Gear. (Refer to item 7.1.4.2. (3) on page 7-155)
2. Turn the Wire Roll Drum (1) or (2) to unroll the Table Wires confirming that those no not entwine.

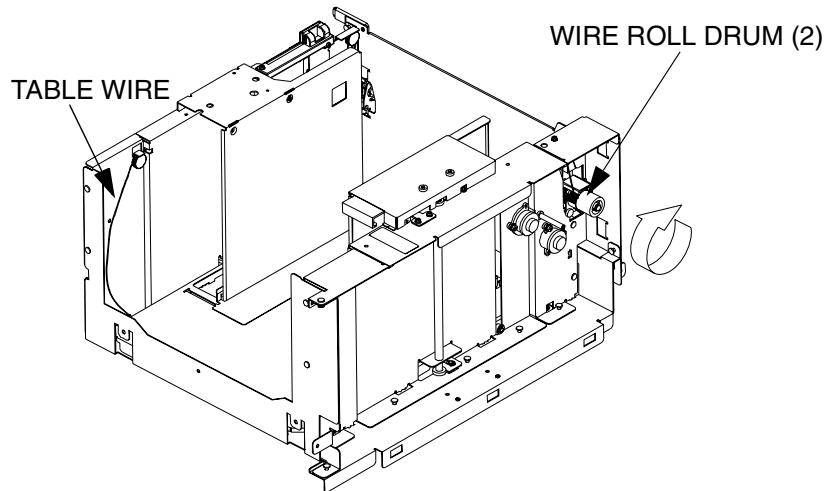


Figure 7-178. Removal of the Table Wire

3. Remove the Derlin Bearings. (Refer to item 7.1.4.2. (5) on page 7-158)
4. Unscrew the each ⊕ screw to remove the Hook on the edge of the Table Wire.

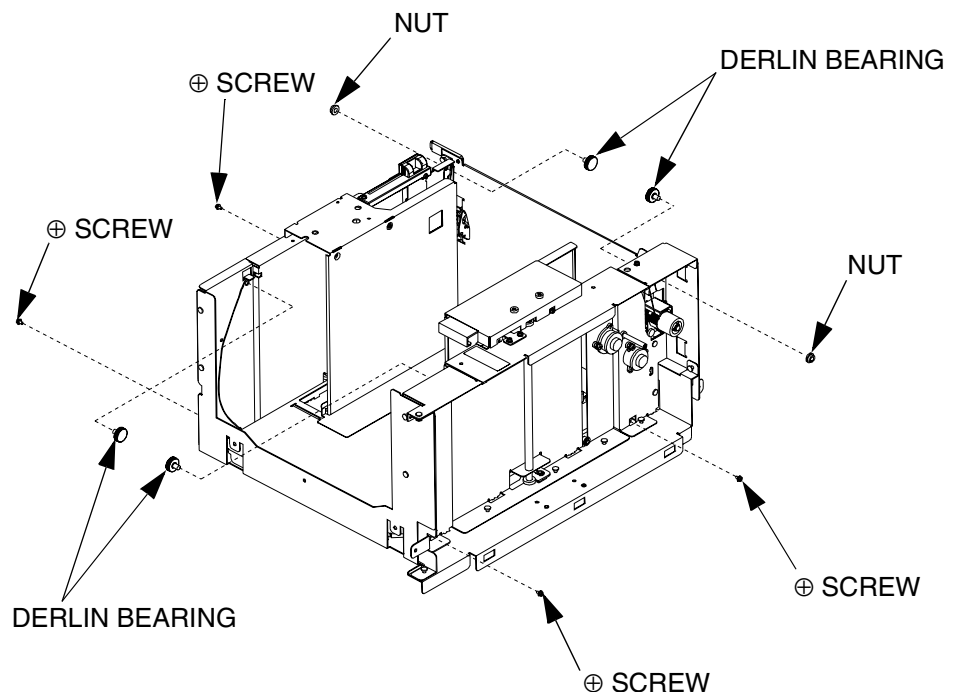


Figure 7-179. -2 Removal of the Table Wire

5. Unscrew the two ⊕ screws to remove the Idler Gear Plate.
6. Remove the E-Ring to remove the Wire Roll Drum (1) and the Table Wire (1).
7. Remove the Wire Roll Drum (2) to remove the Table Wire (1).
8. Unscrew the two - screws to remove the two Pulley Covers.
9. Remove the two Wire Roll Drums (3) to remove the two Table Wires (2).
10. Remove the two 3x14 Pins.

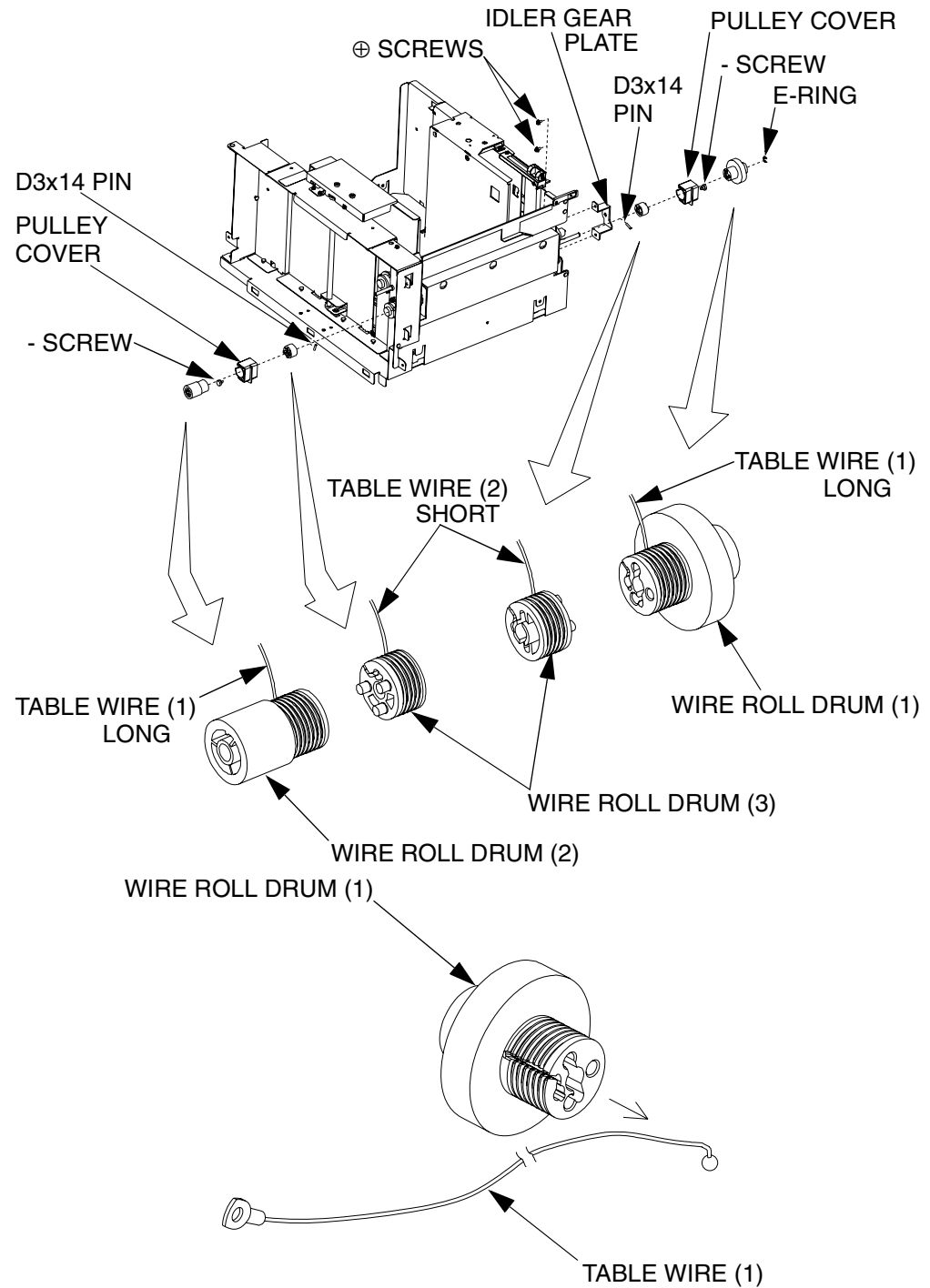


Figure 7-180. -3 Removal of the Table Wire

## [Assembling Procedures]

Perform the disassembling procedures in the reverse order.

**Note:** Insert the steel ball on the edge of the Table Wire to the correct position and lead each wire out of the correct groove position.

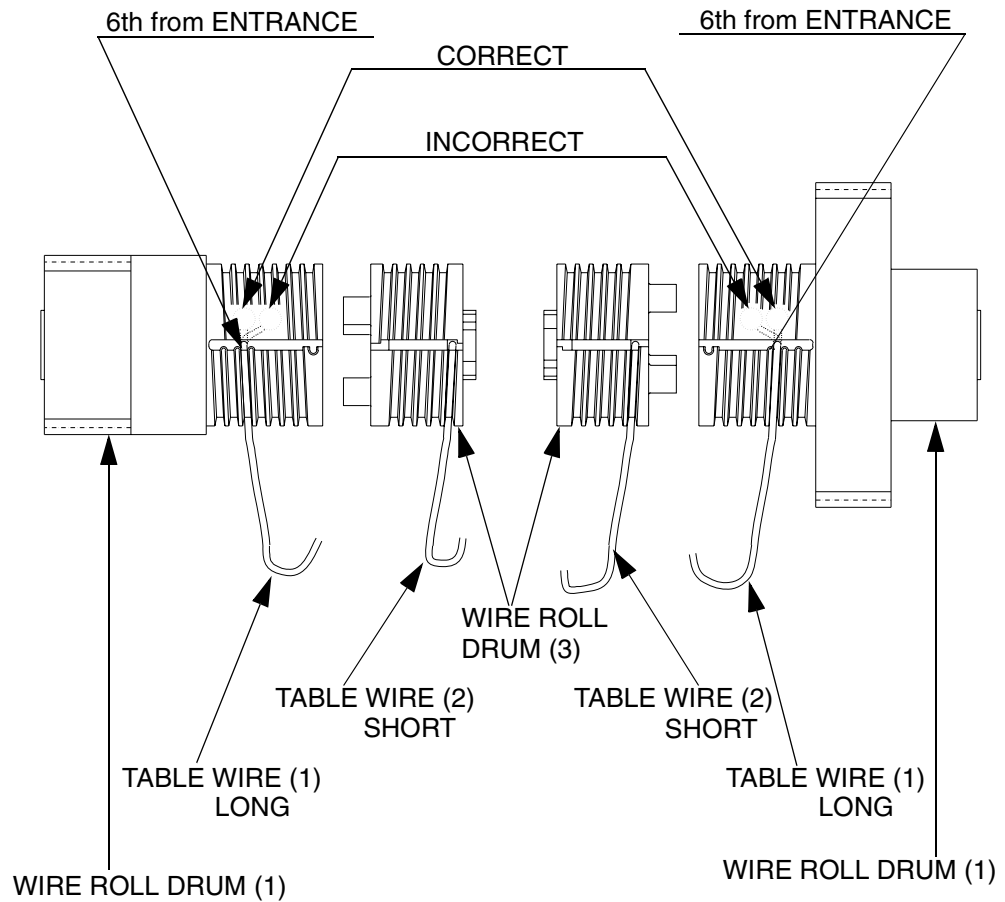


Figure 7-181. -4 Removal of the Table Wire

**Note:** Lead each Table Wire into the correct groove at each Derlin Bearing.  
(Refer to item 7.1.4.2. (5) on page 7-158)

**Note:** When fixing the Wire Hook, do not mistake the direction.

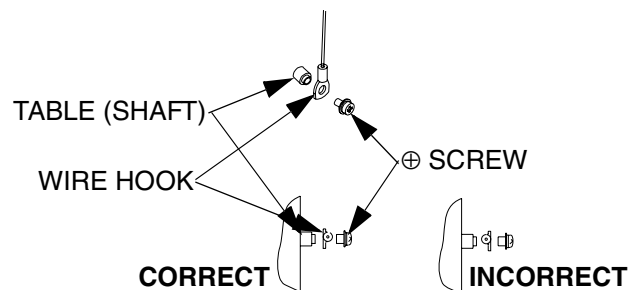


Figure 7-182. -5 Removal of the Table Wire



**Note:** Adjust the distance between the Derlin Bearing and the Frame Inside to 0.2mm to 0.6mm. (Refer to item 7.1.4.2. (5) on page 7-158)

**Note:** Turn the Wire Roll Drum (1) or (2) to roll the Table Wires confirming that they do not entwine, and are not off or out of the correct position.

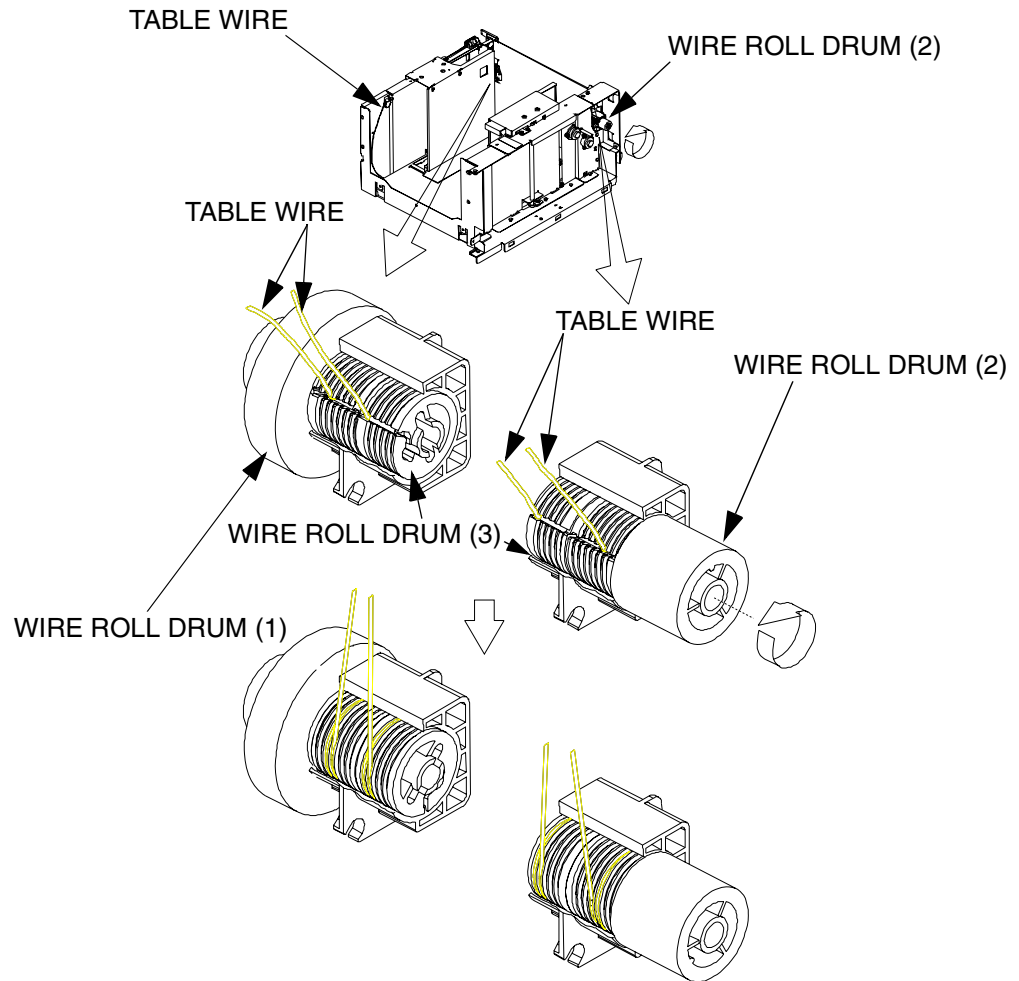


Figure 7-183. -6 Removal of the Table Wire

**[Checks]**

Turn the Wire Roll Drum (1) to confirm that the Table moves smoothly with a full stroke.

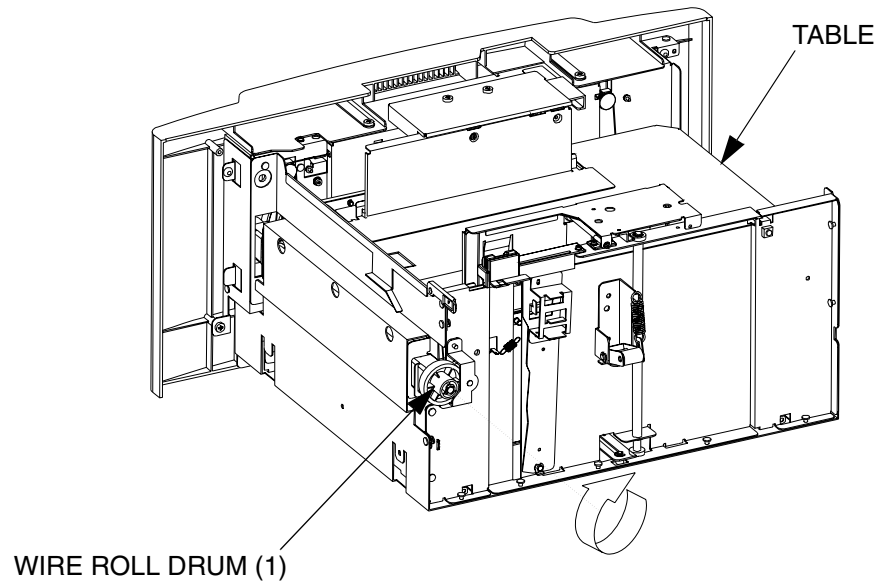


*Figure 7-184. -7 Removal of the Table Wire*

Turn the Wire Roll Drum (1) to raise the Table until it comes to the Frame Upper Edge and check that the Table is level to the Frame Upper Edge.  
 If not, lower the Table and loosen the ⊕ screw and raise and keep it by holding cloth or equivalent between the Wire Roll Drum (1) and the Idler Gear.  
 After removing, turn the ⊕ screw to adjust, take down the Table and fix the ⊕ screw and return the ⊕ screw to adjust.

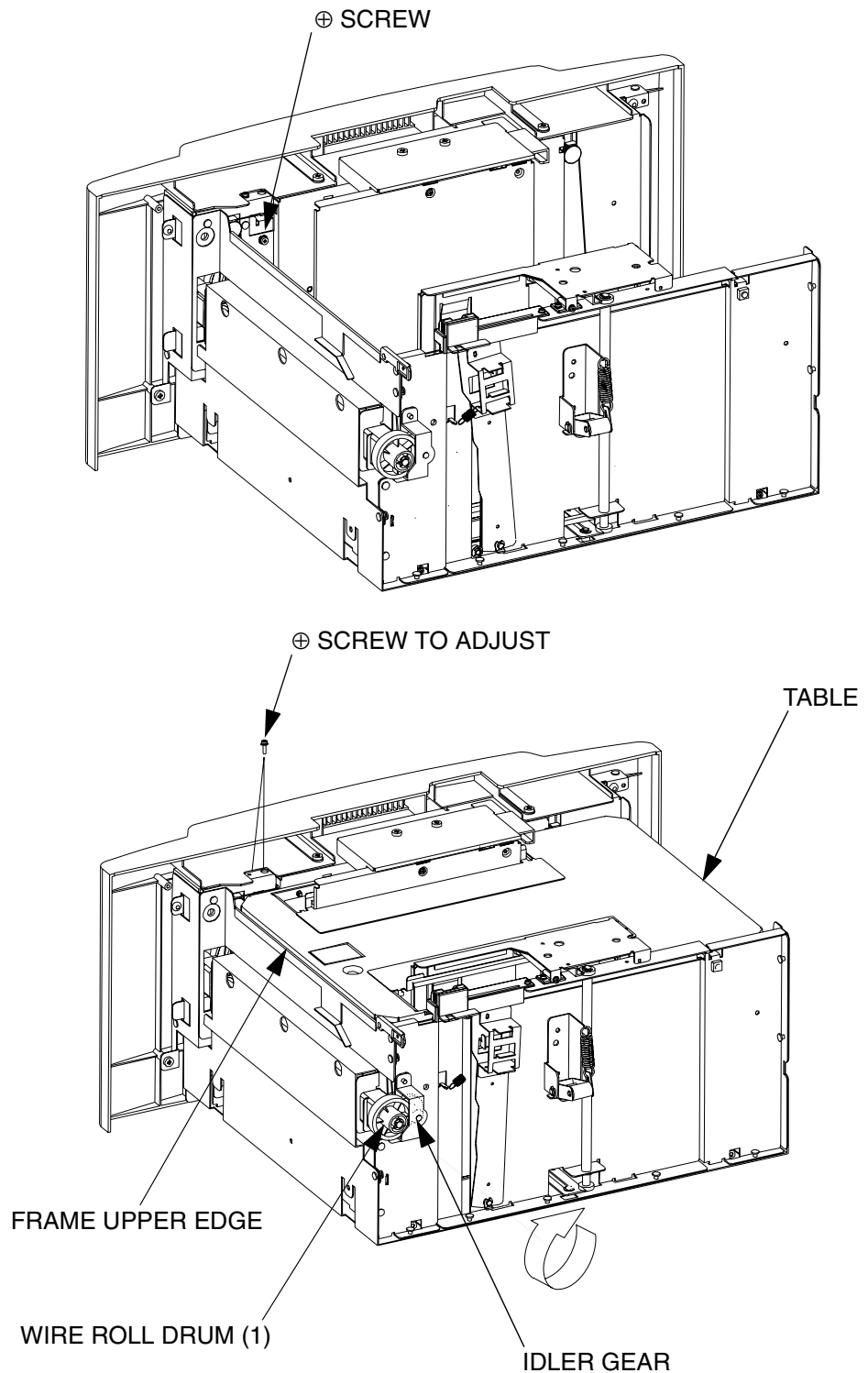


Figure 7-185. -8 Removal of the Table Wire

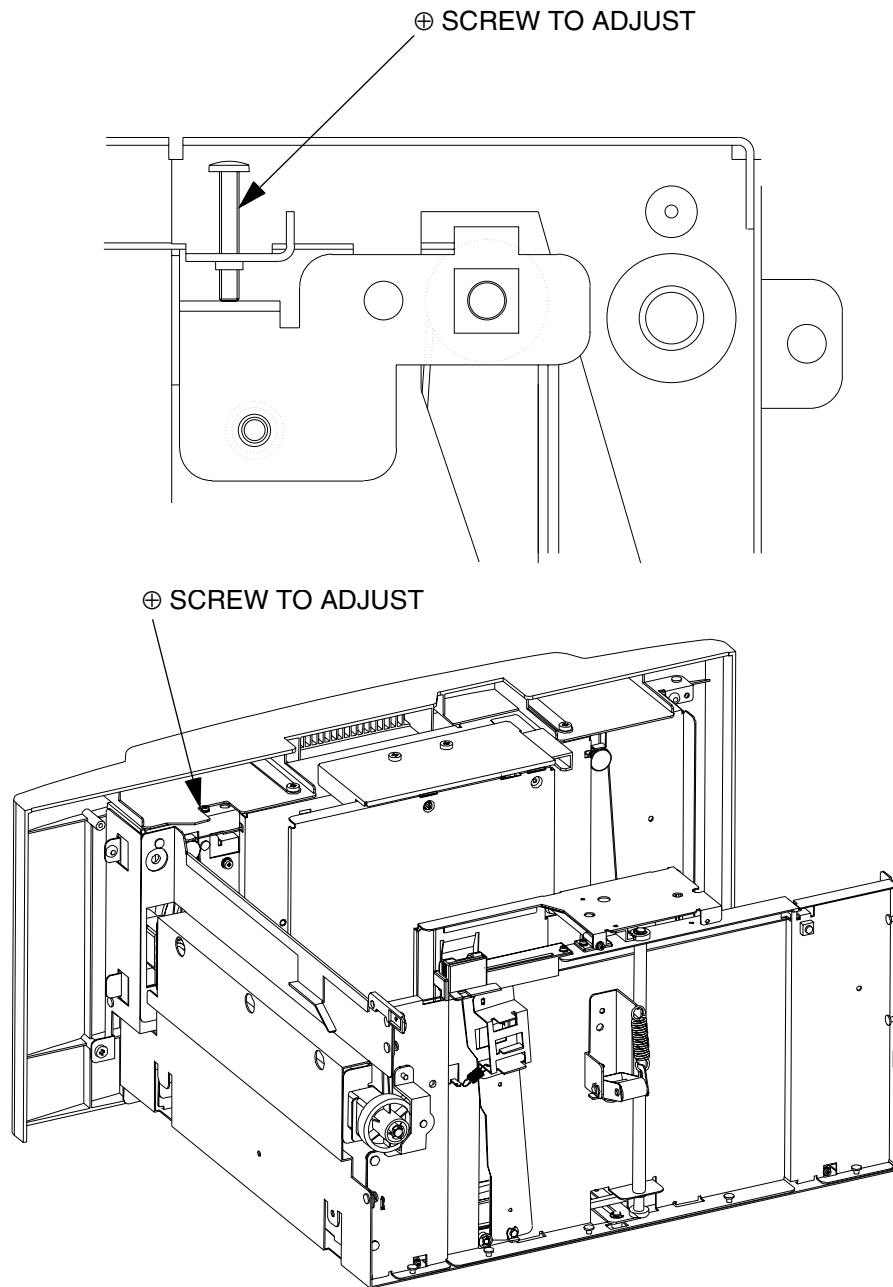


Figure 7-186. -9 Removal of the Table Wire

#### 7.1.4.2. (7) Removal of the B.B Assembly

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver, - Screwdriver, Spanner (M6), Cloth or equivalent.

**[Disassembling Procedures]**

1. Remove the Table Wire. (Refer to item 7.1.4.2. (6) on page 7-161)  
(There is no need to remove the Table Wire out of the Wire Roll Drum.)
2. Turn the B.B Assembly to pull it out.

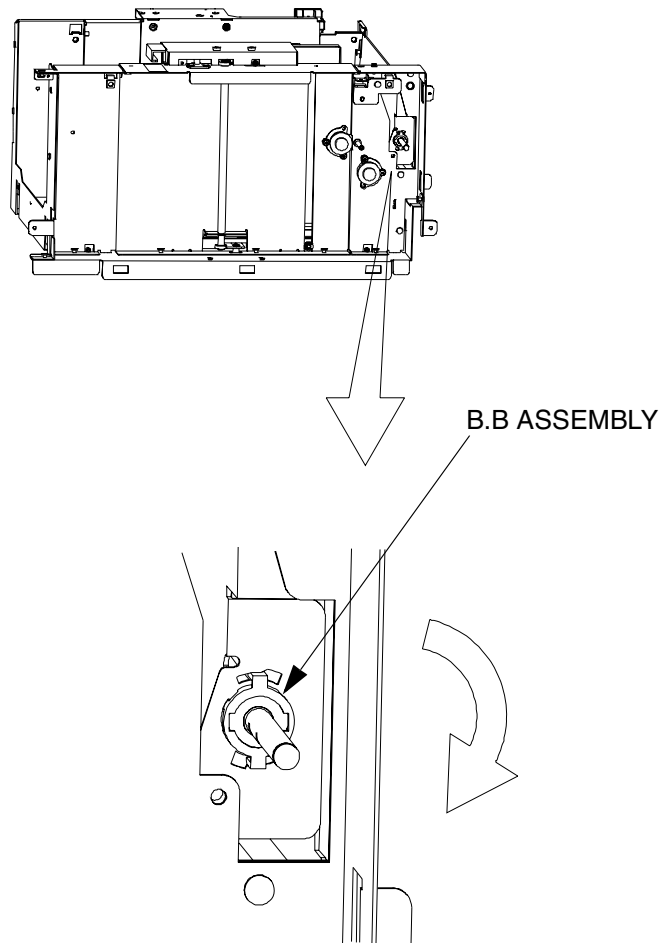


Figure 7-187. Removal of the B.B Assembly

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

### 7.1.4.3. Removal of the Vertical Path Unit Parts

#### 7.1.4.3. (1) Removal of the Vertical Path Unit

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Remove the RH Cover, the RH Rear Side Cover Assembly, the Rear Cover and the RH Side Lower Cover. (Refer to item 3.3.2. (1) on page 3-12)
2. When the Auxiliary Sheet Hopper is attached, remove it. (Refer to item 7.2.1 on page 7-217)
3. Remove the two 500 Sheet Hoppers. (Refer to item 7.1.4.1 on page 7-152)
4. Unscrew the four screws to remove the Hopper Hold Plate (1).
5. Pull out the 2000 Sheet Hopper.
6. Unscrew the two screws to remove the RH Plate.
7. Unscrew the three screws to remove the Joint Bracket.
8. Disconnect the Connectors P/J401, P/J403, and P/J430.
9. Unscrew the two screws and pull out the Vertical Path unit in the direction of the arrow. (Refer to Figure 7-189 on page 7-170)

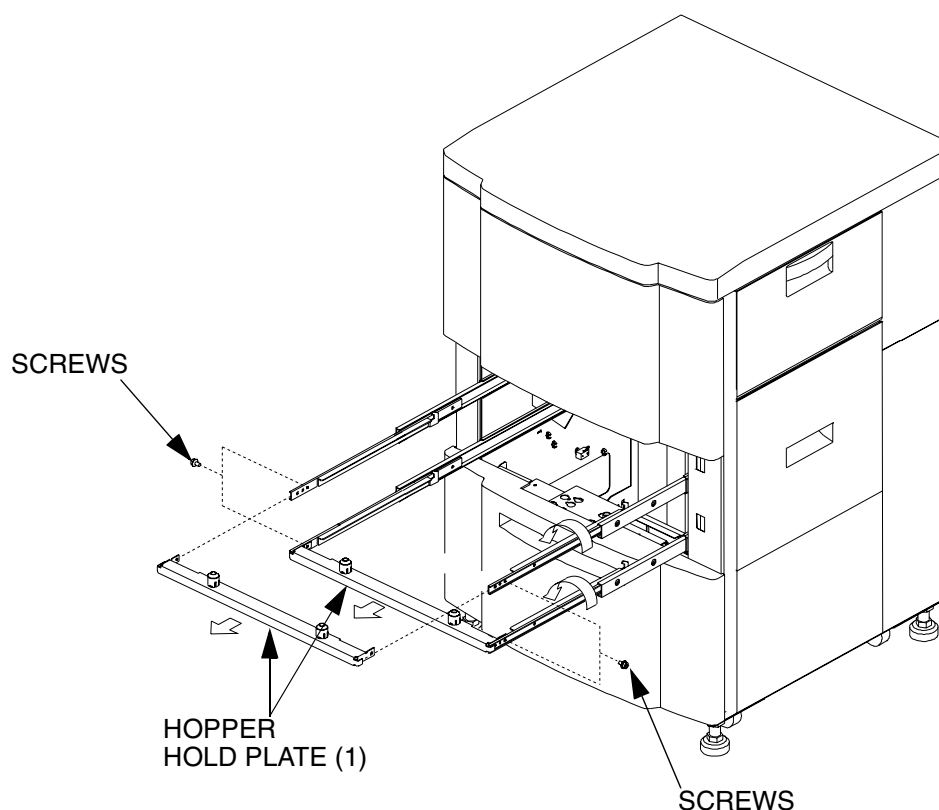


Figure 7-188. Removal of the Vertical Path Unit

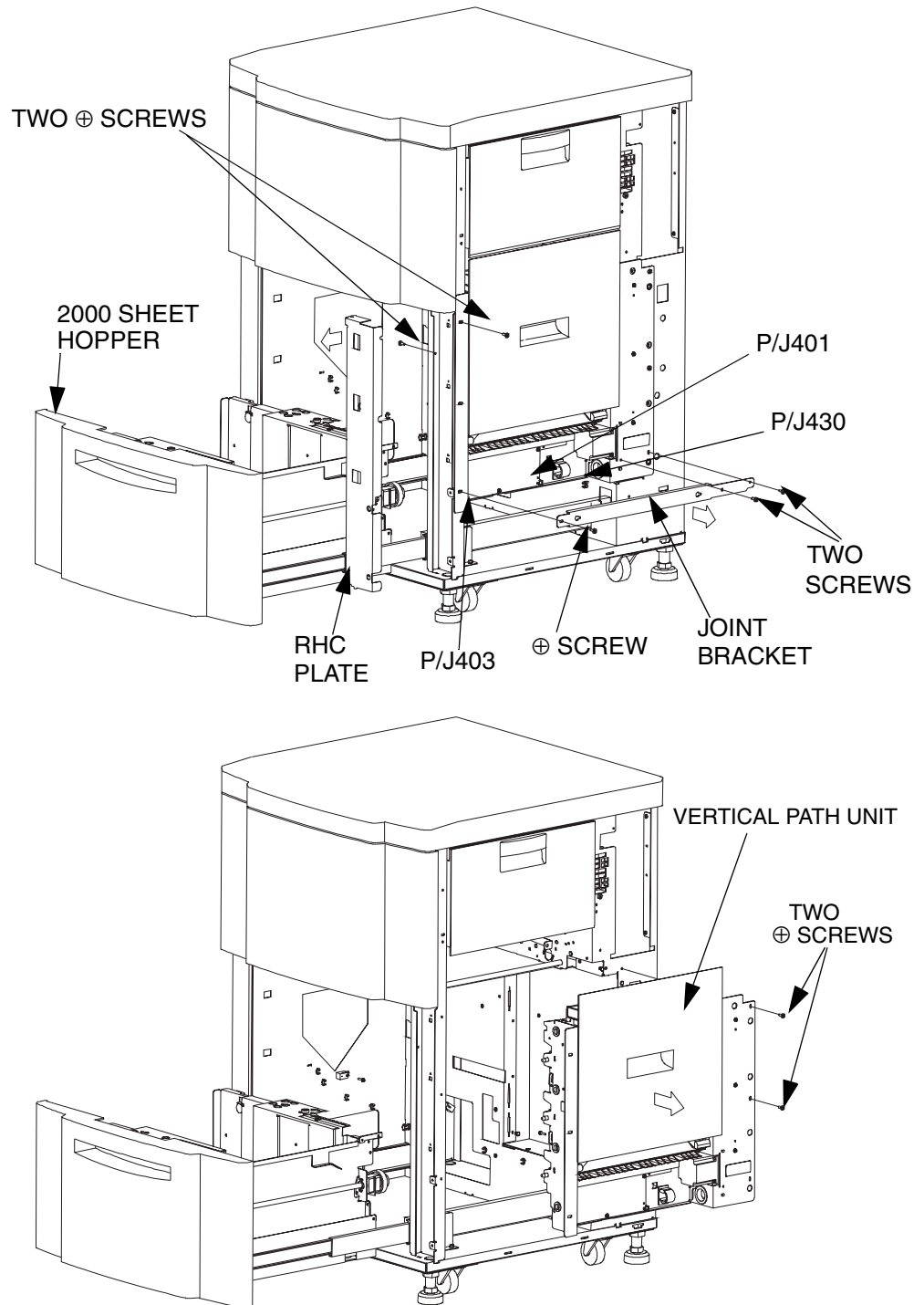


Figure 7-189. Removal of the Vertical Path Unit

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

#### 7.1.4.3. (2) Removal of the Pick Roller

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

Applicable jigs and tools: None.

**[Disassembling Procedures]**

1. Pull out the 2000 Sheet Hopper.
2. Remove the 500 Sheet Hopper.
3. Remove the Hook Ring A, pull off the Pick Roller in the direction of the arrow.

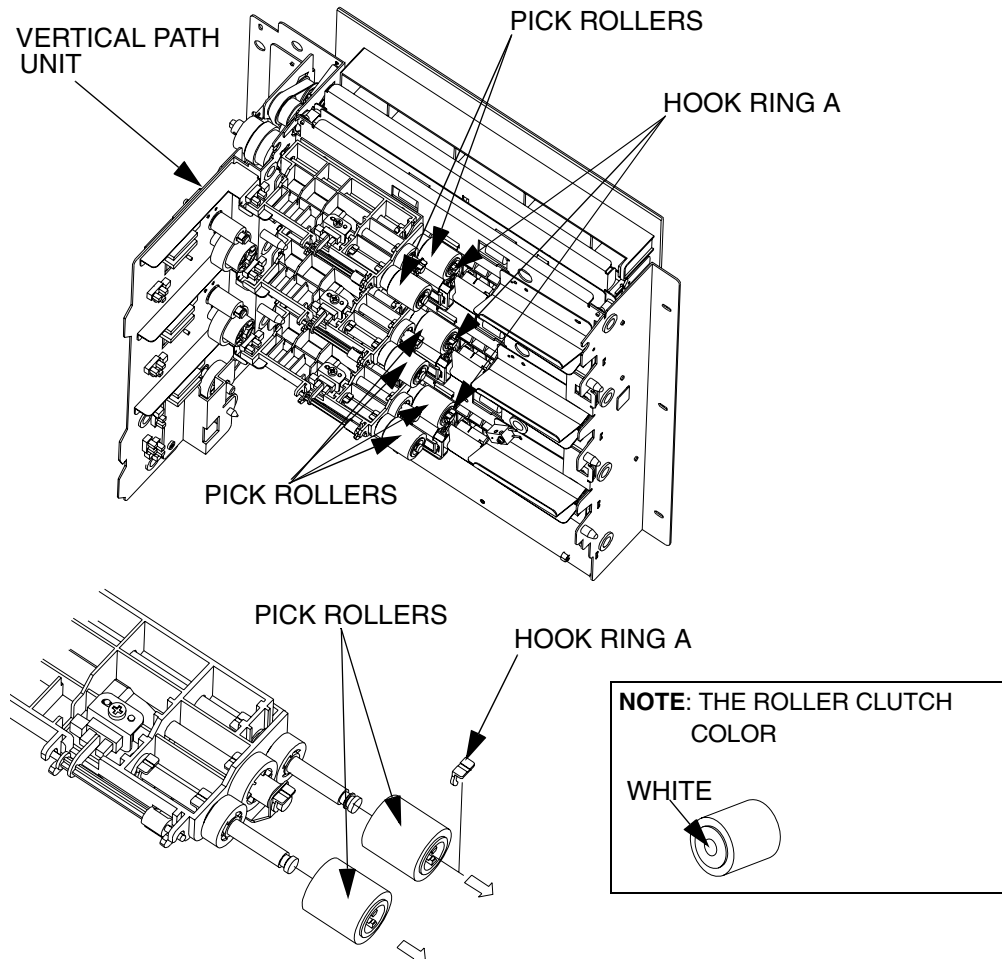


Figure 7-190. Removal of the Pick Roller

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.



#### 7.1.4.3. (3) Removal of the Separator Assembly

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools: None.**

**[Disassembling Procedures]**

1. Pull out the 2000 Sheet Hopper.
2. Remove the 500 Sheet Hoppers.
3. Remove the Separator Assembly.

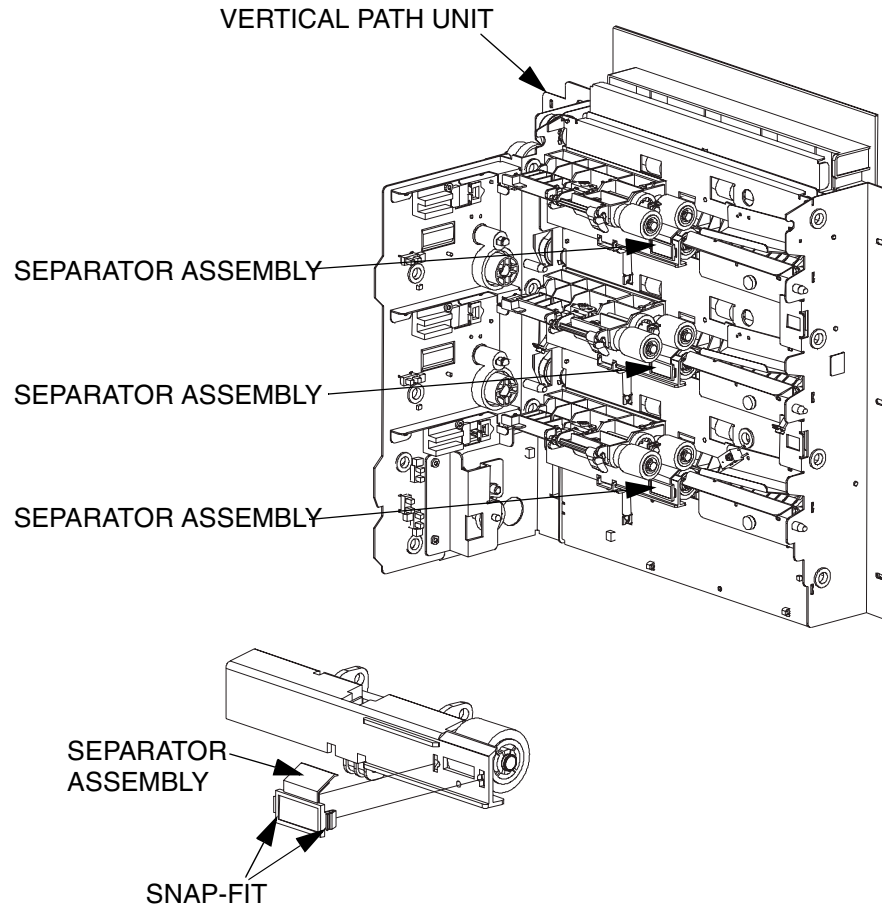


Figure 7-191. Removal of the Separator Assembly

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

**[Checks]**

Make sure that the snap-fit parts of the Separator Assembly are correctly fastened.

#### 7.1.4.3. (4) Removal of the Separator Roller

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

Applicable jigs and tools: None.

**[Disassembling Procedures]**

1. Pull out the 2000 Sheet Hopper.
2. Remove the 500 Sheet Hoppers.
3. Remove the Separator Assembly. (Refer to item 7.1.4.3. (3) on page 7-172)
4. Pull the Latch and remove the Guide Plate.
5. Pull off the Separator Roller in the direction of the arrow.

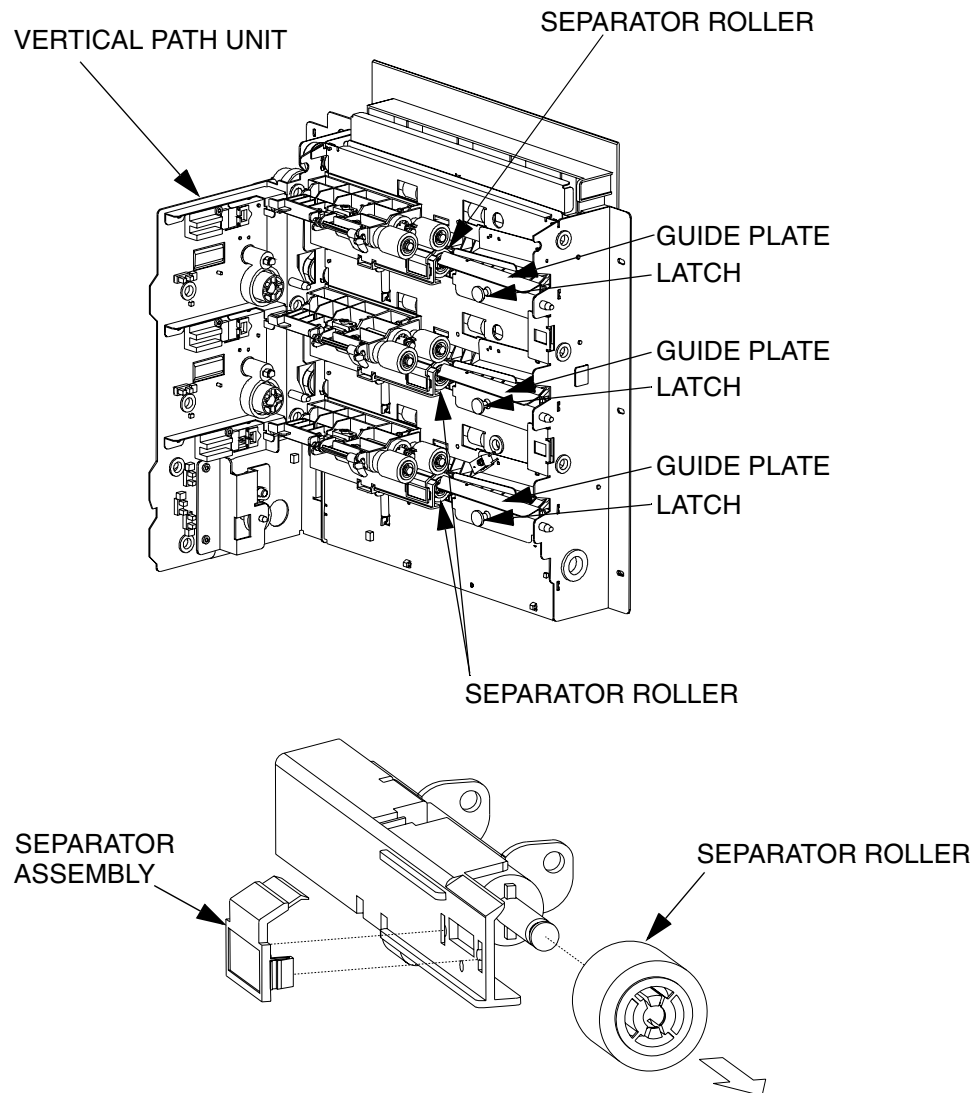


Figure 7-192. Removal of the Separator Roller

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

#### 7.1.4.3. (5) Removal of the Timing Belt

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

Applicable jigs and tools: ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Remove the Vertical Path Unit. (Refer to item 7.1.4.3. (1) on page 7-169)
2. Disconnect the Connectors P/J434, P/J435, and P/J436.
3. Unscrew the five ⊕ screws to remove the Back Plate.
4. Open the IS Cover, and unscrew the two ⊕ screws to loosen the Timing Belt.

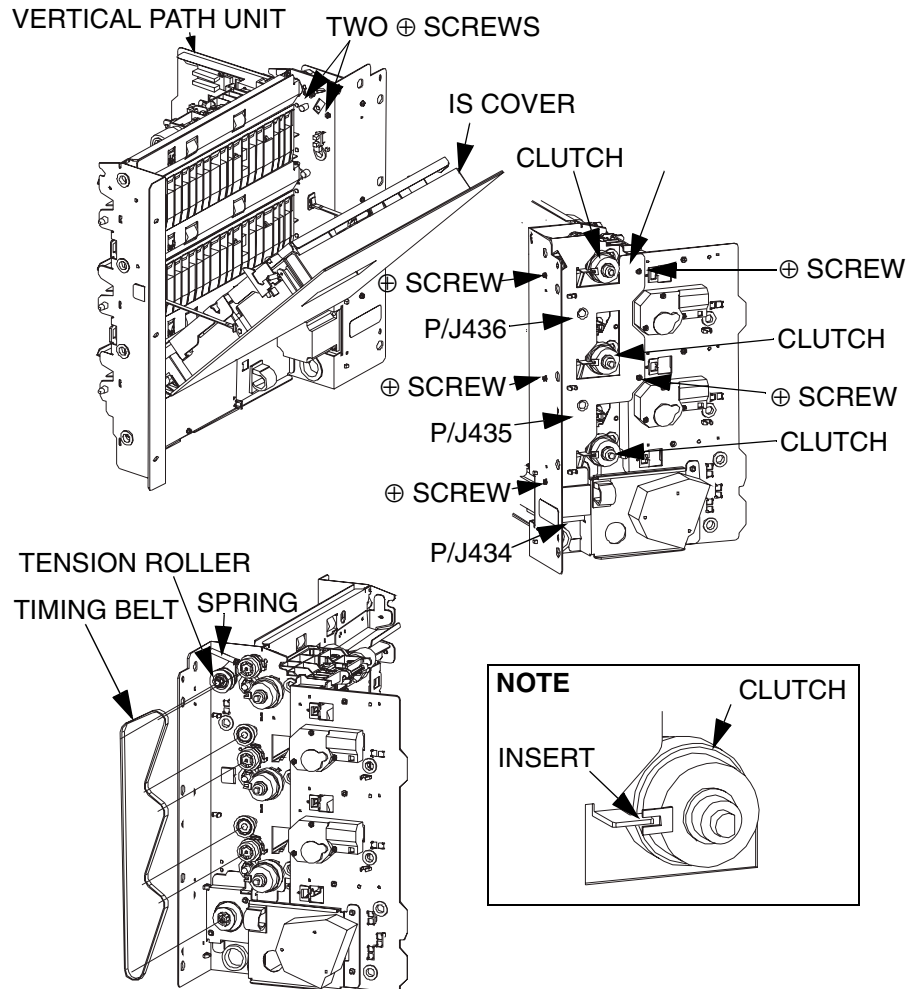


Figure 7-193. Removal of the Timing Belt

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

**Note:** The tension of the Timing Belt is mechanically determined only by the spring force of the spring.  
Therefore, when fixing the screw for the Tension Roller Assembly, do not apply force to the Tension Roller.

#### 7.1.4.3. (6) Removal of the Rubber Roller Assembly

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Remove the Vertical Path Unit. (Refer to item 7.1.4.3. (1) on page 7-169)
2. Open the IS Cover, remove the rivet to remove the IS Cover Assembly.
3. Unscrew the six ⊕ screws to open the Paper Guide A.
4. Remove the Back Plate, and Timing Belt. (Refer to item 7.1.4.3. (5) on page 7-174)
5. Remove the IS Drive Gear, and the IS Drive Pulley.
6. Remove the B.B. Housing to pull off the Rubber Roller Assembly in the direction of the arrow.

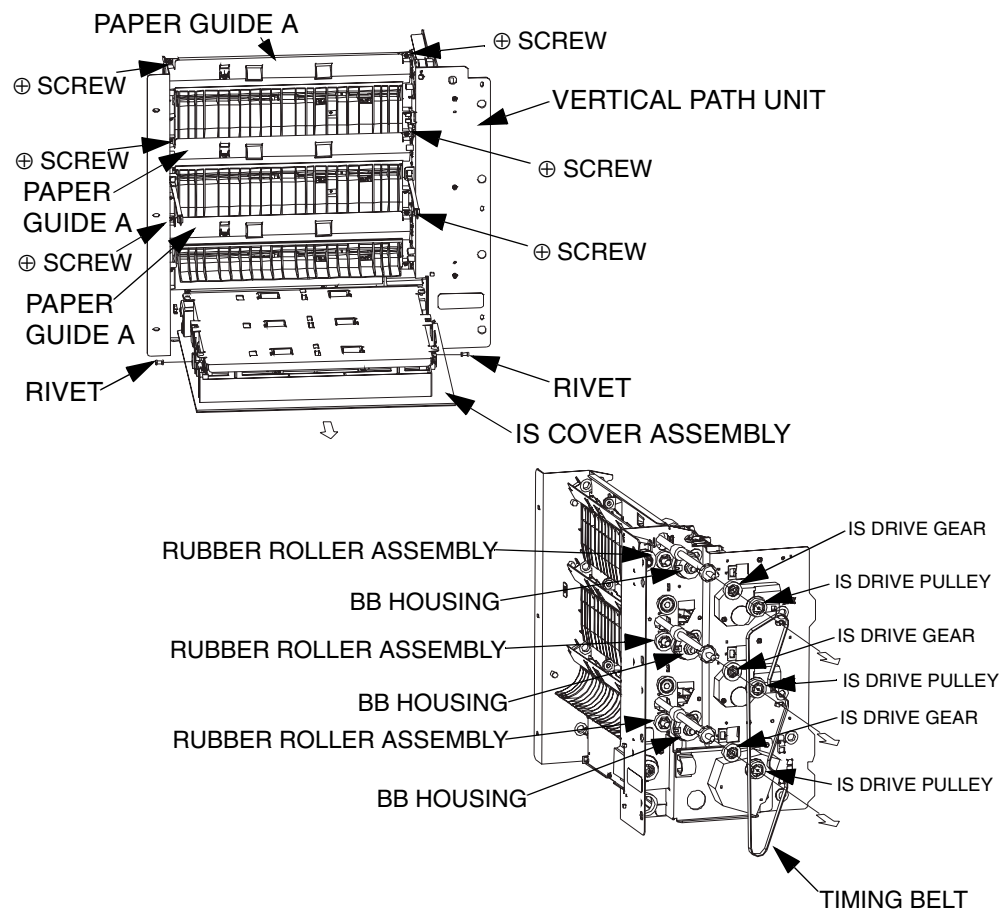


Figure 7-194. Removal of the Rubber Roller Assembly

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

**Note:** The tension of the Timing Belt is mechanically determined only by the spring force of the spring.  
Therefore, when fixing the screw for the Tension Roller Assembly, do not apply force to the Tension Roller.

#### 7.1.4.3. (7) Removal of the Pick Drive Shaft Assembly

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Remove the Vertical Path Unit. (Refer to item 7.1.4.3. (1) on page 7-169)
2. Remove the Back Plate. (Refer to item 7.1.4.3. (5) on page 7-174)
3. Remove the Pick Roller, the Pick Drive Gear, the Pin, the Hook Ring A, and the Retaining Ring-E.
4. Remove the B.B. Housing to pull off the Pick Drive Shaft Assembly in the direction of the arrow.

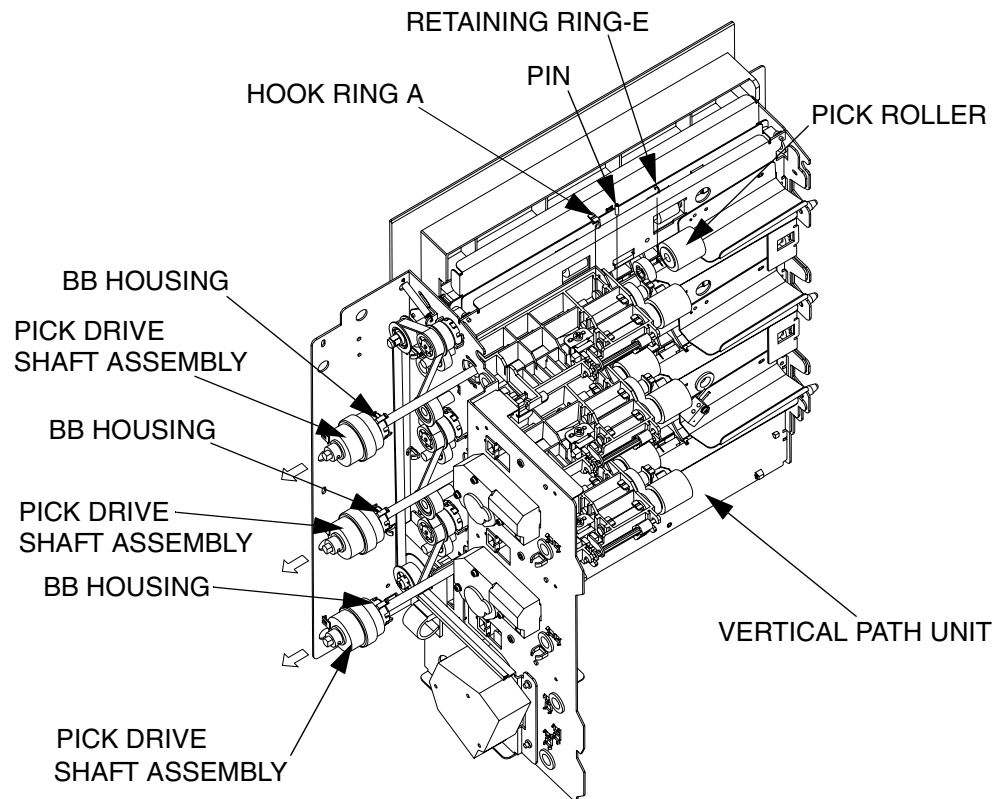


Figure 7-195. Removal of the Pick Drive Shaft Assembly

**[Disassembling Procedures]**

Perform the disassembling procedures in the reverse order.

#### 7.1.4.3. (8) Removal of the Vertical Path Gears

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Remove the Vertical Path Unit. (Refer to item 7.1.4.3. (1) on page 7-169)
2. Remove the Back Plate, and the Timing Belt. (Refer to item 7.1.4.3. (5) on page 7-174)
3. Remove the Pick Drive Shaft Assembly. (Refer to item 7.1.4.3. (7) on page 7-176)
4. Remove the IS Drive Gear, the IS Drive Pulley, the Pick Idler Gear, and the Motor Pulley Tension Roller.
5. Remove the Gear Stopper to remove the Tension Roller B.

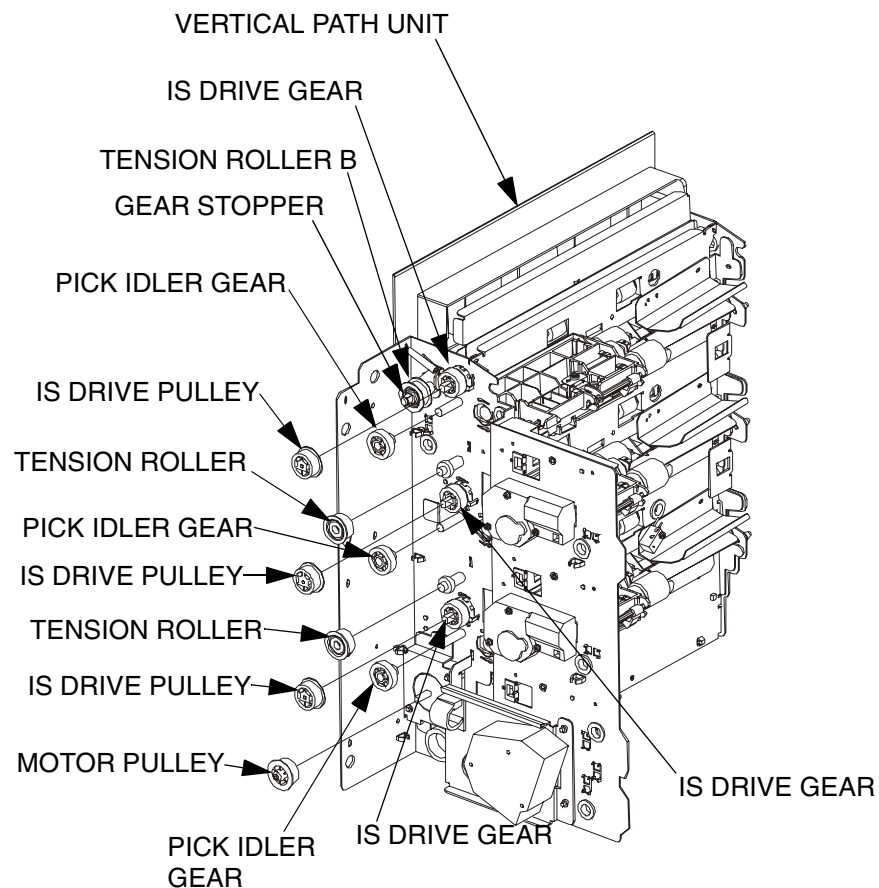


Figure 7-196. Removal of the Vertical Path Gears

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

**Note:** The tension of the Timing Belt is mechanically determined only by the spring force of the spring.  
Therefore, when fixing the screw for the Tension Roller Assembly, do not apply force to the Tension Roller.

#### 7.1.4.3. (9) Removal of the Pressure Roller Assembly

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

Applicable jigs and tools: None.

**[Disassembling Procedures]**

1. Remove the RH Side Lower Cover. (Refer to item 3.3.2. (1) on page 3-12)
2. When the Auxiliary 3000 Sheet Hopper is attached, remove it. (Refer to item 7.2.1 on page 7-217)
3. Remove the IS Cover Assembly. (Refer to item 7.1.4.3. (6) on page 7-175)
4. Remove the hook of the A section, next B section, then remove the Pressure Roller Base Assembly in the direction of the arrow **C**.
5. Remove the Spring to remove the Pressure Roller Assembly.

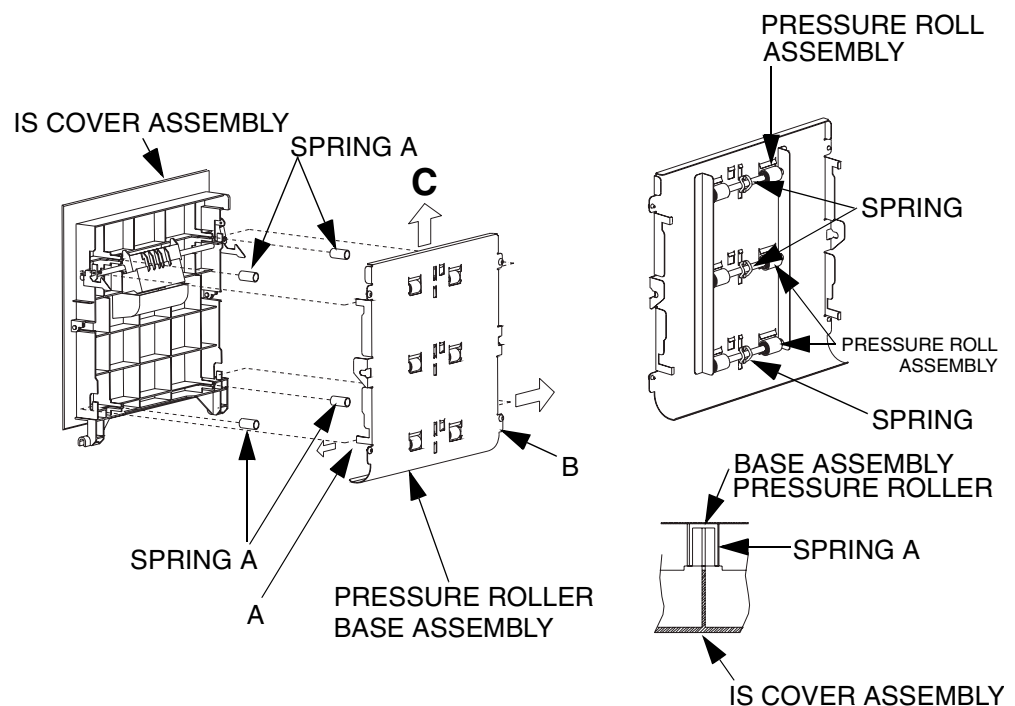


Figure 7-197. Removal of the Pressure Roller Assembly

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

**[Check]**

Make sure that the four Spring A are correctly fastened.

#### 7.1.4.3. (10) Removal of the Torque Limiter

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

Applicable jigs and tools: ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Remove the Vertical Path Unit. (Refer to item 7.1.4.3. (1) on page 7-169)
2. Remove the IS Cover Assembly. (Refer to item 7.1.4.3. (6) on page 7-175)
3. Unscrew the nine ⊕ screws to remove the Paper Guide B, and the Paper Guide C.
4. Remove the two Hook Ring B to remove the SRB Shaft.
5. Remove the Separate Roller Base Assembly.
6. Remove the Separator Roller, the Separator Assembly, and the Hook Ring A to remove the Torque Limiter.

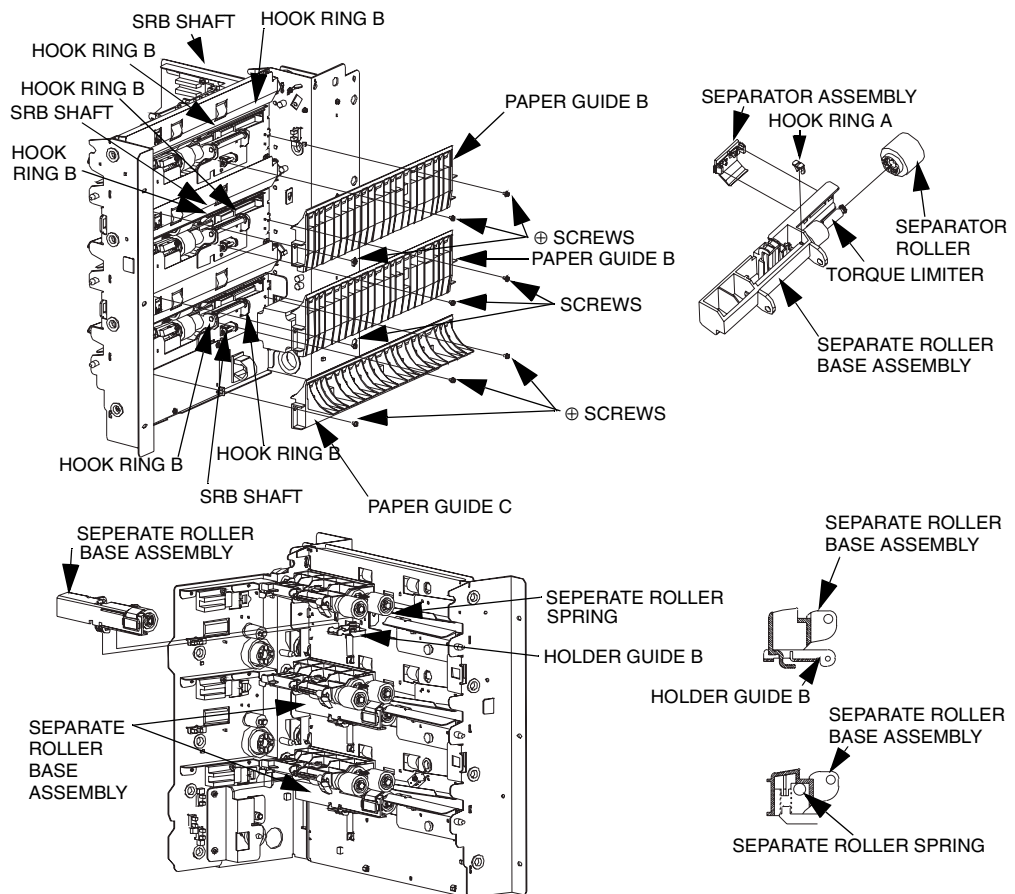


Figure 7-198. Removal of the Torque Limiter

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

**[Checks]**

Make sure that the Separate Roller Springs are correctly fastened.

Make sure that the Separate Roller Base Assembly is inserted in the hole of the Holder Guide B.



#### 7.1.4.3. (11) Removal of the Hopper Feed Motor

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

Applicable jigs and tools: ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Remove the Vertical Path Unit. (Refer to item 7.1.4.3. (1) on page 7-169)
2. Remove the IS Cover Assembly. (Refer to item 7.1.4.3. (6) on page 7-175)
3. Remove the Back Plate, and the Timing Belt. (Refer to item 7.1.4.3. (5) on page 7-174)
4. Remove the Paper Guide C. (Refer to item 7.1.4.3. (10) on page 7-179)
5. Disconnect the connector P/J405.
6. Remove the Motor Pulley, and unscrew the two ⊕ screws to remove the Hopper Feed Motor M401.

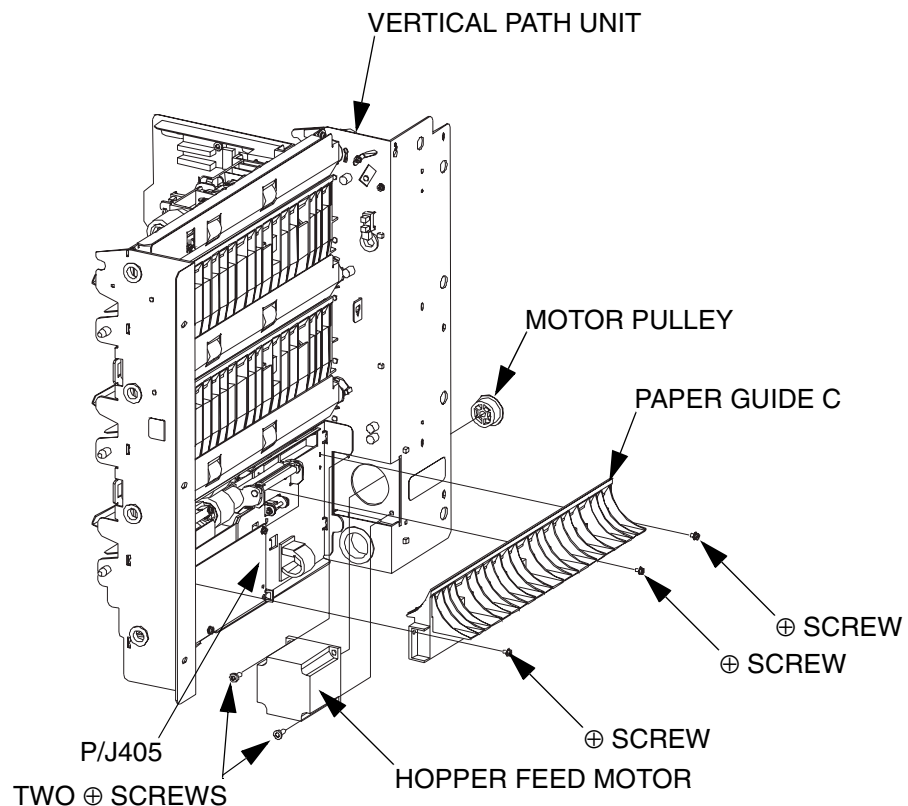


Figure 7-199. Removal of the Hopper Feed Motor

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

**Note:** The tension of the Timing Belt is mechanically determined only by the spring force of the spring.  
Therefore, when fixing the screw for the Tension Roller Assembly, do not apply force to the Tension Roller.

#### 7.1.4.3. (12) Removal of the Hopper 1 Table Motor

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

Applicable jigs and tools: ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Remove the Vertical Path Unit. (Refer to item 7.1.4.3. (1) on page 7-169)
2. Unscrew the two screws to remove the Shaft Holder.
3. Remove the Idler Gear, the Motor Gear and the Pin.
4. Disconnect the connector P/J431.
5. Unscrew the three ⊕ screws to remove the Hopper 1 Table Motor M402.

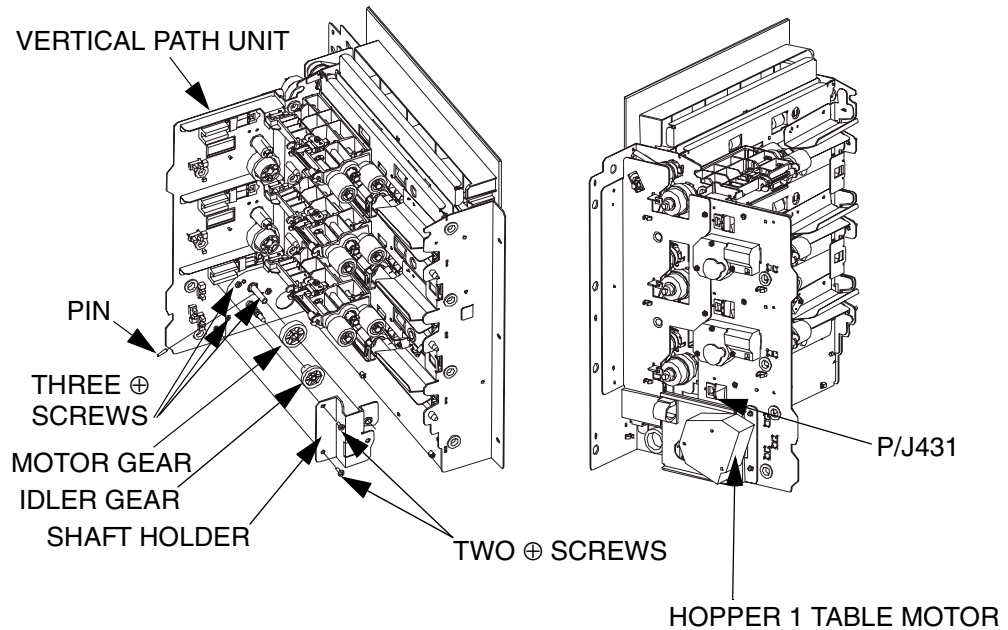


Figure 7-200. Removal of the Hopper 1 Table Motor

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

#### 7.1.4.3. (13) Removal of the Hopper 2/3 Table Motor

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Remove the Vertical Path Unit. (Refer to item 7.1.4.3. (1) on page 7-169)
2. Disconnect the connectors.
3. Unscrew the three ⊕ screws to remove the Hopper 2/3 Table Motor M403/M404.
4. Remove the Motor Gear.

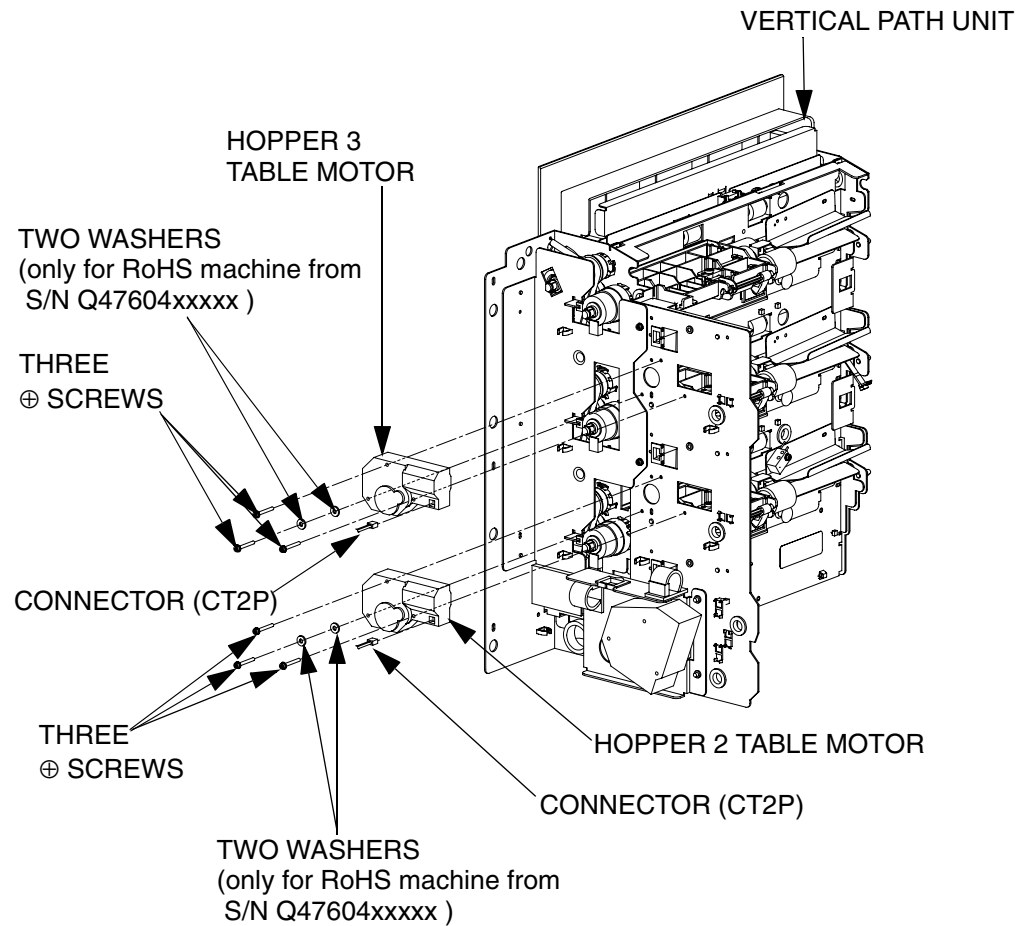


Figure 7-201. Removal of the Hopper 2/3 Table Motor

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

#### 7.1.4.3. (14) Removal of the Empty Sensor

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Remove the Vertical Path Unit. (Refer to item 7.1.4.3. (1) on page 7-169)
2. Unscrew the ⊕ screw to remove the Sensor Plate.
3. Disconnect the connectors.
4. Remove the Empty Sensor.

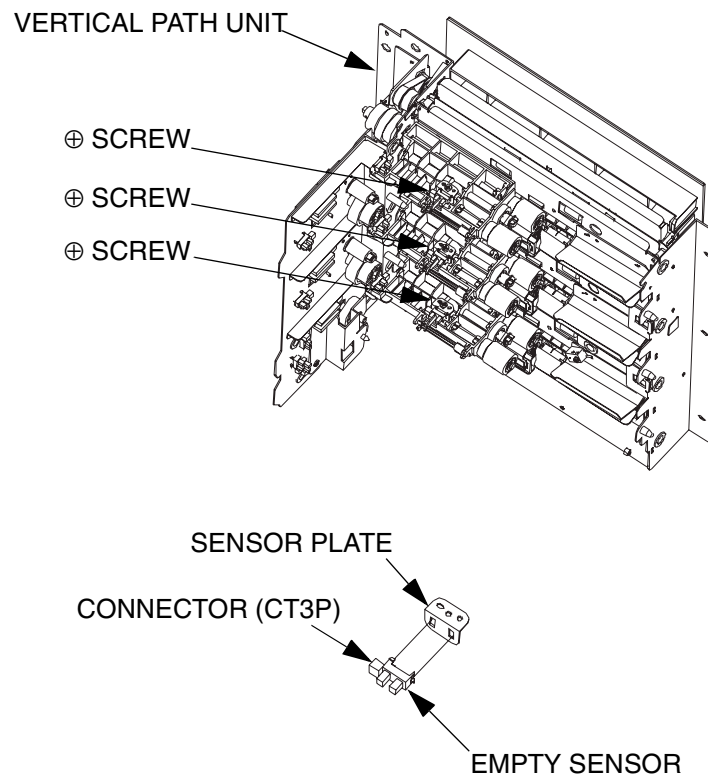


Figure 7-202. Removal of the Empty Sensor

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

#### 7.1.4.3. (15) Removal of the Size Sensor

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Remove the Vertical Path Unit. (Refer to item 7.1.4.3. (1) on page 7-169)
2. Disconnect the connectors.
3. Unscrew the ⊕ screw to remove the Size Sensor.

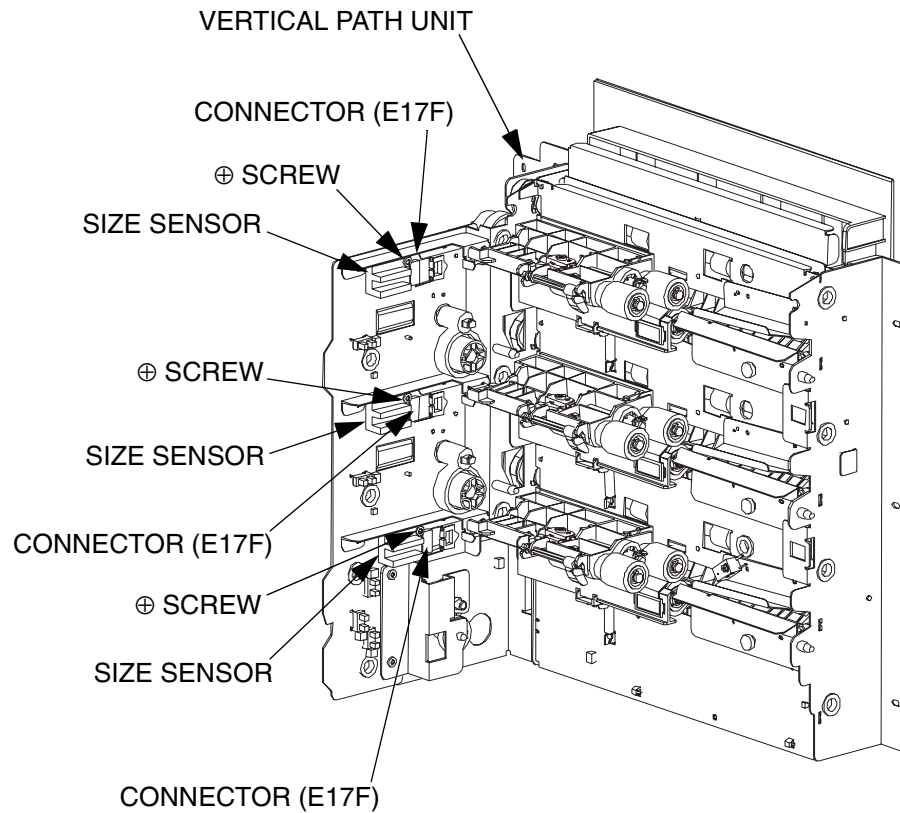


Figure 7-203. Removal of the Size Sensor

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

#### 7.1.4.3. (16) Removal of the Upper Limit Sensor

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

Applicable jigs and tools: ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Remove the RH Side Lower Cover. (Refer to item 3.3.2. (1) on page 3-12)
2. When the Auxiliary Sheet Hopper is attached, remove it. (Refer to item 7.2.1 on page 7-217)
3. Remove the IS Cover Assembly. (Refer to item 7.1.4.3. (6) on page 7-175)
4. Unscrew the two ⊕ screws to open the Paper Guide A
5. Disconnect the connector P/J438.
6. Pull out the 2000 Sheet Hopper and remove the two 500 Sheet Hoppers. (Refer to item 7.1.4.3. (4) on page 7-173)
7. Unscrew the ⊕ screw to remove the Upper Limit Sensor.

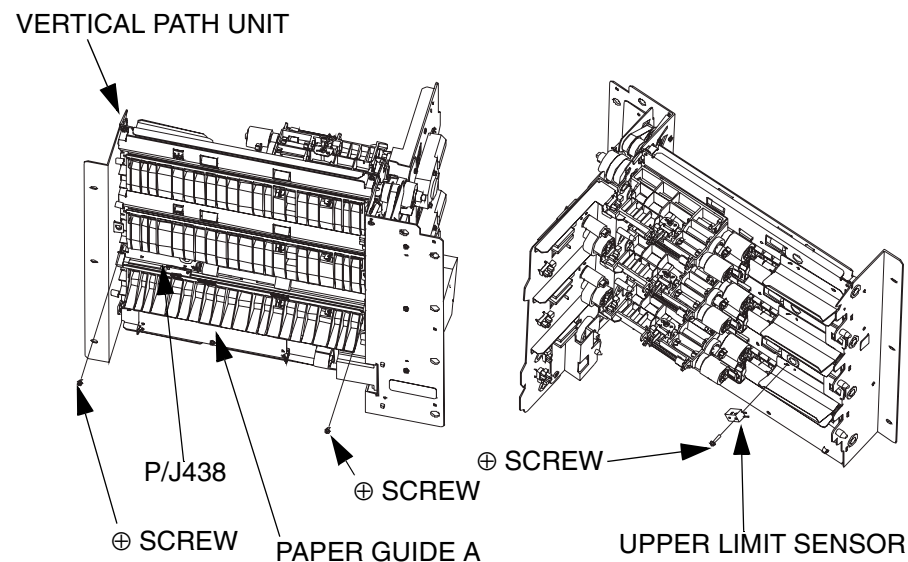


Figure 7-204. Removal of the Upper Limit Sensor

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

**Note:** Tighten the screw torque to a maximum of 3kg.

#### 7.1.4.3. (17) Removal of the Height Sensor

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Remove the Vertical Path Unit. (Refer to item 7.1.4.3. (1) on page 7-169)
2. Disconnect the connectors.
3. Remove the Height Sensor.

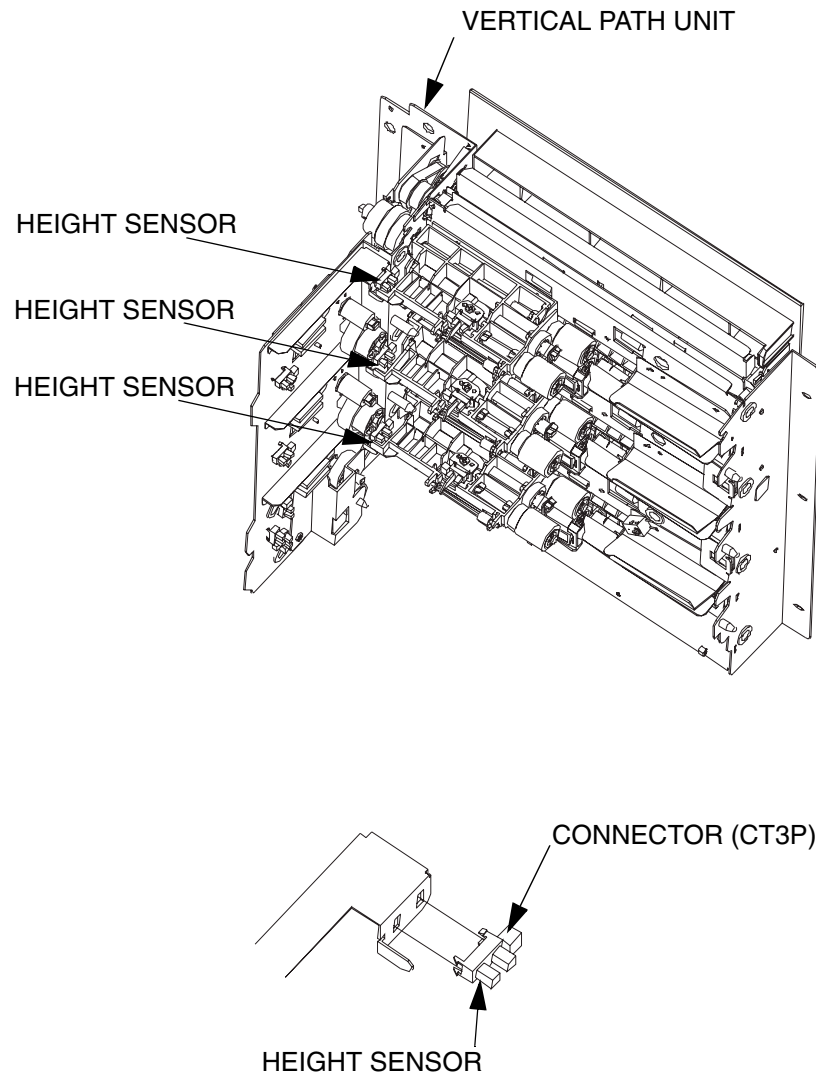


Figure 7-205. Removal of the Height Sensor

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

#### 7.1.4.3. (18) Removal of the Pick Sensor

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Pull out the 2000 Sheet Hopper and remove the two 500 Sheet Hoppers. (Refer to item 7.1.4.3. (4) on page 7-173)
2. Remove the Guide Plate. (Refer to item 7.1.4.3. (4) on page 7-173)
3. Disconnect the connectors.
4. Unscrew the ⊕ screw to remove the Pick Sensor.

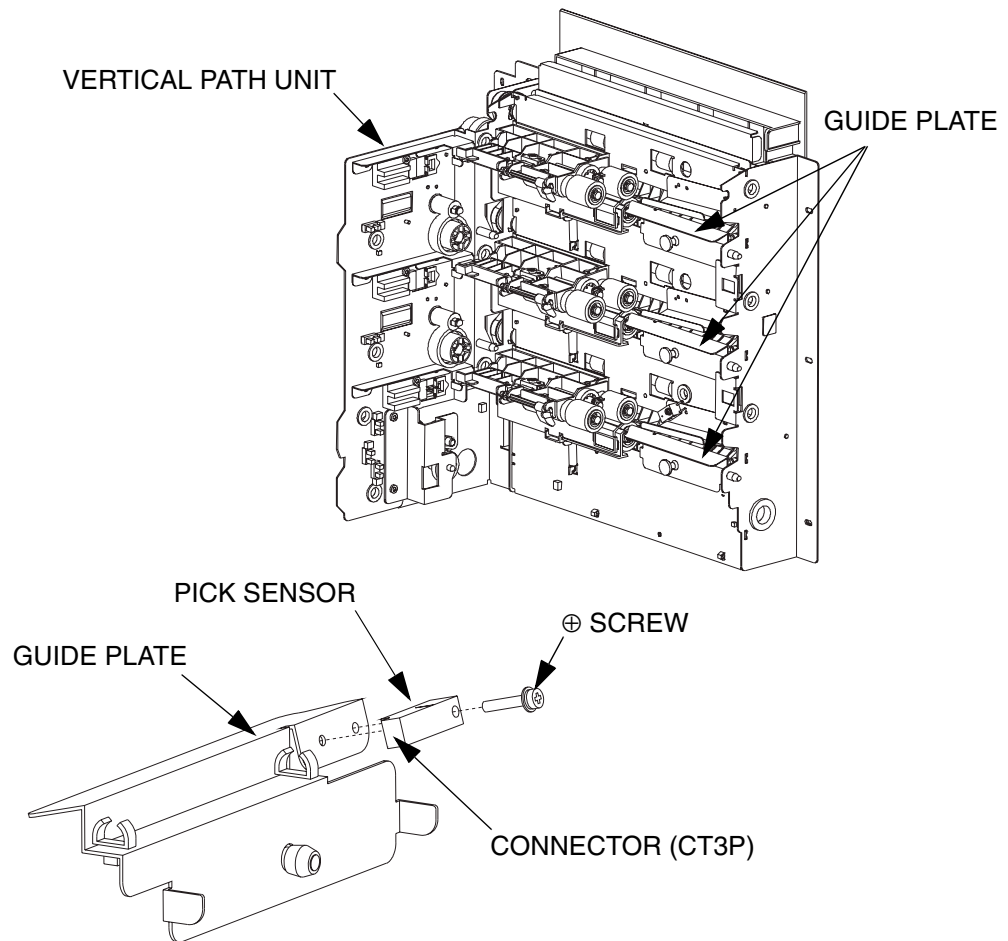


Figure 7-206. Removal of the Pick Sensor

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.



#### 7.1.4.3. (19) Removal of the Rest Sensor

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

Applicable jigs and tools: ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Remove the Vertical Path Unit. (Refer to item 7.1.4.3. (1) on page 7-169)
2. Disconnect the connectors.
3. Remove the Rest Sensor.

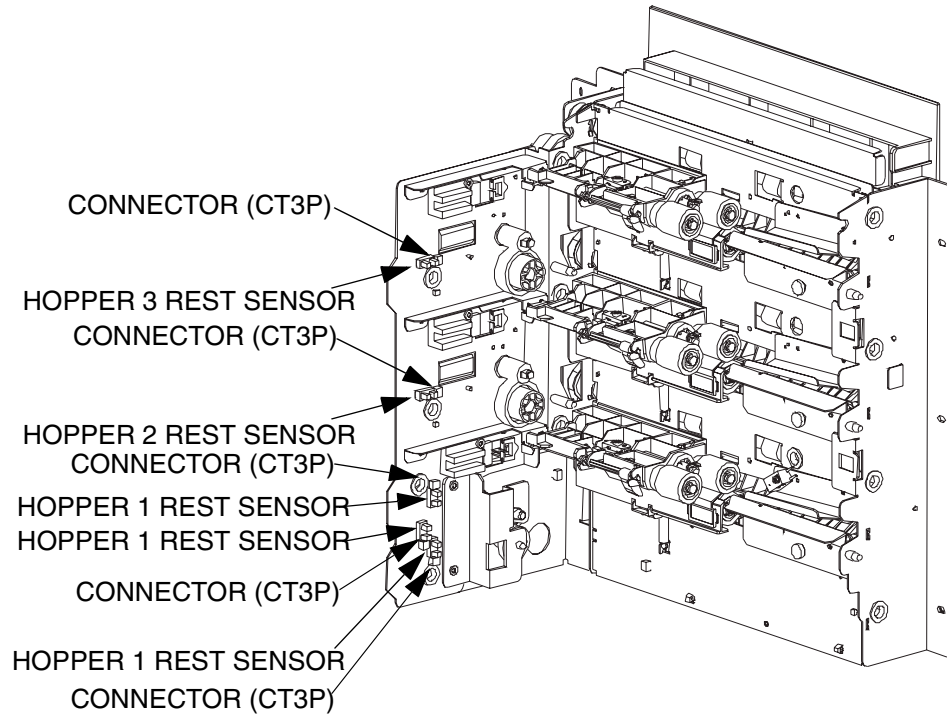


Figure 7-207. Removal of the Rest Sensor

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

#### 7.1.4.3. (20) Removal of the Feed Sensor

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

Applicable jigs and tools: ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Remove the RH Side Lower Cover. (Refer to item 3.3.2. (1) on page 3-12)
2. When the Auxiliary Sheet Hopper is attached, remove it. (Refer to item 7.2.1 on page 7-217)
3. Remove the IS Cover Assembly. (Refer to item 7.1.4.3. (6) on page 7-175)
4. Unscrew the six ⊕ screws to remove the Paper Guide A.
5. Disconnect the connectors.
6. Remove the Sensor Holder from the Paper Guide A.
7. Remove the Feed Sensor from the Sensor Holder.

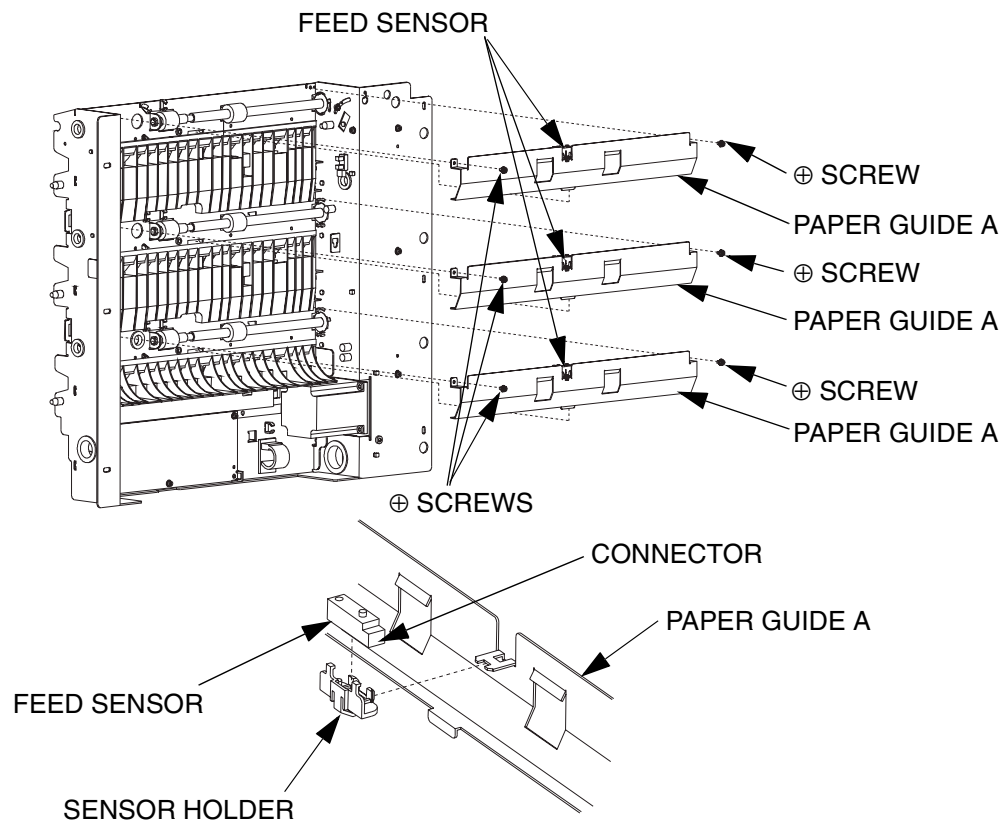


Figure 7-208. Removal of the Feed Sensor

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

**[Checks]**

Make sure that the snap-fit parts of the Sensor Holder are correctly fastened.

#### 7.1.4.3. (21) Removal of the Cover Open Sensor

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools: None.**

**[Disassembling Procedures]**

1. Open the IS Cover.
2. Disconnect the connector.
3. Remove the Cover Open Sensor.

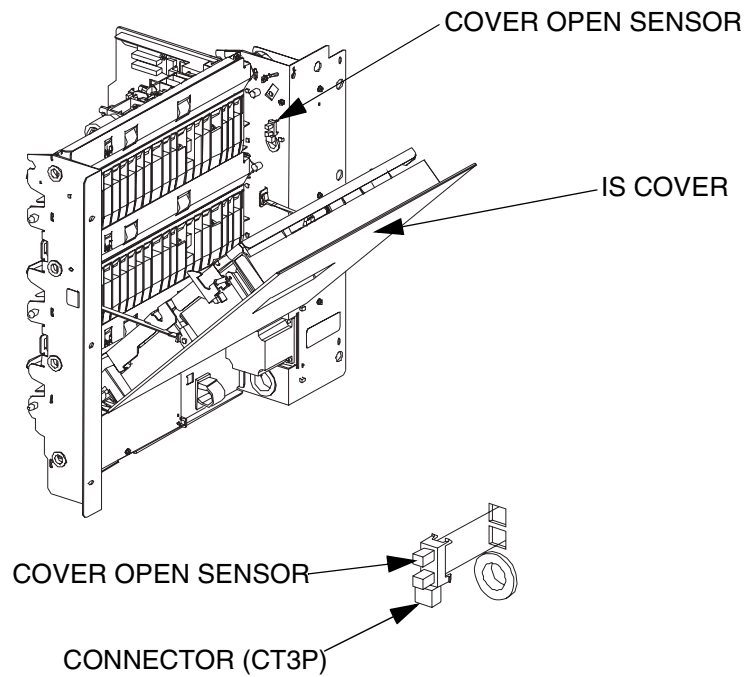


*Figure 7-209. Removal of the Cover Open Sensor*

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

#### 7.1.4.3. (22) Removal of the HPxxx Assembly

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Remove the RH Side Lower Cover. (Refer to item 3.3.2. (1) on page 3-12)
2. When the High Capacity Hopper is attached, remove it. (Refer to item 7.2 on page 7-217)
3. Disconnect the connectors J/P401, J/P403, J/P404, J/P405, J/P406, J/P407, J/P408, J/P409.
4. Unscrew the two ⊕ screws and pull out the HPxxx Assembly.

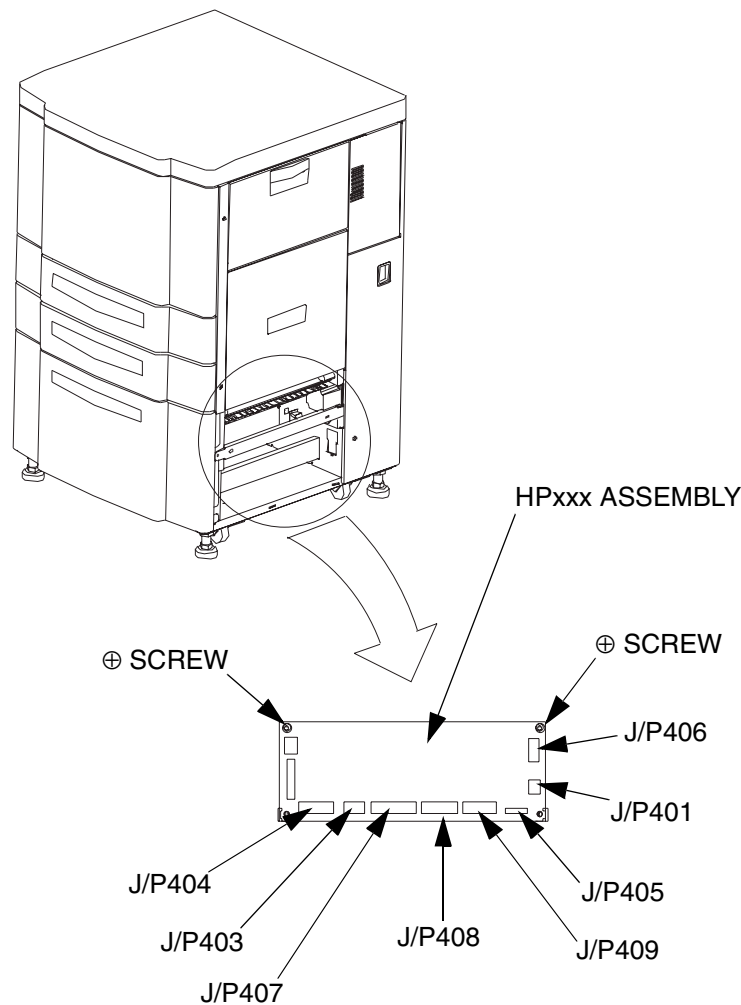


Figure 7-210. Removal of the HPxxx Assembly

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

#### 7.1.4.3. (23) Removal of the Table Drive Gears

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

Applicable jigs and tools: ⊕ Screwdriver, - Precision Screwdriver.

**[Disassembling Procedures]**

1. Remove the Vertical Path Unit. (Refer to item 7.1.4.3. (1) on page 7-169)
2. Remove the Shaft Holder, the Idler Gear, and the Motor Gear. (Refer to item 7.1.4.3. (12) on page 7-181)
3. Remove the Retaining Ring-E and the Coupling Gear.
4. Pull out the Motor Gear 2.

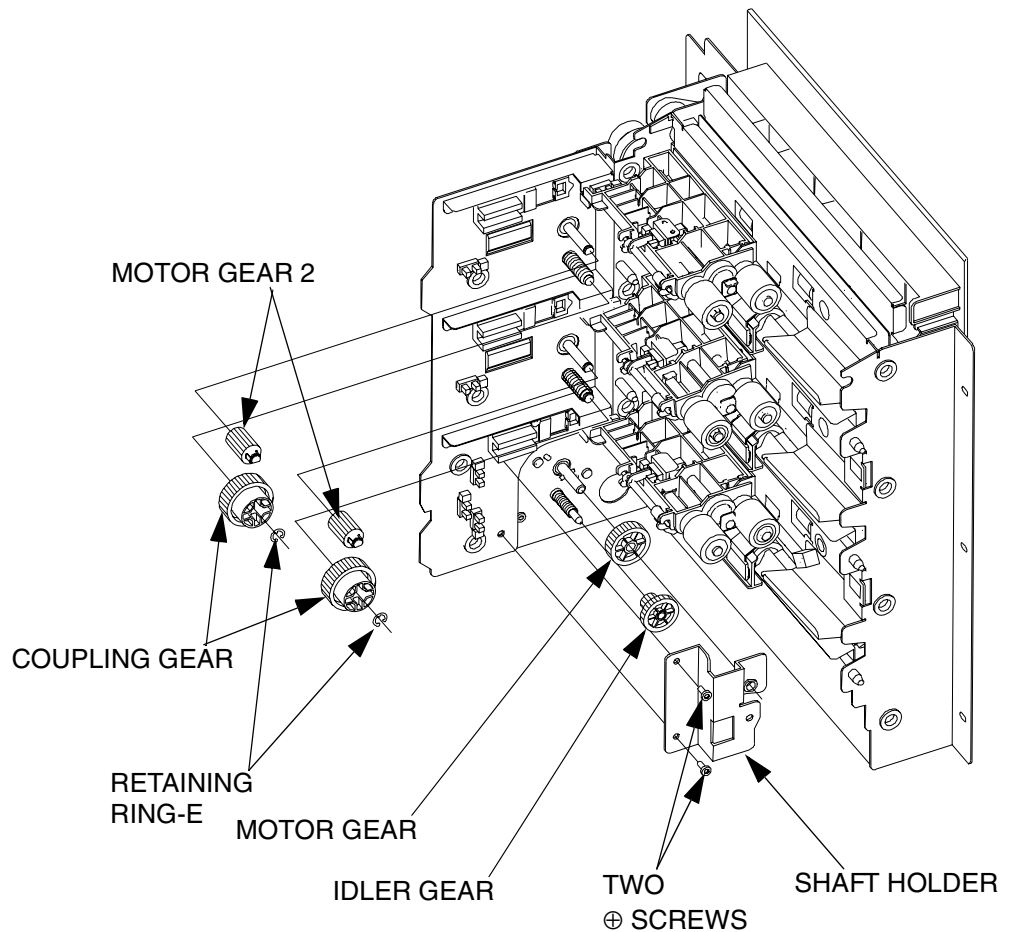


Figure 7-211. Removal of the Table Drive Gears

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

## 7.1.5. Removal of the Other Parts

### 7.1.5.1. Removal of the Engine Other Parts

#### 7.1.5.1. (1) Removal of the Fan Assembly (1)

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver, ⊕ Screwdriver (Short).

**[Disassembling Procedures]**

1. Remove the Optical Unit. ([Refer to item 7.1.1 on page 7-1](#))
2. Disconnect the Connector P/J522 from the Fan Assembly (1).
3. Remove the Fan Assembly (1).

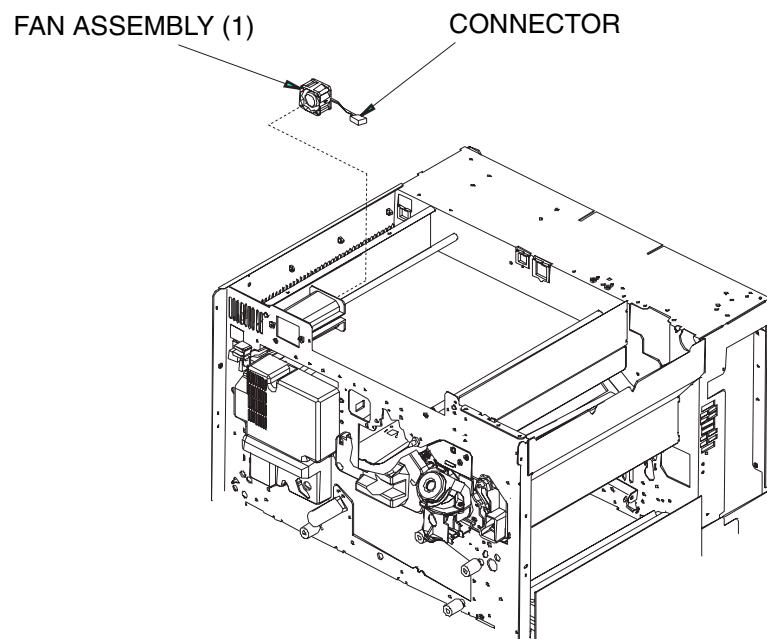


Figure 7-212. Removal of the Fan Assembly (1)

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

#### 7.1.5.1. (2) Removal of the DC Fan (Fuser)

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Open the Front Cover.
2. Remove the Rear Cover Assembly. ([Refer to item 3.3.2. \(1\) on page 3-12](#))
3. Disconnect the Connector P/J523 from the DC Fan (Fuser)
4. Unscrew the two ⊕ screws to remove the Cooling Assembly (1).
5. Unscrew the four ⊕ screws to remove the DC Fan (Fuser).

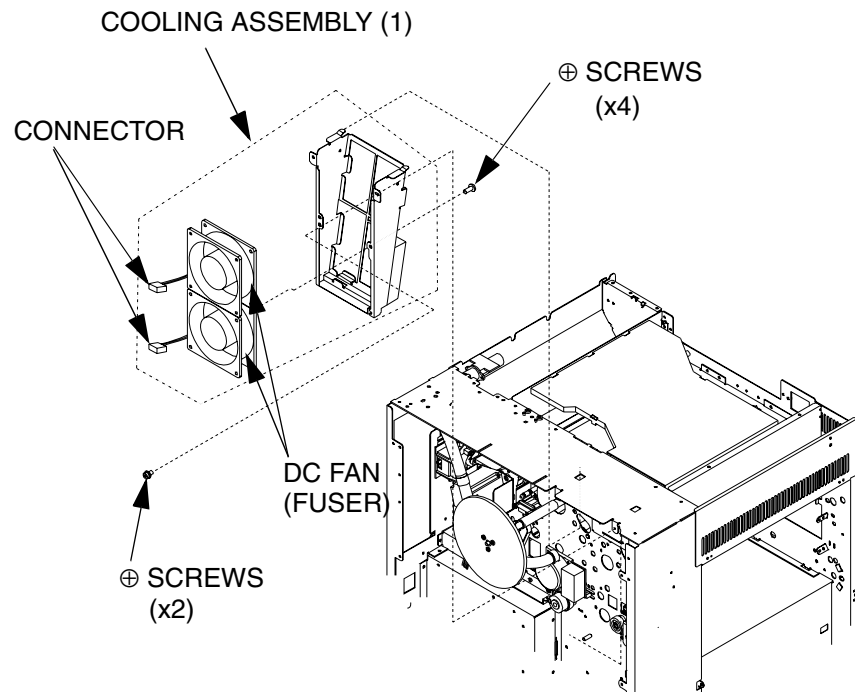


Figure 7-213. Removal of the DC Fan (Fuser)

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

### 7.1.5.1. (3) Removal of the Fan Assembly (3)

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver, ⊕ Screwdriver (Short).

**[Disassembling Procedures]**

1. Open the Front Cover.
2. Remove the Rear Cover Assembly. (Refer to item 3.3.2. (1) on page 3-12)
3. Remove the Top Cover. (Refer to item 3.3.2. (1) on page 3-12)
4. Remove the Drum Unit. (Refer to item 7.1.2.1. (1) on page 7-4)
5. Remove the Developer Unit. (Refer to item 7.1.2.3. (1) on page 7-10)
6. Unscrew the two ⊕ screws to remove the Inner Cover (S).
7. Unscrew the seven ⊕ screws to remove the Inner Cover.
8. Disconnect the Connector P/J524 from the Fan Assembly (3).
9. Unscrew the two ⊕ screws to remove the Fan Assembly (3).

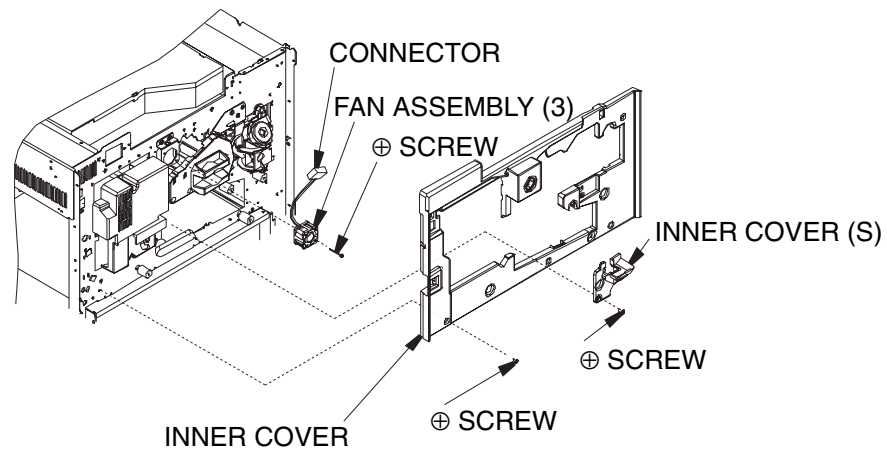


Figure 7-214. Removal of the Fan Assembly (3)

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.



#### 7.1.5.1. (4) Removal of the DC Fan (Paper Out)

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Open the Front Cover.
2. Remove the Rear Cover Assembly. (Refer to item 3.3.2. (1) on page 3-12)
3. Remove the Top Cover. (Refer to item 3.3.2. (1) on page 3-12)
4. Unscrew the four ⊕ screws.
5. Disconnect the Connector P/J525 from the DC Fan (Paper Out).

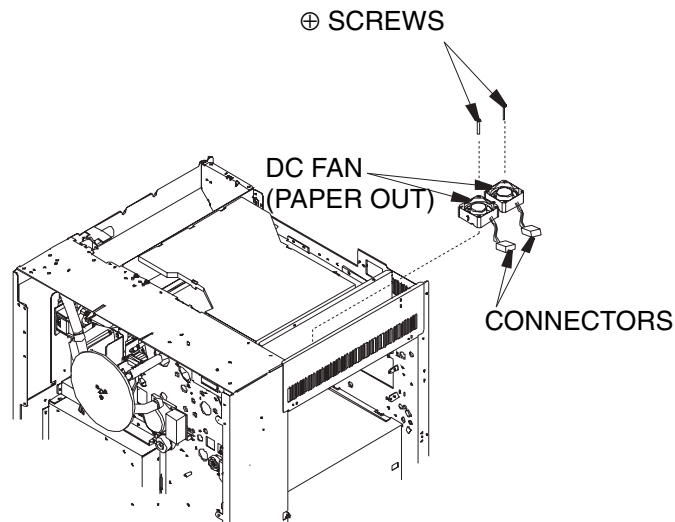


*Figure 7-215. Removal of the DC Fan (Paper Out)*

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

#### 7.1.5.1. (5) Removal of the DC Fan (DEV)

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Remove the Rear Cover Assembly. ([Refer to item 3.3.2. \(1\) on page 3-12](#))
2. Unscrew the two ⊕ screws to remove the Cooling (DEV) Assembly.
3. Disconnect the Connector P/J331 from the DC Fan (DEV).
4. Remove the DC Fan (DEV).

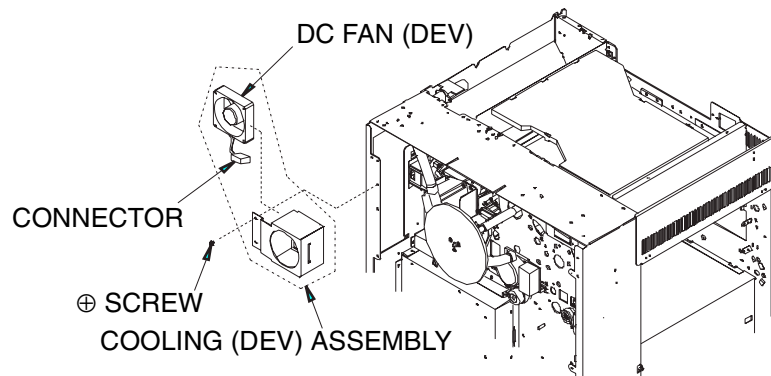


Figure 7-216. Removal of the DC Fan (DEV)

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

### 7.1.5.1. (6) Removal of the DEV Cooling Fan

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Remove the Rear Cover Assembly. (Refer to item 3.3.2. (1) on page 3-12)
2. Remove the RH Rear Side Cover (L) Assembly. (Refer to item 3.3.2. (1) on page 3-12)
3. Remove the Cooling (DEV) Assembly. (Refer to item 7.1.5.1. (6) on page 7-198)
4. Remove the Drum Unit. (Refer to item 7.1.2.1. (1) on page 7-4)
5. Remove the Developer Unit. (Refer to item 7.1.2.3. (1) on page 7-10)
6. Remove the Recycle Tube Assembly. (Refer to item 7.1.2.4. (1) on page 7-36)
7. Unscrew the two ⊕ screws to remove the Waste Bottle Holding Box.
8. Unscrew the two ⊕ screws to remove the Dec Cooling Fan Duct Assembly.
9. Disconnect the Connector P/J332 from the DEV Cooling Fan.
10. Remove the DEV Cooling Fan.

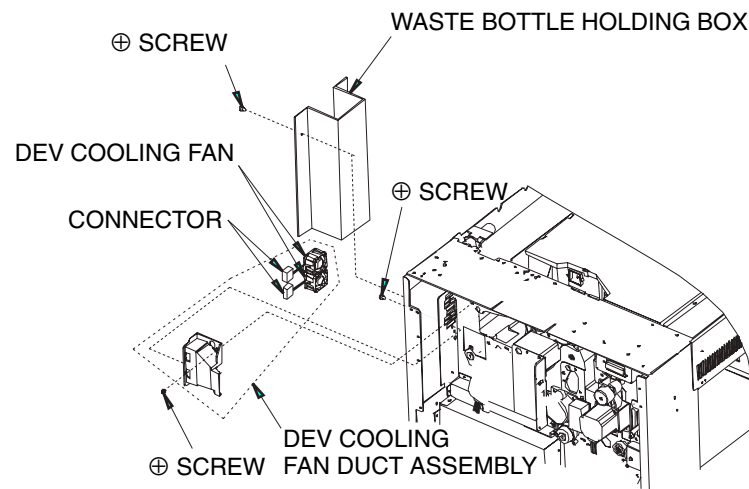


Figure 7-217. Removal of the DEV Cooling Fan

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

#### 7.1.5.1. (7) Removal of the Ozone Blower

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver, ⊕ Screwdriver (Short).

**[Disassembling Procedures]**

1. Remove the Top Cover. (Refer to item 3.3.2. (1) on page 3-12)
2. Remove the Fly Wheel. (Refer to item 7.1.2.5. (1) on page 7-46)
3. Remove the Ozone Chamber Lid Assembly.
4. Disconnect the Connector P/J348 from the Ozone Blower.
5. Unscrew the ⊕ screw to remove the Ozone Chamber Assembly.
6. Unscrew the three ⊕ screws to remove the Ozone Blower.

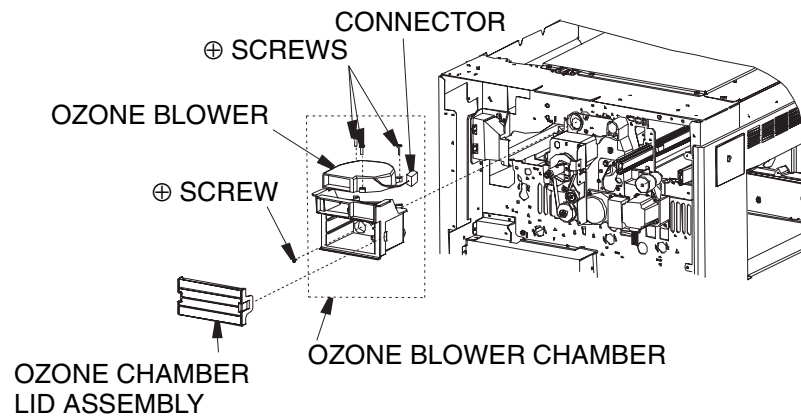


Figure 7-218. Removal of the Ozone Blower

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

#### 7.1.5.1. (8) Removal of the Ozone Filter and Air Filter

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

Applicable jigs and tools: ⊕ Screwdriver, Spanner(M6).

**[Disassembling Procedures]**

1. Remove the Rear Cover Assembly. ([Refer to item 3.3.2. \(1\) on page 3-12](#))
2. Remove the Ozone Chamber Lid Assembly.
3. Remove the Ozone Filter and Air Filter.

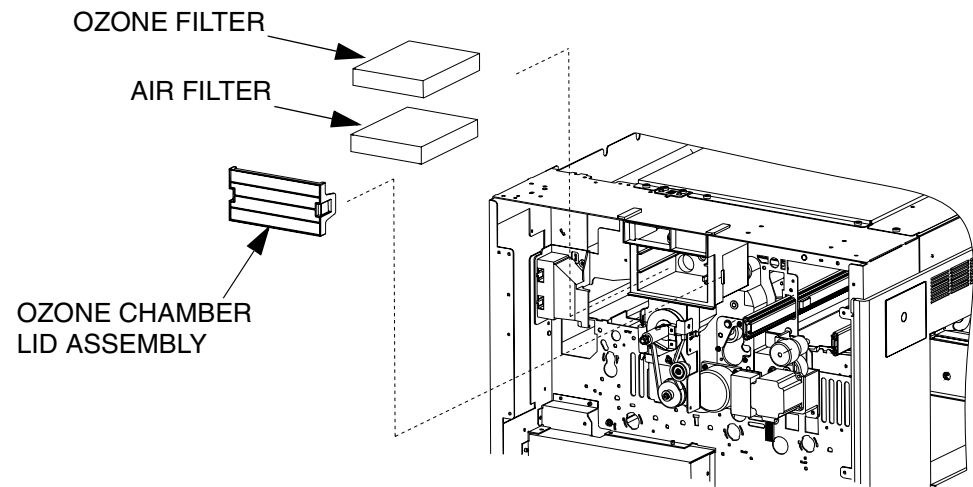


Figure 7-219. Removal of the Ozone Filter and Air Filter

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

#### 7.1.5.1. (9) Removal of the Air Filter (1), (2), and Ozone Filter R1

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

Applicable jigs and tools: ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Remove the Cooling Assembly (1). ([Refer to item 7.1.5.1. \(2\) on page 7-194](#))
2. Remove the Air Filter (1), (2), and the Ozone Filter R1.

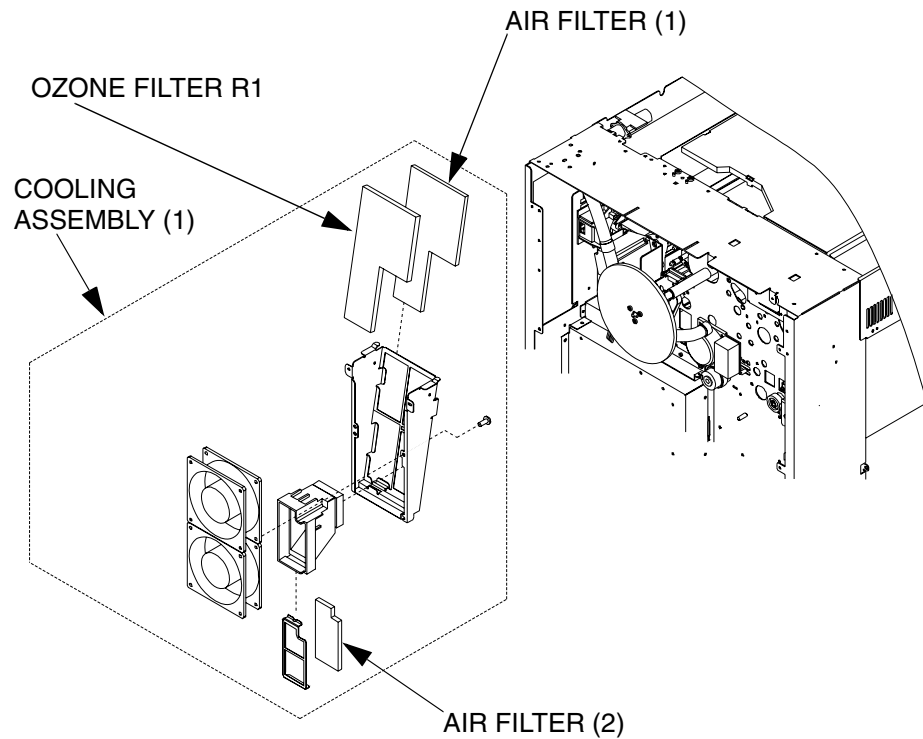


Figure 7-220. Removal of the Air Filter (1), (2), and Ozone Filter R1

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

#### 7.1.5.1. (10) Removal of the Air Filter (3) and Ozone Filter R2

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Remove the Cooling (DEV) Assembly. (Refer to item 7.1.5.1. (5) on page 7-197)
2. Remove the Air Filter (3) and the Ozone Filter R2.

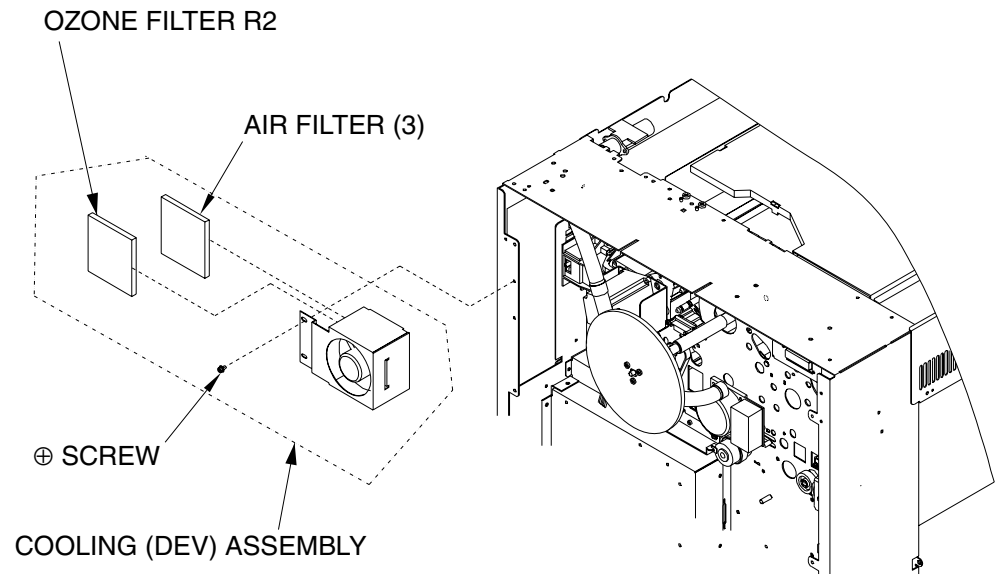


Figure 7-221. Removal of the Air Filter (3) and Ozone Filter R2

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

#### 7.1.5.1. (11) Removal of the Air Filter (4)

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

Applicable jigs and tools: None.

**[Disassembling Procedures]**

1. Open the Bottle Cover.
2. Remove the Air Filter (4).

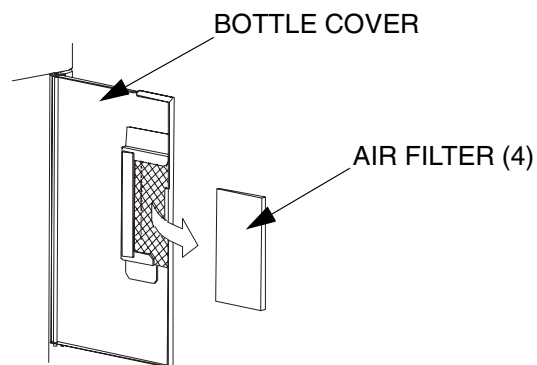
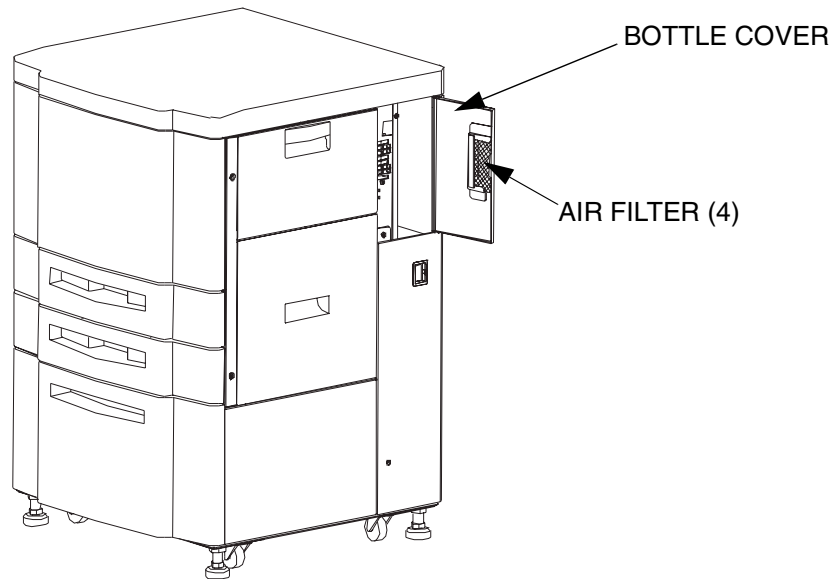


Figure 7-222. Removal of the Air Filter (4)

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.



#### 7.1.5.1. (12) Removal of the Drum Wrap Sensor

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

Applicable jigs and tools: ⊕ Screwdriver, Lint-Free Cloth.

**[Disassembling Procedures]**

1. Open the Front Cover.
2. Remove the Drum Unit. (Refer to item 7.1.2.1. (1) on page 7-4)
3. Remove the Developer Unit. (Refer to item 7.1.2.3. (1) on page 7-10)
4. Unscrew the two ⊕ screws to remove the Toner Guard Plate.
5. Remove the Snaps by pushing in the directions of arrow **A** to release the Drum Wrap Sensor in the direction of arrow **B**.
6. Disconnect the connector in the direction of arrow **C**.

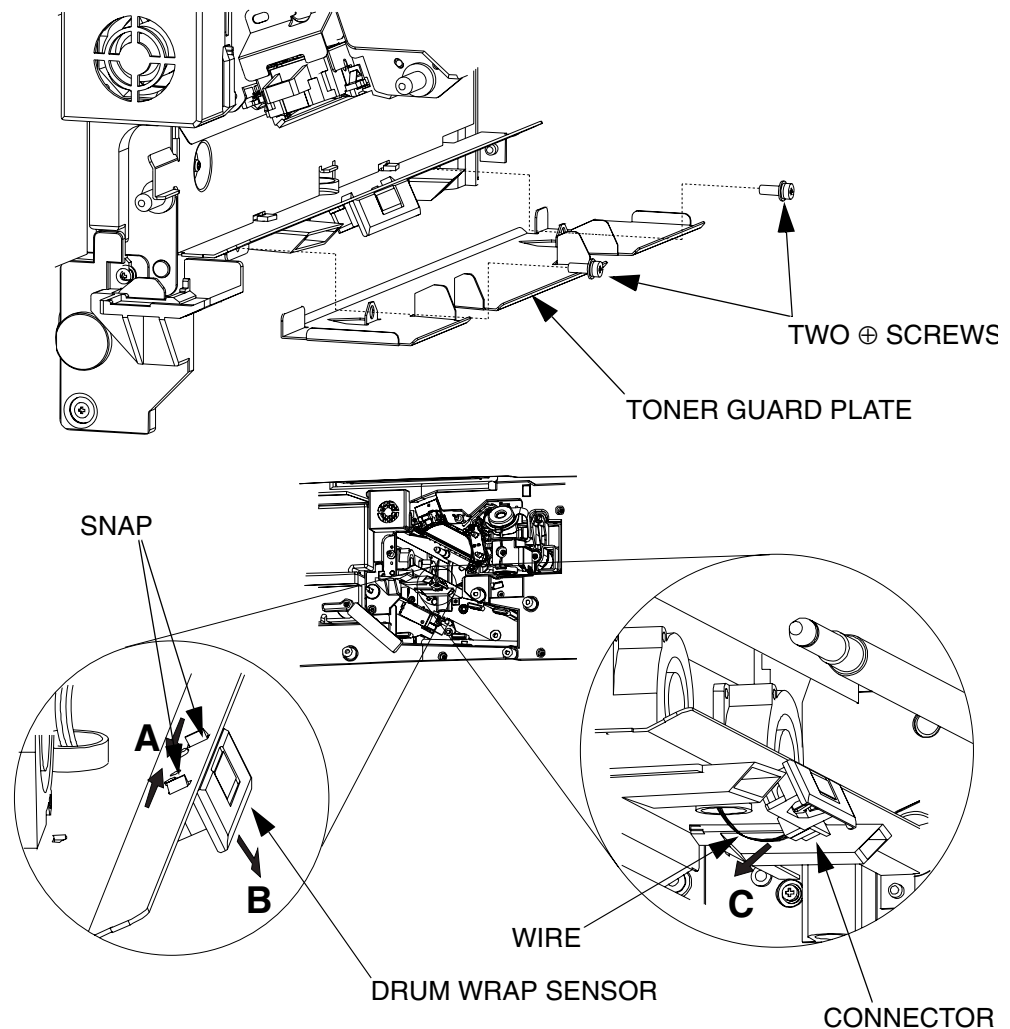


Figure 7-223. Removal of the Drum Wrap Sensor

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

**Note:** Make sure that the wire is tightened after reinstalling the Drum Wrap Sensor.

### 7.1.5.1. (13) Removal of the CPxxx Assembly

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

Applicable jigs and tools: ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Remove the OCxxx Assembly. (Refer to item 7.1.5.1. (17) on page 7-209)
2. Disconnect the connector from the CPxxx Assembly.
3. Unscrew four ⊕ screws to remove the CPxxx Assembly.

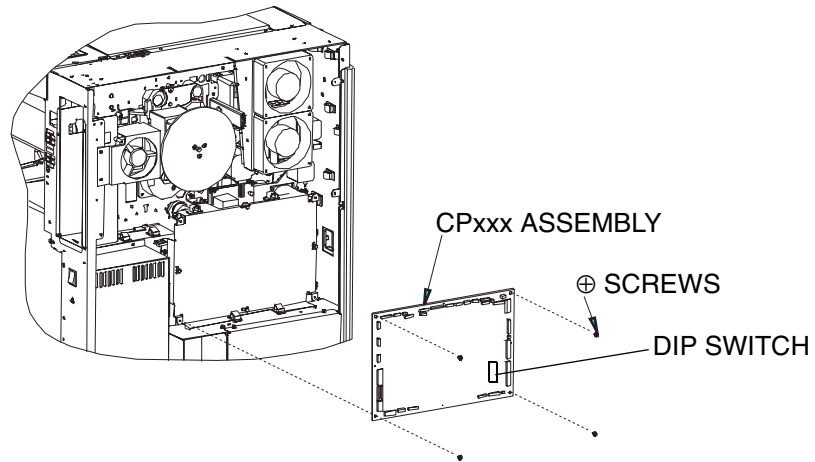


Figure 7-224. Removal of the CPxxx Assembly

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

**Note:** When the CPxxx Assembly is exchanged, mount the nvRAM of the old CPxxx Assembly in the new CPxxx Assembly.  
And, set the Dip Switch as the old CPxxx Assembly.



#### 7.1.5.1. (14) Removal of the High Voltage Power Supply (1)

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver, ⊕ Screwdriver (Short).

**[Disassembling Procedures]**

1. Remove the Cooling (DEV) Assembly. (Refer to item 7.1.5.1. (5) on page 7-197)
2. Remove the Recycle Tube Assembly. (Refer to item 7.1.2.6. (1) on page 7-59)
3. Remove the Bottle Box Assembly. (Refer to item 7.1.2.6. (3) on page 7-63)
4. Remove the RH Rear Side Cover (L) Assembly. (Refer to item 3.3.2. (1) on page 3-12)
5. Unscrew the two ⊕ screws to remove the Waste Bottle Holding Box.
6. Disconnect the connector from the High Voltage Power Supply (1).
7. Remove the three Faston Terminals.
8. Unscrew the ⊕ screw to remove the High Voltage Power Supply (1).

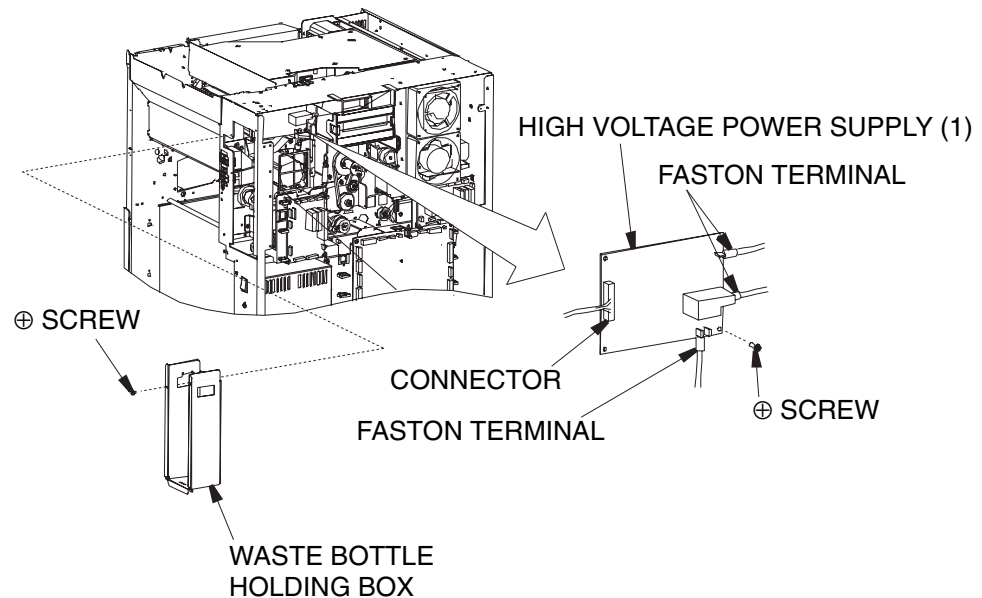


Figure 7-225. Removal of the High Voltage Power Supply

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

#### 7.1.5.1. (15) Removal of the High Voltage Power Supply (2)

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

Applicable jigs and tools: ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Remove the Rear Cover Assembly. ([Refer to item 3.3.2. \(1\) on page 3-12](#))
2. Disconnect the connector from the CPxxx Assembly.
3. Unscrew the ⊕ screw to remove the CP PK Assembly.
4. Remove the two Faston Terminals.
5. Unscrew the ⊕ screws to remove the High Voltage Power Supply (2).

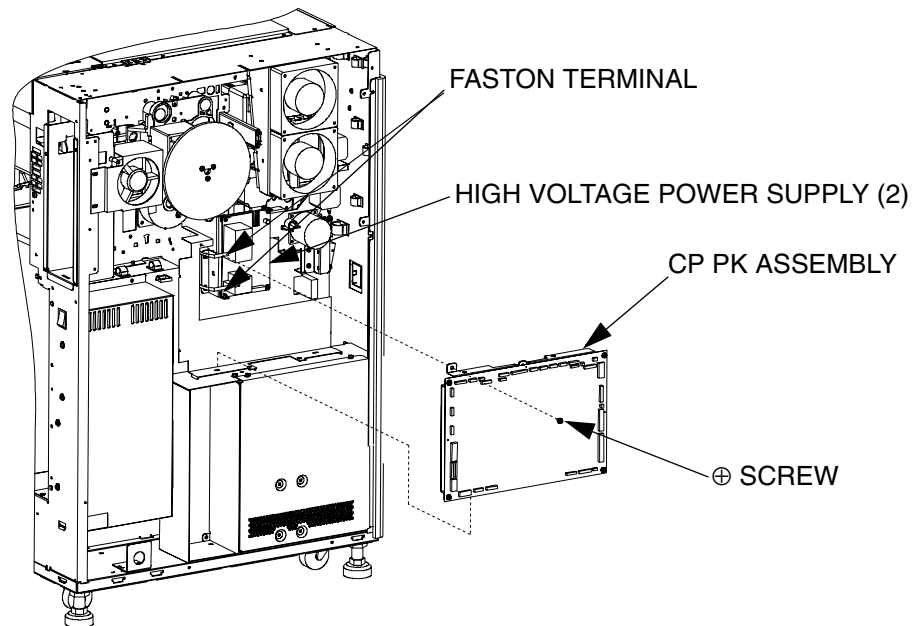


Figure 7-226. Removal of the High Voltage Power Supply (2)

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.



#### 7.1.5.1. (16) Removal of the Power Supply

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER and unplug prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Remove the Rear Cover Assembly. (Refer to item 3.3.2. (1) on page 3-12)
2. Remove the CE Box Assembly. (Refer to item 7.1.5.1. (20) on page 7-212) - Procedures 1 to 5.
3. Disconnect the connector from the Power Supply.
4. Unscrew the five ⊕ screws to remove the Power Cable.
5. Unscrew the three ⊕ screws to remove the Power Supply.

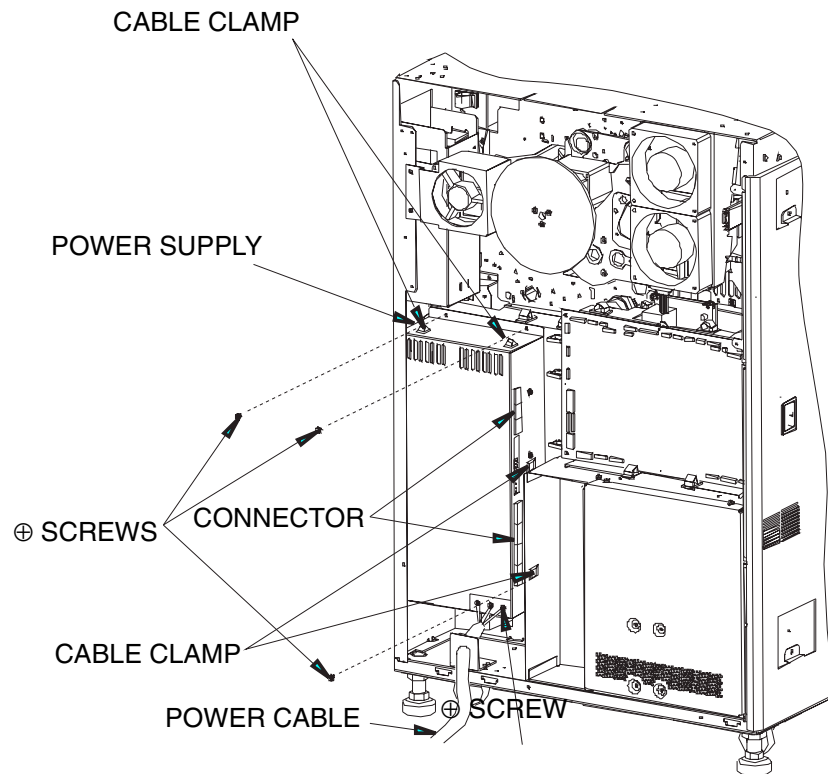


Figure 7-227. Removal of the Power Supply

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

**Note:** When exchanging the power supply, attach four cable clamps in the new power supply after removing them from the old power supply.

#### 7.1.5.1. (17) Removal of the OCxxx Assembly

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Remove the Rear Cover Assembly. ([Refer to item 3.3.2. \(1\) on page 3-12](#))
2. Disconnect the connector from the OCxxx Assembly.
3. Unscrew the two ⊕ screws to remove the OCxxx Assembly.

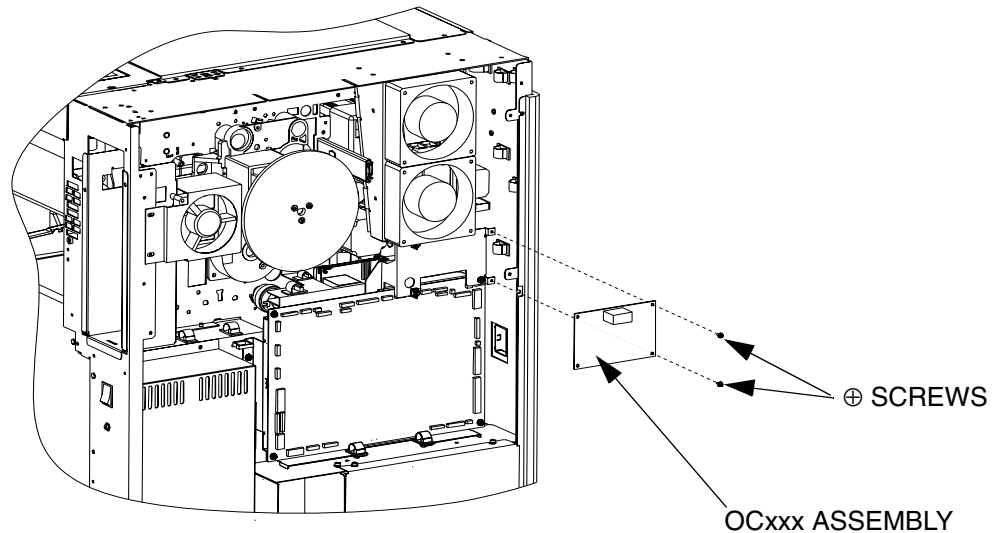


Figure 7-228. Removal of the OCxxx Assembly

**[Assembling Procedures]**

1. Perform the disassembling procedures in the reverse order.

#### 7.1.5.1. (18) Removal of the Front Air Filter

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools: None.**

**[Disassembling Procedures]**

1. Open the Front Cover. (Refer to item 3.2.1 on page 3-2)
2. Remove the Front Air Filter.

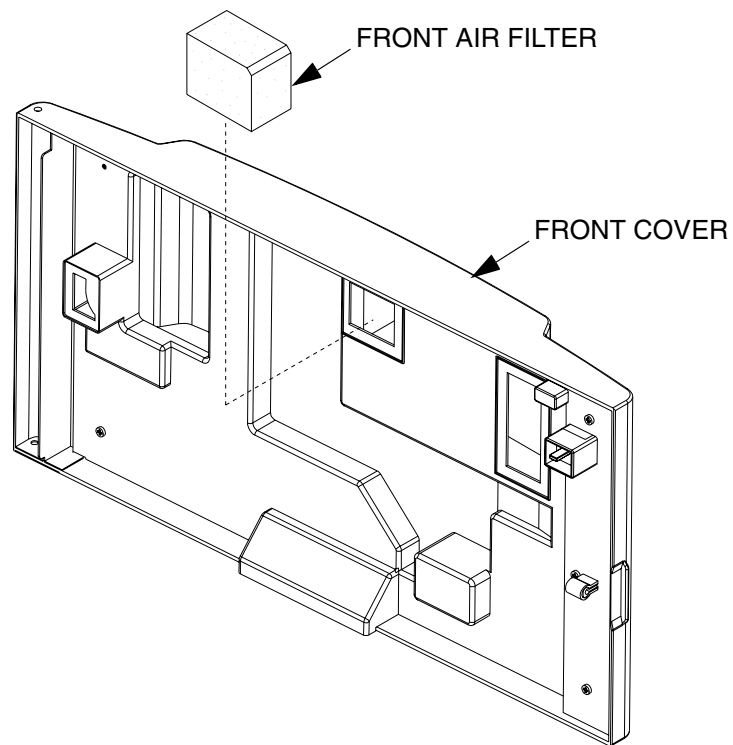


*Figure 7-229. Removal of the Front Air Filter*

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

#### 7.1.5.1. (19) Removal of the Inner Cover

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

Applicable jigs and tools: ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Open the Front Cover.
2. Remove the Rear Cover Assembly. (Refer to item 3.3.2. (1) on page 3-12)
3. Remove the Top Cover. (Refer to item 3.3.2. (1) on page 3-12)
4. Remove the Drum Unit. (Refer to item 7.1.2.1. (1) on page 7-4)
5. Remove the Developer Unit. (Refer to item 7.1.2.3. (1) on page 7-10)
6. Unscrew the two ⊕ screws to remove the Inner Cover (S).
7. Unscrew the seven ⊕ screws to move the Inner Cover.
8. Unscrew the ⊕ screws of the FD Cover Band to remove the Inner Cover.

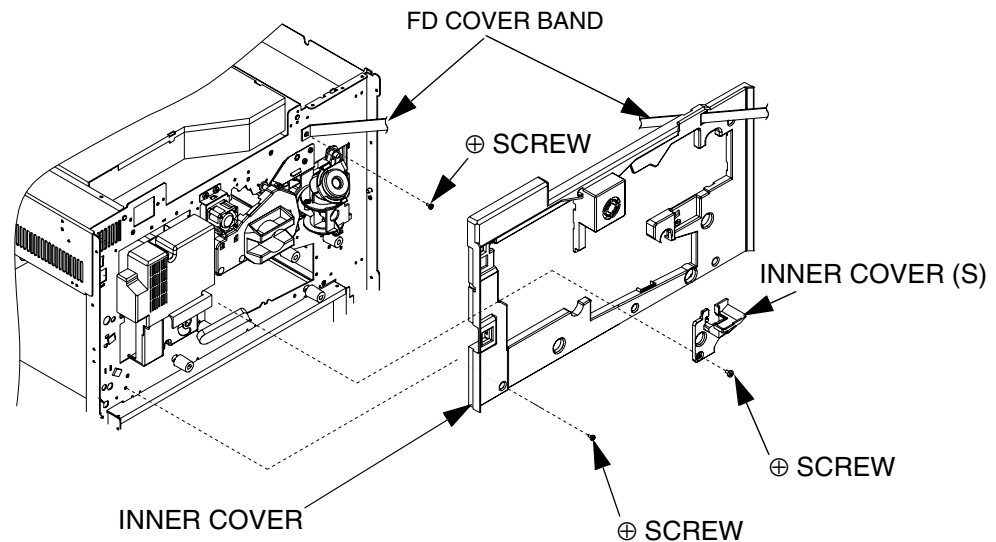


Figure 7-230. Removal of the Inner Cover

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.



#### 7.1.5.1. (20) Removal of the Switching Regulator (5V, 12V)

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

Applicable jigs and tools: ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Remove the Rear Cover Assembly. (Refer to item 3.3.2. (1) on page 3-12)
2. Disconnect the P/J236 Connector from the Power Supply.
3. Unscrew the four ⊕ screws (M4), and the four ⊕ screws (M3) to remove the CE Box Cover.
4. Unscrew the two ⊕ screws (M4) to remove the LV Plate.
5. Unscrew the seven ⊕ screws (M4) to remove the CE Box Assembly.
6. Unscrew the ten ⊕ screws to remove the Cables.
7. Unscrew the four ⊕ screws (M3) to remove the Switching Regulators.

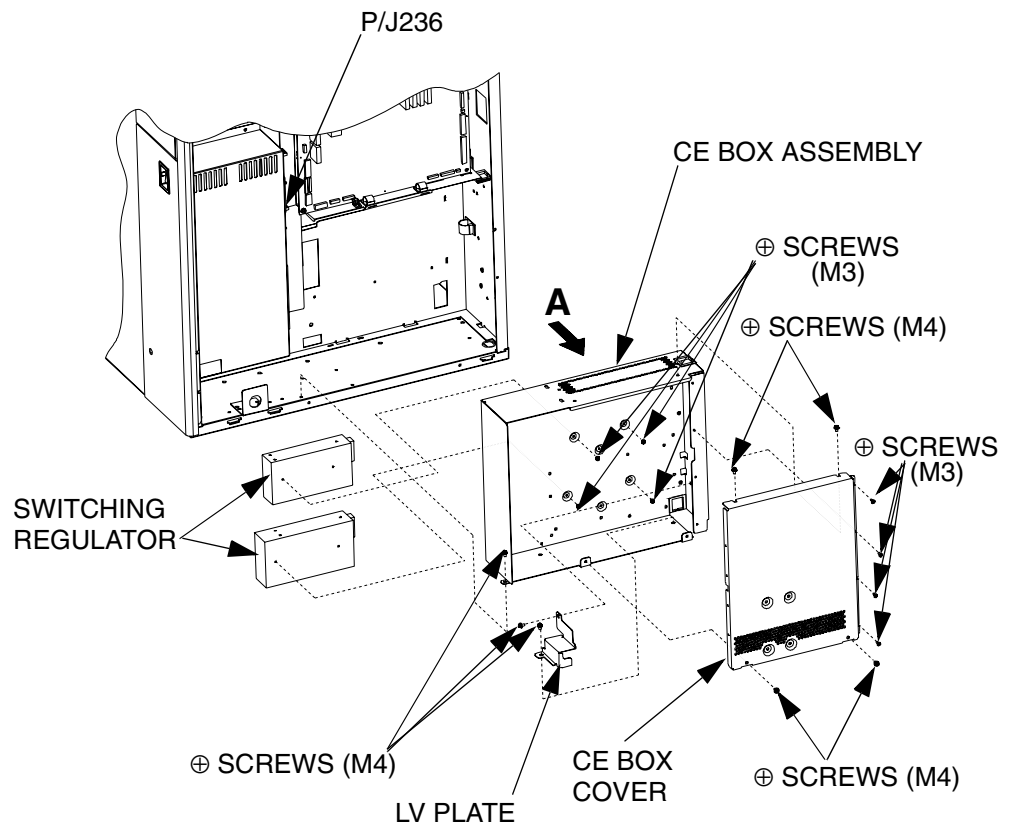


Figure 7-231. Removal of the Switching Regulator

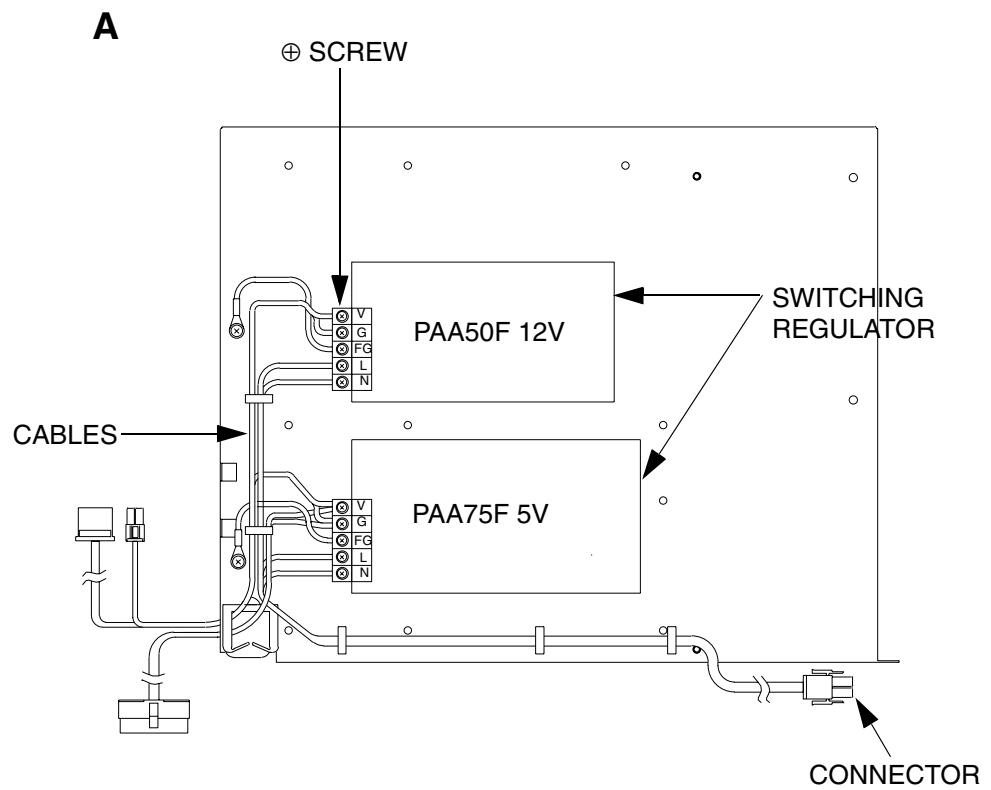


Figure 7-232. -2 Removal of the Switching Regulator

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

#### 7.1.5.1. (21) Removal of the nvRAM on CPxxx Assembly

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

Applicable jigs and tools: ⊕ Screwdriver, an exclusive tool to pull RAMs.

**[Disassembling Procedures]**

1. Remove the CPxxx Assembly. (Refer to item 7.1.5.1. (13) on page 7-205)
2. Remove the nvRAM at "5D" with a pulling tool.

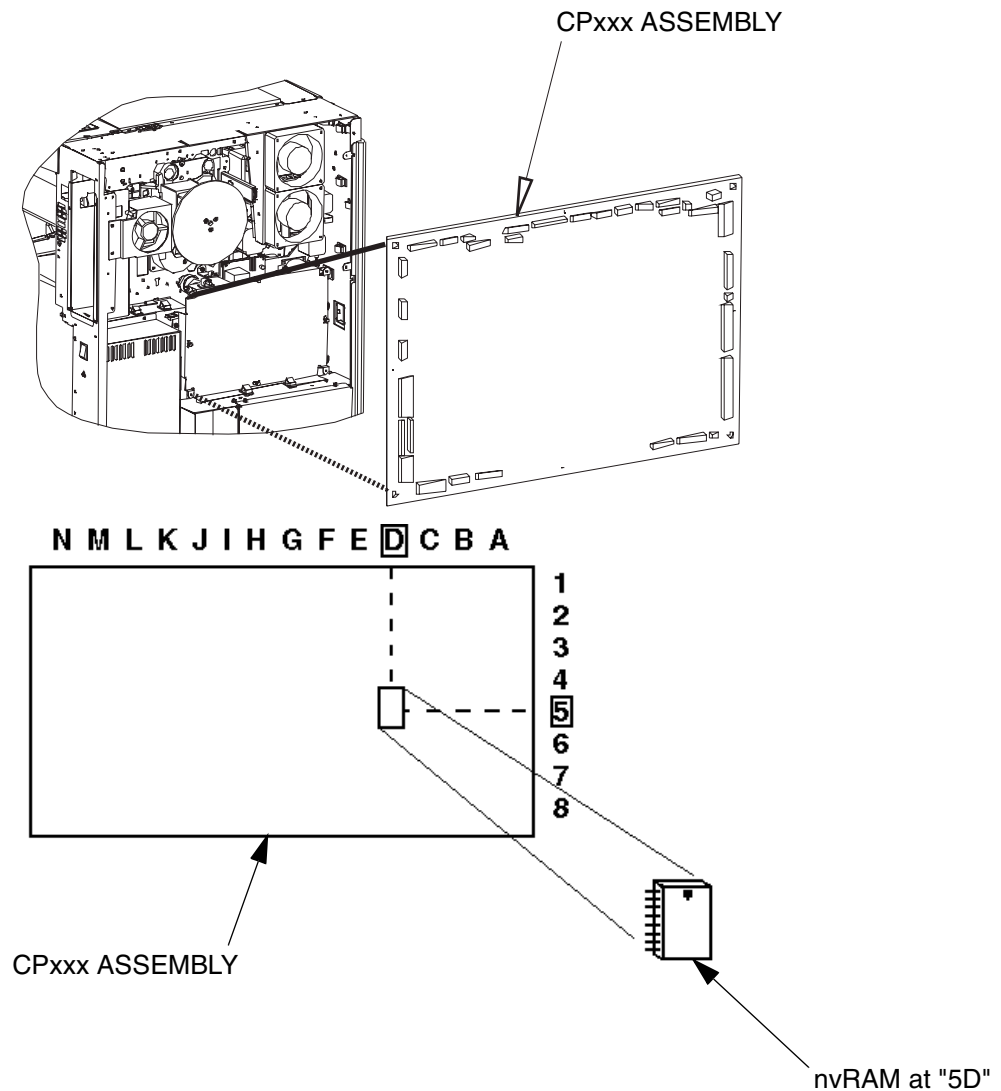


Figure 7-233. Removal of the nvRAM on CPxxx Assembly

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

**Note:** When CPxxx Assembly is exchanged.

Restore the nvRAM data of the CPxxx Assembly backed up into the HDD to the nvRAM on the new CPxxx Assembly. (Refer to the Controller Maintenance Manual)

#### 7.1.5.1. (22) Removal of the AC011 Ass'y

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools: Screwdriver.**

**[Disassembling Procedures]**

1. Remove the Rear Cover Assembly. (Refer to item 3.3.2. (1) on page 3-12)
2. Remove the CE Box Assembly. (Refer to item 7.1.5.1. (20) on page 7-212) - Procedures 1 to 5.
3. Unscrew the two ⊕ screws (M3) to remove the AC Detect PK Holder.
4. Disconnect the two connectors of AC011 Ass'y.
5. Unhook the four holders to remove the AC011 Ass'y.

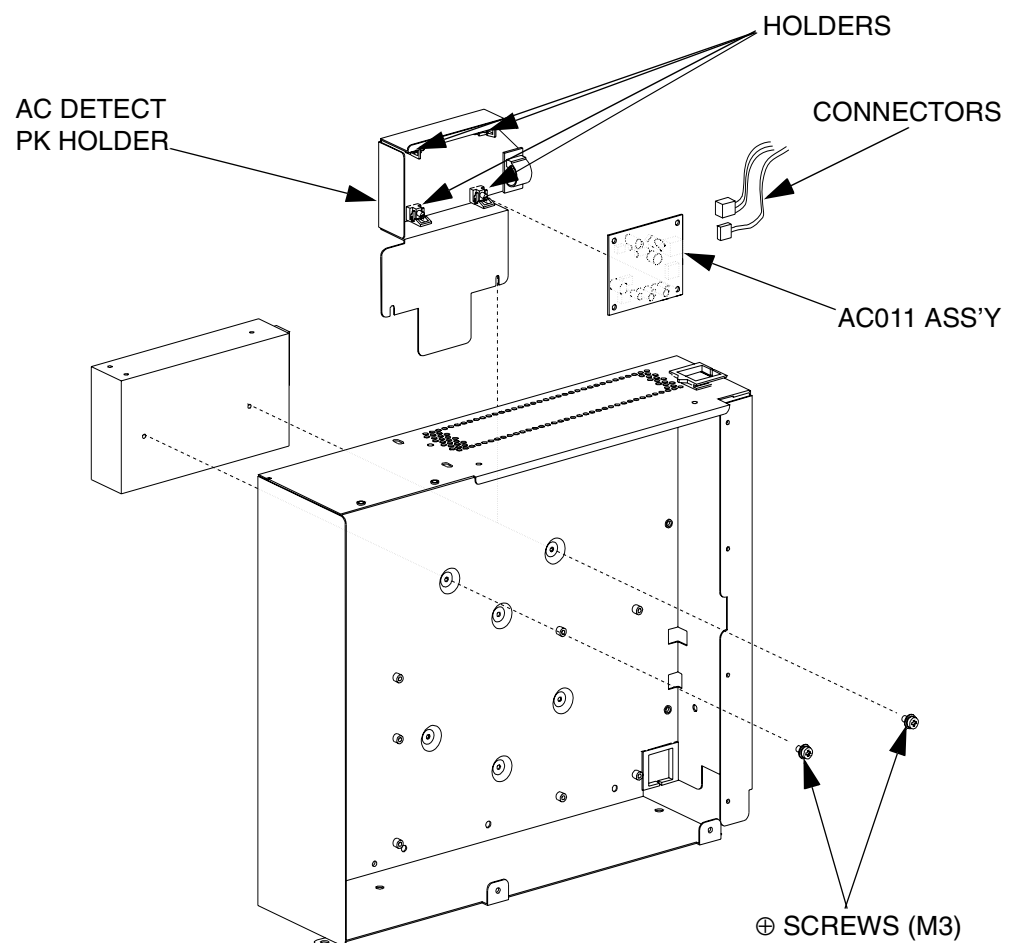


Figure 7-234. Removal of the AC011 Ass'y

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

#### 7.1.5.1. (23) Removal of the Heater Driver

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools: Screwdriver.**

**[Disassembling Procedures]**

1. Remove the Rear Cover Assembly. ([Refer to item 3.3.2. \(1\) on page 3-12](#))
2. Unscrew the two ⊕ screws (M4) to remove the Cord Lock Holder and PK Holder(1).
3. Unscrew the ⊕ screw (M3) to remove the PK Cover.
4. Disconnect the three connectors of the Heater Driver.
5. Unscrew the four ⊕ screws (M3) to remove the Heater Driver.

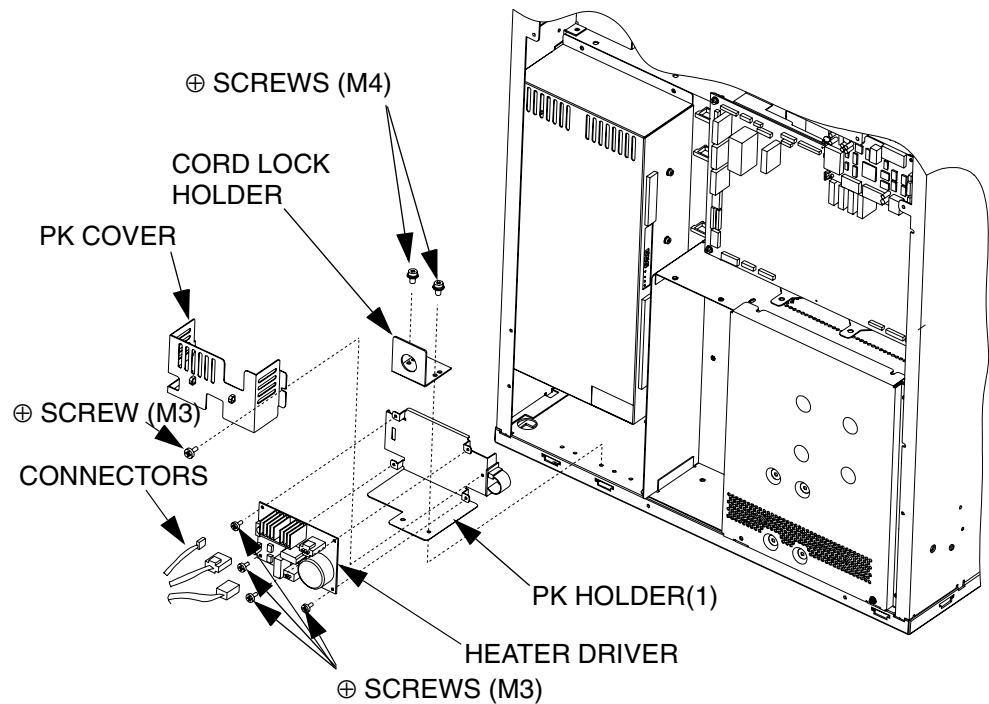


Figure 7-235. Removal of the Heater Driver

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

## 7.2. High Capacity Hopper Parts

### 7.2.1. Removal of the Size Sensor

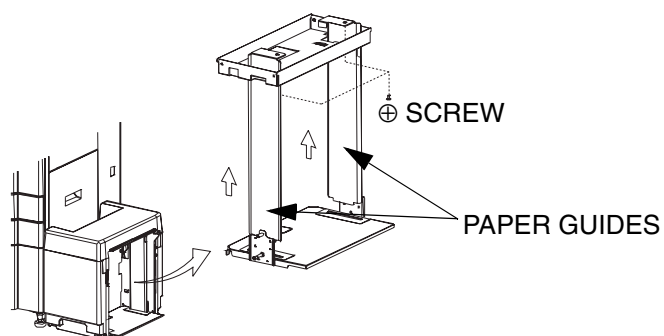
**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

Applicable jigs and tools: ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Unscrew the screw to remove the Door.
2. Unscrew the two ⊕ screws to remove the Paper Guide on both sides.
3. Disconnect the connector to remove the Size Sensor.



**NOTE: NOTICE THE DIRECTION**

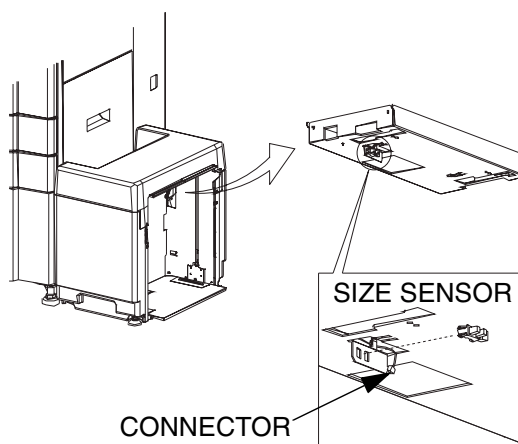
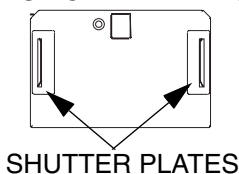


Figure 7-236. Removal of the Size Sensor

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

## 7.2.2. Removal of the Pick Roller

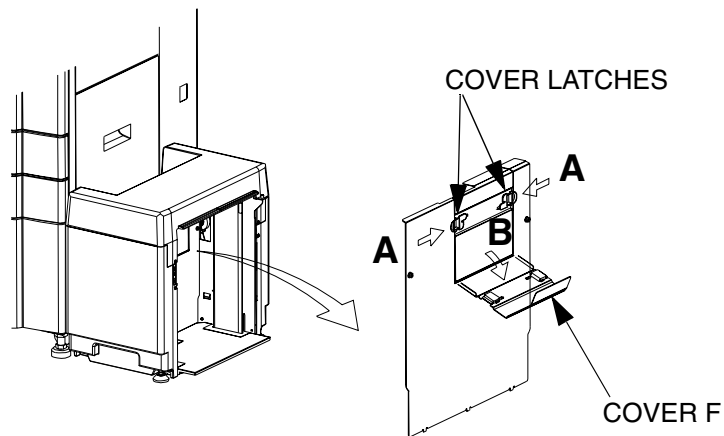
**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Unscrew the ⊕ screw to remove the Door.
2. Slide the Cover Latches in the directions of the arrow **A** and open the Cover F in the direction of arrow **B**.
3. Remove the Pick Roller.



**NOTE:** THIS ROLLER  
CLUTCH COLOR

WHITE

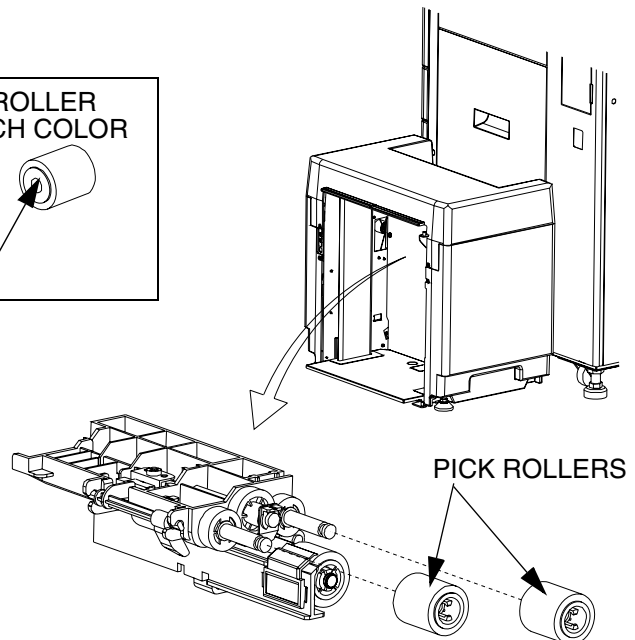


Figure 7-237. Removal of the Pick Roller

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

## 7.2.3. Removal of the Separator Assembly

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Unscrew the ⊕ screw to remove the Door.
2. Open the Cover F. (Refer to item 7.2.2 on page 7-218)
3. Remove the Separator Assembly.

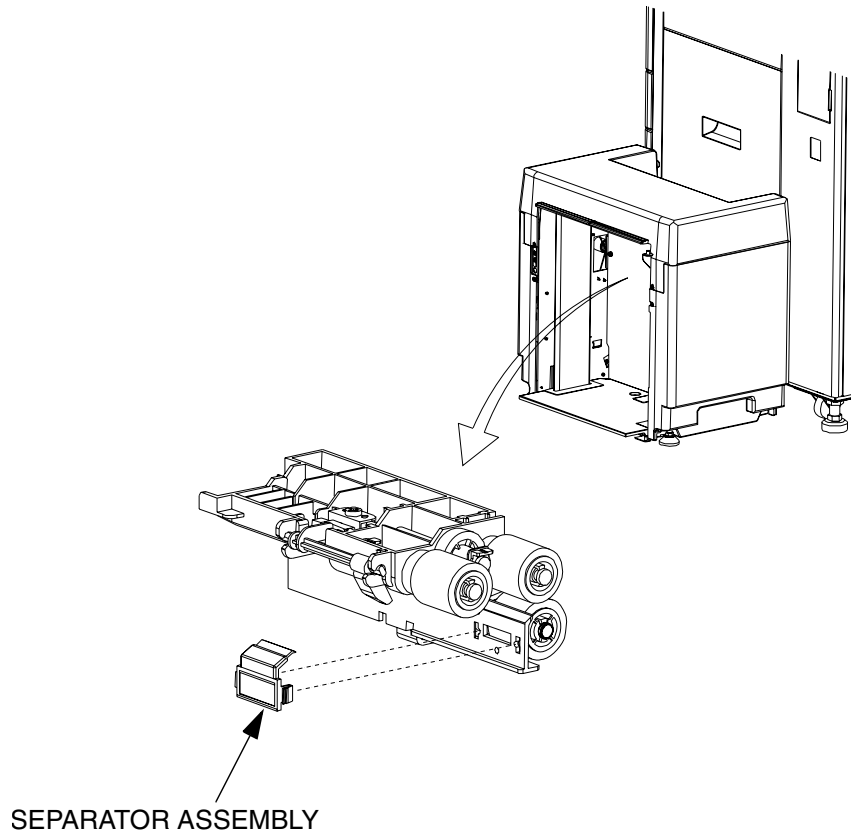


*Figure 7-238. Removal of the Separator Assembly*

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

**[Checks]**

Make sure that the snap-fit parts of the Separator Assembly are correctly fastened.



## 7.2.4. Removal of the Separator Roller

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Unscrew the ⊕ screw to remove the Door.
2. Open the Cover F. (Refer to item 7.2.2 on page 7-218)
3. Remove the Separator Assembly. (Refer to item 7.2.3 on page 7-219)
4. Remove the Separator Roller.

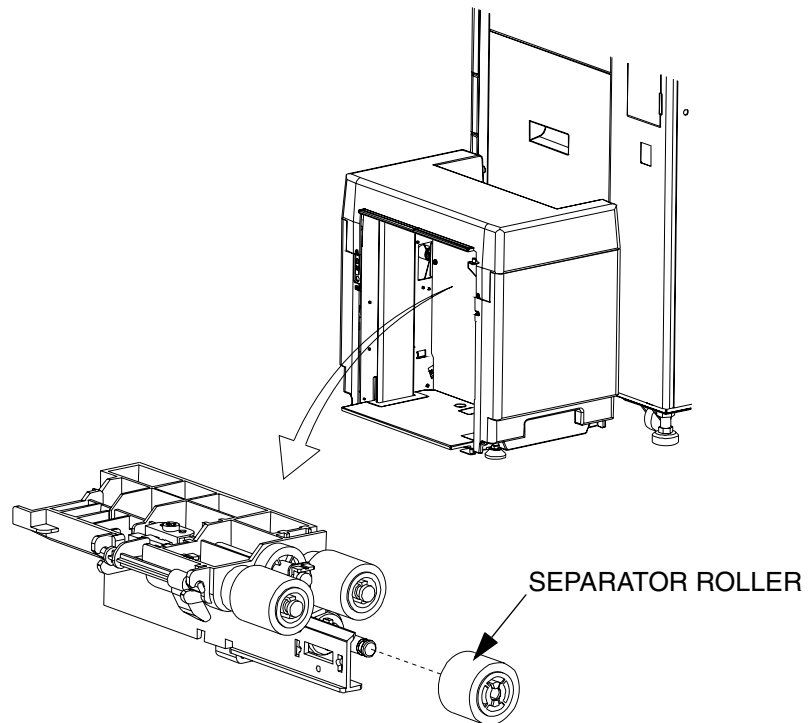


*Figure 7-239. Removal of the Separator Roller*

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

## 7.2.5. Removal of the High Capacity Hopper

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Pull out the 2000 Sheet Hopper.
2. Unscrew the two ⊕ screws to remove the High Capacity Hopper in the direction of the arrow.
3. Disconnect the connectors.

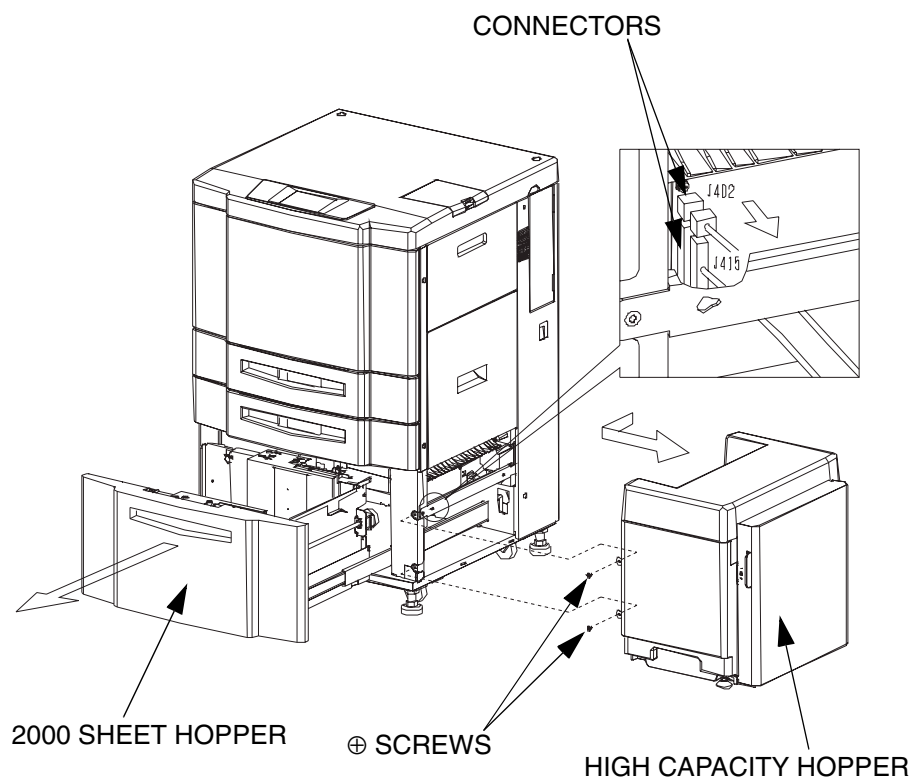


Figure 7-240. Removal of the High Capacity Hopper

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

## 7.2.6. Removal of the Pressure Roller Assembly

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Pull out the 2000 Sheet Hopper.
2. Unscrew the two ⊕ screws to remove the High Capacity Hopper in the direction of the arrow.
3. Disconnect the connectors.
4. Unscrew the ⊕ screw to remove the Door.
5. Remove the Top Cover.
6. Unscrew the four ⊕ screws to remove the Upper Case.
7. Remove the spring to remove the Pressure Roller Assembly.

PRESSURE ROLLER ASSEMBLY

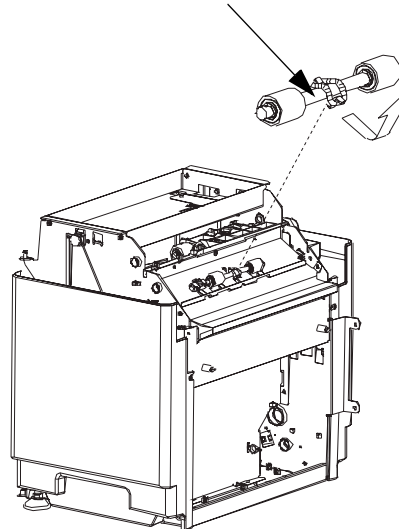


Figure 7-241. Removal of the Pressure Roller Assembly

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

## 7.2.7. Removal of the Sensor Holder

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Pull out the 2000 Sheet Hopper.
2. Unscrew the two ⊕ screws to remove the High Capacity Hopper in the direction of the arrow.
3. Disconnect the connectors.
4. Unscrew the ⊕ screw to remove the Door.
5. Remove the Top Cover.
6. Unscrew the four ⊕ screws to remove the Upper case.
7. Disconnect the connector.
8. Remove the Sensor Assembly to remove the Sensor Holder.

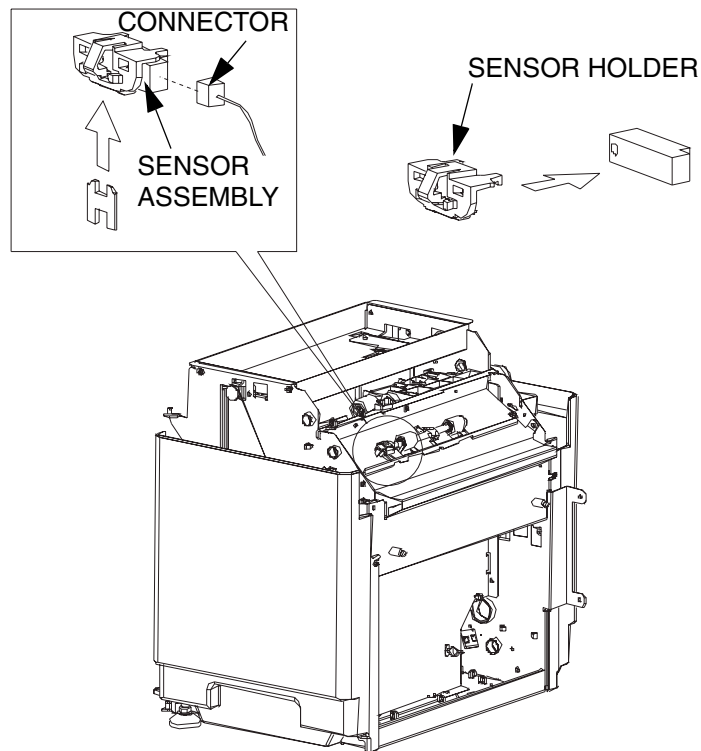


Figure 7-242. Removal of the Sensor Holder

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

**[Checks]**

Make sure that the snap-fit parts of the Sensor Holder are correctly fastened.

## 7.2.8. Removal of the Feed Sensor

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Pull out the 2000 Sheet Hopper.
2. Unscrew the two ⊕ screws to remove the High Capacity Hopper in the direction of the arrow.
3. Disconnect the connectors.
4. Unscrew the ⊕ screw to remove the Door.
5. Remove the Top Cover.
6. Unscrew the four ⊕ screws to remove the Upper Case.
7. Disconnect the connector.
8. Remove the Sensor Assembly to remove the Feed Sensor.

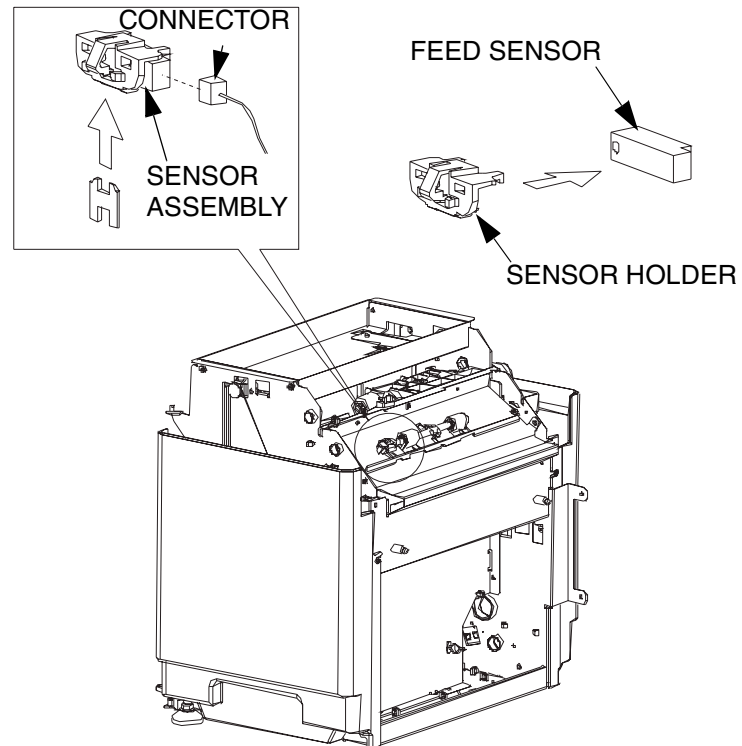


Figure 7-243. Removal of the Feed Sensor

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

**[Checks]**

Make sure that the snap-fit parts of the Sensor Holder are correctly fastened.

## 7.2.9. Removal of the Top Cover Sensor

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Pull out the 2000 Sheet Hopper.
2. Unscrew the two ⊕ screws to remove the High Capacity Hopper in the direction of the arrow.
3. Disconnect the connectors.
4. Unscrew the ⊕ screw to remove the Door.
5. Remove the Top Cover.
6. Unscrew the four ⊕ screws to remove the Upper case.
7. Disconnect the connector to remove the Top Cover Sensor.

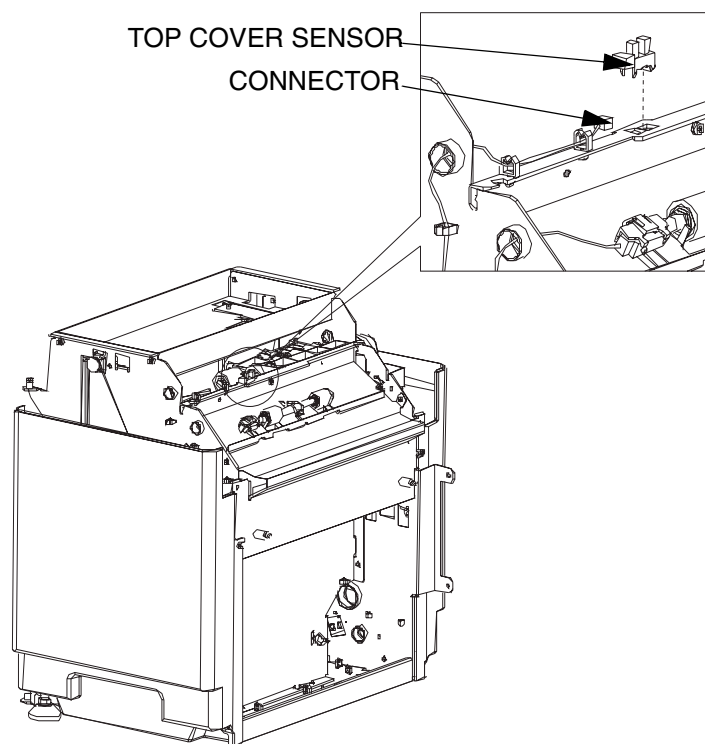


Figure 7-244. Removal of the Top Cover Sensor

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

## 7.2.10. Removal of the AHxxx Assembly

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Pull out the 2000 Sheet Hopper.
2. Unscrew the two ⊕ screws to remove the High Capacity Hopper in the direction of the arrow.
3. Disconnect the connectors.
4. Unscrew the ⊕ screw to remove the Door.
5. Remove the Top Cover.
6. Unscrew the four ⊕ screws to remove the Upper Case.
7. Unscrew the four ⊕ screws to remove the Side Case.
8. Disconnect the connectors.
9. Unscrew the two ⊕ screws to remove the AHxxx Assembly.

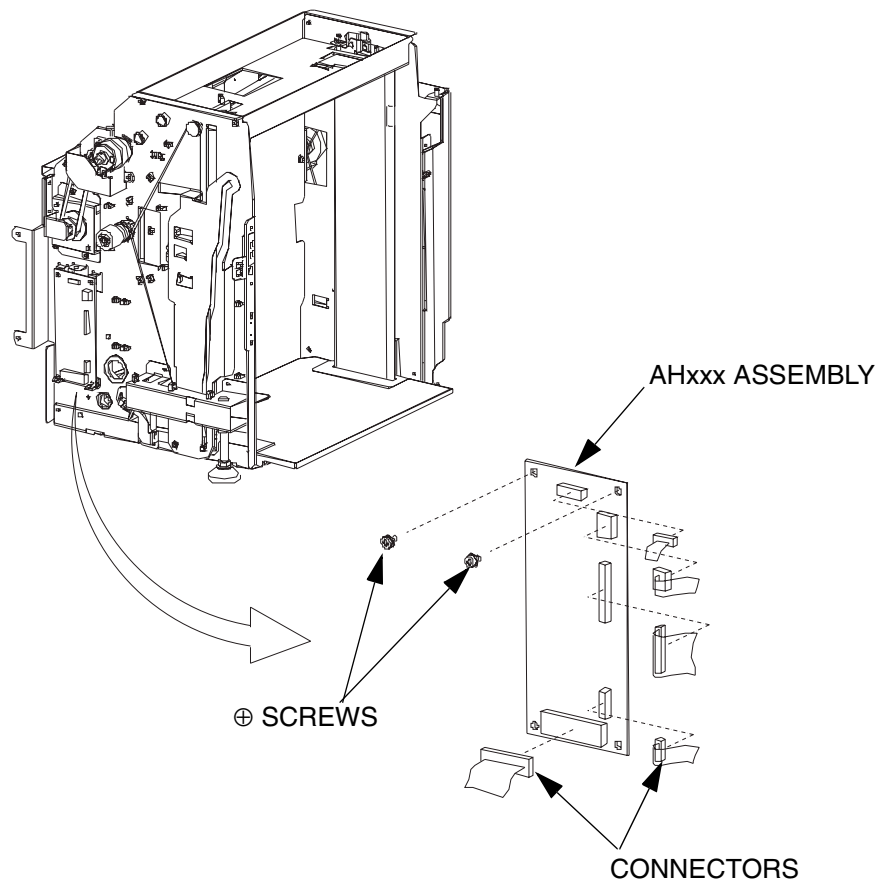


Figure 7-245. Removal of the AHxxx Assembly

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

## 7.2.11. Removal of the Rest Sensor

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Pull out the 2000 Sheet Hopper.
2. Unscrew the two ⊕ screws to remove the High Capacity Hopper in the direction of the arrow.
3. Disconnect the connectors.
4. Unscrew the ⊕ screw to remove the Door.
5. Remove the Top Cover.
6. Unscrew the four ⊕ screws to remove the Upper Case.
7. Unscrew the four ⊕ screws to remove the Side Case.
8. Remove the two E-Rings to remove the Position Arm.
9. Disconnect the connectors to remove the Rest Sensor.

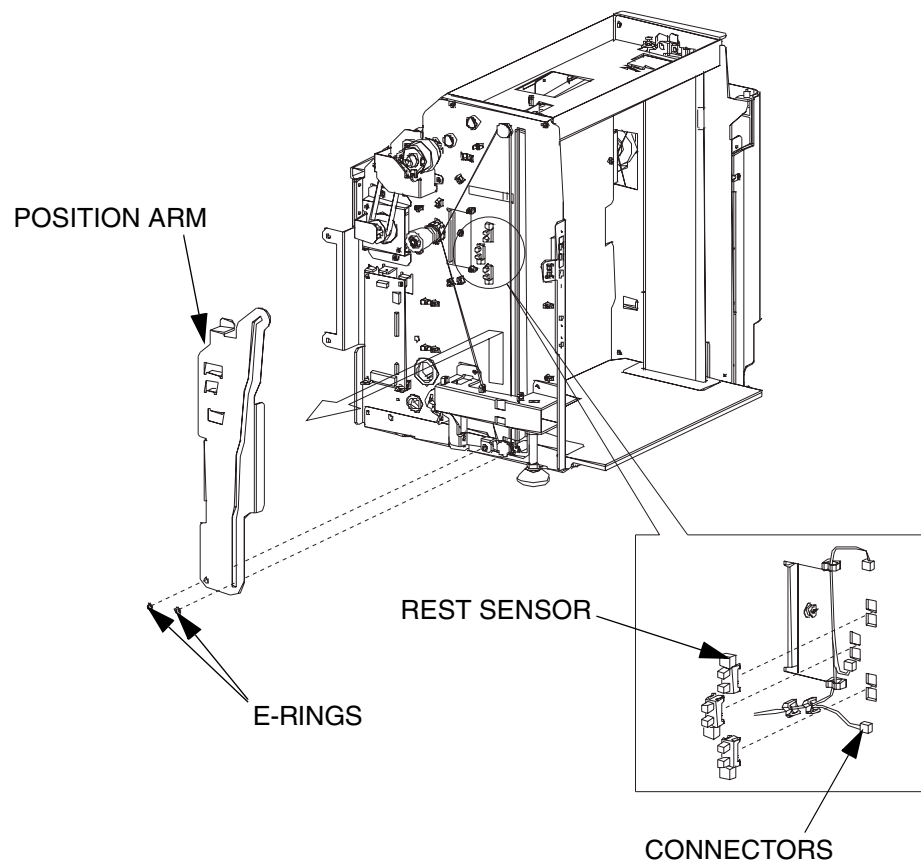


Figure 7-246. Removal of the Rest Sensor

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.



## 7.2.12. Removal of the Door Sensor

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Pull out the 2000 Sheet Hopper.
2. Unscrew the two ⊕ screws to remove the High Capacity Hopper in the direction of the arrow.
3. Disconnect the connectors.
4. Unscrew the ⊕ screw to remove the Door.
5. Remove the Top Cover.
6. Unscrew the four ⊕ screws to remove the Upper Case.
7. Unscrew the four ⊕ screws to remove the Side Case.
8. Disconnect the connector to remove the Door Sensor.

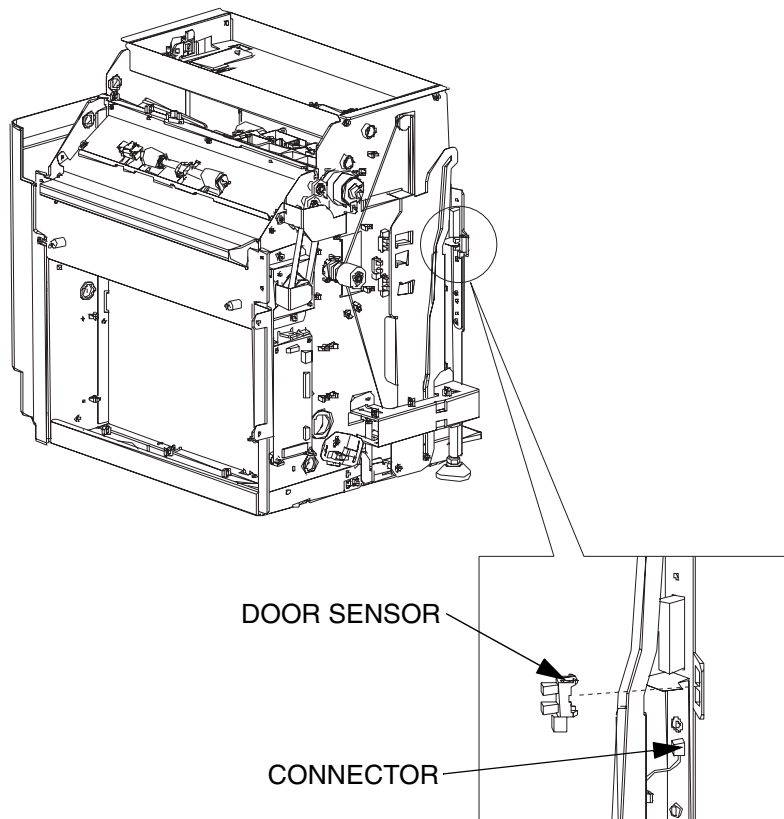


Figure 7-247. Removal of the Door Sensor

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

## 7.2.13. Removal of the Over Run Sensor

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Pull out the 2000 Sheet Hopper.
2. Unscrew the two ⊕ screws to remove the High Capacity Hopper in the direction of the arrow.
3. Disconnect the connectors.
4. Unscrew the ⊕ screw to remove the Door.
5. Remove the Top Cover.
6. Unscrew the four ⊕ screws to remove the Upper Case.
7. Unscrew the four ⊕ screws to remove the Side Case.
8. Disconnect the connector to remove the Over Run Sensor.

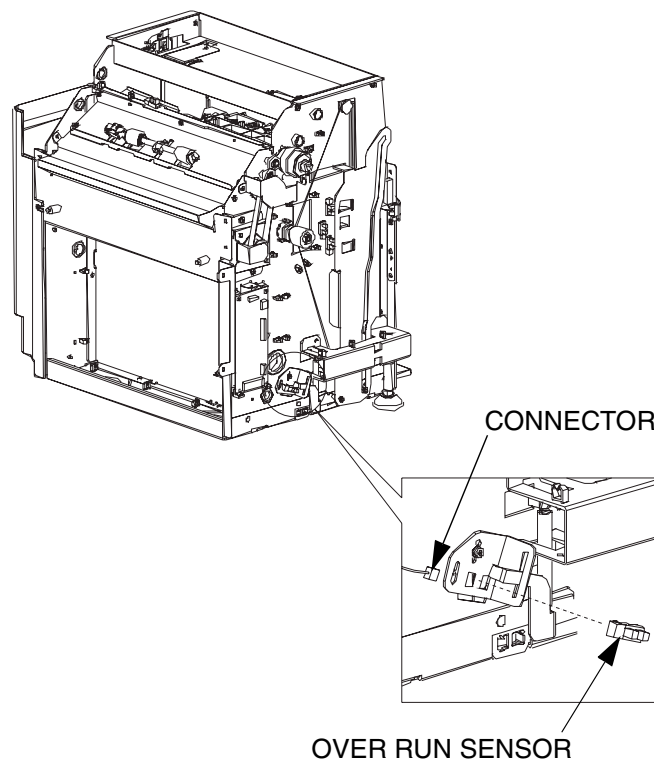


Figure 7-248. Removal of the Over Run Sensor

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

## 7.2.14. Removal of the Lower Limit Sensor

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Unscrew the ⊕ screw to remove the Door.
2. Unscrew the two ⊕ screws to remove the Paper Guides on both sides. (Refer to item 7.2.1 on page 7-217)
3. Open the Cover F. (Refer to item 7.2.2 on page 7-218)
4. Remove the Spring F (on one side only) in the direction of arrow **A**.
5. Unscrew the four ⊕ screws to remove the Front Frame Assembly.
6. Assemble the Door.
7. Power on, and then power off when the Table goes up to the middle position.
8. Pull out the 2000 Sheet Hopper.
9. Unscrew the two ⊕ screws to remove the High Capacity Hopper in the direction of the arrow.
10. Disconnect the connectors.
11. Unscrew the ⊕ screw to remove the Door.
12. Remove the Top Cover.
13. Unscrew the four ⊕ screws to remove the Upper Case.
14. Unscrew the four ⊕ screws to remove the Side Case.
15. Disconnect the connectors to remove the Lower Limit Sensor.

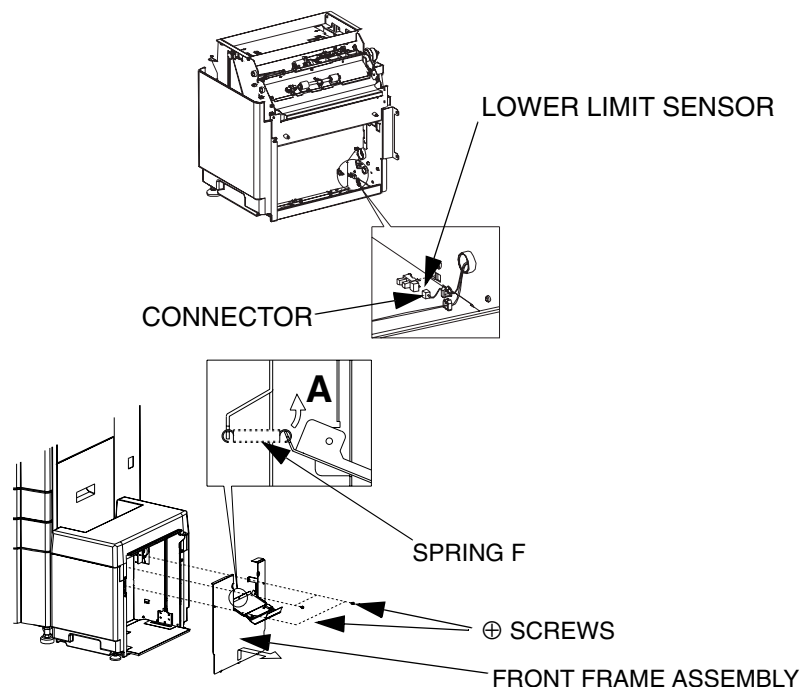


Figure 7-249. Removal of the Lower Limit Sensor

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

## 7.2.15. Removal of the Hopper Feed Motor

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Pull out the 2000 Sheet Hopper.
2. Unscrew the two ⊕ screws to remove the High Capacity Hopper in the direction of the arrow.
3. Disconnect the connector.
4. Unscrew the ⊕ screw to remove the Door.
5. Remove the Top Cover.
6. Unscrew the four ⊕ screws to remove the Upper Case.
7. Unscrew the four ⊕ screws to remove the Side Case.
8. Unscrew the two ⊕ screws to remove the Side Cover.
9. Loosen the two ⊕ screws of the Motor Assembly.

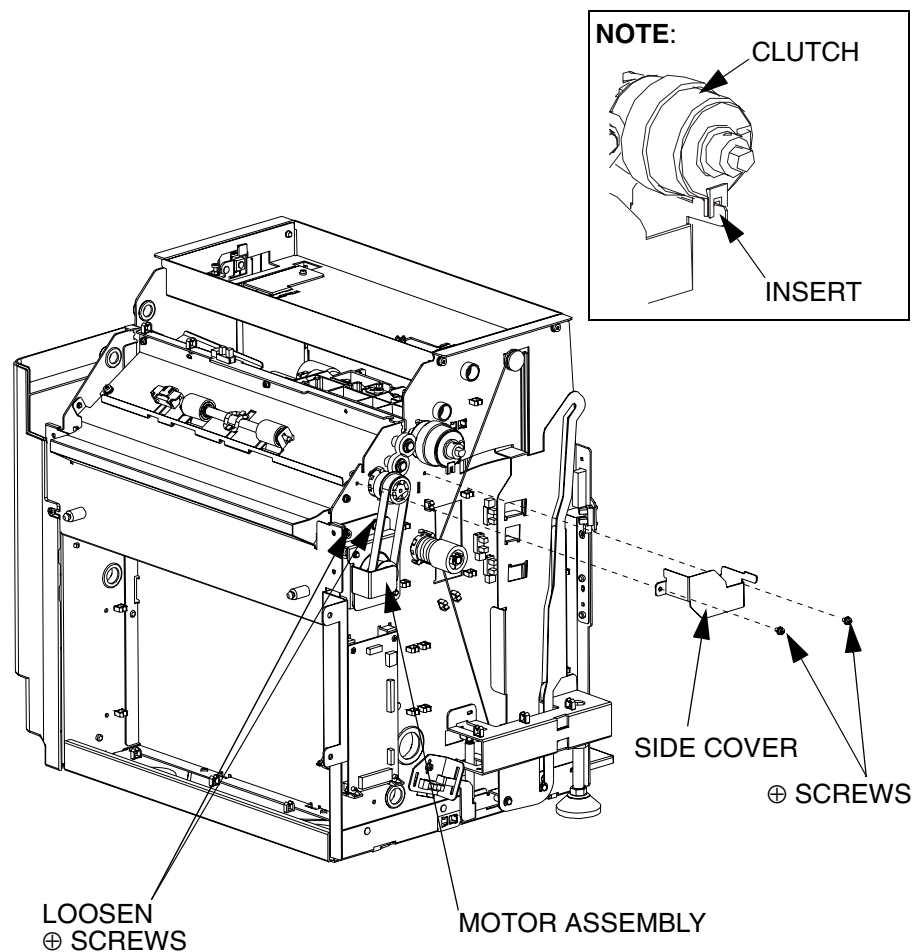


Figure 7-250. Removal of the Hopper Feed Motor

10. Disconnect the connector.
11. Remove the two ⊕ screws to remove the Motor Assembly.
12. Remove the two ⊕ screws to remove the Hopper Feed Motor.

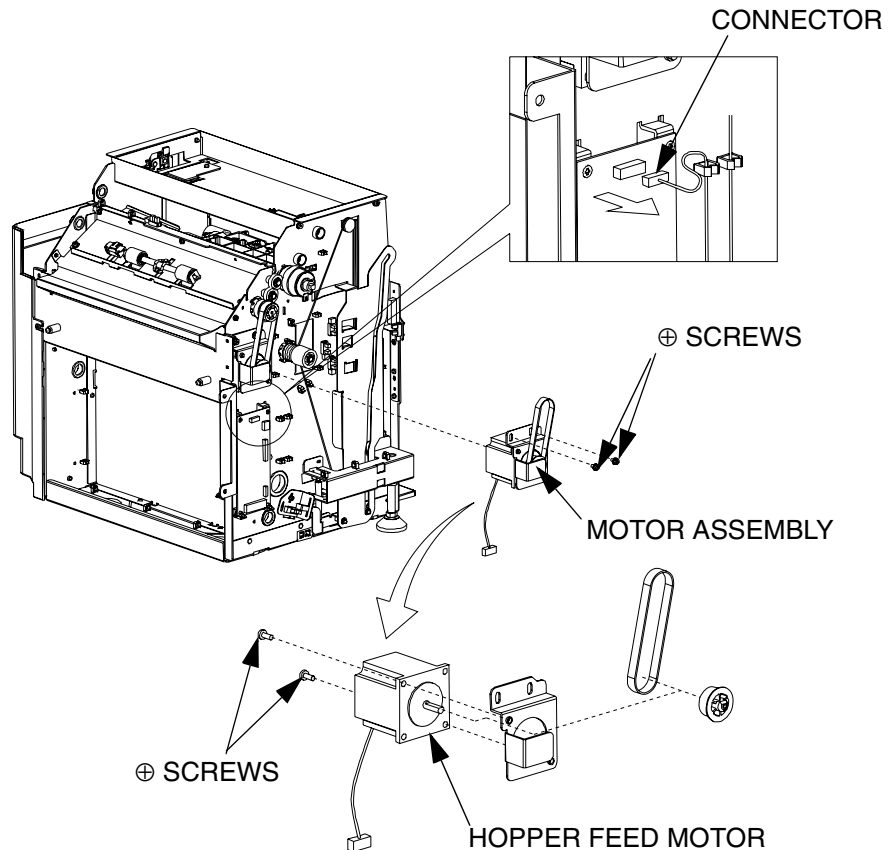


Figure 7-251. Removal of the Hopper Feed Motor

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

**Note:** Adjust the Motor Assembly and fix it with ⊕ screws.  
The tension of the Timing Belt is determined by self weight of the Motor Assembly.

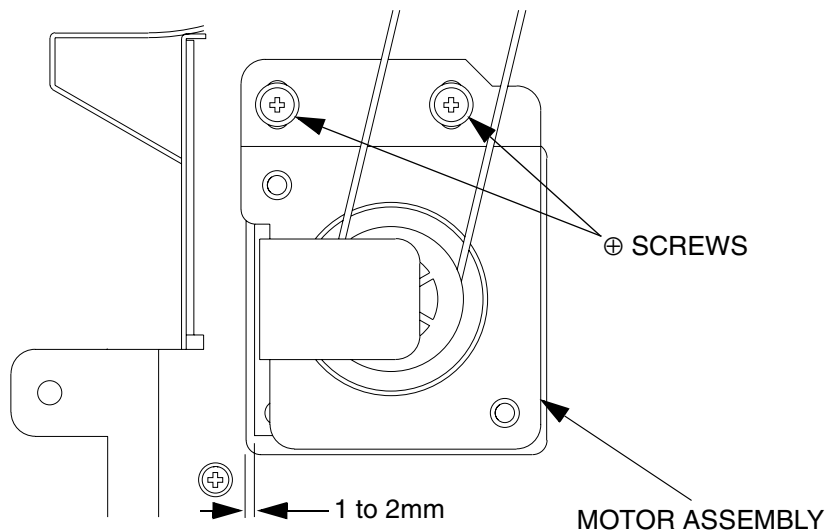


Figure 7-252. Adjustment of the Hopper Feed Motor

## 7.2.16. Removal of the Timing Belt

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Pull out the 2000 Sheet Hopper.
2. Unscrew the two ⊕ screws to remove the High Capacity Hopper in the direction of the arrow.
3. Disconnect the connector.
4. Unscrew the ⊕ screw to remove the Door.
5. Remove the Top Cover.
6. Unscrew the four ⊕ screws to remove the Upper Case.
7. Unscrew the four ⊕ screws to remove the Side Case.
8. Unscrew the two ⊕ screws to remove the Side Cover. (Refer to item 7.2.15 on page 7-231)
9. Loosen the two ⊕ screws of the Motor Assembly. (Refer to item 7.2.15 on page 7-231)
10. Disconnect the connector. (Refer to item 7.2.15 on page 7-231)
11. Remove the two ⊕ screws to remove the Motor Assembly. (Refer to item 7.2.15 on page 7-231)
12. Remove the two ⊕ screws to remove the Timing Belt.

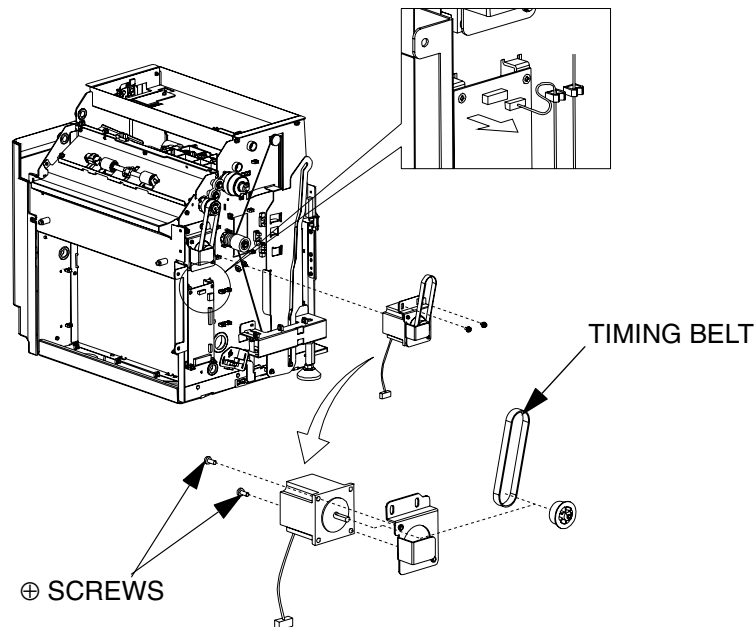


Figure 7-253. Removal of the Timing Belt

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

**Note:** Adjust the Motor Assembly and fix it with ⊕ screws. (Refer to item 7.2.15 on page 7-231)  
The tension of the Timing Belt is determined by self weight of the Motor Assembly.

## 7.2.17. Removal of the Rubber Roller Assembly

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Pull out the 2000 Sheet Hopper.
2. Unscrew the two ⊕ screws to remove the High Capacity Hopper in the direction of the arrow.
3. Disconnect the connector.
4. Unscrew the ⊕ screw to remove the Door.
5. Remove the Top Cover.
6. Unscrew the four ⊕ screws to remove the Upper Case.
7. Unscrew the four ⊕ screws to remove the Side Case.
8. Unscrew the two ⊕ screws to remove the Side Cover. (Refer to item 7.2.15 on page 7-231)
9. Loosen the two ⊕ screws of the Motor Assembly. (Refer to item 7.2.15 on page 7-231)
10. Remove the IS Drive Pulley and the IS Drive Gear.

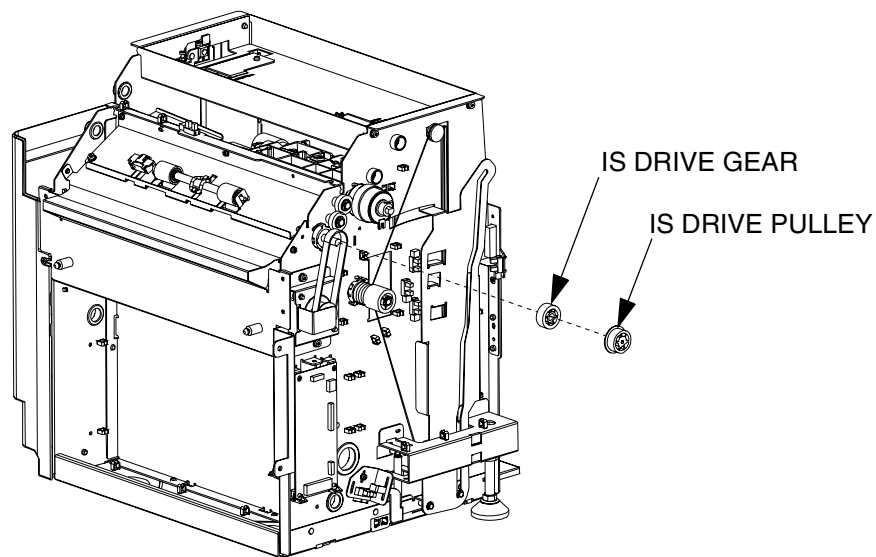


Figure 7-254. Removal of the Rubber Roller Assembly

11. Unscrew the four ⊕ screws to remove the Side Case.
12. Disconnect the connector.
13. Unscrew the four ⊕ screws to remove the Pressure Roller Base Assembly.
14. Unscrew the five ⊕ screws to remove the Rear Frame.

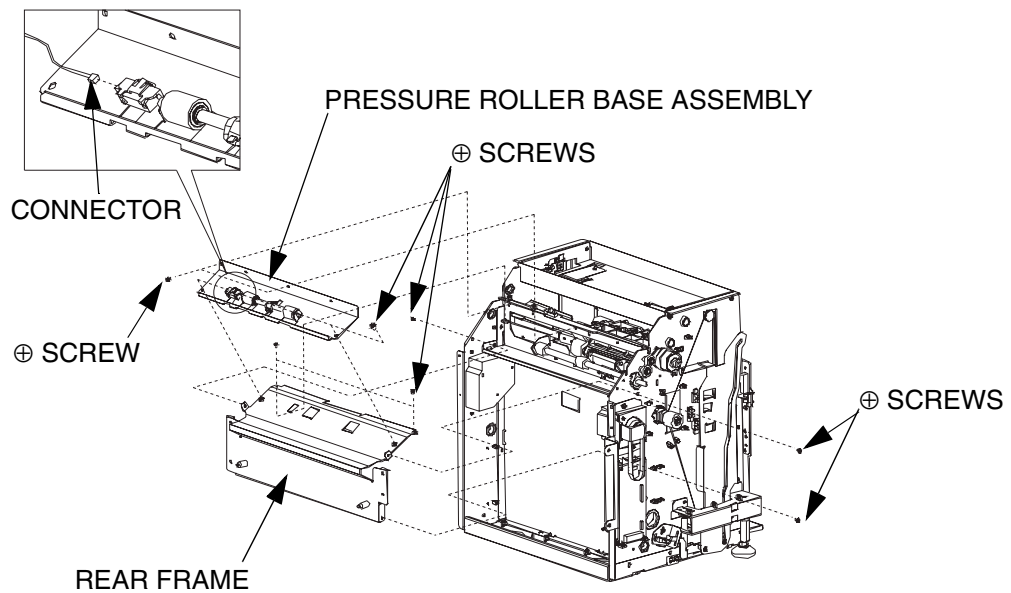


Figure 7-255. Removal of the Rubber Roller Assembly



15. Turn the B.B Housing to pull out the Rubber Roller Assembly.

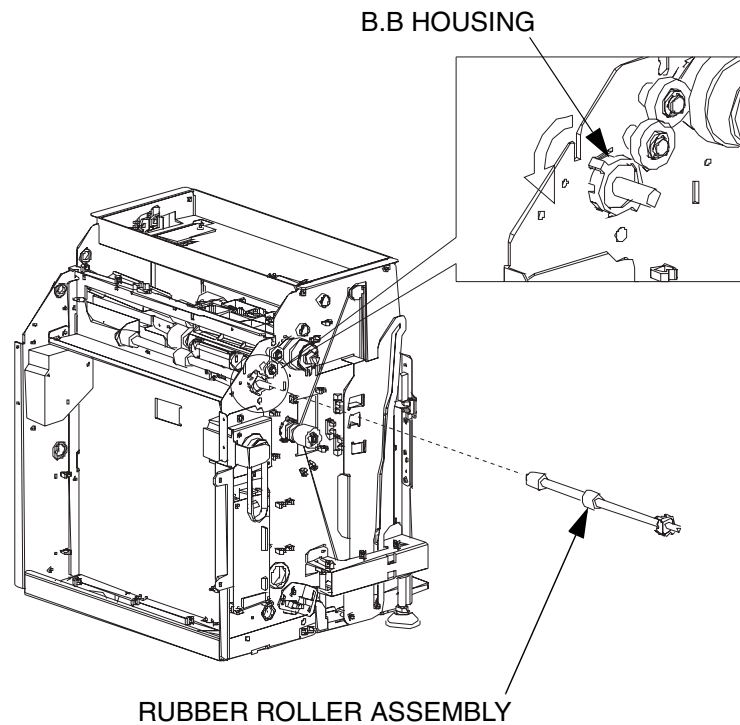


Figure 7-256. Removal of the Rubber Roller Assembly

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

**Note:** Adjust the Motor Assembly and fix it with  $\oplus$  screws. ([Refer to item 7.2.15 on page 7-231](#))  
The tension of the Timing Belt is determined by self weight of the Motor Assembly.

## 7.2.18. Removal of the Hopper Table Motor

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Pull out the 2000 Sheet Hopper.
2. Unscrew the two ⊕ screws to remove the High Capacity Hopper in the direction of the arrow.
3. Disconnect the connector.
4. Unscrew the ⊕ screw to remove the Door.
5. Remove the Top Cover.
6. Unscrew the four ⊕ screws to remove the Upper Case.
7. Unscrew the four ⊕ screws to remove the Side Case.
8. Unscrew the two screws to remove the T Motor Bracket, the two Sleeve Bearings, the Table Motor Gear and the 3x14 Pin.

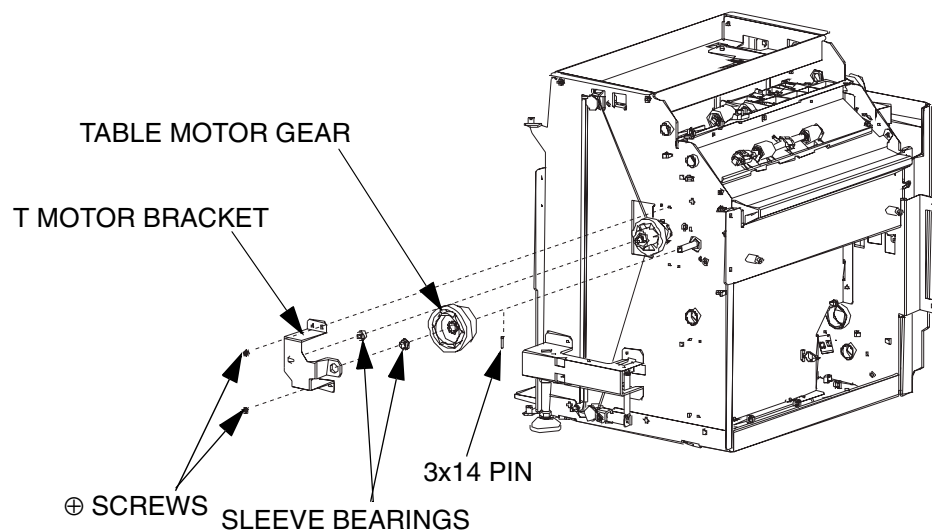


Figure 7-257. Removal of the Hopper Table Motor

9. Disconnect the connector.
10. Unscrew the three ⊕ screws to remove the Hopper Table Motor.

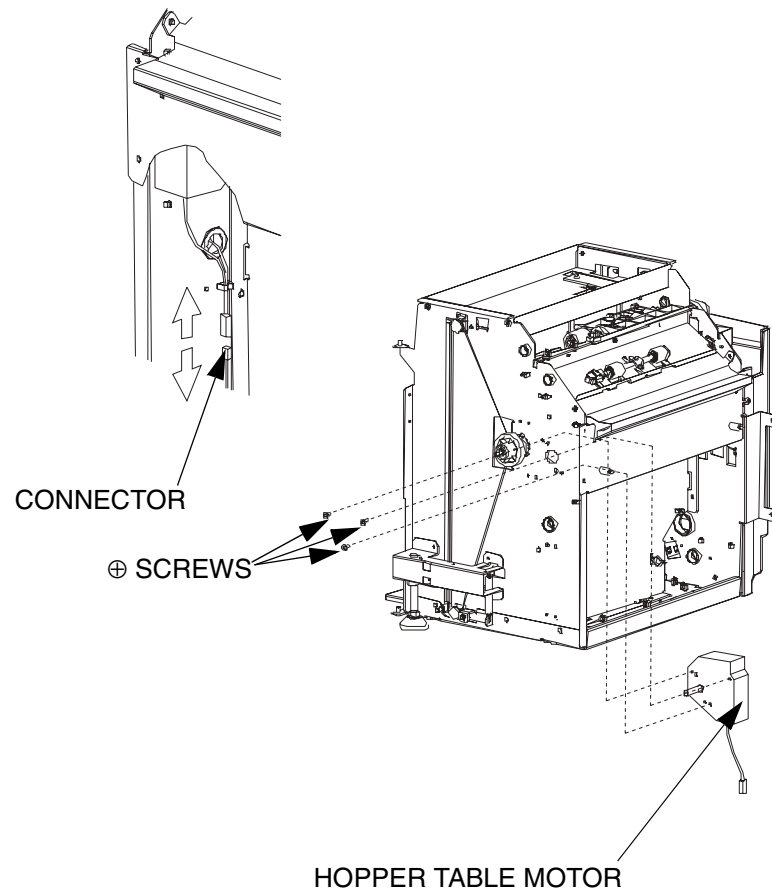


*Figure 7-258. Removal of the Hopper Table Motor*

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

## 7.2.19. Removal of the Table Wires

### 7.2.19.1. Removal of the Table Wire (1)

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Pull out the 2000 Sheet Hopper.
2. Unscrew the two ⊕ screws to remove the High Capacity Hopper in the direction of the arrow.
3. Disconnect the connector.
4. Unscrew the ⊕ screw to remove the Door.
5. Remove the Top Cover.
6. Unscrew the four ⊕ screws to remove the Upper Case.
7. Unscrew the four ⊕ screws to remove the Side Case.
8. Unscrew the two ⊕ screws to remove the Paper Guide.
9. Unscrew the two ⊕ screws.

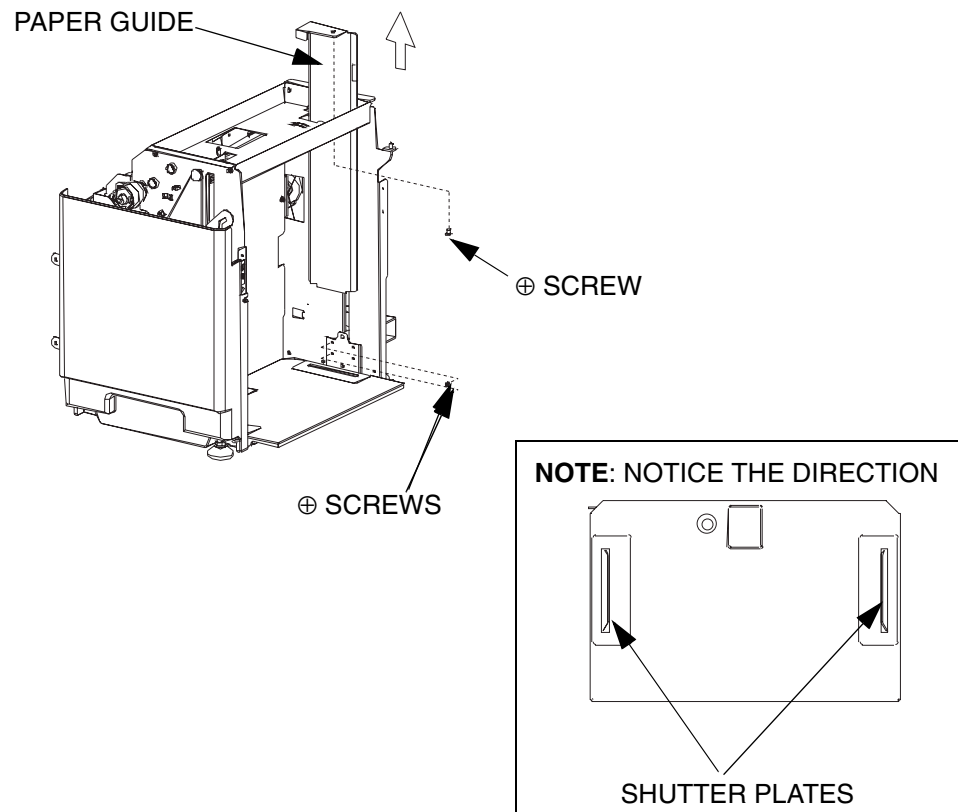


Figure 7-259. Removal of the Table Wire

10. Unscrew the two ⊕ screws to remove the T Motor Bracket, the two Sleeve Bearings, the Table Motor Gear, and the 3x14 Pin. (Refer to item 7.2.18 on page 7-237)
11. Unscrew the ⊕ screw to remove the Table Roller.

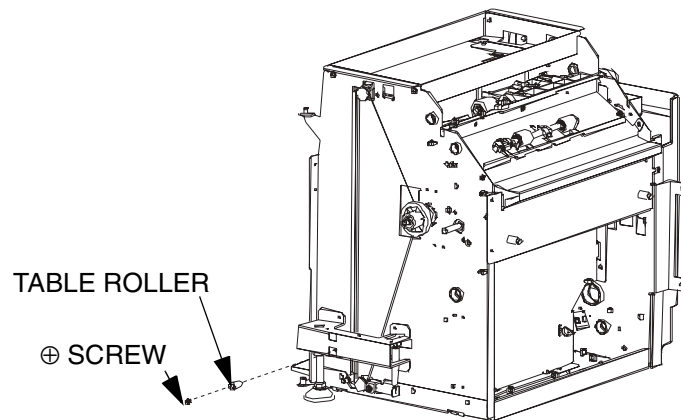


Figure 7-260. Removal of the Table Wire

12. Lower the Pulley Holder as shown in the figure below, remove the lower wire and then remove the upper wire.
13. Remove the E-Ring and the Wire Roll Drum (1) to remove the Table Wire (1).

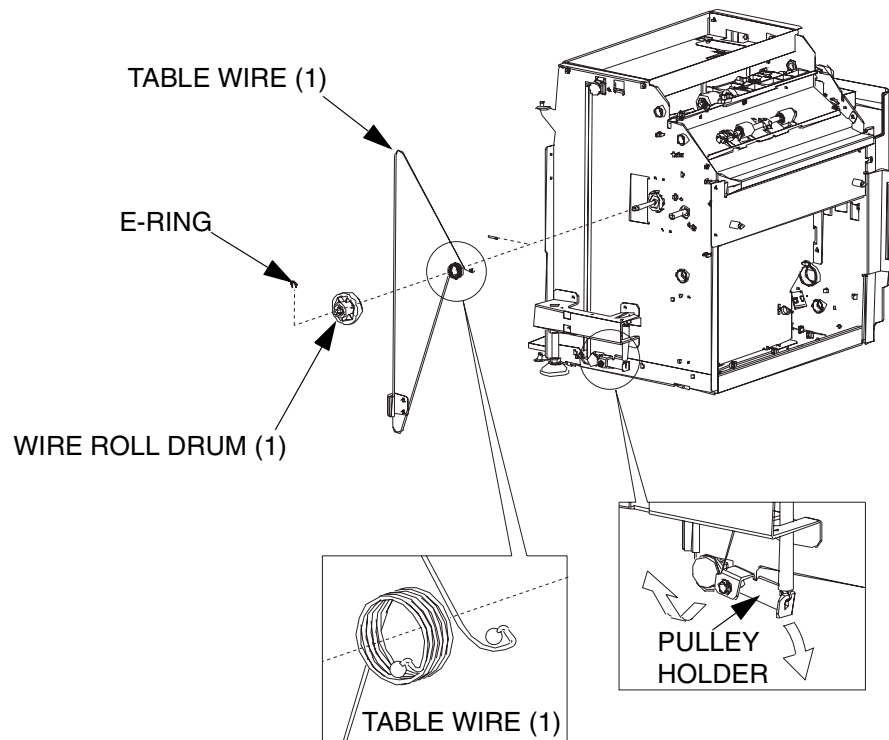


Figure 7-261. Removal of the Table Wire

### [Assembling Procedures]

Perform the disassembling procedures in the reverse order.

**Note:** Push the steel ball on the edge of the wire with 5 twists into the groove of the Wire Roll Drum and start rolling.

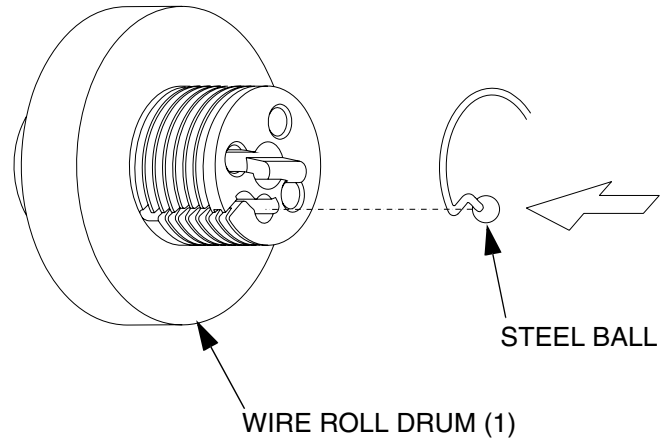


Figure 7-262. Removal of the Table Wire

### [Checks]

Turn the Wire Roll Drum to confirm that the Table moves smoothly with a full stroke.

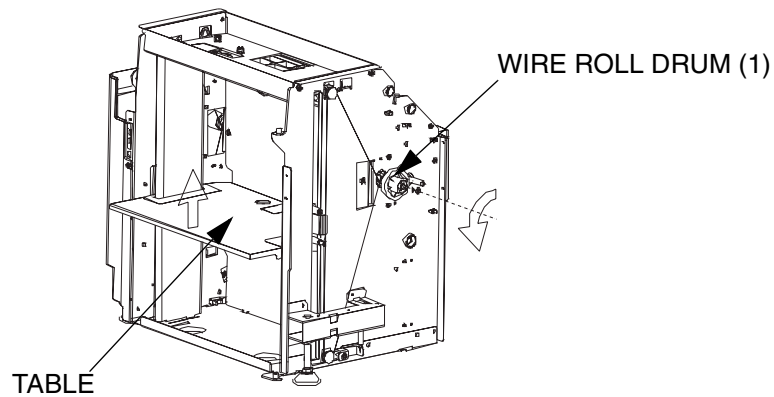


Figure 7-263. Removal of the Table Wire

Raise the Table until it comes to the Pick Roller and attach the 3x14 Pin, Table Motor Gear to fix the Table. Check that the Table is level. If not, loosen the nut and turn the screw to adjust. After adjustment tighten the nut.

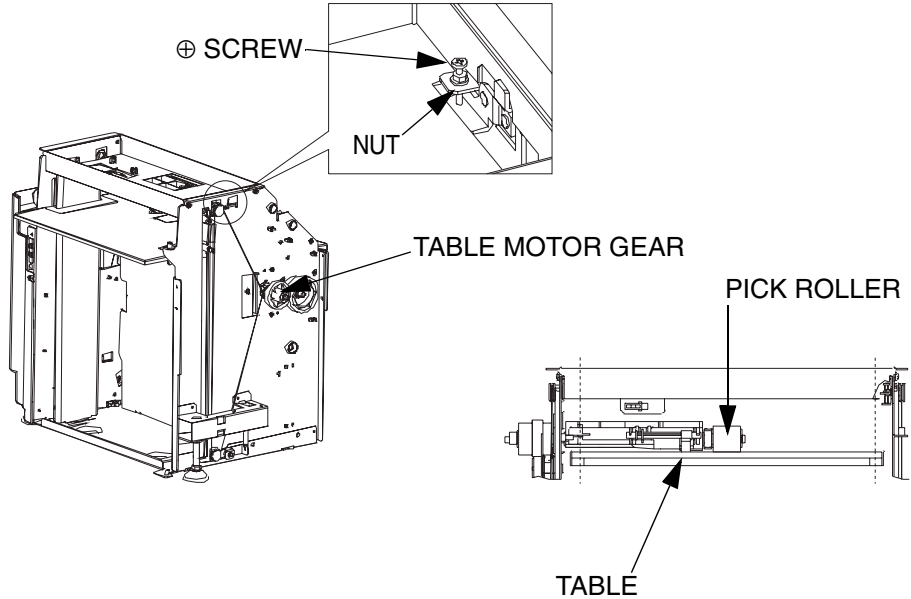


Figure 7-264. Removal of the Table Wire

## 7.2.19.2. Removal of the Table Wire (2)

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Pull out the 2000 Sheet Hopper.
2. Unscrew the two ⊕ screws to remove the High Capacity Hopper in the direction of the arrow.
3. Disconnect the connectors.
4. Unscrew the ⊕ screw to remove the Door.
5. Remove the Top Cover.
6. Unscrew the four ⊕ screws to remove the Upper Case.
7. Unscrew the eight ⊕ screws to remove the Side Case on both sides.
8. Unscrew the two ⊕ screws to remove the T Motor Bracket, the two Sleeve Bearings, the Table Motor Gear, and the 3x14 Pin. (Refer to item 7.2.18 on page 7-237)
9. Unscrew the ⊕ screw to remove the Paper Guide. (Refer to item 7.2.19.1 on page 7-239)
10. Unscrew the two ⊕ screws. (Refer to item 7.2.19.1 on page 7-239)
11. Unscrew the ⊕ screw to remove the Paper Guide.
12. Unscrew the two ⊕ screws.

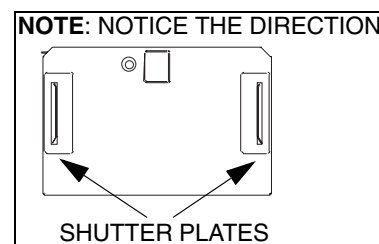
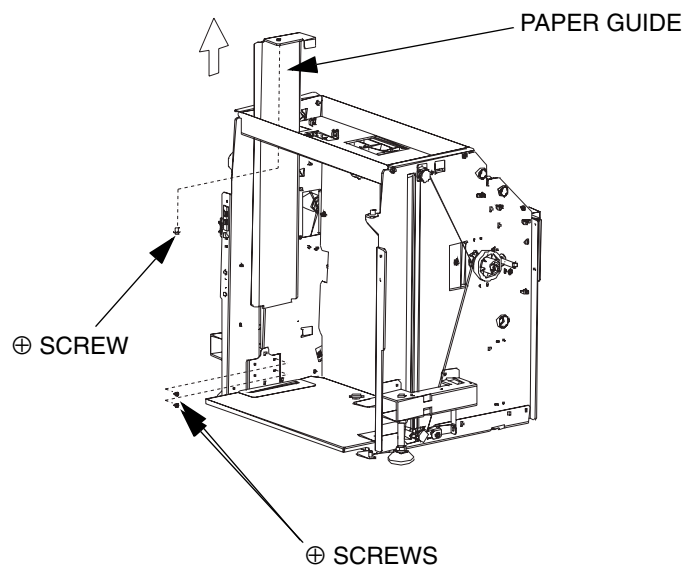


Figure 7-265. Removal of the Table Wire (2)



13. Remove the two E-Rings to remove the Position Arm. (Refer to item 7.2.11 on page 7-227)
14. Unscrew the ⊕ screw to remove the Table Roller.
15. Unscrew the ⊕ screw to remove the Sensor Holder.

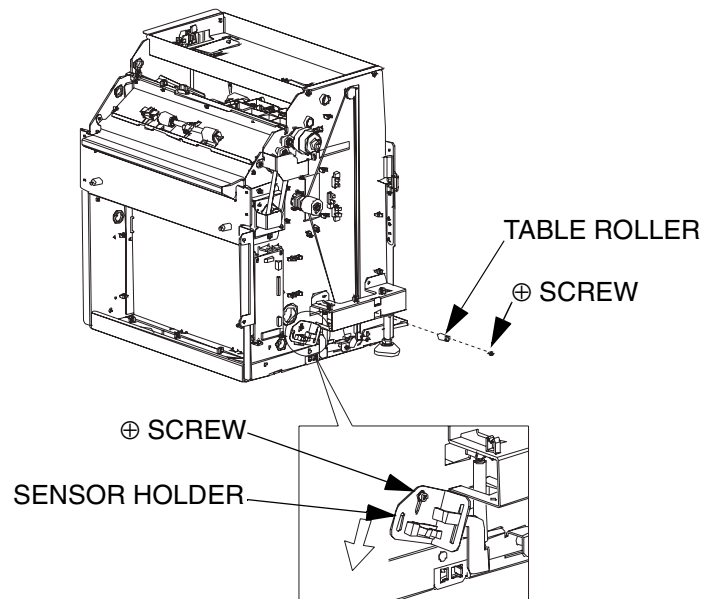


Figure 7-266. Removal of the Table Wire (2)

16. Remove the Lower Wire by pulling down the Pulley Holder as shown in the figure below and remove the Upper Wire.
17. Remove the E-Ring and the Wire Roll Drum (2) to remove the Table Wire (2).

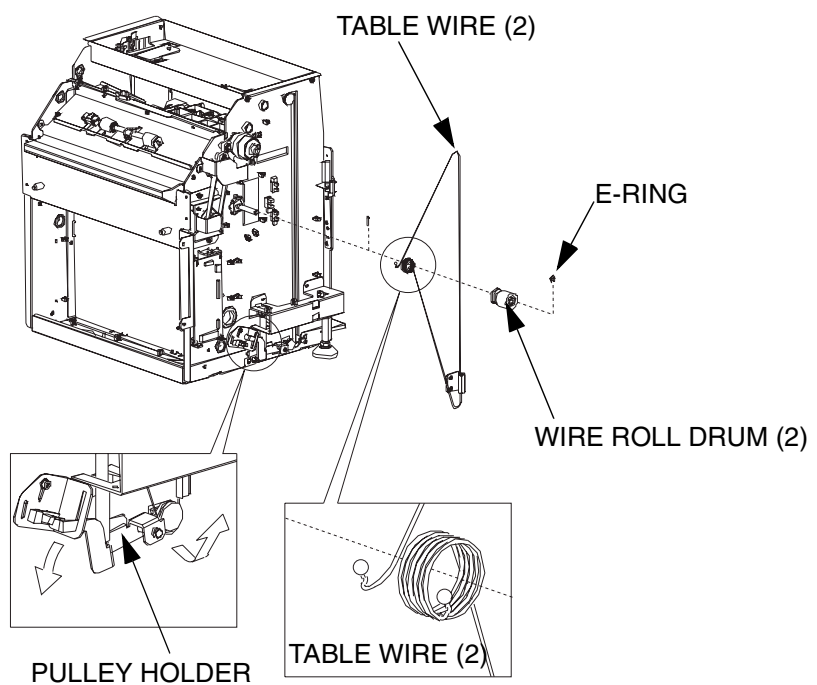


Figure 7-267. Removal of the Table Wire (2)

### [Assembling Procedures]

Perform the disassembling procedures in the reverse order.

**Note:** Push the steel ball on the edge of the wire with 5 twists into the groove of the Wire Roll Drum and start rolling .  
Adjust the Over Run Sensor and fix it with a screw.

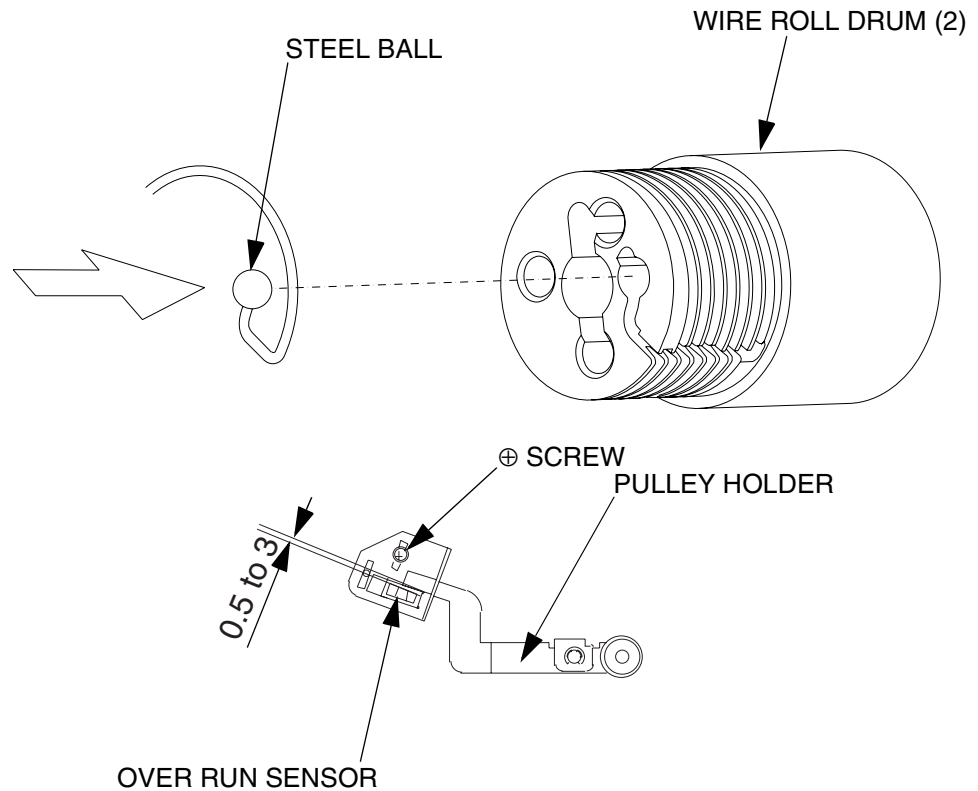


Figure 7-268. Removal of the Table Wire (2)

### [Checks]

Turn the Wire Roll Drum to confirm that the Table moves smoothly with a full stroke ([Refer to item 7.2.19.1 on page 7-239](#)).

Raise the Table until it comes to the Pick Roller and attach the 3x14 Pin, Table Motor Gear to fix the Table. Check that the Table is level. If not, loosen the nut and turn the screw to adjust. After adjustment tighten the nut. ([Refer to item 7.2.19.1 on page 7-239](#)).

## 7.2.20. Removal of the Wire Roll Drums

### 7.2.20.1. Removal of the Wire Roll Drum (1)

**CAUTION:**  
Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver.

#### [Disassembling Procedures]

1. Pull out the 2000 Sheet Hopper.
2. Unscrew the two ⊕ screws to remove the High Capacity Hopper in the direction of the arrow.
3. Disconnect the connectors.
4. Unscrew the ⊕ screw to remove the Door.
5. Remove the Top Cover.
6. Unscrew the four ⊕ screws to remove the Upper Case.
7. Unscrew the four ⊕ screws to remove the Side Case.
8. Unscrew the two ⊕ screws to remove the T Motor Bracket, the two Sleeve Bearings, the Table Motor Gear, and the 3x14 Pin. (Refer to item 7.2.18 on page 7-237)
9. Remove the Lower Wire by pulling down the Pulley Holder as shown in the figure below and remove the Upper Wire. (Refer to item 7.2.19.1 on page 7-239)
10. Remove the E-Ring to remove the Wire Roll Drum (1). (Refer to item 7.2.19.1 on page 7-239)

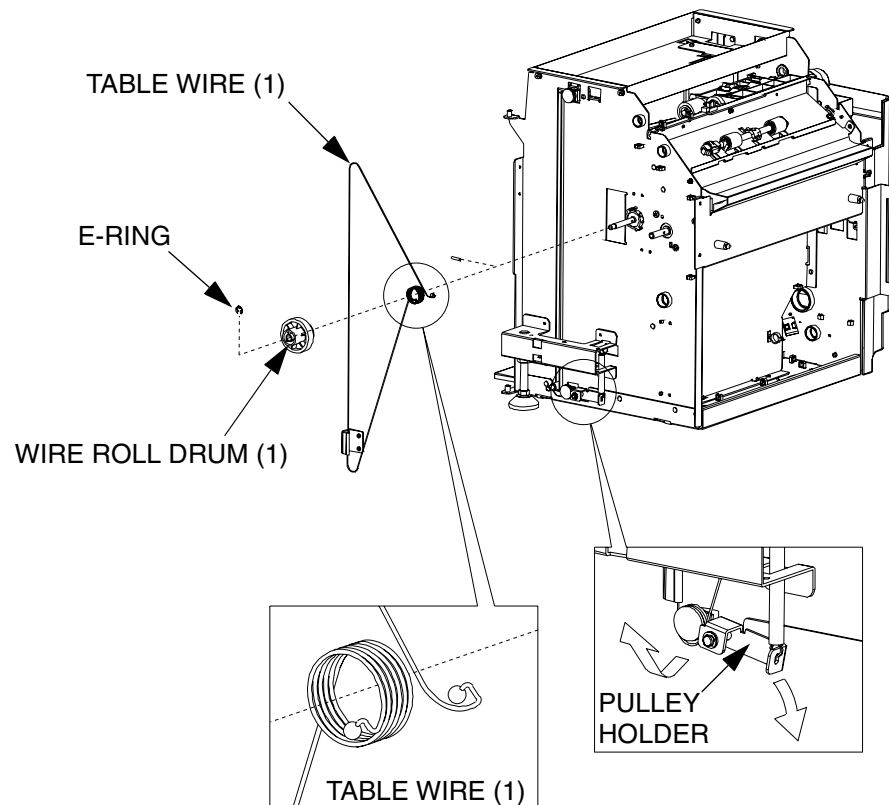


Figure 7-269. Removal of the Wire Roll Drum (1)

### [Assembling Procedures]

Perform the disassembling procedures in the reverse order.

**Note:** Push the steel ball on the edge of the wire with 5 twists into the groove of the Wire Roll Drum and start rolling ([Refer to item 7.2.19.1 on page 7-239](#)).

### [Checks]

Turn the Wire Roll Drum to confirm that the Table moves smoothly with a full stroke ([Refer to item 7.2.19.1 on page 7-239](#)).

Raise the Table until it comes to the Pick Roller and attach the 3x14 Pin, Table Motor Gear to fix the Table. Check that the Table is level. If not, loosen the nut and turn the screw to adjust. After adjustment tighten the nut. ([Refer to item 7.2.19.1 on page 7-239](#)).

## 7.2.20.2. Removal of the Wire Roll Drum (2)

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Pull out the 2000 Sheet Hopper.
2. Unscrew the two ⊕ screws to remove the High Capacity Hopper in the direction of the arrow.
3. Disconnect the connectors.
4. Unscrew the ⊕ screw to remove the Door.
5. Remove the Top Cover.
6. Unscrew the four ⊕ screws to remove the Upper Case.
7. Unscrew the four ⊕ screws to remove the Side Case.
8. Unscrew the two ⊕ screws to remove the T Motor Bracket, the two Sleeve Bearings, the Table Motor Gear, and the 3x14 Pin. (Refer to item 7.2.18 on page 7-237)
9. Remove the two E-Rings to remove the Position Arm. (Refer to item 7.2.11 on page 7-227)
10. Unscrew the ⊕ screw to remove the Sensor Holder. (Refer to item 7.2.19.2 on page 7-243)
11. Remove the Lower Wire by pulling down the Pulley Holder as shown in the figure below and remove the Upper Wire. (Refer to item 7.2.19.2 on page 7-243)
12. Remove the E-Ring to remove the Wire Roll Drum (2). (Refer to item 7.2.19.2 on page 7-243)

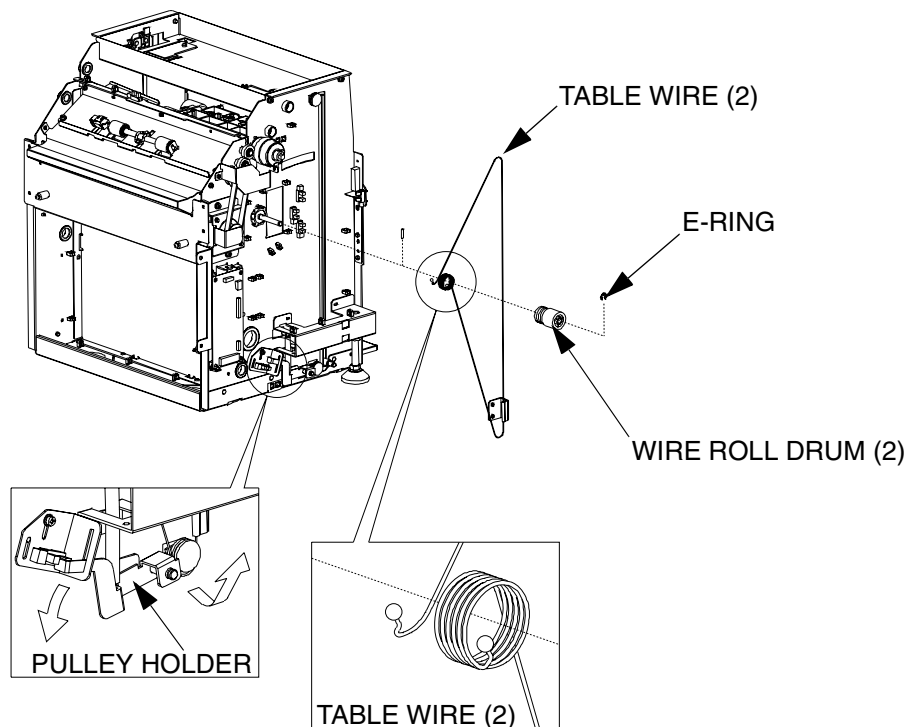


Figure 7-270. Removal of the Wire Roll Drum (2)

### [Assembling Procedures]

Perform the disassembling procedures in the reverse order.

**Note:** Push the steel ball on the edge of the wire with 5 twists into the groove of the Wire Roll Drum and start rolling ([Refer to item 7.2.19.2 on page 7-243](#)).  
Adjust the Over Run Sensor and fix it with a screw.

### [Checks]

Turn the Wire Roll Drum to confirm that the Table moves smoothly with a full stroke ([Refer to item 7.2.19.1 on page 7-239](#)).

Raise the Table until it comes to the Pick Roller and attach the 3x14 Pin, Table Motor Gear to fix the Table. Check that the Table is level. If not, loosen the nut and turn the screw to adjust. After adjustment tighten the nut. ([Refer to item 7.2.19.1 on page 7-239](#)).

## 7.2.21. Removal of the Empty Sensor

**CAUTION:**  
Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver.

### [Disassembling Procedures]

1. Pull out the 2000 Sheet Hopper.
2. Unscrew the two ⊕ screws to remove the High Capacity Hopper in the direction of the arrow.
3. Disconnect the connectors.
4. Unscrew the ⊕ screw to remove the Door.
5. Remove the Top Cover.
6. Unscrew the four ⊕ screws to remove the Upper Case.
7. Unscrew the ⊕ screw to disconnect the connector.
8. Remove the Empty Sensor.

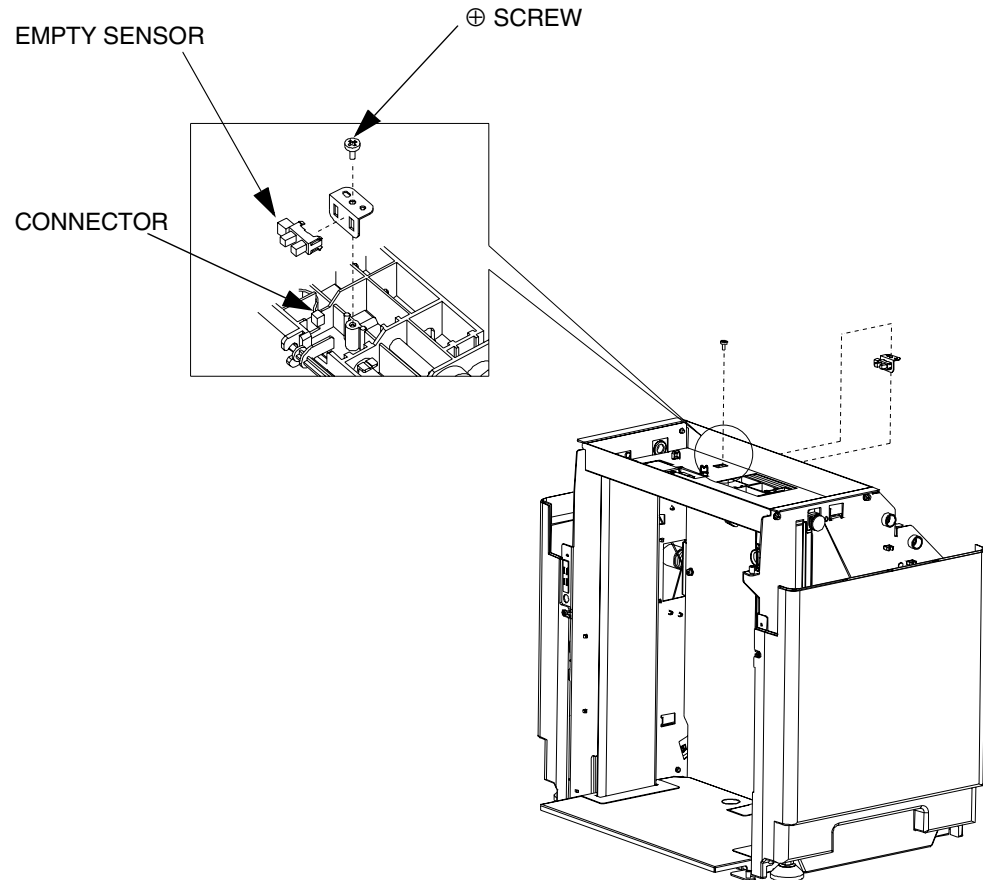


Figure 7-271. Removal of the Empty Sensor

### [Assembling Procedures]

Perform the disassembling procedures in the reverse order.

## 7.2.22. Removal of the Height Sensor

**CAUTION:**  
Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver.

### [Disassembling Procedures]

1. Pull out the 2000 Sheet Hopper.
2. Unscrew the two ⊕ screws to remove the High Capacity Hopper in the direction of the arrow.
3. Disconnect the connectors.
4. Unscrew the ⊕ screw to remove the Door.
5. Remove the Top Cover.
6. Unscrew the four ⊕ screws to remove the Upper Case.
7. Unscrew the two ⊕ screws to remove the Paper Guide on both sides. ([Refer to item 7.2.1 on page 7-217](#))
8. Disconnect the connector.
9. Unscrew the four ⊕ screws to remove the Upper Frame Assembly.

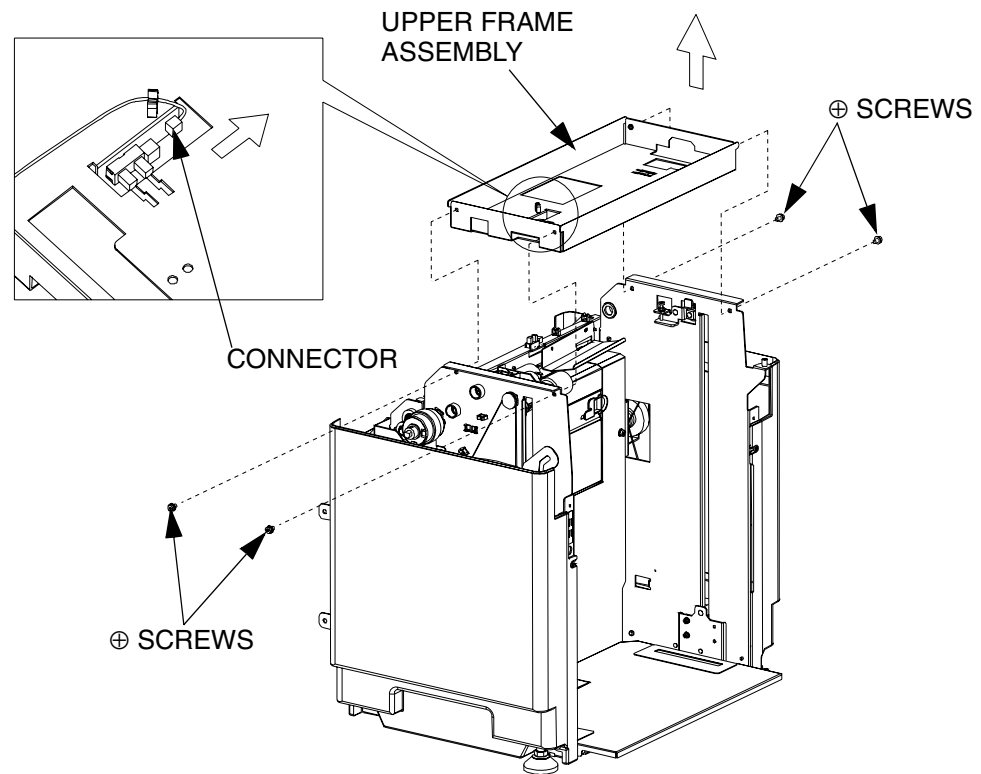


Figure 7-272. -1 Removal of the Height Sensor



10. Disconnect the connector to remove the Height Sensor.

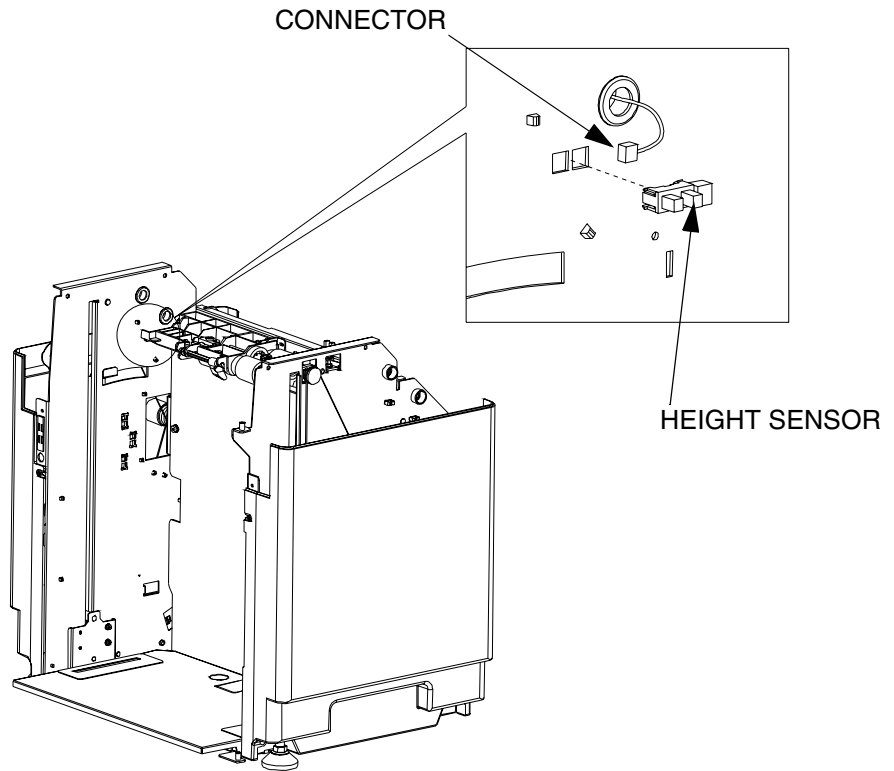


Figure 7-273. -2 Removal of the Height Sensor

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

## 7.2.23. Removal of the Pick Drive Shaft Assembly

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Pull out the 2000 Sheet Hopper.
2. Unscrew the two ⊕ screws to remove the High Capacity Hopper in the direction of the arrow.
3. Disconnect the connectors.
4. Unscrew the ⊕ screw to remove the Door.
5. Remove the Top Cover.
6. Unscrew the four ⊕ screws to remove the Upper Case.
7. Unscrew the four ⊕ screws to remove the Side Case.
8. Unscrew the two ⊕ screws to remove the Side Cover. ([Refer to item 7.2.15 on page 7-231](#))
9. Remove the Pick Roller, the Pick Drive Gear, the 3x14 Pin and the Hook Ring A.

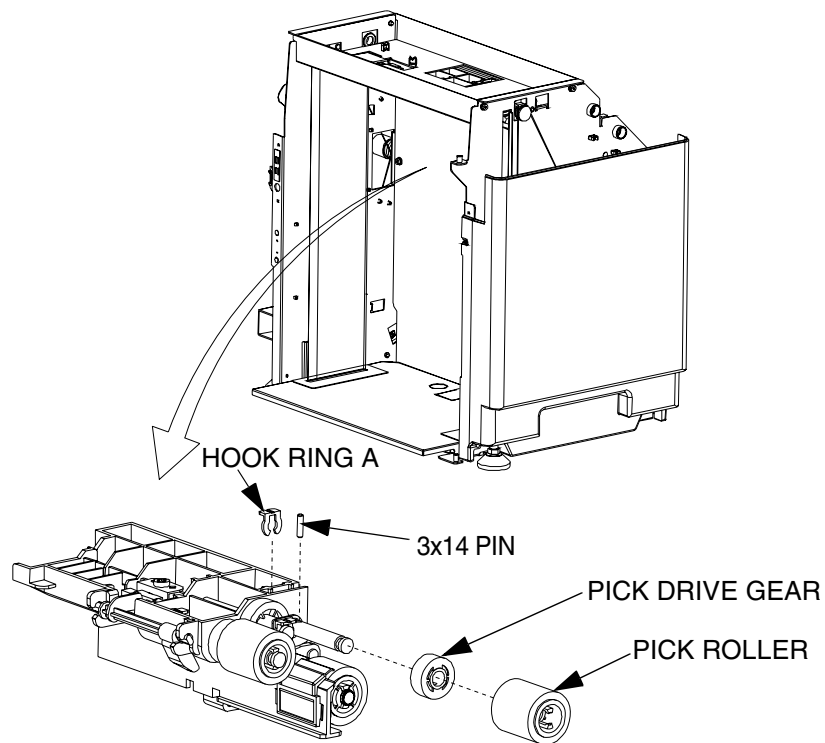


Figure 7-274. Removal of the Pick Drive Shaft Assembly

10. Disconnect the connector.
11. Turn the B.B Housing to pull out the Pick Drive Shaft Assembly.

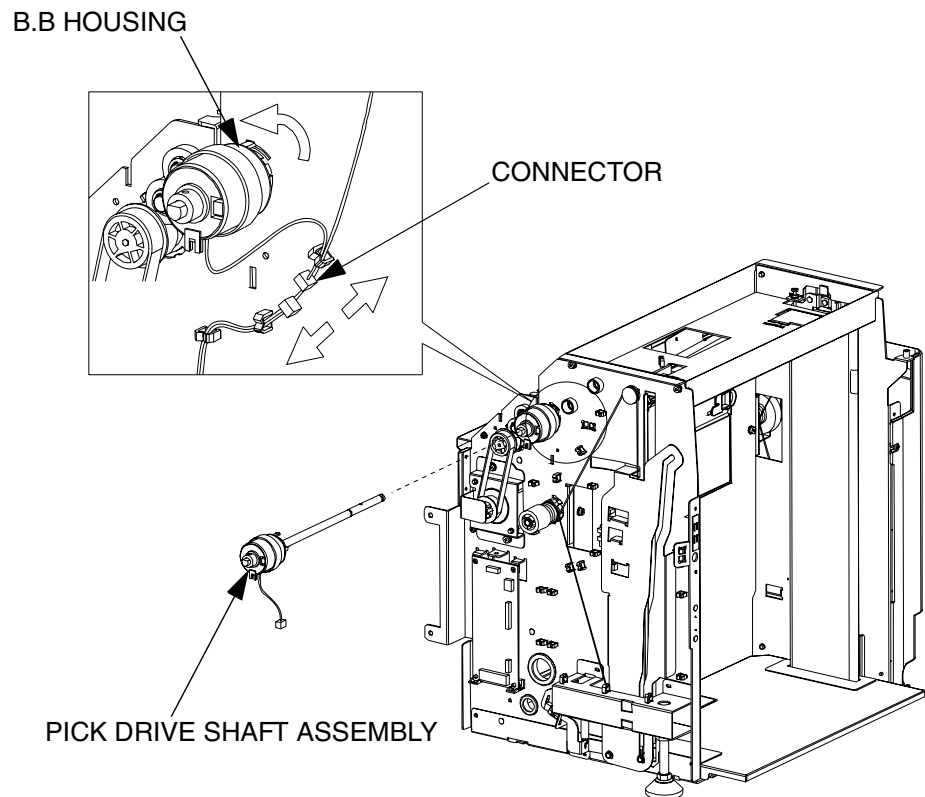


*Figure 7-275. Removal of the Pick Drive Shaft Assembly*

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

## 7.2.24. Removal of the Torque Limiter

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Pull out the 2000 Sheet Hopper.
2. Unscrew the two ⊕ screws to remove the High Capacity Hopper in the direction of the arrow.
3. Disconnect the connectors.
4. Unscrew the ⊕ screw to remove the Door.
5. Remove the Top Cover.
6. Unscrew the four ⊕ screws to remove the Upper Case.
7. Unscrew the eight ⊕ screws to remove the Side Case on both sides.
8. Unscrew the two ⊕ screws to remove the Paper Guide on both sides. ([Refer to item 7.2.1 on page 7-217](#))
9. Open the Cover F. ([Refer to item 7.2.2 on page 7-218](#))
10. Remove the Spring F on one side only. ([Refer to item 7.2.14 on page 7-230](#))
11. Unscrew the four ⊕ screws to remove the Front Frame Assembly. ([Refer to item 7.2.14 on page 7-230](#))
12. Disconnect the connector. ([Refer to item 7.2.17 on page 7-234](#))
13. Unscrew the four ⊕ screws to remove the Pressure Roller Base Assembly. ([Refer to item 7.2.17 on page 7-234](#))
14. Unscrew the five ⊕ screws to remove the Rear Frame. ([Refer to item 7.2.17 on page 7-234](#))

15. Remove the two Hook Ring B to remove the SRB Shaft.
16. Remove the Separate Roller Base Assembly.
17. Remove the Separator Assembly, the Separator Roller (Refer to item 7.2.4 on page 7-220), the Hook Ring B to remove the Torque Limiter.

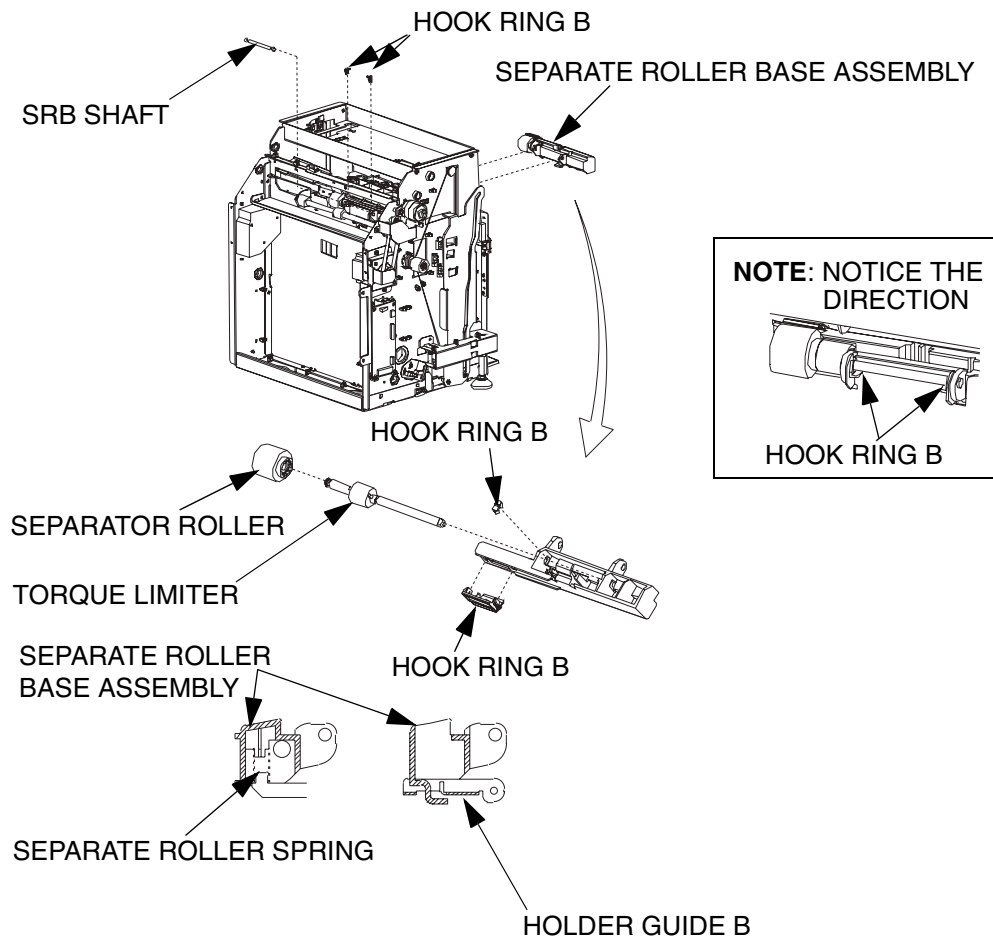


Figure 7-276. Removal of the Torque Limiter

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

**[Checks]**

Make sure that the Separate Roller Spring is correctly fastened.

Make sure that the Separate Roller Base Assembly is put in the hole of the Holder Guide B.

## 7.2.25. Removal of the Gears

### 7.2.25.1. Removal of the Motor Pulley

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Pull out the 2000 Sheet Hopper.
2. Unscrew the two ⊕ screws to remove the High Capacity Hopper in the direction of the arrow.
3. Disconnect the connectors.
4. Unscrew the ⊕ screw to remove the Door.
5. Remove the Top Cover.
6. Unscrew the four ⊕ screws to remove the Upper Case.
7. Unscrew the four ⊕ screws to remove the Side Case.
8. Loosen the two ⊕ screws of the Motor Assembly. (Refer to item 7.2.15 on page 7-231)
9. Disconnect the connector. (Refer to item 7.2.15 on page 7-231)
10. Remove the two ⊕ screws to remove the Motor Assembly. (Refer to item 7.2.15 on page 7-231)
11. Remove the two ⊕ screws to remove the Motor Pulley.

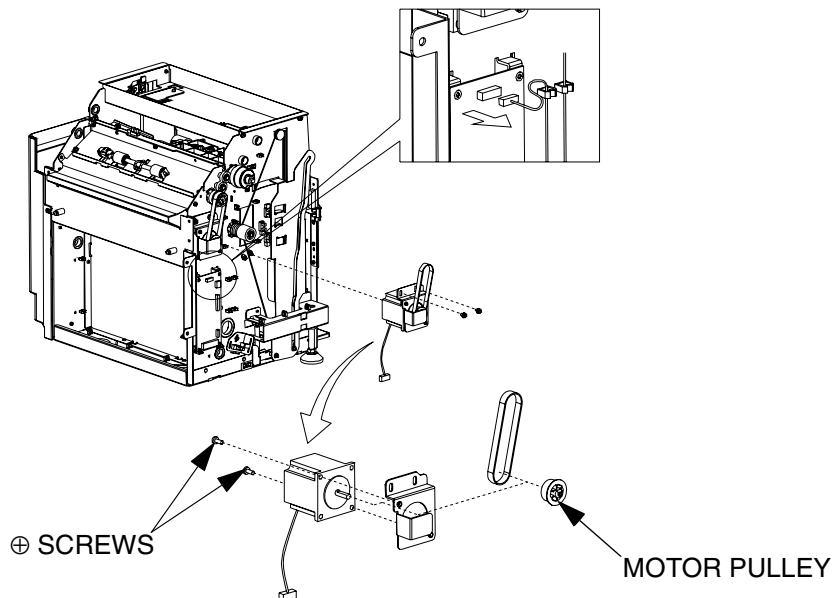


Figure 7-277. Removal of the Motor Pulley

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

**Note:** Adjust the Motor Assembly and fix it with ⊕ screws. (Refer to item 7.2.15 on page 7-231)  
The tension of the Timing Belt is determined by self weight of the Motor Assembly.

## 7.2.25.2. Removal of the IS Drive Pulley

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Pull out the 2000 Sheet Hopper.
2. Unscrew the two ⊕ screws to remove the High Capacity Hopper in the direction of the arrow.
3. Disconnect the connectors.
4. Unscrew the ⊕ screw to remove the Door.
5. Remove the Top Cover.
6. Unscrew the four ⊕ screws to remove the Upper Case.
7. Unscrew the four ⊕ screws to remove the Side Case.
8. Unscrew the two ⊕ screws to remove the Side Cover. (Refer to item 7.2.15 on page 7-231)
9. Loosen the two ⊕ screws of the Motor Assembly. (Refer to item 7.2.15 on page 7-231)
10. Remove the IS Drive Pulley. (Refer to item 7.2.17 on page 7-234)

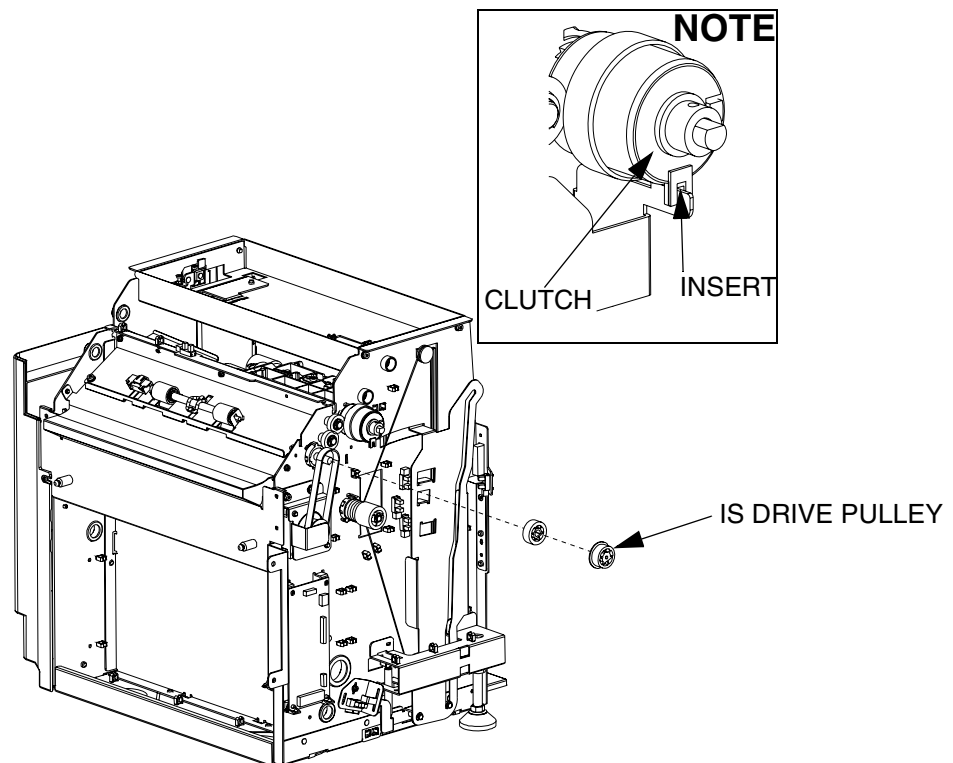


Figure 7-278. Removal of the IS Drive Pulley

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

**Note:** Adjust the Motor Assembly and fix it with ⊕ screws. (Refer to item 7.2.15 on page 7-231)

The tension of the Timing Belt is determined by self weight of the Motor Assembly.

### 7.2.25.3. Removal of the IS Drive Gear

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Pull out the 2000 Sheet Hopper.
2. Unscrew the two ⊕ screws to remove the High Capacity Hopper in the direction of the arrow.
3. Disconnect the connectors.
4. Unscrew the ⊕ screw to remove the Door.
5. Remove the Top Cover.
6. Unscrew the four ⊕ screws to remove the Upper Case.
7. Unscrew the four ⊕ screws to remove the Side Case.
8. Unscrew the two ⊕ screws to remove the Side Cover. (Refer to item 7.2.15 on page 7-231)
9. Loosen the two ⊕ screws of the Motor Assembly. (Refer to item 7.2.15 on page 7-231)
10. Remove the IS Drive Pulley to remove the IS Drive Gear. (Refer to item 7.2.17 on page 7-234)

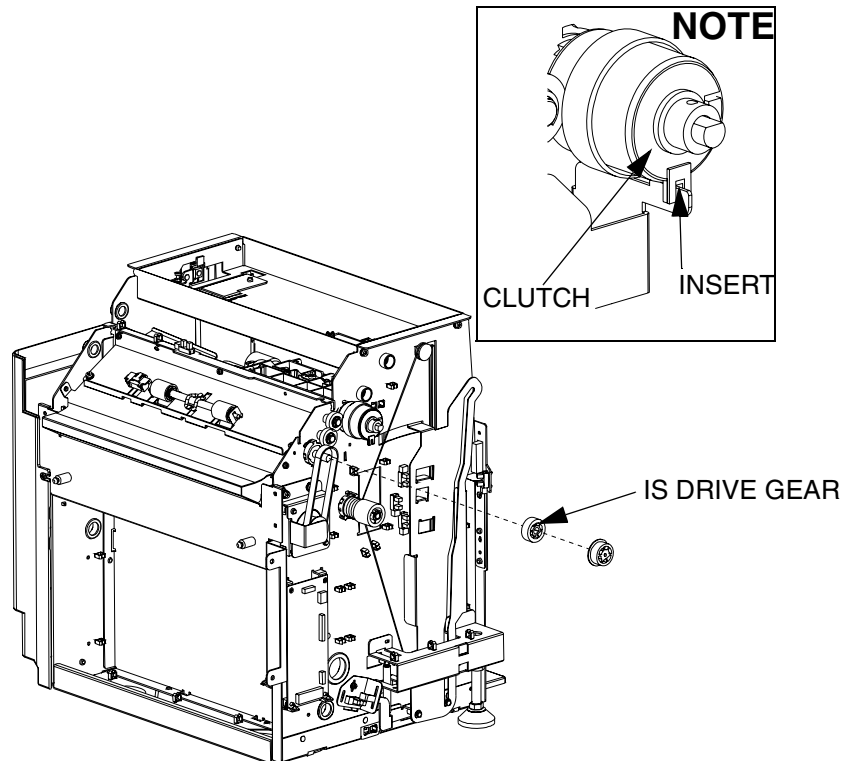


Figure 7-279. Removal of the IS Drive Gear

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

**Note:** Adjust the Motor Assembly and fix it with ⊕ screws. (Refer to item 7.2.15 on page 7-231)  
The tension of the Timing Belt is determined by self weight of the Motor Assembly.



#### 7.2.25.4. Removal of the Pick Drive Gear

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Unscrew the ⊕ screw to remove the Door.
2. Open the Cover F. ([Refer to item 7.2.2 on page 7-218](#))
3. Remove the two Pick Rollers to remove the Pick Drive Gear.

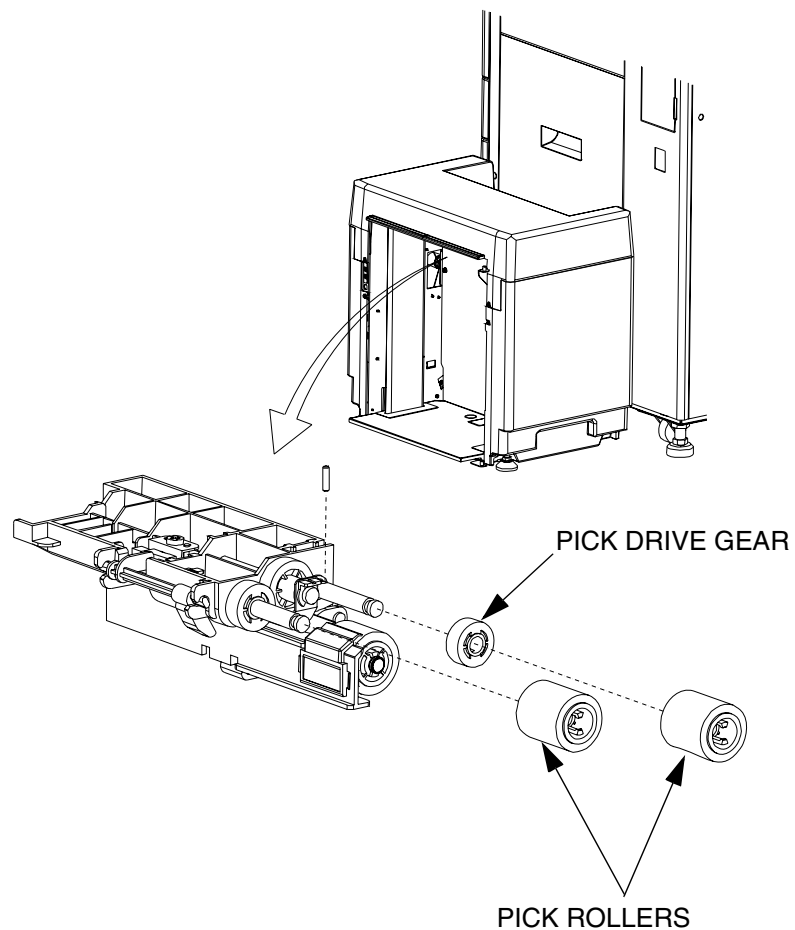


*Figure 7-280. Removal of the Pick Drive Gear*

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

### 7.2.25.5. Removal of the Pick Idler Gear

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Unscrew the ⊕ screw to remove the Door.
2. Open the Cover F. (Refer to item 7.2.2 on page 7-218)
3. Remove the two Pick Rollers.
4. Remove the Hook Ring B, and the PF Guide to remove the Pick Idler Gear.

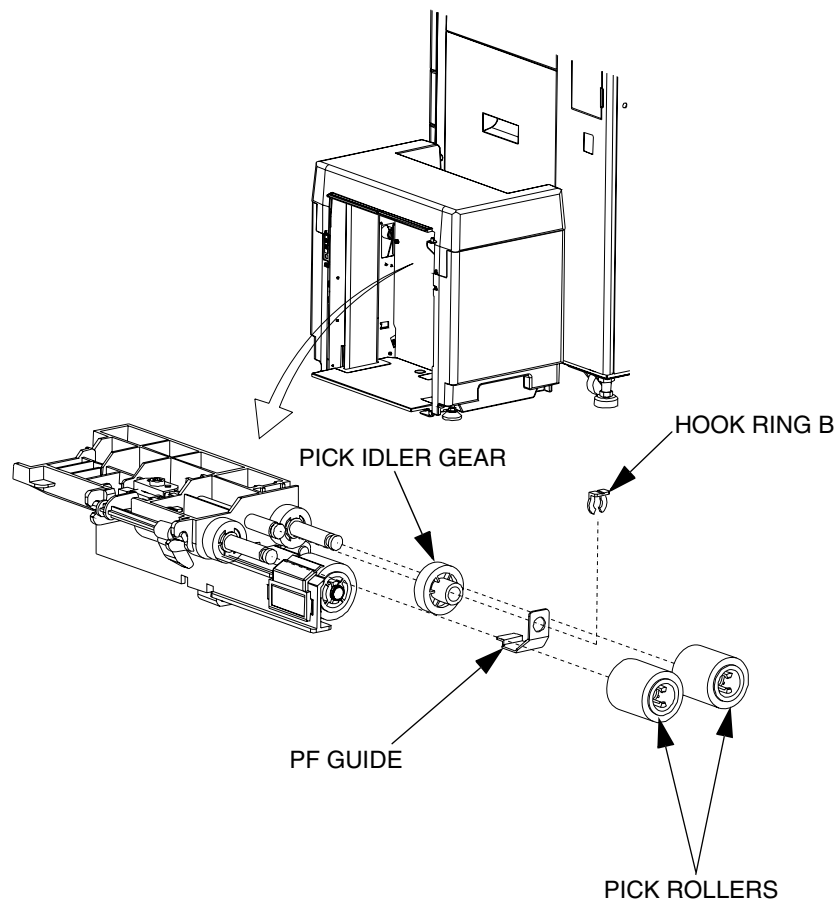


Figure 7-281. Removal of the Pick Idler Gear

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

## 7.2.25.6. Removal of the Pick Roller Gear

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Unscrew the ⊕ screw to remove the Door.
2. Remove the Pick Roller to remove the Pick Roller Gear.

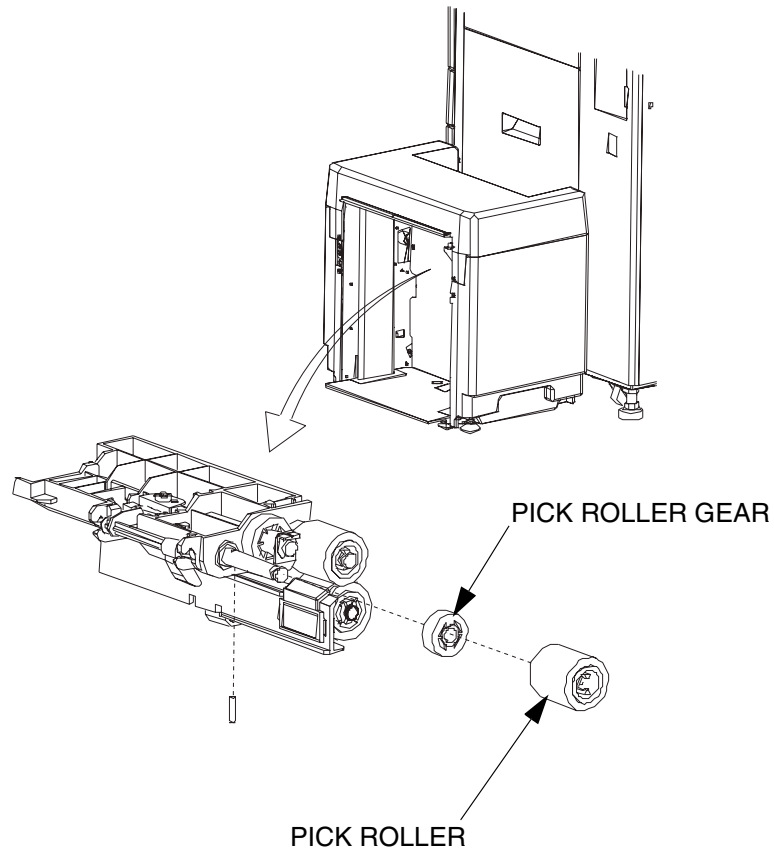


*Figure 7-282. Removal of the Pick Roller Gear*

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

## 7.2.25.7. Removal of the Table Motor Gear

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Pull out the 2000 Sheet Hopper.
2. Unscrew the two ⊕ screws to remove the High Capacity Hopper in the direction of the arrow.
3. Disconnect the connectors.
4. Unscrew the ⊕ screw to remove the Door.
5. Remove the Top Cover.
6. Unscrew the four ⊕ screws to remove the Upper Case.
7. Unscrew the four ⊕ screws to remove the Side Case.
8. Unscrew the two ⊕ screws to remove the T Motor Bracket, and the two Sleeve Bearings. (Refer to item 7.2.18 on page 7-237)
9. Remove the Table Motor Gear. (Refer to item 7.2.18 on page 7-237)

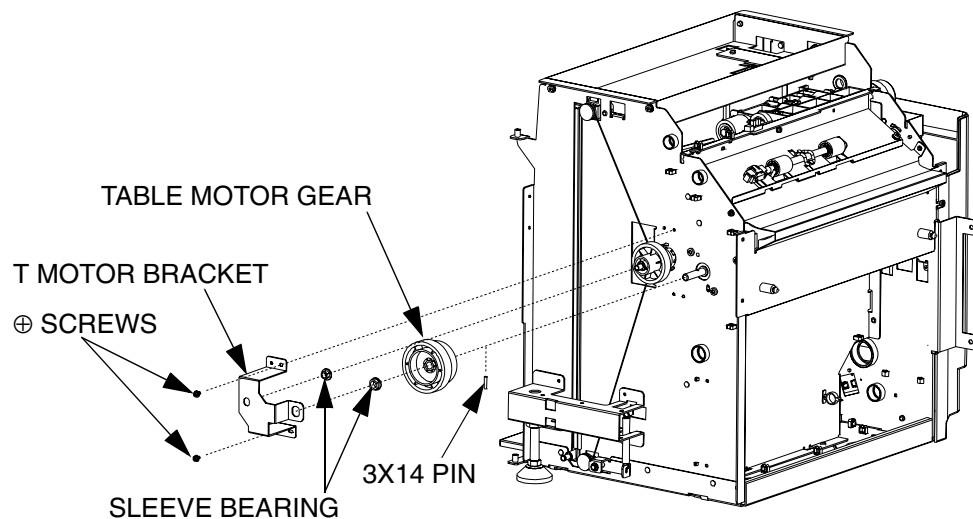


Figure 7-283. Removal of the Table Motor Gear

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

## 7.2.25.8. Removal of the Pick Idler Gear

### CAUTION:

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver.

### [Disassembling Procedures]

1. Pull out the 2000 Sheet Hopper.
2. Unscrew the two ⊕ screws to remove the High Capacity Hopper in the direction of the arrow.
3. Disconnect the connectors.
4. Unscrew the ⊕ screw to remove the Door.
5. Remove the Top Cover.
6. Unscrew the four ⊕ screws to remove the Upper Case.
7. Unscrew the four ⊕ screws to remove the Side Case. (Refer to item 7.2.15 on page 7-231)
8. Unscrew the two ⊕ screws to remove the Side Cover. (Refer to item 7.2.15 on page 7-231)
9. Remove the Pick Roller, the Pick Drive Gear, the 3x14 Pin, and the Hook Ring A. (Refer to item 7.2.23 on page 7-253)
10. Disconnect the connector. (Refer to item 7.2.23 on page 7-253)
11. Turn the B.B Housing to pull out the Pick Drive Shaft Assembly. (Refer to item 7.2.23 on page 7-253)
12. Loosen the two ⊕ screws of the Motor Assembly. (Refer to item 7.2.15 on page 7-231)
13. Remove the IS Drive Pulley, and the IS Drive Gear. (Refer to item 7.2.17 on page 7-234)
14. Remove the two E-Rings to remove the two Pick Idler Gears.

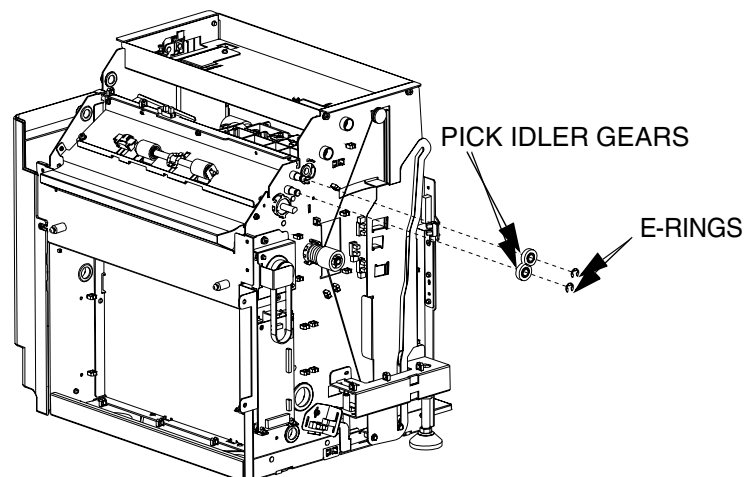


Figure 7-284. Removal of the Pick Idler Gear

### [Assembling Procedures]

Perform the disassembling procedures in the reverse order.

## 7.2.25.9. Removal of the Change Gear 2

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Pull out the 2000 Sheet Hopper.
2. Unscrew the two ⊕ screws to remove the High Capacity Hopper in the direction of the arrow.
3. Disconnect the connectors.
4. Unscrew the ⊕ screw to remove the Door.
5. Remove the Top Cover.
6. Unscrew the four ⊕ screws to remove the Upper Case.
7. Unscrew the eight ⊕ screws to remove the Side Cases on both sides.
8. Unscrew the two ⊕ screws to remove the Paper Guides on both sides. ([Refer to item 7.2.1 on page 7-217](#))
9. Open the Cover F. ([Refer to item 7.2.2 on page 7-218](#))
10. Remove the Spring F on one side only. ([Refer to item 7.2.14 on page 7-230](#))
11. Unscrew the four ⊕ screws to remove the Front Frame Assembly. ([Refer to item 7.2.14 on page 7-230](#))
12. Disconnect the connector. ([Refer to item 7.2.17 on page 7-234](#))
13. Unscrew the four ⊕ screws to remove the Pressure Roller Base Assembly. ([Refer to item 7.2.17 on page 7-234](#))
14. Unscrew the five ⊕ screws to remove the Rear Frame. ([Refer to item 7.2.17 on page 7-234](#))
15. Unscrew the ⊕ screw to remove the Idler Arm Assembly, and the Washer.
16. Remove the E-Ring, Idler Arm Shaft, and the Idler Arm HP to remove the Change Gear 2.

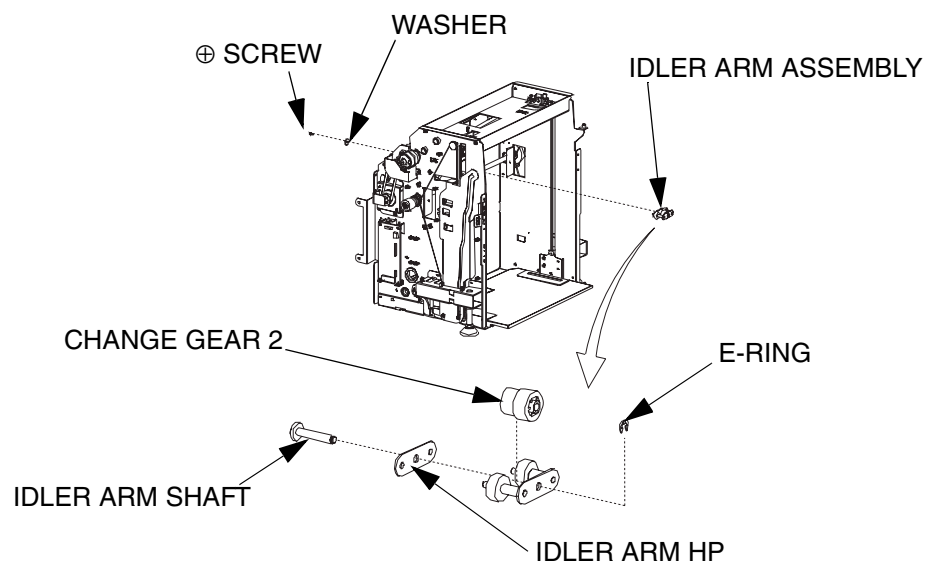


Figure 7-285. Removal of the Change Gear 2

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

## 7.2.25.10. Removal of the Loading Gear

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Pull out the 2000 Sheet Hopper.
2. Unscrew the two ⊕ screws to remove the High Capacity Hopper in the direction of the arrow.
3. Disconnect the connectors.
4. Unscrew the ⊕ screw to remove the Door.
5. Remove the Top Cover.
6. Unscrew the four ⊕ screws to remove the Upper Case.
7. Unscrew the eight ⊕ screws to remove the Side Cases on both sides.
8. Unscrew the two ⊕ screws to remove the Paper Guides on both sides. (Refer to item 7.2.1 on page 7-217)
9. Open the Cover F. (Refer to item 7.2.2 on page 7-218)
10. Remove the Spring F on one side only. (Refer to item 7.2.14 on page 7-230)
11. Unscrew the four ⊕ screws to remove the Front Frame Assembly. (Refer to item 7.2.14 on page 7-230)
12. Disconnect the connector. (Refer to item 7.2.17 on page 7-234)
13. Unscrew the four ⊕ screws to remove the Pressure Roller Base Assembly. (Refer to item 7.2.17 on page 7-234)
14. Unscrew the five ⊕ screws to remove the Rear Frame. (Refer to item 7.2.17 on page 7-234)
15. Unscrew the ⊕ screw to remove the Idler Arm Assembly, and the Washer. (Refer to item 7.2.25.9 on page 7-265)
16. Remove the E-Ring, Idler Arm Shaft, and the Idler Arm HP to remove the Change Gear 2. (Refer to item 7.2.25.9 on page 7-265)
17. Remove the E-Rings to remove the Loading Gears.

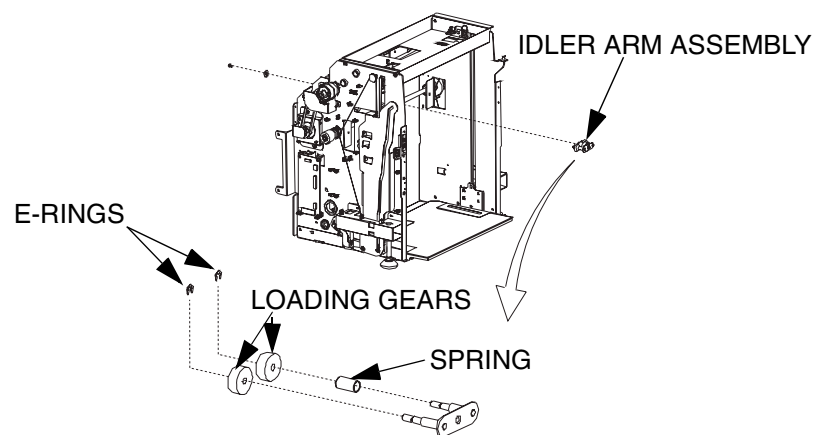


Figure 7-286. Removal of the Loading Gear

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

## 7.2.25.11. Removal of the Change Gear 1

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Pull out the 2000 Sheet Hopper.
2. Unscrew the two ⊕ screws to remove the High Capacity Hopper in the direction of the arrow.
3. Disconnect the connectors.
4. Unscrew the ⊕ screw to remove the Door.
5. Remove the Top Cover.
6. Unscrew the four ⊕ screws to remove the Upper Case.
7. Unscrew the eight ⊕ screws to remove the Side Cases on both sides.
8. Unscrew the two ⊕ screws to remove the T Motor Bracket, the two Sleeve Bearings, the Table Motor Gear, and the 3x14 Pin. (Refer to item 7.2.18 on page 7-237)
9. Unscrew the two ⊕ screws to remove the Paper Guides on both sides. (Refer to item 7.2.1 on page 7-217)
10. Open the Cover F. (Refer to item 7.2.2 on page 7-218)
11. Remove the Spring F on one side only. (Refer to item 7.2.14 on page 7-230)
12. Unscrew the two ⊕ screws to remove the Front Frame Assembly. (Refer to item 7.2.14 on page 7-230)
13. Remove the two E-Rings to remove the Position Arm. (Refer to item 7.2.11 on page 7-227)
14. Disconnect the connector. (Refer to item 7.2.17 on page 7-234)
15. Unscrew the four ⊕ screws to remove the Pressure Roller Base Assembly. (Refer to item 7.2.17 on page 7-234)
16. Unscrew the five ⊕ screws to remove the Rear Frame. (Refer to item 7.2.17 on page 7-234)
17. Unscrew the ⊕ screw to remove the Idler Arm Assembly, and the Washer. (Refer to item 7.2.25.9 on page 7-265)
18. Remove the two E-Rings to remove the Wire Roll Drum, and the D3x14 Pin on both sides. (Refer to item 7.2.20 on page 7-246)



19. Turn the B.B Housing to remove the B.B Housing, and the B.B.
20. Pull out the Drive Shaft Assembly.
21. Unscrew the ⊕ screw to remove the Change Gear 1.

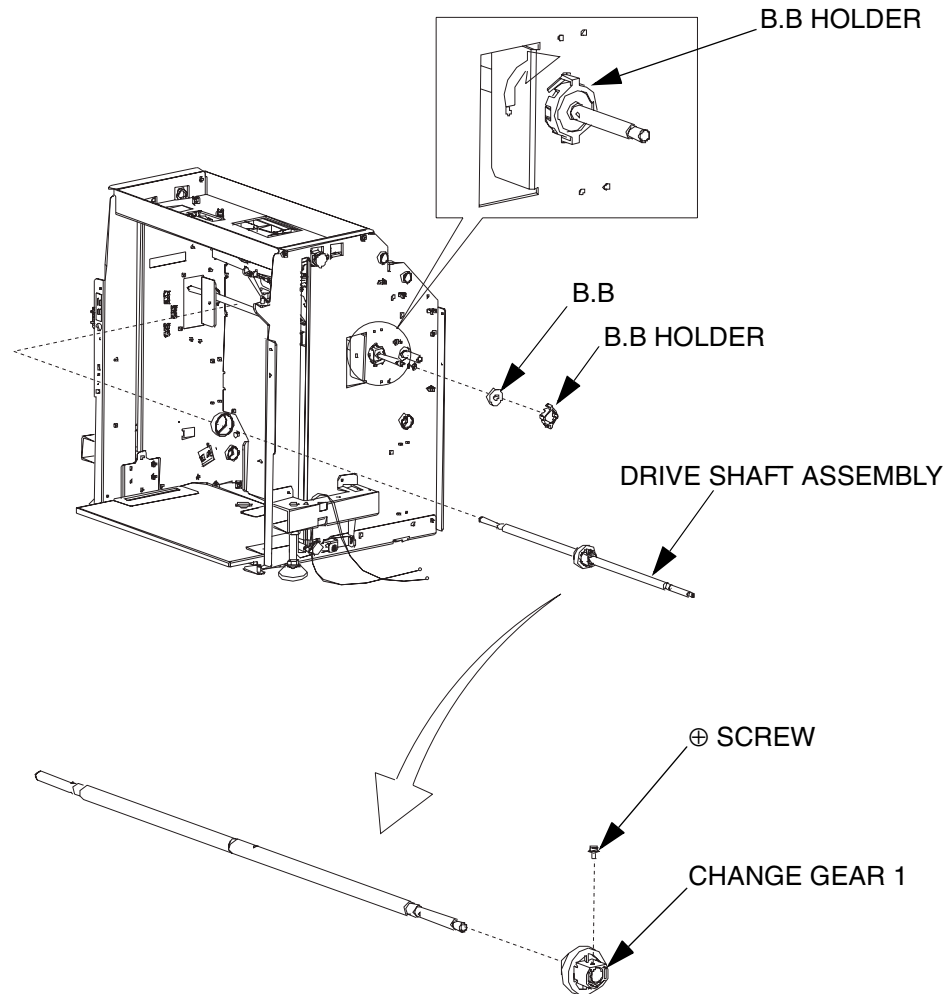


Figure 7-287. Removal of the Change Gear 1

#### [Assembling Procedures]

Perform the disassembling procedures in the reverse order.

**Note:** Push the steel ball on the edge of the wire with 5 twists into the groove of the Wire Roll Drum and start rolling. (Refer to item 7.2.19.1 on page 7-239) and (Refer to item 7.2.19.2 on page 7-243)  
Adjust the Over Run Sensor and fix it with a ⊕ screw.

#### [Checks]

Turn the Wire Roll Drum to confirm that the Table moves smoothly with a full stroke.  
(Refer to item 7.2.19.1 on page 7-239)

Raise the Table until it comes to the Pick Roller and attach the 3x14 Pin, and the Table Motor Gear to fix the Table. Check that the Table is level. If not, loosen the nut and turn the ⊕ screw to adjust. (Refer to item 7.2.19.1 on page 7-239)

## 7.3. Transit Pass Unit Type DDP Parts

### 7.3.1. Removal of the Lower Paper Guide Assembly

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Note:** Disconnect the Finisher SR5000 from the Transit Pass Unit Type DDP before maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver, Pliers.

**[Disassembling Procedures]**

1. Open the Front Cover. (Refer to item 3.3.1 on page 3-9)
2. Remove the Rear Cover. (Refer to item 3.3.2. (3) on page 3-14)
3. Unscrew the four ⊕ screws to remove the Window Shade Cover.
4. Unscrew the four ⊕ screws to remove the Lower Paper Guide Assembly.

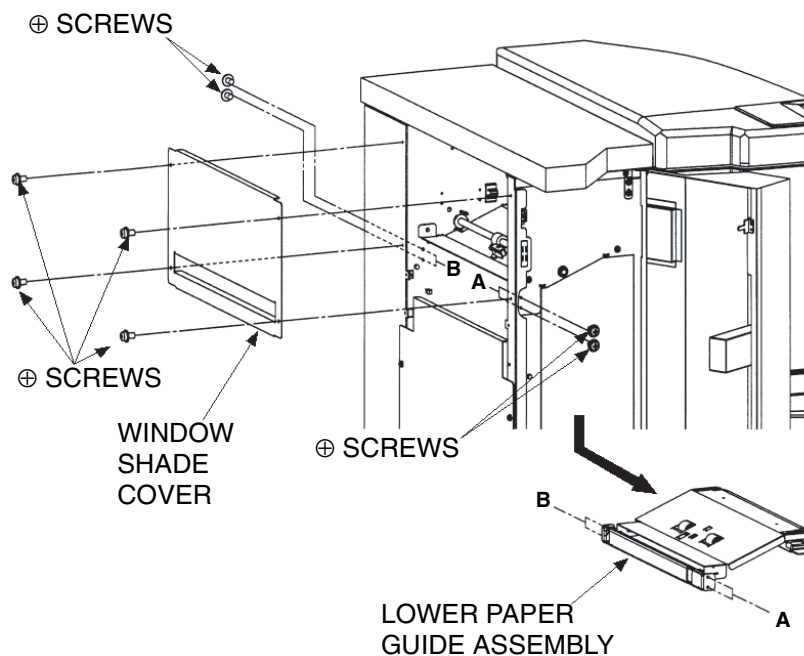


Figure 7-288. Removal of the Lower Paper Guide Assembly

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

## 7.3.2. Removal of the Pressure Roller Assembly

**CAUTION:**  
Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

Applicable jigs and tools: - Screwdriver, Pliers.

### [Disassembling Procedures]

1. Open the Front Cover. (Refer to item 3.3.1 on page 3-9)
2. Release the Extension Spring to remove the Pressure Roller Assembly.

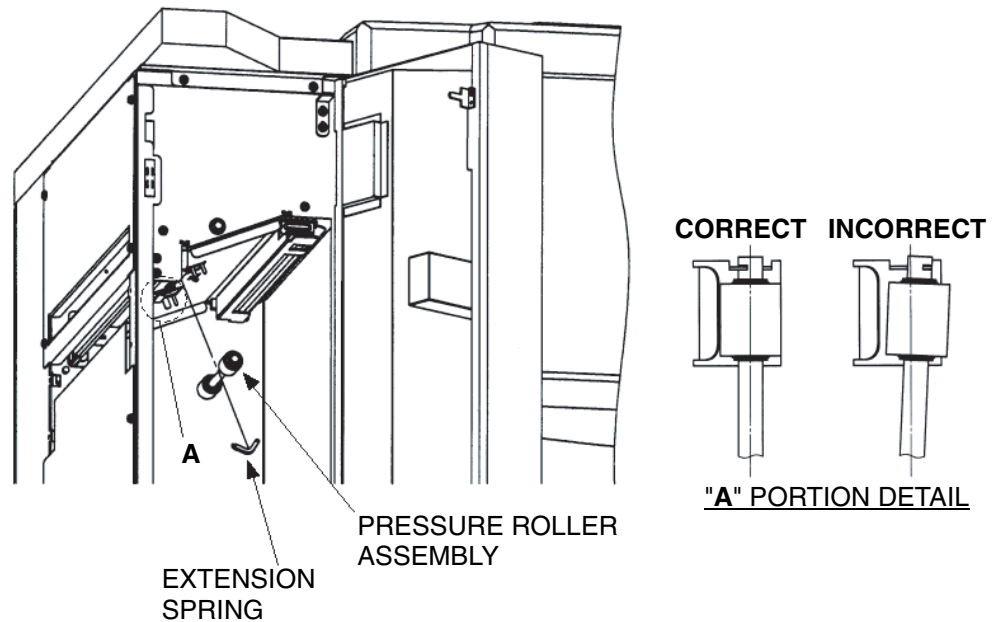


Figure 7-289. Removal of the Pressure Roller Assembly

### [Assembling Procedures]

Perform the disassembling procedures in the reverse order.

See "A" portion detail for mounting the Pressure Roller Assembly.

### 7.3.3. Removal of the Sleeve Bearing

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

Applicable jigs and tools: - Screwdriver, Pliers.

**[Disassembling Procedures]**

1. Open the Front Cover. (Refer to item 3.3.1 on page 3-9)
2. Remove the Snap Ring E and Sleeve Bearing.

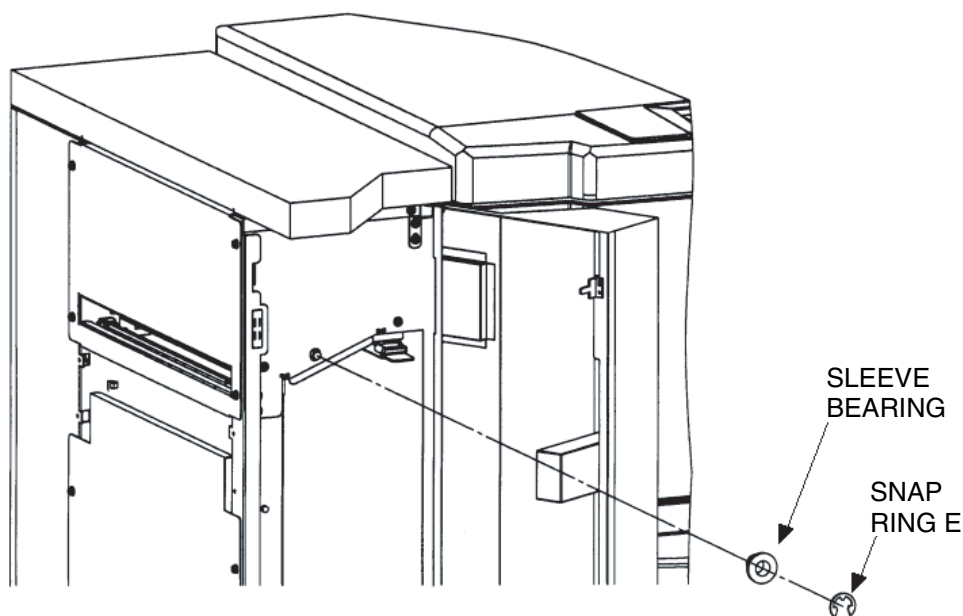


Figure 7-290. Removal of the Sleeve Bearing

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

## 7.3.4. Removal of the Transit Motor

**CAUTION:**  
Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver.

### [Disassembling Procedures]

1. Remove the Rear Cover. (Refer to item 3.3.2. (3) on page 3-14)
2. Disconnect the connectors J/P421.
3. Unscrew the two ⊕ screws to remove the Motor Holder Assembly.
4. Unscrew the two ⊕ screws to remove the Transit Motor and Motor gear (SB).

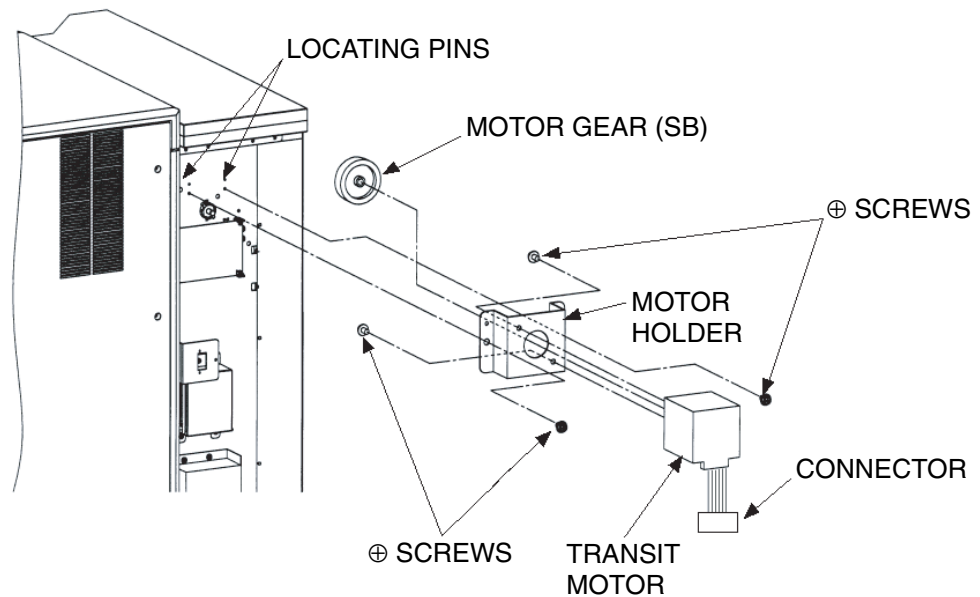


Figure 7-291. Removal of the Transit Motor

### [Assembling Procedures]

Perform the disassembling procedures in the reverse order.

Match the set of the Motor Holder with the locating pins.

### 7.3.5. Removal of the Drive Roller Gear (SB)

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** - Screwdriver, ⊕ Screwdriver, Pliers.

**[Disassembling Procedures]**

1. Remove the Transit Motor. (Refer to item 7.3.4 on page 7-272)
2. Remove the Snap Ring E to remove the Drive Roller Gear (SB).

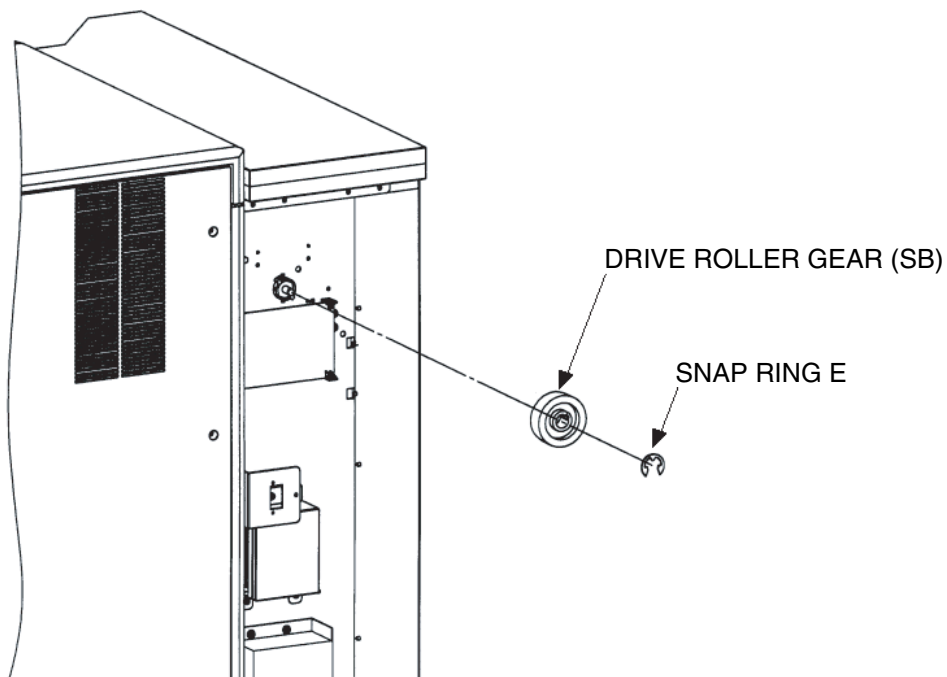


Figure 7-292. Removal of the Drive Roller Gear (SB)

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

## 7.3.6. Removal of the Transit Roller Assembly

**CAUTION:**  
Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** - Screwdriver, ⊕ Screwdriver, Pliers.

### [Disassembling Procedures]

1. Remove the Sleeve Bearing. (Refer to item 7.3.3 on page 7-271)
1. Remove the Drive Roller Gear (SB). (Refer to item 7.3.5 on page 7-273)
2. Remove the B.B Housing by turning it clockwise, then remove the Transit Roller Assembly.

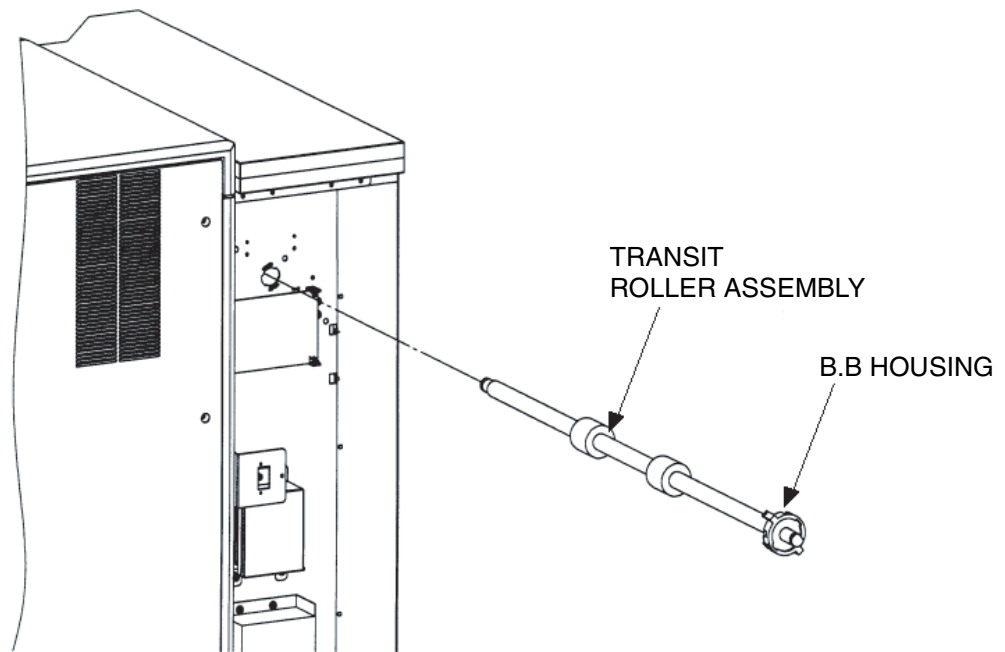


Figure 7-293. Removal of the Transit Roller Assembly

### [Assembling Procedures]

Perform the disassembling procedures in the reverse order.

## 7.3.7. Removal of the ED089 Assembly

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Remove the Rear Cover. (Refer to item 3.3.2. (3) on page 3-14)
2. Disconnect the connectors J/P427, J/P420, J/P438, J/P429, J/P421.
3. Unscrew the two ⊕ screws to remove the ED089 Assembly.

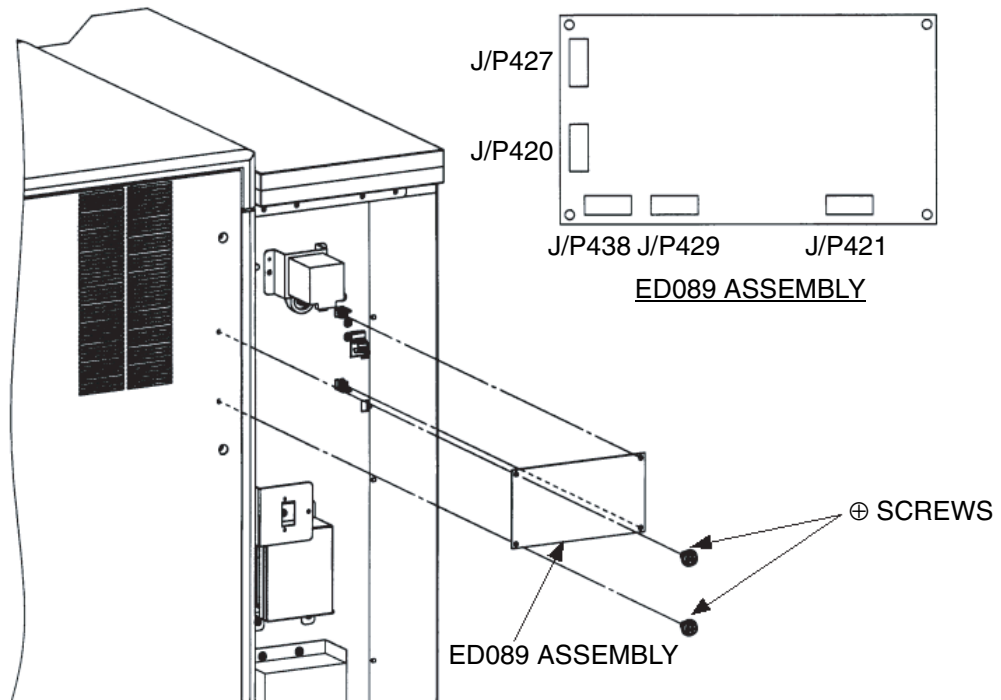


Figure 7-294. Removal of the ED089 Assembly

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.



## 7.3.8. Removal of the RB301 Assembly

**CAUTION:**  
Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver.

### [Disassembling Procedures]

1. Remove the Rear Cover. (Refer to item 3.3.2. (3) on page 3-14)
2. Unscrew the three ⊕ screws to remove the RB Cover.
3. Disconnect the connectors J/P294, J/P291 to remove the RB301 Assembly.

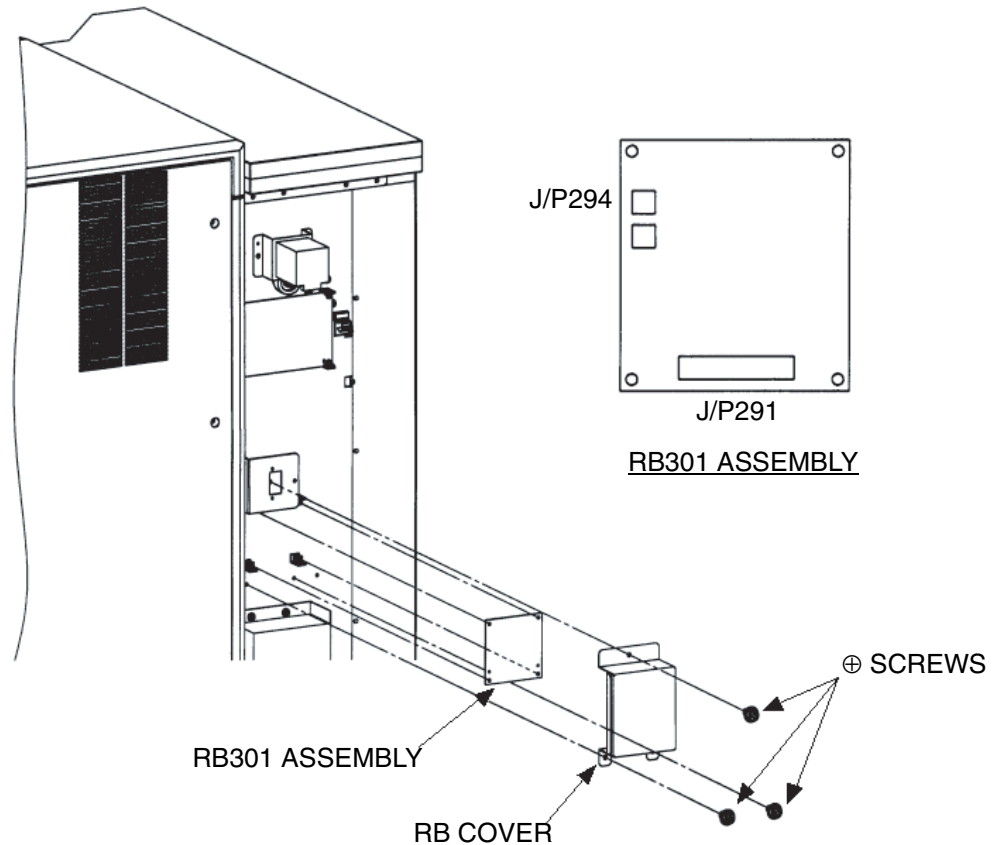


Figure 7-295. Removal of the RB301 Assembly

### [Assembling Procedures]

Perform the disassembling procedures in the reverse order.

## 7.3.9. Removal of the Power Supply

**CAUTION:**

Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

Applicable jigs and tools: ⊕ Screwdriver.

**[Disassembling Procedures]**

1. Remove the Rear Cover. (Refer to item 3.3.2. (3) on page 3-14)
2. Disconnect the connectors CN1, CN2, and CN3.
3. Loosen the ⊕ screw (Lower side).
4. Unscrew the two ⊕ screws to remove the Power Supply and PS Cover.

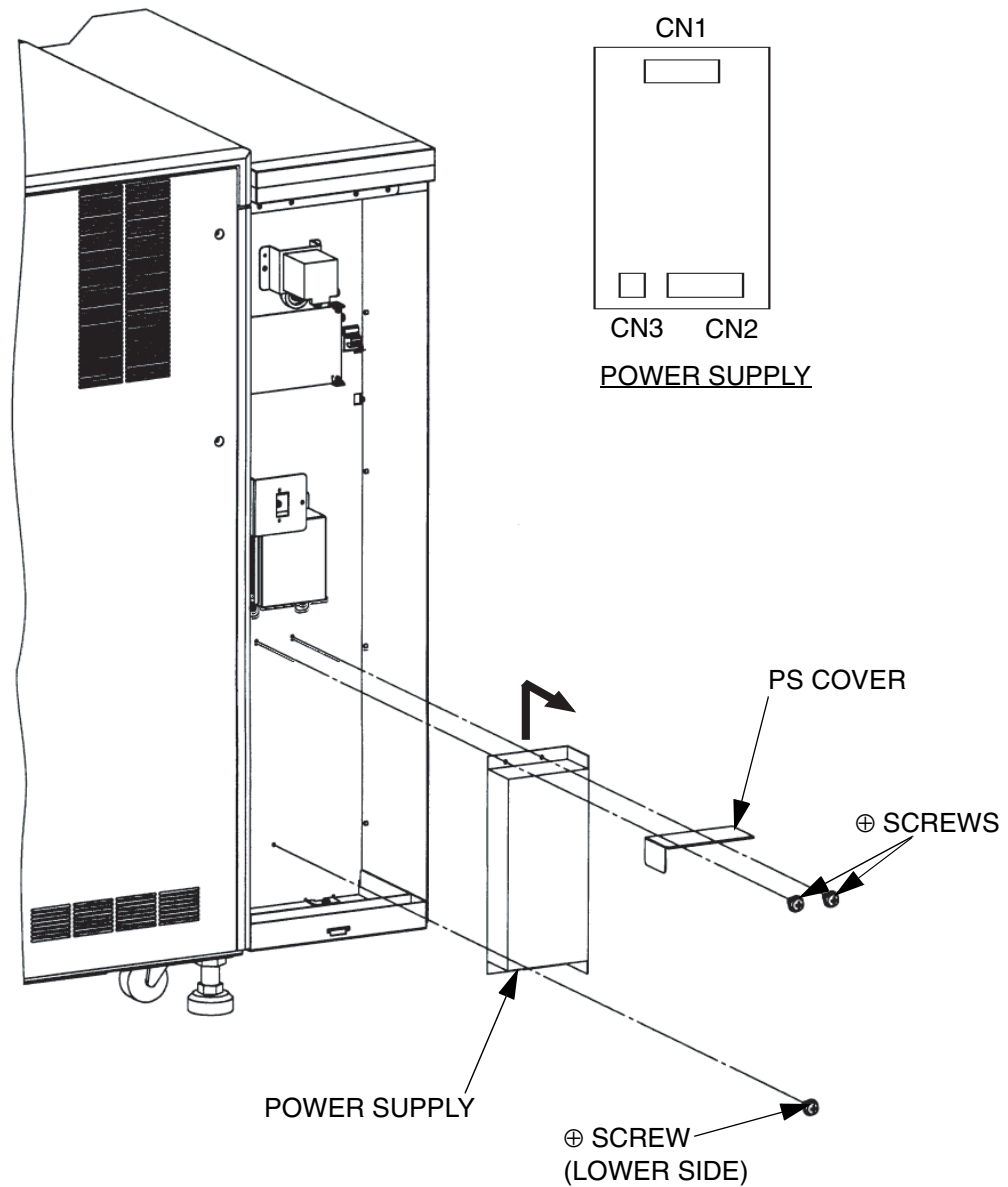


Figure 7-296. Removal of the Power Supply

**[Assembling Procedures]**

Perform the disassembling procedures in the reverse order.

## 7.3.10. Removal of the Transit Pass Sensor

**CAUTION:**  
Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver.

### [Disassembling Procedures]

1. Open the Front Cover. (Refer to item 3.3.1 on page 3-9)
2. Remove the Rear Cover. (Refer to item 3.3.2. (3) on page 3-14)
3. Remove the Top Cover. (Refer to item 3.3.2. (3) on page 3-14)
4. Remove the Transit Pass Sensor (S801) and Sensor Holder.
5. Remove the Transit Pass Sensor (S801) from the Sensor Holder.
6. Disconnect the connector P/J.

TRANSIT PASS  
SENSOR (S801)

SENSOR HOLDER

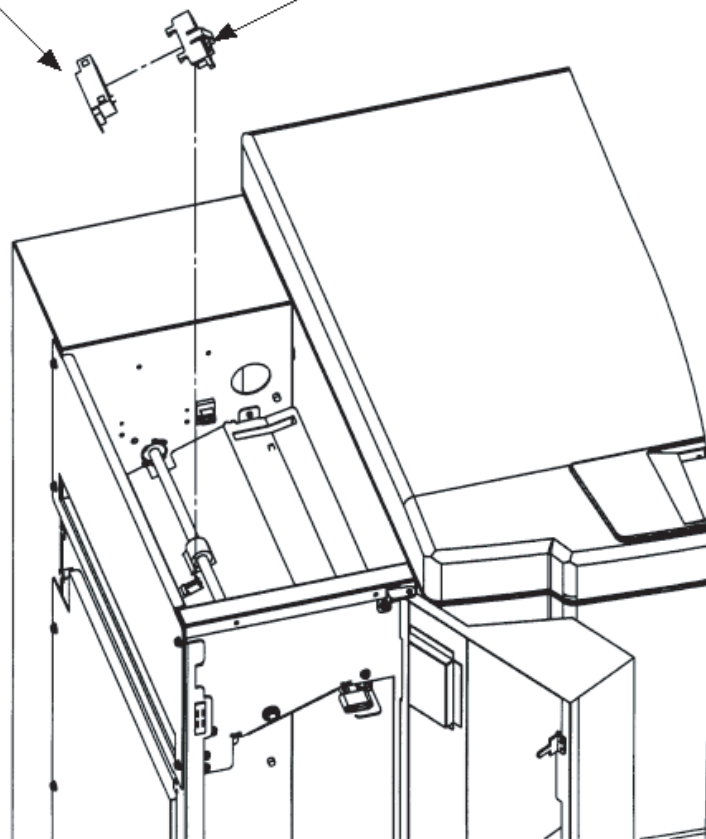


Figure 7-297. Removal of the Transit Pass Sensor

### [Assembling Procedures]

Perform the disassembling procedures in the reverse order.

## 7.3.11. Removal of the Front Cover Switch

**CAUTION:**  
Be sure to turn OFF the MAIN AC POWER prior to performing the maintenance.

**Applicable jigs and tools:** ⊕ Screwdriver.

### [Disassembling Procedures]

1. Open the Front Cover. (Refer to item 3.3.1 on page 3-9)
2. Remove the Rear Cover. (Refer to item 3.3.2. (3) on page 3-14)
3. Remove the Top Cover. (Refer to item 3.3.2. (3) on page 3-14)
4. Disconnect the connectors 1A, 1B, 2A, and 2B.
5. Remove the Front Cover Switch from the frame.

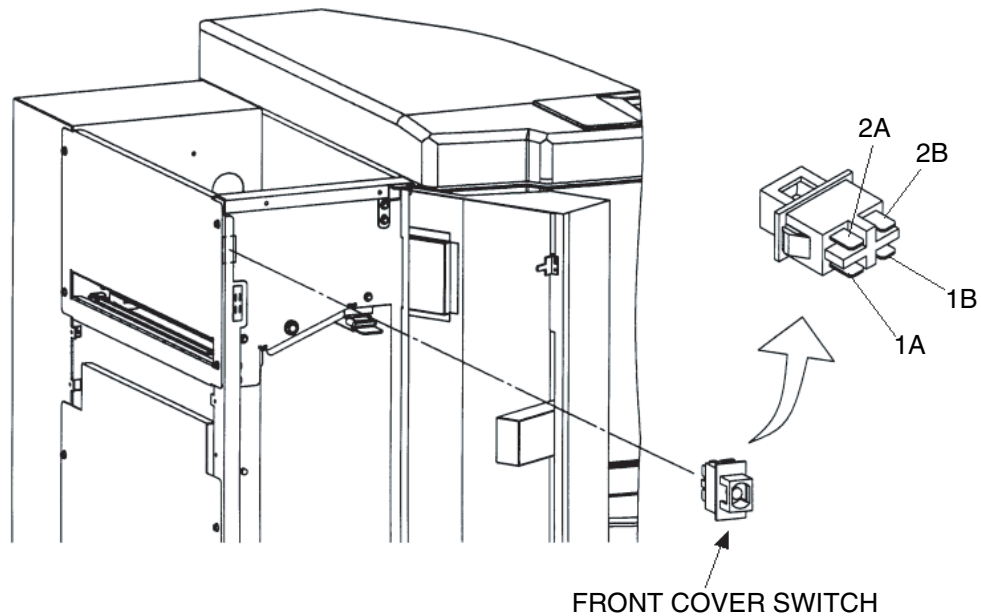


Figure 7-298. Removal of the Front Cover Switch

### [Assembling Procedures]

Perform the disassembling procedures in the reverse order.



# Chapter 8. Handling of Maintenance Panel

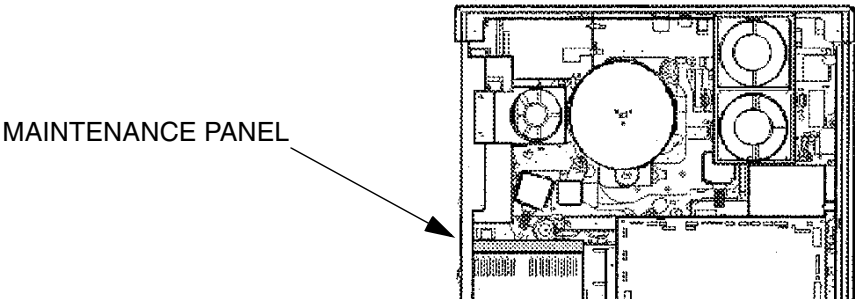
## 8.1. Outline

This printer has functions that carries out the presence of abnormality, and diagnostics of abnormality place by driving a logic circuit and motor in a single body. Furthermore this printer has a function that is grasped the operating situation, exchange time of fixed period exchange component to accumulate the use situation of the printer, the use situation of fixed period exchange component, and the occurrence situation of error. These functions are called by a popular name KPDG(Kanji Printer DiaGnostics).

## 8.2. Installation Position and Functions of Maintenance Panel

### 8.2.1. Installation Position of Maintenance Panel

There is a maintenance panel on the power supply when the rear cover is removed.



### 8.2.2. Functions of Maintenance Panel

DISPLAY

Indicate state of printer, data input from data key, and diagnostics information.

DATA KEY

These keys ("0" to "F") carry out the input of data.

START/STOP KEY

This key carries out function selection, start/stop of each function.

ENTER KEY

This key carries out decision and action of each function.

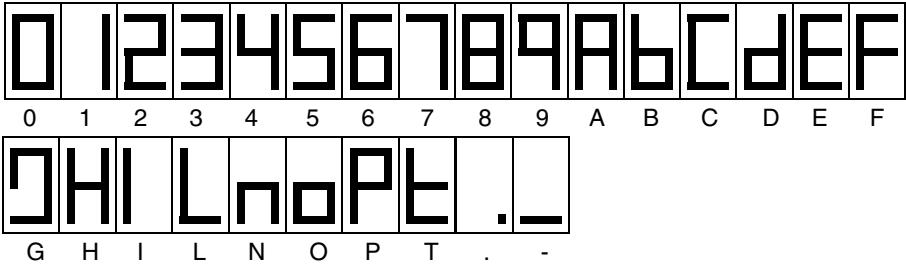
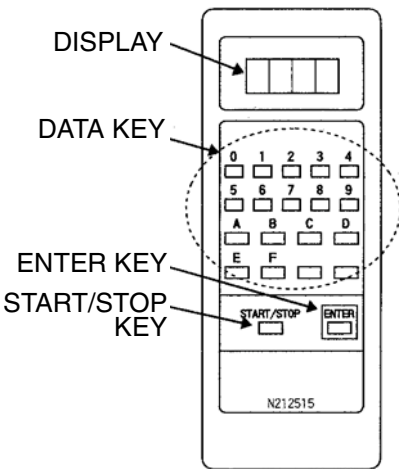


Figure 8-1. Example of Display Indication

|    |   |    |  |
|----|---|----|--|
| MM | L | 00 |  |
|----|---|----|--|

---

## 8.3. Indication of Maintenance Panel

Indication according to a printer state.

| No. | State of Printer | Indication of Display           | Remarks                                              |
|-----|------------------|---------------------------------|------------------------------------------------------|
| 1   | INITIALIZE       | "6000"                          | -                                                    |
| 2   | DORMANT          | "2000"                          | -                                                    |
| 3   | ACTIVATE         | "0000"                          | -                                                    |
| 4   | PRINT            | "0200"                          | -                                                    |
| 5   | ERROR            | Following Error Code Indication | <a href="#">"Error Code Indication," on page 5-8</a> |
| 6   | DIAGNOSTICS      | Following Diagnostics           | <a href="#">"Diagnostics," on page 8-3</a>           |

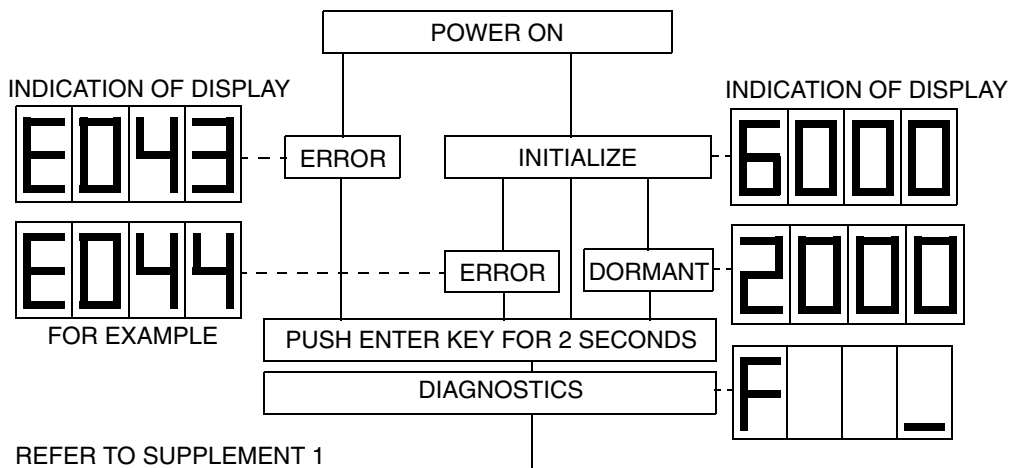
## 8.4. Diagnostics

### 8.4.1. Outline of Diagnostics

At the time of obstacle outbreak or component exchange, this routine carries out gesture check of motor and sensor.

### 8.4.2. Operation Procedure

Operation procedure of maintenance panel according to the flow chart.



REFER TO SUPPLEMENT 1

| Item                     | Routine No. | Contents                                                 | Remarks                                            |
|--------------------------|-------------|----------------------------------------------------------|----------------------------------------------------|
| Sensor Test              | "00 to 4F"  | Read a state of sensor and indicate it.                  | Refer to "Sensor Test," on page 8-4.               |
| Driver Test              | "50 to 8F"  | Drive a motor and perform rotation check.                | Refer to "Driver Test," on page 8-7.               |
| Adjustment               | "90 to 9F"  | Perform adjustment of system department.                 | Refer to "Adjustment," on page 8-13.               |
| Assistance / Maintenance | "A0 to AF"  | Carry out assistance / maintenance of device use states. | Refer to "Assistance / Maintenance," on page 8-23. |
| Diagnostics of Finisher  | "F1"        | Sensor test and driver test of Finisher.                 | Refer to "Diagnostics of Finisher," on page 8-35.  |

PUSH S/S KEY

RETURN TO THE STATE BEFORE  
PUSH ENTER KEY FOR 2  
SECONDS

2000



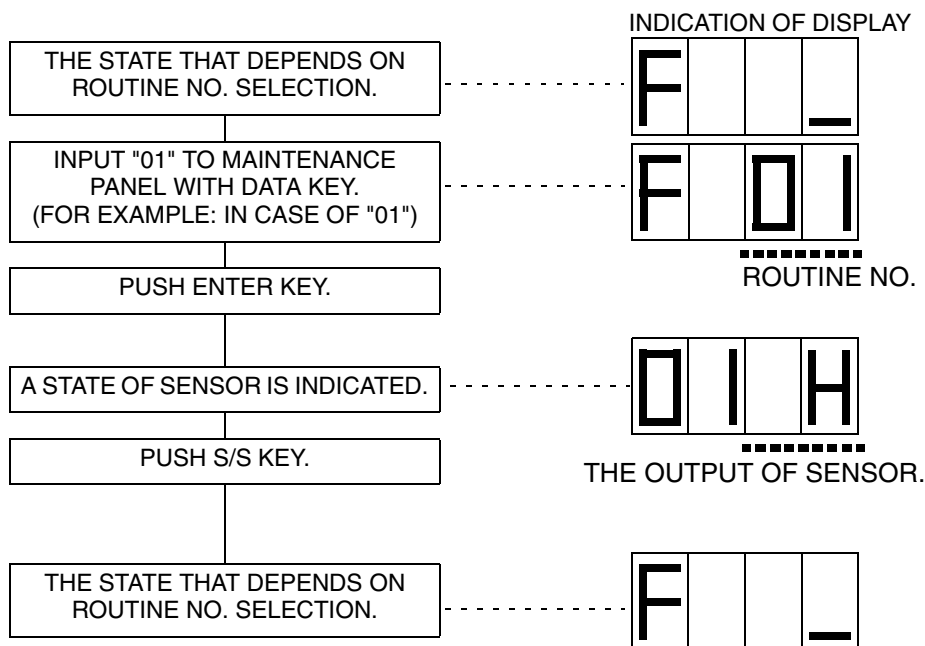
## 8.4.3. Sensor Test

### 8.4.3.1. Sensor Test 1

Routine No. : "01" to "0D", "10" to "17", "1B" to "1C", "1E" to "1F", "20" to "2F", "31" to "33", "36" to "37", "39" to "3C".

(FOR DETAILS REFER TO [SUPPLEMENT 1 - Diagnostics Routine on page -1.](#))

These routines are used, when you confirm whether the operation of selected sensor is normal or abnormal.



#### EXPLANATION OF DETAILS

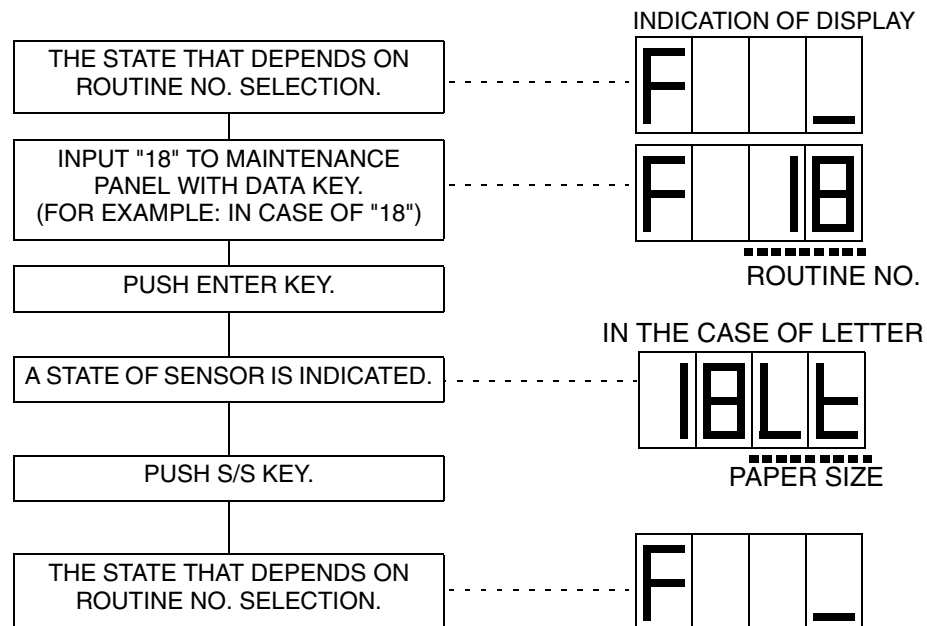
| Routine No.                                                                                                                  | Indication Contents                                                                                                                                    | Display                           |
|------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|
| "01" to "0D"<br>"10" to "17"<br>"1B" to "1C"<br>"1E" to "1F"<br>"20" to "2F" "30"<br>to "33" "36" to<br>"37"<br>"39" to "3C" | The output of sensor indicates "H" or "L".<br>Refer to <a href="#">SUPPLEMENT 2 - Details of Sensor Test on page -1</a> about polarity of each sensor. | <div>0 1 H</div> <div>0 1 L</div> |

### 8.4.3.2. Sensor Test 2

Routine No. : "18" to "1A" (Hopper Size Sensor)

(FOR DETAILS REFER TO [SUPPLEMENT 1 - Diagnostics Routine on page -1.](#))

These routines are used, when you confirm whether the operation of selected sensor is normal or abnormal.



#### EXPLANATION OF DETAILS

| Size                  | Unset | FREE | B5 | A5 |
|-----------------------|-------|------|----|----|
| Indication of Display | OP    | FE   | 65 | A5 |

| Size                  | Ledger | Letter | Legal | A4 |
|-----------------------|--------|--------|-------|----|
| Indication of Display | Ld     | Lt     | Lg    | A4 |

| Size                  | A3 | B4 | NO |
|-----------------------|----|----|----|
| Indication of Display | A3 | 64 | no |

| Size                          | Hopper 1 (Error) | Hopper 2 (Error) | Hopper 3 (Error) |
|-------------------------------|------------------|------------------|------------------|
| Indication of Display (Error) | E284             | E285             | E286             |

Paper size is detected by a combination of 5 light sensors.

If all 5 light sensors are shaded, "E284", "E285" or "E286" is indicated.

If all 5 light sensors are impossible combination, "no" is indicated.

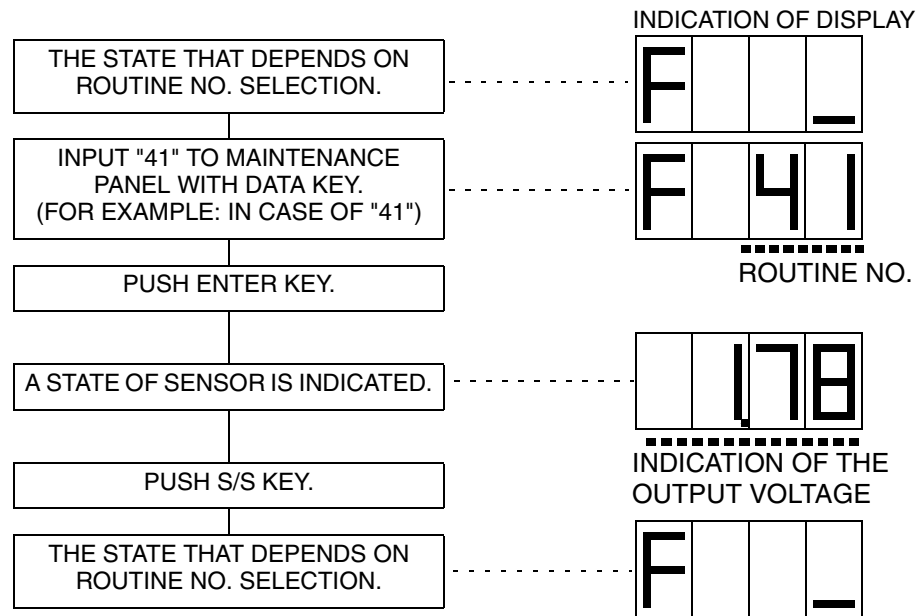
There are not settings of "A5" to Hopper 1.

### 8.4.3.3. Sensor Test 3

Routine No. : "41", "43" to "48" (Analogue Sensor)

(FOR DETAILS REFER TO [SUPPLEMENT 1 - Diagnostics Routine on page -1.](#))

These routines are used, when you confirm whether the operation of selected sensor is normal or abnormal.



#### EXPLANATION OF DETAILS

##### "41" THERMAL SENSOR

Convert Heatroll temperature into the voltage and indicate it.

REFER TO SUPPLEMENT 3 - Temperature of Heat Roll and Output voltage.

##### "43" TONER LEVEL

Indicate the voltage input into the Toner Control Sensor.

Usually indicates about 1 to 4V, the other case is PCB fault.

##### "44" TONER CONTROL

This routine checks the abnormality of the Toner Control Sensor

When you push Enter Key, the voltage which was input into the Toner Control Sensor falls down for 1 second.

At that time if indicated voltage drops, the Toner Control Sensor is normal.

The indicated voltage becomes various kinds of values by state of the Developer Mix.

##### "45" TEMPERATURE SENSOR

This is called Environmental Sensor and arranged inside of the TH Unit.

REFER TO SUPPLEMENT 4 - Air Temperature / Humidity and Output voltage.

##### "46" HUMIDITY SENSOR

This is called Environmental Sensor and arranged under the Developer.

REFER TO SUPPLEMENT 4 - Air Temperature / Humidity and Output voltage.

##### "48" DRUM WRAP2 (diffuse reflected light)

This routine checks the abnormality of the Drum Wrap Sensor.

When you push Enter Key, the voltage which was input into the Drum Wrap Sensor rises for 1 second interval.

At that time if indicated voltage rises, the Drum Wrap Sensor is normal.

The indicated voltage becomes various kinds of values by state of the Drum surface.

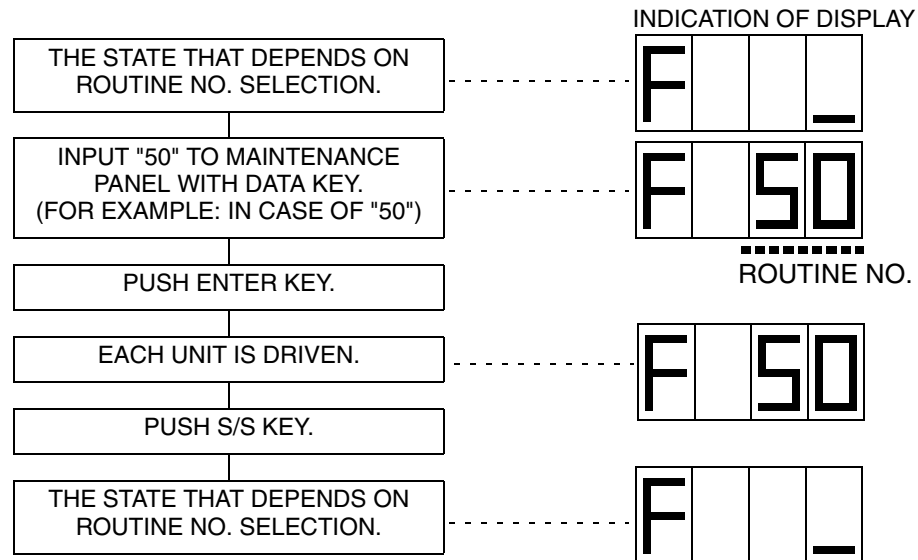
## 8.4.4. Driver Test

### 8.4.4.1. Driver Test 1

Routine No. : "50" to "65", "6B", "6E" to "6F", "70" to "71", "73" to "76", "7B" to "7D", "80" to "83"

(FOR DETAILS REFER TO [SUPPLEMENT 1 - Diagnostics Routine on page -1.](#))

These routines are used, when you confirm whether the operation of the selected motor, fan or high voltage supply is normal or abnormal.



| Routine No.                                                                                                    | Continuous Drive Mode                                                                                     | Automatic Stop Mode                                                                                                                       |
|----------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| "50" to "53"<br>"56" to "5A"<br>"60", "64", "6B"<br>"6E" to "6D"<br>"70" to "71"<br>"74" to "75"<br>"7C", "7E" | Each unit is driven continually after you push enter key till you push S/S key.                           | Each unit is driven after you push enter key. And each unit stops in 10 seconds later automatically.                                      |
| "54", "65"<br>"61" to "63"                                                                                     | After you push enter key, relational motor is driven and clutch is turned on, off in uniformity interval. | After you push enter key, repeat a gesture shown left 10 times and stops automatically.                                                   |
| "55", "5E", "5F"                                                                                               | After you push enter key, solenoid is turned on, off in uniformity interval.                              | After you push enter key, repeat a gesture shown left 10 times and stops automatically.                                                   |
| "5B", to "5D"                                                                                                  | After you push enter key, each motor repeats cw ccw in uniformity interval.                               | After you push enter key, repeat a gesture shown left 5 or 10 times and stops automatically.                                              |
| "71", "73"<br>"80" to "83"                                                                                     | Each unit is driven continually after you push enter key till you push S/S key.                           | Each unit is driven after you push enter key. And each unit stops in 1 second later automatically.                                        |
| "6E"                                                                                                           |                                                                                                           | Transfer Corona Unit is cleaned automatically after you push enter key. If you push S/S key, cleaning comes to an end.                    |
| "6F"                                                                                                           |                                                                                                           | Cleaning departments materials come back to an original position after you push enter key. If you push S/S key, cleaning comes to an end. |

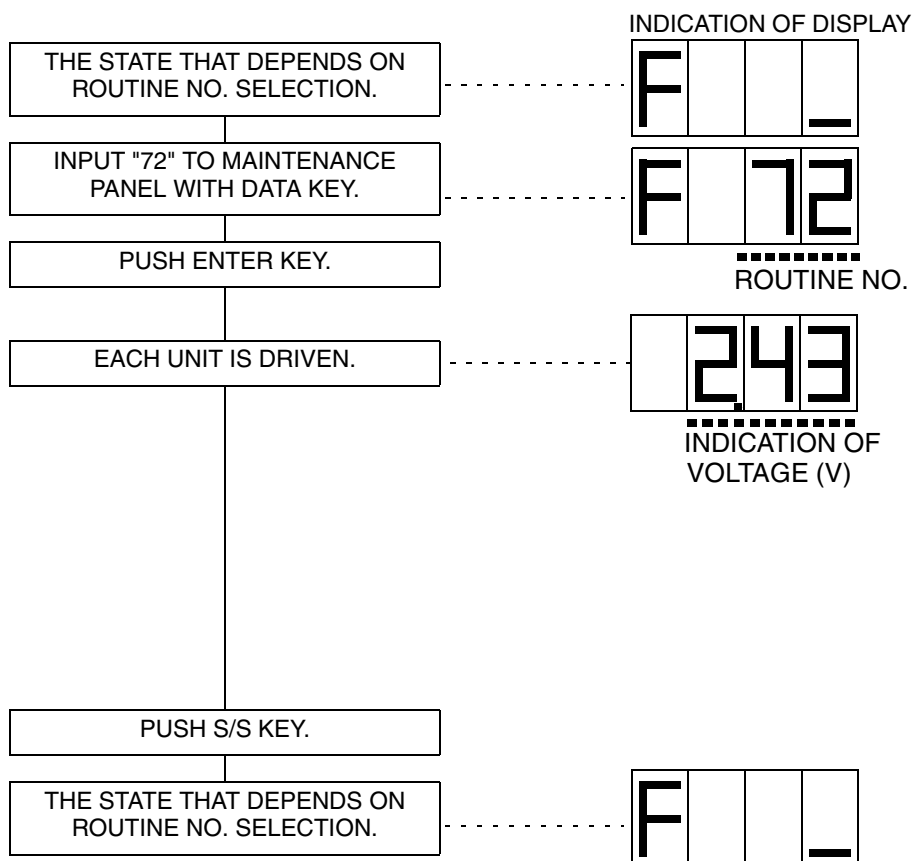
**Note:** "Continuous Drive Mode" and "Automatic Stop Mode" are explained in ["Assistance / Maintenance 1," on page 8-23.](#)

### 8.4.4.2. Driver Test 2

Routine No. : "72" (Dev Motor CW)

(FOR DETAILS REFER TO [SUPPLEMENT 1 - Diagnostics Routine on page -1.](#))

This routine is used, when you confirm whether the operation of the Dev Motor is normal or abnormal. And the output voltage of the Toner Control Sensor is indicated.



#### EXPLANATION OF DETAILS

| Routine No. | Continuous Drive Mode                                                                                                                                       | Automatic Stop Mode                                                                       |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
| "72"        | Dev Motor is driven continually after you push enter key till you push S/S key.<br>The output voltage of the Toner Control Sensor is indicated.             | After you push enter key, repeat a gesture shown left 10 seconds and stops automatically. |
|             | Sample the output voltage of the Toner Control Sensor for 1 second and indicated the average. This value is about 2.5V and doesn't slip off more than 0.3V. |                                                                                           |

**Note:** "Continuous Drive Mode" and "Automatic Stop Mode" are explained in ["Assistance / Maintenance 1," on page 8-23.](#)

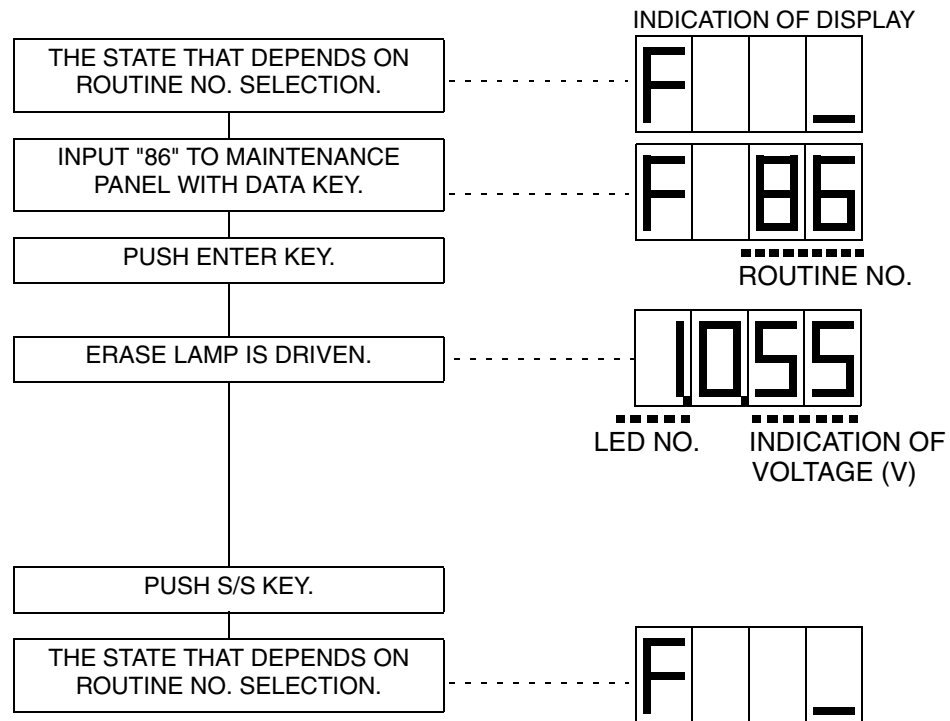
### 8.4.4.3. Driver Test 3

Routine No. : "86" (Erase Lamp)

(FOR DETAILS REFER TO [SUPPLEMENT 1 - Diagnostics Routine on page -1.](#))

This routine is used, when you confirm whether the operation of the Erase Lamp is normal or abnormal.

Convert an electric current spreading in the Erase Lamp into the voltage and it is indicated.



#### EXPLANATION OF DETAILS

| Routine No. | Continuous Drive Mode                                                                                                                      | Automatic Stop Mode                                                                                   |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| "86"        | Led eraser is driven continually after you push enter key till you push S/S key.<br>The voltage of LED 1 is indicated.<br>LED1: Erase Lamp | Led eraser is driven after you push enter key.<br>Erase Lamp stops in 10 seconds later automatically. |
|             | Refer to "SUPPLEMENT 5 - Current of LED Eraser and Output" about the relation between the current and voltage.                             |                                                                                                       |

**Note:** "Continuous Drive Mode" and "Automatic Stop Mode" are explained in ["Assistance / Maintenance 1," on page 8-23.](#)

#### 8.4.4.4. Driver Test 4

Routine No. : "8B", "8C" (Laser power)

(FOR DETAILS REFER TO [SUPPLEMENT 1 - Diagnostics Routine on page -1.](#))

These routines are used for adjustment of laser power in the factory. Refer to ["Adjustment 1," on page 8-13.](#)

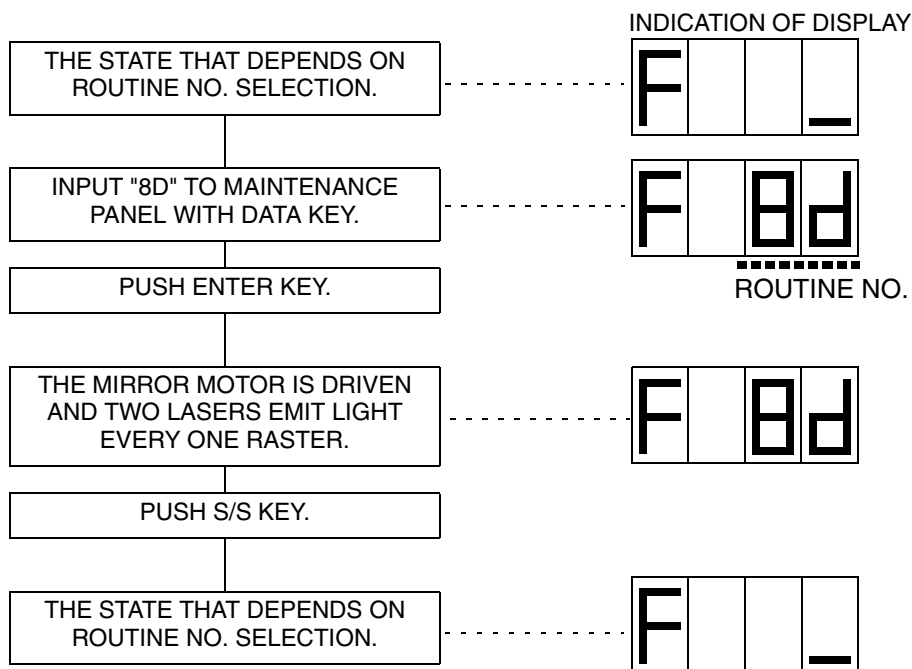
#### 8.4.4.5. Driver Test 5

Routine No. : "8D" (Laser 1.2)

(FOR DETAILS REFER TO [SUPPLEMENT 1 - Diagnostics Routine on page -1.](#))

This routine is used, when you confirm whether the operation of the 2 Lasers are normal or abnormal.

And this routine is used for the confirmation of BD search in the factory.



#### EXPLANATION OF DETAILS

| Routine No. | Continuous Drive Mode                                                                           | Automatic Stop Mode                                                                                                       |
|-------------|-------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|
| "8D"        | Mirror motor is driven and the two lasers emit light every one raster after you push enter key. | After you push enter key, repeat a gesture shown left. And mirror motor and laser stop in 60 seconds later automatically. |

**Note:** "Continuous Drive Mode" and "Automatic Stop Mode" are explained in ["Assistance / Maintenance 1," on page 8-23.](#)

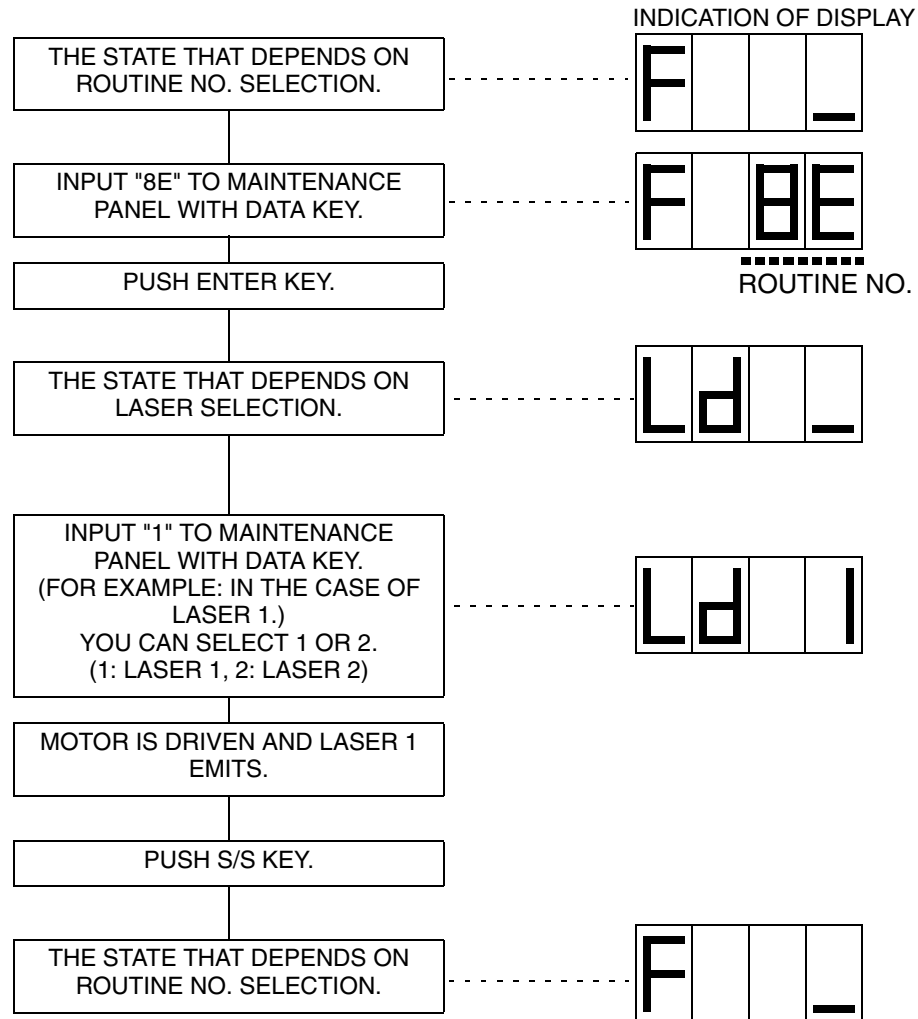
#### 8.4.4.6. Driver Test 6

Routine No. : "8E" (Optical Unit)

(FOR DETAILS REFER TO [SUPPLEMENT 1 - Diagnostics Routine on page -1.](#))

This routine is used, when you confirm whether the operation of the selected Laser is normal or abnormal.

And this routine is used for the confirmation of BD search in the factory.



#### EXPLANATION OF DETAILS

| Routine No. | Continuous Drive Mode                                                                             | Automatic Stop Mode                                                                                                                                |
|-------------|---------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| "8E"        | Mirror motor is driven and a laser selected emits after you push enter key till you push S/S key. | Mirror motor is driven and a laser selected emits after you push enter key. And the Mirror motor and laser stop in 30 seconds later automatically. |

**Note:** "Continuous Drive Mode" and "Automatic Stop Mode" are explained in ["Assistance / Maintenance 1," on page 8-23.](#)

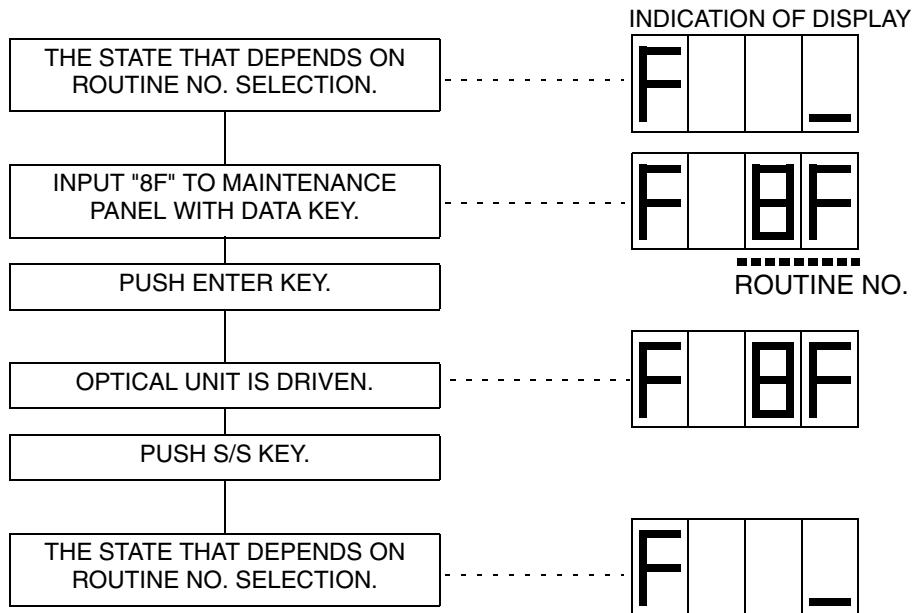


#### 8.4.4.7. Driver Test 7

Routine No. : "8F" (Optical Unit)

(FOR DETAILS REFER TO [SUPPLEMENT 1 - Diagnostics Routine on page -1.](#))

This routine is used, when you confirm whether the operation of the Optical Unit is normal or abnormal.



#### EXPLANATION OF DETAILS

| Routine No. | Continuous Drive Mode                                                                                                                                                                                                                                                                 | Automatic Stop Mode                                                                                       |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|
| "8F"        | Optical unit is driven continually after you push enter key till you push S/S key.                                                                                                                                                                                                    | Optical unit is driven after you push enter key.<br>Optical unit stops in 30 seconds later automatically. |
|             | This function is the same gesture of print sequence.<br>So this function is used for confirmation of the Optical Unit.<br>Furthermore if "E238" or "E239" is detected during print and is not detected during "8F". There may be a possibility of incorrect action by electric noise. |                                                                                                           |

**Note:** "Continuous Drive Mode" and "Automatic Stop Mode" are explained in ["Assistance / Maintenance 1," on page 8-23.](#)

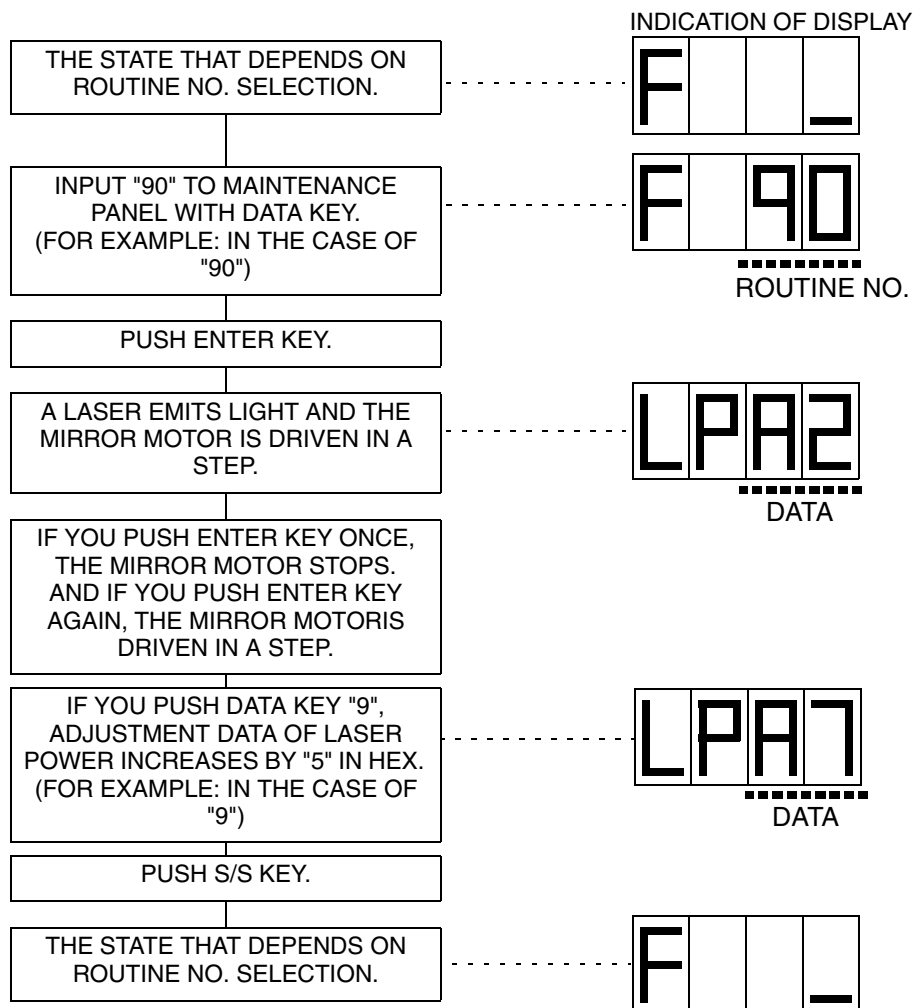
## 8.4.5. Adjustment

### 8.4.5.1. Adjustment 1

Routine No. : "8B", "8C", "90" to "93" (Laser Power)

(FOR DETAILS REFER TO [SUPPLEMENT 1 - Diagnostics Routine on page -1.](#))

These routines are used for adjustment of laser power in the factory.



## EXPLANATION OF DETAILS

Routine No. 8B: This routine is used for adjustment of laser 1 High power when the laser control is not selected.

Routine No. 8C: This routine is used for adjustment of laser 2 High power when the laser control is not selected.

Routine No. 90: This routine is used for adjustment of laser 1 power when the laser control is not selected.

Routine No. 91: This routine is used for adjustment of laser 2 power when the laser control is not selected.

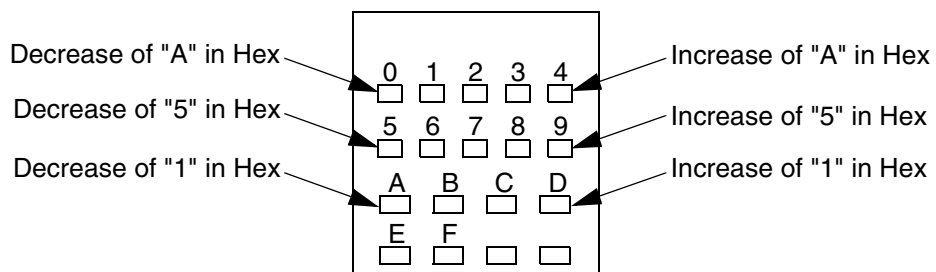
Routine No. 92: This routine is used for adjustment of laser 1 Low power when the laser control is selected.

Routine No. 93: This routine is used for adjustment of laser 2 Low power when the laser control is selected.

Relation between Data key and input data.

You can input data from "00" to "E9".

**Note:** If you input a larger number than "E9", "E9" is set automatically.

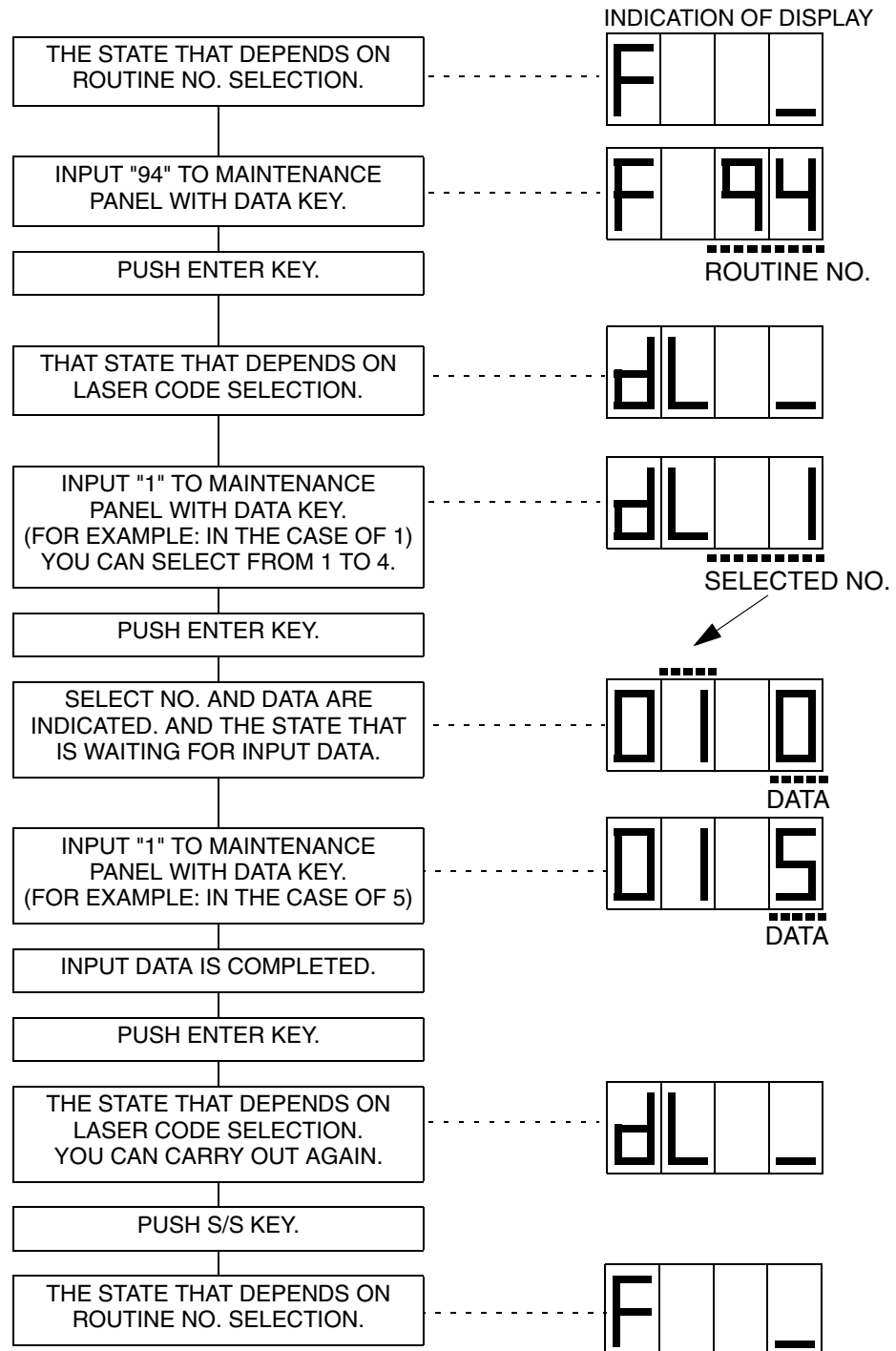


### 8.4.5.2. Adjustment 2

Routine No. : "94" (Laser Delay Data)

(FOR DETAILS REFER TO [SUPPLEMENT 1 - Diagnostics Routine on page -1.](#))

The routines are used for making compensation for laser phase among laser1 high, laser1 low, laser2 high, laser2 low, in the factory when the laser control is selected.



## EXPLANATION OF DETAILS

This routine makes compensation for laser phase among laser1 high, laser1 low, laser2 high and laser2 low,

This function delays each laser drive signal on the basis of input data.

If you carry out this routine, you observe laser drive signals by an oscilloscope or an exclusive tester.

Relationship between Data and laser phase.

Delay time of laser drive signal =  $2.0(\text{ns}) \times \text{Data (Dec)}$

For Example:

Show a good relation of signals and a bad relation of signals to the right. Laser 1 high signal in bad relation of signals is faster than laser 1 high signals in good relation of signals.

Its difference is

$$25.94(\text{ns}) - 11.94(\text{ns}) = 14.00(\text{ns})$$

Therefore

$$14.00(\text{ns}) = 2.0(\text{ns}) \times \text{Data(Dec)}$$

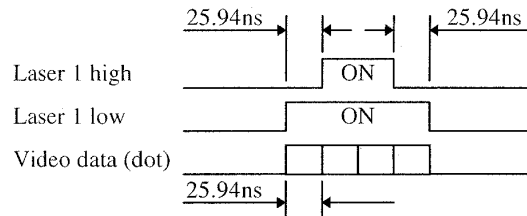
$$\text{Data(Dec)} = 14.00(\text{ns}) / 2.0(\text{ns})$$

$$\text{Data(Dec)} = 7$$

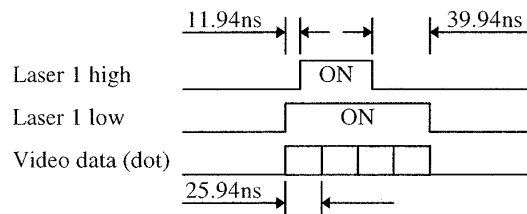
Convert this value (7) into Hex Data

If you input "7" in Hex, Laser 1 high signal is delayed for 14.00(ns)

Bad relation of signals is improved.



Good relation of signals



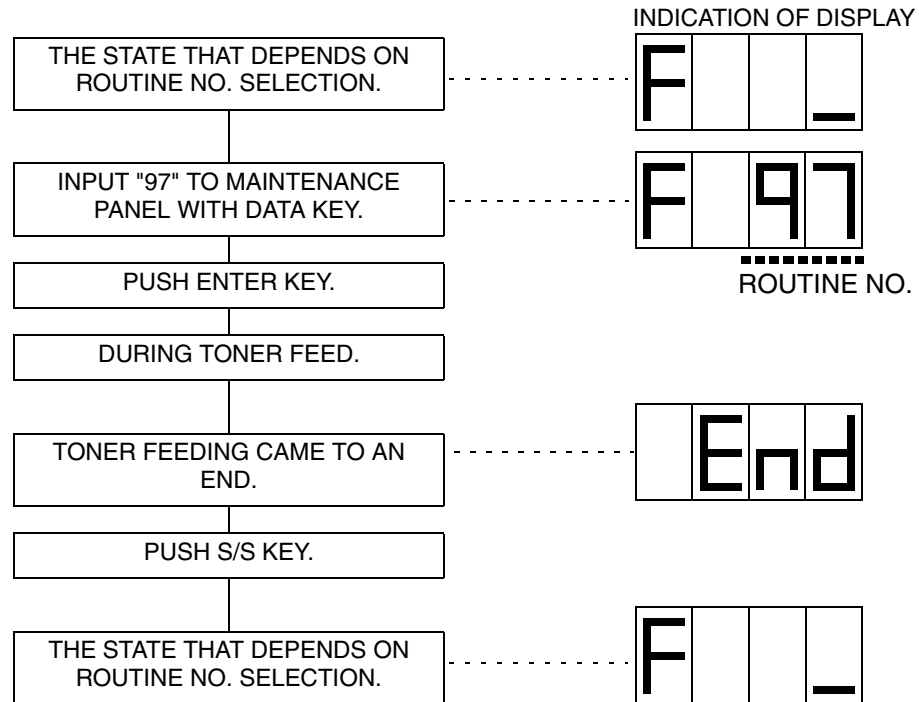
Bad relation of signals

### 8.4.5.3. Adjustment 3

Routine No. : "97" (Toner Supply)

(FOR DETAILS REFER TO [SUPPLEMENT 1 - Diagnostics Routine on page -1.](#))

You have to use this routine when lack of toner (E22B). If you carry out this routine toner in the Toner Hopper is supplied to the Developer Mix until the best concentration and stop to supply toner automatically.



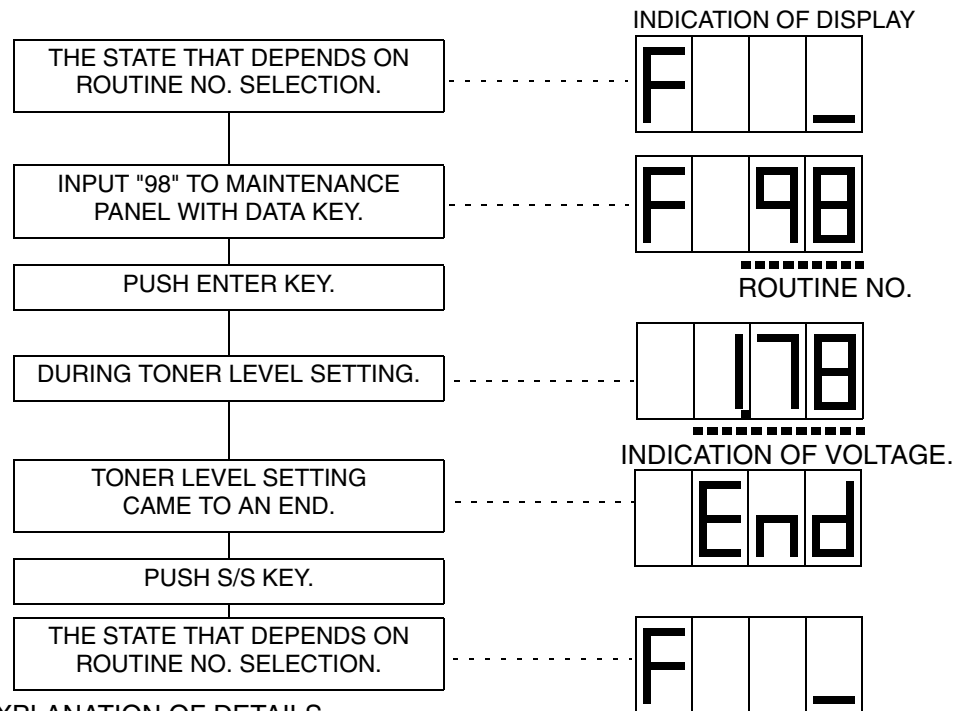
#### 8.4.5.4. Adjustment 4

Routine No. : "98" (Toner Control Level)

(FOR DETAILS REFER TO [SUPPLEMENT 1 - Diagnostics Routine on page -1.](#))

This routine is used in the case of the following.

1. Toner concentration data in the memory was erased by mistake of maintenance.
2. Developer Mix was charged Developer directly without using Developer Mix charge command ("99").



#### EXPLANATION OF DETAILS

Refer to ["Relation between control voltage and output of the sensor"](#), Figure 8-2.

This function adjusts the control voltage (the voltage which is input to the Toner Control Sensor) and set output of the Toner Control Sensor to  $V_{out}$  (2.5V) when good toner concentration of the Developer Mix is in the Developer. If good toner concentration of the Developer Mix is in the Developer, this routine comes to an end soon and "END" is indicated. But if the wrong toner concentration of the Developer Mix is in the Developer or the Toner Control Sensor is faulty, this routine does not come to an end in about 160 seconds later and "E283" is indicated.

And when you do not know whether good or wrong Developer Mix is in the Developer, you should not carry out this routine. Because when toner concentration of the Developer Mix is a little low or high, "E283" is not detected and adjustment is carried out in the state of the Developer Mix.

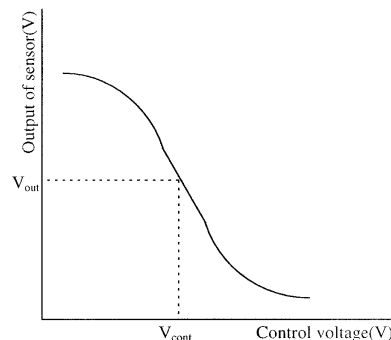


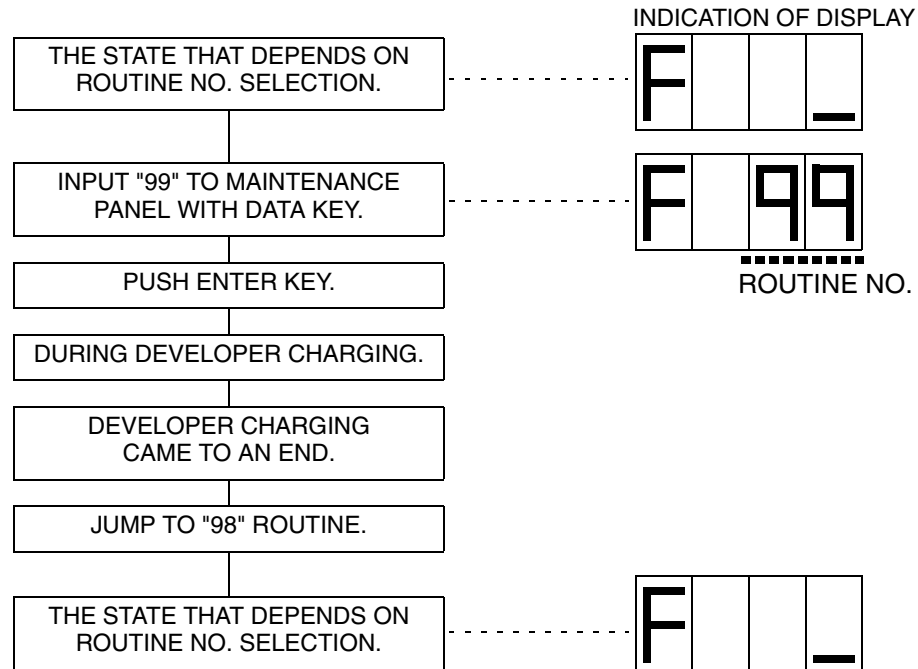
Figure 8-2. Relation between control voltage and output of the sensor

### 8.4.5.5. Adjustment 5

Routine No. : "99" (Developer Charging)

(FOR DETAILS REFER TO [SUPPLEMENT 1 - Diagnostics Routine on page -1.](#))

This routine is used when you charge the Developer with the Developer Mix.  
If this routine is carried out, adjustment of the toner control voltage is carried out automatically too.



#### EXPLANATION OF DETAILS

First this routine confirms whether there is Developer Mix in the Developer or not by the output voltage of the Toner Control Sensor. If Developer mix is in the Developer, "E048" is detected.

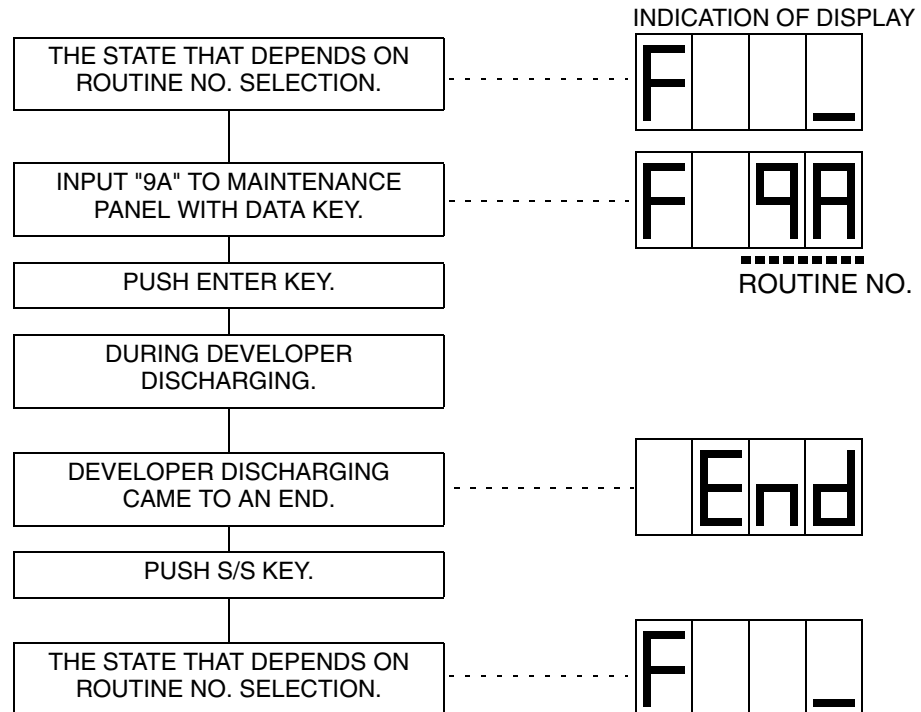
If Developer Mix is not in the Developer, begin to charge the Developer Mix and continue for 80 seconds. And confirms whether there is Developer Mix in the Developer or not by the output voltage of the Toner Control Sensor. If Developer mix is not in the Developer, "E047" is detected. If the Developer Mix is in the Developer, jump to "98" routine.



### 8.4.5.6. Adjustment 6

Routine No. : "9A" (Developer Discharging)  
(FOR DETAILS REFER TO [SUPPLEMENT 1 - Diagnostics Routine on page -1.](#))

This routine is used when you discharge the Developer Mix from the Developer.



#### EXPLANATION OF DETAILS

First this routine confirms whether the Developer Bottle is set or not by the Developer Bottle Set Sensor.

If the Developer Bottle is not set, "E01E" is detected.

If the Developer Bottle is set, begins to discharge the Developer Mix.

"E01E" is detected in the case of removing of the Developer Bottle during the discharging of the Developer Mix.

This routine confirms whether the Developer Mix in the Developer or not by output of voltage of the Toner Control Sensor during discharge of the Developer Mix.

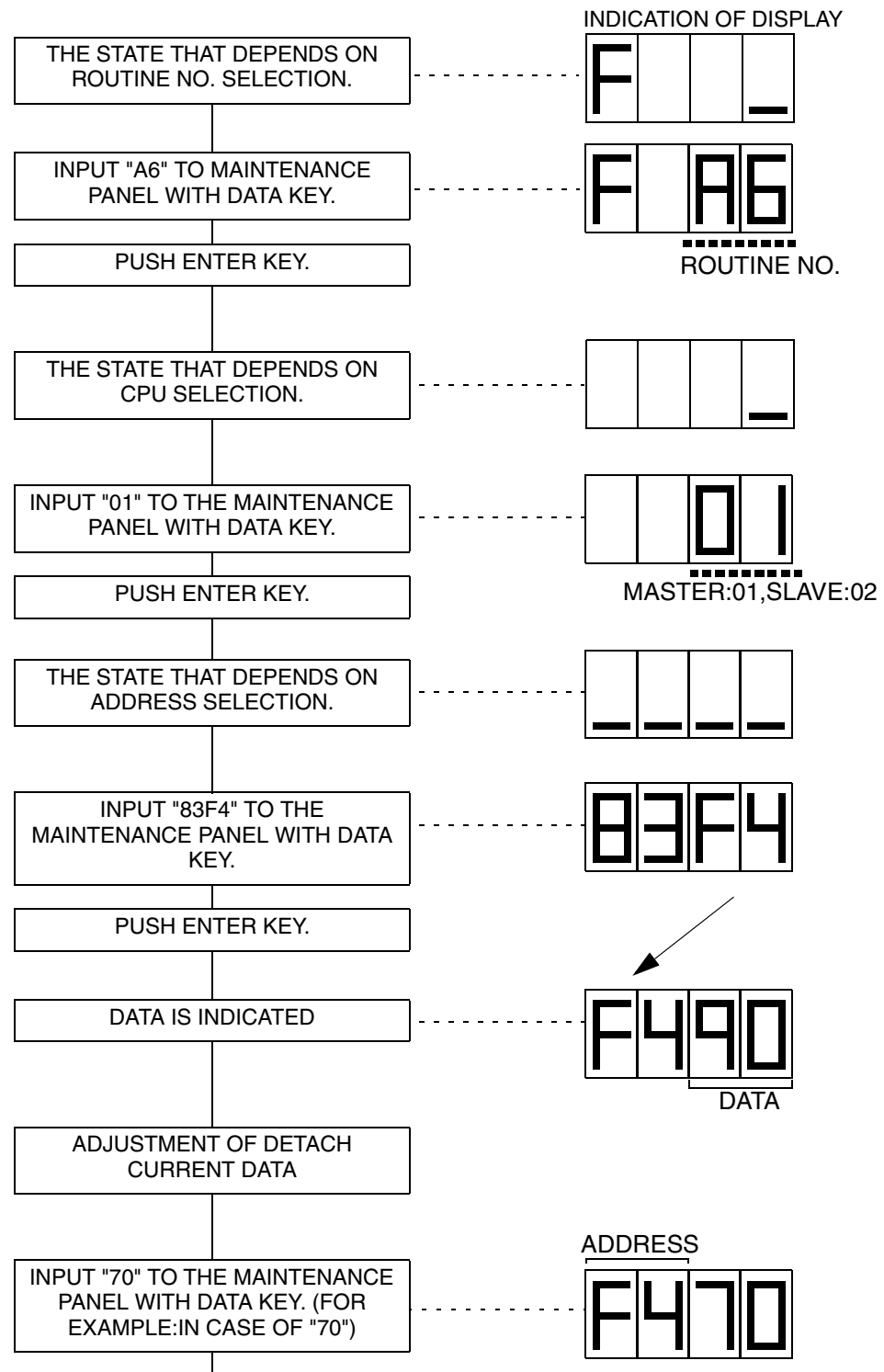
And if the Developer Mix is not in the Developer, this routine comes to an end.

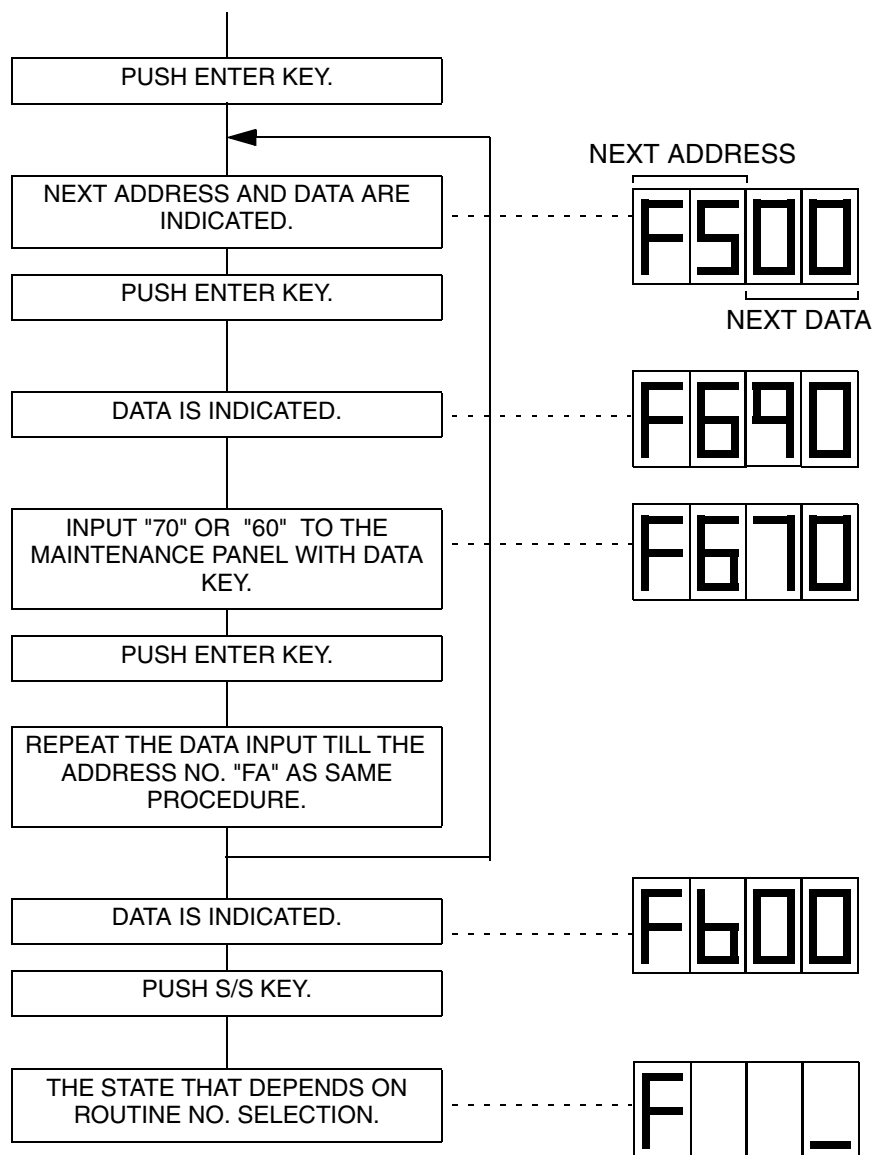
To confirm whether there is Developer Mix in the Developer or not continues for a maximum of 170 seconds. Nevertheless if Developer Mix is in the Developer, "E047" is detected.

### 8.4.5.7. Adjustment 7

Address: "83F4H" to "83FB" (Detach HV)  
(FOR DETAILS REFER TO 8.5.5(20) on page 8-71 and 8.6, "Detach Voltage Adjustment" on page 8-103.)

These Addresses are used for adjustment of Detach HV.





| ADDRESS | Default | 0ft<altitude≤1,300ft | 1,300ft<altitude≤3,800 | 3,800ft<altitude≤7,000 |
|---------|---------|----------------------|------------------------|------------------------|
| 83F4    | 90HEX   | 90HEX                | 80HEX                  | 70HEX                  |
| 83F6    | 90HEX   | 90HEX                | 80HEX                  | 70HEX                  |
| 83F8    | 90HEX   | 90HEX                | 80HEX                  | 70HEX                  |
| 83FA    | 90HEX   | 90HEX                | 80HEX                  | 70HEX                  |

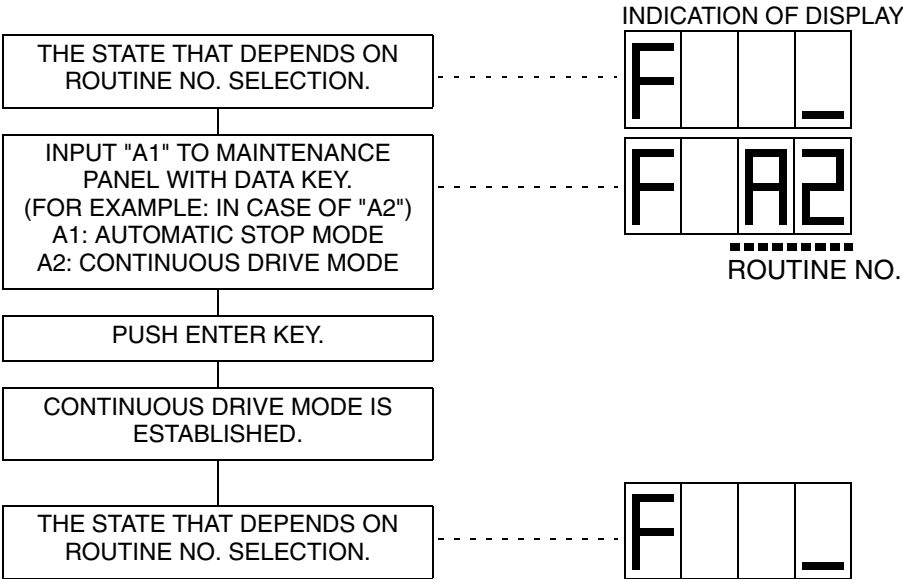
**Note:** If drum wrap occurred after changing the data to "70", change the data to "60". All data must be the same.

# 8.4.6. Assistance / Maintenance

## 8.4.6.1. Assistance / Maintenance 1

Routine No. : "A1", "A2"  
(FOR DETAILS REFER TO [SUPPLEMENT 1 - Diagnostics Routine on page -1.](#))

These routines are used when you change "Automatic Stop Mode" and "Continuous Drive Mode".



EXPLANATION OF DETAILS  
The initial state is "Automatic Stop Mode".  
When you turn off and on the power supply even if you set "Continuous Drive Mode" previously, it becomes "Automatic Stop Mode" automatically

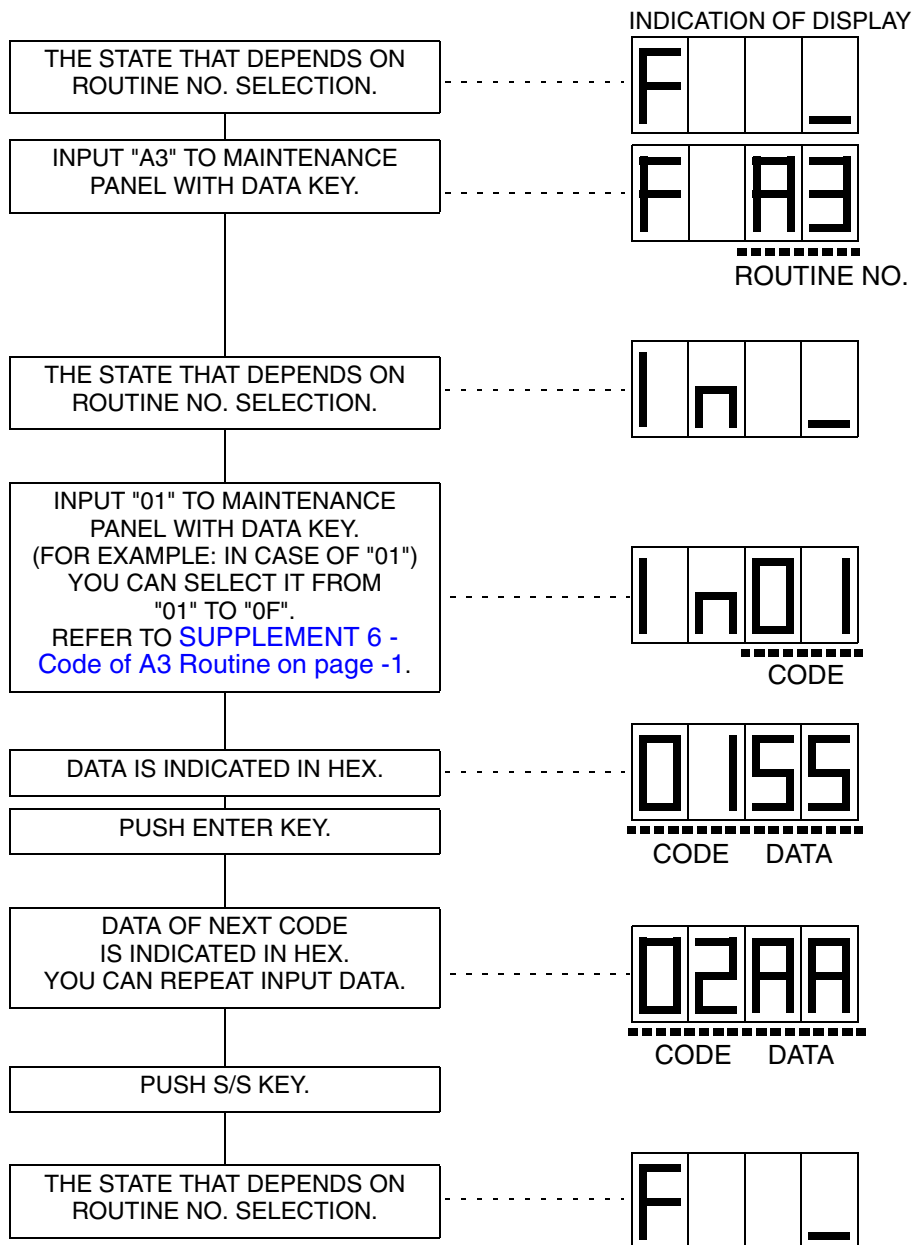
### 8.4.6.2. Assistance / Maintenance 2

Routine No. : "A3" (In Port Read)

(FOR DETAILS REFER TO [SUPPLEMENT 1 - Diagnostics Routine on page -1.](#))

This routine is used when you confirm In-Port of the control board.

Data of In-Port is indicated by 1 byte in hex.



### 8.4.6.3. Assistance / Maintenance 3

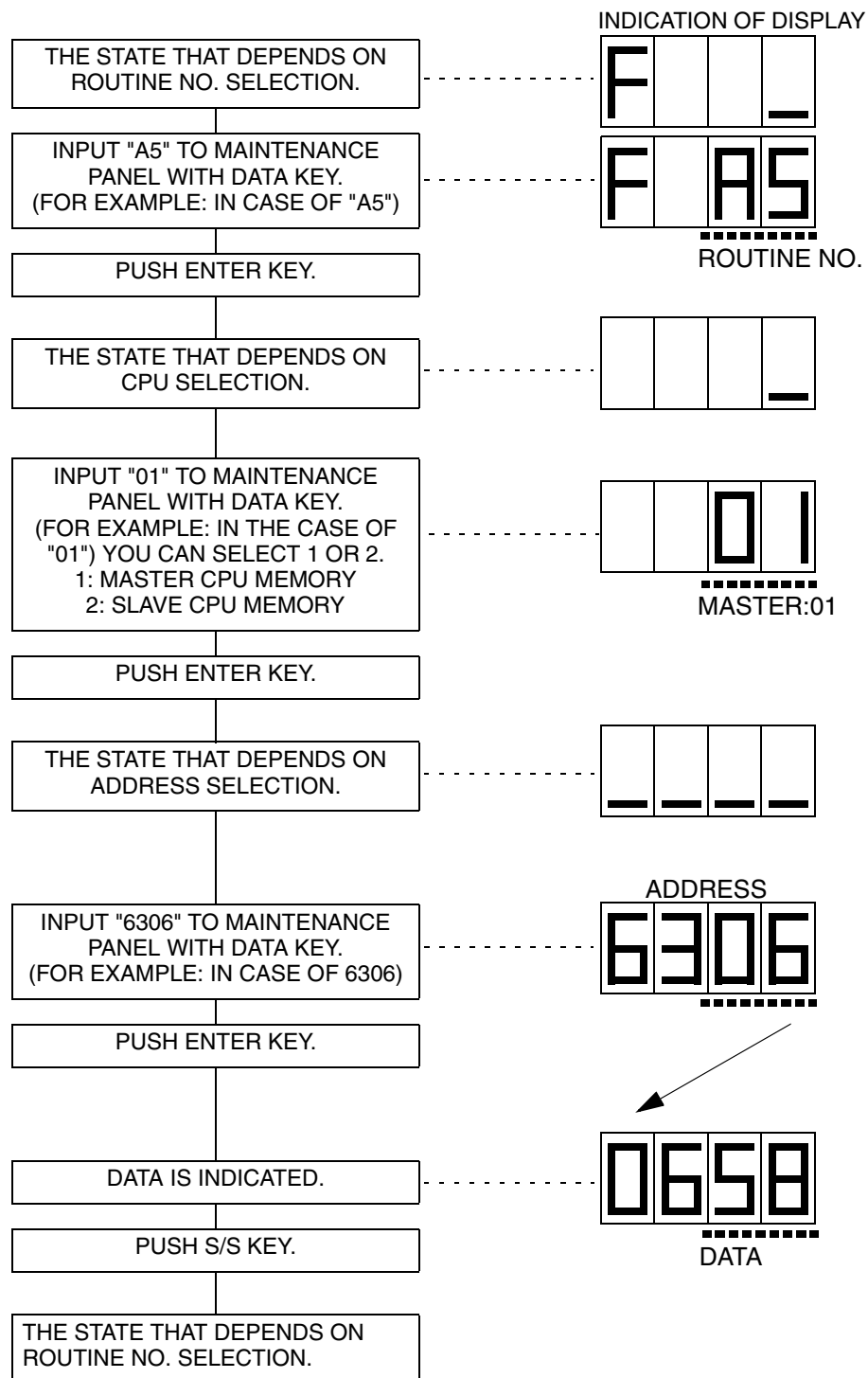
Routine No. : "A5" (Memory Read)

(FOR DETAILS REFER TO [SUPPLEMENT 1 - Diagnostics Routine on page -1.](#))

(FOR DETAILS REFER TO [UC Data on page 8-44.](#))

This routine is used when you read data in memory of the Engine.

Data of address selected is indicated by 1 byte in hex.



#### 8.4.6.4. Assistance / Maintenance 4

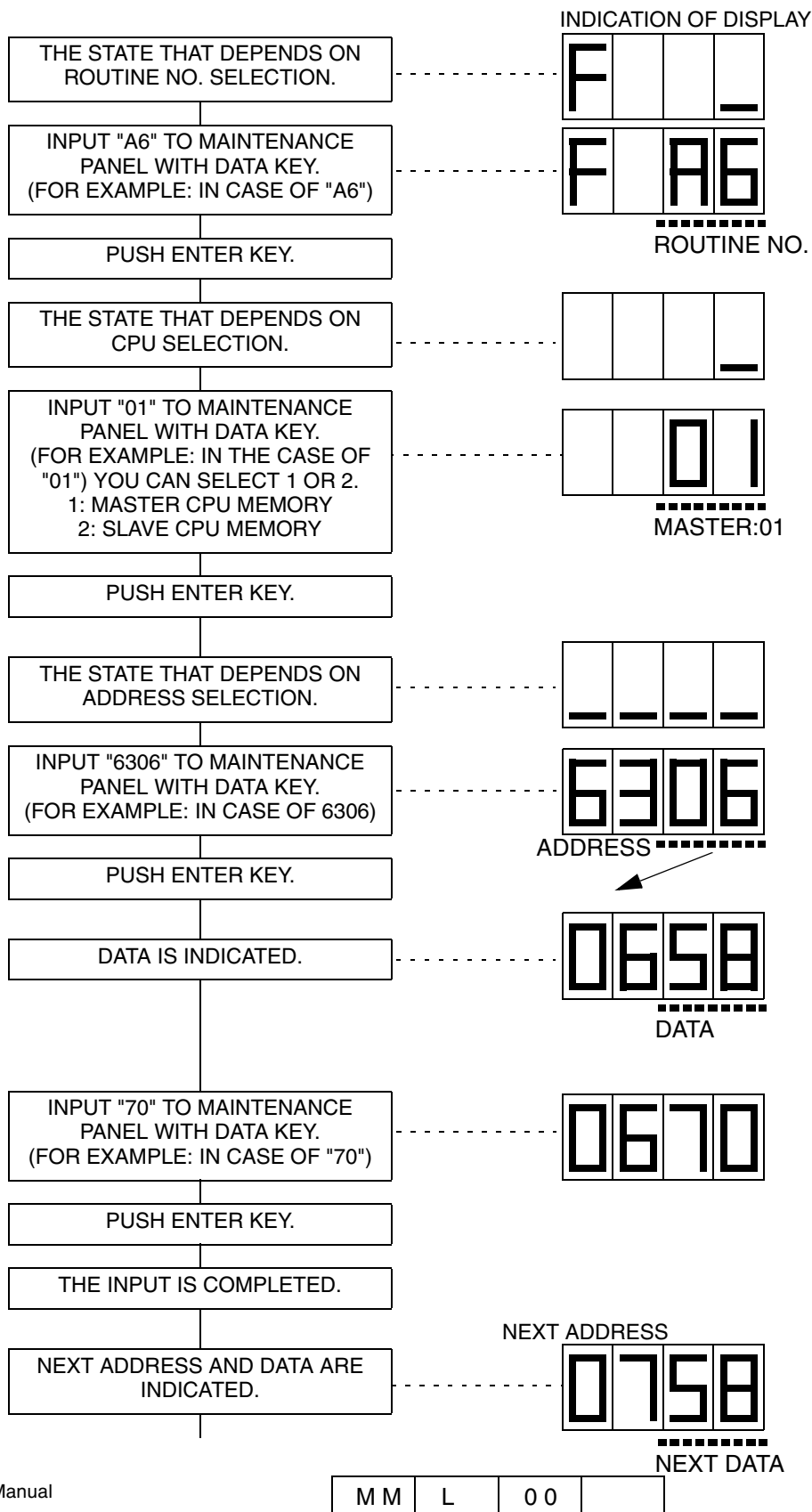
Routine No. : "A6" (Memory Write)

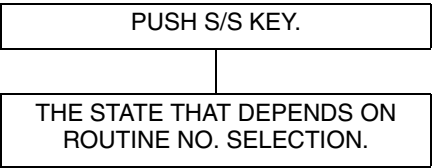
(FOR DETAILS REFER TO [SUPPLEMENT 1 - Diagnostics Routine on page -1.](#))

(FOR DETAILS REFER TO [UC Data on page 8-44.](#))

This routine is used when you write data in memory of the Engine.

Data of address selected is indicated by 1 byte in hex.





|   |  |  |   |
|---|--|--|---|
| F |  |  | — |
|---|--|--|---|

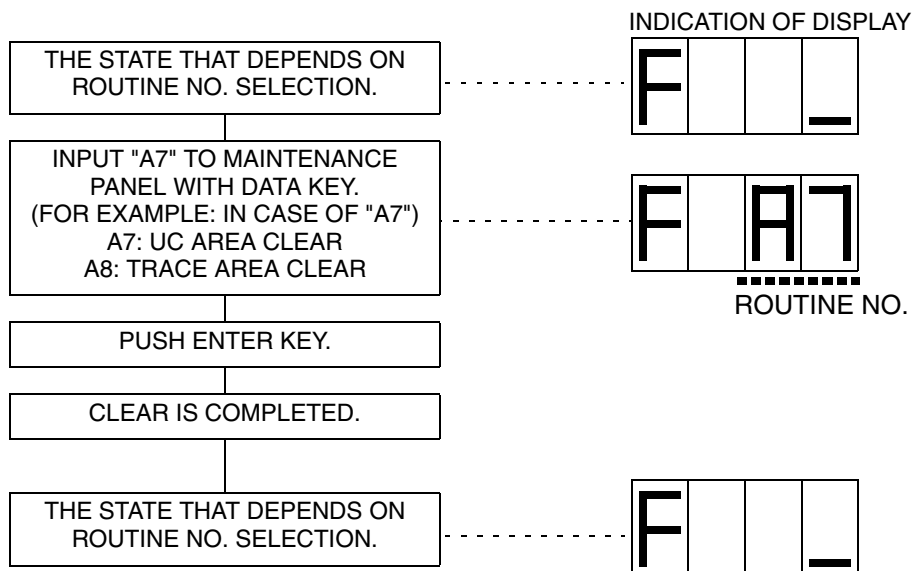


### 8.4.6.5. Assistance / Maintenance 5

Routine No. : "A7", "A8" (UC, Trace Area Clear)

(FOR DETAILS REFER TO [SUPPLEMENT 1 - Diagnostics Routine on page -1.](#))

These routines are used when you clear the UC Area or Trace Area.



#### EXPLANATION OF DETAILS

ROUTINE NO.: "A7"

This command carries out 0 clear of the following items.

|   |                                     |                    |           |            |
|---|-------------------------------------|--------------------|-----------|------------|
| 1 | The count value and of consumables. |                    |           |            |
|   | Developer Mix                       | Fuser Cleaning Web | Drum Unit | Fuser Unit |

ROUTINE NO.: "A8"

This command carries out 0 clear of the following items.

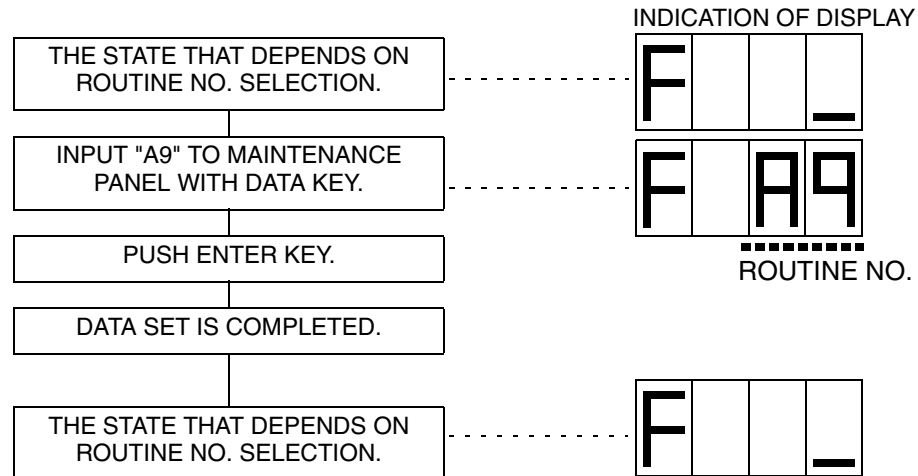
|   |                              |
|---|------------------------------|
| 1 | Control command trace area.  |
| 2 | Error count area.            |
| 3 | Finisher command trace area. |

#### 8.4.6.6. Assistance / Maintenance 6

Routine No. : "A9" (UC Value Set)

(FOR DETAILS REFER TO [SUPPLEMENT 1 - Diagnostics Routine on page -1.](#))

This routine is used when you set the UC Standard value.



#### EXPLANATION OF DETAILS

This command carries out set of the following items.

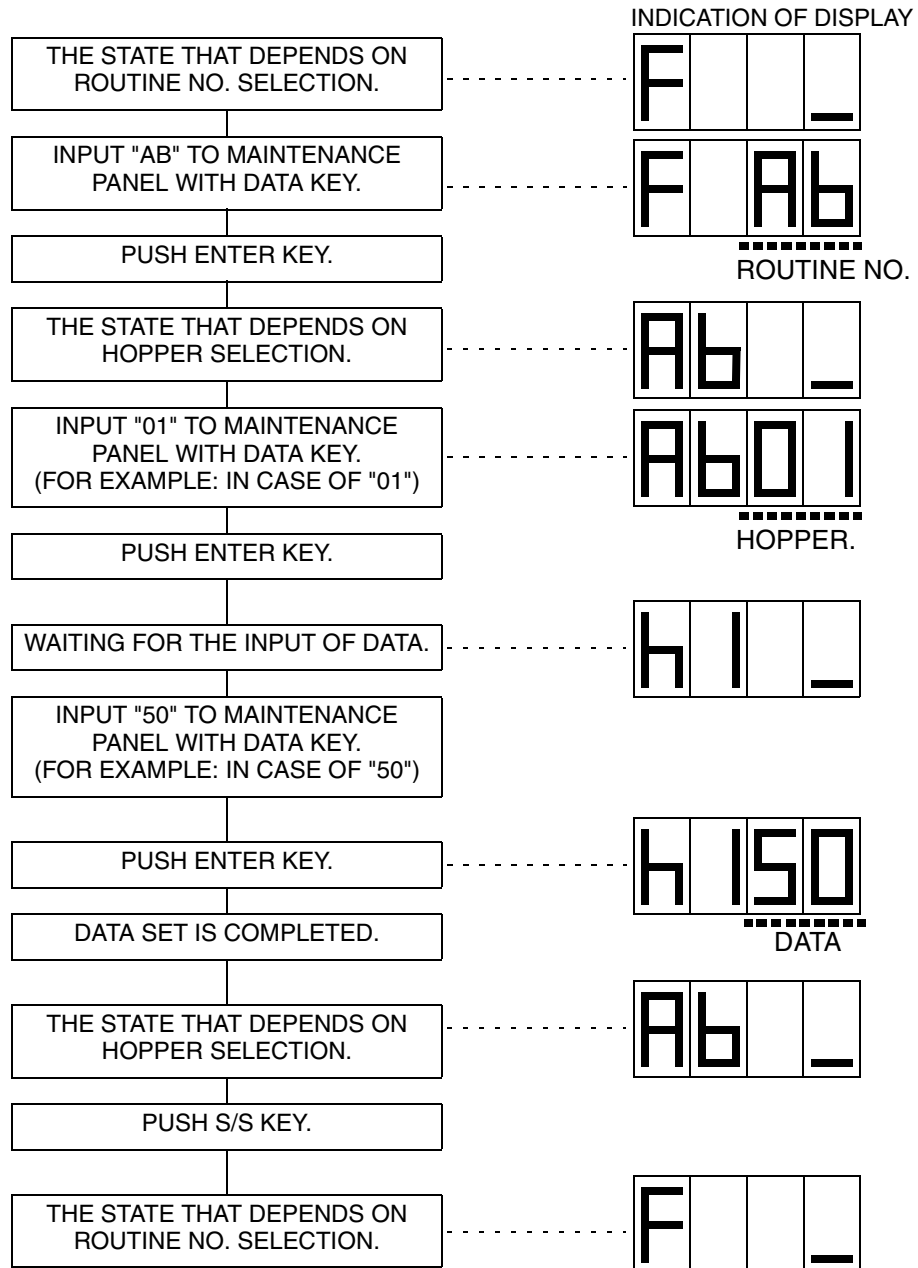
|   |                                                 |                                           |                            |                              |                  |
|---|-------------------------------------------------|-------------------------------------------|----------------------------|------------------------------|------------------|
| 1 | Standard value of consumables.                  |                                           |                            |                              |                  |
|   | Developer Mix                                   | Fuser Cleaning Web                        | Drum Unit                  | Fuser Unit                   |                  |
| 2 | Standard value of preventive maintenance parts. |                                           |                            |                              |                  |
|   | Transfer Corona Wire / Separating Corona Wire   | Transfer / Separating Corona Unit Cleaner | Conveyance Belt            | Charger Corona Wire and Grid |                  |
|   | Paper Pick Ass'y                                | Ozone Filter                              | Air Filter                 | -                            |                  |
|   | Finisher Tray Up-Down Motor                     | Finisher Staple Unit Rear                 | Finisher Staple Unit Front | Finisher Paper Exit Roller   |                  |
|   | Finisher Sponge Roller                          | Finisher Middle Sponge Roller             | Finisher Conveyance Roller | Finisher Conveyance Motor 1  |                  |
|   | Finisher Conveyance Motor 7                     | Finisher Grip Solenoid                    | Finisher Opening Solenoid  | -                            |                  |
| 3 | Standard value of H and V position.             |                                           |                            |                              |                  |
|   | Hopper 1 Simplex                                | Hopper 2 Simplex                          | Hopper 3 Simplex           | MPT Simplex                  | Hopper 5 Simplex |
|   | Hopper 1 Duplex                                 | Hopper 2 Duplex                           | Hopper 3 Duplex            | MPT Duplex                   | Hopper 5 Duplex  |

### 8.4.6.7. Assistance / Maintenance 7

Routine No. : "AB" (Horizontal Data)

(FOR DETAILS REFER TO [SUPPLEMENT 1 - Diagnostics Routine on page -1.](#))

This command is used when you adjust the Horizontal position of the printable area.



## EXPLANATION OF DETAILS

This command is to adjust the horizontal position of the printable area to revise the mechanical error of optics.

And the printer informs the controller the Horizontal standard print start position. This data should be read after issuing the ACTIVATE command.

Relation between Data and the Horizontal standard print start position.

Revise value = 0.085(mm) x Data (Dec)

For example:

When you input "50" in Hex. H is 4.50mm

Correct H is 5.00mm.

$5.00 \text{ (mm)} - 4.50 \text{ (mm)} = 0.50 \text{ (mm)}$

$0.50 \text{ (mm)} = 0.085 \text{ (mm)} \times \text{Data}$

$\text{Data} = 0.50 \text{ (mm)} / 0.085 \text{ (mm)} = 5.88$

Convert this value (5.88) into Hex Data

And add Hex Data to first input Data ("50")

$6 \text{ (Hex)} + 50 \text{ (Hex)} = 56 \text{ (Hex)}$

If you input "56" in Hex, H becomes 5.00mm.

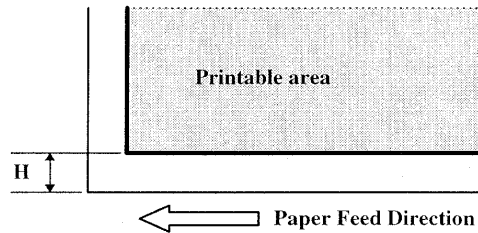


Figure 8-3. Adjustment of the Horizontal Position

Explanation of details:

| Item               | Selection Mode of Hopper | Upper Limit of Data |
|--------------------|--------------------------|---------------------|
| Hopper 1 (Simplex) | "01"                     | "6A"                |
| Hopper 2 (Simplex) | "02"                     | "6A"                |
| Hopper 3 (Simplex) | "03"                     | "6A"                |
| Hopper 5 (Simplex) | "04"                     | "6A"                |
| MB Tray (Simplex)  | "05"                     | "6A"                |
| Hopper 1 (Duplex)  | "06"                     | "6A"                |
| Hopper 2 (Duplex)  | "07"                     | "6A"                |
| Hopper 3 (Duplex)  | "08"                     | "6A"                |
| Hopper 5 (Duplex)  | "09"                     | "6A"                |
| MB Tray (Duplex)   | "0A"                     | "6A"                |

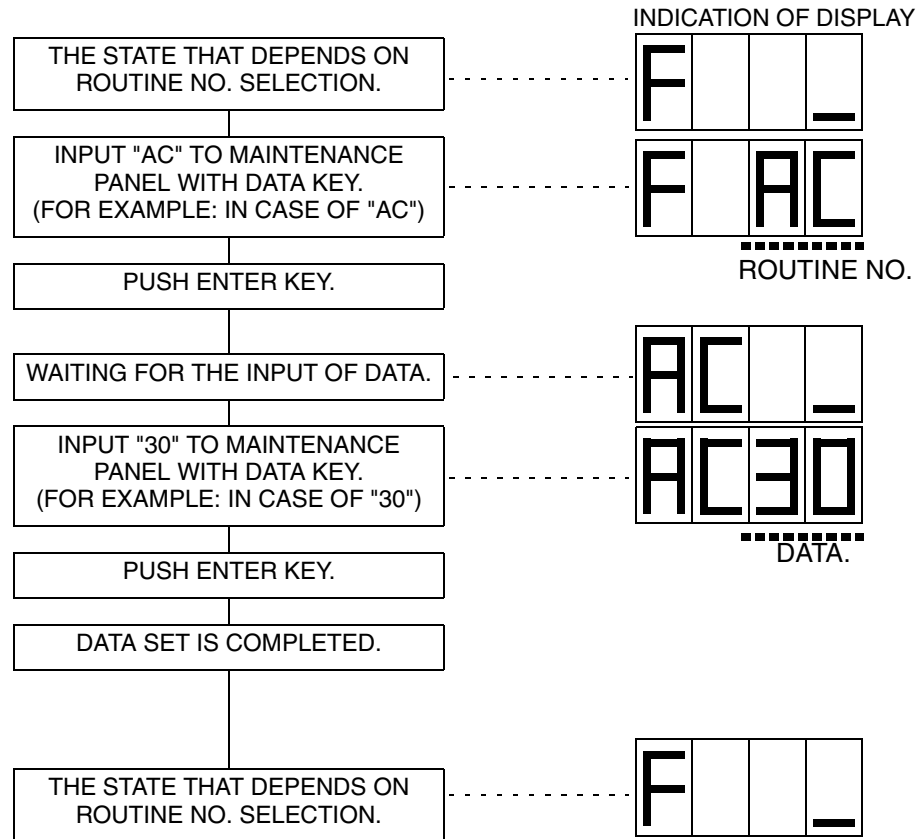
**Note:** If you input a larger number than the Upper Limit of Data, "6A" is set automatically.

#### 8.4.6.8. Assistance / Maintenance 8

Routine No. : "AC" (Vertical Data)

(FOR DETAILS REFER TO [SUPPLEMENT 1 - Diagnostics Routine on page -1.](#))

This command is used when you adjust the Vertical position of the printable area.



## EXPLANATION OF DETAILS

This command is to adjust the vertical position of the printable area to revise the mechanical error of optics.

And the printer informs the controller the Vertical standard print start position.

This data should be read after issuing the ACTIVATE command.

Relation between Data and the Vertical standard print start position.

Revise value =  $0.085(\text{mm}) \times \text{Data (Dec)}$

For example:

When you input "30" in Hex. V is 4.50mm

Correct V is 5.00mm.

$5.00 (\text{mm}) - 4.50 (\text{mm}) = 0.50 (\text{mm})$

$0.50 (\text{mm}) = 0.085 (\text{mm}) \times \text{Data}$

$\text{Data} = 0.50 (\text{mm}) / 0.085 (\text{mm}) = 5.88$

Convert this value (5.88) into Hex Data

And add Hex Data to first input Data ("50")

$6 (\text{Hex}) + 30 (\text{Hex}) = 36 (\text{Hex})$

If you input "36" in Hex, V becomes 5.00mm.

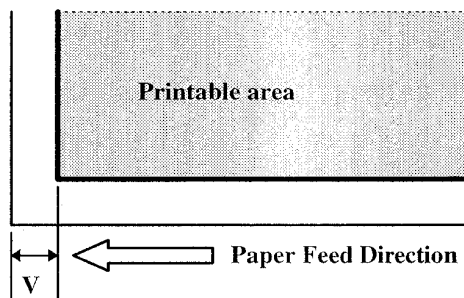


Figure 8-4. Adjustment of the Vertical Position

The Upper Limit of Data is "48".

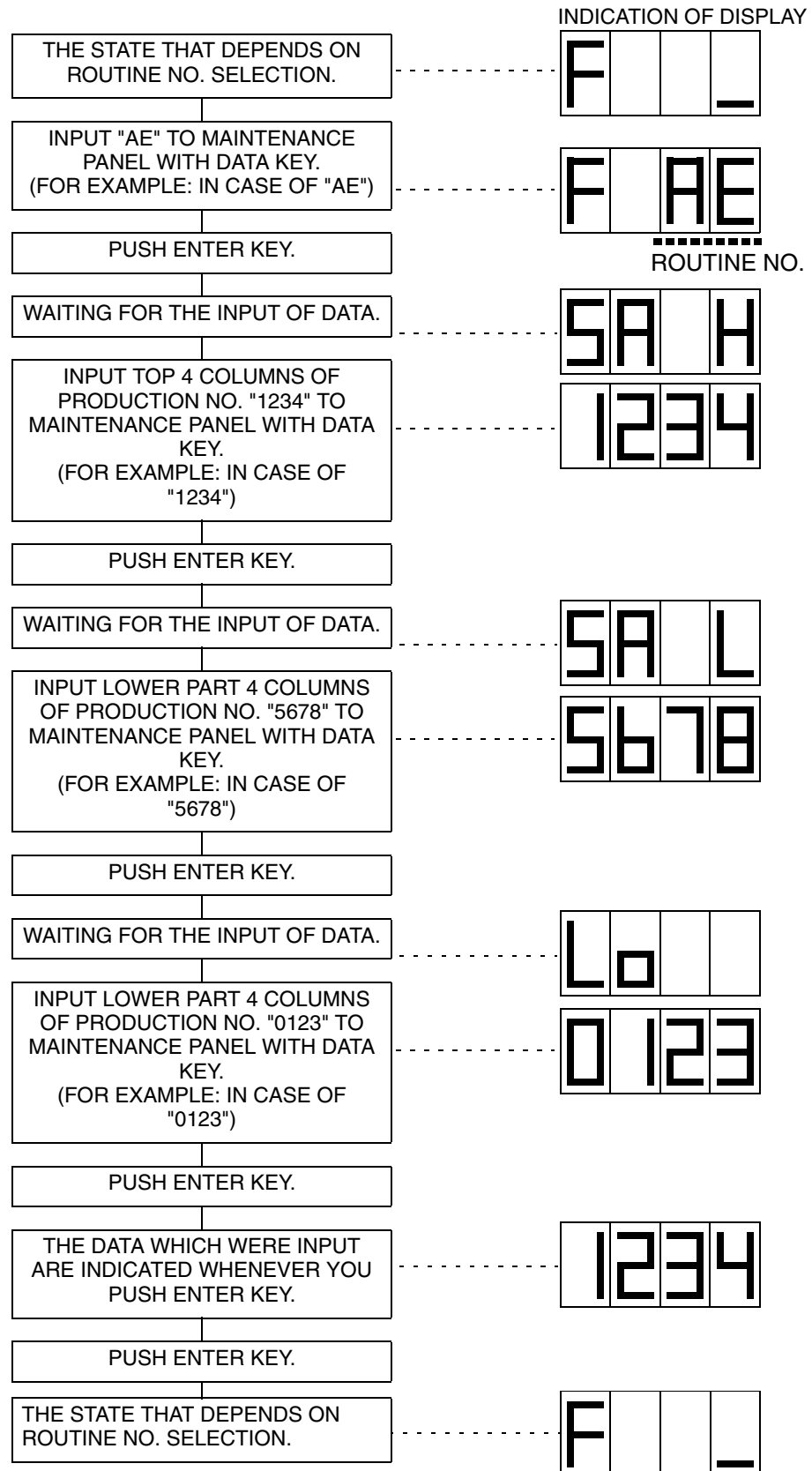
**Note:** If you input a larger number than the Upper Limit of Data, "48" is set automatically.

### 8.4.6.9. Assistance / Maintenance 9

Routine No. : "AE" (Lot Number Set)

(FOR DETAILS REFER TO [SUPPLEMENT 1 - Diagnostics Routine on page -1.](#))

This routine is used for the setting Lot Number in the factory.

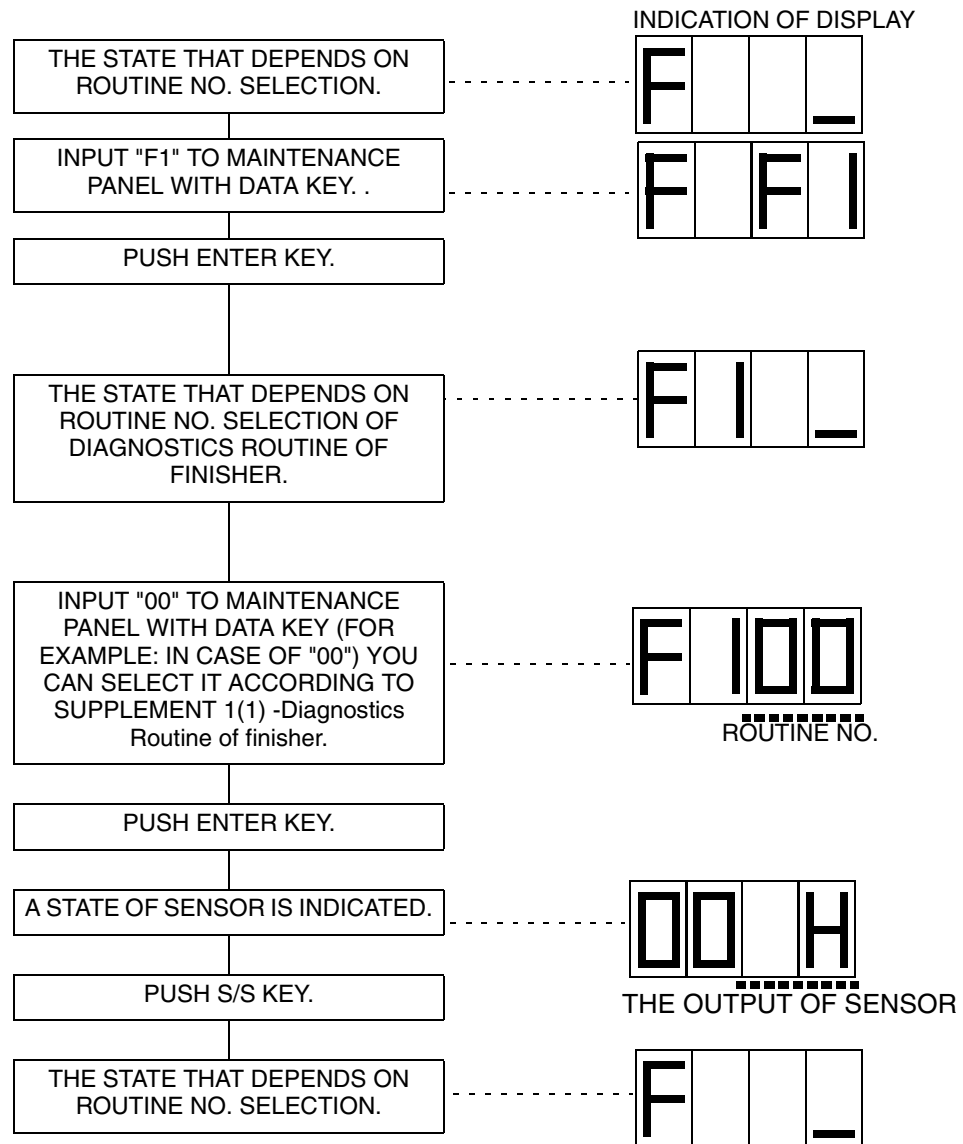


## 8.4.7. Diagnostics of Finisher

### 8.4.7.1. Diagnostics of Finisher 1

Routine No. : "00" to "07", "09" to "0C", "0F", "10" to "19", "1B" to "1C", "20" to "21", "25" to "2F", (Finisher Sensor Test)  
(FOR DETAILS REFER TO SUPPLEMENT 1 - [Diagnostics Routine of Finisher \(FS - 108R\)](#) on page -2.)

These routines are used when you confirm whether the operation of the Finisher's selected sensor is normal or abnormal.



#### EXPLANATION OF DETAILS

| Routine No.                                                                                          | Indication Contents                                                                                                        | Display                           |
|------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|-----------------------------------|
| "00" to "07"<br>"09" to "0C"<br>"0F"<br>"10" to "19"<br>"1B" to "1C"<br>"20" to "21"<br>"25" to "2F" | The output of sensor indicates "H" or "L". Refer to <a href="#">SUPPLEMENT 7 - Diagnostics of Finisher 1 (FS - 108R)</a> . | <div>0 0 H</div> <div>0 0 L</div> |

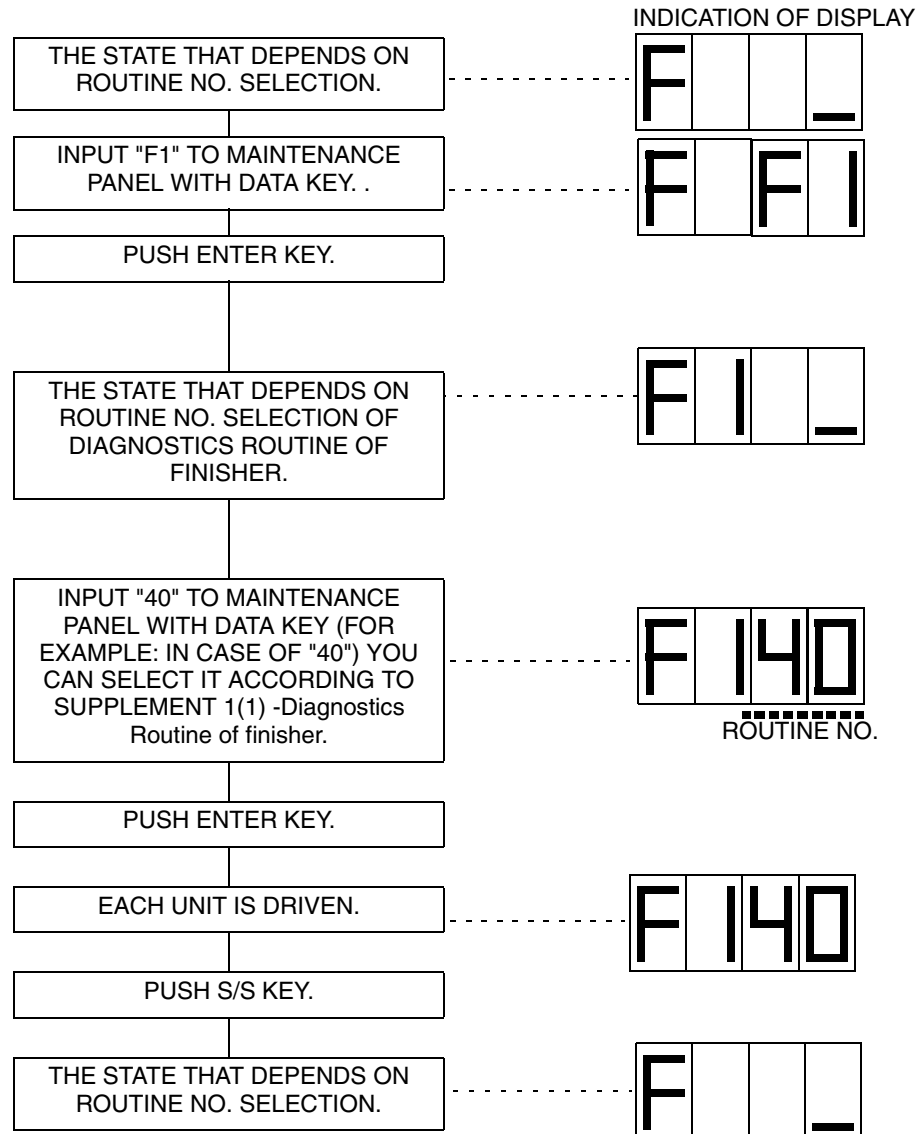


### 8.4.7.2. Diagnostics of Finisher 2

Routine No. : "40" to "64" (Finisher Driver Test 1)

(FOR DETAILS REFER TO SUPPLEMENT 1 - [Diagnostics Routine of Finisher \(FS - 108R\) on page -2.](#))

These routines are used when you confirm whether the operation of the Finisher's selected sensor is normal or abnormal.



Turn OFF/ON the Main Power Switch before printing because the motor which is moved by driver test is not at the home position.

| Routine No. | Continuous Drive Mode                                                                         | Automatic Stop Mode                                                                                                |
|-------------|-----------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|
| "40"        | M1 FNS Conveyance motor is driven continually after you push enter key till you push S/S key. | M1 FNS Conveyance motor is driven after you push enter key. And the motor stops in 10 seconds later automatically. |
| "41"        | -                                                                                             | After you push enter key. the Shift Unit moves to home position once.                                              |
| "42"        | -                                                                                             | After you push enter key. the Shift Unit moves to the shift position once.                                         |

| Routine No. | Continuous Drive Mode                                                                             | Automatic Stop Mode                                                                                                    |
|-------------|---------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|
| "43"        | -                                                                                                 | After you push enter key. the Shift Unit moves to the shift position and returns to the home position once.            |
| "44"        | -                                                                                                 | Main Tray goes up, after you push enter key. And Main Tray stops, when it gets to the upper limit.                     |
| "45"        | -                                                                                                 | Main Tray goes down, after you push enter key. And Main Tray stops, when it gets to the lower limit.                   |
| "46"        | -                                                                                                 | After you push enter key, Main Tray operates like a stapled booklet is delivered to the Main Tray.                     |
| "47"        | -                                                                                                 | After you push enter key, the Alignment Plate/Upper moves to the home position once.                                   |
| "48"        | Paper Exit Roller motor is CW driven continually after you push enter key till you push S/S key.  | Paper Exit Roller motor is CW driven after you push enter key. And the motor stops in 10 seconds later automatically.  |
| "49"        | Paper Exit Roller motor is CCW driven continually after you push enter key till you push S/S key. | Paper Exit Roller motor is CCW driven after you push enter key. And the motor stops in 10 seconds later automatically. |
| "4A"        | -                                                                                                 | After you push enter key. the Paper Exit Opening shuts once.                                                           |
| "4B"        | -                                                                                                 | After you push enter key. the Paper Exit Opening opens once.                                                           |
| "4C"<br>*1  | -                                                                                                 | After you push enter key, the Stapler Motor-R(rear side) returns to the home position.                                 |
| "4D"<br>*2  | -                                                                                                 | After you push enter key, the Stapler Motor-R(rear side) is driven once.                                               |
| "4E"<br>*1  | -                                                                                                 | After you push enter key, the Stapler Motor-F(front side) returns to the home position.                                |
| "4F"<br>*2  | -                                                                                                 | After you push enter key, the Stapler Motor-F(front side) is driven once.                                              |
| "50"        | -                                                                                                 | After you push enter key. The Staplers move to the 2 staple position once.                                             |
| "51"        | -                                                                                                 | After you push enter key. The Staplers move to the rear 1 staple position once.                                        |
| "52"        | Stacker Entrance motor is driven continually after you push enter key till you push S/S key.      | Stacker Entrance motor is driven after you push enter key. And the motor stops in 10 seconds later automatically.      |

| Routine No.         | Continuous Drive Mode                                                                          | Automatic Stop Mode                                                                                                 |
|---------------------|------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| "53"<br>(Fold unit) | -                                                                                              | After you push enter key, the Stapling and Folding Stopper moves to the home position once.                         |
| "54"<br>(Fold unit) | -                                                                                              | After you push enter key, the Alignment Plate/Lower moves to the home position once.                                |
| "55"<br>(Fold unit) | -                                                                                              | After you push enter key, the Folding Stopper moves to the home position once.                                      |
| "56"<br>(Fold unit) | -                                                                                              | After you push enter key, the Folding Knife moves to the home position once.                                        |
| "57"<br>(Fold unit) | Folding Conveyance motor is driven continually after you push enter key till you push S/S key. | Folding Conveyance motor is driven after you push enter key. And the motor stops in 10 seconds later automatically. |
| "58"<br>(Fold unit) | -                                                                                              | After you push enter key, the Stapling & Folding Stopper Release motor moves to the home position once.             |
| "59"<br>(Fold unit) | -                                                                                              | After you push enter key, the Stapling & Folding Stopper Release motor moves to the release position once.          |
| "5A"<br>(Fold unit) | -                                                                                              | After you push enter key, the Stapling & Folding Stopper Release motor moves to the set position once.              |
| "5B"                | -                                                                                              | After you push enter key, the Alignment Plate/Upper opens from the position of the A4 paper once.                   |
| "5C"                | -                                                                                              | After you push enter key, the Alignment Plate/Upper closes from the position of the A4 paper once.                  |
| "5D"                | -                                                                                              | After you push enter key, the Alignment Plate/Upper operates like it aligns the A4 paper once.                      |
| "5E"<br>(Fold unit) | -                                                                                              | After you push enter key, the Alignment Plate/Lower opens from the position of the A4 paper once.                   |
| "5F"<br>(Fold unit) | -                                                                                              | After you push enter key, the Alignment Plate/Lower closes from the position of the A4 paper once.                  |
| "60"<br>(Fold unit) | -                                                                                              | After you push enter key, the Alignment Plate/Lower operates like it aligns the A4 paper once.                      |
| "61"<br>(Fold unit) | -                                                                                              | After you push enter key, Stapling & Folding Stopper moves to the position where A4_SEF paper is stapled once.      |

| Routine No.                        | Continuous Drive Mode | Automatic Stop Mode                                                                                    |
|------------------------------------|-----------------------|--------------------------------------------------------------------------------------------------------|
| "62"<br>(Fold unit)                | -                     | After you push enter key, Folding Stopper moves to the position where A4_SEF paper is folded once.     |
| "63"<br>(Cover sheet feeder)<br>*3 | -                     | Sheet Tray goes up, after you push enter key. And Sheet Tray stops, when it gets to the upper limit.   |
| "64"<br>(Cover sheet feeder)       | -                     | Sheet Tray goes down, after you push enter key. And Sheet Tray stops, when it gets to the lower limit. |

**Note:** "Continuous Drive Mode" and "Automatic Stop Mode" are explained in ["Assistance / Maintenance 1," on page 8-23](#).

\*1 : Stapler Motor R/F does not operate if the motor is at home position.

\*2 : Execute this routine after inserting paper in the Stapler which is driven.

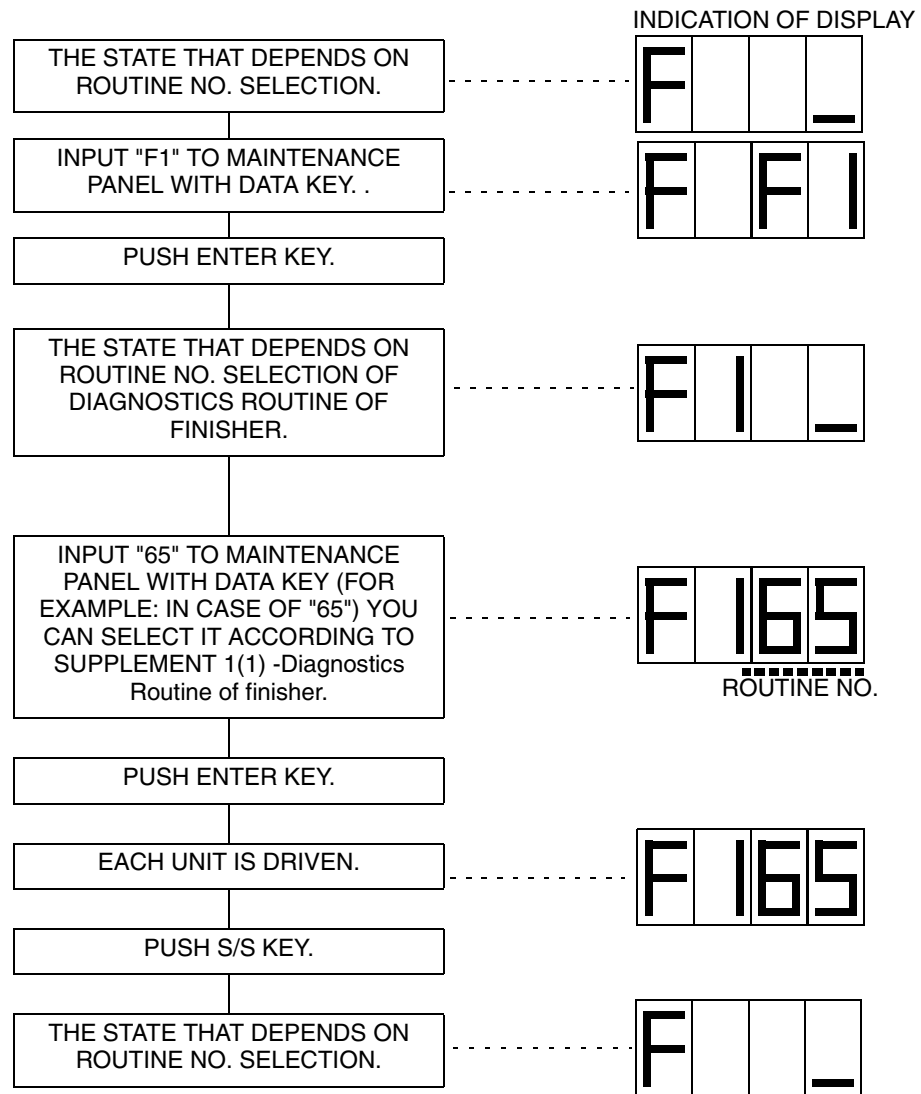
\*3 : When there is no paper on the tray of Cover Sheet Feeder, the tray goes down to the lower limit position after it reaches the upper limit position.

### 8.4.7.3. Diagnostics of Finisher 3

Routine No. : "65" to "6C" (Finisher Driver Test 2)

(FOR DETAILS REFER TO SUPPLEMENT 1 - [Diagnostics Routine of Finisher \(FS - 108R\)](#) on page -2.)

These routines are used when you confirm whether the operation of the Finisher's selected sensor is normal or abnormal.



Turn OFF/ON the Main Power Switch before printing because the motor which is moved by driver test is not at the home position.

| Routine No.                  | Continuous Drive Mode                                                      | Automatic Stop Mode                                                                     |
|------------------------------|----------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| "65" to "69"                 | After you push enter key, the solenoid is turned on till you push S/S key. | After you push enter key, repeat a gesture shown left 10 times and stops automatically. |
| "6A"<br>(Cover sheet feeder) | After you push enter key, the clutch is turned on till you push S/S key.   | After you push enter key, repeat a gesture shown left 10 times and stops automatically. |
| "6B"<br>(Cover sheet feeder) | After you push enter key, the solenoid is turned on till you push S/S key. | After you push enter key, repeat a gesture shown left 10 times and stops automatically. |
| "6C"<br>(Fold unit)          | The Finisher operates continuously like it makes booklet.                  | -                                                                                       |

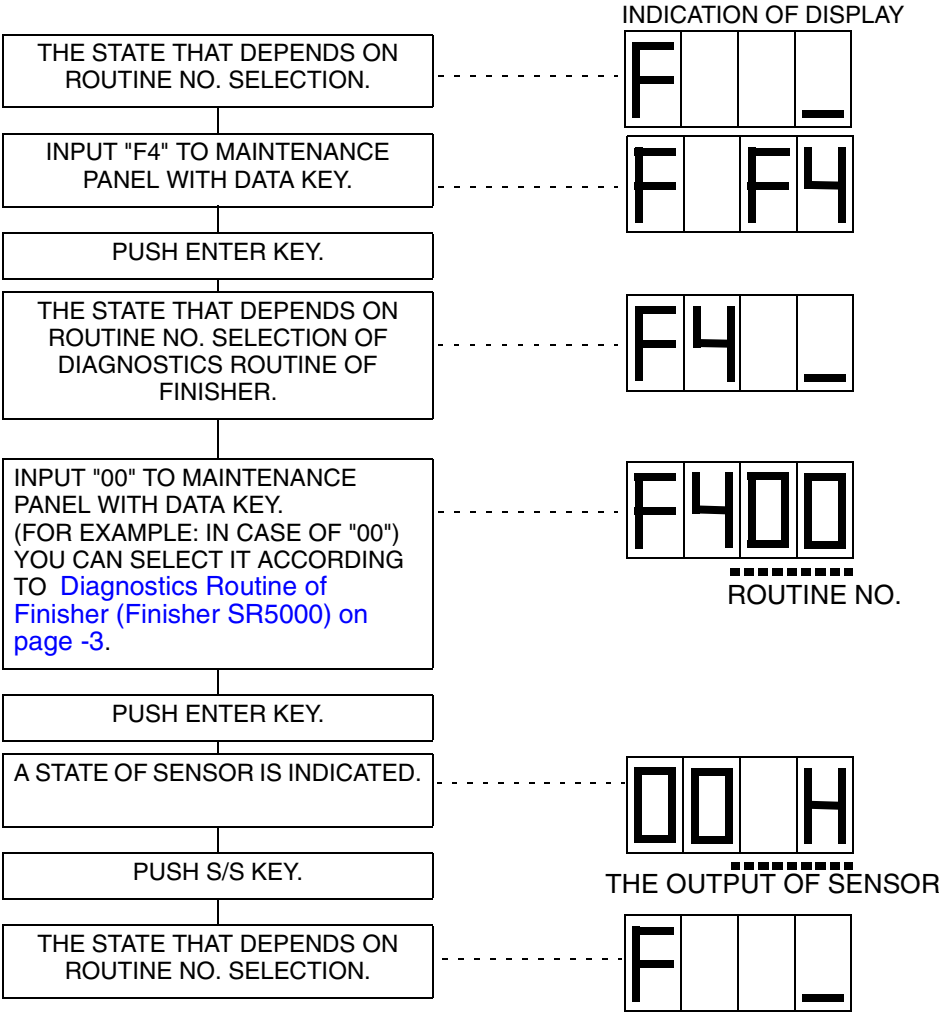
**Note:** "Continuous Drive Mode" and "Automatic Stop Mode" are explained in ["Assistance / Maintenance 1,"](#) on page 8-23.

8.4.7.4. Diagnostics of Finisher 1 (Finisher SR5000)

Routine No. : "00" to "0C", "11" to "21", "23" to "28", "2A" to "31", (Finisher Sensor Test)

(FOR DETAILS REFER TO SUPPLEMENT 1 - [Diagnostics Routine of Finisher \(Finisher SR5000\) on page -3.](#))

These routines are used when you confirm whether the operation of the Finisher's selected sensor is normal or abnormal.



EXPLANATION OF DETAILS

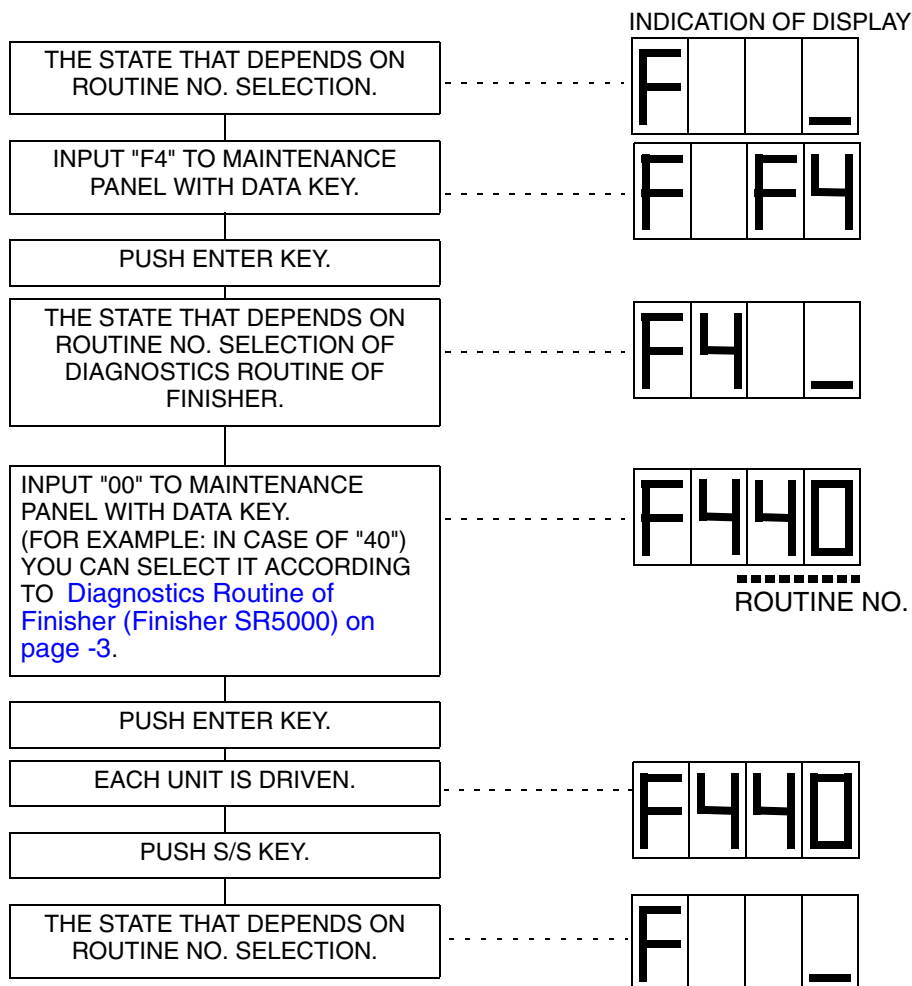
| Routine No.                                                  | Indication Contents                                                                                                               | Display                         |
|--------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|---------------------------------|
| "00" to "0C"<br>"11" to "21"<br>"23" to "28"<br>"2A" to "31" | The output of sensor indicates "H" or "L". Refer to <a href="#">Diagnostics Routine of Finisher (Finisher SR5000) on page -3.</a> | <div>00 H</div> <div>00 L</div> |

### 8.4.7.5. Diagnostics of Finisher 2 (Finisher SR5000)

Routine No. : "41" to "47", "49" to "5F", (Finisher Driver Test 1)

(FOR DETAILS REFER TO [Diagnostics Routine of Finisher \(Finisher SR5000\) on page -3.](#))

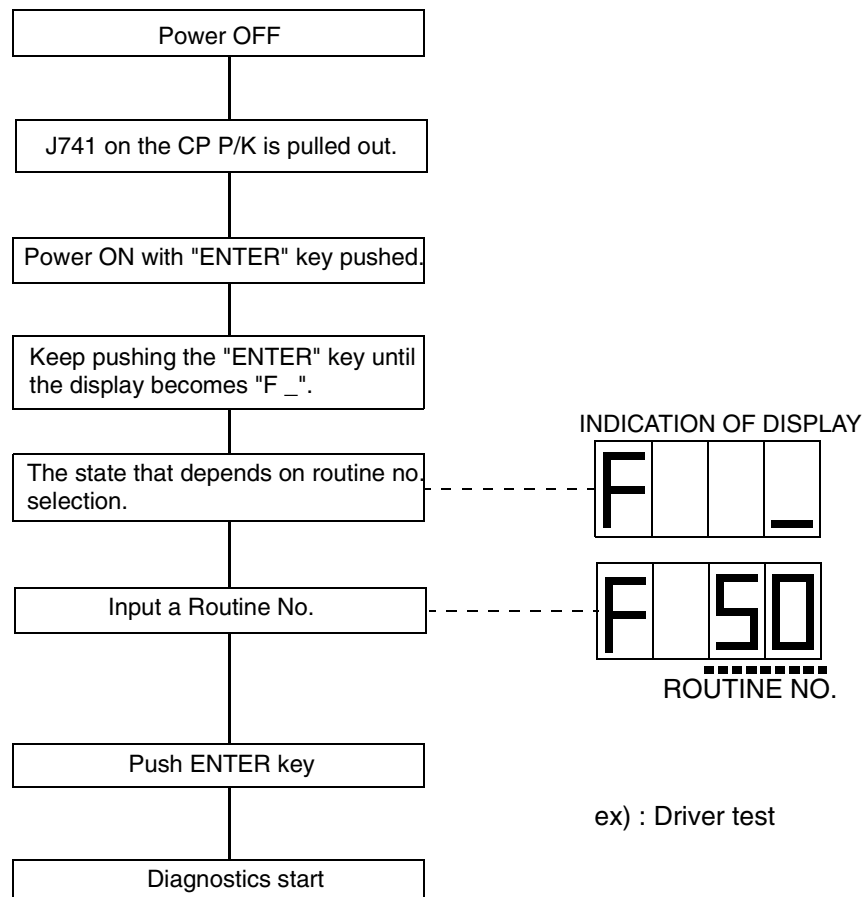
These routines are used when you confirm whether the operation of the Finisher's selected sensor is normal or abnormal.



Turn OFF/ON the Main Power Switch before printing because the motor which is moved by driver test is not at the home position.

## 8.4.8. Power On Diagnostics Function

When the Printer does not change the DORMANT status due to the some trouble, the Sensor test and the Driver test can not executed. Under such a condition, the Sensor test and the Driver test can execute by using the Power On Diagnostics Function.



### End procedure of Power On Diagnostics

To end Power On Diagnostic function, the power supply of the Engine is turned off. At this time, reconnect connector J741 on the CP P/K.

**Note:** In the state of the Power On Diagnostics, the Engine is not initialized. And the Maintenance Panel keeps displaying "F \_", and OPC keeps displaying "EC#24". When the Front cover of the Engine is open, the Maintenance Panel and OCP displays "E043".

Power on Diagnostics Function can execute the function similar to the diagnostics of the Sensor test (8.4.3 on page 8-4), Driver test (8.4.4 on page 8-7), Adjustment (8.4.5 on page 8-13), Assistance / Maintenance (8.4.6 on page 8-23), and Diagnostics of Finisher (8.4.7 on page 8-35).



## 8.5. UC Data

This printer memorizes various data in the memory on the CP P/K.

**Note:** Hopper 5 means High Capacity Hopper  
MB-Tray means Multi-bypass Tray

Table 8-1. Outline of the memory map

| Address             | Purposes                                                                                                                       | Maintenance Ref. + Page |
|---------------------|--------------------------------------------------------------------------------------------------------------------------------|-------------------------|
| 8000H<br>§<br>801FH | The count value and the standard value for Usage Charge Parts                                                                  | 8.5.1, 8-45             |
| 8020H<br>§<br>807FH | The count value and the standard value for Preventive Maintenance Parts                                                        | 8.5.2, 8-46             |
| 8080H<br>§<br>813FH | The information of the UC and PM Parts                                                                                         | 8.5.3, 8-48             |
| 8140H<br>§<br>82EFH | The Paper information                                                                                                          | 8.5.4, 8-52             |
| 82F0H<br>§<br>83FFH | Adjustment value                                                                                                               | 8.5.5, 8-63             |
| 8400H<br>§<br>87FFH | Controller-Engine Command Trace                                                                                                | 8.5.6.1, 8-72           |
| 8800H<br>§<br>8AFFH | The Count Value of the Failures                                                                                                | 8.5.6.2, 8-72           |
| 8B00H<br>§<br>8DFFH | The failure logging Area (not used)                                                                                            | 8.5.6.3, 8-73           |
| 8F00H<br>§<br>8FFFH | Sense Information (not used)                                                                                                   | 8.5.6.4, 8-73           |
| 9000H<br>§<br>92FFH | Paper Feed Information (not used)                                                                                              | 8.5.6.5, 8-73           |
| 9300H<br>§<br>94FFH | Engine-Finisher Command Trace<br>Front Engine: Finisher command logging area.<br>Rear Engine: Relay Unit command logging area. | 8.5.6.6, 8-73           |
| 9500H<br>§<br>9BEFH | Spare area                                                                                                                     | 8.5.7, 8-73             |
| 9BF0H<br>§<br>9BFFH | Rom Rev. and Serial/Lot No. information                                                                                        | 8.5.8, 8-102            |
| 9C00H<br>§<br>9FFFH | Controller spare area                                                                                                          |                         |

### 8.5.1. The count value and the standard value for Usage Charge Parts

"1" is set at "The over count flag (8001H)", when "The count value (8002H-800BH)" is beyond "The standard value (8012H-801BH)".

**Note:** When count value is stored in two addresses, higher two digits for count value are stored in higher address, and lower two digits are stored in lower address.  
e.g. 8002H=12, 8003H=34, count value is 3412.

| Address        | Purpose                                               | Remarks                                |
|----------------|-------------------------------------------------------|----------------------------------------|
| 8000H          | The top address ( UC )                                |                                        |
| 8001H          | The over count flag of UC                             | hexadecimal number of 2 digits         |
|                | bit7 : Fuser Unit                                     |                                        |
|                | bit6 : Drum Unit                                      |                                        |
|                | bit5 : Fuser Cleaning Web                             |                                        |
|                | bit4 : (reserved)                                     |                                        |
|                | bit3 : Developer Mixture                              |                                        |
|                | bit2 : (reserved)                                     |                                        |
|                | bit1 : (reserved)                                     |                                        |
|                | bit0 : (reserved)                                     |                                        |
| 8002H<br>8003H | The count value of UC parts (Fuser Unit)              | 1000 pages/count (decimal/4 digits)    |
| 8004H<br>8005H | The count value of UC parts (Drum Unit)               | 1000 cycles/count (decimal/4 digits)   |
| 8006H<br>8007H | The count value of UC parts (Fuser Cleaning Web)      | 1000 pages/count (decimal/4 digits)    |
| 8008H<br>8009H | (reserved)                                            |                                        |
| 800AH<br>800BH | The count value of UC parts (Developer Mixture)       | 1000 cycles/count (decimal/4 digits)   |
| 800CH<br>800DH | (reserved)                                            |                                        |
| 800EH<br>800FH | (reserved)                                            |                                        |
| 8010H<br>8011H | (reserved)                                            |                                        |
| 8012H<br>8013H | The standard value of UC counter (Fuser Unit)         | Value: 1600 (Kpage) (decimal/4 digits) |
| 8014H<br>8015H | The standard value of UC counter (Drum Unit)          | Value: 500 (Kcycle) (decimal/4 digits) |
| 8016H<br>8017H | The standard value of UC counter (Fuser Cleaning Web) | Value: 320 (Kpage) (decimal/4 digits)  |
| 8018H<br>8019H | (reserved)                                            |                                        |
| 801AH<br>801BH | The standard value of UC counter (Developer Mixture)  | Value: 600 (Kcycle) (decimal/4 digits) |
| 801CH<br>801DH | (reserved)                                            |                                        |
| 801EH<br>801FH | (reserved)                                            |                                        |

## 8.5.2. The count value and the standard value for Preventive Maintenance Parts

### 8.5.2.1. The count value of the PM parts (1000page counter)

These data are shown by a decimal number of 4 digits.

| Address             | Purpose                                                        | Remarks          |
|---------------------|----------------------------------------------------------------|------------------|
| 8020H<br>8021H      | The count value of PM counter<br>(Nip Guide Plate)             | 1000 pages/count |
| 8022H<br>8023H      | The count value of PM counter<br>(Charger Wire)                | 1000 pages/count |
| 8024H<br>8025H      | The count value of PM counter<br>(Corotron Assembly)           | 1000 pages/count |
| 8026H<br>8027H      | The count value of PM counter<br>(Transfer / Separating Wire)  | 1000 pages/count |
| 8028H<br>8029H      | The count value of PM counter<br>(Ozone Filter R1)             | 1000 pages/count |
| 802AH<br>802BH      | The count value of the PM counter<br>(Air Filter (1))          | 1000 pages/count |
| 802CH<br>802DH      | The count value of the PM counter<br>(TH belt)                 | 1000 pages/count |
| 802EH<br>802FH      | The count value of PM counter<br>(Idler Gear Z28 Assembly)     | 1000 pages/count |
| 8030H<br>8031H      | The count value of PM counter<br>(Hopper 1 Separater Assembly) | 1000 pages/count |
| 8032H<br>8033H      | The count value of PM counter<br>(Hopper 2 Separater Assembly) | 1000 pages/count |
| 8034H<br>8035H      | The count value of PM counter<br>(Hopper 3 Separater Assembly) | 1000 pages/count |
| 8036H<br>8037H      | The count value of PM counter<br>(MB Tray Separater Assembly)  | 1000 pages/count |
| 8038H<br>8039H      | The count value of PM counter<br>(Hopper 5 Separater Assembly) | 1000 pages/count |
| 803AH<br> <br>804FH | (reserved)                                                     |                  |
| 8100H<br>8101H      | The count value of PM counter<br>(Paper Exit Roller A)         | 1000 pages/count |
| 8102H<br>8103H      | The count value of PM counter<br>(Stapler Front Side)          | 1000 pages/count |
| 8104H<br>8105H      | The count value of PM counter<br>(Stapler Rear Side)           | 1000 pages/count |
| 8106H<br>8107H      | The count value of PM counter<br>(Paper Exit Solenoid)         | 1000 pages/count |
| 8108H<br>8109H      | The count value of PM counter<br>(Middle Sponge Roller)        | 1000 pages/count |
| 810AH<br>810BH      | The count value of PM counter<br>(Tray Motor)                  | 1000 pages/count |
| 810CH<br> <br>811FH | (reserved)                                                     |                  |

### 8.5.2.2. The PM interval for the PM counter

These data are shown by a decimal number of 4 digits.

| Address             | Purpose                                                                              | Remarks     |
|---------------------|--------------------------------------------------------------------------------------|-------------|
| 8050H<br>8051H      | The PM interval for the PM counter<br>(Nip Guide Plate)                              | Value: 7200 |
| 8052H<br>8053H      | The PM interval for the PM counter<br>(Charger Wire)                                 | Value: 1200 |
| 8054H<br>8055H      | The PM interval for the PM counter<br>(Corotron Assembly)                            | Value: 1200 |
| 8056H<br>8057H      | The PM interval for the PM counter<br>(Transfer Corona Wire/ Separating Corona Wire) | Value: 1200 |
| 8058H<br>8059H      | The PM interval for the PM counter<br>(Ozone Filter R1)                              | Value: 1800 |
| 805AH<br>805BH      | The PM interval for the PM counter<br>(Air Filter (1))                               | Value: 1800 |
| 805CH<br>805DH      | The PM interval for the PM counter<br>(TH-Belt)                                      | Value: 7200 |
| 805EH<br>805FH      | The PM interval for the PM counter<br>(Idler Gear Z28 Assembly)                      | Value: 9600 |
| 8060H<br>8061H      | The PM interval for the PM counter<br>(Hopper 1 Separater Assembly)                  | Value: 600  |
| 8062H<br>8033H      | The PM interval for the PM counter<br>(Hopper 2 Separater Assembly)                  | Value: 600  |
| 8064H<br>8065H      | The PM interval for the PM counter<br>(Hopper 3 Separater Assembly)                  | Value: 600  |
| 8066H<br>8067H      | The PM interval for the PM counter<br>(MB Tray Separater Assembly)                   | Value: 600  |
| 8068H<br>8069H      | The PM interval for the PM counter<br>(Hopper 5 Separater Assembly)                  | Value: 600  |
| 806AH<br> <br>807FH | (reserved)                                                                           |             |
| 80E0H<br>80E1H      | The PM interval for the PM counter<br>(Paper Exit Roller A)                          | Value: 800  |
| 80E2H<br>80E3H      | The PM interval for the PM counter<br>(Stapler Front Side)                           | Value: 200  |
| 80E4H<br>80E5H      | The PM interval for the PM counter<br>(Stapler Rear Side)                            | Value: 200  |
| 80E6H<br>80E7H      | The PM interval for the PM counter<br>(Paper Exit Solenoid)                          | Value: 9999 |
| 80E8H<br>80E9H      | The PM interval for the PM counter<br>(Middle Sponge Roller)                         | Value: 800  |
| 80EAH<br>80EBH      | The PM interval for the PM counter<br>(Tray Motor)                                   | Value: 4800 |
| 80ECH<br> <br>80FFH | (reserved)                                                                           |             |

### 8.5.3. The information for UC and PM parts

- (1) The count value beyond the standard value of UC counter

After "The count value of the UC parts in [on page 8-45](#)" is beyond "The standard value of UC counter in [on page 8-45](#)", the succession of the counter is done in this area.

These counters are shown by a decimal number of 4 digits.

| Address        | Purpose                                                           | Remarks          |
|----------------|-------------------------------------------------------------------|------------------|
| 8080H<br>8081H | The count value beyond the standard value<br>(Fuser Unit)         | 1000 pages/count |
| 8082H<br>8083H | The count value beyond the standard value<br>(Drum Unit)          | 1000 pages/count |
| 8084H<br>8085H | The count value beyond the standard value<br>(Fuser Cleaning Web) | 1000 pages/count |
| 8086H<br>8087H | The count value beyond the standard value<br>(Developer Mixture)  | 1000 pages/count |

- (2) The count limit beyond the standard value of UC counter

It is possible to use the UC parts up to the following value after "The count value of the UC parts in [on page 8-45](#)" is beyond "The standard value of UC counter in [on page 8-45](#)".

These counters are shown by a decimal number of 4 digits.

| Address        | Purpose                                                                  | Remarks             |
|----------------|--------------------------------------------------------------------------|---------------------|
| 8088H<br>8089H | The count limit beyond the standard value<br>(Fuser Unit)                | value:50 (50Kpage)  |
| 808AH<br>808BH | The count limit beyond the standard value<br>(Drum Unit)                 | value:30 (30Kcycle) |
| 808CH<br>808DH | The count limit beyond the standard value<br>(Fuser Cleaning Web)        | value:10 (10Kpage)  |
| 808EH<br>808FH | The count limit beyond the standard value<br>(Developer Mixture)         | value:10 (10Kcycle) |
| 8090H<br>8091H | The report opportunity beyond the standard value<br>(Fuser Unit)         | value:01H (1Kpage)  |
| 8092H<br>8093H | The report opportunity beyond the standard value<br>(Drum Unit)          | value:01H (1Kpage)  |
| 8094H<br>8095H | The report opportunity beyond the standard value<br>(Fuser Cleaning Web) | value:01H (1Kpage)  |
| 8096H<br>8097H | The report opportunity beyond the standard value<br>(Developer Mixture)  | value:01H (1Kpage)  |
| 8098H<br>8099H | The check counter beyond the standard value<br>(Fuser Unit)              | 1000 pages/count    |
| 809AH<br>809BH | The check counter beyond the standard value<br>(Drum Unit)               | 1000 cycles/count   |
| 809CH<br>809DH | The check counter beyond the standard value<br>(Fuser Cleaning Web)      | 1000 pages/count    |
| 809EH<br>809FH | The check counter beyond the standard value<br>(Developer Mixture)       | 1000 cycles/count   |

- (3) The count value of the UC parts beyond the standard value (under 1,000)

After "The count value of the UC parts in [on page 8-45](#)" is beyond "The standard value of UC counter in [on page 8-45](#)", the succession of the counter is done in this area.

These counters are shown by a hexadecimal number of 4 digits.

When a counter reaches 1,000, this value is cleared and "The count value beyond the standard value of UC counter in 8.5.3 (1)" is counted up.

| Address        | Purpose                                                           | Remarks                     |
|----------------|-------------------------------------------------------------------|-----------------------------|
| 80A0H<br>80A1H | The count value beyond the standard value<br>(Fuser Unit)         | (1 to 10)<br>100pages/count |
| 80A2H<br>80A3H | The count value beyond the standard value<br>(Drum Unit)          | (1 to 999)<br>1cycles/count |
| 80A4H<br>80A5H | The count value beyond the standard value<br>(Fuser Cleaning Web) | (1 to 10)<br>100pages/count |
| 80A6H<br>80A7H | The count value beyond the standard value<br>(Developer Mixure)   | (1 to 999)<br>1cycles/count |

(4) The count value of the UC parts (under 1,000)

These counters are shown by a hexadecimal number of 4 digits.

When a counter reaches 1,000, this counter is cleared and "The count value of UC parts (8002H-800BH) in [on page 8-45](#)" is counted up.

| Address        | Purpose                                             | Remarks                     |
|----------------|-----------------------------------------------------|-----------------------------|
| 80A8H<br>80A9H | The count value of UC parts<br>(Fuser Unit)         | (1 to 10)<br>100pages/count |
| 80AAH<br>80ABH | The count value of UC parts<br>(Drum Unit)          | (1 to 999)<br>1cycles/count |
| 80ACH<br>80ADH | The count value of UC parts<br>(Fuser Cleaning Web) | (1 to 10)<br>100pages/count |
| 80AEH<br>80AFH | The count value of UC parts<br>(Developer Mixure)   | (1 to 999)<br>1cycles/count |

(5) The count value of the PM parts (under 1,000)

These counters are shown by a hexadecimal number of 4 digits.

When a counter reaches 1,000, this counter is cleared and "The count value of PM parts (1000 page counter) in [on page 8-46](#)" is counted up.

| Address             | Purpose                                                              | Remarks                      |
|---------------------|----------------------------------------------------------------------|------------------------------|
| 80B0H<br>80B1H      | The count value of PM counter<br>(CH Wire)                           | (1 to 10)<br>100 pages/count |
| 80B2H<br>80B3H      | The count value of PM counter<br>(Corotron Assembly)                 | (1 to 10)<br>100 pages/count |
| 80B4H<br>80B5H      | The count value of PM counter<br>(Transfer / Separating Wire)        | (1 to 10)<br>100 pages/count |
| 80B6H<br>80B7H      | The count value of PM counter<br>(Ozone Filter)                      | (1 to 10)<br>100 pages/count |
| 80B8H<br>80B9H      | The count value of PM counter<br>(Air Filter (1))                    | (1 to 10)<br>100 pages/count |
| 80BAH<br>80BBH      | The count value of PM counter<br>(TH Belt)                           | (1 to 10)<br>100 pages/count |
| 80BCH<br>80BDH      | The count value of PM counter<br>(Hopper 1 Separater Assembly)       | (1 to 999)<br>1 page/count   |
| 80BEH<br>80BFH      | The count value of PM counter<br>(Hopper 2 Separater Assembly)       | (1 to 999)<br>1 page/count   |
| 80C0H<br>80C1H      | The count value of PM counter<br>(Hopper 3 Separater Assembly)       | (1 to 999)<br>1 page/count   |
| 80C2H<br>80C3H      | The count value of PM counter<br>(MB Tray Separater Assembly)        | (1 to 999)<br>1 page/count   |
| 80C4H<br> <br>80DBH | (reserved)                                                           |                              |
| 80DCH<br>80DDH      | The PM interval for the PM counter<br>(Idler Gear Z28 Assembly)      | (1 to 10)<br>100 pages/count |
| 80DEH<br>80DFH      | The PM interval for the PM counter<br>(Nip Guide Plate)              | (1 to 999)<br>1 sheet/count  |
| 80E0H<br>80E1H      | The PM interval for the PM counter<br>( Model 2 Paper Exit Roller )  | Value = 800                  |
| 80E2H<br>80E3H      | The PM interval for the PM counter<br>( Model 2 Stapler Unit Front ) | Value = 250                  |

| Address        | Purpose                                                                                                                              | Remarks                        |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|
| 80E4H<br>80E5H | The PM interval for the PM counter<br>( Model 2 Stapler Unit Rear )                                                                  | Value = 250                    |
| 80E6H<br>80E7H | The PM interval for the PM counter<br>( Model 2 Paper Exit Solenoid )                                                                | Value = 7200                   |
| 80E8H<br>80E9H | The PM interval for the PM counter<br>( Model 2 Middle Sponge Roller )                                                               | Value = 400                    |
| 80EAH<br>80EBH | The PM interval for the PM counter<br>( Model 2 Tray Up-Down Motor )                                                                 | Value = 4800                   |
| 80ECH<br>80EDH |                                                                                                                                      |                                |
| 80EEH<br>80EFH |                                                                                                                                      |                                |
| 80F0H<br>80F1H |                                                                                                                                      |                                |
| 80F2H<br>80F3H | total page counter count value in use Black toner                                                                                    |                                |
| 80F4H<br>80F5H | Front Engine:Total page counter count value in use<br>Mica toner<br>Rear Engine:Total page counter count value in use<br>color toner | 1page/count<br>hex/8 digits    |
| 80F6H<br>80F7H |                                                                                                                                      |                                |
| 80F8H<br>80F9H |                                                                                                                                      |                                |
| 80FAH<br>80FBH | The count value of PM interval<br>( Charger Unit)                                                                                    | valuer:400<br>1000 pages/count |
| 80FCH<br>80FDH | The count value of PM interval<br>( Charger Unit)                                                                                    | Max 9999KP<br>1000 pages/count |
| 80FEH<br>80FFH | The total count value of PM counter<br>(Charger Unit)                                                                                | (1 to 10)<br>100 pages/count   |
| 8100H<br>8101H | The count value of PM counter<br>( Model 2 Paper Exit Roller )                                                                       | 1000 pages/count<br>Max 9999   |
| 8102H<br>8103H | The count value of PM counter<br>( Model 2 Stapler Unit Front )                                                                      | 1000 staples/count<br>Max 9999 |
| 8104H<br>8105H | The count value of PM counter<br>( Model 2 Stapler Unit Rear )                                                                       | 1000 staples/count<br>Max 9999 |
| 8106H<br>8107H | The count value of PM counter<br>( Model 2 Paper Exit Solenoid )                                                                     | 1000pages/count<br>Max 9999    |
| 8108H<br>8109H | The count value of PM counter<br>( Model 2 Middle Sponge Roller )                                                                    | 1000pages/count<br>Max 9999    |
| 810AH<br>810BH | The count value of PM counter<br>( Model 2 Tray Up-Down Motor )                                                                      | 1000pages/count<br>Max 9999    |
| 810CH<br>810DH |                                                                                                                                      |                                |
| 810EH<br>810FH |                                                                                                                                      |                                |
| 8110H<br>8111H |                                                                                                                                      |                                |



| Address             | Purpose                                                 | Remarks                      |
|---------------------|---------------------------------------------------------|------------------------------|
| 8112H<br>8113H      |                                                         |                              |
| 8114H<br>8115H      |                                                         |                              |
| 8116H<br>8117H      |                                                         |                              |
| 8118H<br>8119H      |                                                         |                              |
| 811AH<br>811BH      |                                                         |                              |
| 811CH<br>811DH      |                                                         |                              |
| 811EH<br>811FH      |                                                         |                              |
| 8120H<br>8121H      | The count value of PM counter<br>(Paper Exit Roller A)  | (1 to 10)<br>100 pages/count |
| 8122H<br>8123H      | The count value of PM counter<br>(Stapler Front Side)   | (1 to 999)<br>1 pages/count  |
| 8124H<br>8125H      | The count value of PM counter<br>(Stapler Rear Side)    | (1 to 999)<br>1 pages/count  |
| 8126H<br>8127H      | The count value of PM counter<br>(Paper Exit Solenoid)  | (1 to 999)<br>1 pages/count  |
| 8128H<br>8129H      | The count value of PM counter<br>(Middle Sponge Roller) | (1 to 999)<br>1 pages/count  |
| 812AH<br>812BH      | The count value of PM counter<br>(Tray Motor)           | (1 to 999)<br>1 pages/count  |
| 812CH<br> <br>813FH | (reserved)                                              |                              |

#### 8.5.4. The paper information

(1) Total page count (1000 page counter)

These counters are counted up when the number of paper corresponding to the following counter reaches 1,000, except "The count value of total page counter".

These counters are shown by a decimal number of 4 digits.

| Address             | Purpose                                   | Remarks                             |
|---------------------|-------------------------------------------|-------------------------------------|
| 8140H<br> <br>8143H | The count value of total page counter     | 1page/count<br>hexadecimal/8 digits |
| 8144H<br>8145H      | The count value of total 1-side counter   | 1000pages/count                     |
| 8146H<br>8147H      | The count value of total 2-side counter   | 1000pages/count                     |
| 8148H<br>8149H      | The count value of total A4 (LEF) counter | 1000picks/count                     |
| 814AH<br>814BH      | The count value of total A4 (SEF) counter | 1000picks/count                     |
| 814CH<br>814DH      | The count value of total B4 (SEF) counter | 1000picks/count                     |

| Address                              | Purpose                                                     | Remarks         |
|--------------------------------------|-------------------------------------------------------------|-----------------|
| 814EH<br>814FH                       | The count value of total A3 (SEF) counter                   | 1000picks/count |
| 8150H<br>8151H                       | The count value of total Letter (LEF) counter               | 1000picks/count |
| 8152H<br>8153H                       | The count value of total Letter (SEF) counter               | 1000picks/count |
| 8154H<br>8155H                       | The count value of total Tabstock (LEF) counter             | 1000picks/count |
| 8156H<br>8157H                       | The count value of total 8.5"x12.4" (SEF) counter           | 1000picks/count |
| 8158H<br>8159H                       | The count value of total Legal 13" (SEF) counter            | 1000picks/count |
| 815AH<br>815BH                       | The count value of total Legal 14" (SEF) counter            | 1000picks/count |
| 815CH<br>815DH                       | The count value of total Ledger (SEF) counter               | 1000picks/count |
| 815EH<br>815FH                       | The count value of total B5 (LEF) counter                   | 1000picks/count |
| 8160H<br>8161H                       | The count value of total 12"x18" (SEF) counter              | 1000picks/count |
| 8162H<br>8163H                       | The count value of total A5 (SEF) counter                   | 1000picks/count |
| 8164H<br>8165H                       | The count value of A4 tabstock                              | 1000pages/count |
| 8166H<br>8167H                       | The count value of Special size 1                           | 1000pages/count |
| 8168H<br>8169H                       | The count value of Special size 2                           | 1000pages/count |
| 816AH<br>816BH                       | The count value of Special size 3                           | 1000pages/count |
| 816CH<br><br>816DH<br>816EH<br>816FH | Click charge total page counter count value for Black toner | 1page/count     |

(2) Pick counter of Hopper 1 (1000 pick counter)

These counters are counted up every time the "Pick counter of Hopper 1 (1 pick counter) in (7)" reaches 1,000.

These counters are shown by a decimal number of 4 digits.

| Address        | Purpose                                        | Remarks         |
|----------------|------------------------------------------------|-----------------|
| 8170H<br>8171H | The count value of 1-side counter (Hopper 1)   | 1000picks/count |
| 8172H<br>8173H | The count value of 2-side counter (Hopper 1)   | 1000picks/count |
| 8174H<br>8175H | The count value of A4 (LEF) counter (Hopper 1) | 1000picks/count |
| 8176H<br>8177H | The count value of A4 (SEF) counter (Hopper 1) | 1000picks/count |

| Address        | Purpose                                                   | Remarks         |
|----------------|-----------------------------------------------------------|-----------------|
| 8178H<br>8179H | The count value of B4 (SEF) counter<br>(Hopper 1)         | 1000picks/count |
| 817AH<br>817BH | The count value of A3 (SEF) counter<br>(Hopper 1)         | 1000picks/count |
| 817CH<br>817DH | The count value of Letter (LEF) counter<br>(Hopper 1)     | 1000picks/count |
| 817EH<br>817FH | The count value of Letter (SEF) counter<br>(Hopper 1)     | 1000picks/count |
| 8180H<br>8181H | The count value of 8.5"x12.4" (SEF) counter<br>(Hopper 1) | 1000picks/count |
| 8182H<br>8183H | The count value of B5 (LEF) counter<br>(Hopper 1)         | 1000picks/count |
| 8184H<br>8185H | The count value of Legal 14" (SEF) counter<br>(Hopper 1)  | 1000picks/count |
| 8186H<br>8187H | The count value of Ledger (SEF) counter<br>(Hopper 1)     | 1000picks/count |
| 8188H<br>8189H | The count value of 12"x18" (SEF) counter<br>(Hopper 1)    | 1000picks/count |
| 818AH<br>818BH | The count value of Legal "13" (SEF) counter<br>(Hopper 1) | 1000picks/count |
| 818CH<br>818DH | The count value of Tabstock (LEF) counter<br>(Hopper 1)   | 1000picks/count |
| 818EH<br>818FH | (reserved)                                                |                 |

(3) Pick counter of Hopper 2 (1000 pick counter)

These counters are counted up every time the "Pick counter of Hopper 2 (1 pick counter) in (8)" reaches 1,000.

These counters are shown by a decimal number of 4 digits.

| Address        | Purpose                                               | Remarks         |
|----------------|-------------------------------------------------------|-----------------|
| 8190H<br>8191H | The count value of 1-side counter<br>(Hopper 2)       | 1000picks/count |
| 8192H<br>8193H | The count value of 2-side counter<br>(Hopper 2)       | 1000picks/count |
| 8194H<br>8195H | The count value of A4 (LEF) counter<br>(Hopper 2)     | 1000picks/count |
| 8196H<br>8197H | The count value of A4 (SEF) counter<br>(Hopper 2)     | 1000picks/count |
| 8198H<br>8199H | The count value of B4 (SEF) counter<br>(Hopper 2)     | 1000picks/count |
| 819AH<br>819BH | The count value of A3 (SEF) counter<br>(Hopper 2)     | 1000picks/count |
| 819CH<br>819DH | The count value of Letter (LEF) counter<br>(Hopper 2) | 1000picks/count |
| 819EH<br>819FH | The count value of Letter (SEF) counter<br>(Hopper 2) | 1000picks/count |
| 81A0H<br>81A1H | The count value of A5 (SEF) counter<br>(Hopper 2)     | 1000picks/count |
| 81A2H<br>81A3H | The count value of B5 (LEF) counter<br>(Hopper 2)     | 1000picks/count |

| Address        | Purpose                                                | Remarks         |
|----------------|--------------------------------------------------------|-----------------|
| 81A4H<br>81A5H | The count value of Legal 14" (SEF) counter (Hopper 2)  | 1000picks/count |
| 81A6H<br>81A7H | The count value of Ledger (SEF) counter (Hopper 2)     | 1000picks/count |
| 81A8H<br>81A9H | The count value of 12"x18" (SEF) counter (Hopper 2)    | 1000picks/count |
| 81AAH<br>81ABH | The count value of 8.5"x12.4" (LEF) counter (Hopper 2) | 1000picks/count |
| 81ACH<br>81ADH | The count value of Legal "13" (SEF) counter (Hopper 2) | 1000picks/count |
| 81AEH<br>81AFH | The count value of Tabstock (LEF) counter (Hopper 2)   | 1000picks/count |

(4) Pick counter of Hopper 3 (1000 pick counter)

These counters are counted up every time the "Pick counter of Hopper 3 (1 pick counter) in (9)" reaches 1,000.

These counters are shown by a decimal number of 4 digits.

| Address        | Purpose                                                | Remarks         |
|----------------|--------------------------------------------------------|-----------------|
| 81B0H<br>81B1H | The count value of 1-side counter (Hopper 3)           | 1000picks/count |
| 81B2H<br>81B3H | The count value of 2-side counter (Hopper 3)           | 1000picks/count |
| 81B4H<br>81B5H | The count value of A4 (LEF) counter (Hopper 3)         | 1000picks/count |
| 81B6H<br>81B7H | The count value of A4 (SEF) counter (Hopper 3)         | 1000picks/count |
| 81B8H<br>81B9H | The count value of B4 (SEF) counter (Hopper 3)         | 1000picks/count |
| 81BAH<br>81BBH | The count value of A3 (SEF) counter (Hopper 3)         | 1000picks/count |
| 81BCH<br>81BDH | The count value of Letter (LEF) counter (Hopper 3)     | 1000picks/count |
| 81BEH<br>81BFH | The count value of Letter (SEF) counter (Hopper 3)     | 1000picks/count |
| 81C0H<br>81C1H | The count value of A5 (SEF) counter (Hopper 3)         | 1000picks/count |
| 81C2H<br>81C3H | The count value of B5 (LEF) counter (Hopper 3)         | 1000picks/count |
| 81C4H<br>81C5H | The count value of Legal 14" (SEF) counter (Hopper 3)  | 1000picks/count |
| 81C6H<br>81C7H | The count value of Ledger (SEF) counter (Hopper 3)     | 1000picks/count |
| 81C8H<br>81C9H | The count value of 12"x18" (SEF) counter (Hopper 3)    | 1000picks/count |
| 81CAH<br>81CBH | The count value of 8.5"x12.4" (LEF) counter (Hopper 3) | 1000picks/count |
| 81CCH<br>81CDH | The count value of Legal "13" (SEF) counter (Hopper 3) | 1000picks/count |
| 81CEH<br>81CFH | The count value of Tabstock (LEF) counter (Hopper 3)   | 1000picks/count |

(5) Pick counter of Multi-bypass Tray (1000 pick counter)

These counters are counted up every time the "Pick counter of Multi-bypass Tray (1 pick counter) in (10) " reaches 1,000.

These counters are shown by a decimal number of 4 digits.

| Address        | Purpose                                               | Remarks         |
|----------------|-------------------------------------------------------|-----------------|
| 81D0H<br>81D1H | The count value of 1-side counter (MB Tray)           | 1000picks/count |
| 81D2H<br>81D3H | The count value of 2-side counter (MB Tray)           | 1000picks/count |
| 81D4H<br>81D5H | The count value of A4 (LEF) counter (MB Tray)         | 1000picks/count |
| 81D6H<br>81D7H | The count value of A4 (SEF) counter (MB Tray)         | 1000picks/count |
| 81D8H<br>81D9H | The count value of B4 (SEF) counter (MB Tray)         | 1000picks/count |
| 81DAH<br>81DBH | The count value of A3 (SEF) counter (MB Tray)         | 1000picks/count |
| 81DCH<br>81DDH | The count value of Letter (LEF) counter (MB Tray)     | 1000picks/count |
| 81DEH<br>81DFH | The count value of Letter (SEF) counter (MB Tray)     | 1000picks/count |
| 81E0H<br>81E1H | The count value of Tabstock (SEF) counter (MB Tray)   | 1000picks/count |
| 81E2H<br>81E3H | The count value of 8.5"x12.4" (SEF) counter (MB Tray) | 1000picks/count |
| 81E4H<br>81E5H | The count value of Legal 13" (SEF) counter (MB Tray)  | 1000picks/count |
| 81E6H<br>81E7H | The count value of Legal 14" (SEF) counter (MB Tray)  | 1000picks/count |
| 81E8H<br>81E9H | The count value of Ledger (SEF) counter (MB Tray)     | 1000picks/count |
| 81EAH<br>81EBH | The count value of B5 (LEF) counter (MB Tray)         | 1000picks/count |
| 81ECH<br>81EDH | The count value of 12"x18" (SEF) counter (MB Tray)    | 1000picks/count |
| 81EEH<br>81EFH | The count value of A5 (SEF) counter (MB Tray)         | 1000picks/count |

(6) Pick counter of High Capacity Hopper (1000 pick counter)

These counters are counted up every time the "Pick counter of High Capacity Hopper (1 pick counter) in (11)" reaches 1,000.

These counters are shown by a decimal number of 4 digits.

| Address             | Purpose                                               | Remarks         |
|---------------------|-------------------------------------------------------|-----------------|
| 81F0H<br>81F1H      | The count value of 1-side counter<br>(Hopper 5)       | 1000picks/count |
|                     | The count value of 2-side counter<br>(Hopper 5)       | 1000picks/count |
|                     | The count value of A4 (LEF) counter<br>(Hopper 5)     | 1000picks/count |
|                     | The count value of Letter (LEF) counter<br>(Hopper 5) | 1000picks/count |
| 81F6H<br>81F7H      | The count value of Letter (LEF) counter<br>(Hopper 5) | 1000picks/count |
| 81F8H<br> <br>81FFH | (reserved)                                            |                 |

(7) Pick counter of Hopper 1 (1 pick counter)

These counters show the number of paper picked from Hopper 1 from 1 to 999. Every time the Printer picks a number of paper from Hopper 1, the counter corresponded to the paper size is counted up.

These counters are shown by a hexadecimal number of 4 digits.

When a counter exceeds 3E7H(equal to 999), this number is cleared and "Pick counter of Hopper 1 (1000 pick counter) in (2) " is counted up.

If the Printer picks a number of Letter (LEF) paper on simplex mode, "The count value of 1-side counter(8200 to 8201)" and "The count value of Letter (LEF) counter (820C to 820D)" is counted up.

| Address        | Purpose                                                   | Remarks                    |
|----------------|-----------------------------------------------------------|----------------------------|
| 8200H<br>8201H | The count value of 1-side counter<br>(Hopper 1)           | (1 to 999)<br>1 pick/count |
| 8202H<br>8203H | The count value of 2-side counter<br>(Hopper 1)           | (1 to 999)<br>1 pick/count |
| 8204H<br>8205H | The count value of A4 (LEF) counter<br>(Hopper 1)         | (1 to 999)<br>1 pick/count |
| 8206H<br>8207H | The count value of A4 (SEF) counter<br>(Hopper 1)         | (1 to 999)<br>1 pick/count |
| 8208H<br>8209H | The count value of B4 (SEF) counter<br>(Hopper 1)         | (1 to 999)<br>1 pick/count |
| 820AH<br>820BH | The count value of A3 (SEF) counter<br>(Hopper 1)         | (1 to 999)<br>1 pick/count |
| 820CH<br>820DH | The count value of Letter (LEF) counter<br>(Hopper 1)     | (1 to 999)<br>1 pick/count |
| 820EH<br>820FH | The count value of Letter (SEF) counter<br>(Hopper 1)     | (1 to 999)<br>1 pick/count |
| 8210H<br>8211H | The count value of 8.5"x12.4" (SEF) counter<br>(Hopper 1) | (1 to 999)<br>1 pick/count |
| 8212H<br>8213H | The count value of B5 (LEF) counter<br>(Hopper 1)         | (1 to 999)<br>1 pick/count |
| 8214H<br>8215H | The count value of Legal 14" (SEF) counter<br>(Hopper 1)  | (1 to 999)<br>1 pick/count |
| 8216H<br>8217H | The count value of Ledger (SEF) counter<br>(Hopper 1)     | (1 to 999)<br>1 pick/count |
| 8218H<br>8219H | The count value of 12"x18" (SEF) counter<br>(Hopper 1)    | (1 to 999)<br>1 pick/count |

| Address        | Purpose                                                  | Remarks                    |
|----------------|----------------------------------------------------------|----------------------------|
| 821AH<br>821BH | The count value of Legal 13" (SEF) counter<br>(Hopper 1) | (1 to 999)<br>1 pick/count |
| 821CH<br>821DH | The count value of Tabstock (LEF) counter<br>(Hopper 1)  | (1 to 999)<br>1 pick/count |
| 821EH<br>821FH | (reserved)                                               |                            |

(8) Pick counter of Hopper 2 (1 pick counter)

These counters show the number of paper picked from Hopper 2 from 1 to 999. Every time the Printer picks a number of paper from Hopper 2, the counter corresponded to the paper size is counted up.

These counters are shown by a hexadecimal number of 4 digits.

When a counter exceeds 3E7H(equal to 999), this number is cleared and "Pick counter of Hopper 2 (1000 pick counter) in (3) " is counted up.

| Address        | Purpose                                                   | Remarks                    |
|----------------|-----------------------------------------------------------|----------------------------|
| 8220H<br>8221H | The count value of 1-side counter<br>(Hopper 2)           | (1 to 999)<br>1 pick/count |
| 8222H<br>8223H | The count value of 2-side counter<br>(Hopper 2)           | (1 to 999)<br>1 pick/count |
| 8224H<br>8225H | The count value of A4 (LEF) counter<br>(Hopper 2)         | (1 to 999)<br>1 pick/count |
| 8226H<br>8227H | The count value of A4 (SEF) counter<br>(Hopper 2)         | (1 to 999)<br>1 pick/count |
| 8228H<br>8229H | The count value of B4 (SEF) counter<br>(Hopper 2)         | (1 to 999)<br>1 pick/count |
| 822AH<br>822BH | The count value of A3 (SEF) counter<br>(Hopper 2)         | (1 to 999)<br>1 pick/count |
| 822CH<br>822DH | The count value of Letter (LEF) counter<br>(Hopper 2)     | (1 to 999)<br>1 pick/count |
| 822EH<br>822FH | The count value of Letter (SEF) counter<br>(Hopper 2)     | (1 to 999)<br>1 pick/count |
| 8230H<br>8231H | The count value of A5 (SEF) counter<br>(Hopper 2)         | (1 to 999)<br>1 pick/count |
| 8232H<br>8233H | The count value of B5 (LEF) counter<br>(Hopper 2)         | (1 to 999)<br>1 pick/count |
| 8234H<br>8235H | The count value of Legal 14" (SEF) counter<br>(Hopper 2)  | (1 to 999)<br>1 pick/count |
| 8236H<br>8237H | The count value of Ledger (SEF) counter<br>(Hopper 2)     | (1 to 999)<br>1 pick/count |
| 8238H<br>8239H | The count value of 12"x18" (SEF) counter<br>(Hopper 2)    | (1 to 999)<br>1 pick/count |
| 823AH<br>823BH | The count value of 8.5"x12.4" (LEF) counter<br>(Hopper 2) | (1 to 999)<br>1 pick/count |
| 823CH<br>823DH | The count value of Legal 13" (SEF) counter<br>(Hopper 2)  | (1 to 999)<br>1 pick/count |
| 823EH<br>823FH | The count value of Tabstock (LEF) counter<br>(Hopper 2)   | (1 to 999)<br>1 pick/count |

(9) Pick counter of Hopper 3 (1 pick counter)

These counters show the number of paper picked from Hopper 3 from 1 to 999.

Every time the Printer picks a number of paper from Hopper 3, the counter corre-

sponded to the paper size is counted up.

These counters are shown by a hexadecimal number of 4 digits.

When a counter exceeds 3E7H(equal to 999), this number is cleared and "Pick counter of Hopper 3 (1000 pick counter) in (4) " is counted up.

| Address        | Purpose                                                   | Remarks                    |
|----------------|-----------------------------------------------------------|----------------------------|
| 8240H<br>8241H | The count value of 1-side counter<br>(Hopper 3)           | (1 to 999)<br>1 pick/count |
| 8242H<br>8243H | The count value of 2-side counter<br>(Hopper 3)           | (1 to 999)<br>1 pick/count |
| 8244H<br>8245H | The count value of A4 (LEF) counter<br>(Hopper 3)         | (1 to 999)<br>1 pick/count |
| 8246H<br>8247H | The count value of A4 (SEF) counter<br>(Hopper 3)         | (1 to 999)<br>1 pick/count |
| 8248H<br>8249H | The count value of B4 (SEF) counter<br>(Hopper 3)         | (1 to 999)<br>1 pick/count |
| 824AH<br>824BH | The count value of A3 (SEF) counter<br>(Hopper 3)         | (1 to 999)<br>1 pick/count |
| 824CH<br>824DH | The count value of Letter (LEF) counter<br>(Hopper 3)     | (1 to 999)<br>1 pick/count |
| 824EH<br>824FH | The count value of Letter (SEF) counter<br>(Hopper 3)     | (1 to 999)<br>1 pick/count |
| 8250H<br>8251H | The count value of A5 (SEF) counter<br>(Hopper 3)         | (1 to 999)<br>1 pick/count |
| 8252H<br>8253H | The count value of B5 (LEF) counter<br>(Hopper 3)         | (1 to 999)<br>1 pick/count |
| 8254H<br>8255H | The count value of Legal 14" (SEF) counter<br>(Hopper 3)  | (1 to 999)<br>1 pick/count |
| 8256H<br>8257H | The count value of Ledger (SEF) counter<br>(Hopper 3)     | (1 to 999)<br>1 pick/count |
| 8258H<br>8259H | The count value of 12"x18" (SEF) counter<br>(Hopper 3)    | (1 to 999)<br>1 pick/count |
| 825AH<br>825BH | The count value of 8.5"x12.4" (LEF) counter<br>(Hopper 3) | (1 to 999)<br>1 pick/count |
| 825CH<br>825DH | The count value of Legal 13" (SEF) counter<br>(Hopper 3)  | (1 to 999)<br>1 pick/count |
| 825EH<br>825FH | The count value of Tabstock (LEF) counter<br>(Hopper 3)   | (1 to 999)<br>1 pick/count |

(10) Pick counter of Multi-bypass Tray (1 pick counter)

These counters show the number of paper picked from Multi-bypass Tray from 1 to 999.

Every time the Printer picks a number of paper from Multi-bypass Tray, the counter corresponded to the paper size is counted up.

These counters are shown by a hexadecimal number of 4 digits.

When a counter exceeds 3E7H(equal to 999), this number is cleared and "Pick counter of Multi-bypass Tray (1000 pick counter) in (5) " is counted up.

| Address        | Purpose                                        | Remarks                    |
|----------------|------------------------------------------------|----------------------------|
| 8260H<br>8261H | The count value of 1-side counter<br>(MB Tray) | (1 to 999)<br>1 pick/count |
| 8262H<br>8263H | The count value of 2-side counter<br>(MB Tray) | (1 to 999)<br>1 pick/count |



| Address        | Purpose                                                  | Remarks                    |
|----------------|----------------------------------------------------------|----------------------------|
| 8264H<br>8265H | The count value of A4 (LEF) counter<br>(MB Tray)         | (1 to 999)<br>1 pick/count |
| 8266H<br>8267H | The count value of A4 (SEF) counter<br>(MB Tray)         | (1 to 999)<br>1 pick/count |
| 8268H<br>8269H | The count value of B4 (SEF) counter<br>(MB Tray)         | (1 to 999)<br>1 pick/count |
| 826AH<br>826BH | The count value of A3 (SEF) counter<br>(MB Tray)         | (1 to 999)<br>1 pick/count |
| 826CH<br>826DH | The count value of Letter (LEF) counter<br>(MB Tray)     | (1 to 999)<br>1 pick/count |
| 826EH<br>826FH | The count value of Letter (SEF) counter<br>(MB Tray)     | (1 to 999)<br>1 pick/count |
| 8270H<br>8271H | The count value of Tabstock (LEF) counter<br>(MB Tray)   | (1 to 999)<br>1 pick/count |
| 8272H<br>8273H | The count value of 8.5"x12.4" (LEF) counter<br>(MB Tray) | (1 to 999)<br>1 pick/count |
| 8274H<br>8275H | The count value of Legal 13" (SEF) counter<br>(MB Tray)  | (1 to 999)<br>1 pick/count |
| 8276H<br>8277H | The count value of Legal 14" (SEF) counter<br>(MB Tray)  | (1 to 999)<br>1 pick/count |
| 8278H<br>8279H | The count value of Ledger (LEF) counter<br>(MB Tray)     | (1 to 999)<br>1 pick/count |
| 827AH<br>827BH | The count value of B5 (LEF) counter<br>(MB Tray)         | (1 to 999)<br>1 pick/count |
| 827CH<br>827DH | The count value of 12"x18" (SEF) counter<br>(MB Tray)    | (1 to 999)<br>1 pick/count |
| 827EH<br>827FH | The count value of A5 (SEF) counter<br>(MB Tray)         | (1 to 999)<br>1 pick/count |

(11) Pick counter of High Capacity Hopper (1 pick counter)

These counters show the number of paper picked from High Capacity Hopper from 1 to 999.

Every time the Printer picks a number of paper from High Capacity Hopper, the counter corresponded to the paper size is counted up.

These counters are shown by a hexadecimal number of 4 digits.

When a counter exceeds 3E7H(equal to 999), this number is cleared and "Pick counter of High Capacity Hopper (1000 pick counter) in (6) " is counted up.

| Address             | Purpose                                               | Remarks                    |
|---------------------|-------------------------------------------------------|----------------------------|
| 8280H<br>8281H      | The count value of 1-side counter<br>(Hopper 5)       | (1 to 999)<br>1 pick/count |
| 8282H<br>8283H      | The count value of 2-side counter<br>(Hopper 5)       | (1 to 999)<br>1 pick/count |
| 8284H<br>8285H      | The count value of A4 (LEF) counter<br>(Hopper 5)     | (1 to 999)<br>1 pick/count |
| 8286H<br>8287H      | The count value of Letter (LEF) counter<br>(Hopper 5) | (1 to 999)<br>1 pick/count |
| 8288H<br> <br>828FH | (reserved)                                            |                            |

| Address                                                              | Purpose                                          | Remarks                         |
|----------------------------------------------------------------------|--------------------------------------------------|---------------------------------|
| 8290H<br>8291H                                                       | The count value of A4 tabstock<br>(Hopper1)      | 1000pages/count                 |
| 8292H<br>8293H                                                       | The count value of A4 tabstock<br>(Hopper2)      | 1000pages/count                 |
| 8294H<br>8295H                                                       | The count value of A4 tabstock<br>(Hopper3)      | 1000pages/count                 |
| 8296H<br>8297H                                                       | The count value of A4 tabstock<br>(MB Tray)      | 1000pages/count                 |
| 8298H<br>8299H                                                       | The count value of A4 tabstock<br>(Hopper1)      | (1 to 9)<br>1 pages/count       |
| 829AH<br>829BH                                                       | The count value of A4 tabstock<br>(Hopper2)      | (1 to 9)<br>1 pages/count       |
| 829CH<br>829DH                                                       | The count value of A4 tabstock<br>(Hopper3)      | (1 to 9)<br>1 pages/count       |
| 829EH<br>829FH                                                       | The count value of A4 tabstock<br>(MB Tray)      | (1 to 9)<br>1 pages/count       |
| 82A0H<br>82A1H                                                       | The count value of Special size 1                | (1 to 9)<br>1 pages/count       |
| 82A2H<br>82A3H                                                       | The count value of Special size 2                | (1 to 9)<br>1 pages/count       |
| 82A4H<br>82A5H                                                       | The count value of Special size 3                | (1 to 9)<br>1 pages/count       |
| 82A6H<br>82A7H                                                       | The count value of A4 long                       | 1000pages/count                 |
| 82A8H<br>82A9H                                                       | The count value of A3 long                       | 1000pages/count                 |
| 82AAH<br>82ABH                                                       | The count value of B5 long                       | 1000pages/count                 |
| 82ACH<br>82ADH                                                       | The count value of B4 long                       | 1000pages/count                 |
| 82AEH<br>82AFH                                                       | The count value of A4 long                       | (1 to 9)<br>1 pages/count       |
| 82B0H<br>82B1H                                                       | The count value of A3 long                       | (1 to 9)<br>1 pages/count       |
| 82B2H<br>82B3H                                                       | The count value of B5 long                       | (1 to 9)<br>1 pages/count       |
| 82B4H<br>82B5H                                                       | The count value of B4 long                       | (1 to 9)<br>1 pages/count       |
| 82B6H<br> <br>82BFH                                                  | (reserved)                                       |                                 |
| 82D8H<br>82D9H<br>82DAH<br>82DBH<br>82DCH<br>82DDH<br>82DEH<br>82DFH |                                                  |                                 |
| 82E0H<br>82E1H                                                       | The total count value of PM counter<br>(PC Drum) | Max 9999KC<br>1000 cycles/count |

| Address                          | Purpose                                                                                  | Remarks          |
|----------------------------------|------------------------------------------------------------------------------------------|------------------|
| 82E2H<br>82E3H<br>82E4H<br>82E5H |                                                                                          |                  |
| 82E6H                            | The custom-made selection flag of a hopper 5<br>( 00:Normal FF:Custom-made )             |                  |
| 82E7H                            | Size Data of a hopper 5 Set area<br>( 03:B5_LEF, 05:LET_LEF, 09:A4_LEF, 10:Custom-made ) |                  |
| 82E8H<br>82E9H                   | ( unused )                                                                               |                  |
| 82EAH<br>82EBH                   | The count value of the page counter<br>( LET LEF standard )                              | 1000 pages/count |
| 82ECH                            | Letter 100P counter: for mecanical counter)                                              | 100 pages/count  |
| 82EDH                            | (Reserved)                                                                               |                  |
| 82EEH                            | Letter 80P counter: for fuser web)                                                       | 80 pages/count   |
| 82EFH                            | (Reserved)                                                                               |                  |
| 82F0H                            | Indication setting the UC interval                                                       | "01" = set       |
| 82F1H                            | Indication setting the UC adjustment value                                               | "01" = set       |

## 8.5.5. Adjustment value

(1) The condition of the default value

| Address | Purpose                                    | Remarks         |
|---------|--------------------------------------------|-----------------|
| 82F0H   | Indication setting the UC interval         | already set=01H |
| 82F1H   | Indication setting the UC adjustment value | already set=01H |

(2) Detection Mask Control

| Address | Purpose                                           | Remarks                                                   |
|---------|---------------------------------------------------|-----------------------------------------------------------|
| 82F2H   | Failures Prohibition                              | Main CPU<br>"0" = enable<br>"1" = disable<br>default=00H  |
|         | BIT0: Charger / Grid HV Failure (E225)            |                                                           |
|         | BIT1: Bias HV Failure (E224)                      |                                                           |
|         | BIT2: Transfer HV Failure (E226)                  |                                                           |
|         | BIT3: Detach HV Failure (E227)                    |                                                           |
|         | BIT4: Toner Control Operation on printing         |                                                           |
|         | BIT5: Magroll Revolution Failure (E228)           |                                                           |
|         | BIT6: Toner Feed Motor Error (E22F)               |                                                           |
|         | BIT7: BD Error (E239)                             |                                                           |
| 82F3H   | Failures Prohibition                              | Slave CPU<br>"0" = enable<br>"1" = disable<br>default=28H |
|         | BIT0: Drum Wrap Jam (diffusion)                   |                                                           |
|         | BIT1: Drum Wrap Jam (reflection)                  |                                                           |
|         | BIT2: The transfer wire cleaning                  |                                                           |
|         | BIT3: The Nip Unit cleaning                       |                                                           |
|         | BIT4: HR rotation ("0" = normal, "1" = reverse)   |                                                           |
|         | BIT5: TH motor ("0" = solenoid, "1" = motor)      |                                                           |
|         | BIT6: NIP selection ("0" = solenoid, "1" = motor) |                                                           |
|         | BIT7: Regist correction                           |                                                           |
| 82F4H   | Failures Prohibition                              | Slave CPU<br>"0" = enable<br>"1" = disable<br>default=E2H |
|         | BIT0: Toner Control Operation (Initialize)        |                                                           |
|         | BIT1: Toner Feed Operation (Initialize)           |                                                           |
|         | BIT2: Toner re-cycle rotation error (E231)        |                                                           |
|         | BIT3: Felt End check (E014)                       |                                                           |
|         | BIT4: Magroll Revolution Failure (Initialize)     |                                                           |
|         | BIT5: Over Toner Failure (Initialize)             |                                                           |
|         | BIT6: Lack Toner Failure (Initialize)             |                                                           |
|         | BIT7: Toner Empty Failure (Initialize)            |                                                           |
| 82F5H   | Failures Prohibition                              | "0" = enable<br>"1" = disable<br>default=00H              |
|         | BIT0: VD OPEN Error (E23F, E240)                  |                                                           |
|         | BIT1: BD TIMEOUT Error (E238)                     |                                                           |
|         | BIT2: CVD Clock Error (E241, E242)                |                                                           |
|         | BIT3: CVD Clock Error (E243, E244)                |                                                           |
|         | BIT4: LNB Data Error (E25E)                       |                                                           |
|         | BIT5: DLB Data Error (E25F)                       |                                                           |
|         | BIT6: (reserved)                                  |                                                           |
|         | BIT7: Checking broken wires of thermostat         |                                                           |

(3) Paper Slack Value at Registration

| Address | Purpose                                                                   | Remarks     |
|---------|---------------------------------------------------------------------------|-------------|
| 82F6H   | Regist sag<br>("00" = 3.3mm, "01" = 5.3mm, "02" = 7.4mm,<br>"03" = 9.5mm) | default=01H |

(4) Control of Temperature and Humidity

| Address | Purpose                                                                                  | Remarks     |
|---------|------------------------------------------------------------------------------------------|-------------|
| 82F7H   | Failures Prohibition                                                                     | default=00H |
|         | BIT0: Temperature and humidity of DTC<br>("0" = variable, "1" = fixed)                   |             |
|         | BIT1: Checking the sensor of temperature and<br>humidity ("0" = enable, "1" = disenable) |             |
|         | BIT2: (reserved)                                                                         |             |
|         | BIT3: (reserved)                                                                         |             |
|         | BIT4: (reserved)                                                                         |             |
|         | BIT5: (reserved)                                                                         |             |
|         | BIT6: (reserved)                                                                         |             |
|         | BIT7: (reserved)                                                                         |             |

(5) Toner Control Value

| Address        | Purpose                                            | Remarks       |
|----------------|----------------------------------------------------|---------------|
| 82F8H<br>82F9H | The voltage for the toner control sensor           |               |
| 82FAH<br>82FBH | (reserved)                                         |               |
| 82FCH<br>82FDH | The PWM value of toner control sensor              |               |
| 82FEH          | The specified value of the toner control operation | default = 80H |
| 82FFH          | Skew Jam Check Data                                | default = 04  |

(6) Print position (horizontal / vertical)

| Address | Purpose                                     | Remarks       |
|---------|---------------------------------------------|---------------|
| 8300H   | Hopper 1 horizontal position data (simplex) | default = 52H |
| 8301H   | Hopper 2 horizontal position data (simplex) | default = 52H |
| 8302H   | Hopper 3 horizontal position data (simplex) | default = 52H |
| 8303H   | MB Tray horizontal position data (simplex)  | default = 52H |
| 8304H   | Hopper 5 horizontal position data (simplex) | default = 52H |
| 8305H   | The vertical print position data            | default = 24H |
| 8306H   | Hopper 1 horizontal position data (duplex)  | default = 52H |
| 8307H   | Hopper 2 horizontal position data (duplex)  | default = 52H |
| 8308H   | Hopper 3 horizontal position data (duplex)  | default = 52H |
| 8309H   | MB Tray horizontal position data (duplex)   | default = 52H |

| Address             | Purpose                                    | Remarks       |
|---------------------|--------------------------------------------|---------------|
| 830AH               | Hopper 5 horizontal position data (duplex) | default = 52H |
| 830BH<br> <br>830FH | (reserved)                                 |               |

(7) HV Voltage value

| Address             | Purpose                                       | Remarks       |
|---------------------|-----------------------------------------------|---------------|
| 8310H               | The Detach HV voltage 1 (1-sided)             | default = 90H |
| 8311H               | The Detach HV voltage 2 (1-sided)             | default = 90H |
| 8312H               | The Detach HV voltage 1 (2-sided)             | default = 90H |
| 8313H               | The Detach HV voltage 2 (2-sided)             | default = 90H |
| 8314H               | The Transfer HV voltage (higher)              | default = CCH |
| 8315H               | The Transfer HV voltage (lower)               | default = CCH |
| 8316H               | The Bias HV voltage                           | default = 66H |
| 8317H               | The Grid HV voltage                           | default = 33H |
| 8318H               | The Detach HV voltage (in diagnostics mode)   | value = 33H   |
| 8319H               | The Transfer HV voltage (in diagnostics mode) | value = 33H   |
| 831AH<br> <br>831FH | (reserved)                                    |               |

(8) Transfer / Detach ON / OFF Timer (Master CPU)

| Address | Purpose                                                                                       | Remarks                |
|---------|-----------------------------------------------------------------------------------------------|------------------------|
| 8320H   | Detachment on 1 timer count value                                                             | value = 08H            |
| 8321H   | Detachment on 2 timer count value                                                             | value = 02H            |
| 8322H   | Detachment on 3 timer count value                                                             | value = 13H            |
| 8323H   | Transfer on 1 timer count value                                                               | value = 08H            |
| 8324H   | Transfer on 2 timer count value                                                               | value = 02H            |
| 8325H   | The Nip on timing data or the Transfer off timing data(180ms)                                 | value = 18H            |
| 8326H   | The Nip on timing data or the Transfer off timing data(60ms)                                  | value = 06H            |
| 8327H   | LD1 low drive control adjustment $\pm$ value (bit0 to 3: -adjustment, bit4 to 7: +adjustment) | default = 00H          |
| 8328H   | LD2 low drive control adjustment $\pm$ value (bit0 to 3: -adjustment, bit4 to 7: +adjustment) | default = 00H          |
| 8329H   | The number of Toner empty error can not be reset                                              | default = 06H(6 times) |
| 832AH   | The number of Toner empty error can not be stop printing                                      | default = 04H(4 times) |
| 832BH   | Toner empty detecting counter                                                                 | default = 06H          |
| 832CH   | Toner detecting time                                                                          | default = 3CH(60s)     |
| 832DH   | Toner detecting counter                                                                       | default = 00H          |
| 832EH   | Toner empty detecting time                                                                    | default = 0FH(15s)     |
| 832FH   | Toner empty detecting counter                                                                 | (1s/count)             |

## (9) Developer / Drum Control

| Address        | Purpose                                                                                                  | Remarks                    |
|----------------|----------------------------------------------------------------------------------------------------------|----------------------------|
| 8330H<br>8331H | The time of the toner feed operation<br>(The first time)                                                 | value = 01H (1s)           |
| 8332H<br>8333H | The wait time for the toner sensing operation<br>(The first time)                                        | value = 02H (2s)           |
| 8334H<br>8335H | The time of the toner feed operation<br>(Continuous)                                                     | value = 02H (2s)           |
| 8336H<br>8337H | The wait time of the toner sensing operation<br>(Continuous)                                             | value = 01H (1s)           |
| 8338H<br>8339H |                                                                                                          |                            |
| 833AH<br>833BH | The wait time for Drum reverse rotation                                                                  | value = 0032H<br>(500ms)   |
| 833CH<br>833DH | The time form Charger/Grid off to Drum stop                                                              | value = 000AH<br>(100ms)   |
| 833EH          | (reserved)                                                                                               |                            |
| 833FH          | The number of toner supply to detect Toner Collector<br>Bottle Full                                      | value=03H (3 times)        |
| 8340H          |                                                                                                          |                            |
| 8341H          | The count value to supply toner for "E010"                                                               | 1times/count               |
| 8342H          |                                                                                                          | (unused)                   |
| 8343H          | Toner check flag<br>Bit0: The flag that printer detects the toner for 3 sec.<br>Bit1 to Bit7: (reserved) |                            |
| 8344H          | The count value of the toner reverse feed driving                                                        |                            |
| 8345H          |                                                                                                          |                            |
| 8346H          | Toner Empty Flag                                                                                         |                            |
| 8347H          |                                                                                                          |                            |
| 8348H<br>8349H | The sampling time for the A/D converter                                                                  | value = 0001H<br>(1s)      |
| 834AH<br>834BH | The time value for the Magroll rotation Failure                                                          | value = 001AH<br>(420ms)   |
| 834CH<br>834DH | The voltage for the Over Toner Failure                                                                   | value = 0066H<br>(2.0V)    |
| 834EH<br>834FH | The voltage for the Lack Toner Failure                                                                   | value = 0099H<br>(3.0V)    |
| 8350H<br>8351H | The number of times of the retry for the Over Toner<br>Operation                                         | value = 1EH<br>(1s to 30s) |
| 8352H<br>8353H | The number of times of the retry for the Lack Toner<br>Operation                                         | value = 03H<br>(1s to 3s)  |
| 8354H<br>8355H |                                                                                                          |                            |
| 8356H          | Voltage of Developer Mixture input start                                                                 | value = 4CH(1.48V)         |
| 8357H          | Voltage of Developer Mixture input end                                                                   | value = 4CH(1.48V)         |
| 8358H          | Voltage of Developer Mixture output start                                                                | value = 33H(1.0V)          |
| 8359H          | Voltage of Developer Mixture output end                                                                  | value = 4CH(1.48V)         |

| Address        | Purpose                                                       | Remarks                  |
|----------------|---------------------------------------------------------------|--------------------------|
| 835AH<br>835BH | The wait time of Developer Mixture supply operating           | value = 1EDCH<br>(79s)   |
| 835CH<br>835DH | The sampling retry time of Developer Mixture supply operating | value = 0384H<br>(9s)    |
| 835EH          | The number of retry of Developer Mixture input end check      | value = 03H<br>(3 times) |
| 835FH          | The flag of changing the Developer Mix.                       | changing="01"            |

(10) Heater Control

| Address        | Purpose                                                           | Remarks                        |
|----------------|-------------------------------------------------------------------|--------------------------------|
| 8360H<br>8361H | The time value<br>(soft start on to heater on)                    | value = 000AH<br>(100ms)       |
| 8362H<br>8363H | Heater line break check time                                      | value = 1194H<br>(45s)         |
| 8364H<br>8365H | The specified temperature<br>(Heater Over Temperature failure)    | value = 00E5H<br>(210 degrees) |
| 8366H<br>8367H | The specified temperature<br>(Heater Low Temperature failure)     | value = 00B8H<br>(160 degrees) |
| 8368H<br>8369H | Heater temperature gradient check interval                        | value = 0FA0H<br>(40s)         |
| 836AH<br>836BH | Heater temperature gradient check interval AD value               | value = 0003H<br>(3 degrees)   |
| 836CH<br>836DH | Pre-dormant mode change data                                      | value = 7530H<br>(300s)        |
| 836EH          | Pre-dormant mode control temperature                              | value = B8H(160°C)             |
| 836FH          | Heater low temperature 2                                          | value = 99H(140°C)             |
| 8370H<br>8371H | Heater on control time 1                                          | value = 1194H<br>(45s)         |
| 8372H<br>8373H | Heater off control time                                           | value = 0BB8H<br>(30s)         |
| 8374H<br>8375H | Heater on control time 2                                          | value = 4650H<br>(180s)        |
| 8376H<br>8377H | Heater on time in dormant                                         | value = 0BB8H<br>(30s)         |
| 8378H<br>8379H | Heater on time in printing (not used)                             | value = 1770H                  |
| 837AH<br>837BH | Pre-dormant mode 2 data (not used)                                | value = 00H                    |
| 837CH<br>837DH | Pre-dormant mode 3 data (not used)                                | value = 00H                    |
| 837EH<br>837FH | On time length of Pre-dormant mode HR motor drive<br>(not used)   | value = 00C8H                  |
| 8380H<br>8381H | On time length of Dormant mode HR motor drive                     | value = 0258H<br>(6s)          |
| 8382H<br>8383H | Off time length of Pre-dormant and Dormant mode<br>HR motor drive | value = 1770H<br>(60s)         |
| 8384H<br>8385H | Heater soft start time<br>(first time)                            | value = 000AH<br>(4s)          |



| Address        | Purpose                                                                            | Remarks                  |
|----------------|------------------------------------------------------------------------------------|--------------------------|
| 8386H<br>8387H | Heater soft start time (after first time)                                          | value = 0002H<br>(400ms) |
| 8388H          | Flag of heater relation error generation                                           | value = 01H(on error)    |
| 838AH<br>838BH | Temperature standard average value of thermistor break after Heater relation error | value = 00DBH<br>(0°)    |
| 838CH<br>838DH | Standard value of thermistor break after Heater relation error                     | value = 0015H<br>(-2°)   |
| 838FH          | Flag of set thermistor break detecting standard value                              | value = 01H(set done)    |

(11) Heater Control Data

| Address | Purpose                                          | Remarks     |
|---------|--------------------------------------------------|-------------|
| 8390H   | The snapping temperature (40 degrees)            | value = 0AH |
| 8391H   | The snapping starting temperature (80 degrees)   | value = 2CH |
| 8392H   | HR motor driving start temperature (120 degrees) | value = 73H |
| 8393H   | Heater standard temperature (180 degrees)        | value = CFH |
| 8394H   | Heater standard Lower temperature (170 degrees)  | value = CFH |
| 8395H   | Heater standard Normal temperature (180 degrees) | value = DAH |
| 8396H   | Heater standard High temperature (190 degrees)   | value = DFH |
| 8397H   | Heater control band (-3 to +3 degrees)           | value = 02H |
| 8398H   | Heater2 on temperature (180 degrees)             | value = CFH |
| 8399H   | Heater2 off temperature (196 degrees)            | value = DCH |
| 839AH   | Heater low power mode temperature (120 degrees)  | value = 73H |
| 839BH   |                                                  |             |
| 839CH   | EX Fan control temperature (140 degrees)         | value = 99H |
| 839DH   |                                                  |             |
| 839EH   |                                                  |             |
|         |                                                  |             |

(12) Hopper Control Timer

| Address        | Purpose                                           | Remarks                |
|----------------|---------------------------------------------------|------------------------|
| 83A0H<br>83A1H | The Table timeout data of the Hp1 for the Dormant | value = 0DACH<br>(35s) |
| 83A2H<br>83A3H | The Table timeout data of the Hp2 for the Dormant | value = 0FA0H<br>(40s) |
| 83A4H<br>83A5H | The Table timeout data of the Hp3 for the Dormant | value = 0FA0H<br>(40s) |
| 83A6H<br>83A7H | The Table timeout data of the Hp5 for the Dormant | value = 1194H<br>(45s) |

(13) Fuser cleaning web control

| Address | Purpose                             | Remarks     |
|---------|-------------------------------------|-------------|
| 83A8H   | The wind timing of the Cleaning Web | value = 38H |

## (14) Wrap sensor control

| Address | Purpose                                            | Remarks         |
|---------|----------------------------------------------------|-----------------|
| 83A9H   | The PWM set data of the PC Drum wrap Led           | value = 4BH     |
| 83AAH   | The standard voltage of the PC Drum wrap Led check | default = 0000H |
| 83ABH   |                                                    |                 |

## (15) Transfer / NIP Cleaning Data

| Address        | Purpose                                              | Remarks         |
|----------------|------------------------------------------------------|-----------------|
| 83AFH          | Tr Home Position sensor                              | value = 00H     |
| 83B0H<br>83B1H | Transfer Unit Cleaner retry time (13s,16s)           | default = 0514H |
| 83B2H<br>83B3H | Transfer Unit drive check time1 (20s,18s,30s)        | default = 07D0H |
| 83B4H<br>83B5H | Transfer Unit drive check time2 (22s,18s,30s)        | default = 0898H |
| 83B6H<br>83B7H | Lock current driving value (300mA)                   | value= 0050H    |
| 83B8H<br>83B9H | Nip Cleaner Unit retry time (13s,16s)                | default = 0514H |
| 83BAH<br>83BBH | Nip Cleaner Init drive check time1 (20s,18s,30s)     | default = 07D0H |
| 83BCH<br>83BDH | Nip Cleaner Init drive check time2 (22s,18s,30s)     | default = 0898H |
| 83BEH<br>83BFH | Lock current driving value(Nip Cleaner Unit) (300mA) | value = 0050H   |
| 83C0H          | Nip Motor drive counter                              | value = 06H     |
| 83C1H          | UC change counter                                    |                 |

## (16) BD/VD Error Retry Data

| Address | Purpose                                                | Remarks |
|---------|--------------------------------------------------------|---------|
| 83C2H   | The value of retry checking BD error of E239           |         |
| 83C3H   | The value of retry checking VD-open error of E23F/E240 |         |

## (17) Finisher Alarm Setting

| Address | Purpose                                                       | Remarks     |
|---------|---------------------------------------------------------------|-------------|
| 83C4H   | A control flag to send alarm-set commands of the Finisher     | value = 00H |
| 83C5H   | Alarm-set data 1 of the Finisher                              | value = 00H |
| 83C6H   | Alarm-set data 2 of the Finisher                              | value = 11H |
| 83C7H   | Alarm-set data 3 of the Finisher                              | value = 22H |
| 83C8H   | (reserved)                                                    |             |
| 83C9H   | Offset ON/OFF change flag                                     |             |
| 83CAH   | Finisher error mask flag<br>Bit7:Finisher pick cancel command |             |
| 83CBH   | Finisher adjustment data1                                     | value = 00H |
| 83CCH   | Finisher adjustment data2                                     | value = 00H |

| Address | Purpose                   | Remarks     |
|---------|---------------------------|-------------|
| 83CDH   | Finisher adjustment data3 | value = 20H |
|         |                           |             |

(18) Print Density Data

| Address | Purpose                                                                     | Remarks        |
|---------|-----------------------------------------------------------------------------|----------------|
| 83CFH   | A flag to set a table number which determines value of print density        | value = 00H    |
| 83D0H   | Light print density                                                         | value = 00H    |
| 83D1H   | Semi-light print density                                                    | value = 05H    |
| 83D2H   | Middle print density                                                        | value = 0AH    |
| 83D3H   | Semi-dark print density                                                     | value = 0FH    |
| 83D4H   | Dark print density                                                          | value = 14H    |
| 83D5H   | A flag to select commands about print density                               | "01"= occurred |
| 83D6H   | Additional heater temperature during cardboard printing                     |                |
| 83D7H   |                                                                             |                |
| 83D8H   | Laser 1 power value(high drive)                                             | default = 70H  |
| 83D9H   | Laser 2 power value(high drive)                                             | default = 70H  |
| 83DAH   | Laser 1 power value (Standard control)                                      | default = 60H  |
| 83DBH   | Laser 2 power value (Standard control)                                      | default = 60H  |
| 83DCH   | Laser 1 power value (low drive)                                             | default = 50H  |
| 83DDH   | Laser 2 power value (low drive)                                             | default = 50H  |
| 83DEH   | Laser 1 delay time<br>Bit0 to Bit3: High power<br>Bit4 to Bit7: Lower power |                |
| 83DFH   | Laser 2 delay time<br>Bit0 to Bit3: High power<br>Bit4 to Bit7: Lower power |                |

(19) Temperature / Humidity A/D Sampling Data

| Address        | Purpose                                                                    | Remarks       |
|----------------|----------------------------------------------------------------------------|---------------|
| 83E0H          | A flag to set sampling data of temperature and humidity with A/D converter | value = 01H   |
| 83E1H          | Time counter for the first loop (the temperature-humidity)                 | default = 05H |
| 83E2H<br>83E3H | Time counter for the second loop (the temperature-humidity)                | default = 0AH |
| 83E4H<br>83E5H | Sampling time counter1 of the temperature-humidity                         | (1s)          |
| 83E6H<br>83E7H | Sampling time counter2 of the temperature-humidity                         | (300s)        |
| 83E8H          | The table select flag of the temperature-humidity data                     |               |
| 83E9H          | The pulse data of the Laser1                                               |               |
| 83EAH          | The pulse data of the Laser2                                               |               |

| Address | Purpose                                                                                  | Remarks               |
|---------|------------------------------------------------------------------------------------------|-----------------------|
| 83EBH   | The enable flag of the Grid Voltage control (PC Drum life)<br>disable:FFH enable:00H-FEH | default = 00H(enable) |
| 83ECH   | The Back up data of the PC Drum life for the Grid Voltage control                        |                       |

(20) PWM Timer Specified value (Master CPU)

| Address             | Purpose                                                                 | Remarks         |
|---------------------|-------------------------------------------------------------------------|-----------------|
| 83F0H<br> <br>83F3H | (reserved)                                                              |                 |
| 83F4H<br>83F5H      | The standard value of Detach HV 1 (1-side)<br>(Set up data = 40H ~ A0H) | default = 70H   |
| 83F6H<br>83F7H      | The standard value of Detach HV 2 (1-side)<br>(Set up data = 40H ~ A0H) | default = 70H   |
| 83F8H<br>83F9H      | The standard value of Detach HV 3 (2-side)<br>(Set up data = 40H ~ A0H) | default = 70H   |
| 83FAH<br>83FBH      | The standard value of Detach HV 4 (2-side)<br>(Set up data = 40H ~ A0H) | default = 70H   |
| 83FCH               | Print mode 1 (DD Table X(39))back up data                               | default = 80H   |
| 83FDH               | Print mode 2 (DD Table X(3C))back up data                               | default = 22H   |
| 83FEH               |                                                                         |                 |
| 83FFH               | Back up data set flag                                                   | "01" = occurred |
| 8400H<br>8401H      | Next trace address set area<br>(CE - PR I/F Command)                    |                 |
| 8402H<br> <br>87FFH | Trace data set area                                                     |                 |

## 8.5.6. Trace Area

### 8.5.6.1. Controller-Engine Command Trace

The command trace between the Controller and the Engine is logged in the following area.

8400 to 8401: Trace start address

8402 to 87FF: Trace area

The Engine indicates the trace start address where the next command is logged. When the Engine receives a command and replies a status, the Engine logs its command at an address indicated by the trace start address and its status at the next address. The Engine continues this operation whenever it receives a command.

**Note:** Engine does not log the status read command etc. and its reply.

Engine logs "7F" when received C-Reset signal.

Engine logs "7E" when received CPF signal for Simplex paper.

Engine logs "7D" when received CPF signal for Duplex paper.

Example:

If the Engine logged the trace to 8500 address, the next address (8501) is indicated in 8400 to 8401 address. (8400 = "01", 8401 = "85")

### 8.5.6.2. The Count Value of the Failures

The Engine logs the number of error in this area.

If an error occurs, the Engine counts up the value of the address corresponded to its error code by a hexadecimal number.

The correspondence between an error code and an address is shown below.

If the number of error exceeds "FF", the number becomes "00".

| Address             | Error Code                                                |
|---------------------|-----------------------------------------------------------|
| 8800H               | The top address                                           |
| 8801H               | E001 (Hopper 1 Paper Empty)                               |
| 8802H               | E002 (Hopper 2 Paper Empty)                               |
| 5                   |                                                           |
| 8AFFH               | E2FF (It is not assigned to an error code)                |
| 8B00H<br>8B01H      | Next trace address set area<br>(The failure logging area) |
| 8B02H<br> <br>8B0FH | 8B02H~8B0FH = unused                                      |
| 8B10H               | Error Code Higher Byte (at powering on X'FF')             |
| 8B11H               | Error Code Lower Byte (at powering on X'FF')              |
| 8B12H               | Total Page Counter ( Highest Byte )                       |
| 8B13H               | Total Page Counter ( Higher Byte )                        |
| 8B14H               | Total Page Counter ( Lower Byte )                         |
| 8B15H               | Total Page Counter ( Lowest Byte )                        |
| 8B16H               | Pick Data ( 1st Byte )                                    |
| 8B17H               | Pick Data ( 2nd Byte )                                    |
| 8B18H               | Pick Data ( 3rd Byte )                                    |
| 8B19H               | Pick Data ( 4th Byte )                                    |
| 8B1AH               | Pick Data ( 5th Byte )                                    |
| 8B1BH               | Pick Data ( 6th Byte )                                    |

| Address             | Error Code                                 |
|---------------------|--------------------------------------------|
| 8B1CH               | Print mode 1 ( Device Data Table 1 X'39' ) |
| 8B1DH               | Print mode 2 ( Device Data Table 1 X'3C' ) |
| 8B1EH               | Paper Length ( Device Data Table 2 X'03' ) |
| 8B1FH               | Paper Width ( Device Data Table 2 X'02' )  |
| 8B20H<br> <br>8DFFH | Trace area                                 |
| 8E00H<br> <br>8FFFH | Sense information<br>( unused )            |

Example

If "E001" error occurs, the Engine counts up the value of "8801" address.

### 8.5.6.3. The Failure logging Area

This area is not used in the current version

### 8.5.6.4. Sense Information

This area is not used in the current version.

### 8.5.6.5. Paper Feed Information

This area is not used in the current version.

### 8.5.6.6. Engine-Finisher Command Trace

The command trace between the Engine and the Finisher is logged in the following area.

9300 to 9301: Trace start address

9302 to 94FF: Trace area

The Engine indicates the trace start address where the next command is logged. If the Engine logged the trace to 9400 address, the next address (9401) is indicated 9300 to 9301 address. (9300="01", 9301="04")

When the Engine issues a command and receives a status, the Engine logs its command at a certain address and its status at the next address. The Engine continues this operation whenever it issues a command.

**Note:** Engine does not log the status read command etc. and its reply.

### 8.5.7. Spare Area

| Address        | Purpose                                                                                         | Remarks |
|----------------|-------------------------------------------------------------------------------------------------|---------|
| 9000H<br>9001H | Max.output value in a page of Simplex face<br>(A5 size H Pos.sensor logging information)        |         |
| 9002H<br>9003H | Min.output value in a page of Simplex face<br>(A5 size H Pos.sensor logging information)        |         |
| 9004H<br>9005H | Ave.output value in a page of Simplex face<br>(A5 size H Pos.sensor logging information)        |         |
| 9006H<br>9007H | Adjustment output value in a page of Simplex face<br>(A5 size H Pos.sensor logging information) |         |
| 9008H<br>9009H | Max.output value in a page of Duplex face<br>(A5 size H Pos.sensor logging information)         |         |

| Address             | Purpose                                                                                                         | Remarks |
|---------------------|-----------------------------------------------------------------------------------------------------------------|---------|
| 900AH<br>900BH      | Min.output value in a page of Duplex face<br>(A5 size H Pos.sensor logging information)                         |         |
| 900CH<br>900DH      | Ave.output value in a page of Duplex face<br>(A5 size H Pos.sensor logging information)                         |         |
| 900EH<br>900FH      | Adjustment output value in a page of Duplex face<br>(A5 size H Pos.sensor logging information)                  |         |
| 9010H<br> <br>901FH | 12-in x 18-in size H Pos.sensor logging information<br>Details about logging data(refer to 9000H-900FH)         |         |
| 9020H<br> <br>902FH | B5 size H Pos.sensor logging information<br>Details about logging data(refer to 9000H-900FH)                    |         |
| 9030H<br> <br>903FH | LET SEF size H Pos.sensor logging information<br>Details about logging data(refer to 9000H-900FH)               |         |
| 9040H<br> <br>904FH | LET LEF size H Pos.sensor logging information<br>Details about logging data(refer to 9000H-900FH)               |         |
| 9050H<br> <br>905FH | B4 size H Pos.sensor logging information<br>Details about logging data(refer to 9000H-900FH)                    |         |
| 9060H<br> <br>906FH | A4 SEF size H Pos.sensor logging information<br>Details about logging data(refer to 9000H-900FH)                |         |
| 9070H<br> <br>907FH | A4 LEF size H Pos.sensor logging information<br>Details about logging data(refer to 9000H-900FH)                |         |
| 9080H<br> <br>908FH | A3 size H Pos.sensor logging information<br>Details about logging data(refer to 9000H-900FH)                    |         |
| 9090H<br> <br>909FH | 8.5-in x 12.4-in size H Pos.sensor logging<br>information<br>Details about logging data(refer to 9000H-900FH)   |         |
| 90A0H<br> <br>90AFH | 8.5-in x 13-in SEF size H Pos.sensor logging<br>information<br>Details about logging data(refer to 9000H-900FH) |         |
| 90B0H<br> <br>90BFH | 8.5-in x 14-in SEF size H Pos.sensor logging<br>information<br>Details about logging data(refer to 9000H-900FH) |         |
| 90C0H<br> <br>90CFH | LED SEF size H Pos.sensor logging information<br>Details about logging data(refer to 9000H-900FH)               |         |
| 90D0H<br> <br>90DFH | Special 1 size H Pos.sensor logging information<br>Details about logging data(refer to 9000H-900FH)             |         |
| 90E0H<br> <br>90EFH | Special 2 size H Pos.sensor logging information<br>Details about logging data(refer to 9000H-900FH)             |         |
| 90F0H<br> <br>90FFH | Special 3 size H Pos.sensor logging information<br>Details about logging data(refer to 9000H-900FH)             |         |
| 9160H               | Tray information<br>(Double feed sensor logging information1)                                                   |         |

| Address             | Purpose                                                                                    | Remarks |
|---------------------|--------------------------------------------------------------------------------------------|---------|
| 9161H               | 1st feed paper detection information<br>(Double feed sensor logging information1)          |         |
| 9162H               | Last feed paper thickness information<br>(Double feed sensor logging information1)         |         |
| 9163H               | Just feed paper thickness information<br>(Double feed sensor logging information1)         |         |
| 9164H<br> <br>9167H | Double feed sensor logging information<br>Details about logging data(refer to 9160H-9163H) |         |
| 9168H<br> <br>916BH | Double feed sensor logging information<br>Details about logging data(refer to 9160H-9163H) |         |
| 916CH<br> <br>916FH | Double feed sensor logging information<br>Details about logging data(refer to 9160H-9163H) |         |
| 9170H<br> <br>9173H | Double feed sensor logging information<br>Details about logging data(refer to 9160H-9163H) |         |
| 9174H<br> <br>9177H | Double feed sensor logging information<br>Details about logging data(refer to 9160H-9163H) |         |
| 9178H<br> <br>917BH | Double feed sensor logging information<br>Details about logging data(refer to 9160H-9163H) |         |
| 917CH<br> <br>917FH | Double feed sensor logging information<br>Details about logging data(refer to 9160H-9163H) |         |
| 9300H<br>9301H      | Next trace address set area<br>(PR - Finisher I/F Command)                                 |         |
| 9302H<br> <br>94FFH | Trace data set area                                                                        |         |

(1) Master PWM Timer

| Address             | Purpose                                                          | Remarks              |
|---------------------|------------------------------------------------------------------|----------------------|
| 9500H<br> <br>954FH | Area to set DTC Duty count<br>(for temperature-humidity control) | 70Byte (9500H-9546H) |

(2) Paper data area

| Address | Purpose                          | Remarks                |
|---------|----------------------------------|------------------------|
| 9550H   |                                  |                        |
| 9551H   | Special size paper length        | DD2(03H)               |
| 9552H   |                                  |                        |
| 9553H   | PSI Feeder Connect flag          |                        |
| 9554H   |                                  |                        |
| 9555H   |                                  |                        |
| 9556H   | HR motor control value (TOP PPS) | value = 0408H(1302pps) |
| 9557H   |                                  | more than 24lbs paper  |
| 9558H   | Last special size paper length   | DD2(02H)               |



| Address | Purpose                                                                                                                                                   | Remarks                               |
|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|
| 9559H   | Special size paper width                                                                                                                                  |                                       |
| 955AH   | Last special size paper width                                                                                                                             |                                       |
| 955BH   |                                                                                                                                                           |                                       |
| 955CH   |                                                                                                                                                           |                                       |
| 955DH   |                                                                                                                                                           |                                       |
| 955EH   | Dormant Request data save area                                                                                                                            | DD1(38H)                              |
| 955FH   | Finisher alarm data set flag                                                                                                                              |                                       |
| 9560H   | A5 paper handling                                                                                                                                         | value = FFH(able)                     |
| 9561H   | Bit0: adaptable for laser power control = 0<br>Bit1 to Bit7: (reserved)                                                                                   | 0=valid/1=invalid,<br>"0" = selection |
| 9562H   | Paper weight change HP information                                                                                                                        |                                       |
| 9563H   | Paper weight information                                                                                                                                  |                                       |
| 9564H   | Tray 1 paper weight information                                                                                                                           |                                       |
| 9565H   | Tray 2 paper weight information                                                                                                                           |                                       |
| 9566H   | Tray 3 paper weight information                                                                                                                           |                                       |
| 9567H   | MB Tray paper weight information                                                                                                                          |                                       |
| 9568H   | Tray 5 paper weight information                                                                                                                           |                                       |
| 9569H   | Last paper weight change HP information                                                                                                                   |                                       |
| 956AH   | Last paper weight information                                                                                                                             |                                       |
| 956BH   | Flip mode                                                                                                                                                 | value = FFH(able)                     |
| 956CH   | The counter of the billing control                                                                                                                        |                                       |
| 956DH   | Tray 1 size information                                                                                                                                   | DD2 (0AH)                             |
| 956EH   | Tray 2 size information                                                                                                                                   | DD2 (0BH)                             |
| 956FH   | Tray 3 size information                                                                                                                                   | DD2 (0CH)                             |
| 9570H   | MB Tray size information                                                                                                                                  | DD2 (0DH)                             |
| 9571H   | Insertor size information                                                                                                                                 | DD2 (16H)                             |
| 9572H   | The configuration data of the Finisher108<br>(DD Table2 X(31))                                                                                            |                                       |
| 9573H   | Container Stacker 5 mode                                                                                                                                  | DD4 (01H)                             |
| 9574H   | Container Stacker 6 mode                                                                                                                                  | DD4 (03H)                             |
| 9575H   | Container Stacker 7 mode                                                                                                                                  | DD4 (05H)                             |
| 9576H   | Container Stacker 8 mode                                                                                                                                  | DD4 (07H)                             |
| 9577H   | Finisher option information<br>bit7 : inserter<br>bit6 : bookletray<br>bit5 to 0 : reserved                                                               |                                       |
| 9578H   | (Reserved)                                                                                                                                                |                                       |
| 9579H   | Container Stacker cover latch off information<br>bit7 to 4 : latch off information of STK8 to STK5<br>bit3 to 0 : latch off wait information STK8 to STK5 |                                       |
| 957AH   | Normal parameter set flag                                                                                                                                 |                                       |
| 957BH   | Mica parameter set flag                                                                                                                                   |                                       |

| Address | Purpose                                                                                                                                                                                                                                                                                                                                                                                | Remarks                                                                                                                                                                                                                         |
|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 957CH   | Developer information                                                                                                                                                                                                                                                                                                                                                                  | DDT1(1EH) save                                                                                                                                                                                                                  |
| 957DH   | Relay Unit information                                                                                                                                                                                                                                                                                                                                                                 | DDT1(1EH) save                                                                                                                                                                                                                  |
| 957EH   | bit 0: Double Feed sensor: Front Engine<br>bit 0: Top cover open(E042): Rear Engine<br>bit 1: Dev unit non set error(E037)<br>bit 2: Toner hopper 4<br>bit(=1): Rear Enginebit 3: PID control : Rear Engine<br>bit 4: Toner hopper non set error (E036)<br>bit 5: Paper feed control delay<br>bit 6: H Pos.skew errorbit 7: H Pos.skew check control<br>bit 7: Drum motor check(DDP70) | default = 81H<br>1=valid/0=invalid<br>0=valid/1=invalid<br>0=valid/1=invalid<br>1=valid/0=invalid<br>1=valid/0=invalid<br>0=valid/1=invalid<br>0=valid/1=invalid<br>0=valid/1=invalid<br>1=valid/0=invalid<br>1=valid/0=invalid |
| 957FH   | bit 0: Timing roller NIP mechanism<br>bit 1: H direction adjustment control<br>bit 2: V direction adjustment control<br>bit 3: CCD control<br>bit 4: paper shrinkage control<br>bit 5: Fan alarm control<br>bit 6: Double Feed sensor control<br>bit 7: sensor dirty detecting information logging                                                                                     | default = 00<br>1=valid/0=invalid<br>1=valid/0=invalid<br>1=valid/0=invalid<br>1=valid/0=invalid<br>1=valid/0=invalid<br>1=valid/0=invalid<br>1=valid/0=invalid<br>1=valid/0=invalid                                            |
| 9580H   | Stapling position adjustment value (Letter_SEF)<br>(Set up data = 00H ~ FFH)                                                                                                                                                                                                                                                                                                           | 0.1 mm/count<br>(-12.8 ~ +12.7mm)                                                                                                                                                                                               |
| 9581H   | Stapling position adjustment value (B4_SEF)<br>(Set up data = 00H ~ FFH)                                                                                                                                                                                                                                                                                                               | 0.1 mm/count<br>(-12.8 ~ +12.7mm)                                                                                                                                                                                               |
| 9582H   | Stapling position adjustment value (A4_SEF)<br>(Set up data = 00H ~ FFH)                                                                                                                                                                                                                                                                                                               | 0.1 mm/count<br>(-12.8 ~ +12.7mm)                                                                                                                                                                                               |
| 9583H   | Stapling position adjustment value (A3_SEF)<br>(Set up data = 00H ~ FFH)                                                                                                                                                                                                                                                                                                               | 0.1 mm/count<br>(-12.8 ~ +12.7mm)                                                                                                                                                                                               |
| 9584H   | Stapling position adjustment value (Legal14_SEF)<br>(Set up data = 00H ~ FFH)                                                                                                                                                                                                                                                                                                          | 0.1 mm/count<br>(-12.8 ~ +12.7mm)                                                                                                                                                                                               |
| 9585H   | Stapling position adjustment value (Ledger_SEF)<br>(Set up data = 00H ~ FFH)                                                                                                                                                                                                                                                                                                           | 0.1 mm/count<br>(-12.8 ~ +12.7mm)                                                                                                                                                                                               |
| 9586H   | Stapling position adjustment value (others)<br>(Set up data = 00H ~ FFH)                                                                                                                                                                                                                                                                                                               | 0.1 mm/count<br>(-12.8 ~ +12.7mm)                                                                                                                                                                                               |
| 9587H   |                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                 |
| 9588H   | Folding position adjustment value (Letter_SEF)<br>(Set up data = 00H ~ FFH)                                                                                                                                                                                                                                                                                                            | 0.1 mm/count<br>(-12.8 ~ +12.7mm)                                                                                                                                                                                               |
| 9589H   | Folding position adjustment value (B4_SEF)<br>(Set up data = 00H ~ FFH)                                                                                                                                                                                                                                                                                                                | 0.1 mm/count<br>(-12.8 ~ +12.7mm)                                                                                                                                                                                               |
| 958AH   | Folding position adjustment value (A4_SEF)<br>(Set up data = 00H ~ FFH)                                                                                                                                                                                                                                                                                                                | 0.1 mm/count<br>(-12.8 ~ +12.7mm)                                                                                                                                                                                               |
| 958BH   | Folding position adjustment value (A3_SEF)<br>(Set up data = 00H ~ FFH)                                                                                                                                                                                                                                                                                                                | 0.1 mm/count<br>(-12.8 ~ +12.7mm)                                                                                                                                                                                               |
| 958CH   | Folding position adjustment value (Legal14_SEF)<br>(Set up data = 00H ~ FFH)                                                                                                                                                                                                                                                                                                           | 0.1 mm/count<br>(-12.8 ~ +12.7mm)                                                                                                                                                                                               |
| 958DH   | Folding position adjustment value (Ledger_SEF)<br>(Set up data = 00H ~ FFH)                                                                                                                                                                                                                                                                                                            | 0.1 mm/count<br>(-12.8 ~ +12.7mm)                                                                                                                                                                                               |
| 958EH   | Folding position adjustment value (others)<br>(Set up data = 00H ~ FFH)                                                                                                                                                                                                                                                                                                                | 0.1 mm/count<br>(-12.8 ~ +12.7mm)                                                                                                                                                                                               |
| 958FH   |                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                 |

| Address        | Purpose                                                                                                  | Remarks                           |
|----------------|----------------------------------------------------------------------------------------------------------|-----------------------------------|
| 9590H          | Stapling position adjustment value<br>(Set up data = 6AH ~ 96H)                                          | 0.5 mm/count<br>(-10.1 ~ +10.1mm) |
| 9591H          | Folding position adjustment value<br>(Set up data = 67H ~ 99H)                                           | 0.4 mm/count<br>(-10.2 ~ +10.2mm) |
| 9592H          | Trimming length adjustment value<br>(Set up data = 79H ~ AAH)                                            | 0.4 mm/count<br>(0.2 ~ 20.1mm)    |
| 95A0H          | Container Stacker Unit 1 Upper Basket<br>F Jogger position adjustment value<br>(Set up data = 74H ~ 8CH) | 0.25 mm/count<br>(-3.0 ~ +3.0mm)  |
| 95A1H          | Container Stacker Unit 1 Upper Basket<br>R Jogger position adjustment value<br>(Set up data = 74H ~ 8CH) | 0.25 mm/count<br>(-3.0 ~ +3.0mm)  |
| 95A2H          | Container Stacker Unit 1 Upper Basket<br>Stopper position adjustment value<br>(Set up data = 74H ~ 8CH)  | 0.25 mm/count<br>(-3.0 ~ +3.0mm)  |
| 95A3H          |                                                                                                          |                                   |
| 95A4H          | Container Stacker Unit 1 Lower Basket<br>F Jogger position adjustment value<br>(Set up data = 74H ~ 8CH) | 0.25 mm/count<br>(-3.0 ~ +3.0mm)  |
| 95A5H          | Container Stacker Unit 1 Lower Basket<br>R Jogger position adjustment value<br>(Set up data = 74H ~ 8CH) | 0.25 mm/count<br>(-3.0 ~ +3.0mm)  |
| 95A6H          | Container Stacker Unit 1 Lower Basket<br>Stopper position adjustment value<br>(Set up data = 74H ~ 8CH)  | 0.25 mm/count<br>(-3.0 ~ +3.0mm)  |
| 95A7H          |                                                                                                          |                                   |
| 95A8H          | Container Stacker Unit 2 Upper Basket<br>F Jogger position adjustment value<br>(Set up data = 74H ~ 8CH) | 0.25 mm/count<br>(-3.0 ~ +3.0mm)  |
| 95A9H          | Container Stacker Unit 2 Upper Basket<br>R Jogger position adjustment value<br>(Set up data = 74H ~ 8CH) | 0.25 mm/count<br>(-3.0 ~ +3.0mm)  |
| 95AAH          | Container Stacker Unit 2 Upper Basket<br>Stopper position adjustment value<br>(Set up data = 74H ~ 8CH)  | 0.25 mm/count<br>(-3.0 ~ +3.0mm)  |
| 95ABH          |                                                                                                          |                                   |
| 95ACH          | Container Stacker Unit 2 Lower Basket<br>F Jogger position adjustment value<br>(Set up data = 74H ~ 8CH) | 0.25 mm/count<br>(-3.0 ~ +3.0mm)  |
| 95ADH          | Container Stacker Unit 2 Lower Basket<br>R Jogger position adjustment value<br>(Set up data = 74H ~ 8CH) | 0.25 mm/count<br>(-3.0 ~ +3.0mm)  |
| 95AEH          | Container Stacker Unit 2 Lower Basket<br>Stopper position adjustment value<br>(Set up data = 74H ~ 8CH)  | 0.25 mm/count<br>(-3.0 ~ +3.0mm)  |
| 95AFH          |                                                                                                          |                                   |
| 95B0H<br>95B1H | The PM interval for the PM counter<br>Unit 1 Upper Basket Paper Exit Paddle 1                            | Value = 9600<br>1000 pages/count  |
| 95B2H<br>95B3H | The PM interval for the PM counter<br>Unit 1 Upper Basket Paper Exit Paddle 2                            | Value = 9600<br>1000 pages/count  |

| Address        | Purpose                                                                       | Remarks                           |
|----------------|-------------------------------------------------------------------------------|-----------------------------------|
| 95B4H<br>95B5H | The PM interval for the PM counter<br>Unit 1 Upper Basket Paper Exit Paddle 1 | 1000 pages/count<br>Max 9999      |
| 95B6H<br>95B7H | The PM interval for the PM counter<br>Unit 1 Upper Basket Paper Exit Paddle 2 | 1000 pages/count<br>Max 9999      |
| 95B8H<br>95B9H | The PM interval for the PM counter<br>Unit 1 Upper Basket Paper Exit Paddle 1 | (1 to 999)<br>1 page/count        |
| 95BAH<br>95BBH | The PM interval for the PM counter<br>Unit 1 Upper Basket Paper Exit Paddle 2 | (1 to 999)<br>1 page/count        |
| 95BCH<br>95BDH | The PM interval for the PM counter<br>Unit 1 Lower Basket Paper Exit Paddle 1 | Value = 9600<br>1000 pages/count  |
| 95BEH<br>95BFH | The PM interval for the PM counter<br>Unit 1 Lower Basket Paper Exit Paddle 2 | Value = 9600<br>1000 pages/count  |
| 95C0H<br>95C1H | The PM interval for the PM counter<br>Unit 1 Lower Basket Paper Exit Paddle 1 | 1000 pages/count<br>Max 9999      |
| 95C2H<br>95C3H | The PM interval for the PM counter<br>Unit 1 Lower Basket Paper Exit Paddle 2 | 1000 pages/count<br>Max 9999      |
| 95C4H<br>95C5H | The PM interval for the PM counter<br>Unit 1 Lower Basket Paper Exit Paddle 1 | (1 to 999)<br>1 page/count        |
| 95C6H<br>95C7H | The PM interval for the PM counter<br>Unit 1 Lower Basket Paper Exit Paddle 2 | (1 to 999)<br>1 page/count        |
| 95C8H<br>95C9H | The PM interval for the PM counter<br>Unit 2 Upper Basket Paper Exit Paddle 1 | Value = 9600<br>1000 pages/count  |
| 95CAH<br>95CBH | The PM interval for the PM counter<br>Unit 2 Upper Basket Paper Exit Paddle 2 | Value = 9600<br>1000 pages/count  |
| 95CCH<br>95CDH | The PM interval for the PM counter<br>Unit 2 Upper Basket Paper Exit Paddle 1 | 1000 pages/count<br>Max 9999      |
| 95CEH<br>95CFH | The PM interval for the PM counter<br>Unit 2 Upper Basket Paper Exit Paddle 2 | 1000 pages/count<br>Max 9999      |
| 95D0H<br>95D1H | The PM interval for the PM counter<br>Unit 2 Upper Basket Paper Exit Paddle 1 | (1 to 999)<br>1 page/count        |
| 95D2H<br>95D3H | The PM interval for the PM counter<br>Unit 2 Upper Basket Paper Exit Paddle 2 | (1 to 999)<br>1 page/count        |
| 95D4H<br>95D5H | The PM interval for the PM counter<br>Unit 2 Lower Basket Paper Exit Paddle 1 | Value = 9600<br>1000 pages/count  |
| 95D6H<br>95D7H | The PM interval for the PM counter<br>Unit 2 Lower Basket Paper Exit Paddle 2 | Value = 9600<br>1000 pages/count  |
| 95D8H<br>95D9H | The PM interval for the PM counter<br>Unit 2 Lower Basket Paper Exit Paddle 1 | 1000 pages/count<br>Max 9999      |
| 95DAH<br>95DBH | The PM interval for the PM counter<br>Unit 2 Lower Basket Paper Exit Paddle 2 | 1000 pages/count<br>Max 9999      |
| 95DCH<br>95DDH | The PM interval for the PM counter<br>Unit 2 Lower Basket Paper Exit Paddle 1 | (1 to 999)<br>1 page/count        |
| 95DEH<br>95DFH | The PM interval for the PM counter<br>Unit 2 Lower Basket Paper Exit Paddle 2 | (1 to 999)<br>1 page/count        |
| 9600H<br>9601H | The PM interval for the PM counter<br>Publishing Finisher Trimming Blade      | Value = 200<br>1000 times/count   |
| 9602H<br>9603H | The PM interval for the PM counter<br>Publishing Finisher Stapler             | Value = 500<br>1000 staples/count |

| Address        | Purpose                                                                           | Remarks                          |
|----------------|-----------------------------------------------------------------------------------|----------------------------------|
| 9604H<br>9605H | The PM interval for the PM counter<br>Publishing Finisher Air Blower              | Value = 450<br>1000 picks/count  |
| 9606H<br>9607H |                                                                                   |                                  |
|                |                                                                                   |                                  |
| 9610H<br>9611H | The count value of PM counter<br>Publishing Finisher Trimming Blade               | 1000 times/count<br>Max 9999     |
| 9612H<br>9613H | The count value of PM counter<br>Publishing Finisher Stapler                      | 1000 staples/count<br>Max 9999   |
| 9614H<br>9615H | The count value of PM counter<br>Publishing Finisher Air Blower                   | 1000 picks/count<br>Max 9999     |
| 9616H<br>9617H |                                                                                   |                                  |
|                |                                                                                   |                                  |
| 9620H<br>9621H | The count value of PM counter<br>Publishing Finisher Trimming Blade               | (1 to 999)<br>1 time/count       |
| 9622H<br>9623H | The count value of PM counter<br>Publishing Finisher Stapler                      | (1 to 999)<br>1 staple/count     |
| 9624H<br>9625H | The count value of PM counter<br>Publishing Finisher Air Blower                   | (1 to 999)<br>1 pick/count       |
| 9626H<br>9627H |                                                                                   |                                  |
|                |                                                                                   |                                  |
| 9630H<br>9631H | The PM interval for the PM counter<br>Unit 1 Upper Basket Paper Exit Idler Roller | Value = 9600<br>1000 pages/count |
| 9632H<br>9633H | The PM interval for the PM counter<br>Unit 1 Lower Basket Paper Exit Idler Roller | Value = 9600<br>1000 pages/count |
| 9634H<br>9635H | The PM interval for the PM counter<br>Unit 1 Upper Basket Paper Exit Idler Roller | 1000 pages/count<br>Max 9999     |
| 9636H<br>9637H | The PM interval for the PM counter<br>Unit 1 Lower Basket Paper Exit Idler Roller | 1000 pages/count<br>Max 9999     |
| 9638H<br>9639H | The PM interval for the PM counter<br>Unit 1 Upper Basket Paper Exit Idler Roller | (1 to 999)<br>1 page/count       |
| 963AH<br>963BH | The PM interval for the PM counter<br>Unit 1 Lower Basket Paper Exit Idler Roller | (1 to 999)<br>1 page/count       |
| 963CH<br>963DH |                                                                                   |                                  |
| 963EH<br>963FH |                                                                                   |                                  |
| 9640H<br>9641H | The PM interval for the PM counter<br>Unit 2 Upper Basket Paper Exit Idler Roller | Value = 9600<br>1000 pages/count |
| 9642H<br>9643H | The PM interval for the PM counter<br>Unit 2 Lower Basket Paper Exit Idler Roller | Value = 9600<br>1000 pages/count |
| 9644H<br>9645H | The PM interval for the PM counter<br>Unit 2 Upper Basket Paper Exit Idler Roller | 1000 pages/count<br>Max 9999     |
| 9646H<br>9647H | The PM interval for the PM counter<br>Unit 2 Lower Basket Paper Exit Idler Roller | 1000 pages/count<br>Max 9999     |

| Address        | Purpose                                                                                    | Remarks                    |
|----------------|--------------------------------------------------------------------------------------------|----------------------------|
| 9648H<br>9649H | The PM interval for the PM counter<br>Unit 2 Upper Basket Paper Exit Idler Roller          | (1 to 999)<br>1 page/count |
| 964AH<br>964BH | The PM interval for the PM counter<br>Unit 2 Lower Basket Paper Exit Idler Roller          | (1 to 999)<br>1 page/count |
| 964CH<br>964DH |                                                                                            |                            |
| 964EH<br>964FH |                                                                                            |                            |
| 9650H          | Container Stacker 5 paper size information                                                 | DD4 (09H)                  |
| 9651H          | Container Stacker 5 special paper length information                                       | DD4 (0AH)                  |
| 9652H          | Container Stacker 5 special paper width information                                        | DD4 (0BH)                  |
| 9653H          | Container Stacker 6 paper size information                                                 | DD4 (0CH)                  |
| 9654H          | Container Stacker 6 special paper length information                                       | DD4 (0DH)                  |
| 9655H          | Container Stacker 6 special paper width information                                        | DD4 (0EH)                  |
| 9656H          | Container Stacker 7 paper size information                                                 | DD4 (0FH)                  |
| 9657H          | Container Stacker 7 special paper length information                                       | DD4 (10H)                  |
| 9658H          | Container Stacker 7 special paper width information                                        | DD4 (11H)                  |
| 9659H          | Container Stacker 8 paper size information                                                 | DD4 (12H)                  |
| 965AH          | Container Stacker 8 special paper length information                                       | DD4 (13H)                  |
| 965BH          | Container Stacker 8 special paper width information                                        | DD4 (14H)                  |
| 965CH          | Container Stacker decurler mode                                                            | DD4 (17H)                  |
| 965DH          | Container Stacker table down band(thick paper)                                             | value = 1EH(30mm)          |
| 965EH          | Container Stacker table down band(thin paper)                                              | value = 32H(50mm)          |
| 965FH          | E253(INVALID CONFIGURATION)<br>error detail information                                    |                            |
| 9660H          | Drum life related print density LIGHT mode (1 to 5)<br>At less than 50kP drum life         | value = 19H (430V)         |
| 9661H          | At less than 100kP drum life                                                               | value = 1CH (436V)         |
| 9662H          | At less than 200kP drum life                                                               | value = 1FH (442V)         |
| 9663H          | At less than 300kP drum life                                                               | value = 22H (448V)         |
| 9664H          | At less than 400kP drum life                                                               | value = 25H (454V)         |
| 9665H          | At less than 500kP drum life                                                               | value = 28H (460V)         |
| 9666H          | Drum life related print density semi-LIGHT<br>mode (1 to 5)<br>At less than 50kP drum life | value = 23H (450V)         |
| 9667H          | At less than 100kP drum life                                                               | value = 26H (456V)         |
| 9668H          | At less than 200kP drum life                                                               | value = 29H (462V)         |
| 9669H          | At less than 300kP drum life                                                               | value = 2CH (468V)         |
| 966AH          | At less than 400kP drum life                                                               | value = 2FH (474V)         |
| 966BH          | At less than 500kP drum life                                                               | value = 32H (480V)         |
| 966CH          | Drum life related print density MIDDLE mode (1 to 5)<br>At less than 50kP drum life        | value = 32H (480V)         |
| 966DH          | At less than 100kP drum life                                                               | value = 35H (486V)         |

| Address | Purpose                                                                                   | Remarks            |
|---------|-------------------------------------------------------------------------------------------|--------------------|
| 966EH   | At less than 200kP drum life                                                              | value = 38H (492V) |
| 966FH   | At less than 300kP drum life                                                              | value = 3BH (498V) |
| 9670H   | At less than 400kP drum life                                                              | value = 3EH (504V) |
| 9671H   | At less than 500kP drum life                                                              | value = 41H (510V) |
| 9672H   | Drum life related print density semi-DARK mode (1 to 5)<br>At less than 50kP drum life    | value = 4BH (530V) |
| 9673H   | At less than 100kP drum life                                                              | value = 4EH (536V) |
| 9674H   | At less than 200kP drum life                                                              | value = 51H (542V) |
| 9675H   | At less than 300kP drum life                                                              | value = 54H (548V) |
| 9676H   | At less than 400kP drum life                                                              | value = 57H (554V) |
| 9677H   | At less than 500kP drum life                                                              | value = 5AH (540V) |
| 9678H   | Drum life related print density DARK mode (1 to 5)<br>At less than 50kP drum life         | value = 64H (580V) |
| 9679H   | At less than 100kP drum life                                                              | value = 67H (586V) |
| 967AH   | At less than 200kP drum life                                                              | value = 6AH (592V) |
| 967BH   | At less than 300kP drum life                                                              | value = 6DH (598V) |
| 967CH   | At less than 400kP drum life                                                              | value = 70H (604V) |
| 967DH   | At less than 500kP drum life                                                              | value = 73H (610V) |
| 967EH   | Drum life related print density LIGHT mode (6 to 10)<br>At less than 600kP drum life      | value = 2BH (466V) |
| 967FH   | At less than 700kP drum life                                                              | value = 1CH (472V) |
| 9680H   | At less than 800kP drum life                                                              | value = 1CH (478V) |
| 9681H   | At less than 900kP drum life                                                              | value = 1CH (484V) |
| 9682H   | At more than 900kP drum life                                                              | value = 37H (490V) |
| 9683H   | Drum life related print density semi-LIGHT mode (6 to 10)<br>At less than 600kP drum life | value = 35H (486V) |
| 9684H   | At less than 700kP drum life                                                              | value = 38H (492V) |
| 9685H   | At less than 800kP drum life                                                              | value = 3BH (498V) |
| 9686H   | At less than 900kP drum life                                                              | value = 3EH (504V) |
| 9687H   | At more than 900kP drum life                                                              | value = 41H (510V) |
| 9688H   | Drum life related print density MIDDLE mode (6 to 10)<br>At less than 600kP drum life     | value = 44H (516V) |
| 9689H   | At less than 700kP drum life                                                              | value = 47H (522V) |
| 968AH   | At less than 800kP drum life                                                              | value = 4AH (528V) |
| 968BH   | At less than 900kP drum life                                                              | value = 4DH (534V) |
| 968CH   | At more than 900kP drum life                                                              | value = 50H (540V) |
| 968DH   | Drum life related print density semi-DARK mode (6 to 10)<br>At less than 600kP drum life  | value = 5DH (566V) |
| 968EH   | At less than 700kP drum life                                                              | value = 60H (572V) |

| Address | Purpose                                                                             | Remarks            |
|---------|-------------------------------------------------------------------------------------|--------------------|
| 968FH   | At less than 800kP drum life                                                        | value = 63H (578V) |
| 9690H   | At less than 900kP drum life                                                        | value = 66H (584V) |
| 9691H   | At more than 900kP drum life                                                        | value = 69H (590V) |
| 9692H   | Drum life related print density DARK mode (6 to 10)<br>At less than 600kP drum life | value = 76H (616V) |
| 9693H   | At less than 700kP drum life                                                        | value = 79H (622V) |
| 9694H   | At less than 800kP drum life                                                        | value = 7CH (628V) |
| 9695H   | At less than 900kP drum life                                                        | value = 7FH (634V) |
| 9696H   | At more than 900kP drum life                                                        | value = 82H (640V) |
| 96A0H   | Vertical Reduction Rate(Hop1, Front Engine, Back-side, 2-Sided)                     |                    |
| 96A1H   | Vertical Reduction Rate(Hop2, Front Engine, Back-side, 2-Sided)                     |                    |
| 96A2H   | Vertical Reduction Rate(Hop3, Front Engine, Back-side, 2-Sided)                     |                    |
| 96A3H   | Vertical Reduction Rate(Hop5, Front Engine, Back-side, 2-Sided)                     |                    |
| 96A4H   | Vertical Reduction Rate(Hop1, Rear Engine, Face-side, 2-Sided)                      |                    |
| 96A5H   | Vertical Reduction Rate(Hop2, Rear Engine, Face-side, 2-Sided)                      |                    |
| 96A6H   | Vertical Reduction Rate(Hop3, Rear Engine, Face-side, 2-Sided)                      |                    |
| 96A7H   | Vertical Reduction Rate(Hop5, Rear Engine, Face-side, 2-Sided)                      |                    |
| 96A8H   | Vertical Reduction Rate(Hop1, Rear Engine, Back-side, 2 1-Sided)                    |                    |
| 96A9H   | Vertical Reduction Rate(Hop2, Rear Engine, Back-side, 2 1-Sided)                    |                    |
| 96AAH   | Vertical Reduction Rate(Hop3, Rear Engine, Back-side, 2 1-Sided)                    |                    |
| 96ABH   | Vertical Reduction Rate(Hop5, Rear Engine, Back-side, 2 1-Sided)                    |                    |
| 96ACH   | Vertical Reduction Rate(Hop1, Rear Engine, Back-side, 1-Sided)                      |                    |
| 96ADH   | Vertical Reduction Rate(Hop2, Rear Engine, Back-side, 1-Sided)                      |                    |
| 96AEH   | Vertical Reduction Rate(Hop3, Rear Engine, Back-side, 1-Sided)                      |                    |
| 96AFH   | Vertical Reduction Rate(Hop5, Rear Engine, Back-side, 1-Sided)                      |                    |
| 96B0H   | Vertical Reduction Rate(Hop1, Front Engine, Face-side, 2-Sided)                     |                    |
| 96B1H   | Vertical Reduction Rate(Hop2, Front Engine, Face-side, 2-Sided)                     |                    |
| 96B2H   | Vertical Reduction Rate(Hop3, Front Engine, Face-side, 2-Sided)                     |                    |



| Address | Purpose                                                                                                                                                                                                                                                                                                                                          | Remarks                                                                                                                                                                     |
|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 96B3H   | Vertical Reduction Rate(Hop5, Front Engine, Face-side, 2-Sided)                                                                                                                                                                                                                                                                                  |                                                                                                                                                                             |
| 96C0H   | Tray 1 H direction position data (Simplex)                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                             |
| 96C1H   | Tray 2 H direction position data (Simplex)                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                             |
| 96C2H   | Tray 3 H direction position data (Simplex)                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                             |
| 96C3H   | MB Tray H direction position data (Simplex)                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                             |
| 96C4H   | Tray 5 H direction position data (Simplex)                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                             |
| 96C5H   | Tray 1 H direction position data (Duplex)                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                             |
| 96C6H   | Tray 2 H direction position data (Duplex)                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                             |
| 96C7H   | Tray 3 H direction position data (Duplex)                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                             |
| 96C8H   | MB Tray H direction position data (Duplex)                                                                                                                                                                                                                                                                                                       | not used                                                                                                                                                                    |
| 96C9H   | Tray 5 H direction position data (Duplex)                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                             |
| 96CAH   | Tray 1 H direction position data (Simplex side in Rear Engine in Duplex printing)                                                                                                                                                                                                                                                                | not used                                                                                                                                                                    |
| 96CBH   | Tray 2H direction position data (Simplex side in Rear Engine in Duplex printing)                                                                                                                                                                                                                                                                 | not used                                                                                                                                                                    |
| 96CCH   | Tray 3 H direction position data (Simplex side in Rear Engine in Duplex printing)                                                                                                                                                                                                                                                                | not used                                                                                                                                                                    |
| 96CDH   | MB Tray H direction position data (Simplex side in Rear Engine in Duplex printing)                                                                                                                                                                                                                                                               | not used                                                                                                                                                                    |
| 96CEH   | Tray 5 H direction position data (Simplex side in Rear Engine in Duplex printing)                                                                                                                                                                                                                                                                | not used                                                                                                                                                                    |
| 96D0H   | Simplex H direction offset value (+)                                                                                                                                                                                                                                                                                                             | not used                                                                                                                                                                    |
| 96D1H   | Simplex H direction offset value (-)                                                                                                                                                                                                                                                                                                             | not used                                                                                                                                                                    |
| 96D2H   | Duplex S-side H direction offset value (+)                                                                                                                                                                                                                                                                                                       | not used                                                                                                                                                                    |
| 96D3H   | Duplex S-side H direction offset value (-)                                                                                                                                                                                                                                                                                                       | not used                                                                                                                                                                    |
| 96D4H   | Duplex D-side H direction offset value (+)                                                                                                                                                                                                                                                                                                       | not used                                                                                                                                                                    |
| 96D5H   | Duplex D-side H direction offset value (-)                                                                                                                                                                                                                                                                                                       | not used                                                                                                                                                                    |
| 96D6H   | H direction offset value (+)                                                                                                                                                                                                                                                                                                                     | not used                                                                                                                                                                    |
| 96D7H   | H direction offset value (-)                                                                                                                                                                                                                                                                                                                     | not used                                                                                                                                                                    |
| 96D8H   | LED PWM Duty value in dirty detecting control                                                                                                                                                                                                                                                                                                    | value = 0DH(+5%)                                                                                                                                                            |
| 96D9H   | H.Pos sensor error detecting<br>bit 1: sensor output break in printing(E28F)<br>bit 2: 4BF value detecting in printing(E28F)<br>bit 4: sensor dirty detecting in initialize(E28F)<br>bit 5: sensor dirty detecting in activate(E28F)<br>bit 6: adjustment limit detecting in printing(E28F)<br>bit 7: sensor dirty detecting information logging | default = D7H: Front Engine, 9FH: Rear Engine<br>0=valid/1=invalid<br>0=valid/1=invalid<br>0=valid/1=invalid<br>0=valid/1=invalid<br>0=valid/1=invalid<br>0=valid/1=invalid |
| 96DAH   | The number of retry of dirty detecting                                                                                                                                                                                                                                                                                                           | value = 05H                                                                                                                                                                 |
| 96DBH   | Standard LED PWM Duty value                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                             |
| 96DCH   | Tray 1 LED PWM Duty value                                                                                                                                                                                                                                                                                                                        | value = 80H                                                                                                                                                                 |
| 96DDH   | Tray 2 LED PWM Duty value                                                                                                                                                                                                                                                                                                                        | value = 80H                                                                                                                                                                 |
| 96DEH   | Tray 3 LED PWM Duty value                                                                                                                                                                                                                                                                                                                        | value = 80H                                                                                                                                                                 |

| Address        | Purpose                                                     | Remarks                 |
|----------------|-------------------------------------------------------------|-------------------------|
| 96DFH          | Tray 5 LED PWM Duty value                                   | value = 80H             |
| 96E0H          | First toner feed time                                       | value = 01H(1s)         |
| 96E1H          | First wait time                                             | value = 02H(2s)         |
| 96E2H          | The number of first cycle                                   | value = 04H(4 times)    |
| 96E3H          | Second toner feed time                                      | value = 02H(2s)         |
| 96E4H          | Second wait time                                            | value = 01H(1s)         |
| 96E5H          | The number of second cycle                                  | value = 04H(4 times)    |
| 96F0H          | CCD serial No.4 save                                        |                         |
| 96F1H          | CCD serial No.3 save                                        |                         |
| 96F2H          | CCD serial No.2 save                                        |                         |
| 96F3H          | CCD serial No.1 save                                        |                         |
| 96F4H          | (Reserved)                                                  |                         |
| 96F5H          | Developer Mixture change flag                               |                         |
| 96F6H          | CCD back up timing flag                                     |                         |
| 96F8H          | CCD back up timing counter                                  |                         |
| 9706H<br>9707H | Developer Mixture input time for Mica                       | value = 7C9CH<br>(319s) |
| 9708H          | Retry counter for Mica                                      | value = 08H (8 times)   |
|                |                                                             |                         |
| 970AH          | Tray 1 OC data upper limit value                            | value = FCH             |
| 970BH          | Tray 2 OC data upper limit value                            | value = FCH             |
| 970CH          | Tray 3 OC data upper limit value                            | value = FCH             |
| 970DH          | MB Tray OC data upper limit value                           | value = FCH             |
| 970EH          | Tray 5 OC data upper limit value                            | value = FCH             |
| 970FH          | OC data debug mode fixed value                              | value = 3AH             |
| 9710H<br>9711H | H Pos. sensor logging information (2) save register Address |                         |
| 9712H<br>9713H | H Pos. sensor logging information (3) save register Address |                         |
| 9714H<br>9715H | H Pos. sensor logging information (4) save register Address |                         |
| 9716H<br>9717H | H Pos. sensor logging information (5) save register Address |                         |
| 9718H<br>9719H | H Pos. sensor logging information (6) save register Address |                         |
| 971AH<br>971BH | H Pos. sensor logging information (7) save register Address |                         |
| 971CH<br>971DH | H Pos. sensor logging information (1) save register Address |                         |
| 971EH<br>971FH | H Pos. sensor logging information (8) save register Address |                         |
| 9720H          | LED PWM Duty value                                          |                         |
| 9721H          | LED PWM on time (1)                                         | value = 14H(20ms)       |



| Address        | Purpose                                                                                                                                                                                                                                                                                                                                           | Remarks                                                                                                                                                                            |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 9722H          | LED PWM on time (2)                                                                                                                                                                                                                                                                                                                               | value = 16H(22ms)                                                                                                                                                                  |
| 9723H          | SI/HOLD ON/OFF change time                                                                                                                                                                                                                                                                                                                        | value = 02H(2ms)                                                                                                                                                                   |
| 9724H<br>9725H | Length from center of paper path to first pixel                                                                                                                                                                                                                                                                                                   | value = 065EH<br>(1630mm)                                                                                                                                                          |
|                |                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                    |
| 972AH          | The number of 1 image sampling                                                                                                                                                                                                                                                                                                                    | value = 05H                                                                                                                                                                        |
| 972BH          | OC data debug mode for each HP H adjustment data adding                                                                                                                                                                                                                                                                                           | value = 00H                                                                                                                                                                        |
|                |                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                    |
| 972DH          | LED PWM Duty value                                                                                                                                                                                                                                                                                                                                | not used                                                                                                                                                                           |
| 972EH          | The number of 1 image sampling                                                                                                                                                                                                                                                                                                                    | value = 05H                                                                                                                                                                        |
| 972FH          | 1 image sampling cycle                                                                                                                                                                                                                                                                                                                            | value = 0AH(10ms)                                                                                                                                                                  |
| 9750H          | Sensitivity adjustment for paper thickness detecting                                                                                                                                                                                                                                                                                              | value = 28H(28lbs)                                                                                                                                                                 |
| 9751H          | Tray 1 Double Feed error (E157,E158)<br>Tray 2 Double Feed error (E159,E15A)<br>Tray 3 Double Feed error (E15B,E15C)<br>Tray 5 Double Feed error (E15D,E15E)                                                                                                                                                                                      | 00 = valid, FF = invalid                                                                                                                                                           |
| 9752H          | Noise mask                                                                                                                                                                                                                                                                                                                                        | value = 02H(lower 2bit)                                                                                                                                                            |
| 9753H          | Sensitivity adjustment for detector                                                                                                                                                                                                                                                                                                               | value = 00H                                                                                                                                                                        |
| 9754H          | LED drive method change setting                                                                                                                                                                                                                                                                                                                   | value = 81H(fixed)                                                                                                                                                                 |
| 9755H          | bit 6: each HP separating control selection<br>bit7: Front Engine dormant control temperature Low/Normal/High                                                                                                                                                                                                                                     | 1=valid/0=invalid,<br>"1" = selection                                                                                                                                              |
| 9756H          | Separating blower control selection                                                                                                                                                                                                                                                                                                               | value = 01H                                                                                                                                                                        |
| 9757H          | On time duty                                                                                                                                                                                                                                                                                                                                      | value = FFH                                                                                                                                                                        |
|                |                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                    |
| 975EH          | Each tray H Pos. Sensor control selection<br>bit 0 : Tray 1 H Pos. sensor control<br>bit 1 : Tray 2 H Pos. sensor control<br>bit 2 : Tray 3 H Pos. sensor control<br>bit 3 : Tray 5 H Pos. sensor control                                                                                                                                         | default = 00H<br>0=valid/1=invalid<br>0=valid/1=invalid<br>0=valid/1=invalid<br>0=valid/1=invalid                                                                                  |
| 975FH          | bit 0: intermittent control (1) selection<br>bit 1: intermittent control (2) selection<br>bit 2: intermittent control (3) selection<br>bit 3: intermittent control (4) selection<br>bit 4: intermittent control (5) selection<br>bit 5: 120°C control selection<br>bit 6: Heater 2 control (1) selection<br>bit 7: Heater 2 control (2) selection | value = 0EH<br>"0" = no selection<br>"1" = selection<br>"1" = selection<br>"1" = selection<br>"0" = no selection<br>"0" = no selection<br>"0" = no selection<br>"0" = no selection |
| 9760H          | Intermittent control (1) gradient check A/D value                                                                                                                                                                                                                                                                                                 | value = 05H                                                                                                                                                                        |
| 9761H          | Intermittent control (1) gradient check time                                                                                                                                                                                                                                                                                                      | value = 08H(3.2s)                                                                                                                                                                  |
| 9762H          | Intermittent control (1) on time                                                                                                                                                                                                                                                                                                                  | value = 08H(3.2s)                                                                                                                                                                  |
| 9763H          | Intermittent control (1) off time                                                                                                                                                                                                                                                                                                                 | value = 08H(3.2s)                                                                                                                                                                  |
| 9764H          | Intermittent control (1) start temperature                                                                                                                                                                                                                                                                                                        | value = 17H(160°C)                                                                                                                                                                 |
| 9765H          | Intermittent control (1) end temperature                                                                                                                                                                                                                                                                                                          | value = D0H(181°C)                                                                                                                                                                 |
| 9766H          | Intermittent control (2) gradient check A/D value                                                                                                                                                                                                                                                                                                 | value = 05H                                                                                                                                                                        |

| Address | Purpose                                                                                        | Remarks                     |
|---------|------------------------------------------------------------------------------------------------|-----------------------------|
| 9767H   | Intermittent control (2) gradient check time                                                   | value = 08H(3.2s)           |
| 9768H   | Intermittent control (2) on time                                                               | value = 08H(3.2s)           |
| 9769H   | Intermittent control (2) off time                                                              | value = 08H(3.2s)           |
| 976AH   | Intermittent control (2) start temperature                                                     | value = 06H(174°C)          |
| 976BH   | Intermittent control (2) end temperature                                                       | value = D0H(181°C)          |
| 976CH   | Intermittent control (3) gradient check A/D value                                              | value = 04H                 |
| 976DH   | Intermittent control (3) gradient check time                                                   | value = 08H(3.2s)           |
| 976EH   | Intermittent control (3) on time                                                               | value = 08H(3.2s)           |
| 976FH   | Intermittent control (3) off time                                                              | value = 08H(3.2s)           |
| 9770H   | Intermittent control (3) start temperature                                                     | value = 06H(174°C)          |
| 9771H   | Intermittent control (3) end temperature                                                       | value = D0H(181°C)          |
| 9772H   | Intermittent control (4) gradient check A/D value                                              | value = 04H                 |
| 9773H   | Intermittent control (4) gradient check time                                                   | value = 08H(3.2s)           |
| 9774H   | Intermittent control (4) on time                                                               | value = 08H(3.2s)           |
| 9775H   | Intermittent control (4) off time                                                              | value = 08H(3.2s)           |
| 9776H   | Intermittent control (4) start temperature                                                     | not used                    |
| 9777H   | Intermittent control (4) end temperature                                                       | value = 02H                 |
| 9778H   | Front Engine: (Reserved)<br>Thin paper Duplex Heater temperature in Heater control LOW mode    | Rear Engine:<br>value = 0AH |
| 9779H   | Front Engine: (Reserved)<br>Thin paper Duplex Heater temperature in Heater control NORMAL mode | Rear Engine:<br>value = 0DH |
| 977AH   | Front Engine: (Reserved)<br>Thin paper Duplex Heater temperature in Heater control HIGH mode   | Rear Engine:<br>value = 07H |
| 977BH   | Heater temperature added value in Heater control LOW and thick paper printing                  | value = 0DH                 |
| 977CH   | Heater temperature added value in Heater control NORMAL and thick paper printing               | value = 07H                 |
| 977DH   | Heater temperature added value in Heater control HIGH and thick paper printing                 | value = 00H                 |
|         |                                                                                                |                             |
| 97B0H   | Color code No.2: Toner control page step 1                                                     | value = 32H(500page)        |
| 97B1H   | Color code No.2: Toner control page step 2                                                     | value = 64H(1000page)       |
| 97B2H   | Color code No.3: Toner control page step 1                                                     | value = 32H(500page)        |
| 97B3H   | Color code No.3: Toner control page step 2                                                     | value = 64H(1000page)       |
| 97B4H   | Color code No.4: Toner control page step 1                                                     | value = 00H(0page)          |
| 97B5H   | Color code No.4: Toner control page step 2                                                     | value = 00H(0page)          |
| 97B6H   | Color code No.5: Toner control page step 1                                                     | value = 00H(0page)          |
| 97B7H   | Color code No.5: Toner control page step 2                                                     | value = 00H(0page)          |
| 97B8H   | Color code No.6: Toner control page step 1                                                     | value = 00H(0page)          |
| 97B9H   | Color code No.6: Toner control page step 2                                                     | value = 00H(0page)          |

| Address | Purpose                                       | Remarks            |
|---------|-----------------------------------------------|--------------------|
| 97BAH   | Color code No.7: Toner control page step 1    | value = 00H(0page) |
| 97BBH   | Color code No.7: Toner control page step 2    | value = 00H(0page) |
| 97BCH   | Color code No.8: Toner control page step 1    | value = 00H(0page) |
| 97BDH   | Color code No.8: Toner control page step 2    | value = 00H(0page) |
| 97BEH   | Color code No.9: Toner control page step 1    | value = 00H(0page) |
| 97BFH   | Color code No.9: Toner control page step 2    | value = 00H(0page) |
| 97C0H   | Color code No.A: Toner control page step 1    | value = 00H(0page) |
| 97C1H   | Color code No.A: Toner control page step 2    | value = 00H(0page) |
| 97C2H   | Color code No.B: Toner control page step 1    | value = 00H(0page) |
| 97C3H   | Color code No.B: Toner control page step 2    | value = 00H(0page) |
| 97C4H   | Color code No.C: Toner control page step 1    | value = 00H(0page) |
| 97C5H   | Color code No.C: Toner control page step 2    | value = 00H(0page) |
| 97C6H   | Color code No.D: Toner control page step 1    | value = 00H(0page) |
| 97C7H   | Color code No.D: Toner control page step 2    | value = 00H(0page) |
| 97C8H   | Color code No.E: Toner control page step 1    | value = 00H(0page) |
| 97C9H   | Color code No.E: Toner control page step 2    | value = 00H(0page) |
| 97CAH   | Color code No.F: Toner control page step 1    | value = 00H(0page) |
| 97CBH   | Color code No.F: Toner control page step 2    | value = 00H(0page) |
| 97CCH   | Color code No.2: Toner control voltage step 1 | value = 05H(0.1V)  |
| 97CDH   | Color code No.2: Toner control voltage step 2 | value = 05H(0.1V)  |
| 97CEH   | Color code No.3: Toner control voltage step 1 | value = 05H(0.1V)  |
| 97CFH   | Color code No.3: Toner control voltage step 2 | value = 05H(0.1V)  |
| 97D0H   | Color code No.4: Toner control voltage step 1 | value = 00H(0.0V)  |
| 97D1H   | Color code No.4: Toner control voltage step 2 | value = 00H(0.0V)  |
| 97D2H   | Color code No.5: Toner control voltage step 1 | value = 00H(0.0V)  |
| 97D3H   | Color code No.5: Toner control voltage step 2 | value = 00H(0.0V)  |
| 97D4H   | Color code No.6: Toner control voltage step 1 | value = 00H(0.0V)  |
| 97D5H   | Color code No.6: Toner control voltage step 2 | value = 00H(0.0V)  |
| 97D6H   | Color code No.7: Toner control voltage step 1 | value = 00H(0.0V)  |
| 97D7H   | Color code No.7: Toner control voltage step 2 | value = 00H(0.0V)  |
| 97D8H   | Color code No.8: Toner control voltage step 1 | value = 00H(0.0V)  |
| 97D9H   | Color code No.8: Toner control voltage step 2 | value = 00H(0.0V)  |
| 97DAH   | Color code No.9: Toner control voltage step 1 | value = 00H(0.0V)  |
| 97DBH   | Color code No.9: Toner control voltage step 2 | value = 00H(0.0V)  |
| 97DCH   | Color code No.A: Toner control voltage step 1 | value = 00H(0.0V)  |
| 97DDH   | Color code No.A: Toner control voltage step 2 | value = 00H(0.0V)  |
| 97DEH   | Color code No.B: Toner control voltage step 1 | value = 00H(0.0V)  |
| 97DFH   | Color code No.B: Toner control voltage step 2 | value = 00H(0.0V)  |
| 97E0H   | Color code No.C: Toner control voltage step 1 | value = 00H(0.0V)  |

| Address | Purpose                                       | Remarks           |
|---------|-----------------------------------------------|-------------------|
| 97E1H   | Color code No.C: Toner control voltage step 2 | value = 00H(0.0V) |
| 97E2H   | Color code No.D: Toner control voltage step 1 | value = 00H(0.0V) |
| 97E3H   | Color code No.D: Toner control voltage step 2 | value = 00H(0.0V) |
| 97E4H   | Color code No.E: Toner control voltage step 1 | value = 00H(0.0V) |
| 97E5H   | Color code No.E: Toner control voltage step 2 | value = 00H(0.0V) |
| 97E6H   | Color code No.F: Toner control voltage step 1 | value = 00H(0.0V) |
| 97E7H   | Color code No.F: Toner control voltage step 2 | value = 00H(0.0V) |
| 97E8H   | Print page check counter                      |                   |
| 97E9H   |                                               |                   |
| 97EAH   |                                               |                   |
| 97EBH   |                                               |                   |
| 97ECH   | CCD serial No.4 for comparing                 |                   |
| 97EDH   | CCD serial No.3 for comparing                 |                   |
| 97EEH   | CCD serial No.2 for comparing                 |                   |
| 97EFH   | CCD serial No.1 for comparing                 |                   |

(3) Others

| Address             | Purpose                                     | Remarks         |
|---------------------|---------------------------------------------|-----------------|
| 97FCH<br>97FDH      | FRAM check data 1 (X'AA55')                 |                 |
| 97FEH<br>97FFH      | FRAM check data 2 (X'AA55')                 |                 |
| 9800H<br> <br>98FFH | Trace data set area<br>(Toner control data) |                 |
| 9800H               | (Reserved)                                  |                 |
| 9801H               | Color code No.1 : printing setting No.      | value=00H(No.0) |
| 9802H               | Color code No.2 : printing setting No.      | value=02H(No.2) |
| 9803H               | Color code No.3 : printing setting No.      | value=01H(No.1) |
| 9804H               | Color code No.4 : printing setting No.      | value=02H(No.2) |
| 9805H               | Color code No.5 : printing setting No.      | value=02H(No.2) |
| 9806H               | Color code No.6 : printing setting No.      | value=02H(No.2) |
| 9807H               | Color code No.7 : printing setting No.      | value=02H(No.2) |
| 9808H               | Color code No.8 : printing setting No.      | value=02H(No.2) |
| 9809H               | Color code No.9 : printing setting No.      | value=02H(No.2) |
| 980AH               | Color code No.A : printing setting No.      | value=02H(No.2) |
| 980BH               | Color code No.B : printing setting No.      | value=02H(No.2) |
| 980CH               | Color code No.C : printing setting No.      | value=02H(No.2) |
| 980DH               | Color code No.D : printing setting No.      | value=00H(No.0) |
| 980EH               | Color code No.E : printing setting No.      | value=00H(No.0) |
| 980FH               | Color code No.F : printing setting No.      | value=00H(No.0) |
| 9810H               | (Reserved)                                  |                 |

| Address | Purpose                                                | Remarks         |
|---------|--------------------------------------------------------|-----------------|
| 9811H   | Color code No.1 : toner feed cycle                     | value=64H(1.0s) |
| 9812H   | Color code No.2 : toner feed cycle                     | value=32H(0.5s) |
| 9813H   | Color code No.3 : toner feed cycle                     | value=32H(0.5s) |
| 9814H   | Color code No.4 : toner feed cycle                     | value=32H(0.5s) |
| 9815H   | Color code No.5 : toner feed cycle                     | value=32H(0.5s) |
| 9816H   | Color code No.6 : toner feed cycle                     | value=32H(0.5s) |
| 9817H   | Color code No.7 : toner feed cycle                     | value=32H(0.5s) |
| 9818H   | Color code No.8 : toner feed cycle                     | value=32H(0.5s) |
| 9819H   | Color code No.9 : toner feed cycle                     | value=32H(0.5s) |
| 981AH   | Color code No.A : toner feed cycle                     | value=32H(0.5s) |
| 981BH   | Color code No.B : toner feed cycle                     | value=32H(0.5s) |
| 981CH   | Color code No.C : toner feed cycle                     | value=32H(0.5s) |
| 981DH   | Color code No.D : toner feed cycle                     | value=32H(0.5s) |
| 981EH   | Color code No.E : toner feed cycle                     | value=32H(0.5s) |
| 981FH   | Color code No.F : toner feed cycle                     | value=32H(0.5s) |
| 9820H   | Printing setting No.1: print density LIGHT : BIAS      | value=05H(300V) |
| 9821H   | Printing setting No.1: print density SEMI-LIGHT : BIAS | value=0AH(350V) |
| 9822H   | Printing setting No.1: print density MIDDLE: BIAS      | value=0FH(400V) |
| 9823H   | Printing setting No.1: print density SEMI-DARK : BIAS  | value=14H(450V) |
| 9824H   | Printing setting No.1: print density DARK : BIAS       | value=19H(500V) |
| 9825H   | Printing setting No.2: print density LIGHT : BIAS      | value=05H(300V) |
| 9826H   | Printing setting No.2: print density SEMI-LIGHT : BIAS | value=07H(300V) |
| 9827H   | Printing setting No.2: print density MIDDLE: BIAS      | value=0AH(350V) |
| 9828H   | Printing setting No.2: print density SEMI-DARK : BIAS  | value=0FH(400V) |
| 9829H   | Printing setting No.2: print density DARK : BIAS       | value=14H(450V) |
| 982AH   | (Reserved)                                             |                 |
| 982BH   | (Reserved)                                             |                 |
| 982CH   | (Reserved)                                             |                 |
| 982DH   | (Reserved)                                             |                 |
| 982EH   | (Reserved)                                             |                 |
| 982FH   | (Reserved)                                             |                 |
| 9830H   | BIAS, GRID potential difference setting                | value=82H(130V) |
| 9831H   | Drum life GRID adding value                            | value=06H(6V)   |
| 9832H   | (Reserved)                                             |                 |
| 9833H   | (Reserved)                                             |                 |
| 9834H   | (Reserved)                                             |                 |

| Address        | Purpose                                                                                                                                                                                           | Remarks                                                                                         |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| 9835H          | Print setting No.0: The number of count of Developer Mixture output retry                                                                                                                         | value=00H(0 time)                                                                               |
| 9836H<br>9837H | Print setting No.1: No check time of Developer Mixture input                                                                                                                                      | value=1EDCH(79s)                                                                                |
| 9838H          | Print setting No.1: The number of count of Developer Mixture output retry                                                                                                                         | value=00H(0 time)                                                                               |
|                |                                                                                                                                                                                                   |                                                                                                 |
| 983AH<br>983BH | Print setting No.2: No check time of Developer Mixture input                                                                                                                                      | value=1EDCH(79s)                                                                                |
| 983CH          | Print setting No.2: The number of count of Developer Mixture output retry                                                                                                                         | value=00H(0 time)                                                                               |
|                |                                                                                                                                                                                                   |                                                                                                 |
|                |                                                                                                                                                                                                   |                                                                                                 |
|                |                                                                                                                                                                                                   |                                                                                                 |
| 9840H<br>9841H | H Pos. sensor skew detecting logging information (2) save register Address                                                                                                                        |                                                                                                 |
| 9842H<br>9843H | H Pos. sensor skew detecting logging information (3) save register Address                                                                                                                        |                                                                                                 |
| 9844H<br>9845H | H Pos. sensor skew detecting logging information (4) save register Address                                                                                                                        |                                                                                                 |
| 9846H<br>9847H | H Pos. sensor skew detecting logging information (5) save register Address                                                                                                                        |                                                                                                 |
| 9848H<br>9849H | H Pos. sensor skew detecting logging information (1) save register Address                                                                                                                        |                                                                                                 |
|                |                                                                                                                                                                                                   |                                                                                                 |
|                |                                                                                                                                                                                                   |                                                                                                 |
|                |                                                                                                                                                                                                   |                                                                                                 |
|                |                                                                                                                                                                                                   |                                                                                                 |
| 9852H          | Skew detecting data                                                                                                                                                                               | value = 12H(1.5mm)                                                                              |
| 9853H          | LED PWM on time (1)                                                                                                                                                                               | not used                                                                                        |
| 9854H          | Color parameter control flag<br>bit0: laser power color control<br>bit1: toner control color control<br>bit2: BIAS color control<br>bit3: BIAS adjustment color control<br>bit4 to 7 : (Reserved) | value = 00H<br>0=valid/1=invalid<br>0=valid/1=invalid<br>0=valid/1=invalid<br>0=valid/1=invalid |
| 9855H          | Developer Mixture flag                                                                                                                                                                            |                                                                                                 |
| 9856H          | (Reserved)                                                                                                                                                                                        |                                                                                                 |
|                |                                                                                                                                                                                                   |                                                                                                 |
| 9858H          | Skew detecting comparing position +offset                                                                                                                                                         | value = 00H                                                                                     |
| 9859H          | Skew detecting comparing position -offset                                                                                                                                                         | value = 00H                                                                                     |
| 985AH          | LED PWM on time (2)                                                                                                                                                                               | not used                                                                                        |
| 985BH          |                                                                                                                                                                                                   |                                                                                                 |
| 985CH          | HR warm up operation time                                                                                                                                                                         | value = 55H (85s)                                                                               |
| 985DH          |                                                                                                                                                                                                   |                                                                                                 |



| Address        | Purpose                                                   | Remarks              |
|----------------|-----------------------------------------------------------|----------------------|
| 9860H          | Color Laser setting No.0: LD1 high drive sdjustment value | value = 7BH          |
| 9861H          | Color Laser setting No.0: LD2 high drive sdjustment value | value = 7BH          |
| 9862H          | Color Laser setting No.0: LD1 low drive sdjustment value  | value = 49H          |
| 9863H          | Color Laser setting No.0: LD2 low drive sdjustment value  | value = 49H          |
| 9864H          | Color Laser setting No.1: LD1 high drive sdjustment value | value = 7BH          |
| 9865H          | Color Laser setting No.1: LD2 high drive sdjustment value | value = 7BH          |
| 9866H          | Color Laser setting No.1: LD1 low drive sdjustment value  | value = 49H          |
| 9867H          | Color Laser setting No.1: LD2 low drive sdjustment value  | value = 49H          |
| 9868H          | Color Laser setting No.2: LD1 high drive sdjustment value | value = 7BH          |
| 9869H          | Color Laser setting No.2: LD2 high drive sdjustment value | value = 7BH          |
| 986AH          | Color Laser setting No.2: LD1 low drive sdjustment value  | value = 49H          |
| 986BH          | Color Laser setting No.2: LD2 low drive sdjustment value  | value = 49H          |
| 986CH          | Color drum wrap detecting setting                         | value = 0FH(0.3V)    |
|                |                                                           |                      |
|                |                                                           |                      |
|                |                                                           |                      |
| 9870H<br>9871H | Color code No.2 bias step 1                               | value = 0020H(20kC)  |
| 9872H<br>9873H | Color code No.2 bias step 2                               | value = 0040H(40kC)  |
| 9874H<br>9875H | Color code No.3 bias step 1                               | value = 0100H(100kC) |
| 9876H<br>9877H | Color code No.3 bias step 2                               | value = 0150H(150kC) |
| 9878H<br>9879H | Color code No.4 bias step 1                               | value = 0020H(20kC)  |
| 987AH<br>987BH | Color code No.4 bias step 2                               | value = 0080H(80kC)  |
| 987CH<br>987DH | Color code No.5 bias step 1                               | value = 0000H(0kC)   |
| 987EH<br>987FH | Color code No.5 bias step 2                               | value = 0000H(0kC)   |
| 9880H<br>9881H | Color code No.6 bias step 1                               | value = 0000H(0kC)   |
| 9882H<br>9883H | Color code No.6 bias step 2                               | value = 0000H(0kC)   |

| Address        | Purpose                              | Remarks                  |
|----------------|--------------------------------------|--------------------------|
| 9884H<br>9885H | Color code No.7 bias step 1          | value = 0000H(0kC)       |
| 9886H<br>9887H | Color code No.7 bias step 2          | value = 0000H(0kC)       |
| 9888H<br>9889H | Color code No.8 bias step 1          | value = 0000H(0kC)       |
| 988AH<br>988BH | Color code No.8 bias step 2          | value = 0000H(0kC)       |
| 988CH<br>988DH | Color code No.9 bias step 1          | value = 0000H(0kC)       |
| 988EH<br>988FH | Color code No.9 bias step 2          | value = 0000H(0kC)       |
| 9890H<br>9891H | Color code No.A bias step 1          | value = 0000H(0kC)       |
| 9892H<br>9893H | Color code No.A bias step 2          | value = 0000H(0kC)       |
| 9894H<br>9895H | Color code No.B bias step 1          | value = 0000H(0kC)       |
| 9896H<br>9897H | Color code No.B bias step 2          | value = 0000H(0kC)       |
| 9898H<br>9899H | Color code No.C bias step 1          | value = 0000H(0kC)       |
| 989AH<br>989BH | Color code No.C bias step 2          | value = 0000H(0kC)       |
| 989CH<br>989DH | Color code No.D bias step 1          | value = 0000H(0kC)       |
| 989EH<br>989FH | Color code No.D bias step 2          | value = 0000H(0kC)       |
| 98A0H<br>98A1H | Color code No.E bias step 1          | value = 0000H(0kC)       |
| 98A2H<br>98A3H | Color code No.E bias step 2          | value = 0000H(0kC)       |
| 98A4H<br>98A5H | Color code No.F bias step 1          | value = 0000H(0kC)       |
| 98A6H<br>98A7H | Color code No.F bias step 2          | value = 0000H(0kC)       |
| 98A8H<br>98A9H | Color code No.2 toner control step 1 | value = 0150H<br>(150kC) |
| 98AAH<br>98ABH | Color code No.2 toner control step 2 | value = 0200H<br>(200kC) |
| 98ACH<br>98ADH | Color code No.3 toner control step 1 | value = 0150H<br>(150kC) |
| 98AEH<br>98AFH | Color code No.3 toner control step 2 | value = 0200H<br>(200kC) |
| 98B0H<br>98B1H | Color code No.4 toner control step 1 | value = 0000H (0kC)      |
| 98B2H<br>98B3H | Color code No.4 toner control step 2 | value = 0000H (0kC)      |

| Address        | Purpose                                   | Remarks                         |
|----------------|-------------------------------------------|---------------------------------|
| 98B4H<br>98B5H | Color code No.5 toner control step 1      | value = 0000H (0kC)             |
| 98B6H<br>98B7H | Color code No.5 toner control step 2      | value = 0000H (0kC)             |
| 98B8H<br>98B9H | Color code No.6 toner control step 1      | value = 0000H (0kC)             |
| 98BAH<br>98BBH | Color code No.6 toner control step 2      | value = 0000H (0kC)             |
| 98BCH<br>98BDH | Color code No.7 toner control step 1      | value = 0000H (0kC)             |
| 98BEH<br>98BFH | Color code No.7 toner control step 2      | value = 0000H (0kC)             |
| 98C0H<br>98C1H | Color code No.8 toner control step 1      | value = 0000H (0kC)             |
| 98C2H<br>98C3H | Color code No.8 toner control step 2      | value = 0000H (0kC)             |
| 98C4H<br>98C5H | Color code No.9 toner control step 1      | value = 0000H (0kC)             |
| 98C6H<br>98C7H | Color code No.9 toner control step 2      | value = 0000H (0kC)             |
| 98C8H<br>98C9H | Color code No.A toner control step 1      | value = 0000H (0kC)             |
| 98CAH<br>98CBH | Color code No.A toner control step 2      | value = 0000H (0kC)             |
| 98CCH<br>98CDH | Color code No.B toner control step 1      | value = 0000H (0kC)             |
| 98CEH<br>98CFH | Color code No.B toner control step 2      | value = 0000H (0kC)             |
| 98D0H<br>98D1H | Color code No.C toner control step 1      | value = 0000H (0kC)             |
| 98D2H<br>98D3H | Color code No.C toner control step 2      | value = 0000H (0kC)             |
| 98D4H<br>98D5H | Color code No.D toner control step 1      | value = 0000H (0kC)             |
| 98D6H<br>98D7H | Color code No.D toner control step 2      | value = 0000H (0kC)             |
| 98D8H<br>98D9H | Color code No.E toner control step 1      | value = 0000H (0kC)             |
| 98DAH<br>98DBH | Color code No.E toner control step 2      | value = 0000H (0kC)             |
| 98DCH<br>98DDH | Color code No.F toner control step 1      | value = 0000H (0kC)             |
| 98DEH<br>98DFH | Color code No.F toner control step 2      | value = 0000H (0kC)             |
|                |                                           |                                 |
| 98F3H          | Transfer cleaner return control selection | value = 00H<br>(return control) |

| Address                          | Purpose                                                                    | Remarks       |
|----------------------------------|----------------------------------------------------------------------------|---------------|
| 98F4H<br>98F5H<br>98F6H<br>98F7H | Total page counter of last H Pos. sensor dirty check                       |               |
| 98F8H                            | LED PWM Duty value at H Pos. sensor dirty detecting                        |               |
| 98F9H                            | LED PWM Duty value of last H Pos. sensor dirty detecting                   |               |
| 9900H<br> <br>99FFH              | Trace data set area<br>(Memory write address)<br>DDP70, DDP92              |               |
| 9900H<br>9901H                   | H Pos. sensor logging information (9) save register Address                |               |
| 9A00H<br> <br>9AEFH              | Trace data set area 2<br>DDP70, DDP92                                      |               |
| 9AE0H<br>9AE1H                   | Double Feed detecting sensor logging information (2) save register Address |               |
| 9AE2H<br>9AE3H                   | Double Feed detecting sensor logging information (3) save register Address |               |
| 9AE4H<br>9AE5H                   | Double Feed detecting sensor logging information (4) save register Address |               |
| 9AE6H<br>9AE7H                   | Double Feed detecting sensor logging information (5) save register Address |               |
| 9AE8H<br>9AE9H                   | Double Feed detecting sensor logging information (1) save register Address |               |
|                                  |                                                                            |               |
| 9AF0H<br>9AF1H                   | RAM W/R check flag                                                         | value = 19AFH |
|                                  |                                                                            |               |
| 9AF4H<br> <br>9AF7H              | NVSRAM READ/WRITE CHECK WORK                                               |               |
| 9AFEH<br>9AFFH                   | default set flag                                                           | value = 0801H |
|                                  |                                                                            |               |
| 9B00H<br> <br>9BDFH              | (reserved)                                                                 |               |
| 9B30H                            | Tray 1 Detach HV 1 standard value (Simplex)                                | default = 90H |
| 9B31H                            | Tray 1 Detach HV 2 standard value (Simplex)                                | default = 90H |
| 9B32H                            | Tray 1 Detach HV 3 standard value (Duplex)                                 | default = 90H |
| 9B33H                            | Tray 1 Detach HV 4 standard value (Duplex)                                 | default = 90H |
| 9B34H                            | Tray 2 Detach HV 1 standard value (Simplex)                                | default = 90H |
| 9B35H                            | Tray 2 Detach HV 2 standard value (Simplex)                                | default = 90H |
| 9B36H                            | Tray 2 Detach HV 3 standard value (Duplex)                                 | default = 90H |
| 9B37H                            | Tray 2 Detach HV 4 standard value (Duplex)                                 | default = 90H |

| Address                                                                                                           | Purpose                                                                                                                                                                                                                               | Remarks                                                                                                                                                                                                  |
|-------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 9B38H                                                                                                             | Tray 3 Detach HV 1 standard value (Simplex)                                                                                                                                                                                           | default = 90H                                                                                                                                                                                            |
| 9B39H                                                                                                             | Tray 3 Detach HV 2 standard value (Simplex)                                                                                                                                                                                           | default = 90H                                                                                                                                                                                            |
| 9B3AH                                                                                                             | Tray 3 Detach HV 3 standard value (Duplex)                                                                                                                                                                                            | default = 90H                                                                                                                                                                                            |
| 9B3BH                                                                                                             | Tray 3 Detach HV 4 standard value (Duplex)                                                                                                                                                                                            | default = 90H                                                                                                                                                                                            |
| 9B3CH                                                                                                             | Tray 5 Detach HV 1 standard value (Simplex)                                                                                                                                                                                           | default = 90H                                                                                                                                                                                            |
| 9B3DH                                                                                                             | Tray 5 Detach HV 2 standard value (Simplex)                                                                                                                                                                                           | default = 90H                                                                                                                                                                                            |
| 9B3EH                                                                                                             | Tray 5 Detach HV 3 standard value (Duplex)                                                                                                                                                                                            | default = 90H                                                                                                                                                                                            |
| 9B3FH                                                                                                             | Tray 5 Detach HV 4 standard value (Duplex)                                                                                                                                                                                            | default = 90H                                                                                                                                                                                            |
| 9B40H                                                                                                             | MB Tray Detach HV 1 standard value (Simplex)                                                                                                                                                                                          | default = 90H                                                                                                                                                                                            |
| 9B41H                                                                                                             | MB Tray Detach HV 2 standard value (Simplex)                                                                                                                                                                                          | default = 90H                                                                                                                                                                                            |
| 9B42H                                                                                                             | MB Tray Detach HV 3 standard value (Duplex)                                                                                                                                                                                           | not used                                                                                                                                                                                                 |
| 9B43H                                                                                                             | MB Tray Detach HV 4 standard value (Duplex)                                                                                                                                                                                           | not used                                                                                                                                                                                                 |
| 9B44H<br>9B45H                                                                                                    | Color code No.2 bias step 3                                                                                                                                                                                                           | value = 0080H(80kC)                                                                                                                                                                                      |
| 9B46H<br>9B47H                                                                                                    | Color code No.2 bias step 4                                                                                                                                                                                                           | value = 0250H(250kC)                                                                                                                                                                                     |
| 9B48H<br>9B49H                                                                                                    | Color code No.2 bias step 5                                                                                                                                                                                                           | value = 0350H(350kC)                                                                                                                                                                                     |
| 9B4AH<br>9B4BH                                                                                                    | Color code No.3 bias step 3                                                                                                                                                                                                           | value = 0250H(250kC)                                                                                                                                                                                     |
| 9B4CH<br>9B4DH                                                                                                    | Color code No.3 bias step 4                                                                                                                                                                                                           | value = 0350H(350kC)                                                                                                                                                                                     |
| 9B4EH<br>9B4FH                                                                                                    | Color code No.3 bias step 5                                                                                                                                                                                                           | value = 0450H(450kC)                                                                                                                                                                                     |
|                                                                                                                   | 9B50H-9B5CH : Staple position adjustment value for Finisher SR5000<br>adjustment range: -2mm ~ +2mm<br>resolution: 0.5mm/1digit<br>* The MSB 2^7 means the direction of adjustment.<br>MSB= "0" --> front side, MSB="1" --> rear side |                                                                                                                                                                                                          |
| 9B50H<br>9B51H<br>9B52H<br>9B53H<br>9B54H<br>9B55H<br>9B56H<br>9B57H<br>9B58H<br>9B59H<br>9B5AH<br>9B5BH<br>9B5CH | (nu)<br>(nu)<br>B5_LEF<br>Letter-SEF(8.5" x 11")<br>Letter-LEF(8.5" x 11")<br>B4-SEF<br>A4-SEF<br>A4-LEF<br>A3-SEF<br>Executive<br>Legal13"-SEF(8.5" x 13", Folio)<br>Legal14"-SEF(8.5" x 14")<br>Ledger-SEF(11" x 17")               | default = 00H<br>default = 00H<br>default = 00H<br>default = 00H<br>default = 00H<br>default = 00H<br>default = 00H<br>default = 00H<br>default = 00H<br>default = 00H<br>default = 00H<br>default = 00H |
| 9B50H<br>9B51H                                                                                                    | Color code No.4 bias step 3                                                                                                                                                                                                           | value = 0120H(120kC)                                                                                                                                                                                     |
| 9B52H<br>9B53H                                                                                                    | Color code No.4 bias step 4                                                                                                                                                                                                           | value = 0000H(0kC)                                                                                                                                                                                       |
| 9B54H<br>9B55H                                                                                                    | Color code No.4 bias step 5                                                                                                                                                                                                           | value = 0000H(0kC)                                                                                                                                                                                       |

| Address                                                                                                           | Purpose                                                                                                                                                                                                                                         | Remarks                                                                                                                                                                                                  |
|-------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 9B56H<br>9B57H                                                                                                    | Color code No.5 bias step 3                                                                                                                                                                                                                     | value = 0000H(0kC)                                                                                                                                                                                       |
| 9B58H<br>9B59H                                                                                                    | Color code No.5 bias step 4                                                                                                                                                                                                                     | value = 0000H(0kC)                                                                                                                                                                                       |
| 9B5AH<br>9B5BH                                                                                                    | Color code No.5 bias step 5                                                                                                                                                                                                                     | value = 0000H(0kC)                                                                                                                                                                                       |
| 9B5CH<br>9B5DH                                                                                                    | Color code No.6 bias step 3                                                                                                                                                                                                                     | value = 0000H(0kC)                                                                                                                                                                                       |
| 9B5EH<br>9B5FH                                                                                                    | Color code No.6 bias step 4                                                                                                                                                                                                                     | value = 0000H(0kC)                                                                                                                                                                                       |
|                                                                                                                   | 9B60H-9B6CH : Jogger position adjustment value<br>for Finisher SR5000<br>adjustment range: -2mm ~ +1.5mm<br>resolution: 0.5mm/1digit<br>* The MSB 2 <sup>^</sup> 7 means the direction of adjustment.<br>MSB= "0" --> narrow, MSB= "1" --> wide |                                                                                                                                                                                                          |
| 9B60H<br>9B61H<br>9B62H<br>9B63H<br>9B64H<br>9B65H<br>9B66H<br>9B67H<br>9B68H<br>9B69H<br>9B6AH<br>9B6BH<br>9B6CH | (nu)<br>(nu)<br>B5_LEF<br>Letter-SEF(8.5" x 11")<br>Letter-LEF(8.5" x 11")<br>B4-SEF<br>A4-SEF<br>A4-LEF<br>A3-SEF<br>Executive<br>Legal13"-SEF(8.5" x 13", Folio)<br>Legal14"-SEF(8.5" x 14")<br>Ledger-SEF(11" x 17")                         | default = 00H<br>default = 00H<br>default = 00H<br>default = 00H<br>default = 00H<br>default = 00H<br>default = 00H<br>default = 00H<br>default = 00H<br>default = 00H<br>default = 00H<br>default = 00H |
| 9B60H<br>9B61H                                                                                                    | Color code No.6 bias step 5                                                                                                                                                                                                                     | value = 0000H(0kC)                                                                                                                                                                                       |
| 9B62H<br>9B63H                                                                                                    | Color code No.7 bias step 3                                                                                                                                                                                                                     | value = 0000H(0kC)                                                                                                                                                                                       |
| 9B64H<br>9B65H                                                                                                    | Color code No.7 bias step 4                                                                                                                                                                                                                     | value = 0000H(0kC)                                                                                                                                                                                       |
| 9B66H<br>9B67H                                                                                                    | Color code No.7 bias step 5                                                                                                                                                                                                                     | value = 0000H(0kC)                                                                                                                                                                                       |
| 9B68H<br>9B69H                                                                                                    | Color code No.8 bias step 3                                                                                                                                                                                                                     | value = 0000H(0kC)                                                                                                                                                                                       |
| 9B6AH<br>9B6BH                                                                                                    | Color code No.8 bias step 4                                                                                                                                                                                                                     | value = 0000H(0kC)                                                                                                                                                                                       |
| 9B6CH<br>9B6DH                                                                                                    | Color code No.8 bias step 5                                                                                                                                                                                                                     | value = 0000H(0kC)                                                                                                                                                                                       |
| 9B6EH<br>9B6FH                                                                                                    | Color code No.9 bias step 3                                                                                                                                                                                                                     | value = 0000H(0kC)                                                                                                                                                                                       |

| Address                                                                                                                             | Purpose                                                                                                                                                                                                                                                                        | Remarks                                                                                                                                                                                                                                    |
|-------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                     | 9B70H-9B7DH : Shift Jogger position adjustment<br>value for Finisher SR5000<br>adjustment range: -3mm ~ +3mm<br>resolution: 0.1mm/1digit<br>* The MSB 2 <sup>7</sup> means the direction of adjustment.<br>MSB= "0" --> narrow, MSB= "1" --> wide                              |                                                                                                                                                                                                                                            |
| 9B70H<br>9B71H<br>9B72H<br>9B73H<br>9B74H<br>9B75H<br>9B76H<br>9B77H<br>9B78H<br>9B79H<br>9B7AH<br>9B7BH<br>9B7CH<br>9B7DH<br>9B7EH | A5<br>Special<br>12" x 18"<br>B5_LEF<br>Letter-SEF(8.5" x 11")<br>Letter-LEF(11" x 8.5")/Letter-TAB(11" x 9")<br>B4-SEF<br>A4-SEF<br>A4-LEF/A4 TAB<br>A3-SEF<br>Executive<br>Legal13"-SEF(8.5" x 13", Folio)<br>Legal14"-SEF(8.5" x 14")<br>Ledger-SEF(11" x 17")<br>Statement | default = 00H<br>default = 00H<br>default = 00H<br>default = 00H<br>default = 00H<br>default = 00H<br>default = 00H<br>default = 00H<br>default = 00H<br>default = 00H<br>default = 00H<br>default = 00H<br>default = 00H<br>default = 00H |
| 9B70H<br>9B71H                                                                                                                      | Color code No.9 bias step 4                                                                                                                                                                                                                                                    | value = 0000H(0kC)                                                                                                                                                                                                                         |
| 9B72H<br>9B73H                                                                                                                      | Color code No.9 bias step 5                                                                                                                                                                                                                                                    | value = 0000H(0kC)                                                                                                                                                                                                                         |
| 9B74H<br>9B75H                                                                                                                      | Color code No.A bias step 3                                                                                                                                                                                                                                                    | value = 0000H(0kC)                                                                                                                                                                                                                         |
| 9B76H<br>9B77H                                                                                                                      | Color code No.A bias step 4                                                                                                                                                                                                                                                    | value = 0000H(0kC)                                                                                                                                                                                                                         |
| 9B78H<br>9B79H                                                                                                                      | Color code No.A bias step 5                                                                                                                                                                                                                                                    | value = 0000H(0kC)                                                                                                                                                                                                                         |
| 9B7AH<br>9B7BH                                                                                                                      | Color code No.B bias step 3                                                                                                                                                                                                                                                    | value = 0000H(0kC)                                                                                                                                                                                                                         |
| 9B7CH<br>9B7DH                                                                                                                      | Color code No.B bias step 4                                                                                                                                                                                                                                                    | value = 0000H(0kC)                                                                                                                                                                                                                         |
| 9B7EH<br>9B7FH                                                                                                                      | Color code No.B bias step 5                                                                                                                                                                                                                                                    | value = 0000H(0kC)                                                                                                                                                                                                                         |
|                                                                                                                                     | 9B80H-9B8CH : Top Fence position adjustment<br>value for Finisher SR5000<br>adjustment range: -5mm ~ +10mm<br>resolution: 0.1mm/1digit<br>* The MSB 2 <sup>7</sup> means the direction of adjustment.<br>MSB= "0" --> decrease, MSB= "1" --> increasing                        |                                                                                                                                                                                                                                            |
| 9B80H<br>9B81H<br>9B82H<br>9B83H<br>9B84H<br>9B85H<br>9B86H<br>9B87H<br>9B88H<br>9B89H<br>9B8AH<br>9B8BH<br>9B8CH                   | (nu)<br>(nu)<br>B5_LEF<br>Letter-SEF(8.5" x 11")<br>Letter-LEF(8.5" x 11")<br>B4-SEF<br>A4-SEF<br>A4-LEF<br>A3-SEF<br>Executive<br>Legal13"-SEF(8.5" x 13", Folio)<br>Legal14"-SEF(8.5" x 14")<br>Ledger-SEF(11" x 17")                                                        | default = 00H<br>default = 00H<br>default = 00H<br>default = 00H<br>default = 00H<br>default = 00H<br>default = 00H<br>default = 00H<br>default = 00H<br>default = 00H<br>default = 00H<br>default = 00H<br>default = 00H                  |

| Address        | Purpose                                                                                   | Remarks                          |
|----------------|-------------------------------------------------------------------------------------------|----------------------------------|
| 9B80H<br>9B81H | Color code No.C bias step 3                                                               | value = 0000H (0kC)              |
| 9B82H<br>9B83H | Color code No.C bias step 4                                                               | value = 0000H (0kC)              |
| 9B84H<br>9B85H | Color code No.C bias step 5                                                               | value = 0000H (0kC)              |
| 9B86H<br>9B87H | Color code No.D bias step 3                                                               | value = 0000H (0kC)              |
| 9B88H<br>9B89H | Color code No.D bias step 4                                                               | value = 0000H (0kC)              |
| 9B8AH<br>9B8BH | Color code No.D bias step 5                                                               | value = 0000H (0kC)              |
| 9B8CH<br>9B8DH | Color code No.E bias step 3                                                               | value = 0000H (0kC)              |
| 9B8EH<br>9B8FH | Color code No.E bias step 4                                                               | value = 0000H (0kC)              |
| 9B90H<br>9B91H | The PM interval for the PM counter<br>Alignment Brush Roller of Finisher SR5000           | Value = 2500<br>1000 pages/count |
| 9B92H<br>9B93H | The PM interval for the PM counter<br>Stapler of Finisher SR5000                          | Value = 5000<br>1000 pages/count |
| 9B94H<br>9B95H | The PM interval for the PM counter<br>Positioning Roller (Staple Tray) of Finisher SR5000 | Value = 2500<br>1000 pages/count |
| 9B96H<br>9B97H | The PM interval for the PM counter<br>Drag Roller of Finisher SR5000                      | Value = 300<br>1000 pages/count  |
| 9B98H<br>9B99H | The PM interval for the PM counter<br>Alignment Brush Roller of Finisher SR5000           | 1000 pages/count<br>Max 9999     |
| 9B9AH<br>9B9BH | The PM interval for the PM counter<br>Stapler of Finisher SR5000                          | 1000 pages/count<br>Max 9999     |
| 9B9CH<br>9B9DH | The PM interval for the PM counter<br>Positioning Roller (Staple Tray) of Finisher SR5000 | 1000 pages/count<br>Max 9999     |
| 9B9EH<br>9B9FH | The PM interval for the PM counter<br>Drag Roller of Finisher SR5000                      | 1000 pages/count<br>Max 9999     |
| 9B90H<br>9B91H | Color code No.E bias step 5                                                               | value = 0000H (0kC)              |
| 9B92H<br>9B93H | Color code No.F bias step 3                                                               | value = 0000H (0kC)              |
| 9B94H<br>9B95H | Color code No.F bias step 4                                                               | value = 0000H (0kC)              |
| 9B96H<br>9B97H | Color code No.F bias step 5                                                               | value = 0000H (0kC)              |
| 9B98H<br>9B99H | Color code No.2 toner control step 3                                                      | value = 0300H<br>(300kC)         |
| 9B9AH<br>9B9BH | Color code No.2 toner control step 4                                                      | value = 0400H<br>(400kC)         |
| 9B9CH<br>9B9DH | Color code No.3 toner control step 3                                                      | value = 0300H<br>(300kC)         |
| 9B9EH<br>9B9FH | Color code No.3 toner control step 4                                                      | value = 0400H<br>(400kC)         |



| Address        | Purpose                                                                                             | Remarks                    |
|----------------|-----------------------------------------------------------------------------------------------------|----------------------------|
| 9BA0H<br>9BA1H | The count value of PM counter<br>Alignment Brush Roller of Finisher SR5000                          | (1 to 999)<br>1 page/count |
| 9BA2H<br>9BA3H | The count value of PM counter<br>Stapler of Finisher SR5000                                         | (1 to 999)<br>1 page/count |
| 9BA4H<br>9BA5H | The count value of PM counter<br>Positioning Roller (Staple Tray) of Finisher SR5000                | (1 to 999)<br>1 page/count |
| 9BA6H<br>9BA7H | The count value of PM counter<br>Drag Roller of Finisher SR5000                                     | (1 to 999)<br>1 page/count |
| 9BA0H<br>9BA1H | Color code No.4 toner control step 3                                                                | value = 0000H (0kC)        |
| 9BA2H<br>9BA3H | Color code No.4 toner control step 4                                                                | value = 0000H (0kC)        |
| 9BA4H<br>9BA5H | Color code No.5 toner control step 3                                                                | value = 0000H (0kC)        |
| 9BA6H<br>9BA7H | Color code No.5 toner control step 4                                                                | value = 0000H (0kC)        |
| 9BA8H<br>9BA9H | Color code No.6 toner control step 3                                                                | value = 0000H (0kC)        |
| 9BAAH<br>9BABH | Color code No.6 toner control step 4                                                                | value = 0000H (0kC)        |
| 9BACH<br>9BADH | Color code No.7 toner control step 3                                                                | value = 0000H (0kC)        |
| 9BAEH<br>9BAFH | Color code No.7 toner control step 4                                                                | value = 0000H (0kC)        |
|                | Indicates the program version of Finisher SR5000<br>firmware: "N2N3.N5N6" + "N7", boot area "N9N10" |                            |
| 9BB0H          | Finisher SR5000 Program version<br>N2(bit 7~4), N3(bit 3~0)                                         | Binary-coded decimal       |
| 9BB1H          | Finisher SR5000 Program version<br>N5(bit 7~4), N6(bit 3~0)                                         | Binary-coded decimal       |
| 9BB2H          | Finisher SR5000 Program version<br>N7 suffix, 40 and 41~5AH, ASCII code                             | ASCII code                 |
| 9BB3H          | Finisher SR5000 Boot Area Program version<br>N9/N10<br>N9(bit 7~4), N10(bit 3~0)                    | Binary-coded decimal       |
| 9BB4H          | Jogger mode of Finisher SR5000 (00 = enable)                                                        | default = 00H              |
| 9BB5H          | Prestack mode of Finisher SR5000<br>(02 = 2page prestack mode)                                      | default = 02H              |
| 9BB0H<br>9BB1H | Color code No.8 toner control step 3                                                                | value = 0000H (0kC)        |
| 9BB2H<br>9BB3H | Color code No.8 toner control step 4                                                                | value = 0000H (0kC)        |
| 9BB4H<br>9BB5H | Color code No.9 toner control step 3                                                                | value = 0000H (0kC)        |
| 9BB6H<br>9BB7H | Color code No.9 toner control step 4                                                                | value = 0000H (0kC)        |
| 9BB8H<br>9BB9H | Color code No.A toner control step 3                                                                | value = 0000H (0kC)        |

| Address        | Purpose                                                                                                                                                          | Remarks                                                                                                                                     |
|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| 9BBAH<br>9BBBH | Color code No.A toner control step 4                                                                                                                             | value = 0000H (0kC)                                                                                                                         |
| 9BBCH<br>9BBDH | Color code No.B toner control step 3                                                                                                                             | value = 0000H (0kC)                                                                                                                         |
| 9BBEH<br>9BBFH | Color code No.B toner control step 4                                                                                                                             | value = 0000H (0kC)                                                                                                                         |
| 9BC0H<br>9BC1H | Color code No.C toner control step 3                                                                                                                             | value = 0000H (0kC)                                                                                                                         |
| 9BC2H<br>9BC3H | Color code No.C toner control step 4                                                                                                                             | value = 0000H (0kC)                                                                                                                         |
| 9BC4H<br>9BC5H | Color code No.D toner control step 3                                                                                                                             | value = 0000H (0kC)                                                                                                                         |
| 9BC6H<br>9BC7H | Color code No.D toner control step 4                                                                                                                             | value = 0000H (0kC)                                                                                                                         |
| 9BC8H<br>9BC9H | Color code No.E toner control step 3                                                                                                                             | value = 0000H (0kC)                                                                                                                         |
| 9BCAH<br>9BCBH | Color code No.E toner control step 4                                                                                                                             | value = 0000H (0kC)                                                                                                                         |
| 9BCCH<br>9BCDH | Color code No.F toner control step 3                                                                                                                             | value = 0000H (0kC)                                                                                                                         |
| 9BCEH<br>9BCFH | Color code No.F toner control step 4                                                                                                                             | value = 0000H (0kC)                                                                                                                         |
| 9BD0H          | Color code No.2 bias page step                                                                                                                                   | value = 05H (50v)                                                                                                                           |
| 9BD1H          | Color code No.3 bias page step                                                                                                                                   | value = 05H (50v)                                                                                                                           |
| 9BD2H          | Color code No.4 bias page step                                                                                                                                   | value = 00H (0v)                                                                                                                            |
| 9BD3H          | Color code No.5 bias page step                                                                                                                                   | value = 00H (0v)                                                                                                                            |
| 9BD4H          | Color code No.6 bias page step                                                                                                                                   | value = 00H (0v)                                                                                                                            |
| 9BD5H          | Color code No.7 bias page step                                                                                                                                   | value = 00H (0v)                                                                                                                            |
| 9BD6H          | Color code No.8 bias page step                                                                                                                                   | value = 00H (0v)                                                                                                                            |
| 9BD7H          | Color code No.9 bias page step                                                                                                                                   | value = 00H (0v)                                                                                                                            |
| 9BD8H          | Color code No.A bias page step                                                                                                                                   | value = 00H (0v)                                                                                                                            |
| 9BD9H          | Color code No.B bias page step                                                                                                                                   | value = 00H (0v)                                                                                                                            |
| 9BDAH          | Color code No.C bias page step                                                                                                                                   | value = 00H (0v)                                                                                                                            |
| 9BDBH          | Color code No.D bias page step                                                                                                                                   | value = 00H (0v)                                                                                                                            |
| 9BDCH          | Color code No.E bias page step                                                                                                                                   | value = 00H (0v)                                                                                                                            |
| 9BDDH          | Color code No.F bias page step                                                                                                                                   | value = 00H (0v)                                                                                                                            |
| 9BDEH          | Color page check control selection<br>bit 0: color No.2<br>bit 1: color No.3<br>bit 2: color No.4<br>bit 3: color No.5<br>bit 4: color No.6<br>bit 5: color No.7 | default = 00H<br>0=valid/1=invalid<br>0=valid/1=invalid<br>0=valid/1=invalid<br>0=valid/1=invalid<br>0=valid/1=invalid<br>0=valid/1=invalid |

| Address                          | Purpose                                                                                                                                                          | Remarks                                                                                                                                     |
|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| 9BDFH                            | Color page check control selection<br>bit 0: color No.A<br>bit 1: color No.B<br>bit 2: color No.C<br>bit 3: color No.D<br>bit 4: color No.E<br>bit 5: color No.F | default = 00H<br>0=valid/1=invalid<br>0=valid/1=invalid<br>0=valid/1=invalid<br>0=valid/1=invalid<br>0=valid/1=invalid<br>0=valid/1=invalid |
| 9BE0H                            | memory write routine control flag                                                                                                                                | 00H=limited<br>FFH=no limited                                                                                                               |
| 9BE1H                            | Heater temperature indication control flag                                                                                                                       | 00H=limited<br>FFH=no limited                                                                                                               |
| 9BF0H<br>9BF1H                   | Master ROM Revision                                                                                                                                              |                                                                                                                                             |
| 9BF2H<br>9BF3H                   | Slave ROM Revision                                                                                                                                               |                                                                                                                                             |
| 9BF4H<br>9BF5H                   |                                                                                                                                                                  |                                                                                                                                             |
| 9BF6H                            | Printer lot number4                                                                                                                                              |                                                                                                                                             |
| 9BF7H                            | Printer lot number3                                                                                                                                              |                                                                                                                                             |
| 9BF8H                            | Printer lot number2                                                                                                                                              |                                                                                                                                             |
| 9BF9H                            | Printer lot number1                                                                                                                                              |                                                                                                                                             |
| 9BFAH<br>9FBH                    | Lot No.                                                                                                                                                          |                                                                                                                                             |
| 9BFCH<br>9BFDH<br>9BFEH<br>9BFFH |                                                                                                                                                                  |                                                                                                                                             |
| 9BE0H                            | A control flag of Memory-Writing routine                                                                                                                         | "00": limited, "FF": free                                                                                                                   |
| 9BE1H                            | A control flag to display temperature of the Heater                                                                                                              | "00": disable, "FF": enable                                                                                                                 |
| 9BE2H<br> <br>9BEFH              | (reserved)                                                                                                                                                       |                                                                                                                                             |

### 8.5.8. Rom Rev. and Serial/Lot No. Information

| Address        | Purpose              | Remarks     |
|----------------|----------------------|-------------|
| 9BF0H<br>9BF1H | Master ROM Revision  |             |
| 9BF2H<br>9BF3H | Slave ROM Revision   |             |
| 9BF4H          | (reserved)           |             |
| 9BF5H          | (reserved)           |             |
| 9BF6H          | Printer lot number 4 |             |
| 9BF7H          | Printer lot number 3 |             |
| 9BF8H          | Printer lot number 2 |             |
| 9BF9H          | Printer lot number 1 |             |
| 9BFAH<br>9FBH  | Lot No.              | 2-Byte data |

| Address | Purpose    | Remarks |
|---------|------------|---------|
| 9BFCH   | (reserved) |         |
| 9BFDH   | (reserved) |         |
| 9BFEH   | (reserved) |         |
| 9BFFH   | (reserved) |         |

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## 8.6. Detach Voltage Adjustment

### 8.6.1. Setting the Detach Voltage

The Detach Voltage is sensitive to elevation, humidity, and paper type. The default setting is "144"; however, it may be necessary to adjust the setting based on the conditions at the installation site. E128, E134, E118, or E119 errors are an indication that an adjustment is necessary. If so, use the following procedure to adjust the Detach Voltage Settings:

1. Select **Setup / Service / Password / Configuration / Detach Voltage**. Set to Default "144".
2. Select **Printer / Test Print / Print Quality / Text File 4%** and select the paper input tray and output tray.
3. Observe whether the 29 duplexed pages are output without an error and record observations.
4. Repeat Step 1 and set all four detach settings lower by an increment of "8".
5. Repeat Steps 2 and 3, recording observations.
6. Continue repeating Steps 1, 2 and 3, reducing the setting in increments of "8" (128, 120, 112, 104, 96, 88, 80) recording observations at each setting.
7. Repeat Step 1 and set all four detach settings to "152".
8. Repeat Steps 2 and 3.
9. Continue repeating Steps 1, 2 and 3, increasing in increments of "8" (160, 168, 176, 184, 192, 200, 208) recording observations at each setting.
10. From the observations made in Steps 6 and 9 determine the range of acceptable output (no errors). Make the final setting at the midpoint. For example, if errors occurred at settings of 104 and below and also at settings of 160 and above, make the final setting at 132 (midway between 104 and 160).



## SUPPLEMENT 1 - Diagnostics Routine

Select the routine, and input the row No., column No. in that order. e.g. Sensor Test for "HP1 Height Sensor" is routine No."01".

| Item        | No | 0                       | 1                      | 2                     | 3                       | 4                    | 5                        | 6                        | 7                           | 8                              | 9                  | A                     | B                             | C                     | D                        | E                       | F                            |
|-------------|----|-------------------------|------------------------|-----------------------|-------------------------|----------------------|--------------------------|--------------------------|-----------------------------|--------------------------------|--------------------|-----------------------|-------------------------------|-----------------------|--------------------------|-------------------------|------------------------------|
| Sensor Test | 0  |                         | HP1 Height Sensor      | HP2 Height Sensor     | HP3 Height Sensor       | Height Sensor        | HP1 Upper Limit Sensor   | HP1 Empty Sensor         | HP2 Empty Sensor            | HP3 Empty Sensor               | Empty Sensor       | MB Tray Empty Sensor  | Lower Limit Sensor            | SB Cover Sensor       | IS Cover Open Sensor     |                         | Transit Pass Unit Cover Open |
|             | 1  | HP1 Rest Sensor A       | HP1 Rest Sensor B      | HP1 Rest Sensor C     | HP2 Rest Sensor         | HP3 Rest Sensor      | HP5 Rest Sensor A        | HP5 Rest Sensor B        | HP5 Rest Sensor C           | HP1 Size Sensor                | HP2 Size Sensor    | HP3 Size Sensor       | HP5 Size Sensor               | HP5 Top Cover Sensor  |                          | HP5 Door Sensor         | HP5 Over Run Sensor          |
|             | 2  | IS Feed Sensor 1        | IS Feed Sensor 2       | IS Feed Sensor 3      | HP5 Feed Sensor         | Timing Sensor        | Skew Sensor 1            | Skew Sensor 2            | HR Out Sensor               | Flip Sensor                    | S/B Sensor         | Return1 Sensor        | Return2 Sensor                | PF Out Sensor         | HP1 Pick Sensor          | HP2 Pick Sensor         | HP3 Pick Sensor              |
|             | 3  | MG Sensor               | Drum REV Sensor        | Toner Empty Sensor *1 | Toner Bag Set Sensor *2 |                      |                          | Toner Bag Full Sensor *3 | Dev Bottle Set Sensor       |                                | Recycle REV Sensor | Felt End Sensor       | TR Cleaner Position Sensor *4 | S/B Gate Sensor       |                          |                         | Transit Pass Unit Sensor     |
|             | 4  |                         | Thermal Sensor (A/D)   |                       | Toner Level (A/D)       | Toner Control (A/D)  | Temperature Sensor (A/D) | Humidity Sensor (A/D)    |                             | Drum Wrap 2 (A/D)              |                    |                       |                               |                       |                          |                         |                              |
| Driver Test | 5  | Timing Motor CW Drive   | Timing Motor CCW Drive | Return Motor CW Drive | Return Motor CCW Drive  | MB Clutch Drive      |                          | HR Motor Drive           | Resistration Motor CW Drive | Resistration Motor CCW Drive   | PF Out Motor Drive | TH Motor Drive        | S/B Motor CW/CCW Drive        | S/B Solenoid Drive    | Flip Motor CW/CCW Drive  | Flip Solenoid Drive     | Decurler Solenoid Drive      |
|             | 6  | Hopper Feed Motor Drive | Hopper 1 Clutch Drive  | Hopper 2 Clutch Drive | Hopper 3 Clutch Drive   | Hopper 5 Motor Drive | Hopper 5 Clutch Drive    |                          |                             |                                |                    |                       | Transit Pass Unit Motor       |                       |                          | TR Cleaner CW/CCW Drive | TR Cleaner CW/CCW Drive      |
|             | 7  | Drum Motor CW Drive     | Drum Motor CCW Drive   | Dev Motor CW Drive    | Dev Motor CCW Drive     | Toner Feed CW Drive  | Toner Feed CCW Drive     | Felt CCW/CW Drive        |                             |                                |                    |                       | TH Ass'y Fan Drive            | Dev Cooling Fan Drive | Separating Blowers Drive |                         |                              |
|             | 8  | Charger Grid HV         | Bias HV                | Transfer HV           | Detach HV               |                      |                          | Erase Lamp Drive         |                             |                                |                    |                       | Laser 1 High Drive            | Laser 2 High Drive    | Laser 1/2 Drive          | Mirror & Laser Drive    | Optical Unit Drive           |
| Adjustment  | 9  | Laser 1 Drive           | Laser 2 Drive          | Laser 1 Low Drive     | Laser 2 Low Drive       | Laser Delay Data Set |                          |                          | Toner Supply                | Toner Control Level Adjustment | Developer Charging | Developer Discharging |                               |                       |                          |                         |                              |
| Maintenance | A  |                         | Automatic Stop Mode    | Continuous Drive Mode | Import Read             |                      | Memory Read              | Memory Write             | UC Area Clear               | Trace Area Clear               | UC Value Set       |                       | H Data Set                    | V Data Set            |                          | Printer Lot Number Set  |                              |
|             | B  |                         |                        |                       |                         |                      |                          |                          |                             |                                |                    |                       |                               |                       |                          |                         |                              |
|             | C  |                         |                        |                       |                         |                      |                          |                          |                             |                                |                    |                       |                               |                       |                          |                         |                              |
|             | D  |                         |                        |                       |                         |                      |                          |                          |                             |                                |                    |                       |                               |                       |                          |                         |                              |
|             | E  |                         |                        |                       |                         |                      |                          |                          |                             |                                |                    |                       |                               |                       |                          |                         |                              |
| Option      | F  |                         | Finisher Diag. *6      |                       |                         | Finisher Diag. *7    |                          |                          |                             |                                |                    |                       |                               |                       |                          |                         |                              |

You can carry out these commands in the case of the state that each hopper is opened. If you don't act so, paper is picked.

\*1 Toner Empty Sensor corresponds to Toner Sensor (Toner Hopper).

\*2 Toner Bag Set Sensor corresponds to Toner Collector Bottle Set Sensor.

\*3 Toner Bag Full Sensor corresponds to Toner Sensor (Recycle Unit).

\*4 TR Cleaner Position Sensor corresponds to Transfer Cleaner Position Sensor.

\*5 TR Cleaner corresponds to Corotron Cleaner Motor.

\*6 Refer to SUPPLEMENT 1 (1) "Diagnostics Routine of Finisher (FS - 108R)" on page 2.

\*7 Refer to SUPPLEMENT 1 (2) "Diagnostics Routine of Finisher (Finisher SR5000)" on page 3.

# (1) Diagnostics Routine of Finisher (FS - 108R)

| Item                 | No | 0                              | 1                                    | 2                                | 3                                    | 4                                | 5                         | 6                                  | 7                              | 8                                     | 9                                      | A                                  | B                         | C                         | D                             | E                        | F                                 |
|----------------------|----|--------------------------------|--------------------------------------|----------------------------------|--------------------------------------|----------------------------------|---------------------------|------------------------------------|--------------------------------|---------------------------------------|----------------------------------------|------------------------------------|---------------------------|---------------------------|-------------------------------|--------------------------|-----------------------------------|
| Finisher Sensor Test | 0  | Interlock                      | P Exit Cover PS                      | Tray Upper Limit PS              | Tray Lower Limit PS                  | Staple Paper Exit Upper Limit PS | Sub Tray Full PS          | Folding Full Up PS                 | Tray No Paper Detect PS        |                                       | Sheet Tray Upper Limit PS              | Sheet Tray Lower Limit PS          | Pre No Paper PS           | Sheet Set PS              |                               |                          | No Sheet PS                       |
|                      | 1  | FIN Entrance Passage PS        | Paper Exit 2 PS                      | Paper Exit 1 PS                  | Stacker Conveyance Passage PS        | Sub Tray Paper Exit PS           | Folding Passage PS/2      | Folding Passage PS/1               | Folding P Exit PS              | Sheet Passage PS                      | Stacker No Paper Detect PS             |                                    | Cartridge Detect SW/F     | Staple Detect SW/F        |                               |                          |                                   |
|                      | 2  | Cartridge Detect SW/R          | Staple Detect SW/R                   |                                  |                                      |                                  | Stapler Movement HP PS    | Stapler Rotation HP PS             | Alignment Plate/UP HP PS       | Roller Shift HP PS                    | Paper Exit Belt HP PS                  | Paper Exit Opening PS              | Folding Stopper HP PS     | Alignment Plate/LOW HP PS | Stpl&Fold Stopper HP PS       | Folding Knife HP PS      | Stpl&Fold Stopper Release M HP PS |
|                      | 3  |                                |                                      |                                  |                                      |                                  |                           |                                    |                                |                                       |                                        |                                    |                           |                           |                               |                          |                                   |
| Finisher Driver Test | 4  | Conveyance Motor Drive         | Shift HP Search                      | Shift Drive                      | Shift Rotate                         | Main Tray Up                     | Main Tray Down            | Main Tray Staple Operation         | Alignment Plate/UP Drive       | Paper Exit Roller Motor CW Drive      | Paper Exit Roller Motor CCW Drive      | Paper Exit Opening Close           | Paper Exit Opening Open   | Stapler R Initialize      | Stapler R Staple              | Stapler F Initialize     | Stapler F Staple                  |
|                      | 5  | Stapler HP Search              | Stapler 1 Position Drive             | Stacker Entrance Motor Drive     | Stpl&Fold Stopper M A4(SEF) Position | Alignment Plate/LOW Drive        | Folding Stopper HP Search | Folding Knife HP Search            | Folding Conveyance Motor Drive | Stpl&Fold Stopper Release M HP Search | Stpl&Fold Stopper Release M HP Release | Stpl&Fold Stopper Release M HP Set | Alignment Plate/UP Open   | Alignment Plate/UP Close  | Alignment Plate/UP Open/Close | Alignment Plate/LOW Open | Alignment Plate/LOW Close         |
|                      | 6  | Alignment Plate/LOW Open/Close | Stpl&Fold Stopper M A4(SEF) Position | Folding Stopper A4(SEF) Position | Sheet Tray Motor Up                  | Sheet Tray Motor Down            | Gate Solenoid Drive       | Sub-Tray Paper Exit solenoid Drive | Sub-Tray Solenoid Drive        | By-Pass Solenoid Drive                | Paper Exit Solenoid Drive              | Paper Feed Clutch Drive            | Paper Feed Solenoid Drive | Running                   |                               |                          |                                   |

## (2) Diagnostics Routine of Finisher (Finisher SR5000)

| Item                 | No | 0                                | 1                                    | 2                        | 3                         | 4                           | 5                                      | 6                                  | 7                           | 8                              | 9                             | A                         | B                                  | C                               | D                                 | E                    | F                                |
|----------------------|----|----------------------------------|--------------------------------------|--------------------------|---------------------------|-----------------------------|----------------------------------------|------------------------------------|-----------------------------|--------------------------------|-------------------------------|---------------------------|------------------------------------|---------------------------------|-----------------------------------|----------------------|----------------------------------|
| Finisher Sensor Test | 0  | Entrance Sensor                  | Upper Tray Exit Sensor               | Shift Tray Exit Sensor 1 | Staple Tray Exit Sensor   | Shift Tray Full Sensor      | Shift Tray Near-Full Sensor            | Stack Feed-Out Belt HP Sensor      | Jogger HP Sensor            | Shift HP1 Sensor               | Staple HP Sensor (Front/Rear) | Staple Change HP Sensor   | Needle Full Detect Sensor          | Staple Tray Space Sensor        |                                   |                      |                                  |
|                      | 1  |                                  | Staple Space Sensor                  | Shift Space Sensor       | Jam Detection Sensor      | Upper Tray Full Sensor      | Stapler Rotation Sensor 1              | Staple Trimming Hopper Full Sensor | Pre-Stack Tray Paper Sensor | Stack Plate HP Sensor (Center) | Exit Guide HP Sensor          | Stapler Rotation Sensor 2 | Release HP Sensor                  | Stack Plate HP Sensor (Front)   | Stack Plate HP Sensor (Rear)      | Drag Drive HP Sensor | Positioning Roller HP Sensor     |
|                      | 2  | Paper Height Sensor Standby Mode | Shift Tray Full Sensor (Large paper) |                          | Shift Jogger Sensor       | Shift Tray Jogger HP Sensor | Shift Tray Jogger Retraction HP Sensor | Emergency Stop Switch              | Top Fence HP Switch         | Bottom Fence HP Switch         |                               | Shift Tray Exit Sensor 2  | Upper Tray Junction Gate HP Sensor | Stapler Junction Gate HP Sensor | Pre-Stack Junction Gate HP Sensor | Pre-Stack Sensor     | Pre-Stack Cancellation HP Sensor |
|                      | 3  |                                  |                                      |                          |                           |                             |                                        |                                    |                             |                                |                               |                           |                                    |                                 |                                   |                      |                                  |
| Finisher Driver Test | 4  |                                  | Upper Transport Motor                | Shift Tray Exit Motor    | Upper Tray Junction Motor | Shift Tray Lift Motor       | Jogger Motor                           | Stapler Movement Motor             | Stapler Hammer Motor        |                                | Stapler Junction Gate Motor   | Drag Drive Motor          | Stack Feed-On Belt Motor           | Shift Motor                     | Stapler Rotation Motor            | Stapler Exit Motor   | Exit Guide Motor                 |
|                      | 5  | Stack Plate Motor (Center)       | Pre-Stack Junction Gate Motor        |                          | Stack Plate Motor (Front) | Stack Plate Motor (Rear)    | Positioning Drive Motor                | Positioning Roller Motor           | Shift Tray Jogger Motor     | Shift Tray Junction Gate Motor | Top Fence Motor               | Bottom Fence Motor        | Lower Transport Motor              | Upper Tray Exit Motor           | Drag Roller Motor                 |                      |                                  |
|                      | 6  |                                  |                                      |                          |                           |                             |                                        |                                    |                             |                                |                               |                           |                                    |                                 |                                   |                      |                                  |
|                      | 7  |                                  |                                      |                          |                           |                             |                                        |                                    |                             |                                |                               |                           |                                    |                                 |                                   |                      |                                  |



## SUPPLEMENT 2 - Details of Sensor Test

| Routine No. | Sensor Name            | Description                                                                                                                                                                                                                                                                                                                                                                  |
|-------------|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 00          | -                      | -                                                                                                                                                                                                                                                                                                                                                                            |
| 01          | HP1 Height Sensor      | This signal is "H", when the paper in Hopper 1 or table of Hopper 1 reaches the top of Hopper 1.                                                                                                                                                                                                                                                                             |
| 02          | HP2 Height Sensor      | This signal is "H", when the paper in Hopper 2 or table of Hopper 2 reaches the top of Hopper 2.                                                                                                                                                                                                                                                                             |
| 03          | HP3 Height Sensor      | This signal is "H", when the paper in Hopper 3 or table of Hopper 3 reaches the top of Hopper 3.                                                                                                                                                                                                                                                                             |
| 04          | HP5 Height Sensor      | This signal is "H", when the paper in High Capacity Hopper or table of High Capacity Hopper reaches the top of High Capacity Hopper.                                                                                                                                                                                                                                         |
| 05          | HP1 Upper Limit Sensor | This signal is "H", when the paper in Hopper 1 is set incorrect.                                                                                                                                                                                                                                                                                                             |
| 06          | HP1 Empty Sensor       | This signal is "H", when there is no paper in Hopper 1.                                                                                                                                                                                                                                                                                                                      |
| 07          | HP2 Empty Sensor       | This signal is "H", when there is no paper in Hopper 2.                                                                                                                                                                                                                                                                                                                      |
| 08          | HP3 Empty Sensor       | This signal is "H", when there is no paper in Hopper 3.                                                                                                                                                                                                                                                                                                                      |
| 09          | HP5 Empty Sensor       | This signal is "H", when there is no paper in High Capacity Hopper.                                                                                                                                                                                                                                                                                                          |
| 0A          | MBT Empty Sensor       | This signal is "H", when there is no paper in MB Tray.                                                                                                                                                                                                                                                                                                                       |
| 0B          | HP5 Lower Limit Sensor | This signal is "H", when the table of High Capacity Hopper reaches bottom of High Capacity Hopper.                                                                                                                                                                                                                                                                           |
| 0C          | SB Cover Open          | This signal is "H", when the SB Cover opened.                                                                                                                                                                                                                                                                                                                                |
| 0D          | IS Cover Open Sensor   | This signal is "H", when the IS Cover opened.                                                                                                                                                                                                                                                                                                                                |
| 0E          | -                      | -                                                                                                                                                                                                                                                                                                                                                                            |
| 0F          | -                      | -                                                                                                                                                                                                                                                                                                                                                                            |
| 10          | HP1 Rest Sensor A      | The quantity of paper is detected by a combination of Rest Sensor A, B and C.<br>When the quantity of paper is 0% to 25%, Rest Sensor A, B and C are "H".<br>When the quantity of paper is 25% to 50%, Rest Sensor A and C are "H".<br>When the quantity of paper is 50% to 75%, Rest Sensor C is "H".<br>When the quantity of paper is 75% to 100%, no Rest Sensor is "H".  |
| 11          | HP1 Rest Sensor B      |                                                                                                                                                                                                                                                                                                                                                                              |
| 12          | HP1 Rest Sensor C      |                                                                                                                                                                                                                                                                                                                                                                              |
| 13          | HP2 Rest Sensor        | This signal is "H", when the quantity of paper in Hopper 2 is 50% or less.                                                                                                                                                                                                                                                                                                   |
| 14          | HP3 Rest Sensor        | This signal is "H", when the quantity of paper in Hopper 3 is 50% or less.                                                                                                                                                                                                                                                                                                   |
| 15          | HP5 Rest Sensor A      | The quantity of paper is detected by a combination of Rest Sensors A, B and C.<br>When the quantity of paper is 0% to 25%, Rest Sensor A, B and C are "H".<br>When the quantity of paper is 25% to 50%, Rest Sensor A and B are "H".<br>When the quantity of paper is 50% to 75%, Rest Sensor A is "H".<br>When the quantity of paper is 75% to 100%, no Rest Sensor is "H". |
| 16          | HP5 Rest Sensor B      |                                                                                                                                                                                                                                                                                                                                                                              |
| 17          | HP5 Rest Sensor C      |                                                                                                                                                                                                                                                                                                                                                                              |
| 18          | HP1 Size Sensor        | Paper size is indicated.                                                                                                                                                                                                                                                                                                                                                     |
| 19          | HP2 Size Sensor        | Paper size is indicated.                                                                                                                                                                                                                                                                                                                                                     |
| 1A          | HP3 Size Sensor        | Paper size is indicated.                                                                                                                                                                                                                                                                                                                                                     |
| 1B          | HP5 Size Sensor        | This signal is "H", when the letter size is in High Capacity Hopper.                                                                                                                                                                                                                                                                                                         |

| Routine No. | Sensor Name                       | Description                                                                                                       |
|-------------|-----------------------------------|-------------------------------------------------------------------------------------------------------------------|
| 1C          | HP5 Top Cover Sensor              | This signal is "H", when the Top Cover of the High Capacity Hopper is opened.                                     |
| 1D          | -                                 | -                                                                                                                 |
| 1E          | HP5 Door Sensor                   | This signal is "H", when the Door of the High Capacity Hopper is opened.                                          |
| 1F          | HP5 Over Run Sensor               | This signal is "L", when abnormality was detected during table of High Capacity Hopper operation.                 |
| 20          | IS Feed Sensor 1                  | This signal is "L", when there is a paper on IS Feed Sensor 1.                                                    |
| 21          | IS Feed Sensor 2                  | This signal is "L", when there is a paper on IS Feed Sensor 2.                                                    |
| 22          | IS Feed Sensor 3                  | This signal is "L", when there is a paper on IS Feed Sensor 3.                                                    |
| 23          | HP5 Feed Sensor                   | This signal is "L", when there is a paper on HP5 Feed Sensor.                                                     |
| 24          | Timing Sensor                     | This signal is "L", when there is a paper on Timing Sensor.                                                       |
| 25          | Skew Sensor 1                     | This signal is "L", when there is a paper on Skew Sensor 1.                                                       |
| 26          | Skew Sensor 2                     | This signal is "L", when there is a paper on Skew Sensor 2.                                                       |
| 27          | HR Out Sensor                     | This signal is "H", when there is paper on HR Out Sensor.                                                         |
| 28          | Flip Sensor                       | This signal is "L", when there is a paper on Flip Sensor.                                                         |
| 29          | SB Sensor                         | This signal is "L", when there is a paper on SB Sensor.                                                           |
| 2A          | Return Sensor 1                   | This signal is "L", when there is a paper on Return Sensor 1.                                                     |
| 2B          | Return Sensor 2                   | This signal is "L", when there is a paper on Return Sensor 2.                                                     |
| 2C          | PF Out Sensor                     | This signal is "L", when there is a paper on PF Out Sensor.                                                       |
| 2D          | HP1 Pick Sensor                   | This signal is "L", when there is a paper on HP1 Pick Sensor.                                                     |
| 2E          | HP2 Pick Sensor                   | This signal is "L", when there is a paper on HP2 Pick Sensor.                                                     |
| 2F          | HP3 Pick Sensor                   | This signal is "L", when there is a paper on HP3 Pick Sensor.                                                     |
| 30          | MG Sensor                         | This signal repeats "H" and "L" while MG Motor is driven.                                                         |
| 31          | Drum REV Sensor                   | This signal repeats "H" and "L", while Drum Motor is driven. "H" state when the sensor is shaded by the actuator. |
| 32          | Toner Sensor (Toner Hopper)       | "L" is indicated, when there is no toner in the Toner Hopper.                                                     |
| 33          | Toner Collector Bottle Set Sensor | "L" is indicated, when the Toner Collector Bottle is set.                                                         |
| 34          | -                                 | -                                                                                                                 |
| 35          | -                                 | -                                                                                                                 |
| 36          | Toner Sensor (Recycle Unit)       | "H" is indicated, when the Toner Collector Bottle is full of toner.                                               |
| 37          | Dev Bottle Set Sensor             | "L" is indicated, when the Dev Bottle is set.                                                                     |
| 38          | -                                 | -                                                                                                                 |
| 39          | Recycle REV Sensor                | This signal repeats "H" and "L", while Drum Motor is driven. "H" state when the sensor is shaded by the actuator. |
| 3A          | Felt End Sensor                   | This signal is "H", when there is no Felt in the Fuser Unit.                                                      |

| Routine No. | Sensor Name                      | Description                                                                                                                                         |
|-------------|----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| 3B          | Transfer Cleaner Position Sensor | "L" is indicated, when the Transfer Cleaner is at home position.                                                                                    |
| 3C          | SB Gate Sensor                   | This signal repeats "H" and "L" while SB Gate Motor is driven. "H" state when the sensor is shaded by the actuator.                                 |
| 3D          | -                                | -                                                                                                                                                   |
| 3E          | -                                | -                                                                                                                                                   |
| 3F          | -                                | -                                                                                                                                                   |
| 40          | -                                | -                                                                                                                                                   |
| 41          | Thermal Sensor (A/D)             | Output voltage of the Thermal Sensor in the Fuser is indicated. Refer to SUPPLEMENT 3 - Temperature of Heat Roll and Output voltage                 |
| 42          | -                                | -                                                                                                                                                   |
| 43          | Toner Level (A/D)                | The voltage input into the Toner Control Sensor is indicated.                                                                                       |
| 44          | Control Level (A/D)              | Output voltage of the Toner Control Sensor is indicated.                                                                                            |
| 45          | Temperature Sensor (A/D)         | Output voltage of the Temperature Sensor (Environmental Sensor) is indicated. Refer to SUPPLEMENT 4 - Air Temperature / Humidity and Output voltage |
| 46          | Humidity Sensor (A/D)            | Output voltage of the Humidity Sensor (Environmental Sensor) is indicated. Refer to SUPPLEMENT 4 - Air Temperature / Humidity and Output voltage    |
| 47          | Drum Wrap 1 (A/D)                | Output voltage by original reflected light of the Drum Wrap Sensor is indicated.                                                                    |
| 48          | Drum Wrap 2 (A/D)                | Output voltage by diffusive reflected light of the Drum Wrap Sensor is indicated.                                                                   |
| 49          | -                                | -                                                                                                                                                   |
| 4A          | -                                | -                                                                                                                                                   |
| 4B          | -                                | -                                                                                                                                                   |
| 4C          | -                                | -                                                                                                                                                   |
| 4D          | -                                | -                                                                                                                                                   |
| 4E          | -                                | -                                                                                                                                                   |
| 4F          | -                                | -                                                                                                                                                   |

## SUPPLEMENT 3 - Temperature of Heat Roll and Output voltage

| Temperature of Heat Roll (x°C) | Output voltage (V) | Data (Hex) |
|--------------------------------|--------------------|------------|
| 20                             | 0.07               | 03         |
| 25                             | 0.10               | 04         |
| 30                             | 0.12               | 06         |
| 35                             | 0.15               | 07         |
| 40                             | 0.19               | 09         |
| 45                             | 0.24               | 0C         |
| 50                             | 0.29               | 0F         |
| 55                             | 0.36               | 12         |
| 60                             | 0.44               | 16         |
| 65                             | 0.52               | 1A         |
| 70                             | 0.62               | 1F         |
| 75                             | 0.74               | 25         |
| 80                             | 0.87               | 2C         |
| 85                             | 1.01               | 33         |
| 90                             | 1.16               | 3B         |
| 95                             | 1.32               | 43         |
| 100                            | 1.50               | 4C         |
| 105                            | 1.68               | 55         |
| 110                            | 1.87               | 5F         |
| 115                            | 2.06               | 69         |
| 120                            | 2.25               | 73         |
| 125                            | 2.44               | 7C         |
| 130                            | 2.63               | 86         |
| 135                            | 2.81               | 8F         |
| 140                            | 2.98               | 98         |
| 145                            | 3.15               | A1         |
| 150                            | 3.31               | A9         |
| 155                            | 3.46               | B1         |
| 160                            | 3.59               | B8         |
| 161                            | 3.62               | B9         |

| Temperature of Heat Roll (x°C) | Output voltage (V) | Data (Hex) |
|--------------------------------|--------------------|------------|
| 162                            | 3.65               | BA         |
| 163                            | 3.67               | BC         |
| 164                            | 3.70               | BD         |
| 165                            | 3.72               | BE         |
| 166                            | 3.75               | BF         |
| 167                            | 3.77               | C1         |
| 168                            | 3.79               | C2         |
| 169                            | 3.82               | C3         |
| 170                            | 3.84               | C4         |
| 171                            | 3.86               | C5         |
| 172                            | 3.88               | C6         |
| 173                            | 3.90               | C7         |
| 174                            | 3.93               | C9         |
| 175                            | 3.95               | CA         |
| 176                            | 3.97               | CB         |
| 177                            | 3.98               | CC         |
| 178                            | 4.01               | CD         |
| 179                            | 4.02               | CD         |
| 180                            | 4.04               | CF         |
| 181                            | 4.06               | D0         |
| 182                            | 4.08               | D0         |
| 183                            | 4.10               | D1         |
| 184                            | 4.12               | D2         |
| 185                            | 4.13               | D3         |
| 186                            | 4.15               | D4         |
| 187                            | 4.17               | D5         |
| 188                            | 4.18               | D6         |
| 189                            | 4.20               | D7         |
| 190                            | 4.22               | D7         |
| 191                            | 4.23               | D8         |

| Temperature of Heat Roll (x°C) | Output voltage (V) | Data (Hex) |
|--------------------------------|--------------------|------------|
| 192                            | 4.25               | D9         |
| 193                            | 4.26               | DA         |
| 194                            | 4.27               | DA         |
| 195                            | 4.29               | DB         |
| 196                            | 4.30               | DC         |
| 197                            | 4.32               | DC         |
| 198                            | 4.33               | DD         |
| 199                            | 4.34               | DE         |
| 200                            | 4.35               | DE         |
| 201                            | 4.37               | DF         |
| 202                            | 4.38               | E0         |
| 203                            | 4.39               | E0         |
| 204                            | 4.40               | E1         |
| 205                            | 4.41               | E2         |
| 206                            | 4.43               | E2         |
| 207                            | 4.44               | E3         |
| 208                            | 4.45               | E3         |
| 209                            | 4.46               | E4         |
| 210                            | 4.47               | E4         |
| 215                            | 4.52               | E7         |
| 220                            | 4.55               | E8         |
| 225                            | 4.60               | EB         |
| 230                            | 4.64               | ED         |
| 235                            | 4.67               | EF         |
| 240                            | 4.70               | F0         |
| 245                            | 4.72               | F1         |
| 250                            | 4.75               | F3         |
| 255                            | 4.77               | F4         |
| 260                            | 4.79               | F5         |
| 265                            | 4.81               | F6         |

# SUPPLEMENT 4 - Air Temperature / Humidity and Output voltage

| Air temperature (x°C) | Output voltage (V) | Data (HEX) |
|-----------------------|--------------------|------------|
| -10                   | 4.50               | E6         |
| -5                    | 4.36               | DF         |
| -4                    | 4.33               | DD         |
| -3                    | 4.30               | DB         |
| -2                    | 4.26               | DA         |
| -1                    | 4.23               | D8         |
| 0                     | 4.19               | D6         |
| 5                     | 3.96               | CA         |
| 10                    | 3.79               | C1         |
| 11                    | 3.74               | BF         |
| 12                    | 3.69               | BC         |
| 13                    | 3.64               | BA         |
| 14                    | 3.59               | B8         |
| 15                    | 3.54               | B5         |
| 16                    | 3.49               | B2         |
| 17                    | 3.44               | B0         |
| 18                    | 3.39               | AD         |
| 19                    | 3.34               | AA         |
| 20                    | 3.28               | A8         |
| 21                    | 3.23               | A5         |
| 22                    | 3.18               | A2         |
| 23                    | 3.12               | 9F         |
| 24                    | 3.07               | 9D         |
| 25                    | 3.01               | 9A         |
| 26                    | 2.96               | 97         |
| 27                    | 2.90               | 94         |
| 28                    | 2.85               | 91         |
| 29                    | 2.79               | 8E         |
| 30                    | 2.73               | 8B         |
| 31                    | 2.68               | 89         |
| 32                    | 2.62               | 86         |
| 33                    | 2.57               | 83         |
| 34                    | 2.51               | 80         |
| 35                    | 2.46               | 7D         |
| 36                    | 2.40               | 7B         |
| 37                    | 2.35               | 78         |
| 38                    | 2.29               | 75         |
| 39                    | 2.24               | 72         |
| 40                    | 2.19               | 70         |
| 41                    | 2.14               | 6D         |
| 42                    | 2.09               | 6A         |
| 43                    | 2.03               | 68         |
| 44                    | 1.98               | 65         |
| 45                    | 1.93               | 63         |
| 46                    | 1.89               | 60         |
| 47                    | 1.84               | 5E         |
| 48                    | 1.79               | 5B         |
| 49                    | 1.74               | 59         |
| 50                    | 1.70               | 56         |
| 51                    | 1.65               | 54         |
| 52                    | 1.61               | 52         |
| 53                    | 1.57               | 50         |
| 54                    | 1.52               | 4D         |
| 55                    | 1.48               | 4B         |
| 60                    | 1.29               | 41         |

Humidity (5°C)

| Humidity (%) | Output voltage (V) | Data (HEX) |
|--------------|--------------------|------------|
| 10           | 1.12               | 39         |
| 15           | 1.14               | 3A         |
| 20           | 1.20               | 3D         |
| 25           | 1.34               | 44         |
| 30           | 1.52               | 4D         |
| 35           | 1.70               | 56         |
| 40           | 1.86               | 5F         |
| 50           | 2.11               | 6B         |
| 60           | 2.31               | 76         |
| 70           | 2.48               | 7F         |
| 80           | 2.64               | 87         |
| 90           | 2.78               | 8E         |

Humidity (15°C)

| Humidity (%) | Output voltage (V) | Data (HEX) |
|--------------|--------------------|------------|
| 10           | 0.98               | 32         |
| 15           | 1.06               | 36         |
| 20           | 1.18               | 3C         |
| 25           | 1.37               | 46         |
| 30           | 1.55               | 4F         |
| 35           | 1.71               | 57         |
| 40           | 1.86               | 5F         |
| 50           | 2.10               | 6B         |
| 60           | 2.29               | 75         |
| 70           | 2.46               | 7D         |
| 85           | 2.60               | 85         |
| 90           | 2.74               | 8C         |

Humidity (25°C)

| Humidity (%) | Output voltage (V) | Data (HEX) |
|--------------|--------------------|------------|
| 10           | 0.84               | 2B         |
| 15           | 0.99               | 32         |
| 20           | 1.16               | 3B         |
| 25           | 1.36               | 45         |
| 30           | 1.58               | 50         |
| 35           | 1.74               | 59         |
| 40           | 1.88               | 60         |
| 50           | 2.12               | 6C         |
| 60           | 2.30               | 75         |
| 70           | 2.45               | 7D         |
| 80           | 2.59               | 84         |
| 90           | 2.74               | 8C         |

Humidity (35°C)

| Humidity (%) | Output voltage (V) | Data (HEX) |
|--------------|--------------------|------------|
| 10           | 0.75               | 26         |
| 15           | 0.99               | 32         |
| 20           | 1.21               | 3D         |
| 25           | 1.42               | 48         |
| 30           | 1.62               | 52         |
| 35           | 1.77               | 5A         |
| 40           | 1.90               | 61         |
| 50           | 2.13               | 6D         |
| 60           | 2.31               | 76         |
| 70           | 2.46               | 7D         |
| 80           | 2.61               | 85         |
| 90           | 2.75               | 8C         |

Humidity (45°C)

| Humidity (%) | Output voltage (V) | Data (HEX) |
|--------------|--------------------|------------|
| 10           | 0.84               | 2A         |
| 15           | 1.09               | 37         |
| 20           | 1.31               | 42         |
| 25           | 1.49               | 4C         |
| 30           | 1.66               | 54         |
| 35           | 1.80               | 5C         |
| 40           | 1.93               | 62         |
| 50           | 2.11               | 6B         |
| 60           | 2.27               | 74         |
| 70           | 2.42               | 7B         |
| 80           | 2.56               | 82         |
| 90           | 2.69               | 89         |



## SUPPLEMENT 5 - Current of LED Eraser and Output

The relation between current of LED Eraser and Output.

| Current of LED Eraser (mA) | Output voltage (V) | Remarks                                                              |
|----------------------------|--------------------|----------------------------------------------------------------------|
| 0                          | 0.00               |                                                                      |
| 1                          | 0.02               |                                                                      |
| 2                          | 0.04               |                                                                      |
| 3                          | 0.06               |                                                                      |
| 4                          | 0.08               |                                                                      |
| 5                          | 0.10               |                                                                      |
| 6                          | 0.12               |                                                                      |
| 7                          | 0.14               |                                                                      |
| 8                          | 0.16               | LED Erase non set (E080) occurs in the case of less than this value. |
| 9                          | 0.18               |                                                                      |
| 10                         | 0.20               |                                                                      |
| 15                         | 0.30               |                                                                      |
| 20                         | 0.40               |                                                                      |
| 25                         | 0.50               |                                                                      |
| 30                         | 0.60               |                                                                      |
| 35                         | 0.70               | Value of this neighborhood is indicated under normal conditions.     |
| 40                         | 0.80               |                                                                      |
| 45                         | 0.90               |                                                                      |
| 50                         | 1.00               |                                                                      |
| 55                         | 1.10               |                                                                      |
| 60                         | 1.20               |                                                                      |
| 65                         | 1.30               |                                                                      |
| 70                         | 1.40               |                                                                      |
| 75                         | 1.50               |                                                                      |
| 80                         | 1.60               |                                                                      |
| 85                         | 1.70               |                                                                      |
| 90                         | 1.80               |                                                                      |
| 95                         | 1.90               |                                                                      |
| 100                        | 2.00               |                                                                      |
| 105                        | 2.10               |                                                                      |
| 110                        | 2.20               |                                                                      |
| 115                        | 2.30               |                                                                      |
| 120                        | 2.40               |                                                                      |
| 125                        | 2.50               |                                                                      |
| 130                        | 2.60               | LED Eraser over current (E281) occurs in the case of more than this  |
| 135                        | 2.70               |                                                                      |
| 140                        | 2.80               |                                                                      |
| 145                        | 2.90               |                                                                      |
| 150                        | 3.00               |                                                                      |
| 155                        | 3.10               |                                                                      |
| 160                        | 3.20               |                                                                      |
| 165                        | 3.30               |                                                                      |
| 170                        | 3.40               |                                                                      |
| 175                        | 3.50               |                                                                      |
| 180                        | 3.60               |                                                                      |
| 185                        | 3.70               |                                                                      |
| 190                        | 3.80               |                                                                      |
| 195                        | 3.90               |                                                                      |
| 200                        | 4.00               |                                                                      |
| 205                        | 4.10               |                                                                      |
| 210                        | 4.20               |                                                                      |
| 215                        | 4.30               |                                                                      |
| 220                        | 4.40               |                                                                      |
| 225                        | 4.50               |                                                                      |
| 230                        | 4.60               |                                                                      |
| 235                        | 4.70               |                                                                      |
| 240                        | 4.80               |                                                                      |
| 245                        | 4.90               |                                                                      |
| 250                        | 5.00               |                                                                      |





## SUPPLEMENT 6 - Code of A3 Routine

| CODE | BIT | Signal Name                       | Description                                                                                                 |
|------|-----|-----------------------------------|-------------------------------------------------------------------------------------------------------------|
| 00   | 7   | Charger/Grid Alarm                | This signal is "1" at the time of error. (When the Charger/Grid does not work, this signal is "1" too.)     |
|      | 6   | Bias Alarm                        | This signal is "1" at the time of error. (When the Bias does not work, this signal is "1" too.)             |
|      | 5   | Transfer Alarm                    | This signal is "1" at the time of error. (When the Transfer does not work, this signal is "1" too.)         |
|      | 4   | Detach Alarm                      | This signal is "1" at the time of error. (When the Detach does not work, this signal is "1" too.)           |
|      | 3   | -                                 | -                                                                                                           |
|      | 2   | Blower Fan Alarm                  | This signal is "1" at the time of error. (When the Blower Fan does not work, this signal is "1" too.)       |
|      | 1   | Toner Feed Motor Lock             | This signal is "0" at the time of error. (When the Toner Feed Motor is not driven, this signal is "0" too.) |
|      | 0   | Drum Motor Lock                   | This signal is "1" at the time of error. (When the Drum Motor is not driven, this signal is "1" too.)       |
| 01   | 7   | Transfer Cleaner Position Sensor  | This signal is "0", when the Transfer Cleaner is home position.                                             |
|      | 6   | -                                 | -                                                                                                           |
|      | 5   | +24V Off                          | This signal is "1", when +24V of the CPxxx Assembly is provided.                                            |
|      | 4   | +24VS Off                         | This signal is "1", when +24VS of the CPxxx Assembly is provided.                                           |
|      | 3   | -                                 | -                                                                                                           |
|      | 2   | Toner Sensor (Recycle Unit)       | This signal is "1", when the Toner Collector Bottle is full of toner.                                       |
|      | 1   | Toner Collector Bottle Set Sensor | This signal is "0", when the Toner Collector Bottle is set.                                                 |
|      | 0   | Dev Bottle Set Sensor             | This signal is "0", when the Dev Bottle is set.                                                             |
| 02   | 7   | Dip Switch 1                      | This signal is "0", when the Toner Recycle Mode is selected.                                                |
|      | 6   | Dip Switch 2                      |                                                                                                             |
|      | 5   | Dip Switch 3                      |                                                                                                             |
|      | 4   | Dip Switch 4                      |                                                                                                             |
|      | 3   | Dip Switch 5                      | This signal is "0", when the High Capacity Hopper is connected.                                             |
|      | 2   | Dip Switch 6                      |                                                                                                             |
|      | 1   | Dip Switch 7                      |                                                                                                             |
|      | 0   | Dip Switch 8                      | This signal is "0", when the Standard Finisher is connected.                                                |

| CODE | BIT | Signal Name                 | Description                                                                                                                                          |
|------|-----|-----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| 03   | 7   | Drum REV Sensor             | This signal repeats "1" and "0", when the Drum Motor is driven.                                                                                      |
|      | 6   | Magroll Revolution Sensor   | This signal repeats "1" and "0", when the Magroll Motor is driven.                                                                                   |
|      | 5   | Recycle REV Sensor          | This signal repeats "1" and "0", when the Drum Motor is driven.                                                                                      |
|      | 4   | -                           | -                                                                                                                                                    |
|      | 3   | -                           | -                                                                                                                                                    |
|      | 2   | Front Cover Sensor          | This signal is "0", when the Front Cover is opened.                                                                                                  |
|      | 1   | Toner Sensor (Toner Hopper) | This signal is "0", when there is no toner in the Toner Hopper.                                                                                      |
|      | 0   | -                           | -                                                                                                                                                    |
| 04   | 7   | Video RDY 2                 | This signal becomes "2", when Video Data 2 has not been sent from the Controller during print. And this signal is latched till reset is carried out. |
|      | 6   | Video RDY 1                 | This signal becomes "1", when Video Data 1 has not been sent from the Controller during print. And this signal is latched till reset is carried out. |
|      | 5   | Video Open 2                | This signal becomes "2", when Connector of the Video Cable falls out. And this signal is latched till reset is carried out.                          |
|      | 4   | Video Open 1                | This signal becomes "1", when Connector of the Video Cable falls out. And this signal is latched till reset is carried out.                          |
|      | 3   | -                           | -                                                                                                                                                    |
|      | 2   | -                           | -                                                                                                                                                    |
|      | 1   | Mirror Motor Alarm          | This signal is "0" at the time of error. (When the Mirror Motor is not driven, this signal is "0" too.)                                              |
|      | 0   | OC Fan Alarm                | This signal is "1" at the time of error. (When the OC Fan does not work, this signal is "1" too.)                                                    |
| 05   | 7   | Timing Sensor               | This signal is "0", when there is a paper on the Timing Sensor.                                                                                      |
|      | 6   | Skew Sensor 1               | This signal is "0", when there is a paper on the Skew Sensor 1.                                                                                      |
|      | 5   | Skew Sensor 2               | This signal is "0", when there is a paper on the Skew Sensor 2.                                                                                      |
|      | 4   | Flip Sensor                 | This signal is "0", when there is a paper on the Flip Sensor.                                                                                        |
|      | 3   | SB Sensor                   | This signal is "0", when there is a paper on the SB Sensor.                                                                                          |
|      | 2   | PF Out Sensor               | This signal is "0", when there is a paper on the PF Out Sensor.                                                                                      |
|      | 1   | Return Sensor 1             | This signal is "0", when there is a paper on the Return Sensor 1.                                                                                    |
|      | 0   | Return Sensor 2             | This signal is "0", when there is a paper on the Return Sensor 2.                                                                                    |

| CODE | BIT | Signal Name      | Description                                                        |
|------|-----|------------------|--------------------------------------------------------------------|
| 06   | 7   | SB Cover Sensor  | This signal is "1", when the SB Cover is opened.                   |
|      | 6   | MBF Empty Sensor | This signal is "1", when there is no paper in the MB Tray.         |
|      | 5   | Felt End Sensor  | This signal is "1", when there no Felt in the Fuser Unit.          |
|      | 4   | HR Out Sensor    | This signal is "1", when there is paper on the HR Out Sensor.      |
|      | 3   | -                | -                                                                  |
|      | 2   | -                | -                                                                  |
|      | 1   | -                | -                                                                  |
|      | 0   | -                | -                                                                  |
| 07   | 7   | -                | -                                                                  |
|      | 6   | -                | -                                                                  |
|      | 5   | -                | -                                                                  |
|      | 4   | -                | -                                                                  |
|      | 3   | -                | -                                                                  |
|      | 2   | -                | -                                                                  |
|      | 1   | -                | -                                                                  |
|      | 0   | -                | -                                                                  |
| 08   | 7   | HP3 Pick Sensor  | This signal is "0", when there is a paper on the HP3 Pick Sensor.  |
|      | 6   | IS Feed Sensor 3 | This signal is "0", when there is a paper on the IS Feed Sensor 3. |
|      | 5   | IS Feed Sensor 2 | This signal is "0", when there is a paper on the IS Feed Sensor 2. |
|      | 4   | IS Feed Sensor 1 | This signal is "0", when there is a paper on the IS Feed Sensor 1. |
|      | 3   | IS Cover Sensor  | This signal is "1", when the IS Cover is opened.                   |
|      | 2   | HP2 Pick Sensor  | This signal is "0", when there is a paper on the HP2 Pick Sensor.  |
|      | 1   | HP +24V Off      | This signal is "1", when +24V of the HPxxx Assembly is provided.   |
|      | 0   | HP1 Pick Sensor  | This signal is "0", when there is a paper on the HP1 Pick Sensor.  |

| CODE | BIT | Signal Name            | Description                                                                                                                                                                                                                                                                                                                                                                  |
|------|-----|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 09   | 7   | Feed Sensor            | This signal is "0", when there is a paper on the Return Sensor 2.                                                                                                                                                                                                                                                                                                            |
|      | 6   | HP5 +24VS Off          | This signal is "1", when +24V of the AHxxx Assembly is provided.                                                                                                                                                                                                                                                                                                             |
|      | 5   | -                      | -                                                                                                                                                                                                                                                                                                                                                                            |
|      | 4   | -                      | -                                                                                                                                                                                                                                                                                                                                                                            |
|      | 3   | -                      | -                                                                                                                                                                                                                                                                                                                                                                            |
|      | 2   | -                      | -                                                                                                                                                                                                                                                                                                                                                                            |
|      | 1   | -                      | -                                                                                                                                                                                                                                                                                                                                                                            |
|      | 0   | -                      | -                                                                                                                                                                                                                                                                                                                                                                            |
| 0A   | 7   | HP3 Height Sensor      | This signal is "1", when the paper in Hopper 3 or the table of Hopper 3 reaches the top of Hopper 3.                                                                                                                                                                                                                                                                         |
|      | 6   | HP3 Empty Sensor       | This signal is "1", when there is no paper in Hopper 3.                                                                                                                                                                                                                                                                                                                      |
|      | 5   | HP3 Rest Sensor        | This signal is "1", when the quantity of paper in Hopper 3 is 20% or less.                                                                                                                                                                                                                                                                                                   |
|      | 4   | -                      | -                                                                                                                                                                                                                                                                                                                                                                            |
|      | 3   | HP2 Height Sensor      | This signal is "1", when the paper in Hopper 2 or the table of Hopper 2 reaches the top of Hopper 2.                                                                                                                                                                                                                                                                         |
|      | 2   | HP2 Empty Sensor       | This signal is "1", when there is no paper in Hopper 2.                                                                                                                                                                                                                                                                                                                      |
|      | 1   | HP2 Rest Sensor        | This signal is "1", when the quantity of paper in Hopper 2 is 20% or less.                                                                                                                                                                                                                                                                                                   |
|      | 0   | -                      | -                                                                                                                                                                                                                                                                                                                                                                            |
| 0B   | 7   | HP1 Height Sensor      | This signal is "1", when the paper in Hopper 1 or the table of Hopper 1 reaches the top of Hopper 1.                                                                                                                                                                                                                                                                         |
|      | 6   | HP1 Empty Sensor       | This signal is "1", when there is no paper in Hopper 1.                                                                                                                                                                                                                                                                                                                      |
|      | 5   | HP1 Upper Limit Sensor | This signal is "1", when there is no paper in Hopper 1.                                                                                                                                                                                                                                                                                                                      |
|      | 4   | HP1 Rest Sensor C      | The quantity of paper is detected by a combination of Rest Sensors A, B and C.<br>When the quantity of paper is 0% to 25%, Rest Sensor A, B and C are "1".<br>When the quantity of paper is 25% to 50%, Rest Sensor A and C are "1".<br>When the quantity of paper is 50% to 75%, Rest Sensor C is "1".<br>When the quantity of paper is 75% to 100%, no Rest Sensor is "1". |
|      | 3   | HP1 Rest Sensor B      |                                                                                                                                                                                                                                                                                                                                                                              |
|      | 2   | HP1 Rest Sensor A      |                                                                                                                                                                                                                                                                                                                                                                              |
|      | 1   | -                      |                                                                                                                                                                                                                                                                                                                                                                              |
|      | 0   | -                      | -                                                                                                                                                                                                                                                                                                                                                                            |

| CODE | BIT | Signal Name       | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|------|-----|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 0C   | 7   | -                 | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|      | 6   | -                 | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|      | 5   | -                 | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|      | 4   | HP1 Size Sensor 5 | Paper size is detected by a combination of signal of five sensors.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|      | 3   | HP1 Size Sensor 4 | No Size Sensor is "1" : Hopper is opened.    Size Sensor 1 is "1" : Free Size.    Size Sensor 2 is "1" : B5 size.<br>Size Sensor 1 and 3 are "1" : A5 size.    Size Sensor 1, 2 and 4 are "1" : Ledger size.    Size Sensor 1, 2, 3 and 4 are "1" : Letter size.<br>Size Sensor 5 is "1" : A4 SEF size.    Size Sensor 1, 2, 3 and 5 are "1" : Legal size.    Size Sensor 4 and 5 are "1" : A4 LEF size.<br>Size Sensor 3, 4 and 5 are "1" : A3 size.    Size Sensor 2, 3, 4 and 5 are "1" : B4 size.    Size Sensor 1, 2, 3, 4 and 5 are "1" : Error. |
|      | 2   | HP1 Size Sensor 3 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|      | 1   | HP1 Size Sensor 2 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|      | 0   | HP1 Size Sensor 1 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 0D   | 7   | -                 | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|      | 6   | -                 | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|      | 5   | -                 | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|      | 4   | HP2 Size Sensor 5 | Paper size is detected by a combination of signal of five sensors.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|      | 3   | HP2 Size Sensor 4 | No Size Sensor is "1" : Hopper is opened.    Size Sensor 1 is "1" : Free Size.    Size Sensor 2 is "1" : B5 size.<br>Size Sensor 1 and 3 are "1" : A5 size.    Size Sensor 1, 2 and 4 are "1" : Ledger size.    Size Sensor 1, 2, 3 and 4 are "1" : Letter size.<br>Size Sensor 5 is "1" : A4 SEF size.    Size Sensor 1, 2, 3 and 5 are "1" : Legal size.    Size Sensor 4 and 5 are "1" : A4 LEF size.<br>Size Sensor 3, 4 and 5 are "1" : A3 size.    Size Sensor 2, 3, 4 and 5 are "1" : B4 size.    Size Sensor 1, 2, 3, 4 and 5 are "1" : Error. |
|      | 2   | HP2 Size Sensor 3 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|      | 1   | HP2 Size Sensor 2 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|      | 0   | HP2 Size Sensor 1 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 0E   | 7   | -                 | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|      | 6   | -                 | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|      | 5   | -                 | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|      | 4   | HP3 Size Sensor 5 | Paper size is detected by a combination of signal of five sensors.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|      | 3   | HP3 Size Sensor 4 | No Size Sensor is "1" : Hopper is opened.    Size Sensor 1 is "1" : Free Size.    Size Sensor 2 is "1" : B5 size.<br>Size Sensor 1 and 3 are "1" : A5 size.    Size Sensor 1, 2 and 4 are "1" : Ledger size.    Size Sensor 1, 2, 3 and 4 are "1" : Letter size.<br>Size Sensor 5 is "1" : A4 SEF size.    Size Sensor 1, 2, 3 and 5 are "1" : Legal size.    Size Sensor 4 and 5 are "1" : A4 LEF size.<br>Size Sensor 3, 4 and 5 are "1" : A3 size.    Size Sensor 2, 3, 4 and 5 are "1" : B4 size.    Size Sensor 1, 2, 3, 4 and 5 are "1" : Error. |
|      | 2   | HP3 Size Sensor 3 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|      | 1   | HP3 Size Sensor 2 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|      | 0   | HP3 Size Sensor 1 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

| CODE | BIT | Signal Name        | Description                                                                                                                                                                                                                                                                                                                                                                 |
|------|-----|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 0F   | 7   | Height Sensor      | This signal is "1", when there is paper in High Capacity Hopper or table of High Capacity Hopper reaches top of High Capacity Hopper.                                                                                                                                                                                                                                       |
|      | 6   | Empty Sensor       | This signal is "1", when there is no paper in High Capacity Hopper.                                                                                                                                                                                                                                                                                                         |
|      | 5   | Lower Limit Sensor | This signal is "1", when table of High Capacity Hopper reaches bottom of High Capacity Hopper.                                                                                                                                                                                                                                                                              |
|      | 4   | Rest Sensor (C)    | The quantity of paper is detected by a combination of Rest Sensors A, B and C.<br>When the quantity of paper is 0% to 25%, Rest Sensor A, B and C are "1".<br>When the quantity of paper is 25% to 50%, Rest Sensor A and B are "1".<br>When the quantity of paper is 50% to 75%, Rest Sensor A is "1".<br>When the quantity of paper is 75% to 100%, no Rest Sensor is "1" |
|      | 3   | Rest Sensor (B)    |                                                                                                                                                                                                                                                                                                                                                                             |
|      | 2   | Rest Sensor (A)    |                                                                                                                                                                                                                                                                                                                                                                             |
|      | 1   | Door Sensor        |                                                                                                                                                                                                                                                                                                                                                                             |
|      | 0   | Over Run Sensor    | This signal is "1", when abnormality was detected during table of the High Capacity Hopper operation.                                                                                                                                                                                                                                                                       |

## SUPPLEMENT 7 - Diagnostics of Finisher 1 (FS - 108R)

| CODE | Signal Name                              | Description                                                                           |
|------|------------------------------------------|---------------------------------------------------------------------------------------|
| 00   | Interlock                                | The signal is "H", when the Finisher Front Cover opened.                              |
| 01   | Paper Exit-Cover Open/Close Detection PS | The signal is "H", when the Paper Exit-Cover opened.                                  |
| 02   | Tray Upper-Limit PS                      | The signal is "L", when the Main Tray reaches the upper limit position.               |
| 03   | Tray Lower-Limit PS                      | The signal is "L", when the Main Tray reaches the bottom position.                    |
| 04   | Staple Paper Exit Upper-Limit PS         | The signal is "H", when the Main Tray reaches the waiting position.                   |
| 05   | Sub-Tray Full PS                         | The signal is "H", when the paper on the Sub Tray becomes full.                       |
| 06   | Folding Full Up PS                       | The signal is "H", when the Booklet in the Booklet Tray becomes full.                 |
| 07   | Tray No-Paper Detection PS               | The signal is "L", when the condition of paper on the Main Tray becomes near empty.   |
| 08   |                                          |                                                                                       |
| 09   | Sheet-Tray Upper-Limit PS                | The signal is "L", when the Sheet-Tray reaches the top position.                      |
| 0A   | Sheet-Tray Lower-Limit PS                | The signal is "L", when the Sheet-Tray reaches the bottom position.                   |
| 0B   | Pre No-Paper PS                          | The signal is "H", when the paper reaches the pre position of the Cover Sheet Feeder. |
| 0C   | Sheet Set PS                             | The signal is "L", when the paper is set on the tray of the Cover Sheet Feeder.       |
| 0D   |                                          |                                                                                       |
| 0E   |                                          |                                                                                       |
| 0F   | No-Sheet PS                              | The signal is "H", when there is no paper on the tray of the Cover Sheet Feeder.      |
| 10   | FIN Entrance Passage PS                  | The signal is "L", when there is paper.                                               |
| 11   | Paper Exit-2 PS                          | The signal is "L", when there is paper.                                               |
| 12   | Paper Exit-1 PS                          | The signal is "L", when there is paper.                                               |
| 13   | Stacker Conveyance Passage PS            | The signal is "L", when there is paper.                                               |
| 14   | Sub-Tray Paper Exit PS                   | The signal is "L", when there is paper.                                               |
| 15   | Folding Passage PS/2                     | The signal is "L", when there is paper.                                               |
| 16   | Folding Passage PS/1                     | The signal is "L", when there is paper.                                               |
| 17   | Folding Paper-Exit PS                    | The signal is "H", when there is paper.                                               |

| CODE | Signal Name                                      | Description                                                                                  |
|------|--------------------------------------------------|----------------------------------------------------------------------------------------------|
| 18   | Sheet Passage PS                                 | The signal is "L", when there is paper.                                                      |
| 19   | Stacker No-Paper Detection PS                    | The signal is "L", when there is paper.                                                      |
| 1A   |                                                  |                                                                                              |
| 1B   | Cartridge Detection SW/F                         | The signal is "H", when there is no cartridge housing in the Stapler unit of the front side. |
| 1C   | Staple Detection SW/F                            | The signal is "H", when there is no staple in the Stapler unit of the front side.            |
| 1D   |                                                  |                                                                                              |
| 1E   |                                                  |                                                                                              |
| 1F   |                                                  |                                                                                              |
| 20   | Cartridge Detection SW/R                         | The signal is "H", when there is no cartridge housing in the Stapler unit of the rear side.  |
| 21   | Staple Detection SW/R                            | The signal is "H", when there is no staple in the Stapler unit of the rear side.             |
| 22   |                                                  |                                                                                              |
| 23   |                                                  |                                                                                              |
| 24   |                                                  |                                                                                              |
| 25   | Staple-Movement HP PS                            | The signal is "L", when the horizontal position of the Staplers is at the home position.     |
| 26   | Stapler-Rotation HP PS                           | The signal is "L", when the rotation position of the Staplers is at the home position.       |
| 27   | Alignment-Plate/Upper HP PS                      | The signal is "L", when the Alignment Plate is at the home position.                         |
| 28   | Roller-Shift HP PS                               | The signal is "H", when the Shift Unit is at the home position.                              |
| 29   | Paper Exit-Belt HP PS                            | The signal is "H", when the Paper Exit Belt is at the home position.                         |
| 2A   | Paper Exit-Opening PS                            | The signal is "L", when the Paper Exit Opening closed.                                       |
| 2B   | Folding Stopper HP PS                            | The signal is "L", when the Folding Stopper is at the home position.                         |
| 2C   | Alignment-Plate/Lower HP PS                      | The signal is "L", when the Staple Side Guide is at the home position.                       |
| 2D   | Stapling and Folding stopper HP PS               | The signal is "L", when the Staple Stopper is at the home position.                          |
| 2E   | Folding-Knife HP PS                              | The signal is "H", when the Folding Knife is at the home position.                           |
| 2F   | Stapling and Folding stopper-Release-Motor HP PS | The signal is "H", when the Stapling Stopper is at the home position(release position).      |



## Chapter 9. Theory of Operation

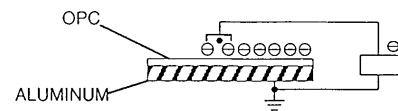
### 9.1. Principle of Printing - Outline of Electrophotographic Process

#### Outline of Electrophotographic Process

This section describes the outline of the electrophotographic process of this printer. The photoconductor (Organic photoconductor . . . OPC) used by this printer is created by a thin film over the aluminum support. The film provides photoconductivity (in dark places, it is an insulating material that holds electric charge at the surface. When it is exposed to light, the electric resistance decreases and the surface charge is quickly released).

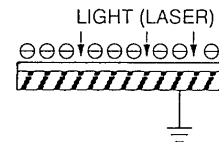
#### Charging

The OPC is exposed to negative (-) corona in a dark room to give uniform negative (-) electric charge on the OPC.



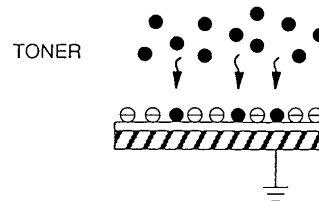
#### Exposure

The OPC is exposed to light (laser) in a dark room. The electric charge of the exposed OPC section which is exposed to light disappears and a latent electrostatic image is formed.



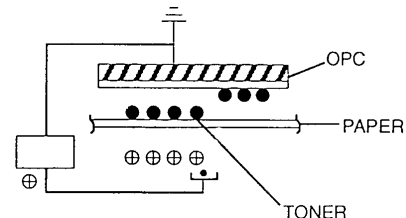
#### Developing

The OPC is contacted with toner that has negative (-) electric charge. The toner attaches to the section that lost electric charge during exposure process and the latent electrostatic image becomes visible on the OPC.



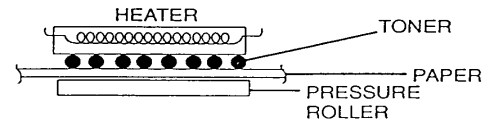
#### Transfer

A sheet of paper is placed under the photoconductor and a positive (+) electric charge is applied by the corona emission. Consequently the toner on the OPC is attracted to the paper.



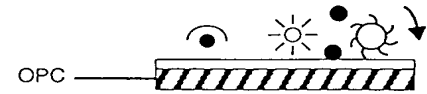
### Fusing

The paper with toner is heated to fuse the toner to the paper.



### Cleaning

The OPC is cleaned for the next charge process.



## 9.2. Principle of Printing - Outline of Print Operation

This section describes the outline of the print operation. The figure below shows the print operation of this printer.

1. Upon start of printing, the OPC begins to rotate in one direction at a fixed peripheral speed. It consists of an aluminium pipe with a OPC film on the surface and rotates until printing is completed.
2. When the rotating speed of the OPC becomes constant, a high negative voltage is applied uniformly to provide electric charge to the surface of the OPC.  
**(Charging)**
3. The mirror motor starts rotating immediately when the power to the printer is switched on. It continues to rotate at a fixed speed so long as the power is on. The polygon mirror has 8 facets

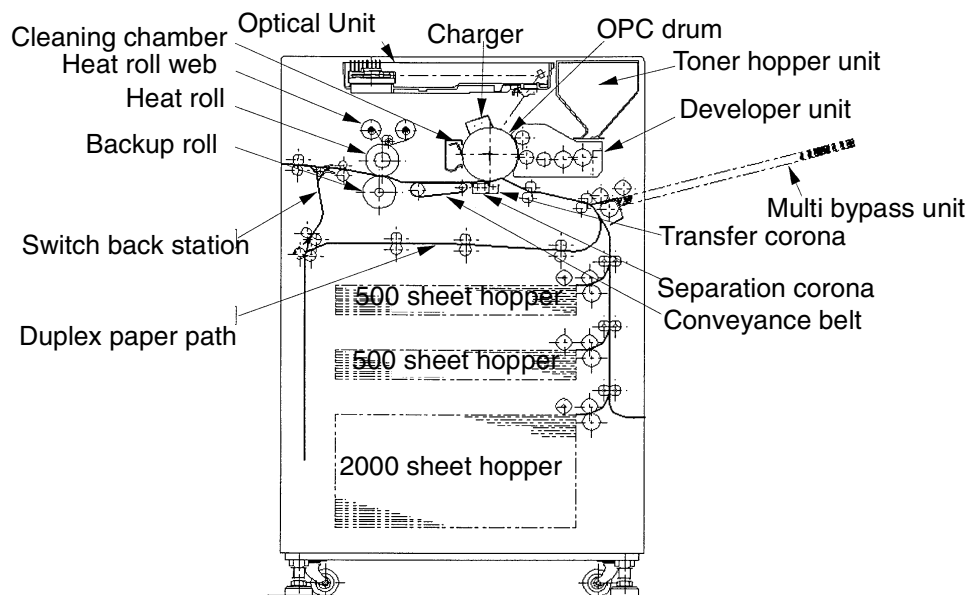


Figure 9-1. Outline of Printing

4. The OPC is exposed to the laser beam in the following manner. (Exposure)

The laser beam is intermittently scanned over the charge surface of the OPC. Because the charges at the portions exposed to the laser beam are eliminated, a character or graphic can be formed on the surface of the OPC while controlling the continuance and dis-continuance of the laser beam. Such a character or graphic is called a latent electrostatic image. It is not visible to the eyes.

According to the signal sent from the controller, the laser beam from the laser diode is turned on and off.

The FTH lens (composed of a single lens) compensates for the distortion of the laser beam due to the rotating angle of the polygon mirror, and it makes the radiating speed of the laser beam equivalent to the spot diameter over the entire area of the OPC.

5. When the OPC exposed to the laser beam passes the developer unit, the toner is electrostatically attached to the exposed portion. **(Developing)**

6. When the paper sent from the hopper unit passes the transfer station, a high voltage is applied by the corona emission of the transfer corona to give positive charge to the back side of the paper to transfer the toner image from the OPC.  
**(Transfer)**
7. When the paper reaches the fuser unit, it is heated and pressed by the heat roll and backup roll so that the toner adheres to the paper. **(Fusing)**
8. Toner remaining on the OPC after transfer is removed by the cleaner and the OPC becomes ready for the next cycle.
9. When printing has been completed, the paper is sent to the output tray or the Finisher(option).

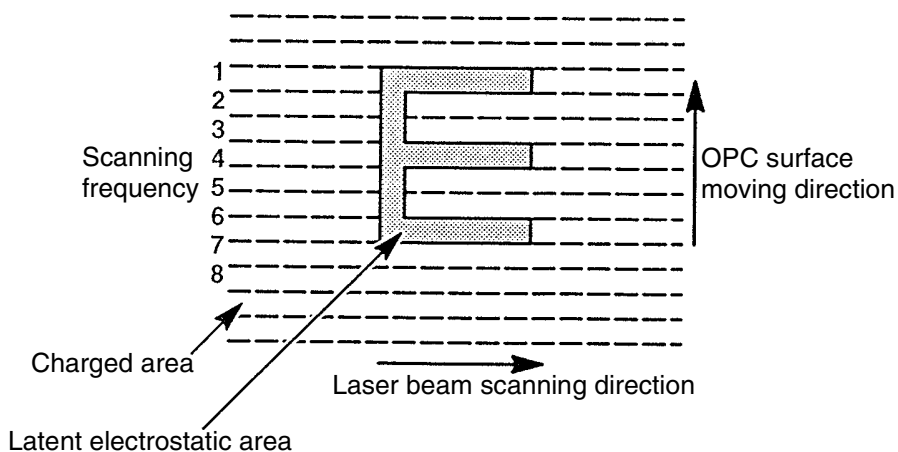


Figure 9-2. Electrophotographic Process - Latent image

### 9.3. Printing System - Outline of Printing Mechanism

1. The OPC surface is charged to about -650V due to corona emission performed by the corona charger. **(Charging)**
2. The laser beam is exposed to the OPC surface by the video (character) signal, and the surface voltage of the exposed section drops to about -70V. **(Exposure)**

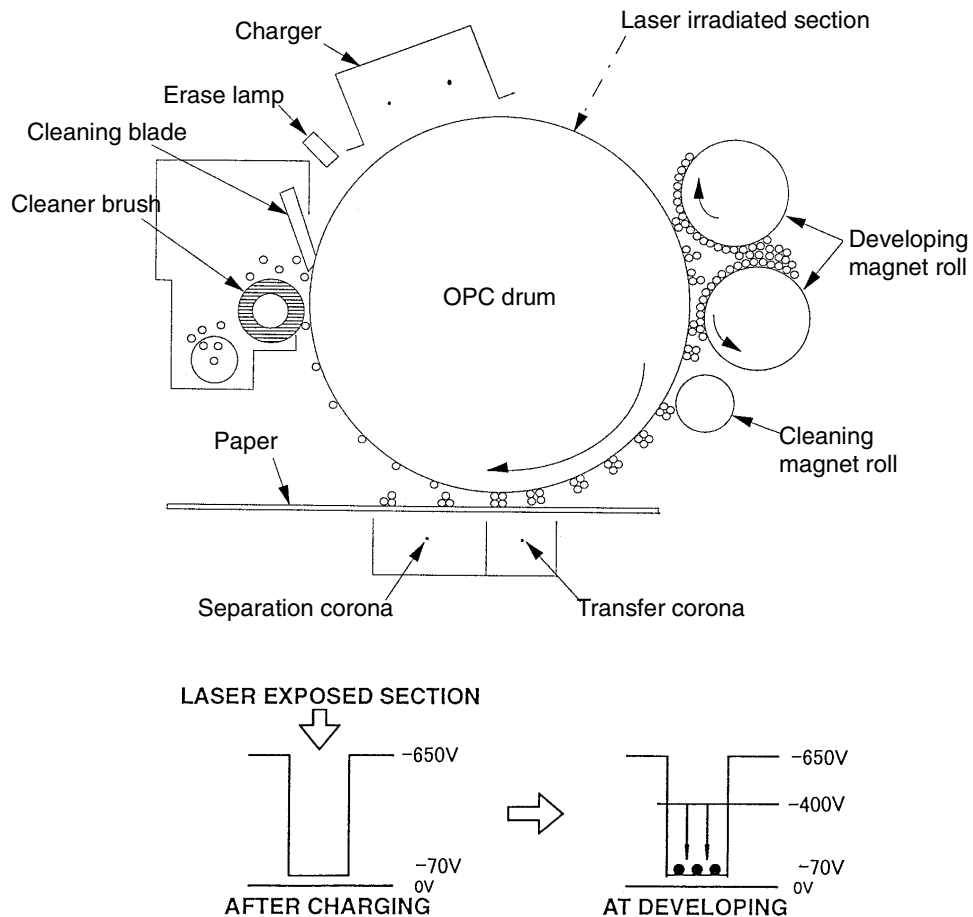


Figure 9-3. Outline of Printing System

3. The carrier and toner are mixed by the rotation of the 2 auger rolls, toner charged with electrostatic charge and carrier is charged with electrostatic charge. Toner clings to carrier by electrostatic force. The carrier with toner is absorbed by the magnet roll and sent to the surface of the OPC. The electric potential of the magnet roll is a value about -400V. As a result, the toner with electrostatic charge clings only to section that has the lower surface electrostatic potential. In other words, the toner between the magnet roll and the OPC has a stronger electrostatic force than carrier, so toner is attracted to the OPC. **(Developing)**
4. The toner with an electrostatic charge on the OPC is drawn to the paper by the electrostatic charge generated by the corona emission of the transfer corona.
5. About 85% of the toner is drawn from the OPC to the paper and the remaining toner is left on the OPC as residual toner.

6. The residual toner is scattered by the cleaner brush to make cleaning easier and the residual toner is scraped by the cleaning blade.  
In case of toner recycle setting, the toner collected into the cleaner chamber is transported to the toner hopper by an auger screw. In case of no toner recycle setting, the toner collected into the cleaner chamber is transported to the toner bag by the auger screw.
7. The entire surface voltage of the OPC is lowered to -70V by illuminating the erase lamp.

## 9.4. Printing System - Construction of the Developer unit

The developer unit consists of two developing magnet rolls which rotate in a clockwise and counterclockwise direction while the transfer toner to the OPC. Developer mixture is 1.6 kg.

1. Developing magnet rolls for developing: They feed the developer mixture to adhere the toner to the latent image formed on the surface of the OPC.
2. Cleaning magnet roll: It removes faulty carrier attached on the OPC by image force and bias voltage.

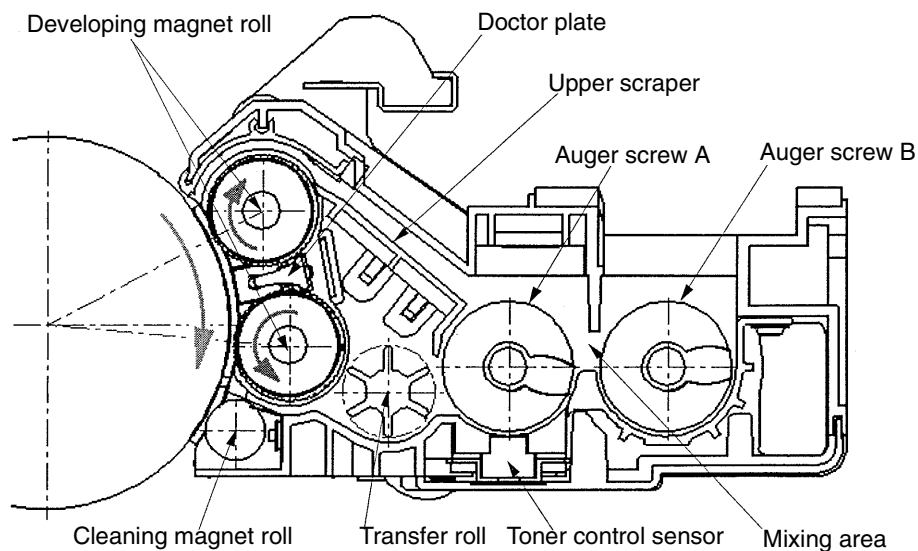


Figure 9-4. Construction of the Developer unit

3. Doctor plate: It provides the most suitable amount of developer mixture to the developing magnet rolls.
4. Upper scraper: It guides the developer mixture used for developing to the mixing area.
5. Auger screw: It agitates and mixes the developer mixture.
6. Transfer roll: It transfers developer mixture from the mixing area to the developing magnet rolls.
7. Toner control sensor: It detects the toner concentration.

## 9.5. Optical System - Parts names and explanation

### 9.5. (1) Optical System Parts

This section describes the Optical System of this printer. The Optical System used by this printer uses a diode laser.

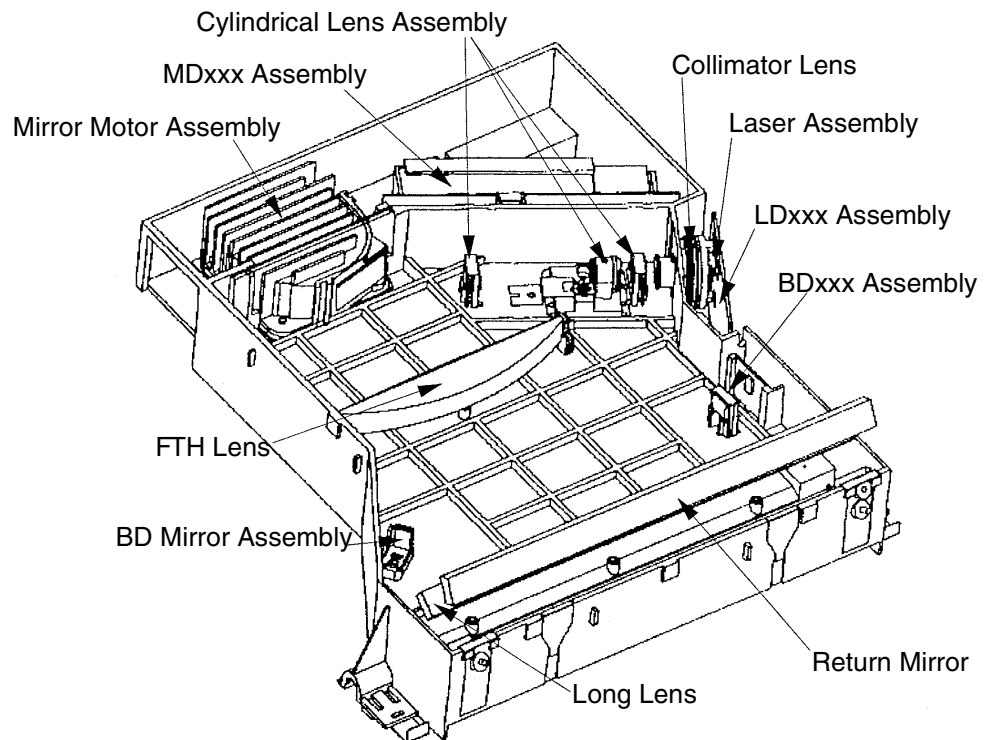


Figure 9-5. Construction of the Optical unit

#### 1. Laser Assembly

Laser Diode: The wavelength is 680 nm(invisible).

LDxxx Assembly: This drives the laser diode and amplifies the monitor current from the laser diode for power control.

Collimator Lens: This lens gathers the laser beam and makes it a parallel beam.

#### 2. Cylindrical Lens Assembly

Cylindrical Lens: It makes the appropriate beam shape and size.

#### 3. Mirror Motor Assembly

As the polygon mirror rotates, the laser beam is horizontally scanned to draw rasters on the OPC repeatedly.

#### 4. FTH Lens

It fixes the scan speed of the laser beam on the OPC which was scanned by the polygon mirror. And also it eliminates the scan pitch errors caused by the tilt of the polygon mirror facets.

5. **Return Mirror**

It reflects the laser beam passed through the FTH lens to the OPC.

6. **Long Lens**

It corrects the skew of the laser beam against the OPC drum.

7. **BD Mirror Assembly**

BD Mirror: It reflects the laser beam from the FTH lens and radiates the laser beam to the BD sensor in the BD181 Assembly.

8. **BDxxx Assembly**

It senses the laser beam from the BD mirror and generates the BD signal.

9. **MDxxx Assembly**

This assembly drives the mirror motor.



## 9.5. (2) Horizontal Synchronization

The operation in which one surface of the polygon mirror scans the laser beam to the OPC once is called a raster. Sending one raster to the control electronics is called to get the horizontal synchronization. The horizontal synchronization signal is called the beam detect signal (DBD signal). During printing, the DBD signal is detected by the BD sensor and sent to the control electronics every time one raster is completed.

The optical unit has two laser light sources. The printer engine issues two DBD detect signals to each laser light source at certain timings to make two DBD signals.

After detecting the two DBD signals, the control electronics transmit each CVD signal at the proper timing.

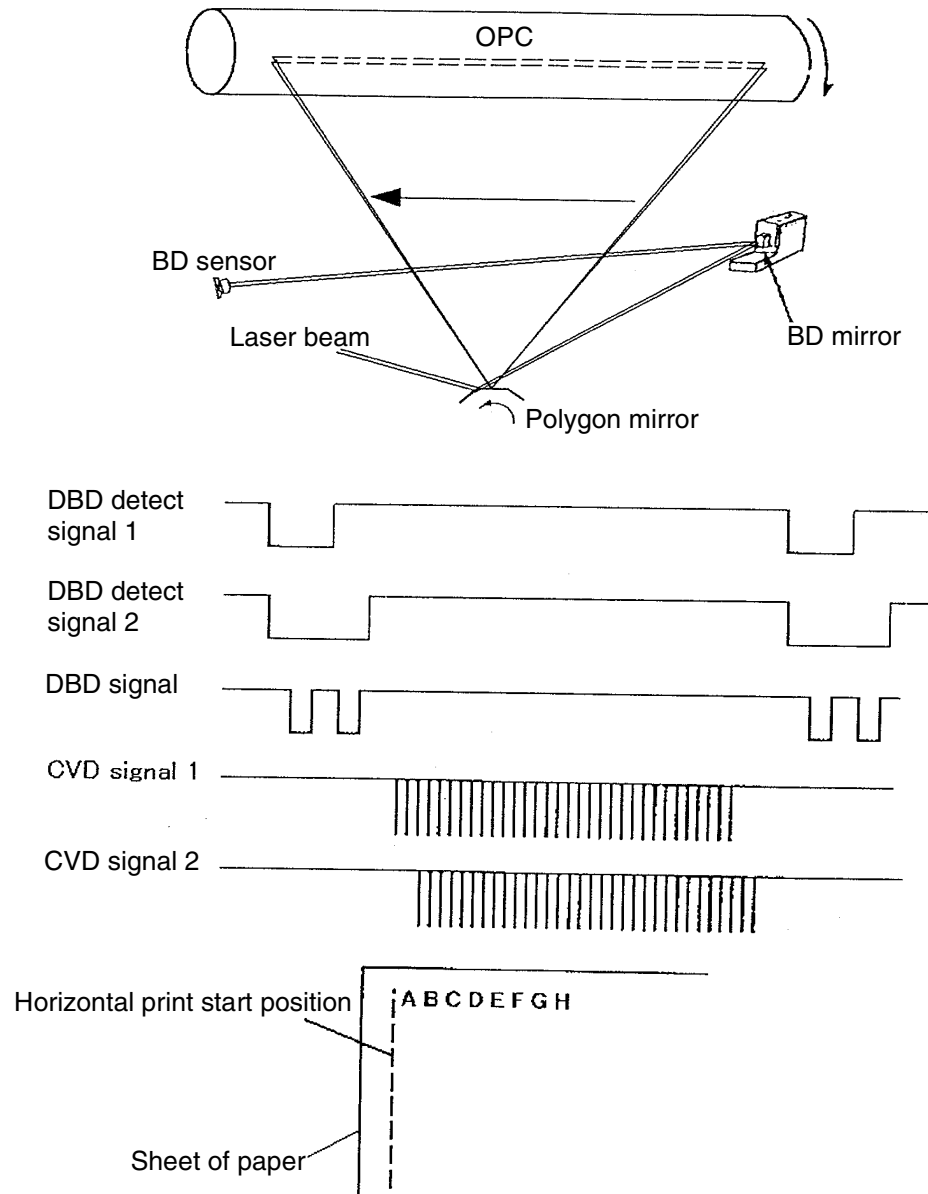


Figure 9-6. Horizontal Synchronization

### 9.5. (3) Vertical Synchronization

To let the control electronics know the printing start position on each page is called to get vertical synchronization. The vertical synchronization signal is called DTP signal. After receiving the pick command from the control electronics and picking a sheet, the printer sends the DTP signal to the controller. While the DTP signal is true, the controller sends the CPF signal to start printing. While the DTP signal is true, the controller sends the CPF signal to start printing.

The CVD signal from the control electronics utilizes the DTP signal as reference. That is, the DTP signal determines the vertical printing start position.

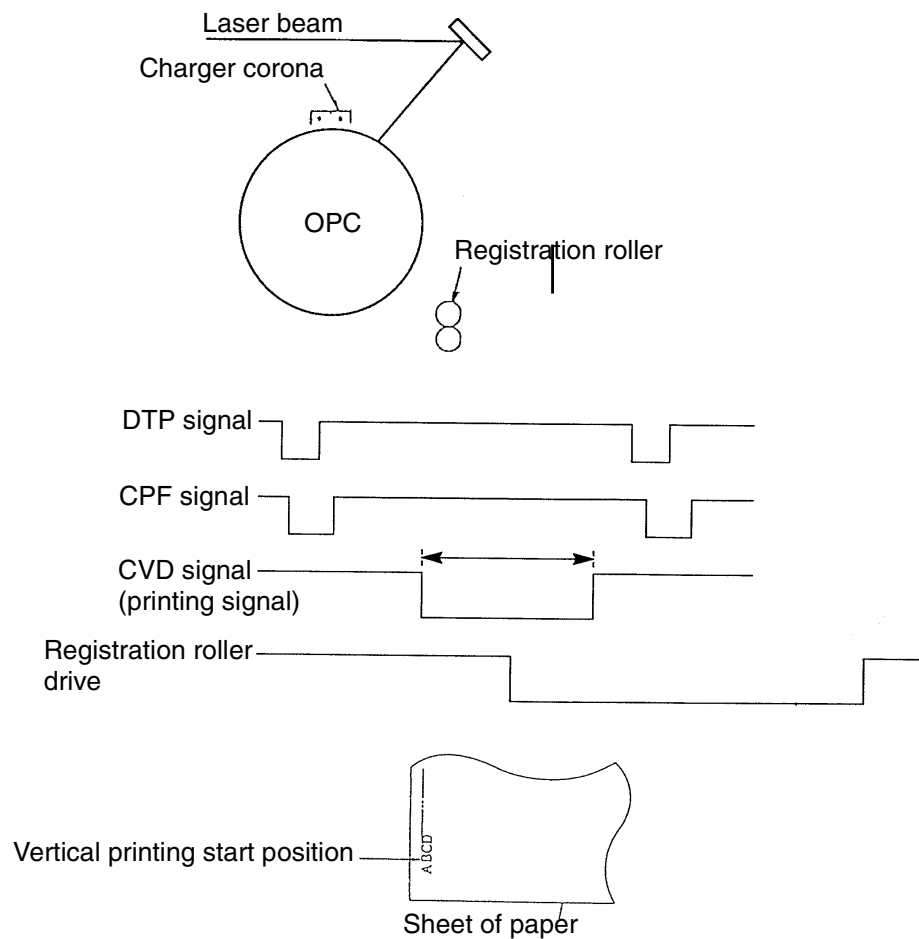


Figure 9-7. Vertical Synchronization

## 9.6. Paper Movement Process - Simplex Path Printing

### Outline of paper movement

This section describes the simplex path for the paper from the hopper.

#### **From one of the hoppers**

When the clutch is on, the pick roller picks a sheet of paper from one of the hoppers. The paper travels through the vertical path by rollers to the registration station.

#### **Registration station**

For the registration and skew correction, the edge of paper is fed until it attaches to all registration rollers. The rollers rotate in a forward direction according to the "CPF (control paper feed)" signal and the paper is consequently fed.

#### **Separation corona**

After the transfer, a high (-) voltage and a high alternative voltage are applied by the corona emission of the separation corona to discharge an electrostatic charge between the paper and the OPC drum.

#### **Conveyance belt**

After the separation corona separates the paper from the OPC drum, the conveyance belt that has a suction mechanism feeds the paper to the fuser unit.

#### **Fuser unit**

The fuser unit fuses the toner on the paper and feeds the paper to the switch back station.

#### **Switch back station**

In case of face up mode, the paper is directly fed to the output tray without flipping over. In case of face down mode, the paper is flipped over and fed to the output tray.

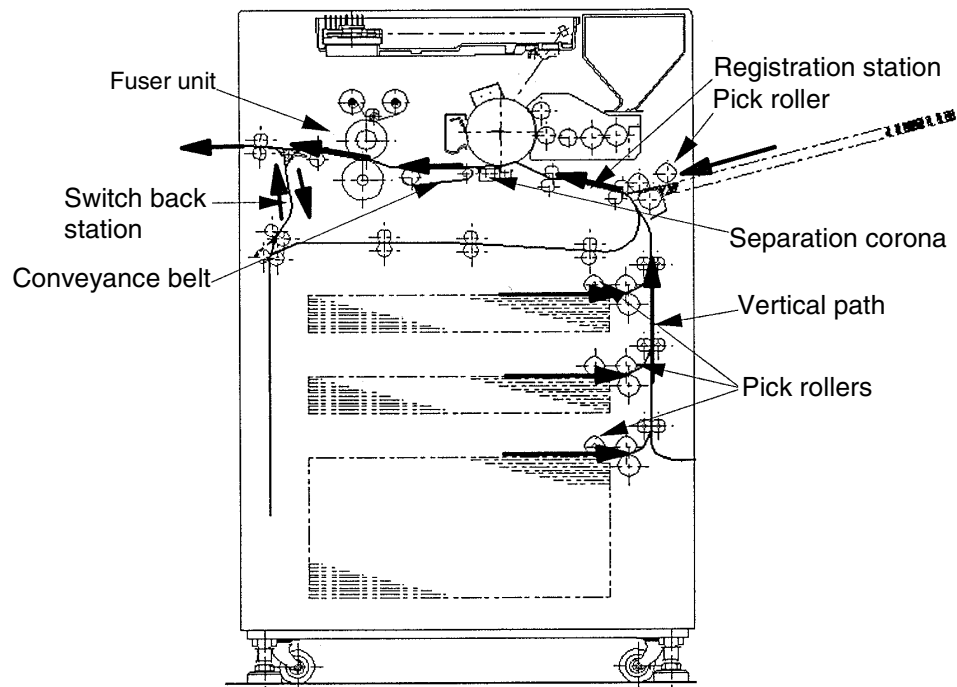


Figure 9-8. Paper movement process - Simplex path printing

## 9.7. Paper Movement Process - Duplex Path Printing

### Outline of paper movement

This section describes the duplex path for the paper from the hopper.

The duplex paper movement is the same as the simplex paper movement except that after the paper rides on the conveyance belt and sent to the fuser unit for fusing, then after the last edge of the paper passes the switch back sensor, the switch back gate changes. The paper then changes direction at the switch back to go through the duplex path so as to print to the reverse side of the paper. It then travels to the output tray flipping over.

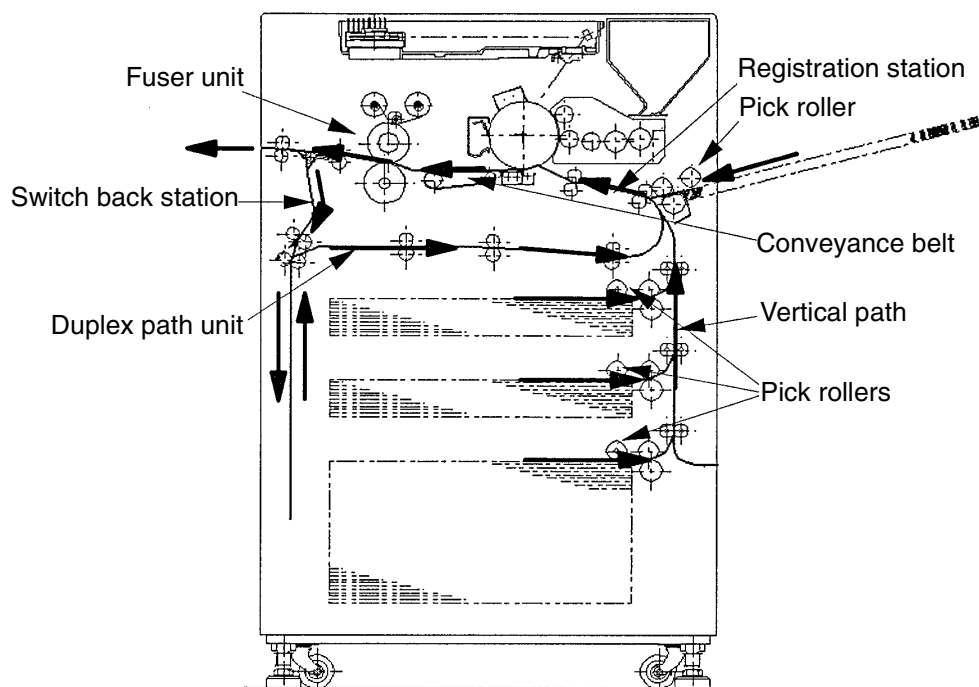


Figure 9-9. Paper movement process - Duplex path printing

## 9.8. Paper Movement Process - Paper Feed Mechanism

### 9.8. (1) Pick and Separate Mechanism

The left side shows the paper feed mechanism with one sheet being picked by the rubber pick rollers. The separate roller has a torque limiter and rotates when friction is charged over a certain level. When one sheet is picked, force is applied to the separator roller so it turns. When two sheets are picked by the pick roller the separator roller stops and only one sheet is fed.

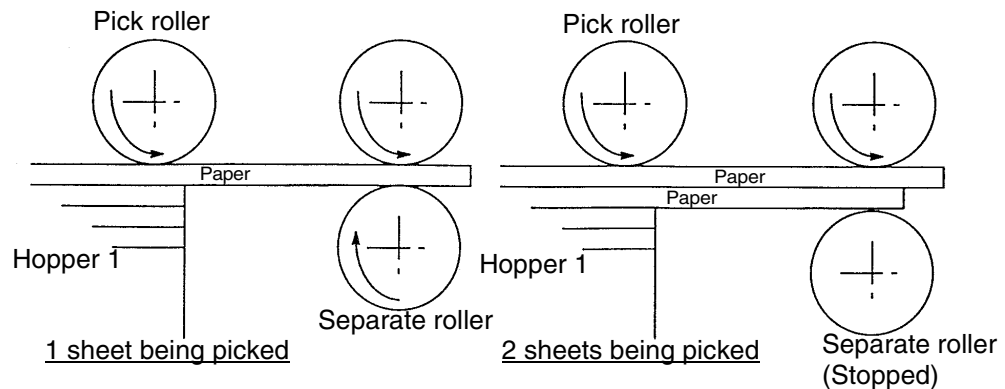
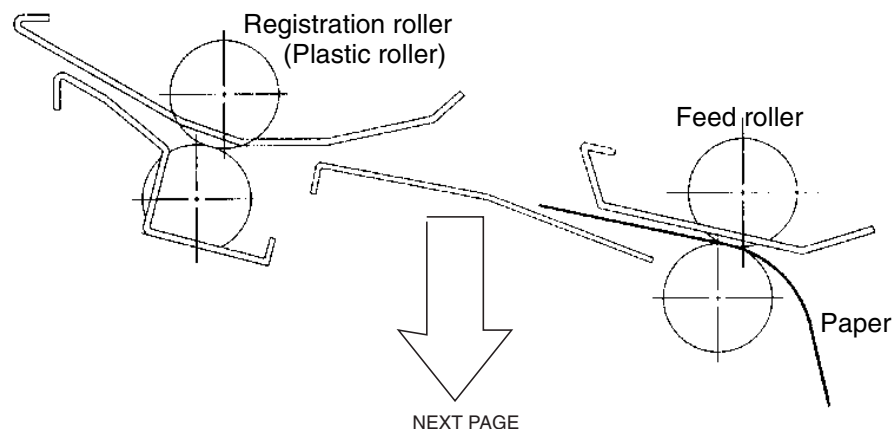


Figure 9-10. Paper movement - Pick/Separation Roller Mechanism

### 9.8. (2) Registration Station

Automatic registration is achieved by the skew sensor which measures the time difference between the start of the "CPF" signal to the detection of the top edge of the paper. The roller's velocity (registration roller) feeds the paper back to compensate for the difference between the designed time (time till the exposed position on the OPC reaches to the transfer point) and the actual measured time.



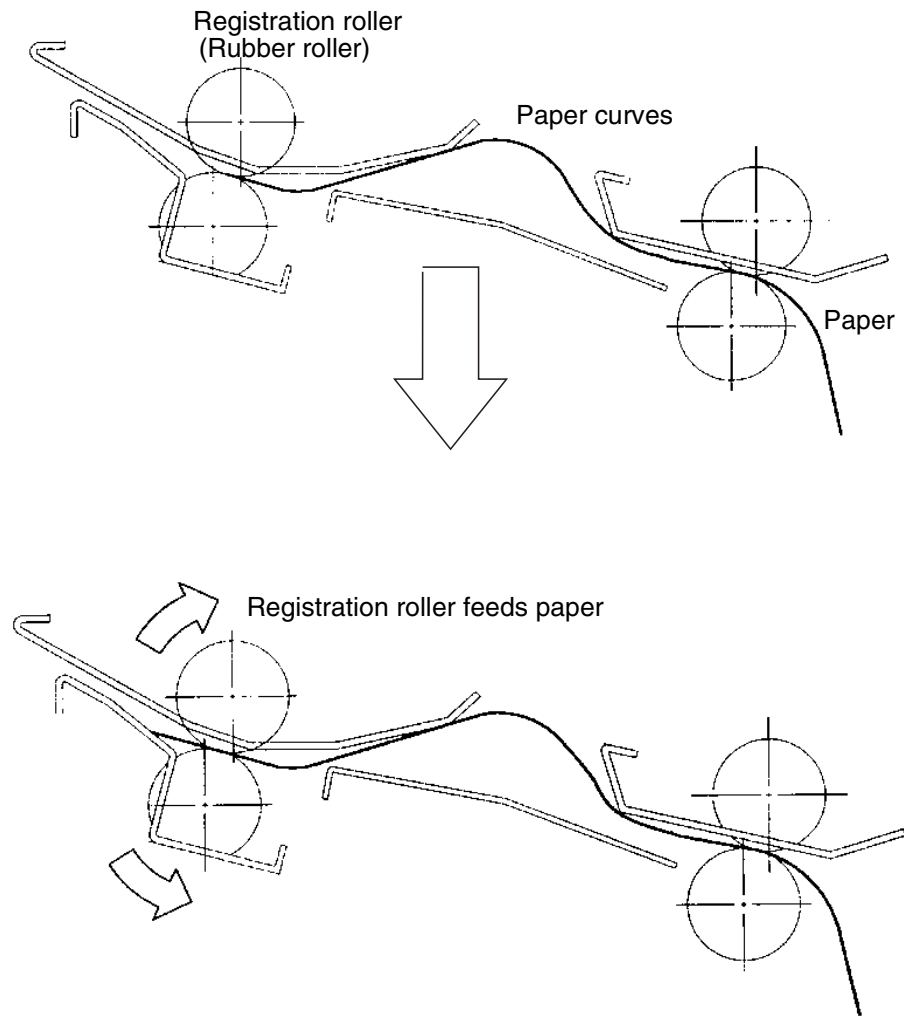


Figure 9-11. Paper movement - Pick/Separation Roller Mechanism

### 9.8. (3) Switch Back Station

#### Face up mode for simplex printing

The flip gate moves downward and a sheet of paper travels to the output tray.

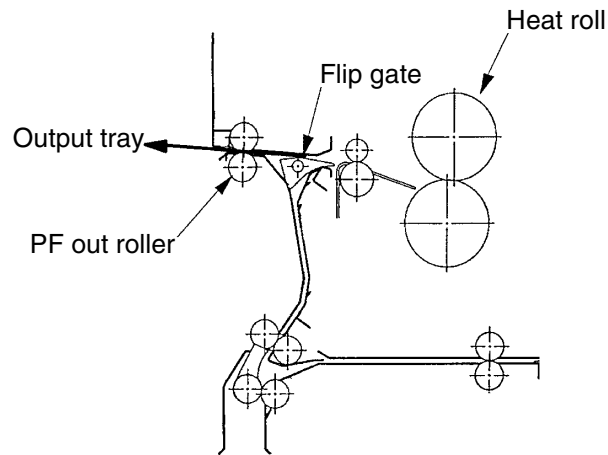


Figure 9-12. Face up mode for simplex printing

#### Face down mode

The flip gate moves upward to feed a sheet of paper to the switch back station. The flip roller feeds the paper downward and stops for a moment. Then the flip roller reverses and the paper travels to the output tray.

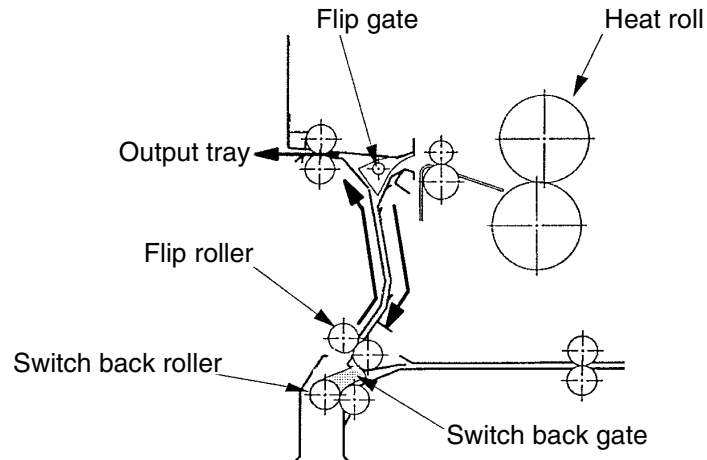


Figure 9-13. Face down mode

### Switch back for duplex printing

The flip gate moves upward to feed a sheet of paper to the switch back station. When the trailing edge of the paper approaches the switch back roller, the switch back roller stops for a moment.

The switch back gate moves downwards and the switch back roller starts reversing. Then the paper travels to the duplex paper path.

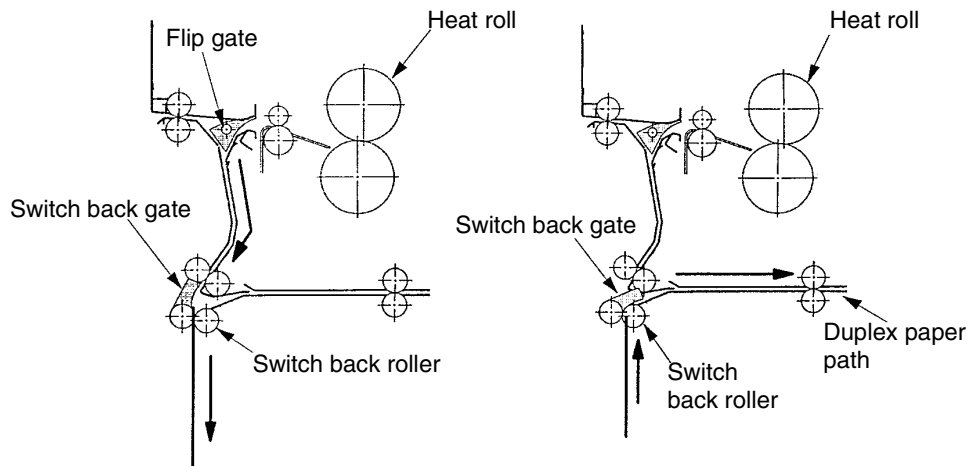


Figure 9-14. Switch back for duplex printing



## 9.9. Power Supplies

### 9.9. (1) Printer Power Supply

The input voltage of the printer is 200-240V AC. The power supply section protects the printer against individual abnormalities such as over-voltage, abnormal rise of temperatures, etc., in addition to its original function of AC and DC power to the printer.

Table 9-1. Output type of AC and DC and the major use and purpose

| Output Type               | Major Use and Purpose                                                                           |
|---------------------------|-------------------------------------------------------------------------------------------------|
| 200-240 AC (single phase) | HEATER LAMP, POWER SUPPLY OF THE CONTROLLER                                                     |
| +5V DC                    | LOGIC CONTROL, PAPER SENSORS, COVER SENSORS, THERMISTOR OF THE HEATROLL, AND TONER EMPTY SENSOR |
| +24V DC / +24VS DC        | MOTORS, FANS, SOLENOIDS, CLUTCHES, AND HIGH VOLTAGE POWER SUPPLY                                |

Block Diagram

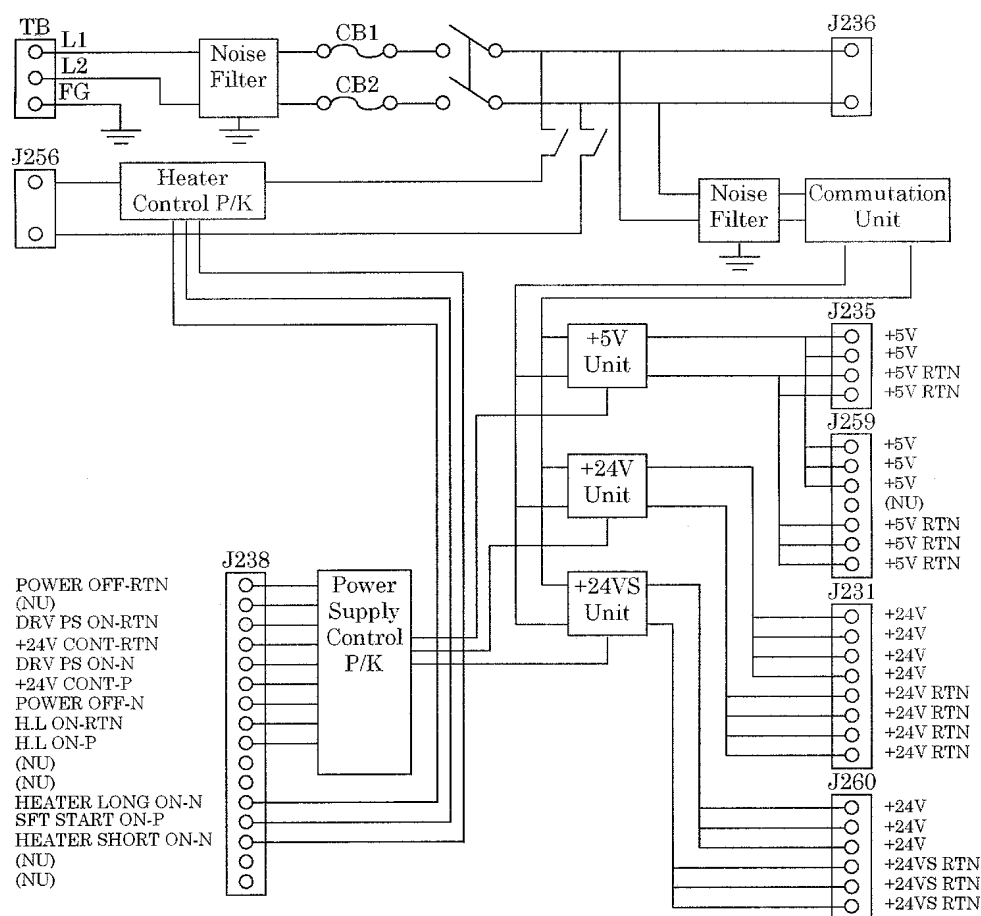


Figure 9-15. Printer Power Supply

## 9.9. (2) Controller Power Supply

The input voltage of the controller is 200-240V AC. The power supply section protects the controller against individual abnormalities such as over-voltage, abnormal rise of temperatures, etc., in addition to its original function of AC and DC power to the controller.

Table 9-2. Output type of AC and DC and the major use and purpose

| Output Type | Major Use and Purpose |
|-------------|-----------------------|
| +5V DC      | LOGIC CONTROL         |
| +12V DC     | HDD                   |

Block Diagram

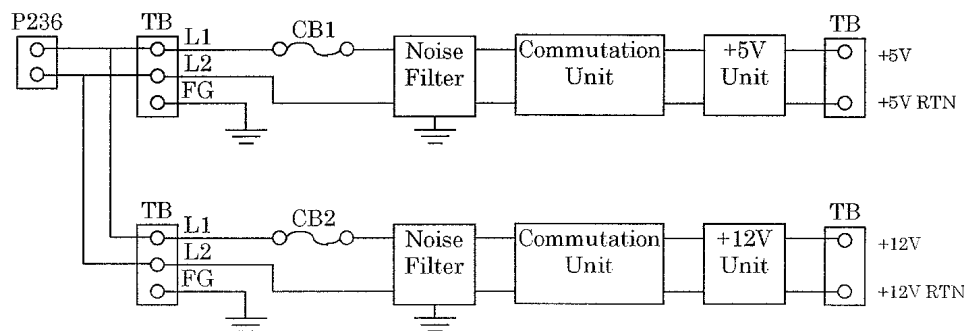


Figure 9-16. Controller Power Supply

### 9.9. (3) High Voltage Power Supply

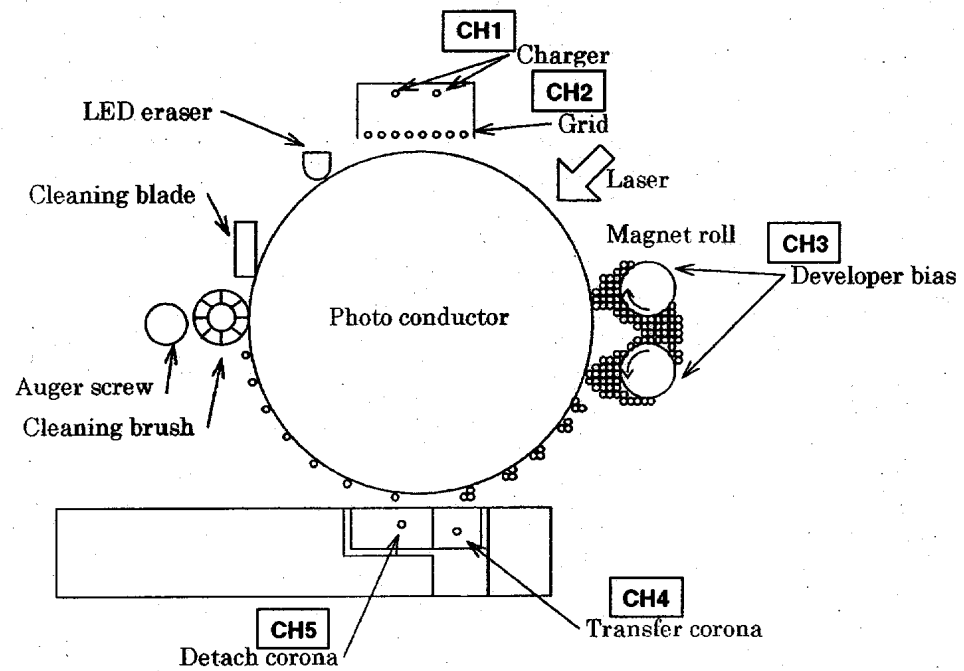


Figure 9-17. High Voltage Power Supply

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## 9.10. DE (Device Electronics)

The DE consists of the main control print board which has two CPUs and mainly three driver print boards. The names together with their functions are described below.

CPxxx      This contains two CPUs which control the entire printer, a driver of motors for the greater part of the printer, and contains the controller interface logic.

It also accommodates circuits for receiving commands from the controller and control signals, circuit for reporting the status of the printer interior(device data) to the controller, etc.

The functions of this P/K are described below:

Paper feed control

Paper skew detection

Timing transfer control

Heater temperature control

High voltage power supply control

Toner density control

OCxxx      This contains the circuits for the optical unit which is composed of receiver circuits for various sensors and I/O ports for the mirror motor control signals.

The functions of this P/K are described below:

Video signal control

Laser control

Beam detect control

Mirror motor drive control

HPxxx      This contains two kinds of standard hopper P/Ks with extension hoppers available.

The functions of this P/K are described below:

Paper pick control for each hopper

Paper feed control

Search of quantity of remaining paper

## 9.11. Printer Control System Diagram

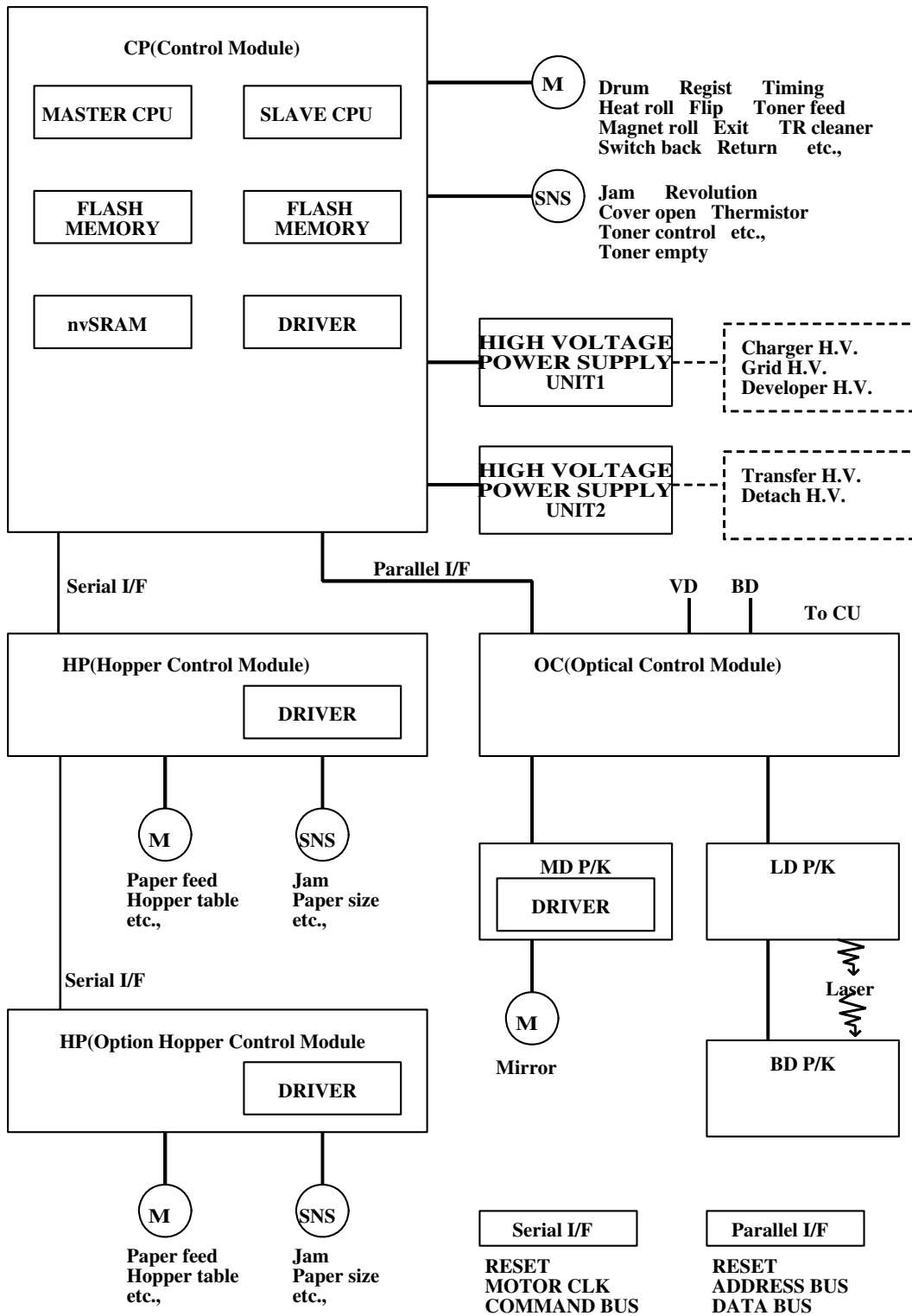


Figure 9-18. Printer Control Circuit Diagram

## 9.12. Secondary Circuit Connection

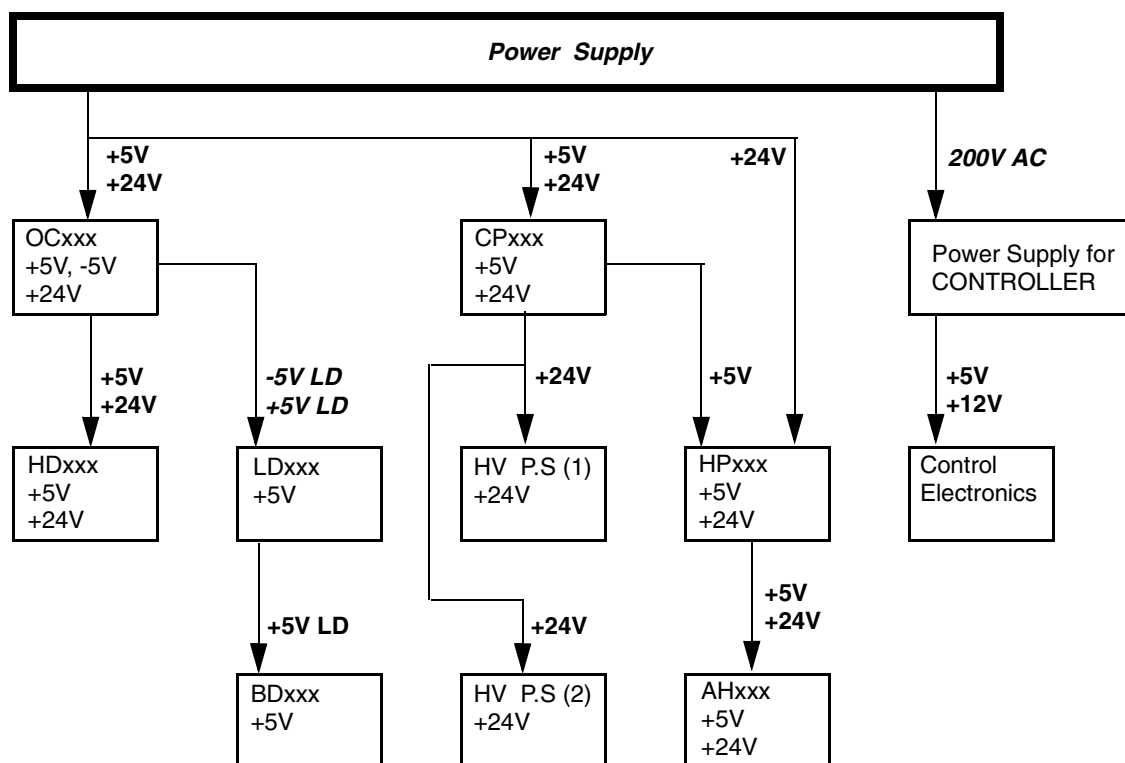


Figure 9-19. Secondary Circuit Connection

### Abbreviations:

|                                   |                     |                                 |
|-----------------------------------|---------------------|---------------------------------|
| CP: Control Process               | OC: Optical Control | MD: Mirror Motor Driver         |
| LD: Laser Driver                  | BD: Beam Detect     | HP: Hopper Driver               |
| HV P.S: High Voltage Power Supply |                     | AH: High Capacity Hopper Driver |

## 9.13. Finisher SR5000 Power Supply

The input voltage of the Power Supply for Finisher SR5000 is 200-240V AC. This power supply section protects the Finisher SR5000 against individual abnormalities such as over-voltage, abnormal rise of temperatures, etc., in addition to its original function of AC and DC power to the Finisher SR5000.

Table 9-3. Output type and the major use and purpose

| Output type | Major use and purpose                    |
|-------------|------------------------------------------|
| +24V DC     | Finisher control board, Finisher devices |

Block Diagram

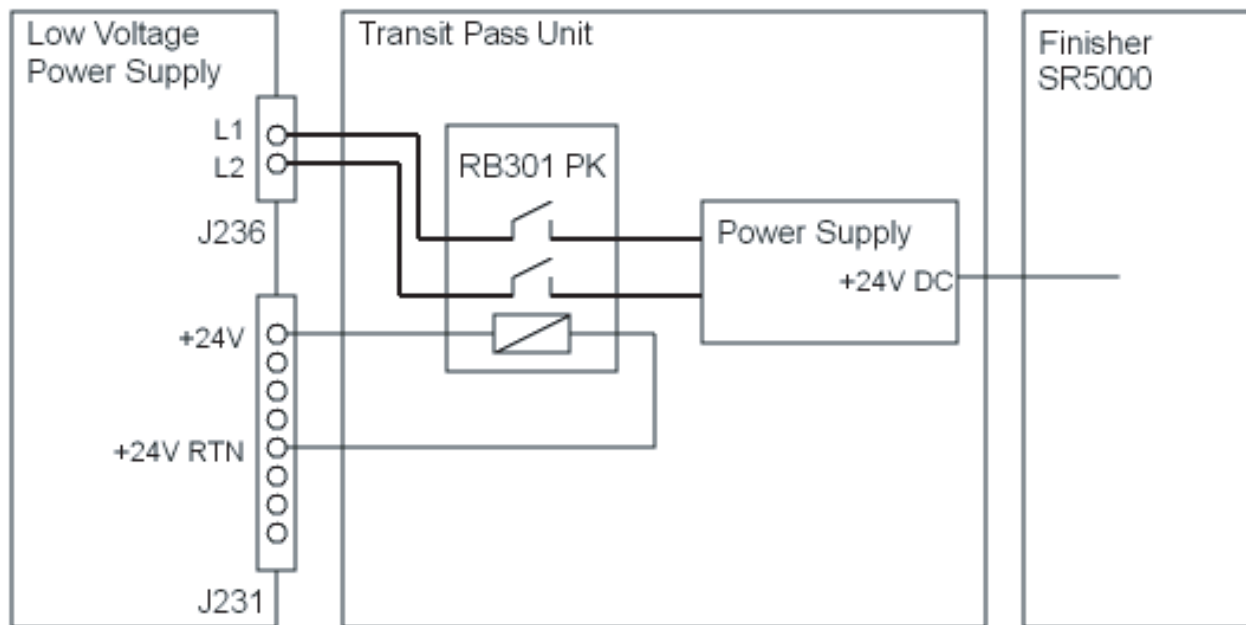


Figure 9-20. Finisher SR5000 Power Supply

|     |   |     |  |
|-----|---|-----|--|
| M M | L | 0 0 |  |
|-----|---|-----|--|



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## 4. TROUBLESHOOTING

### 4.1 PROGRAM DOWNLOAD

#### 4.1.1 OVERVIEW

Here are some important points to keep in mind when downloading software:

- If an error interrupts download processing, the machine cannot operate normally with the program software only partially downloaded.
- When download processing execution starts, “Downloading...” is displayed and when downloading has completed successfully, the message is cleared.
- If the download is interrupted when the “Downloading ...” message is displayed, the machine does not attempt a re-try.
- The program that downloads firmware from an SD card is part of the GW controller software. If downloading this software is interrupted, the program stored in the machine may be corrupted. Because of this, it may not be possible to restart the downloading program. (In addition, if the GW controller software cannot be downloaded, other software on other SD cards cannot be downloaded.) However, it may be possible to restart the program without replacing the board by setting DIP SW 1 on the controller to ON, and re-starting.

Trouble-  
shooting

#### 4.1.2 RECOVERY METHODS

When an error occurs during downloading, an error code is displayed on the operation panel.

- If the download procedure can be re-started, re-start the download procedure.
- If the download procedure cannot be downloaded for other than the GW controller, replace the board where the downloaded program is stored.
- If the download procedure cannot be downloaded for the GW controller, set DIP SW 1 to ON. Power the machine off and on to start the downloading program. After downloading has completed, set the DIP SW to OFF then power the machine off and on again.

### 4.1.3 DOWNLOAD ERROR CODES

|    | Display                                                             | Details                                                                                                                                   | Recovery                                                                                                                                                                                                                                            |
|----|---------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 01 | Reboot after<br>card insert E01<br>↓<br>Module ID<br>Card No. xx/xx | Controller ROM update error 1                                                                                                             | <ul style="list-style-type: none"> <li>• Use the correct card</li> </ul>                                                                                                                                                                            |
|    |                                                                     | When the update break data is stored in NVRAM, the break module information and the decompression module capable of writing do not match. |                                                                                                                                                                                                                                                     |
| 02 | Download Error E02<br>Power off/on                                  | Controller ROM update error 2.                                                                                                            | <ul style="list-style-type: none"> <li>• Cycle the machine off/on to rewrite</li> </ul>                                                                                                                                                             |
|    |                                                                     | Error occurs during ROM update program initialization.                                                                                    |                                                                                                                                                                                                                                                     |
| 03 | Download Error E03<br>Power off/on                                  | Controller ROM update error 3                                                                                                             | <ul style="list-style-type: none"> <li>• Cycle the machine off/on</li> <li>• Install the missing ROM DIMM</li> </ul>                                                                                                                                |
|    |                                                                     | The ROM for the write operation does not exist.                                                                                           |                                                                                                                                                                                                                                                     |
| 04 | Download Error E04<br>Power off/on                                  | Controller ROM update error 4                                                                                                             | <ul style="list-style-type: none"> <li>• Cycle the machine off/on</li> <li>• Set DIP SW 1 to ON and retry</li> <li>• Replace RAM DIMM</li> <li>• Replace controller board</li> </ul>                                                                |
|    |                                                                     | GZIP data confirmation fails. (CRC value check)                                                                                           |                                                                                                                                                                                                                                                     |
| 05 | Download Error E05<br>Power off/on                                  | Controller ROM update error 5                                                                                                             | <ul style="list-style-type: none"> <li>• Cycle the machine off/on</li> <li>• Set DIP SW 1 to ON and retry</li> <li>• Replace RAM DIMM</li> <li>• Replace controller board</li> </ul>                                                                |
|    |                                                                     | Error occurs when writing to the device.                                                                                                  |                                                                                                                                                                                                                                                     |
| 06 | Download Error E06<br>Power off/on                                  | Controller ROM update error 6                                                                                                             | <ul style="list-style-type: none"> <li>• Turn the machine power off/on.</li> <li>• Set controller DIPSW-1 to ON to force the machine to write to ROM.</li> <li>• If you cannot force the machine to write, replace the controller board.</li> </ul> |
|    |                                                                     | CPU clock error.                                                                                                                          |                                                                                                                                                                                                                                                     |
| 19 | Download Error E19<br>Power off/on                                  | Controller ROM update error 7                                                                                                             | <ul style="list-style-type: none"> <li>• Software defective</li> </ul>                                                                                                                                                                              |
|    |                                                                     | Schedule data is unclear.                                                                                                                 |                                                                                                                                                                                                                                                     |
| 20 | Down Error E20<br>Power Off/On                                      | System error 1 (+SC991)                                                                                                                   | <ul style="list-style-type: none"> <li>• Cycle the machine off/on and re-try</li> <li>• Replace controller board</li> </ul>                                                                                                                         |
|    |                                                                     | The physical address cannot be mapped. Software/hardware is defective                                                                     |                                                                                                                                                                                                                                                     |
| 21 | Download Error E21<br>Power Off/On                                  | System error 2 (+SC991)                                                                                                                   | <ul style="list-style-type: none"> <li>• Cycle the machine off/on and re-try.</li> <li>• Replace RAM</li> <li>• Replace the controller board</li> </ul>                                                                                             |
|    |                                                                     | There is not sufficient memory to download.                                                                                               |                                                                                                                                                                                                                                                     |

|    | Display                                                     | Details                                                                                                                                                                | Recovery                                                                                                                                                                 |
|----|-------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 22 | Download Error E22<br>Module ID<br>Card No xx/xx            | System error 3 (+SC991)                                                                                                                                                | <ul style="list-style-type: none"> <li>• Cycle the machine off/on and re-try.</li> <li>• Replace card</li> <li>• Replace controller board</li> </ul>                     |
|    |                                                             | Data fails to decompress. Card defective.                                                                                                                              |                                                                                                                                                                          |
|    | SC991                                                       | System error 4                                                                                                                                                         | <ul style="list-style-type: none"> <li>• Cycle the machine off/on and re-try</li> <li>• Set DIP SW 1 to ON and re-try</li> <li>• Replace the controller board</li> </ul> |
|    |                                                             | "Selfupdate" does not execute. Software defective.                                                                                                                     |                                                                                                                                                                          |
| 23 | Download Error E24<br>Power Off/On                          | System error 5                                                                                                                                                         | <ul style="list-style-type: none"> <li>• Cycle the machine off/on and re-try</li> <li>• Replace the card</li> <li>• Replace the controller board</li> </ul>              |
|    |                                                             | Card read/write error. Software or card defective.                                                                                                                     |                                                                                                                                                                          |
| 30 | No Valid Data E30                                           | Download dysfunction 1                                                                                                                                                 | <ul style="list-style-type: none"> <li>• HDD defective</li> <li>• HDD harness disconnected, defective</li> </ul>                                                         |
|    |                                                             | Print download is not possible. Cannot download to HDD because HDD not installed or defective.                                                                         |                                                                                                                                                                          |
| 31 | Reboot After Card Insert E31<br>Module ID<br>Card No. xx/xx | Download dysfunction 2                                                                                                                                                 | <ul style="list-style-type: none"> <li>• Set the correct cards in the correct order</li> </ul>                                                                           |
|    |                                                             | Download continuity error with more than one card. The second or later card is not compatible.                                                                         |                                                                                                                                                                          |
| 32 | Reboot After Card Insert E32<br>Module ID<br>Card No. xx/xx | Download dysfunction 3                                                                                                                                                 | <ul style="list-style-type: none"> <li>• Use the correct card</li> <li>• If power failure caused the failure, remove the card and insert another.</li> </ul>             |
|    |                                                             | Download interrupted because card is not correct, or power failure interrupted download.                                                                               |                                                                                                                                                                          |
| 33 | No Valid Data E33                                           | Download dysfunction 4                                                                                                                                                 | <ul style="list-style-type: none"> <li>• Use the correct card</li> </ul>                                                                                                 |
|    |                                                             | Card version error. Attempted to download program using a card with the wrong version number.                                                                          |                                                                                                                                                                          |
| 34 | No Valid Data E34                                           | Download dysfunction 5                                                                                                                                                 | <ul style="list-style-type: none"> <li>• Use the correct card</li> </ul>                                                                                                 |
|    |                                                             | Specification error. DOM card set in EXP machine, or vice versa.                                                                                                       |                                                                                                                                                                          |
| 35 | No Valid Data E35                                           | Download dysfunction 6                                                                                                                                                 | <ul style="list-style-type: none"> <li>• Use the correct card</li> </ul>                                                                                                 |
|    |                                                             | Wrong model. The inserted card is for another model.                                                                                                                   |                                                                                                                                                                          |
| 36 | No Valid Data E36                                           | Download dysfunction 7                                                                                                                                                 | <ul style="list-style-type: none"> <li>• Use the correct card, inserted correctly</li> <li>• Install a ROM DIMM if none is installed</li> </ul>                          |
|    |                                                             | Module error. The program that you are attempting to download does not exist on the machine, or the contact points at the card and the machine slot are not connected. |                                                                                                                                                                          |
| 37 | No Valid Data E37                                           | Download dysfunction 8                                                                                                                                                 | <ul style="list-style-type: none"> <li>• Use an unused card</li> </ul>                                                                                                   |
|    |                                                             | Edit option card error. You attempted to employ a used card.                                                                                                           |                                                                                                                                                                          |
| 40 | Download Error E40<br>Module ID<br>Card No. xx/xx           | Download result failure 1                                                                                                                                              | <ul style="list-style-type: none"> <li>• Cycle the machine off/on and re-try</li> </ul>                                                                                  |
|    |                                                             | Engine download failure.                                                                                                                                               |                                                                                                                                                                          |
| 41 | Download Error E41<br>Module ID<br>Card No. xx/xx           | Download result failure 2                                                                                                                                              | <ul style="list-style-type: none"> <li>• Cycle the machine off/on and re-try</li> </ul>                                                                                  |
|    |                                                             | Fax download failure.                                                                                                                                                  |                                                                                                                                                                          |

|    | Display                                           | Details                                                                                                          | Recovery                                                                                                                                                                                                                                                                                                                       |
|----|---------------------------------------------------|------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 42 | Download Error E42<br>Module ID<br>Card No. xx/xx | Download result failure 3                                                                                        | <ul style="list-style-type: none"> <li>• Cycle the machine off/on and re-try</li> </ul>                                                                                                                                                                                                                                        |
|    |                                                   | Operation panel or language download failed. For this error, sometimes the message may not be displayed.         |                                                                                                                                                                                                                                                                                                                                |
| 43 | Download Error E43<br>Module ID<br>Card No. xx/xx | Download result failure 4                                                                                        | <ul style="list-style-type: none"> <li>• Cycle the machine off/on and re-try</li> </ul>                                                                                                                                                                                                                                        |
|    |                                                   | Print download failed.                                                                                           |                                                                                                                                                                                                                                                                                                                                |
| 44 | Download Error E44<br>Module ID Card No.          | Download result failure 5                                                                                        | <ul style="list-style-type: none"> <li>• Turn the machine power off/on.</li> <li>• Replace the SD card with the start-up SD card that has the source data.</li> <li>• Set controller DIPSW-1 to ON to force the machine to write</li> <li>• If you cannot force the machine to write, replace the controller board.</li> </ul> |
|    |                                                   | The data targeted for the write operation could not be accessed.                                                 |                                                                                                                                                                                                                                                                                                                                |
| 50 | No Valid Data E50                                 | Download invalid                                                                                                 | <ul style="list-style-type: none"> <li>• Use the correct SD card.</li> </ul>                                                                                                                                                                                                                                                   |
|    |                                                   | The source data for the update could not be authenticated.                                                       |                                                                                                                                                                                                                                                                                                                                |
| 51 | (no display)                                      | Remote ROM update failure 1                                                                                      | <ul style="list-style-type: none"> <li>• Turn the machine power off/on and try again.</li> </ul>                                                                                                                                                                                                                               |
|    |                                                   | The source data for the ROM update is corrupted because the machine is operating and an SC code has been issued. |                                                                                                                                                                                                                                                                                                                                |
| 52 | (no display)                                      | Remote ROM update failure 2                                                                                      | <ul style="list-style-type: none"> <li>• Try again with the correct data.</li> </ul>                                                                                                                                                                                                                                           |
|    |                                                   | The source data received for the ROM update is corrupted; it failed a SUM check due to its abnormal length.      |                                                                                                                                                                                                                                                                                                                                |
| 53 | (no display)                                      | Download result failure 6                                                                                        | <ul style="list-style-type: none"> <li>• Do the download procedure again.</li> </ul>                                                                                                                                                                                                                                           |
|    |                                                   | The previous download in progress was cancelled.                                                                 |                                                                                                                                                                                                                                                                                                                                |

#### 4.1.4 PAPER JAM CODES

When a jam occurs, a graphic illustration of the main machine, finisher, booklet finisher, Z-fold unit, cover interposer tray, LCT, and bypass tray appears on the operation panel screen.

The location of the jammed paper becomes lit (does not flash) in the graphic illustration.

A jam code is displayed on the operation panel to indicate the cause and location of the jam. For more details, please refer to the tables on the following pages.

**Note concerning the tables**

- Late: Paper should be at the sensor, but it is not
- Lag: There should be no paper at the sensor, but paper is present

**Copier B234/B235/B236**

| Display | No. | Jam Cause                           |
|---------|-----|-------------------------------------|
| A       | 3   | 1st Paper Feed Sensor – Late        |
| A3      | 4   | 2nd Paper Feed Sensor – Late        |
| A2      | 5   | 3rd Paper Feed Sensor – Late        |
| U2      | 6   | 4th Paper Feed Sensor – Late        |
| U4      | 7   | 5th Paper Feed Sensor – Late        |
| U5      | 8   | 6th Paper Feed Sensor – Late        |
| V       | 9   | 7th Paper Feed Sensor – Late        |
| B1      | 10  | 1st Transport Sensor - Late         |
| B1      | 11  | 2nd Transport Sensor - Late         |
| B1      | 12  | 3rd Transport Sensor - Late         |
| U       | 13  | 4th Transport Sensor - Late         |
| U       | 14  | 5th Transport Sensor - Late         |
| U       | 15  | 6th Transport Sensor - Late         |
| U       | 16  | 7th Transport Sensor - Late         |
| B4      | 17  | LCT Relay Sensor - Late             |
| B4      | 18  | LCT Exit Sensor - Late              |
| B1      | 19  | Upper Relay Sensor - Late           |
| C       | 20  | Registration Sensor - Late          |
| D       | 21  | Job Time Sensor – Late              |
| D       | 22  | Exit Sensor - Late                  |
| Z1      | 23  | Duplex Entrance Sensor - Late       |
| Z4      | 24  | Duplex Transport Sensor 1 – Late    |
| Z4      | 25  | Duplex Transport Sensor 2 – Late    |
| Z4      | 26  | Duplex Transport Sensor 3 – Late    |
| Z1      | 27  | Duplex Inverter Sensor - Late       |
| Z1      | 28  | Duplex Inverter Relay Sensor - Late |
| A       | 53  | 1st Paper Feed Sensor – Lag         |
| A3      | 54  | 2nd Paper Feed Sensor – Lag         |
| A2      | 55  | 3rd Paper Feed Sensor – Lag         |
| U2      | 56  | 4th Paper Feed Sensor – Lag         |
| U4      | 57  | 5th Paper Feed Sensor – Lag         |
| U5      | 58  | 6th Paper Feed Sensor – Lag         |
| V       | 59  | 7th Paper Feed Sensor – Lag         |
| U       | 60  | 1st Transport Sensor - Lag          |
| U       | 61  | 2nd Transport Sensor - Lag          |
| U       | 62  | 3rd Transport Sensor - Lag          |
| U       | 63  | 4th Transport Sensor - Lag          |
| U       | 64  | 5th Transport Sensor - Lag          |
| U       | 65  | 6th Transport Sensor - Lag          |
| U       | 66  | 7th Transport Sensor - Lag          |
| B4      | 67  | LCT Relay Sensor – Lag              |
| U       | 68  | LCT Exit Sensor - Lag               |
| B1      | 69  | Upper Relay Sensor - Lag            |
| C       | 70  | Registration Sensor - Lag           |
| D       | 71  | Job Time Sensor – Lag               |
| D       | 72  | Exit Sensor - Lag                   |
| Z1      | 73  | Duplex Entrance Sensor - Lag        |
| Z4      | 74  | Duplex Transport Sensor 1 – Lag     |
| Z4      | 75  | Duplex Transport Sensor 2 – Lag     |
| Z4      | 76  | Duplex Transport Sensor 3 – Lag     |
| Z1      | 77  | Duplex Inverter Sensor - Lag        |
| Z1      | 78  | Duplex Inverter Relay Sensor - Lag  |
| B1      | 99  | Double-Feed Sensor                  |

***Paper Jam Locations – Finisher B830***

| Display | No. | Jam Cause                      |
|---------|-----|--------------------------------|
| R1~3    | 101 | Entrance Sensor - Late         |
| R1~3    | 102 | Entrance Sensor – Lag          |
| R1~3    | 103 | Upper Tray Exit Sensor – Late  |
| R1~3    | 104 | Upper Tray Exit Sensor – Lag   |
| R1~3    | 105 | Shift Tray Exit Sensor – Late  |
| R1~3    | 106 | Shift Tray Exit Sensor – Lag   |
| R4~8    | 107 | Staple Tray Exit Sensor – Late |
| R4~8    | 108 | Staple Tray Exit Sensor – Lag  |
| R4~8    | 109 | Pre-Stack Paper Sensor - Late  |
| R4~8    | 110 | Pre-Stack Paper Sensor – Lag   |
| R4~8    | 111 | Stack Feed-Out Belt HP Sensor  |
| R1~3    | 112 | Transport Motors               |
| R1~3    | 113 | Shift Tray Lift Motor          |
| R4~8    | 114 | Jogger Motor                   |
| R1~3    | 115 | Shift Motor                    |
| R4~8    | 116 | Staple Motor                   |
| R4~8    | 117 | Stack Feed-Out Belt Motor      |
| R1~3    | 118 | Punch Motor                    |
| R4~8    | 119 |                                |
| R4~8    | 120 | Pre-Stack Transport Motor      |
| R1~3    | 121 |                                |

***Cover Interposer Tray B835***

| Display | No. | Jam Cause                            |
|---------|-----|--------------------------------------|
| Q1      | 130 | 1st Paper Feed Sensor – Late         |
| Q1      | 131 | 1st Paper Feed Sensor – Lag          |
| Q2      | 132 | 2nd Paper Feed Sensor – Late         |
| Q2      | 133 | 2nd Paper Feed Sensor – Lag          |
| Q3~4    | 134 | 1st Transport Sensor – Late          |
| Q3~4    | 135 | 1st Transport Sensor – Lag           |
| Q3~4    | 136 | 2nd Transport Sensor – Late          |
| Q3~4    | 137 | 2nd Transport Sensor – Lag           |
| Q3~4    | 138 | 1st Vertical Transport Sensor - Late |
| Q3~4    | 139 | 1st Vertical Transport Sensor - Lag  |
| Q3~4    | 140 | 2nd Vertical Transport Sensor - Late |
| Q3~4    | 141 | 2nd Vertical Transport Sensor - Lag  |
| Q3~4    | 142 | Vertical Exit Sensor – Late          |
| Q3~4    | 143 | Vertical Exit Sensor - Lag           |
| Q3~4    | 144 | Entrance Sensor – Late               |
| Q3~4    | 145 | Entrance Sensor – Lag                |
| Q3~4    | 146 | Exit Sensor – Late                   |
| Q3~4    | 147 | Exit Sensor – Lag                    |
| Q1      | 148 | 1st Lift Motor                       |
| Q2      | 149 | 2nd Lift Motor                       |
| Q1      | 150 | 1st Pick-Up Motor                    |
| Q2      | 151 | 2nd Pick-Up Motor                    |

***Booklet Finisher B836***

| Display | No. | Jam Cause                         |
|---------|-----|-----------------------------------|
| M1~M3   | 160 | Entrance Sensor – Late            |
| M1~M3   | 161 | Entrance Sensor – Lag             |
| M4~M6   | 162 | Stapling Tray Paper Sensor – Late |
| M4~M6   | 163 | Stapling Tray Paper Sensor – Lag  |
| M7~11   | 164 | Stack Present Sensor – Late       |
| M7~11   | 165 | Stack Present Sensor – Lag        |
| M7~11   | 166 | Fold Unit Entrance Sensor – Late  |
| M7~11   | 167 | Fold Unit Entrance Sensor – Lag   |
| M7~11   | 168 | Fold Unit Exit Sensor – Late      |
| M7~11   | 169 | Fold Unit Exit Sensor – Lag       |
| M7~11   | 170 | Exit Sensor – Late                |
| M7~11   | 171 | Exit Sensor – Lag                 |
| M7~11   | 174 | Jogger Fence                      |
| M7~11   | 175 | Stack Feed-Out Belt               |
| M7~11   | 176 | Booklet Stapler – Front           |
| M7~11   | 177 | Booklet Stapler – Rear            |
| M7~11   | 178 | Stack Junction Gate Motor         |
| M7~11   | 179 | Clamp Roller Retraction Motor     |
| M7~11   | 180 | Bottom Fence Lift Motor           |
| M7~11   | 181 | Fold Plate Motor                  |

***Paper Jam Locations – Z-Fold Unit B660***

| Display | No. | Jam Cause                      |
|---------|-----|--------------------------------|
| N1      | 200 | Feed Sensor – Late             |
| N1      | 201 | Feed Sensor – Lag              |
| N2~N3   | 202 | Fold Timing Sensor – Late      |
| N2~N3   | 203 | Fold Timing Sensor – Lag       |
| N2~N3   | 204 | Leading Edge Sensor – Late     |
| N2~N3   | 205 | Leading Edge Sensor – Lag      |
| N2~N3   | 206 | Upper Stopper HP Sensor – Late |
| N2~N3   | 207 | Upper Stopper HP Sensor – Lag  |
| N1      | 208 | Upper Exit Sensor 1 – Late     |
| N1      | 209 | Upper Exit Sensor 1- Lag       |
| N2~N3   | 210 |                                |
| N2~N3   | 211 |                                |
| N2~N3   | 212 | Lower Exit Sensor 2 – Late     |
| N2~N3   | 213 | Lower Exit Sensor 2 – Lag      |
| N1      | 214 | Feed Motor                     |
| N2~N3   | 215 | Lower Stopper Motor            |
| N2~N3   | 216 | Upper Stopper Motor            |
| N2~N3   | 217 | Fan Motor                      |



## 4.2 SERVICE CALL CONDITIONS

### 4.2.1 SERVICE MODE LOCK/UNLOCK

At locations where the machine contains sensitive data, the customer engineer cannot operate the machine until the Administrator turns the service mode lock off. This function makes sure that work on the machine is always done with the permission of the Administrator.

1. If you cannot go into the SP mode, ask the Administrator to log in with the Operator Tool and then set "Service Mode Lock" to OFF. After he or she logs in:  
Operator Tools > System Settings > Administrator Tools > Service Mode Lock > OFF
  - This unlocks the machine and lets you get access to all the SP codes.
  - The CE can do servicing on the machine and turn the machine off and on. It is not necessary to ask the Administrator to log in again each time the machine is turned on.
2. If you must use the printer bit switches, go into the SP mode and set **SP 5169** to "1".
3. After machine servicing is completed:
  - Change **SP 5169** from "1" to "0".
  - Turn the machine off and on. Tell the administrator that you completed servicing the machine.
  - The Administrator will then set the "Service Mode Lock" to ON.

## 4.2.2 SERIES SERVICE CALL CONDITIONS

There are 4 levels of service call conditions.

| Level | Definition                                                                                                                                                                                                              | Reset Procedure                                              |
|-------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------|
| A     | Fusing unit SCs displayed on the operation panel. The machine is disabled. The operator cannot reset the SC.                                                                                                            | Enter SP mode, then turn the main power switch off and on.   |
| B     | SCs that disable only the features that use the defective item. These SCs are not shown to the operator under normal conditions. They are displayed on the operation panel only when the defective feature is selected. | Turn the main power switch off and on.                       |
| C     | SCs that are not shown on the operation panel. They are internally logged.                                                                                                                                              | Logging only                                                 |
| D     | Turning the operation switch (or main power switch) off then on resets these SCs. These SCs are displayed on the operation panel and displayed again if the error reoccurs.                                             | Turn the operation switch (or main power switch) off and on. |

### 4.2.3 SC CODE DESCRIPTIONS

#### Important

- If a problem concerns a circuit board, disconnect and reconnect the connectors and then test the machine. Often a loose or disconnected harness is the cause of the problem. Always do this before you decide to replace the PCB.
- If a motor lock error occurs, check the mechanical load before you decide to replace the motor or sensors.
- When a Level “A” or “B” SC occurs while in an SP mode, the machine cannot display the SC number. If this occurs, check the SC number after leaving the SP mode.
- If you set SP 5875 to ‘on’, the machine reboots automatically when the machine issues a Level “B&D” SC code. This is done for Level “D” SC codes only.

#### CAUTION

**Never turn off the main power switch when the power LED is lit or flashing. To avoid damaging the hard disk or memory, press the operation switch to switch the power off, wait for the power LED to go off, and then switch the main power switch off.**

Trouble-  
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**NOTE:** The main power LED () lights or flashes while the platen cover or ARDF is open, while the main machine is communicating with a facsimile or the network server, or while the machine is accessing the hard disk or memory for reading or writing data.

**SC Code Group Designations**

| <b>Group</b>                       | <b>SC</b> | <b>System</b>            |
|------------------------------------|-----------|--------------------------|
| Scanning                           | 100       | Lamp Control             |
|                                    | 120       | Scanning                 |
|                                    | 140       | Magnification            |
|                                    | 160       | Filter Processing        |
|                                    | 190       | Other                    |
| Image Creation                     | 300       | Charge                   |
|                                    | 320       | Image Writing (Exposure) |
|                                    | 340       | Development              |
|                                    | 360       | Image Memory             |
|                                    | 400       | Transfer                 |
|                                    | 410       | Separation               |
|                                    | 420       | Cleaning                 |
|                                    | 430       | Quenching                |
|                                    | 440       | Drum                     |
|                                    | 490       | Other                    |
| Feed, Transport, Duplexing, Fusing | 500       | Feed, Transport          |
|                                    | 520       | Duplexing                |
|                                    | 540       | Fusing                   |
|                                    | 590       | Other                    |
| Communication                      | 600       | Internal Communication   |
|                                    | 620       | External Communication   |
|                                    | 690       | Other                    |
| Peripheral Devices                 | 700       | ADF                      |
|                                    | 720       | Finishers                |
|                                    | 790       | Other                    |
| Other                              | 900       | Counters                 |
|                                    | 920       | Memory                   |
|                                    | 990       | Other                    |

## 4.2.4 SC CODE DESCRIPTIONS

|              |          |                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                |
|--------------|----------|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>SC101</b> | <b>B</b> | Exposure Lamp Error                                                               |                                                                                                                                                                                                                                                                                                                                                                                |
|              |          | The standard white level was not detected properly when scanning the white plate. | <ul style="list-style-type: none"> <li>• Exposure lamp defective</li> <li>• Lamp stabilizer defective</li> <li>• Exposure lamp connector defective</li> <li>• Scanner motor control unit (MCU board) defective</li> <li>• SBU board defective</li> <li>• Dirty standard white plate</li> <li>• Dirty scanner mirror or scanner mirror or lens block out of position</li> </ul> |

|              |          |                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                     |
|--------------|----------|-----------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>SC120</b> | <b>B</b> | Scanner Home Position Error 1                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                     |
|              |          | The scanner home position sensor does not detect the OFF condition during initialization or copying | <ul style="list-style-type: none"> <li>• Scanner home position sensor defective</li> <li>• Poor connection between HP sensor and MCU board</li> <li>• Scanner motor control unit (MCU board) defective</li> <li>• Scanner wire, timing belt, pulleys, or carriage out of position</li> <li>• Scanner motor defective</li> <li>• Poor connection or defective harness between MCU board and scanner motor</li> </ul> |

|              |          |                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|--------------|----------|--------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>SC121</b> | <b>B</b> | Scanner Home Position Error 2                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|              |          | Scanner home position sensor does not detect ON. | <ul style="list-style-type: none"> <li>• Scanner home position sensor defective</li> <li>• Poor connection between MCU board and scanner home position sensor</li> <li>• Harness between MCU board and sensor defective</li> <li>• MCU board defective</li> <li>• Scanner wire, timing belt, pulleys, or carriage out of position</li> <li>• Scanner drive motor defective</li> <li>• Harness between MCU board and scanner motor disconnected</li> </ul> |

Trouble-  
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|              |          |                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|--------------|----------|------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>SC124</b> | <b>B</b> | <b>Encoder Signal Error</b>                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|              |          | The scanner motor encoder connector is not set correctly, or the encoder signal was not input. | <ul style="list-style-type: none"> <li>• Scanner motor encoder connector disconnected</li> <li>• Scanner motor lead connector disconnected</li> <li>• Scanner motor defective</li> <li>• MCU board defective (scanner motor control unit)</li> <li>• Scanner wire, timing belt, pulleys, or carriage installation incorrect</li> <li>• Power supply connector disconnected (+38V <math>\pm</math>24V)</li> <li>• Power supply unit (PSU-E board) defective</li> </ul> |

|              |          |                                                                                                                                    |                                                                                                                                                                                                      |
|--------------|----------|------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>SC125</b> | <b>B</b> | <b>Scanner Motor Error 1</b>                                                                                                       |                                                                                                                                                                                                      |
|              |          | Scanner motor stopped before feedback from scanner HP sensor detected, or motor speed too slow when detected at scanner HP sensor. | <ul style="list-style-type: none"> <li>• Scanner motor defective (high torque)</li> <li>• Overload on scanner drive mechanism</li> <li>• MCU board defective (scanner motor unit control)</li> </ul> |

|              |          |                                                                                                                        |                                                                                                                                                                                                     |
|--------------|----------|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>SC126</b> | <b>B</b> | <b>Scanner Motor Error 2</b>                                                                                           |                                                                                                                                                                                                     |
|              |          | The scanner motor does not stop within 15 mm after the scanner home position sensor turns on when the scanner returns. | <ul style="list-style-type: none"> <li>• Scanner motor defective (low torque)</li> <li>• Overload on scanner drive mechanism</li> <li>• MCU board defective (scanner motor control unit)</li> </ul> |

|              |          |                                                                                       |                                                                                                                                                                            |
|--------------|----------|---------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>SC127</b> | <b>B</b> | <b>Scanner Motor Error 3</b>                                                          |                                                                                                                                                                            |
|              |          | The scanner motor rotates in the opposite direction to the signal from the MCU board. | <ul style="list-style-type: none"> <li>• Scanner motor defective (motor lead connected incorrectly)</li> <li>• MCU board defective (scanner motor control unit)</li> </ul> |

|              |          |                                                                                                          |                                                                                                                                                                                                                    |
|--------------|----------|----------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>SC128</b> | <b>C</b> | <b>Scanner Motor Error 4</b>                                                                             |                                                                                                                                                                                                                    |
|              |          | The scanner motor speed does not reach the target speed by the time the scanning start point is reached. | <ul style="list-style-type: none"> <li>• Scanner motor defective</li> <li>• Overload on scanner mechanism</li> <li>• PSU-Eb board defective</li> <li>• MCU board defective (scanner motor control unit)</li> </ul> |

|              |          |                                                                                                                                      |                                                                                                                                                                                                                        |
|--------------|----------|--------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>SC129</b> | <b>C</b> | <b>Scanner Motor Error 5</b>                                                                                                         |                                                                                                                                                                                                                        |
|              |          | The scanner motor speed is abnormal. The machine will not stop scanning even after the machine detects that motor speed is abnormal. | <ul style="list-style-type: none"> <li>• Scanner motor defective</li> <li>• Scanner drive mechanism defective</li> <li>• PSU-Eb board defective</li> <li>• MCU board defective (scanner motor control unit)</li> </ul> |

|              |          |                                                                                                                 |                                                                                                                                                                                                                                                             |
|--------------|----------|-----------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>SC141</b> | <b>B</b> | <b>Black level detection error</b>                                                                              |                                                                                                                                                                                                                                                             |
|              |          | When the scanner was turned on, AGC (automatic gain control) failed to achieve the target value of $10 \pm 3$ . | <ul style="list-style-type: none"> <li>• SBU <math>\leftrightarrow</math> IPU harnesses defective</li> <li>• BCU <math>\leftrightarrow</math> IPU harnesses defective</li> <li>• SBU defective</li> <li>• IPU defective</li> <li>• BCU defective</li> </ul> |

|              |          |                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                          |
|--------------|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>SC142</b> | <b>B</b> | <b>White level detection error</b>                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                          |
|              |          | When the scanner was turned on, the second sampling by AGC (automatic gain control) failed to achieve a value within the range $-7$ to $0$ of the target value $128$ . | <ul style="list-style-type: none"> <li>• Standard white plate defective, dirty</li> <li>• Moisture inside the scanner unit</li> <li>• SBU <math>\leftrightarrow</math> IPU harnesses defective</li> <li>• BCU <math>\leftrightarrow</math> IPU harnesses defective</li> <li>• SBU defective</li> <li>• IPU defective</li> <li>• BCU defective</li> </ul> |

Trouble-shooting

|              |          |                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                            |
|--------------|----------|------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>SC143</b> | <b>C</b> | <b>SBU Error 1</b>                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                            |
|              |          | When the scanner was turned on, the SBU (Sensor Board Unit) level adjustment, black level check, and final SBU white level check failed. | <ul style="list-style-type: none"> <li>• SBU defective</li> <li>• IPU defective</li> <li>• BCU defective</li> <li>• Harness between the SBU and IPU defective</li> <li>• Harness between the BCU-IPU defective</li> <li>• Standard white plate not installed correctly, or is dirty</li> <li>• Scanner mirrors and/or lenses are dirty or installed incorrectly</li> </ul> |

|              |          |                                                                                                                                                                                                                               |                                                                                                                                             |
|--------------|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| <b>SC144</b> | <b>B</b> | <b>SBU Error 2</b>                                                                                                                                                                                                            |                                                                                                                                             |
|              |          | At power on: <ul style="list-style-type: none"> <li>• The SYDI terminal signal did not go HIGH within 1 s</li> <li>• The specified SBU (Sensor Board Unit) ID (GASBUP and LM98513) could not be read after 3 tries</li> </ul> | <ul style="list-style-type: none"> <li>• SBU defective</li> <li>• BCU defective</li> <li>• Harness between SBU and IPU defective</li> </ul> |

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| <b>SC161</b> | <b>B</b> | IPU Error                                                                                                             |                                                                                                                                            |
|              |          | At power on, or when the machine returns from an energy save mode, the self-diagnostic program returned an IPU error. | <ul style="list-style-type: none"> <li>• IPU defective</li> <li>• Connection between SBU and IPU is loose, broken, or defective</li> </ul> |

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| <b>SC165</b> | <b>A</b> | Illegal Copy Data Security Error                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|              |          | The "Data Security for Copying Feature" in the User Tools is set to "ON" without the ICIB-2 installed. | <ul style="list-style-type: none"> <li>• Copy Data Security Unit option board is not installed</li> <li>• Copy Data Security Unit board is defective</li> </ul> <p><b>Note:</b></p> <ul style="list-style-type: none"> <li>• The "Data Security for Copying" feature in the User Tools must be set to "OFF" before the ICIB-2 is removed.</li> <li>• To switch this feature off/on: [User Tools]&gt; System Settings&gt; Administrator Tools&gt; Next.&gt; Data Security for Copying&gt; Select Off/On.</li> </ul> |

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| <b>SC180</b> | <b>B</b> | Scanner Unit Fan Error: Scanner Intake Fan                             |                                                                                                                                                                                                |
|              |          | The MCU issued a lock signal fro the scanner intake fan (rear, right). | <ul style="list-style-type: none"> <li>• Fan, MCU, SIB harnesses loose or defective</li> <li>• Scanner intake fan motor defective</li> <li>• MCU defective</li> <li>• SIB defective</li> </ul> |

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| <b>SC181</b> | <b>B</b> | Scanner Unit Fan Error: Lamp Regulator Fan (Right)                      |                                                                                                                                                                                               |
|              |          | The MCU issued a lock signal for the lamp regulator fan (front, right). | <ul style="list-style-type: none"> <li>• Fan, MCU harness loose, defective</li> <li>• Lamp regulator (right) fan motor defective</li> <li>• MCU defective</li> <li>• SIB defective</li> </ul> |

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| <b>SC182</b> | <b>B</b> | Scanner Unit Fan Error: SBU Cooling Fan                                        |                                                                                                                                                                                                                             |
|              |          | The MCU issued a motor lock signal for the SBU cooling fan in the scanner unit | <ul style="list-style-type: none"> <li>• Scanner unit harness loose, defective</li> <li>• Fan, MCU harness loose, defective</li> <li>• SBU Fan motor defective</li> <li>• MCU defective</li> <li>• SIB defective</li> </ul> |

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| <b>SC183</b> | <b>B</b> | Scanner Unit Fan Error: Lamp Regulator Fan (Left)                      |                                                                                                                                                                                                                                               |
|              |          | The MCU issued a lock signal for the lamp regulator fan (front, left). | <ul style="list-style-type: none"> <li>• Scanner unit harness loose, defective</li> <li>• Fan, MCU harness loose, defective</li> <li>• Lamp regulator (left) fan motor defective</li> <li>• MCU defective</li> <li>• SIB defective</li> </ul> |



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| <b>SC185</b> | <b>B</b> | <b>Exposure Lamp 1 Lamp Regulator (Right) Error</b>                                       |                                                                                                                                                                                                                                                                                                                                  |
|              |          | The MCU detected a defect in the lamp regulator (right) when the 1st exposure lamp lit. . | <ul style="list-style-type: none"> <li>• 1st exposure lamp defective</li> <li>• 1st lamp FFC (flat film cable) loose or defective</li> <li>• MCU <math>\leftrightarrow</math> lamp regulator (left) harness defective</li> <li>• Lamp regulator (left) is defective</li> <li>• MCU defective</li> <li>• SIB defective</li> </ul> |

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| <b>SC186</b> | <b>B</b> | <b>Exposure Lamp 2 Lamp Regulator (Left) Error</b>                                       |                                                                                                                                                                                                                                                                                                                                  |
|              |          | The MCU detected a defect in the lamp regulator (left) when the 2nd exposure lamp lit. . | <ul style="list-style-type: none"> <li>• 2nd exposure lamp defective</li> <li>• 2nd lamp FFC (flat film cable) loose or defective</li> <li>• MCU <math>\leftrightarrow</math> lamp regulator (left) harness defective</li> <li>• Lamp regulator (left) is defective</li> <li>• MCU defective</li> <li>• SIB defective</li> </ul> |

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| <b>SC187</b> | <b>B</b> | <b>Scanner Unit Fan Error: Scanner Unit Exhaust Fan</b>                         |                                                                                                                                                                                                                                              |
|              |          | The MCU issued a lock signal for the the scanner unit exhaust fan (rear, left). | <ul style="list-style-type: none"> <li>• Scanner unit harness loose, defective</li> <li>• Fan, MCU harness loose, defective</li> <li>• Scanner unit exhaust fan motor defective</li> <li>• MCU defective</li> <li>• SIB defective</li> </ul> |

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| <b>SC188</b> | <b>B</b> | <b>Scanner Unit Fan Error: Scanner Motor Cooling Fan</b>        |                                                                                                                                                                                                                                              |
|              |          | The MCU issued a lock signal for the scanner motor cooling fan. | <ul style="list-style-type: none"> <li>• Scanner unit harness loose, defective</li> <li>• Fan, MCU harness loose, defective</li> <li>• Scanner unit exhaust fan motor defective</li> <li>• MCU defective</li> <li>• SIB defective</li> </ul> |

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| <b>SC202</b> | <b>B</b> | <b>Polygon Motor Error 1: ON Timeout</b>                                                                    |                                                                                                                                                                                                                                                                                                                |
|              |          | The polygon mirror motor did not reach its operating speed within 20 s after the polygon motor switched on. | <ul style="list-style-type: none"> <li>• Connection between the polygon mirror motor control board and the motor is loose, broken, or defective</li> <li>• Polygon mirror motor defective</li> <li>• Polygon mirror motor control board defective</li> <li>• IPU defective</li> <li>• BCU defective</li> </ul> |

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| <b>SC203</b> | <b>B</b> | <b>Polygon Motor Error 2: OFF Timeout</b>                                            |                                                                                                                                                                                                                                                                                                                |
|              |          | The polygon mirror motor did not go off within 3 s after the motor was switched off. | <ul style="list-style-type: none"> <li>• Connection between the polygon mirror motor control board and the motor is loose, broken, or defective</li> <li>• Polygon mirror motor defective</li> <li>• Polygon mirror motor control board defective</li> <li>• IPU defective</li> <li>• BCU defective</li> </ul> |

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| <b>SC204</b> | <b>B</b> | <b>Polygon Motor Error 3: XSCRDY Signal Error</b>                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                   |
|              |          | <p>The machine detected that the polygon mirror motor XSCRDY signal went inactive :</p> <ul style="list-style-type: none"> <li>• While an image was being created</li> <li>• During the output of a synchronous laser detection signal</li> </ul> | <ul style="list-style-type: none"> <li>• Switch the machine off/on (problem was probably due to electronic noise)</li> <li>• Replace the harness if cycling the machine off/on does not solve the problem</li> <li>• Polygon motor defective</li> <li>• Polygon mirror motor control board defective</li> <li>• IPU defective</li> <li>• BCU defective</li> </ul> |

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| <b>SC205</b> | <b>B</b> | <b>Polygon Motor Error 4: Unstable Timeout</b>                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                          |
|              |          | <p>The machine detected that the polygon mirror motor signal went inactive at some time other than:</p> <ul style="list-style-type: none"> <li>• While an image was being created</li> <li>• During the output of a synchronous laser detection signal</li> </ul> | <ul style="list-style-type: none"> <li>• Switch the machine off/on (problem was probably due to electronic noise)</li> <li>• Replace the harness if cycling the machine off/on does not solve the problem</li> <li>• Polygon motor defective</li> <li>• Polygon mirror motor control board defective</li> <li>• IPU defective</li> </ul> |

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| <b>SC220</b> | <b>B</b> | <b>Synchronization Detector Error 1: LD0</b>                                                                                         |                                                                                                                                                                                                                                                                                                                                                     |
|              |          | When LD0 fired with the polygon mirror motor rotating at normal speed, an synchronous detection signal was not output within 250 ms. | <ul style="list-style-type: none"> <li>• Cycle the machine off/on</li> <li>• Harness connector of the laser synchronization detector board is loose, broken, defective</li> <li>• Laser synchronization detection board defective or installed improperly</li> <li>• LD unit defective</li> <li>• IPU defective</li> <li>• BCU defective</li> </ul> |

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| <b>SC221</b> | <b>B</b> | <b>Synchronization Detection Error 2: Other Than LD0</b>                                                                                                        |                                                                                                                                                                                                                                                                                                                                                     |
|              |          | When a laser diode (other than LD0) fired with the polygon mirror motor rotating at normal speed, an synchronous detection signal was not output within 250 ms. | <ul style="list-style-type: none"> <li>• Cycle the machine off/on</li> <li>• Harness connector of the laser synchronization detector board is loose, broken, defective</li> <li>• Laser synchronization detection board defective or installed improperly</li> <li>• LD unit defective</li> <li>• IPU defective</li> <li>• BCU defective</li> </ul> |

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| <b>SC230</b> | <b>B</b> | <b>FGATE Error 1: Signal Failed to Turn On</b>                                                             |                                                                                                                                                                                                                                                         |
|              |          | The FGATE signal did not switch on within 1 s of when the lasers were supposed to start writing the image. | <ul style="list-style-type: none"> <li>• Cycle the machine off/on</li> <li>• Check the harnesses, connectors of the IPU, Controller, BCU</li> <li>• GAVD on the IPU board defective</li> <li>• Controller defective</li> <li>• BCU defective</li> </ul> |

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| <b>SC231</b> | <b>B</b> | <b>FGATE Error 2: Signal Failed to Turn Off</b>                                                                                                |                                                                                                                                                                                                                                                         |
|              |          | The FGATE signal did not switch off within 7 s of when the lasers started writing the image, or remained off at the beginning of the next job. | <ul style="list-style-type: none"> <li>• Cycle the machine off/on</li> <li>• Check the harnesses, connectors of the IPU, Controller, BCU</li> <li>• GAVD on the IPU board defective</li> <li>• Controller defective</li> <li>• BCU defective</li> </ul> |

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| <b>SC240</b> | <b>B</b> | <b>LD Error</b>                                     |                                                                                                                                                                                                                    |
|              |          | The LD error terminal of the LDB asserted an error. | <ul style="list-style-type: none"> <li>• Cycle the machine off/on</li> <li>• LDB harness connectors loose, broken, defective</li> <li>• LDB defective</li> <li>• IPU defective</li> <li>• BCU defective</li> </ul> |

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| <b>SC300</b> | <b>B</b> | <b>Charge Corona Error 1: Charge Leak</b>                                                                                                               |                                                                                                                                                                                                                                                                                                     |
|              |          | A abnormal detection signal (H) was detected for more than 60 ms. Also, during this time, the detected voltage remained below -4V for more than 50 ms.) | <ul style="list-style-type: none"> <li>• Cycle the machine off/on</li> <li>• CGB power pack harness connectors loose, broken, defective</li> <li>• Corona wire caps loose, missing</li> <li>• CGB power pack defective</li> <li>• Charge corona unit connectors loose, broken, defective</li> </ul> |

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| <b>SC304</b> | <b>B</b> | <b>Charge Corona Error 2: Grid Leak</b>                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                              |
|              |          | A high feedback voltage (H) for the charge corona 60 ms. Also, during this time, the voltage of the charge grid remained less than -400V                                                                                                                                                                                                 | <ul style="list-style-type: none"> <li>• Cycle the machine off/on</li> <li>• Charge unit set incorrectly (not locked in place)</li> <li>• Charge unit connector loose, broken, defective</li> </ul>                                                          |
| <b>SC305</b> | <b>C</b> | <b>Charge Corona Wire Cleaner Error 1</b>                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                              |
|              |          | One of these occurred after the charge corona cleaner motor was switched on: <ul style="list-style-type: none"> <li>• The charge corona wire cleaner motor remained locked within 10 sec after the motor switched on.</li> <li>• The charge corona wire cleaner motor failed to lock within 45 s after the start of cleaning.</li> </ul> | <ul style="list-style-type: none"> <li>• Cycle the machine off/on</li> <li>• Charge corona wire cleaner motor defective</li> </ul>                                                                                                                           |
| <b>SC306</b> | <b>D</b> | <b>Charge Corona Wire Cleaner Error 2</b>                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                              |
|              |          | The cleaning pad of the charge corona wire cleaner mechanism failed to return to its home position.                                                                                                                                                                                                                                      | <ul style="list-style-type: none"> <li>• Connectors between motor and IOB loose, broken, defective</li> <li>• Charge wire dirty, defective, broken</li> <li>• Wire cleaning pad defective</li> <li>• Motor or motor board in motor unit defective</li> </ul> |
| <b>SC312</b> | <b>C</b> | <b>Pre-Charge Output Error 1: Leak</b>                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                              |
|              |          | An abnormal signal (H) was detected continuously for 60 ms. During this time the pre-charge unit voltage remained less than -3 kV for more than 50 ms.                                                                                                                                                                                   | <ul style="list-style-type: none"> <li>• Pre-charge unit set incorrectly.</li> <li>• Pre-charge unit contact is broken or defective.</li> </ul>                                                                                                              |
| <b>SC313</b> | <b>C</b> | <b>Pre-Charge Output Error 1: Grid Output</b>                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                              |
|              |          | An abnormal signal (H) was detected continuously for 60 ms. During this time the pre-charge grid voltage remained less than -400V for more than 50 ms.                                                                                                                                                                                   | <ul style="list-style-type: none"> <li>• Pre-charge unit set incorrectly</li> <li>• Pre-charge unit contact is broken or defective</li> </ul>                                                                                                                |
| <b>SC320</b> | <b>B</b> | <b>Development Bias Error</b>                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                              |
|              |          | An abnormal detection signal (H) was detected continuously for 60 ms. During this time the voltage exceeded -90 $\mu$ A for more than 50 ms.                                                                                                                                                                                             | <ul style="list-style-type: none"> <li>• Development power pack connectors loose, broken, defective</li> <li>• Development unit connectors loose, broken, defective</li> <li>• Development power pack defective</li> </ul>                                   |

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| <b>SC344</b> | <b>C</b> | Development Unit Set Error                                                                                                                                                            |                                                                                                                                                                                          |
|              |          | The development is not installed, or it is installed incorrectly. The development unit set switch is checked every time the machine is turned on and when the front doors are closed. | <ol style="list-style-type: none"> <li>1. Pull out the development unit.</li> <li>2. Install it again.</li> <li>3. Close the front doors</li> <li>4. Cycle the machine off/on</li> </ol> |

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| <b>SC360</b> | <b>C</b> | TD Sensor Output Error 1: Vt Above Upper Limit                                                                                     |                                                                                                                                                                                                   |
|              |          | The result of the check of the TD sensor output (Vt) after every copy for 10 continuous copies was $V_t \geq 4.0V$ (out of range). | <ul style="list-style-type: none"> <li>• TD sensor dirty or defective</li> <li>• TD sensor connector to BCU loose, broken, defective</li> <li>• IOB defective</li> <li>• BCU defective</li> </ul> |

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| <b>SC364</b> | <b>C</b> | TD Sensor Output Error 2: Vt Below Lower Limit                                                                                     |                                                                                                                                                                                                   |
|              |          | The result of the check of the TD sensor output (Vt) after every copy for 10 continuous copies was $V_t \leq 0.5V$ (out of range). | <ul style="list-style-type: none"> <li>• TD sensor dirty or defective</li> <li>• TD sensor connector to BCU loose, broken, defective</li> <li>• IOB defective</li> <li>• BCU defective</li> </ul> |

Trouble-  
shooting

|              |          |                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                         |
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| <b>SC368</b> | <b>B</b> | TD Sensor Adjustment Error 1                                                                                                                                                                                                                                     |                                                                                                                                                                                                         |
|              |          | <p>The value for Vref could not be set because:</p> <ul style="list-style-type: none"> <li>• The target voltage could not reach 2.5V with maximum PWM (255) application</li> <li>• The target voltage exceeded 2.5V with minimum PWM (0) application.</li> </ul> | <ul style="list-style-type: none"> <li>• TD sensor connector or harness to the IOB loose, broken, defective</li> <li>• TD sensor defective</li> <li>• IOB defective</li> <li>• BCU defective</li> </ul> |

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| <b>SC372</b> | <b>B</b> | TD Sensor Adjustment Error 2                                                                                                                                                                                                                                        |                                                                                                                                                                   |
|              |          | <p>The TD sensor output voltage is not adjusted to <math>2.5 \pm 0.1 V</math> within 60 s during initialization of the TD sensor with SP2801.</p> <p><b>Note:</b> When an abnormal condition occurs, "0" is displayed for <b>SP2906</b> (Vcont Manual Setting).</p> | <ul style="list-style-type: none"> <li>• TD sensor connector, harness loose, broken, defective</li> <li>• TD sensor defective</li> <li>• IOB defective</li> </ul> |

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| <b>SC396</b> | <b>B</b> | Drum Motor Error                                                          |                                                                                                                                                                                                                                   |
|              |          | The drum motor lock signal is longer than 2 s while the drum motor is on. | <ul style="list-style-type: none"> <li>• Drum motor connector, harness loose, broken, defective</li> <li>• Drum motor defective</li> <li>• Mechanical problem with the drum unit, transfer belt, toner collection unit</li> </ul> |

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| <b>SC400</b> | <b>C</b> | ID Sensor Error 1: Background Adjustment Error                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                |
|              |          | <p>One of the following ID sensor output voltages was detected for Vsg (the reading of the bare drum surface) at ID sensor initialization.</p> <ul style="list-style-type: none"> <li>• The reading was less than 4V at PWM=255 (Maximum PWM).</li> <li>• The reading was over 4V at PWM=0 (Minimum PWM)</li> </ul> | <ul style="list-style-type: none"> <li>• ID sensor harness, connector was loose, broken, defective</li> <li>• ID sensor dirty</li> <li>• ID sensor defective</li> <li>• IOB defective</li> <li>• BCU defective</li> <li>• LD unit defective</li> <li>• CGB/PPG power pack defective</li> </ul> |

**NOTE**

- The most recent correct PWM value is used for control.
- The value displayed by **SP3103** (ID Sensor Output Display) is the actual, incorrect value.

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| <b>SC401</b> | <b>C</b> | ID Sensor Error 2: Background Output Error                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                  |
|              |          | <p>One of the following conditions were detected when checking the ID sensor pattern:</p> <ul style="list-style-type: none"> <li>• <math>V_{sg} \leq 2.5 \text{ V}</math></li> <li>• <math>V_{sg} = 0 \text{ V}</math></li> <li>• The ID sensor output voltage = 5.0 V and PWM signal input to ID sensor = 0</li> </ul> <p>Note: Vsg is the ID sensor output after checking the bare drum surface in the ID sensor pattern.</p> | <ul style="list-style-type: none"> <li>• ID sensor harness, connector is loose, broken, or defective</li> <li>• ID sensor dirty</li> <li>• ID sensor defective</li> <li>• IOB defective</li> <li>• LD Unit defective</li> <li>• BCU defective</li> <li>• CGB/PPG power pack defective</li> </ul> |

**NOTE**

- The SC code is not displayed; only the logging data is incremented.
- When this SC is issued, only the toner density sensor output (Vt) (even for jobs less than 10 copies) and Vref is not updated.
- After an abnormal condition is detected, **SP3103** (ID Sensor Output Display) shows "Vsp = Vsg = 0" (or "5.0V").
- If the next ID sensor pattern check is normal, this restores normal operation.

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| <b>SC402</b> | <b>C</b> | <b>ID Sensor Error 3: ID Sensor Pattern Error</b>                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                      |
|              |          | One of the following ID sensor output voltages was detected when checking the covered area of the ID sensor pattern:<br><ul style="list-style-type: none"> <li>• <math>V_{sp} \geq 2.5 \text{ V}</math></li> <li>• <math>V_{sp} = 0 \text{ V}</math></li> </ul> | <ul style="list-style-type: none"> <li>• ID sensor harness, connector is loose, broken, or defective</li> <li>• ID sensor dirty</li> <li>• ID sensor defective</li> <li>• IOB defective</li> <li>• LD Unit defective</li> <li>• BCU defective</li> <li>• Development power pack defective</li> </ul> |

**NOTE**

- The SC code is not displayed; only the logging data is incremented.
- When this SC is issued, only the toner density sensor output ( $V_t$ ) (even for jobs less than 10 copies) and  $V_{ref}$  is not updated.
- After an abnormal condition is detected, **SP3103** (ID Sensor Output Display) shows " $V_{sp} = V_{sg} = 0$ " (or "5.0V").
- If the next ID sensor pattern check is normal, this restores normal operation.

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| <b>SC406</b> | <b>C</b> | <b>ID Sensor Error 4: ID Sensor Pattern Not Detected</b>                                                                                  |                                                                                                                                                                                                                                                                                                      |
|              |          | At the ID sensor pattern check of the covered area of the ID sensor pattern, the value of the edge voltage was not 2.5 V for 1.5 seconds. | <ul style="list-style-type: none"> <li>• ID sensor harness, connector is loose, broken, or defective</li> <li>• ID sensor dirty</li> <li>• ID sensor defective</li> <li>• IOB defective</li> <li>• LD Unit defective</li> <li>• BCU defective</li> <li>• Development power pack defective</li> </ul> |

**NOTE**

- The SC code is not displayed; only the logging data is incremented.
- When this SC is issued, only the toner density sensor output ( $V_t$ ) (even for jobs less than 10 copies) and  $V_{ref}$  is not updated.
- After an abnormal condition is detected, **SP3103** (ID Sensor Output Display) shows " $V_{sp} = V_{sg} = 0$ " (or "5.0V").
- If the next ID sensor pattern check is normal, this restores normal operation.

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| <b>SC420</b> | <b>C</b> | <b>Drum Potential Sensor Error 1: <math>V_d</math> Adjustment Error</b>                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                             |
|              |          | When $V_d$ (drum potential of the latent ID sensor pattern before exposure) was adjusted during auto process control: After 5 adjustments by $V_g$ (voltage output of the charge corona unit) $V_d$ failed to attain the value of SP2001 006 (total corona voltage for Photo Mode at normal speed) or $V_d$ failed to attain the value of SP2001 012 for the CPM down mode (but not Photo Mode). | <ul style="list-style-type: none"> <li>• Drum potential sensor harness, connector is loose, broken, defective</li> <li>• Drum potential sensor dirty</li> <li>• Drum potential sensor defective</li> <li>• Drum connector, harness loose, broken, defective</li> <li>• Development power pack defective</li> <li>• BCU defective</li> </ul> |

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| <b>SC424</b> | <b>C</b> | Drum Potential Sensor Error 2: VI Error                                                                                                                                                                                                                                                                                                       |                                                                                                                               |
|              |          | At auto process control initialization, the VL detected after creation of the ID sensor pattern is greater than 400.<br><b>Note:</b> VI is the drum potential after maximum laser exposure, determined by reading the white patches of the potential sensor pattern. To change VI, the machine adjusts the input current of the laser diodes. | <ul style="list-style-type: none"> <li>• Drum worn</li> <li>• LD unit dirty</li> <li>• Poor drum ground connection</li> </ul> |

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| <b>SC428</b> | <b>C</b> | Drum Potential Sensor Error 3: Vh Adjustment Error                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                          |
|              |          | <p>The correct value for Vh (standard drum potential for halftones) could not be detected after 45 consecutive adjustments of LD power:</p> <ul style="list-style-type: none"> <li>• The value for <b>SP3904 001</b> could not be attained for normal speed, or the value of <b>SP3904 002</b> could not be attained for low speed mode.</li> <li>• The LD power adjustments exceeded the upper and lower limits (+185 and -70).</li> </ul> | <ul style="list-style-type: none"> <li>• Drum potential sensor harness, connector is loose, broken, defective</li> <li>• Drum potential sensor dirty</li> <li>• Drum potential sensor defective</li> <li>• Drum unit connector, harness loose, broken, defective</li> <li>• Poor drum ground connection</li> <li>• LD unit defective</li> <li>• BCU defective</li> </ul> |

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| <b>SC435</b> | <b>C</b> | PCU Set Error                                                                                                                                                         |                                                                                                                                                                                  |
|              |          | The PCU is not installed, or it is installed incorrectly. The PCU unit set switch is checked every time the machine is turned on and when the front doors are closed. | <ol style="list-style-type: none"> <li>1. Pull out the PCU unit.</li> <li>2. Install it again.</li> <li>3. Close the front doors</li> <li>4. Cycle the machine off/on</li> </ol> |

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| <b>SC437</b> | <b>C</b> | Drum Potential Sensor Error 4: Vd Detection Error                                                          |                                                                                                                                                            |
|              |          | During execution of auto process control for normal speed and CPM down mode when VD was detected VG= -900V | <ul style="list-style-type: none"> <li>• Do SP3902 001 to determine if auto process control has been turned off. If this SP is off, turn it on.</li> </ul> |



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| <b>SC438</b> | <b>B</b> | <b>Drum Potential Sensor Error 5: ID Sensor Pattern Potential</b>                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                      |
|              |          | When the ID sensor potential (Vp) was measured after a cold start, or at the end of a job, the total of this reading and the value of the setting of SP2201 004 did not exceed 800V (development unit power pack output) after 10 continuous samplings. | <ul style="list-style-type: none"> <li>• Drum potential sensor defective</li> <li>• BCU defective</li> <li>• IOB defective</li> <li>• Poor drum unit connection or connectors defective</li> <li>• Poor drum ground connection</li> <li>• LD defective</li> <li>• Poor drum cleaning ground connection</li> <li>• Drum worn</li> <li>• Dirty laser optics</li> </ul> |

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| <b>SC439</b> |  | <b>Drum Potential Sensor Error 6: Vh Abnormal</b>                                                                                                                           |                                                                                                                                                                                                                              |
|              |  | When the LD power was adjusted during auto process control, the first value detected for the Vh pattern (used to set standard drum potential for halftones) exceeded -730V. | <ul style="list-style-type: none"> <li>• Drum potential sensor harness, connector loose, broken, defective</li> <li>• Drum potential sensor defective</li> <li>• LD unit defective (pattern could not be created)</li> </ul> |

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| <b>SC440</b> | <b>B</b> | <b>Transfer Output Error</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                   |
|              |          | <p>One of the following conditions was detected for 17 counts (about 100 ms) when the transfer voltage was applied with the main motor operating:</p> <ul style="list-style-type: none"> <li>• The value for the transfer current was set for 70uA, but the feedback voltage was less than 0.75V (less than 1.5 KV).</li> <li>• When the feedback current was less than 0.16V (10uA), the feedback voltage was less than 0.15V (less than 300V) due to a poor input connection.</li> <li>• When the feedback current was less than 0.16V (10uA), the feedback voltage was less than 3.05V (over 6.1 KV) due to a poor output connection.</li> </ul> | <ul style="list-style-type: none"> <li>• Transfer power pack harness, connectors loose or broken</li> <li>• Transfer power pack harness or connectors have short circuited</li> <li>• Transfer power pack is defective</li> </ul> |

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| <b>SC441</b> | <b>B</b> | <b>Development Motor Lock</b>                                            |                                                                                                                     |
|              |          | While the motor is operating, the motor lock signal remained LOW for 2 s | <ul style="list-style-type: none"> <li>• Development motor lock due to overload</li> <li>• IOB defective</li> </ul> |

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| <b>SC487</b> | <b>B</b> | Toner Collection Unit Lock                                                                                                                                            |                                                                                                                                       |
|              |          | The toner collection coil rotation sensor did not detect rotation of the coil within 5 s after the drum motor turned on due to toner clumping in the collection unit. | <ul style="list-style-type: none"> <li>• Cycle the machine off/on</li> <li>• Empty or replace the toner collection bottle.</li> </ul> |

**NOTE:**

- The drive gear that drives the cleaning and toner transport mechanism is equipped with a torque limiter. If the rotation of the toner collection coil becomes overloaded, the torque limiter disengages the drive gear.
- The sensor (a photo interrupter) detects the change in the position of the gear triggers the error.
- After this SC is issued the machine will stop.

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| <b>SC488</b> | <b>C</b> | 2nd Cleaning Blade Operation Error                                                                                                |                                                                                                                                                                                         |
|              |          | The push-switch signal from the cleaning blade solenoid was incorrect. The signal is detected 1 sec. after the solenoid operates. | <ul style="list-style-type: none"> <li>• 2nd blade solenoid connector loose, broken defective</li> <li>• 2nd blade solenoid defective</li> <li>• Release mechanism defective</li> </ul> |

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| <b>SC489</b> | <b>C</b> | Drum Cleaning Unit Set Error                                                                                                                                  |                                                                                                                                                                                         |
|              |          | The drum cleaning unit is not set properly. The drum cleaning unit set switch is set every time the machine is turned on and when the front doors are closed. | <ol style="list-style-type: none"> <li>1. Remove the drum cleaning unit</li> <li>2. Install it again.</li> <li>3. Close the front doors</li> <li>4. Cycle the machine off/on</li> </ol> |

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| <b>SC491</b> | <b>B</b> | Polygonal Mirror Motor Cooling Fan Motor Lock                                                                                           |                                                                                                                                                                           |
|              |          | The polygonal mirror motor cooling fan motor lock signal remains HIGH for 5 s while the polygonal mirror motor cooling fan motor is on. | <ul style="list-style-type: none"> <li>• Drive mechanism overload</li> <li>• Obstruction has stopped the fan</li> <li>• Fan connector loose, broken, defective</li> </ul> |

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| <b>SC492</b> | <b>B</b> | Development Unit Suction Motor Lock                                                                                                                                                                     |                                                                        |
|              |          | While the development unit toner suction motor is operating, the lock sensor output did not change for 1 s An electrical overload in the PCB inside the motor unit has caused the motor to malfunction. | <ul style="list-style-type: none"> <li>• Replace the motor.</li> </ul> |

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| <b>SC494</b> | <b>B</b> | <b>Toner Transport Unit Error</b>                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                |
|              |          | One of the following has occurred during toner transport from the toner bank to the toner supply cylinder:<br><ul style="list-style-type: none"> <li>• An obstruction (clumped toner, other foreign material) is blocking the toner supply coil</li> <li>• The coil torque limiter is broken</li> <li>• Toner bottle end sensor is broken</li> </ul> | <ul style="list-style-type: none"> <li>• Cycle the machine off/on</li> <li>• Clean the toner transport coil, tubing, toner supply clutch, torque limiter</li> <li>• Defective toner supply coil</li> <li>• Defective toner supply tube</li> <li>• Defective toner supply clutch</li> <li>• Defective torque limiter</li> </ul> |

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| <b>SC495</b> | <b>B</b> | <b>Toner Bottle Unit Error</b>                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|              |          | During toner transport from the toner supply cylinder to the toner hopper, the toner hopper sensor cannot detect toner even after the toner supply pump switches on for 2 s and switches off 10 times during copying. | <ul style="list-style-type: none"> <li>• Toner supply pump motor harness, connector loose, broken, defective</li> <li>• Toner supply pump motor defective</li> <li>• Blockage in the toner supply tube</li> <li>• Toner supply tube disconnected</li> <li>• Blockage in the toner supply cylinder</li> <li>• Toner-end sensor in the toner supply cylinder defective</li> <li>• Agitator in the toner supply cylinder defective</li> <li>• Toner supply cylinder agitator motor defective</li> </ul> |

Trouble-shooting

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| <b>SC496</b> | <b>B</b> | <b>Toner Collection Bottle Error</b>                                |                                                                                                                                                                                         |
|              |          | The toner collection bottle sensor set sensor remained off for 3 s. | <ul style="list-style-type: none"> <li>• Used toner collection bottle is set incorrectly</li> <li>• Used toner collection bottle harness, connector loose, broken, defective</li> </ul> |

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| <b>SC497</b> | <b>B</b> | <b>Development Unit Toner Suction Bottle Error</b>                                               |                                                                                                                                                                            |
|              |          | During machine operation, the development unit toner suction bottle set sensor goes off for 3 s. | <ul style="list-style-type: none"> <li>• Toner suction bottle is not installed</li> <li>• Toner suction bottle set sensor connector is loose, broken, defective</li> </ul> |

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| <b>SC501</b> | <b>D</b> | <b>1st Tray Lift Mechanism</b>                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                          |
|              |          | One of the following conditions is detected in the 1st tray (tandem tray) of the main machine:<br><ul style="list-style-type: none"> <li>• The 1st tray lift sensor is not activated for 10 s after the 1st tray lift motor turned on.</li> <li>• Upper limit is not detected within 10 s while the paper tray is lifting during paper feed.</li> <li>• The 1st tray lift sensor is already activated when the 1st tray is placed in the machine.</li> </ul> | <ul style="list-style-type: none"> <li>• Poor 1st tray lift motor connection</li> <li>• Remaining paper or another obstruction has stopped the tray and motor</li> <li>• 1st pick-up solenoid connector is loose</li> <li>• 1st pick-up solenoid is blocked by an obstruction</li> </ul> |

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| <b>SC502</b> | <b>D</b> | <b>2nd Tray Lift Malfunction</b>                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                          |
|              |          | <p>One of the following conditions is detected in the 2nd tray of the main machine:</p> <ul style="list-style-type: none"> <li>• The 2nd tray lift sensor is not activated for 10 s after the 2nd tray lift motor turned on.</li> <li>• Upper limit is not detected within 10 s while the paper tray is lifting during paper feed.</li> <li>• The 2nd tray lift sensor is already activated when the 2nd tray is placed in the machine.</li> </ul> | <ul style="list-style-type: none"> <li>• Poor 2nd tray lift motor connection</li> <li>• Remaining paper or another obstruction has stopped the tray and motor</li> <li>• 2nd pick-up solenoid connector is loose</li> <li>• 2nd pick-up solenoid is blocked by an obstruction</li> </ul> |

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| <b>SC503</b> | <b>D</b> | <b>3rd Tray Lift Malfunction</b>                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                          |
|              |          | <p>One of the following conditions is detected in the 3rd tray of the main machine:</p> <ul style="list-style-type: none"> <li>• The 3rd tray lift sensor is not activated for 10 s after the 3rd tray lift motor turned on.</li> <li>• Upper limit is not detected within 10 s while the paper tray is lifting during paper feed.</li> <li>• The 3rd tray lift sensor is already activated when the 3rd tray is placed in the machine</li> </ul> | <ul style="list-style-type: none"> <li>• Poor 3rd tray lift motor connection</li> <li>• Remaining paper or another obstruction has stopped the tray and motor</li> <li>• 3rd pick-up solenoid connector is loose</li> <li>• 3rd pick-up solenoid is blocked by an obstruction</li> </ul> |

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| <b>SC504</b> | <b>D</b> | <b>4th Tray (LCT Tray 1) Lift Malfunction</b>                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                      |
|              |          | <p>One of the following conditions is detected in the 4th tray:</p> <ul style="list-style-type: none"> <li>• The LCT 1st lift sensor is not activated for 10 s after the LCT 1st tray lift motor turned on.</li> <li>• Upper limit is not detected within 10 s while the paper tray is lifting during paper feed.</li> <li>• The LCT 1st lift sensor is already activated when the LCT 1st tray is placed in the machine.</li> </ul> | <ul style="list-style-type: none"> <li>• Poor LCT 1st tray lift motor connection</li> <li>• Remaining paper or another obstruction has stopped the tray and motor</li> <li>• LCT 1st pick-up solenoid connector is loose</li> <li>• LCT 1st pick-up solenoid is blocked by an obstruction</li> </ul> |

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| <b>SC505</b> | <b>D</b> | <b>5th Tray (LCT Tray 2) Lift Malfunction</b>                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                      |
|              |          | <p>One of the following conditions is detected in the 5th tray:</p> <ul style="list-style-type: none"> <li>• The LCT 2nd lift sensor is not activated for 10 s after the LCT 2nd tray lift motor turned on.</li> <li>• Upper limit is not detected within 10 s while the paper tray is lifting during paper feed.</li> <li>• The LCT 2nd lift sensor is already activated when the LCT 2nd tray is placed in the machine.</li> </ul> | <ul style="list-style-type: none"> <li>• Poor LCT 2nd tray lift motor connection</li> <li>• Remaining paper or another obstruction has stopped the tray and motor</li> <li>• LCT 2nd pick-up solenoid connector is loose</li> <li>• LCT 2nd pick-up solenoid is blocked by an obstruction</li> </ul> |

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| <b>SC506</b> | <b>D</b> | <b>6th Tray (LCT Tray 3) Lift Malfunction</b>                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                      |
|              |          | <p>One of the following conditions is detected in the 6th tray.</p> <ul style="list-style-type: none"> <li>• The LCT 3rd lift sensor is not activated for 20 s after the LCT 3rd tray lift motor turned on.</li> <li>• Upper limit is not detected within 20 s while the paper tray is lifting during paper feed.</li> <li>• The LCT 3rd lift sensor is already activated when the LCT 3rd tray is placed in the machine.</li> </ul> | <ul style="list-style-type: none"> <li>• Poor LCT 3rd tray lift motor connection</li> <li>• Remaining paper or another obstruction has stopped the tray and motor</li> <li>• LCT 3rd pick-up solenoid connector is loose</li> <li>• LCT 3rd pick-up solenoid is blocked by an obstruction</li> </ul> |

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| <b>SC507</b> | <b>D</b> | <b>7th Tray (Bypass Tray) Lift Mechanism</b>                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                             |
|              |          | <p>One of the following conditions is detected in the optional bypass tray.</p> <ul style="list-style-type: none"> <li>• The bypass tray lift sensor is not activated for 10 s after the tray lift motor turned on.</li> <li>• Upper limit is not detected within 10 s while the paper tray is lifting during paper feed.</li> <li>• The bypass tray lift sensor is already activated paper is placed in the 7th tray.</li> </ul> | <ul style="list-style-type: none"> <li>• Poor bypass tray lift motor connection</li> <li>• Remaining paper or another obstruction has stopped the tray and motor</li> <li>• Bypass tray pick-up solenoid connector is loose</li> <li>• Bypass tray pick-up solenoid is blocked by an obstruction</li> </ul> |

Trouble-shooting

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| <b>SC529</b> | <b>C</b> | <b>Exit Junction Gate HP Sensor Error</b>                   |                                                                              |
|              |          | The exit junction gate did not return to its home position. | <ul style="list-style-type: none"> <li>• Cycle the machine off/on</li> </ul> |

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| <b>SC531</b> | <b>B</b> | <b>Fusing Motor Lock</b>                                                                                                           |                                                                                                  |
|              |          | A fusing motor lock signal is detected for more than 2 s during operation due to an electrical overload in the motor driver board. | <ul style="list-style-type: none"> <li>• Motor driver board defective. Replace motor.</li> </ul> |

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| <b>SC541</b> | <b>A</b> | <b>Fusing Thermister Open</b>                                             |                                                                                                                                                   |
|              |          | The fusing temperature detected by the thermistor was below 7°C for 15 s. | <ul style="list-style-type: none"> <li>• Fusing thermistor defective or out of position</li> <li>• Poor thermistor terminal connection</li> </ul> |

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| <b>SC542</b> | <b>A</b> | <b>Fusing Temperature Warm-up Error</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                       |
|              |          | <p>One of the following occurred:</p> <ul style="list-style-type: none"> <li>• <b>B234/B235:</b> Hot roller did not reach target operation temperature within 360 sec. after the machine was powered or 360 sec. minutes after the doors were closed.</li> <li>• <b>B236:</b> Hot roller did not reach target operation temperature within 465 sec. after the machine was powered or 465 sec. minutes after the doors were closed.</li> <li>• Fusing temperature rose only 5°C toward the fusing temperature within 20 s after the machine was powered on, or after the doors were closed.</li> <li>• Fusing temperature rose only 5°C toward the fusing temperature within 20 s after thermistor started monitoring hot roller temperature. (The thermistors starts monitoring 25 s after the hot roller starts rotating.)</li> </ul> | <ul style="list-style-type: none"> <li>• Fusing lamp(s) disconnected</li> <li>• Thermistor out of position</li> </ul> |

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| <b>SC543</b> | <b>A</b> | <b>Fusing Overheat Error 1: Software</b>                                                                                                                                |                                                                                                                                                       |
|              |          | A fusing temperature of over 210°C is detected for 5 s by the fusing thermistor. This prevents the fusing lamps from switching on without a fusing lamp trigger signal. | <ul style="list-style-type: none"> <li>• AC drive board defective (TRIAC short)</li> <li>• BCU defective</li> <li>• BCU firmware defective</li> </ul> |

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| <b>SC544</b> | <b>A</b> | <b>Fusing Overheat Error 2: Hardware</b>                                       |                                                                                                                                                       |
|              |          | The fusing temperature monitoring circuit detects abnormal fusing temperature. | <ul style="list-style-type: none"> <li>• AC drive board defective (TRIAC short)</li> <li>• BCU defective</li> <li>• BCU firmware defective</li> </ul> |

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| <b>SC545</b> | <b>A</b> | <b>Fusing Overheat Error 3: Continuous Lamp On</b>                                                                                 |                                                                                                                                          |
|              |          | After warm-up and while the hot roller is not rotating, the fusing lamps remain on at full power for 45 s (B234/B235) 90 s (B236). | <ul style="list-style-type: none"> <li>• Fusing thermistor out of position</li> <li>• One or more fusing lamp is disconnected</li> </ul> |

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| <b>SC547</b> | <b>A</b> | <b>Zero-Cross Signal Not Detected</b>                                                                                            |                                                                                                                                                                                |
|              |          | The applied bandwidth is detected above 66 Hz or below 45 Hz, and no zero-cross signal detected for 5 s with the power relay ON. | <ul style="list-style-type: none"> <li>• Noise on the ac power line</li> <li>• Cycle the machine off/on</li> <li>• If the problem continues, install a noise filter</li> </ul> |

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| <b>SC557</b> | <b>C</b> | Zero-Cross Signal Over                       |                                                                                                                                          |
|              |          | Noise was detected on the power supply line. | <ul style="list-style-type: none"> <li>• Cycle the machine off/on</li> <li>• If the problem continues, install a noise filter</li> </ul> |

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| <b>SC559</b> | <b>A</b> | Fusing Unit Jam Error                                                                                                                                                                               |                                                                                                                                                                                                   |
|              |          | <p>The paper cooling job time sensor detected paper late for 3 counts.</p> <p>This SC only occurs if SP1159 is on, and a jam occurred in the fusing unit for three consecutive sheets of paper.</p> | <ul style="list-style-type: none"> <li>• Remove the paper that is jammed in the fusing unit. Then make sure that the fusing unit is clean and has no obstacles in the paper feed path.</li> </ul> |

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| <b>SC585</b> | <b>C</b> | Double-Feed LED Adjustment Error                                                                                                                                                                                                                                                                                                       |                                                                                                                                           |
|              |          | <p>The calibration of the double-feed LED for the paper type failed reach the target voltage. The print job completed without the double-feed detection operating. The target voltages are:</p> <ul style="list-style-type: none"> <li>• Normal paper 3.0V±1%</li> <li>• Translucent paper: 3.8V±2%</li> <li>• OHP: 4.0V±2%</li> </ul> | <ul style="list-style-type: none"> <li>• Double-feed sensor/LED dirty</li> <li>• Sensor/LED connector loose, broken, defective</li> </ul> |

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| <b>SC592</b> | <b>B</b> | Toner Bank Motor Error                                     |                                                                                                                                                                            |
|              |          | An abnormal signal was received from the toner bank motor. | <ul style="list-style-type: none"> <li>• Toner bank motor defective</li> <li>• Bank motor connector loose</li> <li>• Mechanical overload on the drive mechanism</li> </ul> |

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| <b>SC593</b> | <b>B</b> | Toner Suction Motor Replace Alert                                                                                                                                                     |                                                                                                                      |
|              |          | <p>The total operation time of the motor exceeded 600 hours.</p> <p>Note: A near-end message appears on the operation panel when the service life of the motor exceeds 570 hours.</p> | <ul style="list-style-type: none"> <li>• The toner suction motor has reached the end of its service life.</li> </ul> |

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| <b>SC601</b> | <b>B</b> | Communication Error Between BCU and MCU                                                                                                                                                                                                                                                                                                                    |                                                                                                                                           |
|              |          | One or more of the following occurred:<br><ul style="list-style-type: none"> <li>• The BCU cannot communicate with the MCU within 100 ms after power on after 3 tries.</li> <li>• A BREAK signal was detected after connection between the BCU and MCU.</li> <li>• After a communication error, three tries to communicate with the MCU failed.</li> </ul> | <ul style="list-style-type: none"> <li>• Poor connection between BCU and MCU</li> <li>• BCU defective</li> <li>• MCU defective</li> </ul> |

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| <b>SC620</b> | <b>B</b> | Communication Error Between BCU and ADF 1                                                                                     |                                                                                                                                                                                                     |
|              |          | There was no response from the ADF 100 ms after the ACK signal was sent to the ADF. Three attempts to resend the data failed. | <ul style="list-style-type: none"> <li>• Poor connection between the BCU board and the ADF main board</li> <li>• Interference from external noise on the harness between the BCU and ADF</li> </ul> |

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| <b>SC621</b> | <b>B</b> | Communication Error Between BCU and ADF 2                                                   |                                                                                                                                                                 |
|              |          | The machine detected a break signal (LOW) from the line connection between the BCU and ADF. | <ul style="list-style-type: none"> <li>• Serial line connection unstable</li> <li>• Harness, connectors between ADF and BCU loose, broken, defective</li> </ul> |

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| <b>SC622</b> | <b>B</b> | Communication Error Between BCU and ADF 3     |                                                                                                        |
|              |          | Software error after improper user operation. | <ul style="list-style-type: none"> <li>• Software error</li> <li>• Cycle the machine off/on</li> </ul> |

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| <b>SC625</b> | <b>B</b> | Communication Error Between BCU and Finisher                                                                                                                                         |                                                                                                                       |
|              |          | The BCU cannot communicate with the finisher properly. There was no response from the ADF 100 ms after the ACK signal was sent to the ADF. Three attempts to resend the data failed. | <ul style="list-style-type: none"> <li>• Poor connection between the BCU board and the finisher main board</li> </ul> |

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| <b>SC626</b> | <b>B</b> | Communication Error Between BCU and Finisher |                                                                                                                                                                                                                                                                                                     |
|              |          | A break signal (LOW) was detected.           | <ul style="list-style-type: none"> <li>• Poor connection between the BCU board and the finisher main board</li> <li>• Finisher main board defective</li> <li>• BCU board defective</li> <li>• External electrical noise on the interface cable caused the serial line to become unstable</li> </ul> |



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| <b>SC630</b> | <b>B</b> | CSS Communication |  |
|              |          | <b>Japan Only</b> |  |

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| <b>SC632</b> | <b>B</b> | Charge Unit Device Error 1 |  |
|              |          | <b>Japan Only</b>          |  |

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| <b>SC633</b> | <b>B</b> | Charge Unit Device Error 2 |  |
|              |          | <b>Japan Only</b>          |  |

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| <b>SC650</b> | <b>D</b> | NRS Modem Communication Error                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                              |
|              |          | One of the following factors could be the cause of this error: <ul style="list-style-type: none"> <li>• In the User Tools, check the settings for the dial-up user name and dial up password.</li> <li>• Modem has been disconnected.</li> <li>• Modem board disconnected.</li> </ul> | Check the following for a machine that is using Cumin (NRS modem): <ul style="list-style-type: none"> <li>• An error was returned during the dialup connection</li> <li>• A network was detected at startup</li> <li>• At startup the machine detected that the NIB was disabled, or did not detect a modem board</li> </ul> |

**NOTE:** For more details about this SC code error, execute **SP5990** to print an SMC report so you can read the error code. The error code is not displayed on the operation panel. Here is a list of error codes:

| Error | Problem                                                                                                      | Solution                                                                                                                                                                         |
|-------|--------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1     | Failure to certify dial-up                                                                                   | In the User Tools, check the dial-up user and dial-up password settings                                                                                                          |
| 4     | Illegal modem setting                                                                                        | Check the setting of <b>SP5816 160</b> to determine whether the setting for the AT command is correct. If this SP setting is correct, then the problem is a bug in the software. |
| 5     | Poor connection due to low power supply on the line.                                                         | The problem is on the external power supply line, so there is no corrective action on the machine.                                                                               |
| 11    | Data in the NVRAM became corrupted when the network enable switch and Cumin-M were enabled at the same time. | Use <b>SP5985 1</b> and set the NIC to "0" (Disable) to disable the network board.                                                                                               |
| 12    | The modem board could not enable the NIB.                                                                    | Replace the modem board.                                                                                                                                                         |

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| <b>SC651</b> | <b>C</b> | Illegal Remote Service Dial-up                                    |                                                                                                                                    |
|              |          | An expected error occurred when Cumin-M dialed up the NRS Center. | <ul style="list-style-type: none"> <li>• Software bug</li> <li>• No action is required because only the count is logged</li> </ul> |

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| <b>SC670</b> | <b>B</b> | <p><b>Engine Startup Error</b></p> <p>At power on or after the machine leaves the energy conservation mode:</p> <ul style="list-style-type: none"> <li>• ENGRDY signal does not assert</li> <li>• IPURDY signal does not assert</li> </ul> <p>After power on and the prescribed time has elapsed:</p> <ul style="list-style-type: none"> <li>• No EC response from the engine</li> <li>• No PC response from the engine</li> <li>• No SC response from the engine</li> </ul> <p>During machine operation mode:</p> <ul style="list-style-type: none"> <li>• Write to Rapi drive failure (could not locate destination on the PCI)</li> <li>• After the /ENGRDY signal asserts with no effect.</li> </ul> <ul style="list-style-type: none"> <li>• BCU <math>\leftrightarrow</math> Controller Board disconnected</li> <li>• BCU board defective</li> <li>• Controller board defective</li> <li>• Mother board defective</li> <li>• Software error; switch off/on, if that fails, change the engine firmware</li> <li>• PSU-E or PSU-C defective</li> </ul> |
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| <b>SC672</b> | <b>B</b> | <p><b>Controller Startup Error</b></p> <p>The line between the controller board and the operation panel does not open correctly when the machine is powered on, or after the machine was powered on communication between the controller and operation panel is suspended.</p> <p>The controller board and operation panel could not exchange the handshake (FDH) and acknowledge (FEH) signals within 15 s of the operation panel reset after power on, or after 2 retries there was no response to the transmission line confirmation command issued every 30 s from the operation panel to the controller board.</p> <ul style="list-style-type: none"> <li>• Controller board defective</li> <li>• Controller board installed incorrectly</li> <li>• Operation panel harness connection loose or incorrect</li> </ul> |
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| <b>SC701</b> | <b>B</b> | <p><b>ADF Pickup Roller Release Malfunction</b></p> <p>The pick-up roller HP sensor does not activate or de-activate when the pick-up motor turns on.</p> <ul style="list-style-type: none"> <li>• HP sensor connector, harness loose, broken, defective</li> <li>• Pick-up motor connector, harness loose, broken defective</li> <li>• Pick-up roller HP sensor defective</li> <li>• Pick-up motor defective</li> <li>• ADF main control board defective</li> </ul> |
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| <b>SC702</b> | <b>B</b> | <p><b>ADF Feed-In Motor Error</b></p> <p>While the feed motor is operating, the encoder pulse signal is not received within the specified time, or the paper size length encoder signal cannot be detected within the specified time (the encoder is built into the feed-in motor).</p> <ul style="list-style-type: none"> <li>• Feed-in motor connector, harness loose, broken, defective</li> <li>• Paper length sensor connector, harness loose, broken, defective</li> <li>• Feed-in motor defective</li> <li>• Paper length sensor or encoder is defective</li> <li>• ADF main control board defective</li> </ul> |
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| <b>SC703</b> | <b>B</b> | <b>ADF Transport Belt Motor Error</b>                                                                                                                 |                                                                                                                                                                                                  |
|              |          | While the motor is operating, the encoder pulse signal is not received within the specified time and the transport belt motor does not turn properly. | <ul style="list-style-type: none"> <li>• Transport belt motor defective</li> <li>• Poor connection between the transport motor and ADF main board</li> <li>• ADF main board defective</li> </ul> |

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| <b>SC704</b> | <b>B</b> | <b>ADF Feed-Out Motor Error</b>                                                                                                                          |                                                                                                                                                                                                   |
|              |          | While the feed-out motor is operating, the encoder pulse signal is not received within the specified time, and the feed-out motor does not turn properly | <ul style="list-style-type: none"> <li>• Feed-out motor defective</li> <li>• Poor connection between the feed-out motor and ADF main board</li> <li>• ADF main control board defective</li> </ul> |

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| <b>SC705</b> | <b>B</b> | <b>ADF Original Table Lift Malfunction</b>                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                          |
|              |          | <p>One of the following conditions was detected.</p> <ul style="list-style-type: none"> <li>• The bottom plate position sensor does not activate when the bottom plate motor lifts the original table.</li> <li>• The bottom plate HP sensor does not activate when the bottom plate motor lowers the original table.</li> </ul> | <ul style="list-style-type: none"> <li>• The harnesses, connectors of the bottom plate position sensor, bottom plate HP sensor, bottom plate motor loose, broken, defective</li> <li>• Bottom plate position sensor defective</li> <li>• Bottom plate HP sensor defective</li> <li>• Bottom plate motor defective</li> <li>• ADF main control board defective</li> </ul> |

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| <b>SC720</b> | <b>B</b> | <b>Finisher Upper Transport Motor Error</b>                                                                                                                                        |                                                                                                                                                                                                               |
|              |          | The encoder pulse signal of the upper transport motor in the 3000-Sheet Finisher B830 did not change within the specified time. The upper transport motor did not rotate properly. | <ul style="list-style-type: none"> <li>• Motor harness, connector loose, broken, defective</li> <li>• Motor overloaded</li> <li>• Motor defective</li> <li>• Finisher main control board defective</li> </ul> |

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| <b>SC721</b> | <b>B</b> | <b>Finisher Lower Transport Motor Error</b>                                                                                                                                        |                                                                                                                                                                                                                             |
|              |          | The encoder pulse signal of the lower transport motor in the 3000-Sheet Finisher B830 did not change within the specified time. The lower transport motor did not rotate properly. | <ul style="list-style-type: none"> <li>• Motor harness, connector loose, broken, defective</li> <li>• Motor overloaded</li> <li>• Motor defective</li> <li>• Finisher main control board disconnected, defective</li> </ul> |

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| <b>SC723</b> | <b>D</b> | <b>Positioning Roller Motor Error (3K Finisher B830)</b>                    |                                                                                                                                                                                                                                           |
|              |          | The positioning roller motor of the 3K Finisher is not operating correctly. | <ul style="list-style-type: none"> <li>• Cycle the machine off/on</li> <li>• Motor harness loose, defective</li> <li>• Motor defective</li> <li>• Finisher main control board disconnected, defective</li> <li>• MCU defective</li> </ul> |

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| <b>SC724</b> | <b>D</b> | <b>Finisher Staple Hammer Motor Error</b>                                                            |                                                                                                                                                                                                                                                                                                                                   |
|              |          | Stapling does not finish within the specified time (450 ms) after the staple hammer motor turned on. | <ul style="list-style-type: none"> <li>• Positioning roller HP sensor loose, broken, defective</li> <li>• Positioning mechanism overloaded</li> <li>• Positioning roller motor overloaded due to obstruction</li> <li>• Main control board connectors loose, broken, defective</li> <li>• Main control board defective</li> </ul> |

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| <b>SC725</b> | <b>D</b> | <b>Finisher Stack Feed-Out Motor Error</b>                                                                                   |                                                                                                                                                                                                                                                                                                                                   |
|              |          | The stack feed-out belt HP sensor does not activate within the specified time after the stack feed-out belt motor turned on. | <ul style="list-style-type: none"> <li>• Positioning roller HP sensor loose, broken, defective</li> <li>• Positioning mechanism overloaded</li> <li>• Positioning roller motor overloaded due to obstruction</li> <li>• Main control board connectors loose, broken, defective</li> <li>• Main control board defective</li> </ul> |

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| <b>SC726</b> | <b>D</b> | <b>Finisher Shift Motor Error: 3K Finisher B830</b>                                                |                                                                                                                                                                                                                                                                                                                                   |
|              |          | The state of the shift tray half-turn sensor status did not change after the shift motor turns on. | <ul style="list-style-type: none"> <li>• Positioning roller HP sensor loose, broken, defective</li> <li>• Positioning mechanism overloaded</li> <li>• Positioning roller motor overloaded due to obstruction</li> <li>• Main control board connectors loose, broken, defective</li> <li>• Main control board defective</li> </ul> |

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| <b>SC728</b> | <b>D</b> | <b>Shift Jogger Retraction Motor Error: 3K Finisher B830</b>                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|              |          | <p>The side fences do arrive at the home position within the specified time.</p> <p>-or-</p> <p>The side fences did not leave the home position within the specified time.</p> <p><b>Note:</b> The 1st detection failure issues a jam error, and the 2nd failure issues this SC code.</p> | <ul style="list-style-type: none"> <li>• If the motor is rotating, positioning roller HP sensor loose, broken, defective</li> <li>• If the motor is not rotating: <ul style="list-style-type: none"> <li>• Positioning mechanism overloaded</li> <li>• Positioning roller motor overloaded due to obstruction</li> <li>• Positioning roller motor disconnected, defective</li> </ul> </li> <li>• Main control board connectors loose, broken, defective</li> <li>• Main control board defective</li> </ul> |

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| <b>SC730</b> | <b>D</b> | <b>Lower Transport Motor Error: 3K Finisher B830</b>                                                                                                                      |                                                                                                                                                                                                                                                                                                                           |
|              |          | No encoder pulse signal is detected for the lower transport motor within 600 ms. The 1st failure issues an original jam message, and the 2nd failure issues this SC code. | <ul style="list-style-type: none"> <li>• Lower transport motor disconnected, defective</li> <li>• Finisher connection to lower transport motor loose, defective</li> <li>• Lower transport motor blocked by an obstruction</li> <li>• Lower transport motor defective</li> <li>• Finisher main board defective</li> </ul> |

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| <b>SC731</b> | <b>B</b> | <b>Upper Transport Motor Error (Proof Tray): 3K Finisher B830</b>                                                     |                                                                                                                                                                                                                                                                                                                           |
|              |          | No encoder pulse signal is detected for the upper transport motor within 600 ms. The 1st failure issues this SC code. | <ul style="list-style-type: none"> <li>• Upper transport motor disconnected, defective</li> <li>• Finisher connection to upper transport motor loose, defective</li> <li>• Upper transport motor blocked by an obstruction</li> <li>• Upper transport motor defective</li> <li>• Finisher main board defective</li> </ul> |

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| <b>SC732</b> | <b>D</b> | <b>Shift Tray Exit Motor: 3K Finisher B830</b> |                                                                                                                                                                                                                      |
|              |          | The shift tray exit motor is not operating.    | <ul style="list-style-type: none"> <li>• Motor harness loose, broken, defective</li> <li>• Motor is blocked by an obstruction</li> <li>• Motor defective</li> <li>• Finisher main control board defective</li> </ul> |

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| <b>SC733</b> | <b>D</b> | <b>Stapler Exit Motor: 3K Finisher B830</b> |                                                                                                                                                                                                                      |
|              |          | The stapler exit motor is not operating.    | <ul style="list-style-type: none"> <li>• Motor harness loose, broken, defective</li> <li>• Motor is blocked by an obstruction</li> <li>• Motor defective</li> <li>• Finisher main control board defective</li> </ul> |

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| <b>SC734</b> | <b>B</b> | <b>Upper Tray Junction Gate Motor: 3K Finisher B830</b>                                                                                                                                                                                                        |                                                                                                                                                                                                                    |
|              |          | <p>The upper tray junction gate HP sensor did not detect the gate at the home position within 200 ms after two attempts.</p> <p>-or-</p> <p>The HP sensor twice detected the gate at the home position for more than 200 ms after it was supposed to open.</p> | <ul style="list-style-type: none"> <li>• Junction gate did not arrive at the home position within the specified time</li> <li>• Junction gate did not leave the home position within the specified time</li> </ul> |

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| <b>SC735</b> | <b>B</b> | <b>Staple Junction Gate Motor Error: 3K Finisher B830</b>                                                                                                                                                                                                       |                                                                                                                                                                                                                    |
|              |          | <p>The staple tray junction gate HP sensor did not detect the gate at the home position within 200 ms after two attempts.</p> <p>-or-</p> <p>The HP sensor twice detected the gate at the home position for more than 200 ms after it was supposed to open.</p> | <ul style="list-style-type: none"> <li>• Junction gate did not arrive at the home position within the specified time</li> <li>• Junction gate did not leave the home position within the specified time</li> </ul> |

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| <b>SC736</b> | <b>D</b> | <b>Pre-Stack Junction Gate Motor Error: 3K Finisher B830</b>                                                                                                                                                                                                      |                                                                                                                                                                                                                    |
|              |          | <p>The pre-stack junction gate HP sensor did not detect the gate at the home position for within 200 ms after two attempts.</p> <p>-or-</p> <p>The HP sensor twice detected the gate at the home position for more than 200 ms after it was supposed to open.</p> | <ul style="list-style-type: none"> <li>• Junction gate did not arrive at the home position within the specified time</li> <li>• Junction gate did not leave the home position within the specified time</li> </ul> |

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| <b>SC737</b> | <b>D</b> | <b>Pre-Stack Transport Motor Error: 3K Finisher B830</b> |                                                                                                                                                                                                                      |
|              |          | <p>The pre-stack transport motor is not operating.</p>   | <ul style="list-style-type: none"> <li>• Motor harness loose, broken, defective</li> <li>• Motor is blocked by an obstruction</li> <li>• Motor defective</li> <li>• Finisher main control board defective</li> </ul> |

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| <b>SC738</b> | <b>D</b> | <b>Pre-Stack Junction Gate Release Motor Error: 3K Finisher B830</b>                                                                                                                                                                                                  |                                                                                                                                                                                                                    |
|              |          | <p>The pre-stack junction gate release HP sensor did not detect the gate at the home position within 200 ms after two attempts.</p> <p>-or-</p> <p>The HP sensor twice detected the gate at the home position for more than 200 ms after it was supposed to open.</p> | <ul style="list-style-type: none"> <li>• Junction gate did not arrive at the home position within the specified time</li> <li>• Junction gate did not leave the home position within the specified time</li> </ul> |

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| <b>SC740</b> | <b>D</b> | <b>Finisher Corner Stapler Motor Error: 3K Finisher B830</b>                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|              |          | The stapler motor did not switch off within 600 ms after operating. The 1st detection failure issues a jam error, and the 2nd failure issues this SC code. | <ul style="list-style-type: none"> <li>• Number of sheets in the stack exceeded the limit for stapling</li> <li>• If error occurred during stapling, stapler rotation sensor 1 defective (replace stapler)</li> <li>• If error did not occur during stapling: staple jam:               <ol style="list-style-type: none"> <li>1 Motor blocked by an obstruction</li> <li>2 Stapler motor harness loose, broken, defective</li> <li>3 Corner stapler motor defective</li> <li>4 Main control board defective</li> </ol> </li> </ul> |

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| <b>SC741</b> | <b>D</b> | <b>Finisher Corner Stapler Rotation Motor Error: 3K Finisher B830</b>                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|              |          | <p>The stapler did not return to its home position within the specified time after stapling.</p> <p>-or-</p> <p>The stapler failed to leave the home position within the specified time.</p> <p>The 1st detection failure issues a jam error, and the 2nd failure issues this SC code.</p> | <ul style="list-style-type: none"> <li>• If the motor is running,               <ol style="list-style-type: none"> <li>1 Stapler rotation home position sensor harnesses are broken, loose, or defective</li> <li>2 Stapler rotation home position sensors are defective</li> </ol> </li> <li>• If the motor is not running:               <ol style="list-style-type: none"> <li>1 Motor is blocked by an obstruction</li> <li>2 Motor harness is loose, broken, defective</li> <li>3 Motor is defective</li> </ol> </li> </ul> |

Trouble-shooting

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| <b>SC742</b> | <b>D</b> | <b>Finisher Stapler Movement Motor Error: 3K Finisher B830</b>                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|              |          | <p>The stapler did not return to its home position within the specified time after stapling.</p> <p>-or-</p> <p>The stapler failed to leave the home position within the specified time</p> <p>The 1st detection failure issues a jam error, and the 2nd failure issues this SC code.</p> | <ul style="list-style-type: none"> <li>• If the motor is running,               <ol style="list-style-type: none"> <li>1 Stapler home position sensor harness is broken, loose, or defective</li> <li>2 Stapler home position sensor is defective</li> </ol> </li> <li>• If the motor is not running:               <ol style="list-style-type: none"> <li>1 Motor is blocked by an obstruction</li> <li>2 Motor harness is loose, broken, defective</li> <li>3 Motor is defective</li> </ol> </li> </ul> |

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| <b>SC743</b> | <b>D</b> | <b>Booklet Stapler Motor Error 1: Front Motor (Booklet Finisher)</b>                                                                                                      |                                                                                                                                                                                                                                            |
|              |          | The front stapler unit saddle-stitch motor does not start operation within 600 ms. The 1st detection failure issues a jam error, and the 2nd failure issues this SC code. | <ul style="list-style-type: none"> <li>• Front motor harness loose, broken, defective</li> <li>• Front motor overloaded due to obstruction</li> <li>• Front motor defective</li> <li>• Booklet finisher control board defective</li> </ul> |

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| <b>SC744</b> | <b>D</b> | <b>Booklet Stapler Motor Error 2: Rear Motor (Booklet Finisher)</b>                                                                                                      |                                                                                                                                                                                                                                         |
|              |          | The rear stapler unit saddle-stitch motor does not start operation within 500 ms. The 1st detection failure issues a jam error, and the 2nd failure issues this SC code. | <ul style="list-style-type: none"> <li>• Rear motor harness loose, broken, defective</li> <li>• Rear motor overloaded due to obstruction</li> <li>• Rear motor defective</li> <li>• Booklet finisher control board defective</li> </ul> |

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| <b>SC745</b> | <b>D</b> | <b>Feed-Out Belt Motor Error (Booklet Finisher)</b>                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|              |          | The stack feed-out belt HP sensor does not activate within the specified time after the stack feed-out belt motor turns on. The 1st detection failure issues a jam error, and the 2nd failure issues this SC code. | <ul style="list-style-type: none"> <li>• If the motor is operating               <ol style="list-style-type: none"> <li>1 Stack feed-out HP sensor harness loose, broken, defective</li> <li>2 Stack feed-out HP sensor defective</li> </ol> </li> <li>• If the motor is not operating:               <ol style="list-style-type: none"> <li>1 Feed-out motor blocked by an obstruction</li> <li>2 Feed-out motor harness loose, broken, defective</li> <li>3 Feed-out motor defective</li> <li>4 Booklet finisher main board defective</li> </ol> </li> </ul> |

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| <b>SC746</b> | <b>D</b> | <b>Stack Plate Motor Error 1: Front Motor (3K Finisher B830)</b>                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|              |          | The stack plate HP sensor (front) does not activate within 500 ms after the motor turns on. The 1st detection failure issues a jam error, and the 2nd failure issues this SC code. | <ul style="list-style-type: none"> <li>• If the motor is operating               <ol style="list-style-type: none"> <li>1 Front stack plate HP sensor harness loose, broken, defective</li> <li>2 Front stack plate HP sensor defective</li> </ol> </li> <li>• If the motor is not operating:               <ol style="list-style-type: none"> <li>1 Motor blocked by an obstruction</li> <li>2 Motor harness loose, broken, defective</li> <li>3 Motor defective</li> <li>4 Booklet finisher main board defective</li> </ol> </li> </ul> |

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| <b>SC747</b> | <b>D</b> | <b>Stack Plate Motor Error 2: Center Motor (3K Finisher B830)</b>                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|              |          | The stack plate HP sensor (center) does not activate within 500 ms after the motor turns on. The 1st detection failure issues a jam error, and the 2nd failure issues this SC code. | <ul style="list-style-type: none"> <li>• If the motor is operating               <ol style="list-style-type: none"> <li>1 Center stack plate HP sensor harness loose, broken, defective</li> <li>2 Center stack plate HP sensor defective</li> </ol> </li> <li>• If the motor is not operating:               <ol style="list-style-type: none"> <li>1 Motor blocked by an obstruction</li> <li>2 Motor harness loose, broken, defective</li> <li>3 Motor defective</li> <li>4 Booklet finisher main board defective</li> </ol> </li> </ul> |



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| <b>SC748</b> | <b>D</b> | <b>Stack Plate Motor Error 3: Rear Motor (3K Finisher B830)</b>                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|              |          | The stack plate HP sensor (rear) does not activate within 500 ms after the motor turns on. The 1st detection failure issues a jam error, and the 2nd failure issues this SC code. | <ul style="list-style-type: none"> <li>• If the motor is operating               <ol style="list-style-type: none"> <li>1 Rear stack plate HP sensor harness loose, broken, defective</li> <li>2 Rear stack plate HP sensor defective</li> </ol> </li> <li>• If the motor is not operating:               <ol style="list-style-type: none"> <li>1 Motor blocked by an obstruction</li> <li>2 Motor harness loose, broken, defective</li> <li>3 Motor defective</li> <li>4 Booklet finisher main board defective</li> </ol> </li> </ul> |

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| <b>SC750</b> | <b>D</b> | <b>Tray 1 (Upper Tray Lift) Motor Error: 3K Finisher B830</b>                                                                                                                                        |                                                                                                                                                                                                                                                                 |
|              |          | The upper tray paper height sensor does not change its status within 20 sec. after the tray raises or lowers. The 1st detection failure issues a jam error, and the 2nd failure issues this SC code. | <ul style="list-style-type: none"> <li>• Tray lift motor disconnected, defective</li> <li>• Upper tray paper height sensor disconnected, defective</li> <li>• Finisher main board connection to motor loose</li> <li>• Finisher main board defective</li> </ul> |

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| <b>SC753</b> | <b>D</b> | <b>Stacking Roller Motor Error: 3K Finisher B830</b>                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|              |          | <p>The return drive HP sensor did not detect the stacking roller at the HP sensor within 1 sec.</p> <p>-or-</p> <p>The stacking roller did not leave the home position at the specified time.</p> | <ul style="list-style-type: none"> <li>• If the motor is operating               <ol style="list-style-type: none"> <li>1 Return drive HP sensor harness loose, broken, defective</li> <li>2 Return drive HP sensor defective</li> </ol> </li> <li>• If the motor is not operating:               <ol style="list-style-type: none"> <li>1 Motor blocked by an obstruction</li> <li>2 Motor harness loose, broken, defective</li> <li>3 Motor defective</li> <li>4 Finisher main board defective</li> </ol> </li> </ul> |

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| <b>SC754</b> | <b>D</b> | <b>Stacking Roller Drag Motor Error: 3K Finisher B830</b> |                                                                                                                                                                   |
|              |          | The stacking roller drag motor did not turn on.           | <ul style="list-style-type: none"> <li>• Motor harness loose, broken, defective</li> <li>• Motor defective</li> <li>• Finisher control board defective</li> </ul> |

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| <b>SC755</b> | <b>D</b> | <b>Shift Motor Error: 3K Finisher B830</b>                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|              |          | <p>The shift tray half-turn sensors:<br/>Failed twice to detect the shift tray at the home position at the specified time.</p> <p>-or-</p> <p>Failed twice to detect that the shift tray had left the home position.</p> | <ul style="list-style-type: none"> <li>If the motor is operating:               <ol style="list-style-type: none"> <li>1 Half-turn sensor 1, 2 harnesses loose, broken, defective</li> <li>2 One of the half-turn sensors defective</li> </ol> </li> <li>If the motor is not operating:               <ol style="list-style-type: none"> <li>1 Motor blocked by an obstruction</li> <li>2 Motor harness loose, broken, defective</li> <li>3 Motor defective</li> <li>4 Finisher main board defective</li> </ol> </li> </ul> |

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| <b>SC760</b> | <b>B</b> | <b>Punch Motor Error: 3K Finisher B830</b>                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|              |          | <p>The punch HP sensor is not activated within the specified time after the punch motor turned on. The 1st detection failure issues a jam error, and the 2nd failure issues this SC code.</p> | <ul style="list-style-type: none"> <li>If the motor is operating:               <ol style="list-style-type: none"> <li>1 Punch HP sensor loose, broken, defective</li> <li>2 Punch HP sensor defective</li> </ol> </li> <li>If the motor is not operating:               <ol style="list-style-type: none"> <li>1 Motor blocked by an obstruction</li> <li>2 Motor harness loose, broken, defective</li> <li>3 Motor defective</li> <li>4 Finisher main board defective</li> </ol> </li> </ul> |

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| <b>SC761</b> | <b>D</b> | <b>Fold Plate Motor Error: Booklet Finisher</b>                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|              |          | <p>The fold plate moves but:<br/>The fold plate HP sensor did not detect it at the home position within the specified time.</p> <p>-or-</p> <p>The plate remained at the home position longer than the specified time.</p> <p>The 1st detection failure issues a jam error, and the 2nd failure issues this SC code.</p> | <ul style="list-style-type: none"> <li>If the motor is operating:               <ol style="list-style-type: none"> <li>1 Punch HP sensor loose, broken, defective</li> <li>2 Punch HP sensor defective</li> </ol> </li> <li>If the motor is not operating:               <ol style="list-style-type: none"> <li>1 Motor blocked by an obstruction</li> <li>2 Motor harness loose, broken, defective</li> <li>3 Motor defective</li> <li>4 Finisher main board defective</li> </ol> </li> </ul> |

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| <b>SC765</b> | <b>D</b> | <b>Fold Unit Bottom Fence Lift Motor Error</b>                                                   |                                                                                                                                                                                                                                                                                                                                                                                                      |
|              |          | <p>The fold unit bottom fence did not return to the home position within the specified time.</p> | <ul style="list-style-type: none"> <li>Fold bottom fence mechanism overloaded due to an obstruction</li> <li>Fold bottom fence HP sensor connector loose, broken, defective</li> <li>Fold bottom fence HP sensor defective</li> <li>Fold bottom fence lift motor connector loose, broken, defective</li> <li>Fold bottom fence lift motor defective</li> <li>Main control board defective</li> </ul> |

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| <b>SC766</b> | <b>D</b> | <b>Clamp Roller Retraction Motor</b>                                            |                                                                                                                                                                                                                                                                                                                                                                                                     |
|              |          | The clamp roller did not return to the home position within the specified time. | <ul style="list-style-type: none"> <li>• Clamp roller mechanism overloaded due to an obstruction</li> <li>• Clamp roller HP sensor connector loose, broken, defective</li> <li>• Clamp roller HP sensor defective</li> <li>• Clamp roller retraction motor connector loose, broken, defective</li> <li>• Clamp roller retraction motor defective</li> <li>• Main control board defective</li> </ul> |

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| <b>SC767</b> | <b>D</b> | <b>Stack Junction Gate Motor</b>                                                       |                                                                                                                                                                                                                                                                                                                                                                                                             |
|              |          | The stack junction gate did not return to the home position within the specified time. | <ul style="list-style-type: none"> <li>• Stack junction mechanism overloaded due to an obstruction</li> <li>• Stack junction gate HP sensor connector loose, broken, defective</li> <li>• Stack junction gate HP sensor defective</li> <li>• Stack junction gate motor connector loose, broken, defective</li> <li>• Stack junction gate motor defective</li> <li>• Main control board defective</li> </ul> |

Troubleshooting

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| <b>SC770</b> | <b>D</b> | <b>Cover Interposer Lift Motor 1 Error</b>                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                       |
|              |          | In the first tray: <ul style="list-style-type: none"> <li>• The upper limit sensor did not detect the bottom plate within the specified time after the lift motor switched on to lift the bottom plate.</li> <li>• The lower limit sensor did not direct the bottom plate within the specified time after the lift motor switched on to lower the bottom plate.</li> </ul> <b>Note:</b> In both cases, 1 error count indicates a jam, 2 error counts issue this SC code. | <ul style="list-style-type: none"> <li>• Lift motor, upper limit sensor, lower limit sensor harnesses, connectors loose, broken, defective</li> <li>• Lift motor defective</li> <li>• Upper limit sensor defective</li> <li>• Lower limit sensor defective</li> </ul> |

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| <b>SC771</b> | <b>D</b> | <b>Cover Interposer Lift Motor 2 Error</b>                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                       |
|              |          | In the second tray: <ul style="list-style-type: none"> <li>• The upper limit sensor did not detect the bottom plate within the specified time after the lift motor switched on to lift the bottom plate.</li> <li>• The lower limit sensor did not direct the bottom plate within the specified time after the lift motor switched on to lower the bottom plate.</li> </ul> <b>Note:</b> In both cases, 1 error count indicates a jam, 2 error counts issue this SC code. | <ul style="list-style-type: none"> <li>• Lift motor, upper limit sensor, lower limit sensor harnesses, connectors loose, broken, defective</li> <li>• Lift motor defective</li> <li>• Upper limit sensor defective</li> <li>• Lower limit sensor defective</li> </ul> |

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| <b>SC772</b> | <b>D</b> | <p><b>Cover Interposer Pickup Motor 1 Error</b></p> <p>In the first tray:</p> <ul style="list-style-type: none"> <li>• While the pick-up roller motor was on, the pick-up roller HP sensor did not detect the pick-up roller at the home position <u>within</u> the specified number of pulses.</li> <li>• While the pick-up roller motor was on, the pick-up roller HP sensor did not detect the pick-up roller at the home position <u>above</u> the specified number of pulses.</li> </ul> <p><b>Note:</b> In both cases, 1 error count indicates a jam, 2 error counts issue this SC code.</p> <ul style="list-style-type: none"> <li>• The pick-up motor, pick-up roller HP sensor harnesses, connectors were loose, broken, defective</li> <li>• Pick-up motor overload due to an obstruction</li> <li>• Pick-up motor defective</li> <li>• Pick-up roller HP sensor defective</li> </ul> |
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| <b>SC773</b> | <b>D</b> | <p><b>Cover Interposer Pickup Motor 2 Error</b></p> <p>In the second tray:</p> <ul style="list-style-type: none"> <li>• While the pick-up roller motor was on, the pick-up roller HP sensor did not detect the pick-up roller at the home position <u>within</u> the specified number of pulses.</li> <li>• While the pick-up roller motor was on, the pick-up roller HP sensor did not detect the pick-up roller at the home position <u>above</u> the specified number of pulses.</li> </ul> <p><b>Note:</b> In both cases, 1 error count indicates a jam, 2 error counts issue this SC code.</p> <ul style="list-style-type: none"> <li>• The pick-up motor, pick-up roller HP sensor harnesses, connectors were loose, broken, defective</li> <li>• Pick-up motor overload due to an obstruction</li> <li>• Pick-up motor defective</li> <li>• Pick-up roller HP sensor defective</li> </ul> |
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| <b>SC775</b> | <b>D</b> | <p><b>Jogger Top Fence Motor: 3K Finisher B830</b></p> <p>The top fence HP sensor detected that:<br/>The top fence did not arrive at the home position within the specified number of pulses.<br/>-or-<br/>The top fence failed to leave the home position within the specified number of pulses.</p> <ul style="list-style-type: none"> <li>• If the jogger top fence motor is operating:             <ol style="list-style-type: none"> <li>1 Top fence HP sensor harness loose, broken, defective</li> <li>2 Top fence HP sensor defective</li> </ol> </li> <li>• If the jogger top fence motor is not operating:             <ol style="list-style-type: none"> <li>1 Motor blocked by an obstruction</li> <li>2 Motor harness loose, broken, defective</li> <li>3 Motor defective</li> <li>4 Finisher main board defective</li> </ol> </li> </ul> |
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| <b>SC776</b> | <b>D</b> | <b>Jogger Bottom Fence Motor: 3K Finisher B830</b>                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|              |          | <p>The bottom fence HP sensor detected that:<br/>The bottom fence did not arrive at the home position at the specified time.</p> <p>-or-</p> <p>The bottom fence failed to leave the home position at the specified time.</p> | <ul style="list-style-type: none"> <li>If the jogger bottom fence motor is operating:               <ol style="list-style-type: none"> <li>Bottom fence HP sensor harness loose, broken, defective</li> <li>Bottom fence HP sensor defective</li> </ol> </li> <li>If the jogger bottom fence motor is not operating:               <ol style="list-style-type: none"> <li>Motor blocked by an obstruction</li> <li>Motor harness loose, broken, defective</li> <li>Motor defective</li> <li>Finisher main board defective</li> </ol> </li> </ul> |

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| <b>SC780</b> | <b>D</b> | <b>Z-Fold Feed Motor Error</b>                                                                                                                                        |                                                                                                                                                            |
|              |          | <p>The feed motor that drives the feed rollers and exit rollers in the Z-fold unit is not operating. The 1st alert signals a jam, the 2nd alert triggers this SC.</p> | <ul style="list-style-type: none"> <li>Motor harness loose, broken, defective</li> <li>Motor blocked by an obstruction</li> <li>Motor defective</li> </ul> |

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| <b>SC781</b> | <b>D</b> | <b>Z-Fold Lower Stopper Motor Error</b>                                                                                                                                                                          |                                                                                                                                                                                                                   |
|              |          | <p>The lower stopper failed to leave the home position with the specified number of motor pulses.</p> <p><b>Note:</b> The 1st detection failure issues a jam error, and the 2nd failure issues this SC code.</p> | <ul style="list-style-type: none"> <li>Lower stopper motor disconnected, defective</li> <li>Lower stopper motor overloaded due to obstruction</li> <li>Lower stopper HP sensor disconnected, defective</li> </ul> |

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| <b>SC782</b> | <b>D</b> | <b>Z-fold Upper Stopper Motor</b>                                                                                                                                                                                |                                                                                                                                                                                                                   |
|              |          | <p>The upper stopper failed to leave the home position with the specified number of motor pulses.</p> <p><b>Note:</b> The 1st detection failure issues a jam error, and the 2nd failure issues this SC code.</p> | <ul style="list-style-type: none"> <li>Upper stopper motor disconnected, defective</li> <li>Upper stopper motor overloaded due to obstruction</li> <li>Upper stopper HP sensor disconnected, defective</li> </ul> |

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| <b>SC784</b> | <b>D</b> | <b>Z-Fold Timing Sensor Adjustment Error 1</b>                                                                         |                                                                                                                                                                                   |
|              |          | <p>The output voltage light emitted from the sensor changed, but the return input was not sufficient to attain V0.</p> | <ul style="list-style-type: none"> <li>Sensor, mirror dirty from paper dust, other particles</li> <li>Harness loose, broken, defective</li> <li>Mirror out of position</li> </ul> |

|              |          |                                                                                                                 |                                                                                                                                                                                         |
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| <b>SC785</b> | <b>D</b> | <b>Z-Fold Timing Sensor Adjustment Error 2</b>                                                                  |                                                                                                                                                                                         |
|              |          | The output voltage light emitted from the sensor changed, but the return input was not sufficient to attain V0. | <ul style="list-style-type: none"> <li>• Sensor, mirror dirty from paper dust, other particles</li> <li>• Harness loose, broken, defective</li> <li>• Mirror out of position</li> </ul> |

|              |          |                                                        |                                                                                                          |
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| <b>SC786</b> | <b>D</b> | <b>Z-Fold Memory Error</b>                             |                                                                                                          |
|              |          | Several attempts to write to the Z-fold memory failed. | <ul style="list-style-type: none"> <li>• Cycle the machine off/on</li> <li>• EEPROM defective</li> </ul> |

|              |          |                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
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| <b>SC790</b> | <b>D</b> | <b>Booklet Stapler Jogger Motor Error</b>                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|              |          | The jogger fence HP sensor failed to detect the jogger fence at the home position within the specified time. | <ul style="list-style-type: none"> <li>• If the booklet stapler jogger motor is operating:               <ol style="list-style-type: none"> <li>1 Jogger fence HP sensor harness loose, broken, defective</li> <li>2 Jogger fence HP sensor defective</li> </ol> </li> <li>• If the jogger bottom fence motor is not operating:               <ol style="list-style-type: none"> <li>1 Motor blocked by an obstruction</li> <li>2 Motor harness loose, broken, defective</li> <li>3 Motor defective</li> <li>4 Finisher main board defective</li> </ol> </li> </ul> |

|              |          |                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
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| <b>SC791</b> | <b>D</b> | <b>Booklet Stapler Output Motor</b>                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|              |          | The stack feed out belt HP sensor failed to detect the feed out belt at the home position within the specified time. | <ul style="list-style-type: none"> <li>• If the booklet stapler output motor is operating:               <ol style="list-style-type: none"> <li>1 Stack feed out belt HP sensor harness loose, broken, defective</li> <li>2 Stack feed out belt HP sensor defective</li> </ol> </li> <li>• If the booklet stapler output motor is not operating:               <ol style="list-style-type: none"> <li>1 Motor blocked by an obstruction</li> <li>2 Motor harness loose, broken, defective</li> <li>3 Motor defective</li> <li>4 Finisher main board defective</li> </ol> </li> </ul> |

|              |          |                                                                                                                                                                                                                                                                            |                                                                                                                                                                        |
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| <b>SC817</b> | <b>D</b> | <b>Monitor Error</b>                                                                                                                                                                                                                                                       |                                                                                                                                                                        |
|              |          | This is a file detection and electronic file signature check error when the boot loader attempts to read the self-diagnostic module, system kernel, or root system files from the OS Flash ROM, or the items on the SD card in the controller slot are false or corrupted. | <ul style="list-style-type: none"> <li>• OS Flash ROM data defective; change the controller firmware</li> <li>• SD card data defective; use another SD card</li> </ul> |

**Error Codes**

| <b>Code</b> | <b>Meaning</b>                            |
|-------------|-------------------------------------------|
| 0x0000 0000 | BIOS boot error                           |
| 0x0000 0001 | Primary boot start load error             |
| 0x0000 0002 | Secondary boot load error (Boot3.Elf)     |
| 0x0000 0003 | Self-diagnostic module error (Diag.Elf)   |
| 0x0000 0004 | Kernel start error (Netbsd)               |
| 0x0000 0005 | Root file system file read error (Rootfs) |
| 0xffff ffff | Other error                               |

**Example:** Data in the self-diagnostic module, system kernel, or root system files are corrupted or do not exist in OS flash ROM or on the SD card  
Files in the self-diagnostic module, kernel, or root file system on the SD card have been falsified or altered

- Before discarding the SD card, try to update the data on the card. If the error occurs again, the card may be defective.
- Be sure to use an SD card that contains the correct electronic signature.

**Trouble-  
shooting**

|              |          |                                                                                                   |                                                                                                                           |
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| <b>SC833</b> |          | <b>Self-Diagnostic Error 7: Engine I/F ASIC</b>                                                   |                                                                                                                           |
|              | <b>C</b> | A read/write verify error done on the resident RAM on the mother board (Engine I/F board failed). | <ul style="list-style-type: none"> <li>• Replace RAM DIMM on the mother board.</li> <li>• Replace mother board</li> </ul> |

**NOTE:** For more details about this SC code error, execute **SP5990** to print an SMC report so you can read the error code. The error code is not displayed on the operation panel.

|              |          |                                                              |                                                                                                                                                        |
|--------------|----------|--------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>SC851</b> | <b>D</b> | <b>IEEE 1394 I/F Error</b>                                   |                                                                                                                                                        |
|              |          | Driver setting incorrect and cannot be used by the 1394 I/F. | <ul style="list-style-type: none"> <li>• NIB (PHY), LINK module defective; change the Interface Board</li> <li>• Controller board defective</li> </ul> |

|              |          |                                                                                                                                                                           |                                                                                      |
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| <b>SC853</b> | <b>D</b> | Wireless LAN Error 1                                                                                                                                                      |                                                                                      |
|              |          | The board that holds the wireless LAN card can be accessed, but the wireless LAN card (802.11b/Bluetooth) itself could not be accessed while the machine was starting up. | <ul style="list-style-type: none"> <li>Wireless LAN card has been removed</li> </ul> |

|              |          |                                                                                                                                                                      |                                                                                      |
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| <b>SC854</b> | <b>D</b> | Wireless LAN Error 2                                                                                                                                                 |                                                                                      |
|              |          | The board that holds the wireless LAN card can be accessed, but the wireless LAN card (802.11b/Bluetooth) itself cannot be accessed while the machine was operating. | <ul style="list-style-type: none"> <li>Wireless LAN card has been removed</li> </ul> |

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| <b>SC855</b> | <b>D</b> | Wireless LAN Error 3                                                   |                                                                                                                           |
|              |          | An error is detected for the wireless LAN card (802.11b or Bluetooth). | <ul style="list-style-type: none"> <li>Wireless LAN card defective</li> <li>Wireless card connection not tight</li> </ul> |

|              |          |                                                                         |                                                                                                                                                        |
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| <b>SC856</b> | <b>D</b> | Wireless LAN Error 4                                                    |                                                                                                                                                        |
|              |          | An error is detected for the wireless LAN board (802.11b or Bluetooth). | <ul style="list-style-type: none"> <li>Wireless LAN card board defective</li> <li>PCI connector loose (External controller interface board)</li> </ul> |

|              |          |                                                                                |                                                                                           |
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| <b>SC857</b> | <b>D</b> | USB I/F Error 1                                                                |                                                                                           |
|              |          | The USB driver is unstable and generated an error. The USB I/F cannot be used. | <ul style="list-style-type: none"> <li>USB board or controller board defective</li> </ul> |



|              |          |                                                                                                                                                      |                                                                                                                                                  |
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| <b>SC860</b> | <b>D</b> | <b>HDD Error 1</b>                                                                                                                                   |                                                                                                                                                  |
|              |          | The driver could not acquire the status of the hard disks within 30 s, or the HDD is connected, but the driver detected one of the following errors: | <ul style="list-style-type: none"> <li>• Hard disks are not formatted</li> <li>• Hard disk corrupted; reformat the disks with SP mode</li> </ul> |
|              |          | SS_NOT_READY                                                                                                                                         | One or both HDDs are not ready.                                                                                                                  |
|              |          | SS_BAD_LABEL                                                                                                                                         | Partition types are different                                                                                                                    |
|              |          | SS_READ_ERROR                                                                                                                                        | Error returned during label read or label check                                                                                                  |
|              |          | SS_WRITE_ERROR                                                                                                                                       | Error returned during label write or label check                                                                                                 |
|              |          | SS_FS_ERROR                                                                                                                                          | File system repair failed                                                                                                                        |
|              |          | SS_MOUNT_ERROR                                                                                                                                       | File system mount failed                                                                                                                         |
|              |          | SS_COMMAND_ERROR                                                                                                                                     | Drive does not answer the command                                                                                                                |
|              |          | SS_KERNEL_ERROR                                                                                                                                      | Kernel internal error                                                                                                                            |
|              |          | SS_SIZE_ERROR                                                                                                                                        | Driver size is too small                                                                                                                         |
|              |          | SS_NO_PARTITION                                                                                                                                      | Specified partition does not exist                                                                                                               |
|              |          | SS_NO_FILE                                                                                                                                           | Device files do not exist                                                                                                                        |

|              |          |                                                                                                                                         |                                                                                                                                                                                                                                                                      |
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| <b>SC861</b> | <b>B</b> | <b>HDD Error b2: HDD Startup</b>                                                                                                        |                                                                                                                                                                                                                                                                      |
|              |          | The hard disks were detected at power on, but the disks were not detected within 30 s after recovery from the energy conservation mode. | <ul style="list-style-type: none"> <li>• Cable between the hard disks and controller board disconnected or loose</li> <li>• Hard disk power connector loose</li> <li>• One of the hard disks is defective</li> <li>• Controller or mother board defective</li> </ul> |

Trouble-  
shooting

|              |          |                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                     |
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| <b>SC862</b> | <b>A</b> | <b>HDD Error 3: Bad Sectors</b>                                                  |                                                                                                                                                                                                                                                                                                                                                                                                     |
|              |          | The number of bad sectors on the HDD in the area for storing images exceeds 101. | <ul style="list-style-type: none"> <li>• Too many bad sectors accumulated on the HDDs.</li> <li>• Execute SP5832 002 (HDD Formatting – IMH) to format the HDD and replace the bad sectors; copy the stamp data after doing this (use SP 5853).</li> <li>• HDD replacement is recommended because an HDD unit that generates bad sectors is probably of poor quality and performs poorly.</li> </ul> |

|              |          |                                                            |                                                                                                                                         |
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| <b>SC863</b> | <b>B</b> | <b>HDD Error 4: HDD Read Error</b>                         |                                                                                                                                         |
|              |          | The system cannot read the data written on the hard disks. | <ul style="list-style-type: none"> <li>• Sectors on the disks have become corrupted during operation; replace the hard disks</li> </ul> |

|              |          |                                                                       |                                                                            |
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| <b>SC864</b> | <b>B</b> | <b>HDD Error 5: Data CRC Error</b>                                    |                                                                            |
|              |          | During HDD operation, the HDD could not respond to a CRC error query. | <ul style="list-style-type: none"> <li>• Mother board defective</li> </ul> |

|              |          |                                                                                               |                                                                   |
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| <b>SC865</b> | <b>B</b> | HDD Error 6: Access Error                                                                     |                                                                   |
|              |          | HDD responded to an error during operation for a condition other than those for SC863, SC864. | <ul style="list-style-type: none"> <li>• HDD defective</li> </ul> |

|              |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                      |
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| <b>SC866</b> | <b>B</b> | SD Card Error 1: Confirmation                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                      |
|              |          | <p>The machine detects an electronic license error in the application on the SD card inserted in the controller slot when the machine is powered on.</p> <p>The program stored on the SD card contains electronic confirmation license data. If the program does not contain this license data, or if the result of the check reveals the license data in the program on the SD card is incorrect, then the checked program cannot execute and this SC code is displayed.</p> | <ul style="list-style-type: none"> <li>• Required program missing or incorrect</li> <li>• Download the correct program for this machine onto the SD card.</li> </ul> |

|              |          |                                                                                                                              |                                                                                                                                          |
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| <b>SC867</b> | <b>B</b> | SD Card Error 2: SD Card Removal                                                                                             |                                                                                                                                          |
|              |          | The SD card inserted in the system slot when the machine was powered on was removed while the machine was still switched on. | <ul style="list-style-type: none"> <li>• SD card removed from boot slot on the controller</li> <li>• Cycle the machine off/on</li> </ul> |

|              |          |                                                                                                                              |                                                                                                                                                                                                                                                                                                                                            |
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| <b>SC868</b> | <b>B</b> | SD Card Error 3: SD Card Access                                                                                              |                                                                                                                                                                                                                                                                                                                                            |
|              |          | An error is returned during an operation using an SD card. Debug console acquires more detailed information about the error. | <ul style="list-style-type: none"> <li>• SD card not inserted completely</li> <li>• SD card defective</li> <li>• Controller board defective</li> </ul> <p><b>Note:</b> If this SC code is displayed again after cycling the machine off and on, use another SD card. If this does not solve the problem, replace the controller board.</p> |

|              |          |                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                 |
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| <b>SC870</b> | <b>B</b> | <b>Address Book Data Error</b>                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                 |
|              |          | Address book data stored on the hard disk was detected as abnormal when it was accessed from either the operation panel or the network.<br>The address book data cannot be read from the HDD or SD card where it is stored, or the data read from the media is defective.                                                                                                                                                | <ul style="list-style-type: none"> <li>• Software defective; switch off/on, and change the controller firmware if the problem is not solved</li> <li>• HDD defective</li> </ul> |
|              |          | <b>Recommended Recovery</b> <ul style="list-style-type: none"> <li>• Execute SP5846 050 (UCS Settings – Initialize all Directory Info.) to initialize all address book data.</li> <li>• Initialize the user information with SP5832 006 (HDD Formatting– User Information 1) and SP5832 007 (HDD Formatting – User Information 2).</li> <li>• Replace the HDDs.</li> <li>• Boot the machine from the SD card.</li> </ul> |                                                                                                                                                                                 |

|                 |          |                                                                                                                                                                                                                                            |                                                                                                                                                                                                    |
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| <b>SC876</b>    | <b>D</b> | <b>Log Data Error</b>                                                                                                                                                                                                                      |                                                                                                                                                                                                    |
|                 |          | The log data has been corrupted at power on, while the machine was operating, or when the machine was powered off during a print or copy cycle. The machine should never be switched off while it is printing or copying.                  |                                                                                                                                                                                                    |
| <b>SC876-1</b>  |          | Log data file was corrupted at power on or while the machine was operating.                                                                                                                                                                | <ul style="list-style-type: none"> <li>• Format the HDD with SP5832-004.</li> </ul>                                                                                                                |
| <b>SC876-2</b>  |          | The log was set for encryption without the encryption module installed: <ul style="list-style-type: none"> <li>• At power on</li> <li>• While the machine was operating</li> <li>• When the log encryption setting was changed.</li> </ul> | <ul style="list-style-type: none"> <li>• Install or replace and set the encryption module.</li> <li>• Enable the log encryption setting.</li> </ul>                                                |
| <b>SC876-3</b>  |          | At power on the log encryption key was disabled, causing an NVRAM malfunction.                                                                                                                                                             | <ul style="list-style-type: none"> <li>• Format the disk with SP5832-004.</li> </ul>                                                                                                               |
| <b>SC876-4</b>  |          | At power on the machine attempted log data encryption with the log encryption setting disabled (NVRAM malfunction).<br>-or-<br>At power on log encryption was attempted with the log encryption setting disabled (NVRAM malfunction).      | <ul style="list-style-type: none"> <li>• Format the disk with SP5832-004.</li> </ul>                                                                                                               |
| <b>SC876-5</b>  |          | Error occurred at power on.<br>Only the NVRAM was replaced with an NVRAM from another machine.<br>-or-<br>Only the HDD was replaced with an HDD unit from another machine.                                                                 | <ul style="list-style-type: none"> <li>• Replace NVRAM with original NVRAM.</li> <li>• Replace HDD with original HDD.</li> <li>• If the error persists, format the HDD with SP5832-004.</li> </ul> |
| <b>SC876-99</b> |          | Cause unknown. The error occurred at power on or while the machine was operating.                                                                                                                                                          | <ul style="list-style-type: none"> <li>• Contact Ricoh design section.</li> </ul>                                                                                                                  |

**SC876: More**

If the error persists after doing the procedure described in the table above, do this procedure.

1. Switch the machine off, remove the HDD, then switch the machine on.
2. Do SP5801-019 then switch the machine off.
3. Install the HDD again and switch the machine on.
4. Do SP5832-004.
5. Cycle the machine off/on.
6. Do SP9730-002 and set to "1" (ON).
7. Do SP9730-003 and set to "1" (ON).
8. Do SP9730-004 and set to "1" (ON).
9. Cycle the machine off/on.

|              |          |                                                                                          |                                                                              |
|--------------|----------|------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|
| <b>SC880</b> | <b>D</b> | Media Link Board Error                                                                   |                                                                              |
|              |          | A request for access to the Media Link Board was not answered within the specified time. | <ul style="list-style-type: none"> <li>Media Link Board defective</li> </ul> |

|              |          |                                                       |                                                                                                                                       |
|--------------|----------|-------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|
| <b>SC900</b> | <b>C</b> | Electrical Total Counter Error                        |                                                                                                                                       |
|              |          | The total counter contains data that is not a number. | <ul style="list-style-type: none"> <li>NVRAM disturbed unexpectedly</li> <li>NVRAM defective</li> <li>NVRAM data corrupted</li> </ul> |

|              |          |                                               |                                                                                                                                                                        |
|--------------|----------|-----------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>SC901</b> | <b>B</b> | Mechanical Total Counter Error                |                                                                                                                                                                        |
|              |          | The mechanical total counter is disconnected. | <ul style="list-style-type: none"> <li>User removed the counter while it was operating</li> <li>Poor connection</li> <li>Mechanical total counter defective</li> </ul> |

|              |          |                                                             |                                                                                                                 |
|--------------|----------|-------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| <b>SC910</b> | <b>D</b> | External Controller Error 1                                 |                                                                                                                 |
| <b>SC911</b> | <b>D</b> | External Controller Error 2                                 |                                                                                                                 |
| <b>SC912</b> | <b>D</b> | External Controller Error 3                                 |                                                                                                                 |
| <b>SC913</b> | <b>D</b> | External Controller Error 4                                 |                                                                                                                 |
| <b>SC914</b> | <b>D</b> | External Controller Error 5                                 |                                                                                                                 |
|              |          | The external controller alerted the machine about an error. | <ul style="list-style-type: none"> <li>Please refer to the instructions for the external controller.</li> </ul> |

|              |          |                                                                                                                                                                                                                                         |                                                                                                                                                                             |
|--------------|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>SC919</b> | <b>B</b> | External Controller Error 6                                                                                                                                                                                                             |                                                                                                                                                                             |
|              |          | While EAC (External Application Converter), the conversion module, was operating normally, the receipt of a power line interrupt signal from the FLUTE serial driver was detected, or BREAK signal from the other station was detected. | <ul style="list-style-type: none"> <li>• Power outage at the EFI controller</li> <li>• EFI controller was rebooted</li> <li>• Connection to EFI controller loose</li> </ul> |

|              |          |                                                                           |                                                                                                                                                                                      |
|--------------|----------|---------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>SC920</b> | <b>D</b> | Printer Error 1                                                           |                                                                                                                                                                                      |
|              |          | An internal application error was detected and operation cannot continue. | <ul style="list-style-type: none"> <li>• Software defective; switch off/on, or change the controller firmware if the problem is not solved</li> <li>• Insufficient memory</li> </ul> |

|              |          |                                                                                          |                                                                                    |
|--------------|----------|------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
| <b>SC921</b> | <b>D</b> | Printer Error 2                                                                          |                                                                                    |
|              |          | When the printer application started, the font to use could not be found on the SD card. | <ul style="list-style-type: none"> <li>• The font is not on the SD card</li> </ul> |

|              |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                           |
|--------------|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>SC925</b> | <b>B</b> | NetFile Function Error                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                           |
|              |          | <ul style="list-style-type: none"> <li>• The NetFile file management on the HDD cannot be used, or a NetFile management file is corrupted and operation cannot continue.</li> <li>• The HDDs are defective and they cannot be debugged or partitioned, so the Scan Router functions (delivery of received faxes, document capture, etc.), Fabric services, and other network functions cannot be used.( HDD status codes displayed on the debug console are described below.)</li> </ul> | <ul style="list-style-type: none"> <li>• HDD defective</li> <li>• Power supply to machine cut occurred while writing data to HDD</li> <li>• Software error</li> <li>• Please refer to the detailed descriptions below for recovery procedures.</li> </ul> |

Troubleshooting

### HDD Status Codes Displayed on Debug Console

| Display | Meaning                                   |
|---------|-------------------------------------------|
| (-1)    | HDD not connected                         |
| (-2)    | HDD not ready                             |
| (-3)    | No level                                  |
| (-4)    | Partition type incorrect                  |
| (-5)    | Error returned during level read or check |
| (-6)    | Error returned during level read or check |
| (-7)    | "filesystem" repair failed                |
| (-8)    | "filesystem" mount failed                 |
| (-9)    | Drive does not answer command             |
| (-10)   | Internal kernel error                     |
| (-11)   | Size of drive is too small                |
| (-12)   | Specified partition does not exist        |
| (-13)   | Device file does not exist                |

### Recovery Procedure 1

If the machine returns SC codes for HDD errors (SC860 ~ SC865), please follow the recovery procedures described for these SC codes.

### Recovery Procedure 2

If the machine does not return one of the five HDD errors (SC860 ~ SC865), cycle the machine off and on. If this does not solve the problem, then initialize the NetFile partition on the HDD with **SP5832 011** (HDD Formatting – Ridoc I/F).

NetFiles: Jobs printed from the document server using a PC and DeskTopBinder

Before initializing the NetFile partition on the HDD please inform the client that:

1. Received faxes on the delivery server will be lost
2. All captured documents will be lost
3. DeskTopBinder/Print Job Manager/Desk Top Editor job history will be cleared
4. Documents stored on the document server, included scanned documents, will not be lost.
5. The first time the network accesses the machine, the management information must be reconfigured (this will require a significant amount of time).

Before initializing the Netfile partition with **SP5823 011**, do the following:

6. Enter the User Tools mode and execute “Delivery Settings” to print all received fax documents scheduled for delivery and delete them.
7. In the User Tools mode, execute Document Management> Batch Delete Transfer Documents.
8. Execute **SP5832 011** then cycle the machine off and on.

### Recovery Procedure 3

If “Procedure 2” does not solve the problem, execute **SP5832 001** (HDD Formatting – All), then cycle the machine off and on.

Executing **SP5832 001** erases all document and address book data stored on the hard disks. Be sure to consult with the customer before executing this SP code.

### Recovery Procedure 4

If “Recovery Procedures 1 to 3” fail to correct the problem, replace the HDD.

|              |          |                                                                                                                                                              |                                                                                                                                     |
|--------------|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| <b>SC951</b> | <b>B</b> | F-Gate Signal Error<br><br>When the IPU has already received the F-GATE signal (laser writing start trigger signal), the IPU receives another F-GATE signal. | <ul style="list-style-type: none"> <li>• Firmware defective</li> <li>• Update the BCU firmware.</li> <li>• BCU defective</li> </ul> |
|--------------|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|

|              |          |                                                                                         |                                                                                                                                                                                                                                |
|--------------|----------|-----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>SC953</b> | <b>B</b> | Scanner Image Setting Error                                                             |                                                                                                                                                                                                                                |
|              |          | The settings required for image processing using the scanner are not sent from the IPU. | <ul style="list-style-type: none"> <li>• Check the harnesses, connectors between the MCU and BCU</li> <li>• Update the BCU, MCU firmware</li> <li>• MCU defective</li> <li>• BCU defective</li> <li>• IPU defective</li> </ul> |

|              |          |                                                                                                             |                                                                                                                                                                                                                                                                                                                                                           |
|--------------|----------|-------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>SC954</b> | <b>B</b> | Printer Image Setting Error                                                                                 |                                                                                                                                                                                                                                                                                                                                                           |
|              |          | The settings that are required for image processing using the printer controller are not sent from the IPU. | <ul style="list-style-type: none"> <li>• Check the harnesses, connectors to the LDB and IPU</li> <li>• Check the harnesses, connectors between IPU/LDB, LDB/Polygon Mirror Motor PCB</li> <li>• Update the BCU firmware</li> <li>• LD defective</li> <li>• IPU defective</li> <li>• Polygon mirror motor or polygon mirror motor PCB defective</li> </ul> |

|              |          |                                                                                                 |                                                                                                                                                                                        |
|--------------|----------|-------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>SC955</b> | <b>B</b> | Memory Setting Error                                                                            |                                                                                                                                                                                        |
|              |          | The settings that are required for image processing using the memory are not sent from the IPU. | <ul style="list-style-type: none"> <li>• Software bug</li> <li>• Hard disk unit defective</li> <li>• Controller defective</li> <li>• MCU defective</li> <li>• IPU defective</li> </ul> |

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|              |          |                                                                                  |                                                                  |
|--------------|----------|----------------------------------------------------------------------------------|------------------------------------------------------------------|
| <b>SC964</b> | <b>B</b> | Scanner Start Error                                                              |                                                                  |
|              |          | During scanned image processing, another command to start scanning was received. | <ul style="list-style-type: none"> <li>• Software bug</li> </ul> |

|              |          |                                                                          |                                                                  |
|--------------|----------|--------------------------------------------------------------------------|------------------------------------------------------------------|
| <b>SC965</b> | <b>B</b> | Print Start Error                                                        |                                                                  |
|              |          | During print processing, another command to start printing was received. | <ul style="list-style-type: none"> <li>• Software bug</li> </ul> |

|              |          |                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                       |
|--------------|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>SC966</b> | <b>B</b> | Polygon Mirror Motor Ready Error                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                       |
|              |          | The polygon mirror motor does not reach ready status within 15 s after the copy paper is detected by the registration sensor. (15 s after the write request was issued for the IPU, the F-GATE signal remained LOW.) | <ul style="list-style-type: none"> <li>• Polygon mirror motor harness, connections to BCU loose, broken, defective</li> <li>• Polygon mirror motor drive board harness, connector to BCU loose, broken, defective</li> <li>• Polygon mirror motor defective</li> <li>• Polygon mirror motor drive board defective</li> <li>• BCU defective</li> </ul> |

|              |          |                                                                                                                      |                                                                                                                                                                                                         |
|--------------|----------|----------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>SC970</b> | <b>B</b> | <b>Scanner Ready Error</b>                                                                                           |                                                                                                                                                                                                         |
|              |          | The scan ready signal is not generated by the MCU for more than 10 s after the read start signal is sent to the MCU. | <ul style="list-style-type: none"> <li>• Software bugSoftware bugny 6</li> <li>• Harnesses, connectors to the MCU loose, broken, defective</li> <li>• MCU defective</li> <li>• BCU defective</li> </ul> |

|              |          |                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                        |
|--------------|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
| <b>SC990</b> | <b>B</b> | <b>Software Performance Error 1</b>                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                        |
|              |          | An unexpected operation was encountered by the software.                                                                                                                                                                                                                                                                                                                                                                                | <ul style="list-style-type: none"> <li>• Software crash; reboot the machine</li> </ul> |
|              |          | <p><b>Procedure 1</b></p> <p>If the HDDs have just been replaced, be sure to download the stamp data (SP 5853).</p> <p><b>Procedure 2</b></p> <p>With SP5990 004 (SMC Report – Logging Data), print the most recent information for SC990.</p> <p>The SC990 information displays the file name, line number, and value. Report this information to your technical supervisor. For example:</p> <p><b>Function.c LINE: 123 VAL:0</b></p> |                                                                                        |

|              |          |                                                                                                                                   |                                                                                              |
|--------------|----------|-----------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|
| <b>SC991</b> | <b>C</b> | <b>Software Error</b>                                                                                                             |                                                                                              |
|              |          | The software performs an unexpected function and the program cannot continue. Recovery processing allows the program to continue. | <ul style="list-style-type: none"> <li>• Software defective, re-boot<sup>*1</sup></li> </ul> |

<sup>\*1</sup>: In order to get more details about SC991:

- 1) Execute **SP7403** or print an SMC Report (**SP5990**) to read the history of the 10 most recent logged errors.
- 2) If you press the zero key on the operation panel with the SP selection menu displayed, you will see detailed information about the recently logged SC991, including the software file name, line number, and so on. Of these two methods "1)" is the recommended method, because another SC could write over the information for the previous SC.

|              |          |                                                                                                                                                                                                                            |                                                                                                                                          |
|--------------|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| <b>SC994</b> | <b>C</b> | <b>Operation Panel Management Records Exceeded</b>                                                                                                                                                                         |                                                                                                                                          |
|              |          | An error occurred because the number of records exceeded the limit for images managed in the service layer of the firmware. This can occur if there if there are too many application screens open on the operation panel. | <ul style="list-style-type: none"> <li>• No action required because this SC does not interfere with operation of the machine.</li> </ul> |



|              |          |                                                                                         |                                                                                                                                                                                                                                |
|--------------|----------|-----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>SC997</b> | <b>B</b> | Application Selection Error                                                             |                                                                                                                                                                                                                                |
|              |          | An application did not start after pressing the appropriate key on the operation panel. | <ul style="list-style-type: none"> <li>• Software bug; change the firmware for the application that failed</li> <li>• A RAM or DIMM option required by the application is not installed or not installed correctly.</li> </ul> |

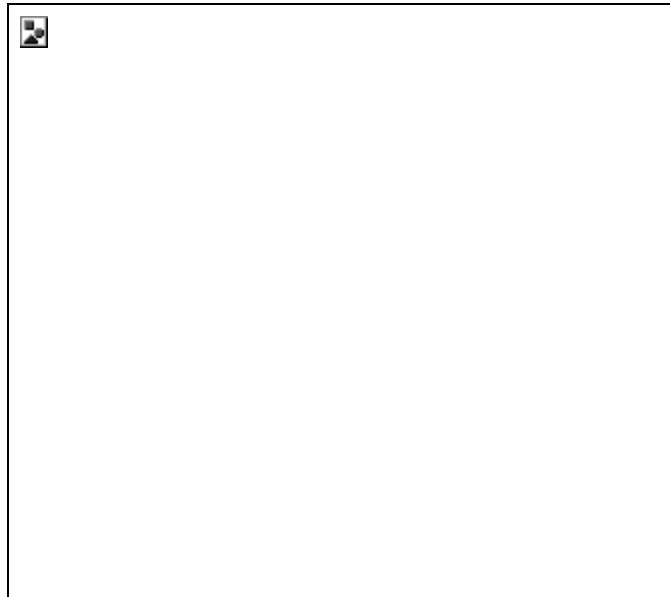
|              |          |                                                                                                                                                                |                                                                                                                                                                                                                                      |
|--------------|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>SC998</b> | <b>B</b> | Application Start Error                                                                                                                                        |                                                                                                                                                                                                                                      |
|              |          | Register processing does not execute for any application within 60 s after the machine is powered on. No application starts correctly, and all end abnormally. | <ul style="list-style-type: none"> <li>• Software defective; change the firmware for the application that failed</li> <li>• A RAM or DIMM option required by the application is not installed or not installed correctly.</li> </ul> |

|              |          |                                                                                         |                                                                                                                                                                                                                                                                                                                                |
|--------------|----------|-----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>SC999</b> | <b>B</b> | Program Download Error                                                                  |                                                                                                                                                                                                                                                                                                                                |
|              |          | The program download from the SD card does not execute normally. This SC is not logged. | <ul style="list-style-type: none"> <li>• Card installed incorrectly</li> <li>• BCU defective</li> <li>• SD card defective</li> <li>• Controller board defective</li> <li>• Power down during program downloading</li> <li>• Wrong type of card inserted (see Section 5 "Service Tables" for downloading procedures)</li> </ul> |

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## 4.2.5 PSU PROTECTION CIRCUITS

### Overview



B234T901.WMF

The diagram above shows the outputs of each converter listed in Table 1.

PSU-C and PSU-E comprise the PSU. PSU-E consists of two PCBs: PCB A and PCB B. There is a total of five converters:

- PSU-C contains the energy save converter.
- PCB A of PSU-E contains the 1st and 2nd converter.
- PCB B of PSU-E contains the 3rd and 4th converter.

The PSU contains several protective circuits that will cut power to prevent damage to the machine and dangerous fire hazards that could be caused by harness short circuits or damage to the PSU circuits due an accidental power overload. These protective circuits are provided at three locations:

- AC input
- Converter control points
- Output points

Even if one or more of these protective circuits should fail, the others will act as backup to cut power to the machine if a problem occurs,

The output points are provided with electronic interrupt circuits, so fuses are not required at these locations.

**Table 1: PSU Converters and Output System**

| Converter   | Output Name | Output Volatge | Output Connector |
|-------------|-------------|----------------|------------------|
| Energy Save | VccE        | 5.1V           | CN733-1p~5p      |
|             | VcaE        | 12.0V          | CN734-1p~3p      |
| 1st         | VccL        | 5.1V           | CN711-1p~3       |
|             | Vcc         | 5.1V           | CN12-1p~3p       |
| 2nd         | Vaa1        | 24.0V          | CN713-1p~2p      |
|             | Vaa2        | 24.0V          | CN713-3p~6p      |
|             | Vaa3        | 24.0V          | CN714-1p~6p      |
| 3rd         | Vaa4        | 24V.0          | CN715-1p~2p      |
|             | Vaa5        | 24.0V          | CN7153p~4p       |
| 4th         | Vmm1        | 38.0V          | CN716-1p         |
|             | Vmm2        | 38.0V          | CN716-2p         |

### AC Input Module

The AC input module has the following 5 fuses.

| Input Fuse | Rating     |
|------------|------------|
| FU1        | 3.15A/250V |
| FU3        | 4A/250V    |
| FU001      | 3.15A/250V |
| FU002      | 6.3A/250V  |
| FU101      | 6.3A/250V  |

The AC input area of the PSU has fuses to cut AC power to the board in case of damage to the PSU board or one or more short circuits in the output area.

The location of the board where output is interrupted is different, depending on which fuse blows. Table 2 shows which areas of the PSU are affected by each fuse.

As shown in Table 2, FU1 cuts all circuits if damage or short circuits occur at PSU-C, which operates independently of the other circuits while the machine is in the sleep (energy conservation) mode. A short circuit in an input harness or other problem on PSU-C will also cause FU3 to blow and will cut all power output from the PSU.

**Table 2: PSU Fuses and Related Power Output Interrupts**

| Converter   | Output Name | FU1 | FU3 | FU001 | FU002 | FU101 |
|-------------|-------------|-----|-----|-------|-------|-------|
| Energy Save | VccE        | O   | O   |       |       |       |
|             | VcaE        | O   | O   |       |       |       |
| 1st         | VccL        | O   | O   | O     |       |       |
|             | Vcc         | O   | O   | O     |       |       |
| 2nd         | Vaa1        | O   | O   | O     | O     |       |
|             | Vaa2        | O   | O   | O     | O     |       |
|             | Vaa3        | O   | O   | O     | O     |       |
| 3rd         | Vaa4        | O   | O   | O     | O     | O     |
|             | Vaa5        | O   | O   | O     | O     | O     |
| 4th         | Vmm1        | O   | O   | O     | O     | O     |
|             | Vmm2        | O   | O   | O     | O     | O     |

If there is damage or a short circuit inside the 1st converter of the control system in PSU-E, FU001 blows and power is interrupted in the output of the 1st, 2nd, 3rd, and 4th converters.

If there is damage or a short circuit inside the 2nd converter of the control system in PSU-E, FU002 blows and power is interrupted in the output of the 2nd, 3rd, and 4th converters.

If there is damage or a short circuit inside the 3rd or 4th converter of the control system in PSU-E, FU101 blows and power is interrupted in the output of the 3rd and 4th converters.

### Converter Control Module

The following devices provide primary protection against current surges:

- Energy save converter
- 1st Converter
- 2nd Converter
- 3rd Converter
- 4th Converter

Each converter generates the dc currents that are used by the CPU, motor drive boards, and other parts of the mainframe. Each converter is provided with a protection circuit to detect power surges.

As shown in Table 3, the power supply to the mainframe that is interrupted depends on which protection circuit is opened as a result of a power surge:

- The protection circuit of the energy save converter cuts all power if a problem occurs in the energy save converter.
- If the problem occurs in the 1st converter, power to the 1st, 2nd, 3rd, and 4th converters is interrupted.
- If the problem occurs in the 2nd converter, power to the 2nd, 3rd, and 4th converters is interrupted.
- If the problem occurs in the 3rd converter, power to only the 3rd converter is interrupted.
- If the problem occurs in the 4th converter, power to only the 4th converter is interrupted.

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**Table 3: Converter Protection Circuits and Related Output Power Interrupts**

| Converter   | Output Name | Energy Save | 1st | 2nd | 3rd | 4th |
|-------------|-------------|-------------|-----|-----|-----|-----|
| Energy Save | VccE        | O           |     |     |     |     |
|             | VcaE        | O           |     |     |     |     |
| 1st         | VccL        | O           | O   |     |     |     |
|             | Vcc         | O           | O   |     |     |     |
| 2nd         | Vaa1        | O           | O   | O   |     |     |
|             | Vaa2        | O           | O   | O   |     |     |
|             | Vaa3        | O           | O   | O   |     |     |
| 3rd         | Vaa4        | O           | O   | O   | O   |     |
|             | Vaa5        | O           | O   | O   | O   |     |
| 4th         | Vmm1        | O           | O   | O   |     | O   |
|             | Vmm2        | O           | O   | O   |     | O   |

#### Important!

To reset the machine after a protection circuit has opened:

1. Switch off the operation switch.
2. Switch off the main power switch.
3. Allow the machine to remain off for at least 5 minutes.
4. Turn on the main power switch.

### **Output Module**

The PSU output module is provided with the following interrupt devices:

- Control system electronic interrupt: 5.1V, 12V
- Drive system electronic interrupt: 24V, 38V

The output fuses of previous models have been replaced by electronic interrupt circuits. These electronic interrupt circuits have protect the machine from excessive current, excessive voltages, and overheating.

- Excessive current can be caused by a short at the power supply.
- Excessive voltage can be caused by damage to the PSU board, short circuits in external harnesses, or an unexpected surge in the external power supply.
- Overheating occurs when the temperature level of the elements in the control circuits of the converters becomes too high due to the failure of the PSU cooling fan, for example.

Table 4 shows how the electronic interrupt circuits react to these three problems.

**Table 4: Electronic Interrupt Detection Locations**

| Converter   | Output Name | Over Current | Over Voltage | Over Heating |
|-------------|-------------|--------------|--------------|--------------|
| Energy Save | VccE        | O            | O            | O            |
|             | VcaE        | O            | O            | O            |
| 1st         | VccL        | O            | O            |              |
|             | Vcc         | O            | O            |              |
| 2nd         | Vaa1        | O            | O            | O            |
|             | Vaa2        | O            | O            | O            |
|             | Vaa3        | O            | O            | O            |
| 3rd         | Vaa4        | O            | O            | O            |
|             | Vaa5        | O            | O            | O            |
| 4th         | Vmm1        | O            | O            | O            |
|             | Vmm2        | O            | O            | O            |

### **Important!**

To reset the machine after a protection circuit has opened:

1. Switch off the operation switch.
2. Switch off the main power switch.
3. Allow the machine to remain off for at least 5 minutes.
4. Turn on the main power switch.

### ***PSU LED Display***

Four converters are built into PSU-E. Each converter is provided with one LED that lights when the converter is activated.

#### **PSU-E Converter LEDs**

| Converter     | LED Name |
|---------------|----------|
| 1st Converter | 5V       |
| 2nd Converter | 24V      |
| 3rd Converter | 24VINT   |
| 4th Converter | 38V      |

With the PSU box door open:

- LED 5V (1st Converter) and LED 24V (2nd Converter) are on PCB A on the right.
- LED 24VINT (3rd Converter) and LED 38V (4th Converter) are on PCB B on the left.

You can see which system is operating abnormally by checking whether these LEDs are on or off. If an LED is off, the converter for that LED is defective (see the above table).

The table below shows what will interrupt the output from a converter.

#### **Converter On/Off States According to Mode**

| Converter   | Output Name | Copy | Standby | Door Open | Energy Saver | Low Power | Off/ Sleep |
|-------------|-------------|------|---------|-----------|--------------|-----------|------------|
| Energy Save | VccE        | ON   | ON      | ON        | ON           | ON        | ON         |
|             | VcaE        | ON   | ON      | ON        | ON           | ON        | ON         |
| 1st         | VccL        | ON   | ON      | ON        | ON           | ON        | OFF        |
|             | Vcc         | ON   | ON      | ON        | ON           | OFF       | OFF        |
| 2nd         | Vaa1        | ON   | ON      | ON        | ON           | OFF       | OFF        |
|             | Vaa2        | ON   | ON      | ON        | ON           | OFF       | OFF        |
|             | Vaa3        | ON   | ON      | ON        | ON           | OFF       | OFF        |
| 3rd         | Vaa4        | ON   | ON      | OFF       | OFF          | OFF       | OFF        |
|             | Vaa5        | ON   | ON      | OFF       | OFF          | OFF       | OFF        |
| 4th         | Vmm1        | ON   | ON      | ON        | OFF          | OFF       | OFF        |
|             | Vmm2        | ON   | ON      | ON        | OFF          | OFF       | OFF        |

***PSU-E Replacement***

Before replacing any part of the PSU (especially PCB A, PCB B):

- Switch the machine off.
- Disconnect it from the power source.
- Allow the machine to stand at least 10 minutes before you open the PSU box door.

PCB-A and PCB B of the PSU-E are both provided with a large capacity electrolytic condenser.

Such large condensers store a large residual charge that can cause electrical shock if a board is handled too soon after the machine is turned off.