KONICA MINOLTA

SERVICE MANUAL

FIELD SERVICE

# PagePro 1380 MF/1390 MF

2006.01
KONICA MINOLTA BUSINESS TECHNOLOGIES, INC. Ver. 2.0

# SAFETY AND IMPORTANT WARNING ITEMS

Read carefully the Safety and Important Warning Items described below to understand them before doing service work.

## IMPORTANT NOTICE

Because of possible hazards to an inexperienced person servicing this product as well as the risk of damage to the product, KONICA MINOLTA BUSINESS TECHNOLOGIES, INC. (hereafter called the KMBT) strongly recommends that all servicing be performed only by KMBT-trained service technicians.
Changes may have been made to this product to improve its performance after this Service Manual was printed. Accordingly, KMBT does not warrant, either explicitly or implicitly, that the information contained in this Service Manual is complete and accurate.
The user of this Service Manual must assume all risks of personal injury and/or damage to the product while servicing the product for which this Service Manual is intended.
Therefore, this Service Manual must be carefully read before doing service work both in the course of technical training and even after that, for performing maintenance and control of the product properly.
Keep this Service Manual also for future service.

## DESCRIPTION ITEMS FOR DANGER, WARNING AND CAUTION

In this Service Manual, each of three expressions "⚠ DANGER", "⚠ WARNING", and "⚠ CAUTION" is defined as follows together with a symbol mark to be used in a limited meaning.
When servicing the product, the relevant works (disassembling, reassembling, adjustment, repair, maintenance, etc.) need to be conducted with utmost care.

⚠ **DANGER: Action having a high possibility of suffering death or serious injury**

⚠ **WARNING: Action having a possibility of suffering death or serious injury**

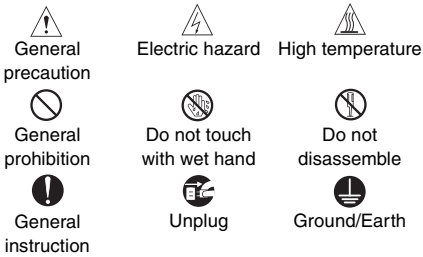
⚠ **CAUTION: Action having a possibility of suffering a slight wound, medium trouble, and property damage**

Symbols used for safety and important warning items are defined as follows:

△ :Precaution when servicing the product.

⃠ :Prohibition when servicing the product.

● :Direction when servicing the product.



# SAFETY WARNINGS

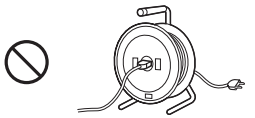
## [1] MODIFICATIONS NOT AUTHORIZED BY KONICA MINOLTA BUSINESS TECHNOLOGIES, INC.

KONICA MINOLTA brand products are renowned for their high reliability. This reliability is achieved through high-quality design and a solid service network.
Product design is a highly complicated and delicate process where numerous mechanical, physical, and electrical aspects have to be taken into consideration, with the aim of arriving at proper tolerances and safety factors. For this reason, unauthorized modifications involve a high risk of degradation in performance and safety. Such modifications are therefore strictly prohibited. the points listed below are not exhaustive, but they illustrate the reasoning behind this policy.

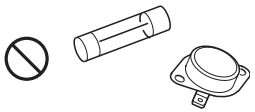
### Prohibited Actions

**⚠ DANGER**

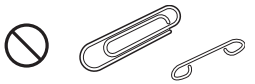
- Using any cables or power cord not specified by KMBT.



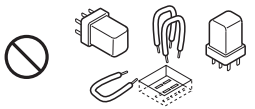
- Using any fuse or thermostat not specified by KMBT. Safety will not be assured, leading to a risk of fire and injury.



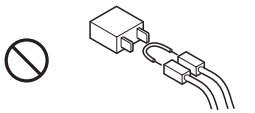
- Disabling fuse functions or bridging fuse terminals with wire, metal clips, solder or similar object.



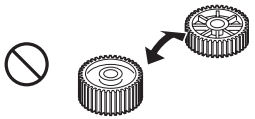
- Disabling relay functions (such as wedging paper between relay contacts)



- Disabling safety functions (interlocks, safety circuits, etc.) Safety will not be assured, leading to a risk of fire and injury.



- Making any modification to the product unless instructed by KMBT
- Using parts not specified by KMBT



## [2] POWER PLUG SELECTION

In some countries or areas, the power plug provided with the product may not fit wall outlet used in the area. In that case, it is obligation of customer engineer (hereafter called the CE) to attach appropriate power plug or power cord set in order to connect the product to the supply.

### Power Cord Set or Power Plug

**⚠ WARNING**

- Use power supply cord set which meets the following criteria:
  - provided with a plug having configuration intended for the connection to wall outlet appropriate for the product's rated voltage and current, and
  - the plug has pin/terminal(s) for grounding, and
  - provided with three-conductor cable having enough current capacity, and
  - the cord set meets regulatory requirements for the area.

  Use of inadequate cord set leads to fire or electric shock.


- Attach power plug which meets the following criteria:
  - having configuration intended for the connection to wall outlet appropriate for the product's rated voltage and current, and
  - the plug has pin/terminal(s) for grounding, and
  - meets regulatory requirements for the area.

  Use of inadequate cord set leads to the product connecting to inadequate power supply (voltage, current capacity, grounding), and may result in fire or electric shock.

- Conductors in the power cable must be connected to terminals of the plug according to the following order:
  - Black or Brown: L (line)
  - White or Light Blue: N (neutral)
  - Green/Yellow: PE (earth)

  Wrong connection may cancel safeguards within the product, and results in fire or electric shock.

## [3] CHECKPOINTS WHEN PERFORMING ON-SITE SERVICE

KONICA MINOLTA brand products are extensively tested before shipping, to ensure that all applicable safety standards are met, in order to protect the customer and customer engineer (hereafter called the CE) from the risk of injury. However, in daily use, any electrical equipment may be subject to parts wear and eventual failure. In order to maintain safety and reliability, the CE must perform regular safety checks.

1. Power Supply

### Connection to Power Supply

**⚠ WARNING**

- Check that mains voltage is as specified.

  Connection to wrong voltage supply may result in fire or electric shock.

- Connect power plug directly into wall outlet having same configuration as the plug.

  Use of an adapter leads to the product connecting to inadequate power supply (voltage, current capacity, grounding), and may result in fire or electric shock.
  If proper wall outlet is not available, advice the customer to contact qualified electrician for the installation.


- Plug the power cord into the dedicated wall outlet with a capacity greater than the maximum power consumption.

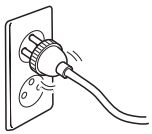
  If excessive current flows in the wall outlet, fire may result.

- If two or more power cords can be plugged into the wall outlet, the total load must not exceed the rating of the wall outlet.

  If excessive current flows in the wall outlet, fire may result.

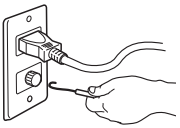
- Make sure the power cord is plugged in the wall outlet securely.

  Contact problems may lead to increased resistance, overheating, and the risk of fire.



- Check whether the product is grounded properly.

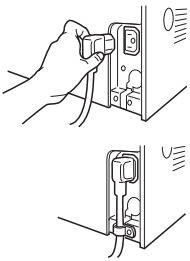
  If current leakage occurs in an ungrounded product, you may suffer electric shock while operating the product.
  Connect power plug to grounded wall outlet.



## Power Plug and Cord

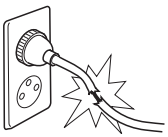
### ⚠ WARNING

- When using the power cord set (inlet type) that came with this product, make sure the connector is securely inserted in the inlet of the product.
  When securing measure is provided, secure the cord with the fixture properly.
  If the power cord (inlet type) is not connected to the product securely, a contact problem may lead to increased resistance, overheating, and risk of fire.

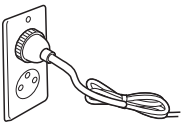


- Check whether the power cord is not stepped on or pinched by a table and so on.
  Overheating may occur there, leading to a risk of fire.

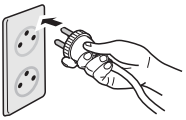
- Check whether the power cord is damaged. Check whether the sheath is damaged.
  If the power plug, cord, or sheath is damaged, replace with a new power cord (with plug and connector on each end) specified by KMBT. Using the damaged power cord may result in fire or electric shock.



- Do not bundle or tie the power cord.
  Overheating may occur there, leading to a risk of fire.

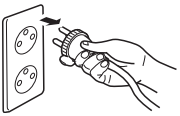


- Check whether dust is collected around the power plug and wall outlet.
  Using the power plug and wall outlet without removing dust may result in fire.



- Do not insert the power plug into the wall outlet with a wet hand.
  The risk of electric shock exists.

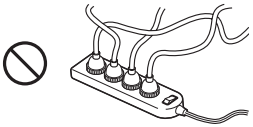
- When unplugging the power cord, grasp the plug, not the cable.
  The cable may be broken, leading to a risk of fire and electric shock.



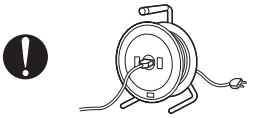
## Wiring

**⚠ WARNING**

- Never use multi-plug adapters to plug multiple power cords in the same outlet.
  If used, the risk of fire exists.



- When an extension cord is required, use a specified one. Current that can flow in the extension cord is limited, so using a too long extension cord may result in fire.
  Do not use an extension cable reel with the cable taken up. Fire may result.

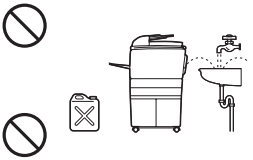


2. Installation Requirements

## Prohibited Installation Places

**⚠ WARNING**

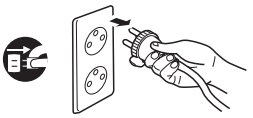
- Do not place the product near flammable materials or volatile materials that may catch fire.
  A risk of fire exists.
- Do not place the product in a place exposed to water such as rain.
  A risk of fire and electric shock exists.



## When not Using the Product for a long time

**⚠ WARNING**

- When the product is not used over an extended period of time (holidays, etc.), switch it off and unplug the power cord.
  Dust collected around the power plug and outlet may cause fire.



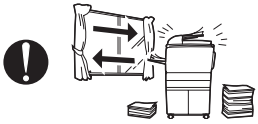
## Ventilation

**⚠ CAUTION**

- The product generates ozone gas during operation, but it will not be harmful to the human body.

  If a bad smell of ozone is present in the following cases, ventilate the room.

  a. When the product is used in a poorly ventilated room
  b. When taking a lot of copies
  c. When using multiple products at the same time



## Stability

**⚠ CAUTION**

- Be sure to lock the caster stoppers.

  In the case of an earthquake and so on, the product may slide, leading to a injury.

## Inspection before Servicing

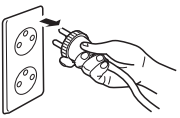
**⚠ CAUTION**

- Before conducting an inspection, read all relevant documentation (service manual, technical notices, etc.) and proceed with the inspection following the prescribed procedure, using only the prescribed tools. Do not make any adjustment not described in the documentation.

  If the prescribed procedure or tool is not used, the product may break and a risk of injury or fire exists.

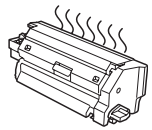
- Before conducting an inspection, be sure to disconnect the power plugs from the product and options.

  When the power plug is inserted in the wall outlet, some units are still powered even if the POWER switch is turned OFF. A risk of electric shock exists.



- The area around the fixing unit is hot.

  You may get burnt.

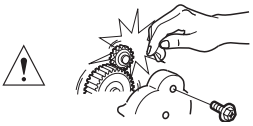


## Work Performed with the Product Powered On

### ⚠ WARNING

- Take every care when making adjustments or performing an operation check with the product powered.

  If you make adjustments or perform an operation check with the external cover detached, you may touch live or high-voltage parts or you may be caught in moving gears or the timing belt, leading to a risk of injury.



- Take every care when servicing with the external cover detached.

  High-voltage exists around the drum unit. A risk of electric shock exists.

## Safety Checkpoints

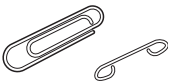
### ⚠ WARNING

- Check the exterior and frame for edges, burrs, and other damage.

  The user or CE may be injured.

- Do not allow any metal parts such as clips, staples, and screws to fall into the product.

  They can short internal circuits and cause electric shock or fire.



- Check wiring for squeezing and any other damage.

  Current can leak, leading to a risk of electric shock or fire.

- Carefully remove all toner remnants and dust from electrical parts and electrode units such as a charging corona unit.

  Current can leak, leading to a risk of product trouble or fire.

- Check high-voltage cables and sheaths for any damage.

  Current can leak, leading to a risk of electric shock or fire.

## Safety Checkpoints

### ⚠ WARNING

- Check electrode units such as a charging corona unit for deterioration and sign of leakage.

  Current can leak, leading to a risk of trouble or fire.

- Before disassembling or adjusting the write unit (P/H unit) incorporating a laser, make sure that the power cord has been disconnected.

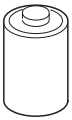
  The laser light can enter your eye, leading to a risk of loss of eyesight.

- Do not remove the cover of the write unit. Do not supply power with the write unit shifted from the specified mounting position.

  The laser light can enter your eye, leading to a risk of loss of eyesight.

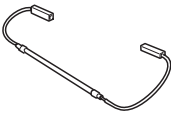
- When replacing a lithium battery, replace it with a new lithium battery specified in the Parts Guide Manual. Dispose of the used lithium battery using the method specified by local authority.

  Improper replacement can cause explosion.



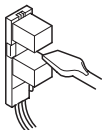
- After replacing a part to which AC voltage is applied (e.g., optical lamp and fixing lamp), be sure to check the installation state.

  A risk of fire exists.



- Check the interlock switch and actuator for loosening and check whether the interlock functions properly.

  If the interlock does not function, you may receive an electric shock or be injured when you insert your hand in the product (e.g., for clearing paper jam).



- Make sure the wiring cannot come into contact with sharp edges, burrs, or other pointed parts.

  Current can leak, leading to a risk of electric shock or fire.

## Safety Checkpoints

### ⚠ WARNING

- Make sure that all screws, components, wiring, connectors, etc. that were removed for safety check and maintenance have been reinstalled in the original location. (Pay special attention to forgotten connectors, pinched cables, forgotten screws, etc.)

  A risk of product trouble, electric shock, and fire exists.


## Handling of Consumables

### ⚠ WARNING

- Toner and developer are not harmful substances, but care must be taken not to breathe excessive amounts or let the substances come into contact with eyes, etc. It may be stimulative.

  If the substances get in the eye, rinse with plenty of water immediately. When symptoms are noticeable, consult a physician.

- Never throw the used cartridge and toner into fire.

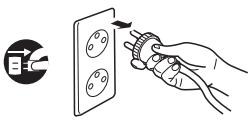
  You may be burned due to dust explosion.

## Handling of Service Materials

### ⚠ CAUTION

- Unplug the power cord from the wall outlet.

  Drum cleaner (isopropyl alcohol) and roller cleaner (acetone-based) are highly flammable and must be handled with care. A risk of fire exists.



- Do not replace the cover or turn the product ON before any solvent remnants on the cleaned parts have fully evaporated.

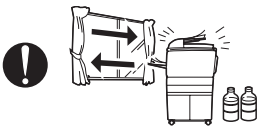
  A risk of fire exists.

## Handling of Service Materials

### ⚠ CAUTION

- Use only a small amount of cleaner at a time and take care not to spill any liquid. If this happens, immediately wipe it off.
  A risk of fire exists.

- When using any solvent, ventilate the room well.
  Breathing large quantities of organic solvents can lead to discomfort.



## [4] Laser Safety

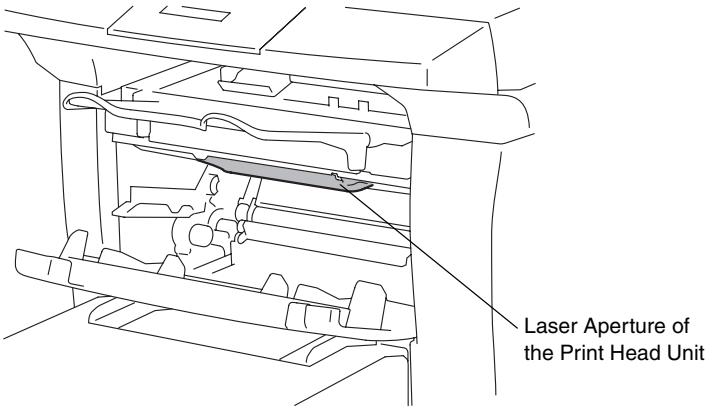
- This is a digital machine certified as a Class 1 laser product. There is no possibility of danger from a laser, provided the machine is serviced according to the instruction in this manual.

### 4.1 Internal Laser Radiation

| semiconductor laser | |
|---|---|
| Maximum power of the laser diode | 15 mW |
| Maximum average radiation power (*) | 36.903 µW |
| Wavelength | 770-800 nm |

*at laser aperture of the Print Head Unit

- This product employs a Class 3b laser diode that emits an invisible laser beam. The laser diode and the scanning polygon mirror are incorporated in the print head unit.
- The print head unit is NOT A FIELD SERVICEABLE ITEM. Therefore, the print head unit should not be opened under any circumstances.



**U.S.A., Canada**
**(CDRH Regulation)**

- This machine is certified as a Class 1 Laser product under Radiation Performance Standard according to the Food, Drug and Cosmetic Act of 1990. Compliance is mandatory for Laser products marketed in the United States and is reported to the Center for Devices and Radiological Health (CDRH) of the U.S. Food and Drug Administration of the U.S. Department of Health and Human Services (DHHS). This means that the device does not produce hazardous laser radiation.

- The label shown on page S-16 indicates compliance with the CDRH regulations and must be attached to laser products marketed in the United States.

**CAUTION**
- **Use of controls, adjustments or performance of procedures other than those specified in this manual may result in hazardous radiation exposure.**

| semiconductor laser | |
|---|---|
| Maximum power of the laser diode | 15 mW |
| Wavelength | 770-800 nm |

**All Areas**

**CAUTION**
- **Use of controls, adjustments or performance of procedures other than those specified in this manual may result in hazardous radiation exposure.**

| semiconductor laser | |
|---|---|
| Maximum power of the laser diode | 15 mW |
| Wavelength | 770-800 nm |

**Denmark**

**ADVARSEL**
- **Usynlig laserstråling ved åbning, når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling. Klasse 1 laser produkt der opfylder IEC60825-1 sikkerheds kravene.**

| halvlederlaser | |
|---|---|
| Laserdiodens højeste styrke | 15 mW |
| bølgelængden | 770-800 nm |

**Finland, Sweden**

**LUOKAN 1 LASERLAITE**
**KLASS 1 LASER APPARAT**

**VAROITUS!**
- **Laitteen käyttäminen muulla kuin tässä käyttöohjeessa mainitulla tavalla saattaa altistaa käyttäjän turvallisuusluokan 1 ylittävälle näkymättömälle lasersäteilylle.**

| puolijohdelaser | |
|---|---|
| Laserdiodin suurin teho | 15 mW |
| aallonpituus | 770-800 nm |

**VARNING!**
- **Om apparaten används på annat sätt än i denna bruksanvisning specificerats, kan användaren utsättas för osynlig laserstrålning, som överskrider gränsen för laserklass 1.**

| halvledarlaser | |
|---|---|
| Den maximala effekten för laserdioden | 15 mW |
| våglängden | 770-800 nm |

**VARO!**
- **Avattaessa ja suojalukitus ohitettaessa olet alttiina näkymättomälle lasersäteilylle. Älä katso säteeseen.**

**VARNING!**
- **Osynlig laserstråining när denna del är öppnad och spärren är urkopplad. Betrakta ej stråien.**

**Norway**

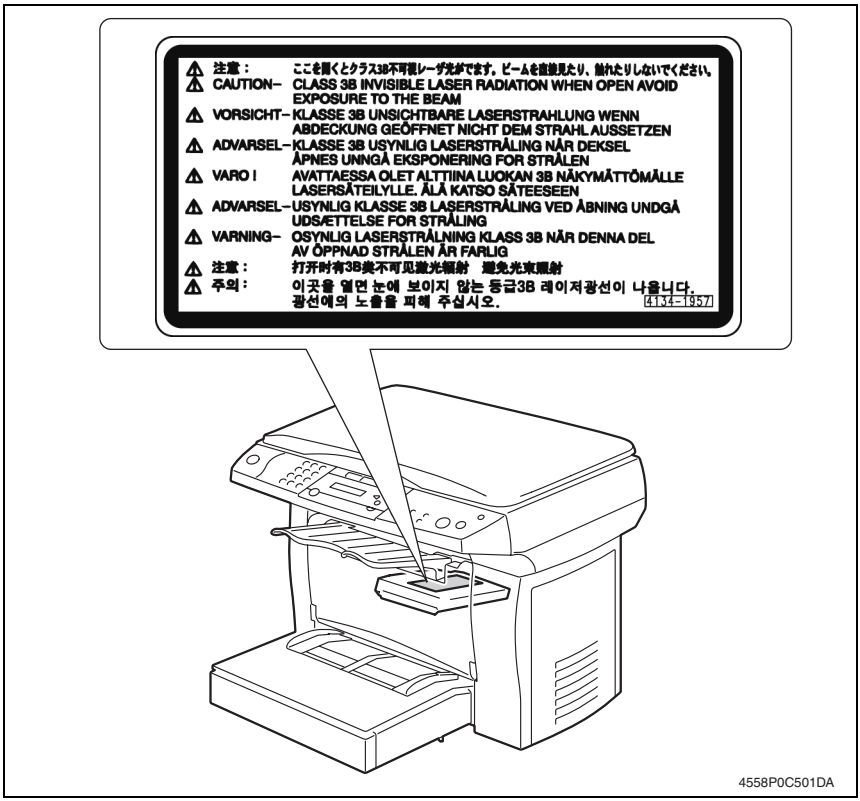
**ADVERSEL**
- **Dersom apparatet brukes på annen måte enn spesifisert i denne bruksanvisning, kan brukeren utsettes för unsynlig laserstrålning, som overskrider grensen for laser klass 1.**

| halvleder laser | |
|---|---|
| Maksimal effekt till laserdiode | 15 mW |
| bølgelengde | 770-800 nm |

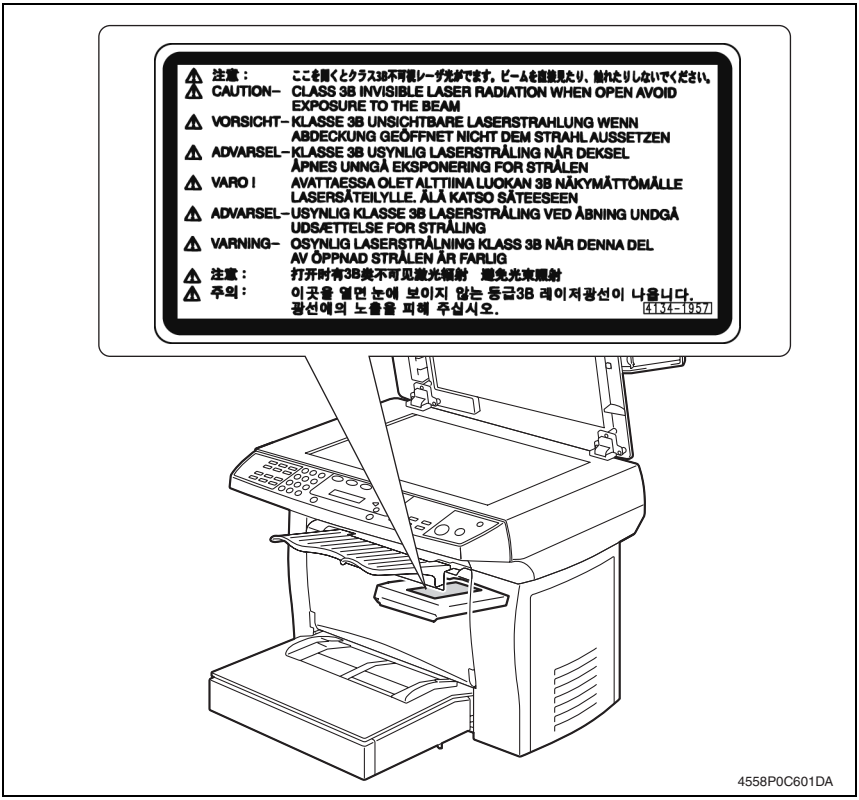
## 4.2 Laser Safety Label

- A laser safety label is attached to the inside of the machine as shown below.

**A. PagePro 1380 MF**



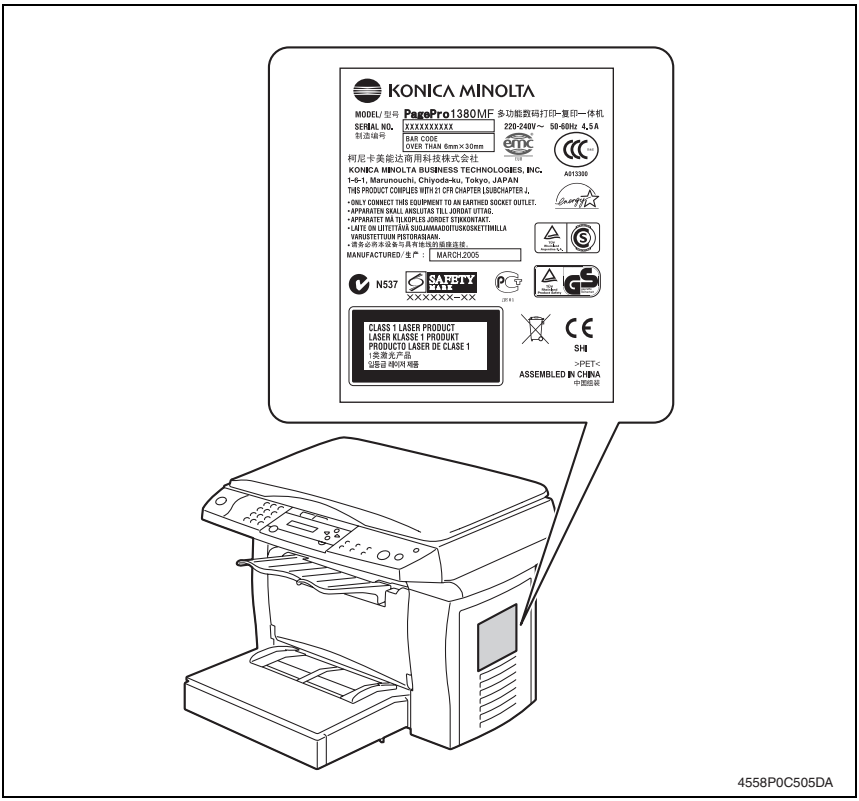
**B. PagePro 1390 MF**



## 4.3 Laser Caution Label

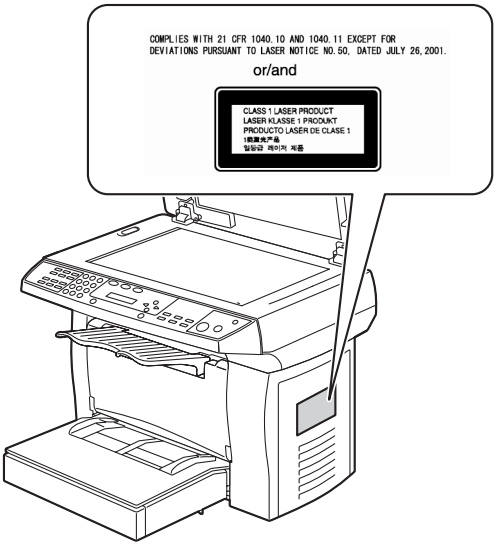
- A laser caution label is attached to the outside of the machine as shown below.

**A. PagePro 1380 MF**




4558P0C505DA

**B. PagePro 1390 MF**

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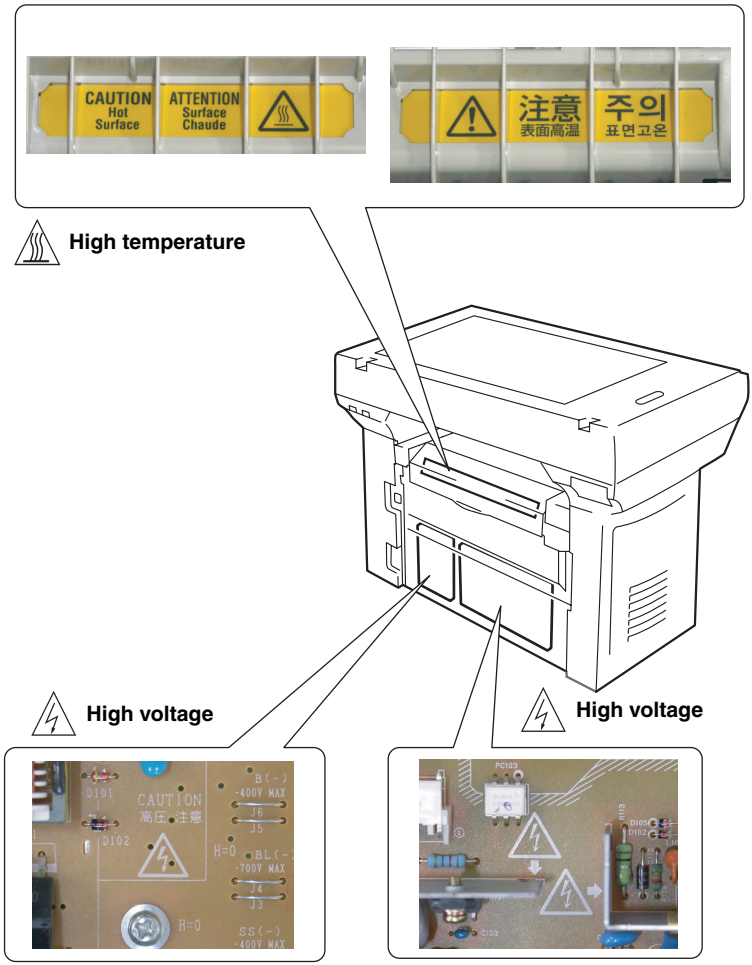
## 4.4 PRECAUTIONS FOR HANDLING THE LASER EQUIPMENT

- When laser protective goggles are to be used, select ones with a lens conforming to the above specifications.
- When a disassembly job needs to be performed in the laser beam path, such as when working around the printerhead and PC Drum, be sure first to turn the printer OFF.
- If the job requires that the printer be left ON, take off your watch and ring and wear laser protective goggles.
- A highly reflective tool can be dangerous if it is brought into the laser beam path. Use utmost care when handling tools on the user's premises.
- The Print Head is not to be disassembled or adjusted in the field. Replace the Unit or Assembly including the Control Board. Therefore, remove the Laser Diode, and do not perform Control Board trimmer adjustment.

# WARNING INDICATIONS ON THE MACHINE

Caution labels shown are attached in some areas on/in the machine.
When accessing these areas for maintenance, repair, or adjustment, special care should be taken to avoid burns and electric shock.




4558P0C503DA

**⚠ CAUTION:**

- **You may be burned or injured if you touch any area that you are advised not to touch by any caution label. Do not remove caution labels. If any caution label has come off or become dirty and therefore the caution cannot be read, contact our Service Office.**

# INDEX (Field Service)

# CONTENTS

## CONTROL PANEL/SERVICE MODE DESCRIPTIONS

## TROUBLESHOOTING

# GENERAL

# 1. SPECIFICATIONS

**(1) Main Unit**

| | | |
|---|---|---|
| Type | : | Desktop |
| Original scanning system | : | Scanning in main scanning direction with an 8-line color CCD sensor, and scanning in sub-scanning direction with unit scanning and sheet feed-through system |
| Photo conductor type | : | OPC (Organic Photo Conductor) |
| Copying system | : | Electrostatic dry-powdered image transfer to plain paper with laser |
| Copy resolution | : | 600 dpi × 600 dpi |
| Scan resolution | : | 1200 dpi |
| Media feed-in system | : | 2-way system (Tray1 and Bypass Tray) |
| Exposure system | : | Unit scanning slit exposure |
| Developing system | : | FMT (Fine Micro Toning) single-component developing |
| Drum-charging system | : | Rotating brush with pre-charge film |
| Image-transfer system | : | Roller transfer |
| Media-separation system | : | Curvature separation + charge neutralizing needle |
| Fusing system | : | Heat roller |
| Max. original size | : | Up to Legal size<br>216 mm × 297 mm (8.5 inch × 11.69 inch) |

Media

| Source | | Tray1 | Bypass Tray |
|---|---|---|---|
| Types | Plain paper (60 to 90 g/m$^2$)<br>(16 to 24 lb.) | ❍ | ❍ |
| | Recycled paper (60 to 90 g/m$^2$)<br>(16 to 24 lb.) | ❍ | ❍ |
| | Thick stock (91 to 163 g/m$^2$)<br>(24 to 43 lb.) | ❍ | ❍ |
| | Transparencies | ❍ | ❍ |
| | Label sheets | ❍ | ❍ |
| | Envelopes | ❍ | ❍ |
| Size Range | Width | 76 mm to 216 mm<br>3 inch to 8.5 inch | |
| | Length | 127 mm to 356 mm<br>5 inch to 14 inch | |

Continuous copy speed (page-to-page) : 20 copies/minute (full size, Letter, Text mode, 600 dpi × 300 dpi with ADF)

Continuous print speed (1 scan, multiple copies) : 20 sheets/minute (at Letter, A4)

Warm-up time : 60 seconds (at a room temperature of 23 °C/ 73.4 °F and at the rated voltage)

First-copy time : 19 seconds or less (full size, Letter, 600 dpi × 300 dpi with ADF)

Zoom Ratios

| | | |
|---|---|---|
| Fixed | Full size | ×1.00 |
| | Reduction | ×0.78 (Legal to Letter) |
| | | ×0.83 (Legal to A4) |
| | | ×0.94 (A4 to Letter) |
| | | ×0.97 (Letter to A4) |
| Variable | ×0.50 to ×4.00 (in ×0.01 increments) | |

Lens : 4 elements glass (F=7.43)
Exposure Lamp : Cold Cathode Florescent Lamp
Fusing temperature : 200 °C

Power /Current Consumption (main unit only)

| Voltage | Maximum power consumption |
|---|---|
| 110 V, 120-127 V | 792, 864-915 W |
| 220-240 V | 990-1080 W |

Power source : 110 V, 120V-127 V, 220-240 V 50/60 Hz

Main Unit Dimensions
PagePro 1380 MF (including Document Cover) : Width....492 mm (14.7 inch)
Depth....465 mm (18.6 inch)
Height...410 mm (16.2 inch)

PagePro 1390 MF (including ADF) : Width....492 mm (14.7 inch)
Depth....465 mm (18.6 inch)
Height...547 mm (21.5 inch)

Main Unit Weight : 14.2 kg (31.33 lb.)

### (2) GDI Printer Function

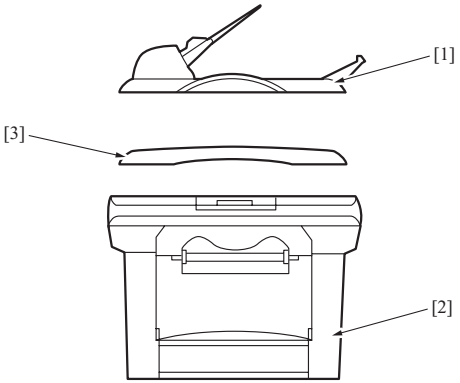
| | | |
|---|---|---|
| RAM | : | Shared with copier |
| Interfaces | : | USB Revision 1.1/2.0 |
| Printer Language | : | GDI |
| Fonts | : | Windows |
| Supported Operating Systems | : | Windows XP (SP1 or later)/Windows 2000 (SP3 or later)/ Windows Me/Windows 98 (SP1)/Windows 98 Second Edition |
| Browser Software | : | Internet Explorer 4.0 or later |

### (3) FAX Function (PagePro 1390 MF Only)

| | | |
|---|---|---|
| Compatibility | : | ITU Super G3 (ECM*) *: Error Correction Mode |
| Scanning Resolution | : | STD: CD 8 lines/mm x FD 3.85 lines/mm<br>Fine: CD 8 lines/mm x FD 7.7 lines/mm<br>Super Fine: CD 8 lines/mm x FD 15.4 lines/mm |
| Line | : | PSTN/ PBX |
| Modem Speed (kbps) | : | 33.6, 31.2, 28.8, 26.4, 24.0, 21.6, 19.2, 16.8, 14.4, 12.0, 9.6, 7.2, 4.8, 2.4 |
| Coding Method | : | MH/ MR/ MMR |
| Max. Scanning Size | : | ADF : 216 mm x 356 mm (8.5 inch x 14 inch)<br>Flatbed Glass: 216 mm x 297 mm (8.5 inch x 11.69 inch) |
| Memory Capacity | : | 3.5 MB |
| Number of Stored Pages | : | 170 pages when receiving<br>(ITU-T Test Chart No. 1, resolution: STD, A4 size) |
| One touch dial | : | 12 numbers (6 keys + shift function) |
| Speed dial | : | 100 fax numbers |
| Group dial | : | 6 groups (50 stations/group) |
| Broadcast | : | 50 stations |
| Paper Size | : | A4, Letter, Legal, A5, B5 |
| Edge Erase | : | 4 mm (top, bottom, left, right) |

# 2. PARTS IDENTIFICATION

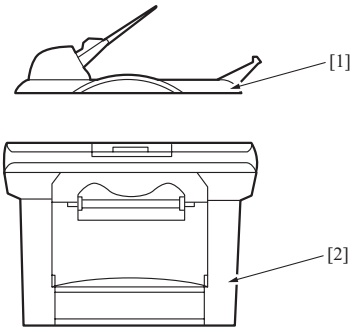
## 2-1. PagePro 1380 MF




4558T1C501DA

1. Auto Document Feeder (ADF) Option
2. Main Unit PagePro 1380 MF
3. Document Cover

## 2-2. PagePro 1390 MF




4558T1C502DA

1. Auto Document Feeder (ADF)
2. Main Unit PagePro 1390 MF

# MAINTENANCE

# 1. MAINTENANCE SCHEDULE

- To ensure that the machine produces good printed pages and to extend its service life, it is recommended that the maintenance jobs described in this schedule be carried out as instructed.

| Part | Clean | Replace after . . . | Ref. Page in This Manual |
|---|---|---|---|
| Paper Take-Up Roller | When a media take-up failure occurs | A media take-up failure occurs | ☞ E-3 |
| Image Transfer Roller | – | 50,000 prints | ☞ E-4 |
| Drum Cartridge | – | 20,000 prints | ☞ E-7 |
| Toner Cartridge | – | 3,000 or 6,000 prints, depending on the capacity of the Toner Cartridge | ☞ E-5 |
| Fusing Unit | – | 50,000 prints | ☞ E-8 |

***NOTES***

- *As a rule, the Drum Cartridge and Toner Cartridge are to be replaced by the user.*
- *The contents of the Maintenance List are subject to change without notice.*
- *For the part numbers, see the Parts Guide Manual and Parts Modification Notices.*

## 1-1. Guidelines for Life Specifications Values by Unit

- The life specifications value represents the number of printed pages produced or figures equivalent to it when given conditions (see the table below) are met. It can be more or less depending on how each individual printer is used.

| Print Conditions | |
|---|---|
| Job type | Continuous |
| Media size | A4 R/Letter R |
| B/W ratio | B/W 5 % |

**(1) Near Life Specifications Value**

| Part | Near Life Value | Detection |
|---|---|---|
| Toner Cartridge | Page Pro 1380 MF: 80 %<br>Page Pro 1390 MF: 75 %<br>(same calculation for each Toner Cartridge) | The value used for detection of the amount of toner still available for use is provided as feedback information for calculating toner consumption, thereby detecting a toner near empty condition. |

**(2) Life Specifications Value**

| Part | Near Life Value | Detection |
|---|---|---|
| Toner Cartridge | 100 %<br>(same calculation for each Toner Cartridge) | The value used for detection of the amount of toner still available for use is provided as feedback information for calculating toner consumption, thereby detecting a toner empty condition. |

**(3) Print Stop Value**

| Part | Print Stop Value | Detection |
|---|---|---|
| Toner Cartridge | 120 %<br>(same calculation for each Toner Cartridge) | The value used for detection of the amount of toner still available for use is provided as feedback information for calculating toner consumption, thereby detecting a print stop condition. |

# 2. REPLACEMENT/CLEANING OF PARTS

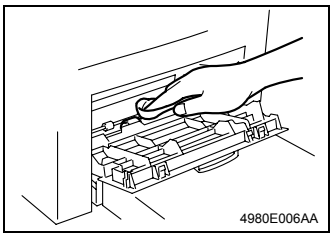
### (1) Cleaning the Paper Take-Up Roller

1. Lift up the Exit Tray and remove it.
2. Open the Front Door.
3. Remove the Imaging Cartridge.

☞ E-5

***NOTE***

- *The Imaging Cartridge consists of the Drum Cartridge, to which the Toner Cartridge is mounted.*

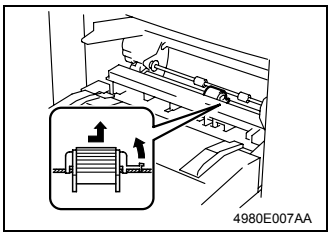



4. Using a soft cloth, wipe the surface of the Paper Take-Up Roller clean of dirt.
5. Close the Front Door.
6. Reinstall the Exit Tray.

### (2) Replacing the Paper Take-Up Roller

1. Lift up the Exit Tray and remove it.
2. Open the Front Door.
3. Remove the Imaging Cartridge.

☞ E-5

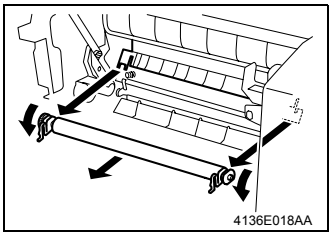



4. Remove the Paper Take-Up Roller.
5. Insert a new Paper Take-Up Roller.
6. Reinstall the Imaging Cartridge.
7. Close the Front Door.
8. Reinstall the Exit Tray.

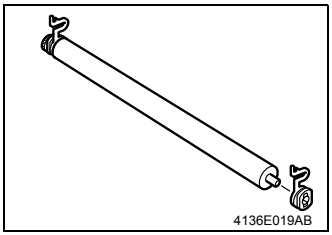
### (3) Replacing the Image Transfer Roller

1. Lift up the Exit Tray and remove it.
2. Open the Front Door.
3. Remove the Imaging Cartridge.

☞ E-5



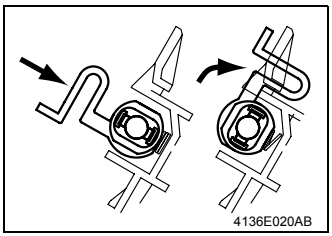

4. Press down the levers of the white bushings (one on the right end and one on the left end of the Image Transfer Roller) and slide the Image Transfer Roller out of the Image Transfer Roller holder.




5. Remove the two bushings (one on the right end and one on the left end) and the gear from the Image Transfer Roller.
6. Install the bushings and the gear in the new Image Transfer Roller.

***NOTES***

- *Do not touch, or dirty with chemicals or toner, the surface of the Image Transfer Roller, as indentations in and dirt on the surface of the Image Transfer Roller adversely affect the quality of the printed image.*
- *When handling the Image Transfer Roller, hold onto the shaft and bushings of the roller.*
- *Do not place a new Image Transfer Roller directly on the floor or other surface.*

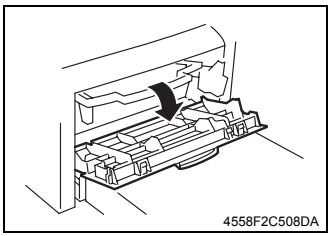



7. Insert the new Image Transfer Roller into the Image Transfer Roller holder and push the levers of the bushings into their original upward positions.

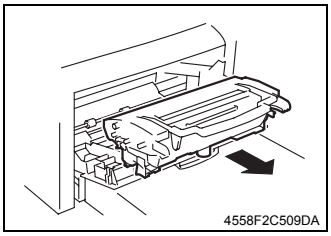
# 3. REPLACEMENT OF CONSUMABLES

### (1) Replacing the Toner Cartridge

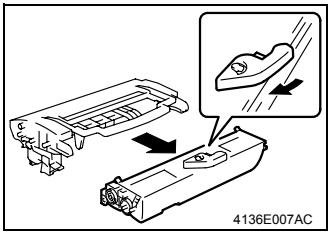
<Removal Procedure>




1. Lift up the Exit Tray and remove it.
2. Open the Front Door.




3. Remove the Imaging Cartridge.

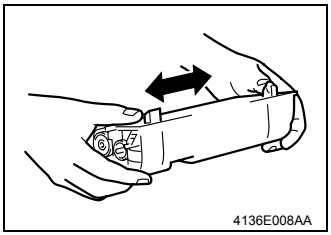



4. Pull the lever of the Toner Cartridge in the direction shown in the illustration and disconnect the Toner Cartridge from the Drum Cartridge.

***NOTE***

- *If the Drum Cartridge is to be placed on a floor or similar place, use care to prevent toner from scattering around.*

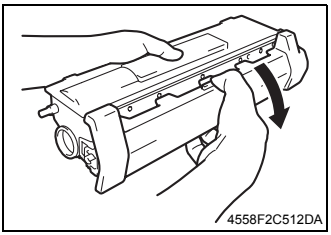
<Installation Procedure>



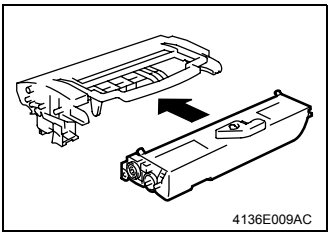

1. Take out a new Toner Cartridge and shake it in the horizontal direction sufficiently to agitate the toner.

***NOTE***

- *DO NOT place the Toner Cartridge in an upright position or shake it vigorously; otherwise, toner will spill.*



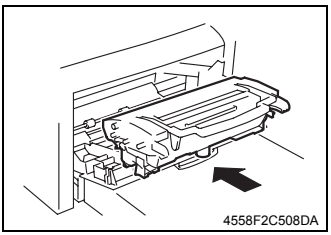

2. Remove the protective cover from the Toner Cartridge.




3. Connect the new Toner Cartridge to the Drum Cartridge.

***NOTE***

- *Insert the Toner Cartridge along the guide provided on the side of the Drum Cartridge, making sure that the Toner Cartridge is not tilted when it is inserted.*




4. Install the Imaging Cartridge in the printer.

***NOTE***

- *Insert the Imaging Cartridge along the guides provided on the insides of the printer. Ensure that the Imaging Cartridge is inserted straight.*

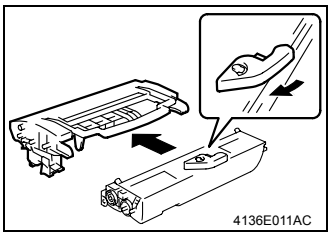
5. Close the Front Door.
6. Reinstall the Exit Tray.

### (2) Replacing the Drum Cartridge

<Removal Procedure>

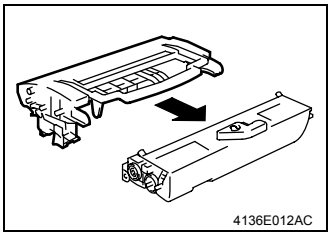
1. Remove the Imaging Cartridge.

☞ E-5




2. Pull the lever of the Toner Cartridge in the direction shown in the illustration and disconnect the Drum Cartridge.

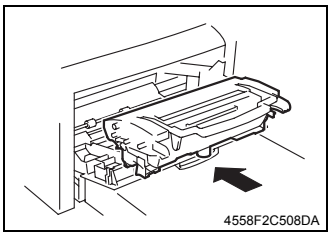
<Installation Procedure>




1. Connect the Toner Cartridge to a new Drum Cartridge.

***NOTE***

- *Insert the Toner Cartridge along the guide provided on the side of the Drum Cartridge, making sure that the Toner Cartridge is not tilted when it is inserted.*




2. Install the Imaging Cartridge in the printer.

***NOTE***

- *Insert the Imaging Cartridge along the guides provided on the insides of the printer. Ensure that the Imaging Cartridge is inserted straight.*

3. Close the Front Door.

***NOTE***

- *After replacing the Drum Cartridge, be sure to reset the OPC counter in the configuration menu.*

☞ S-12

### (3) Replacing the Fusing Unit

***NOTE***

- *Immediately after turning off the printer, the area around the Fusing Unit is extremely hot. Therefore, in order to reduce the risk of burns, wait until the unit has cooled down before performing any operation.*

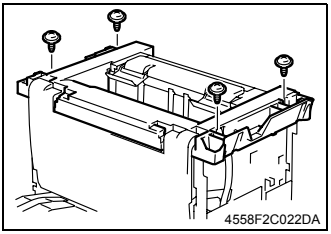
<Removal Procedure>

1. Remove the IR Unit.

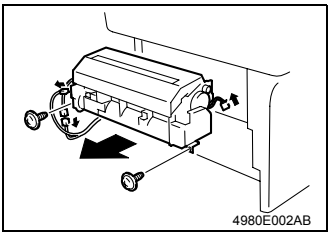
☞ D-18

2. Remove the Exit tray.

☞ D-2



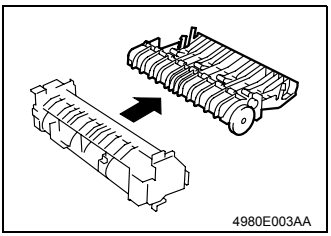

3. Remove four screws and the Upper Cover.




4. Remove two screws, unplug three connectors, and remove the Fusing Unit.

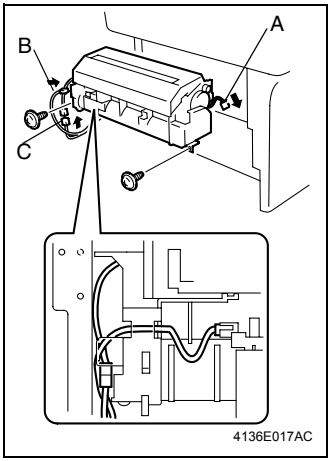
***NOTE***

- *The surfaces around the Fusing Unit are very hot. Use the utmost care not to touch any surfaces other than the Fusing Unit.*




5. Remove the Fusing Unit.

<Installation Procedure>




1. Connect connector A.
2. Mount the Fusing Unit in the printer and secure it in position by tightening the two screws.
3. Connect connectors B and C.

***NOTE***

- *When installing the Fusing Unit, route the harness as shown in the illustration, making sure that no part of the harness is wedged between the Fusing Unit and printer.*

***NOTE***

- *When replacing an individual part of the Fusing Unit due to a defective part or to correct an image problem, see "Disassembling the Fusing Unit" in DIS/REASSEMBLY, ADJUSTMENT".*

☞ D-28

# DIS/REASSEMBLY, ADJUSTMENT

# 1. PRECAUTIONS FOR DISASSEMBLY/ADJUSTMENTS

## 1-1. Parts That Must Not be Touched

### (1) Red-Painted Screws

Purpose of the Red Paint

Red-painted screws show that the assembly or unit secured can be adjusted or set only at the factory and should not be readjusted, set, or removed in the field.

If it becomes unavoidably necessary to disassemble any of these assemblies and units, disassembly may be done provided that the conditions permitting reassembly are met.

Note also that when two or more screws are used on the part in question, only one representative screw may be marked with red paint.

### (2) Variable Resistors on Boards

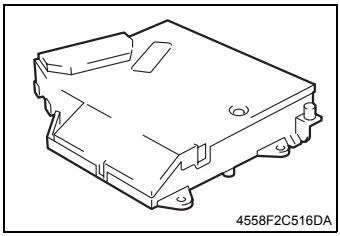
---

Do not turn the variable resistors on boards for which no adjusting instructions are given in ADJUSTMENT.

---

### (3) Other Screws not Marked with Red Paint

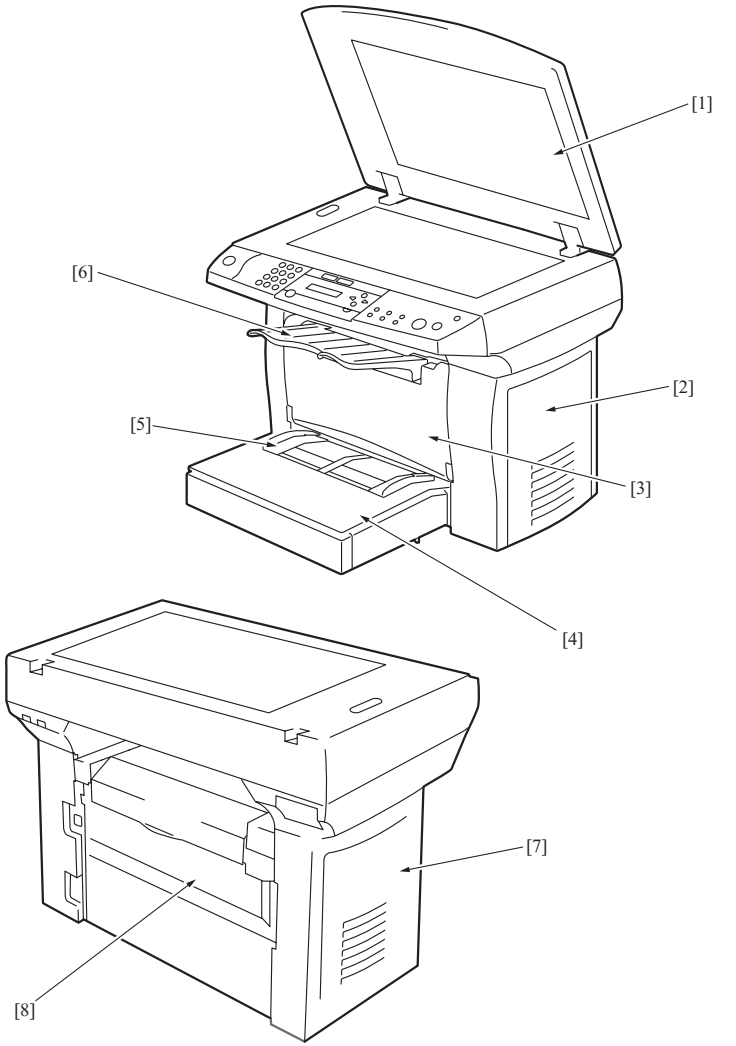
PH Unit



# 2. DISASSEMBLY/REASSEMBLY

## 2-1. Identification of and Removal Procedures for Exterior Parts

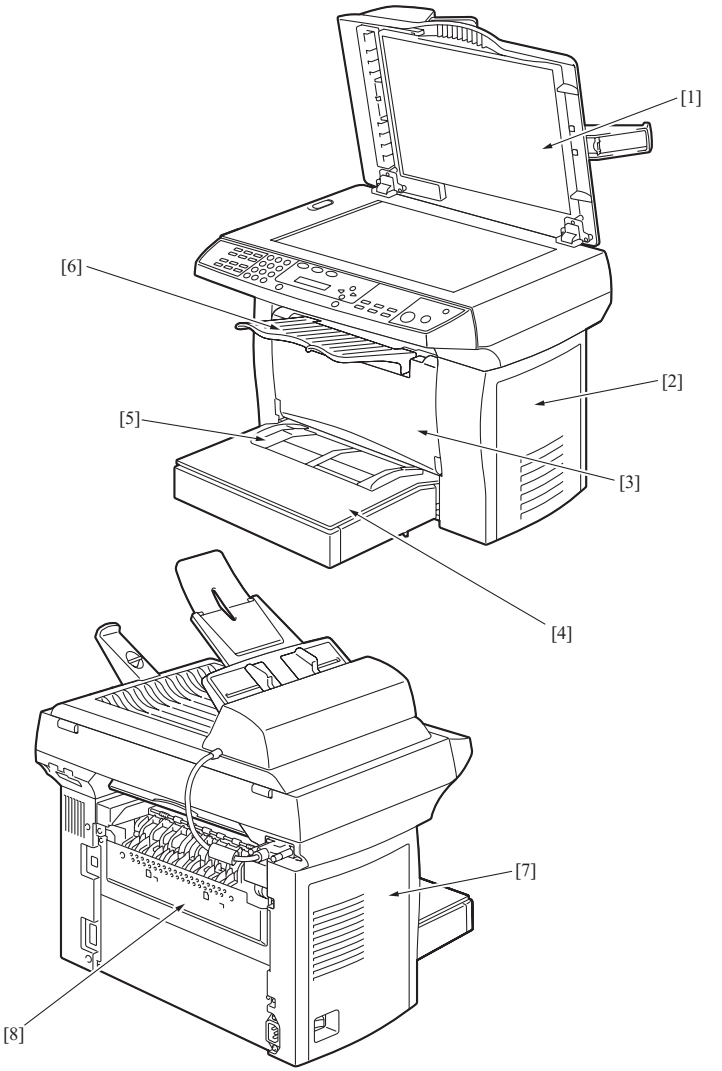
### (1) PagePro 1380 MF




4558F2C501DA

| No. | Name | Removal Procedure |
|---|---|---|
| 1 | Document Cover | Open the Document Cover → Pull it straight up. |
| 2 | Right Cover | ☞ D-5 |
| 3 | Front Door | Open the Front Door. → While pressing in on one side, remove the Front Door. |
| 4 | Tray1 | Hold down the main unit with one hand and pull Tray1 toward you. |
| 5 | Bypass Tray | – |
| 6 | Exit Tray | Unhook the two tabs, and remove the Exit tray. |
| 7 | Left Cover | ☞ D-6 |
| 8 | Rear Cover | Remove the Right Cover and the Left Cover. → Remove two screws, and remove the Rear Cover. |

**(2) PagePro 1390 MF**

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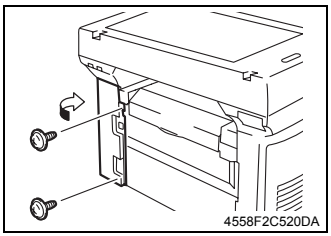
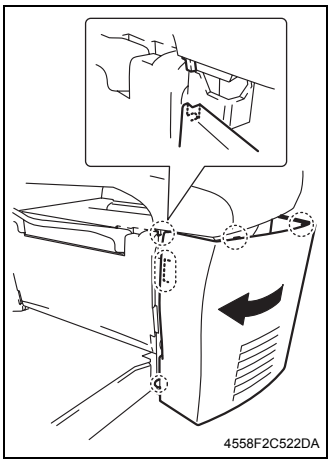
| No. | Name | Removal Procedure |
|---|---|---|
| 1 | ADF | ☞ D-9 of Auto Document Feeder Service Manual |
| 2 | Right Cover | ☞ D-5 |
| 3 | Front Door | Open the Front Door. → While pressing in on one side, remove the Front Door. |
| 4 | Tray1 | Hold down the main unit with one hand and pull Tray1 toward you. |
| 5 | Bypass Tray | – |
| 6 | Exit Tray | Unhook the two tabs, and remove the Exit tray. |
| 7 | Left Cover | ☞ D-6 |
| 8 | Rear Cover | Remove the Right Cover and the Left Cover. → Remove two screws, and remove the Rear Cover. |

### (3) Right Cover




1. Remove two screws that secure the Right Cover at the back and unhook it on the back.

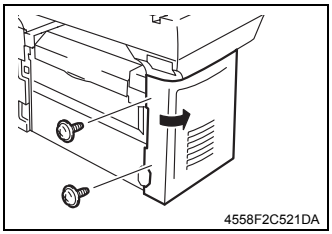



2. Unhook tabs at five locations and remove the Right Cover.

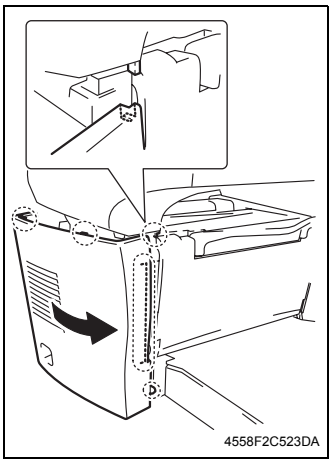
***NOTE***

- *When reinstalling the Right Cover, first hook the tabs at three locations on the front side. Then, while hooking the two tabs on the upper side, hook the Right Cover on the back and tighten the screws.*

### (4) Left Cover




1. Remove two screws that secure the Left Cover at the back and unhook it on the back.




2. Unhook tabs at four locations and remove the Left Cover.

***NOTE***

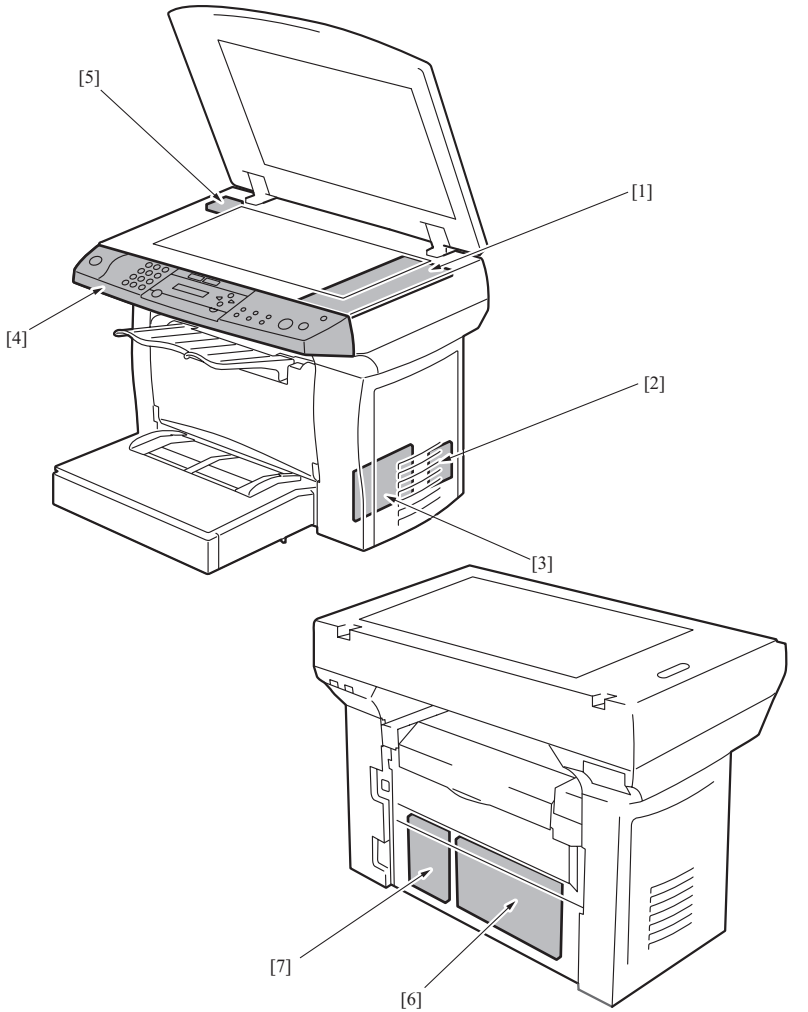
- *When reinstalling the Left Cover, first hook the tabs at two locations on the front side. Then, while hooking the two tabs on the upper side, hook the Left Cover on the back and tighten the screws.*

## 2-2. Removal of Circuit Boards and Other Electrical Components

***NOTES***

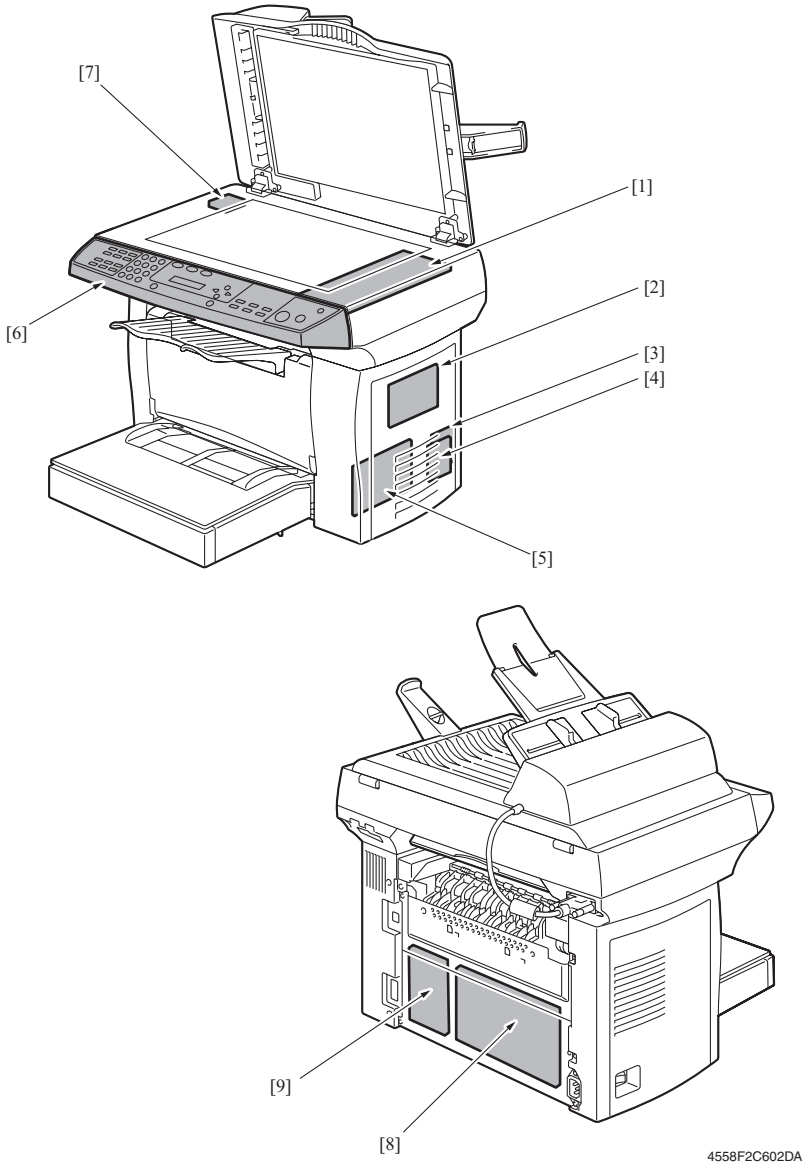
- *When removing a circuit board or other electrical component, refer to the precautions for handling PWBs and follow the corresponding removal procedures.*
- *The removal procedures given in the following paragraphs omit the removal of the component in question from a connector or a PWB support.*
- *Where it is absolutely necessary to touch the ICs and other electrical components on the board, be sure to ground your body.*

**(1) PagePro 1380 MF**



| No. | Symbol | Name | Removal Procedure |
|---|---|---|---|
| [1] | PWB-I | Controller/Image Control Board | ☞ D-15 |
| [2] | PU2 | Power Supply Unit 2 | ☞ D-11 |
| [3] | PWB-A | Mechanical Control Board | ☞ D-11 |
| [4] | PWB-O | Control Panel | ☞ D-12 |
| [5] | PWB-S | Socket Board | ☞ D-17 |
| [6] | PU1 | Power Supply Unit 1 | ☞ D-14 |
| [7] | HV1 | High Voltage Unit | ☞ D-15 |

**(2) PagePro 1390 MF**



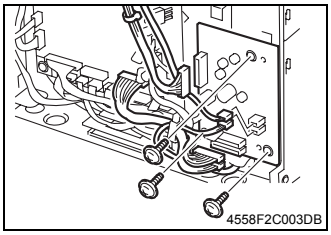
| No. | Symbol | Name | Removal Procedure |
|---|---|---|---|
| [1] | PWB-I | Controller/Image Control Board | ☞ D-15 |
| [2] | PWB-FAX1 | Interface Board | ☞ D-13 |
| [3] | PWB-FAX2 | NCU Board | ☞ D-13 |
| [4] | PU2 | Power Supply Unit 2 | ☞ D-11 |
| [5] | PWB-A | Mechanical Control Board | ☞ D-11 |
| [6] | PWB-O | Control Panel | ☞ D-12 |
| [7] | PWB-S | Socket Board | ☞ D-17 |
| [8] | PU1 | Power Supply Unit 1 | ☞ D-14 |
| [9] | HV1 | High Voltage Unit | ☞ D-15 |

### (3) Removing the Power Supply Unit 2 (PU2)

**<PagePro 1380 MF>**

1. Remove the Right Cover.

☞ D-2

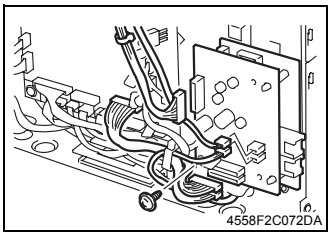



2. Disconnect all connectors and flat cables from the Power Supply Unit 2.
3. Remove three screws and the Power Supply Unit 2.

**<PagePro 1390 MF>**

1. Remove the Right Cover.

☞ D-2

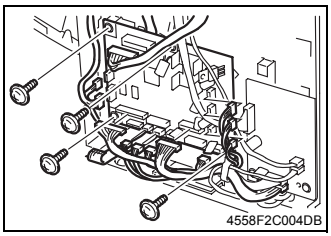



2. Disconnect all connectors and flat cables from the Power Supply Unit 2.
3. Remove the screw, two PWB supports and the Power Supply Unit 2.

### (4) Removing the Mechanical Control Board (PWB-A)

1. Remove the Right Cover.

☞ D-2




2. Disconnect all connectors and flat cables from the Mechanical Control Board.

***NOTE***

- *Use the utmost care not to snap off the flat cable.*

3. Remove four screws and the Mechanical Control Board.

***NOTE***

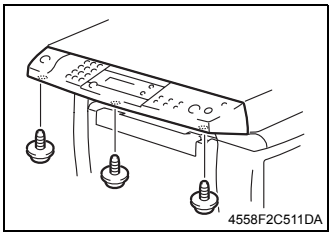
- *When the Mechanical Control Board is replaced, upgrade the Firmware to the latest version.*

☞ D-30

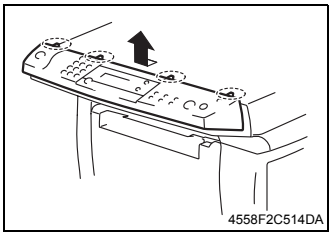
### (5) Removing the Control Panel (PWB-O)

1. Remove the Exit tray.

☞ D-2




2. Remove three screws.

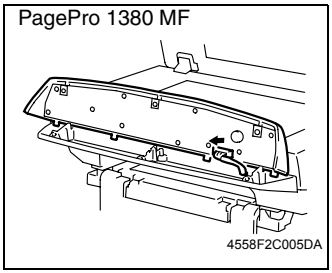



3. Unhook four tabs on the Control Panel.

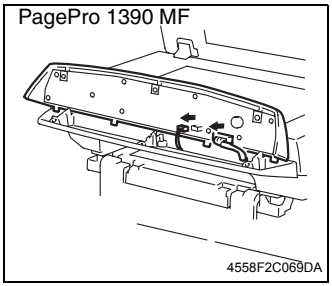
***NOTE***

- *Remove the Control Panel slowly and carefully, as connectors are connected to it.*

PagePro 1380 MF




PagePro 1390 MF

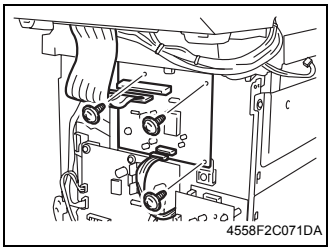



4. Disconnect the connector(s) from the Control Panel.
5. Remove the Control Panel.

### (6) Removing the Interface Board (PWB-FAX1) <PagePro 1390 MF only>

1. Remove the Right Cover.

☞ D-2




2. Disconnect two connectors from the Interface Board.
3. Remove three screws and the Interface Board.

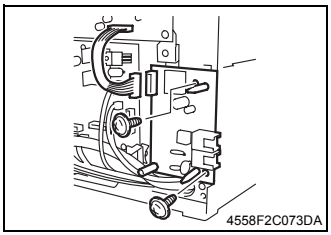
### (7) Removing the NCU Board (PWB-FAX2) <PagePro 1390 MF only>

1. Remove the Right Cover.

☞ D-2

2. Remove the Power Supply Unit 2.

☞ D-11

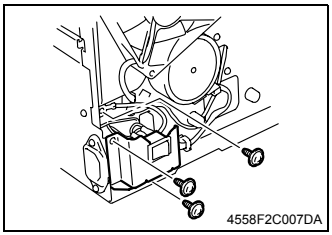



3. Disconnect the connector from the NCU Board.
4. Remove two screws, three PWB supports and the NCU Board.

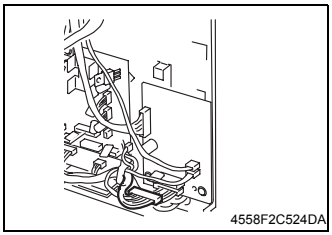
### (8) Removing the Power Supply Unit 1 (PU1)

1. Remove the Fusing Unit.

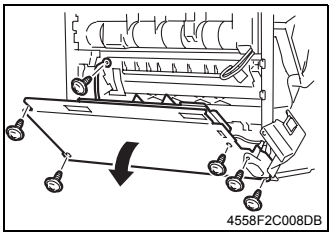
☞ E-8



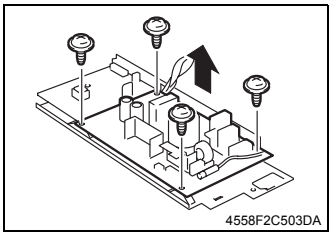

2. Remove three screws.
3. Remove the Power Switch stay.
4. Remove the Power Switch Assy.




5. Disconnect the connector from the Power Supply Unit 2.




6. Remove six screws, disconnect three connectors, and remove the Power Supply Unit Assy.

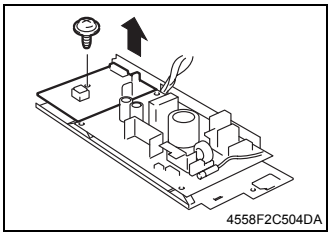



7. Remove four screws and the Power Supply Unit 1.

### (9) Removing the High Voltage Unit (HV1)

1. Remove the Power Supply Unit Assy.

☞ D-14

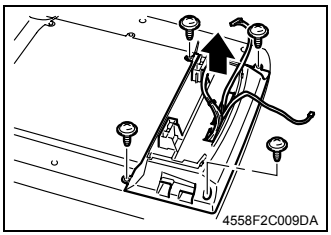



2. Remove the screw and the High Voltage Unit.

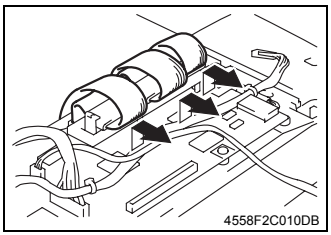
### (10) Removing the Controller/Image Control Board (PWB-I)

1. Remove the IR Unit.

☞ D-18



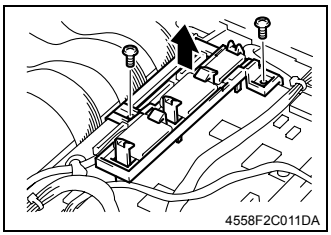

2. Remove four screws and the Controller/Image Control Board Cover.




3. Disconnect three flat cables from the Controller/ Image Control Board.

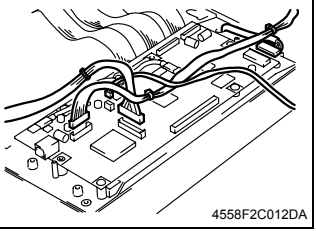
***NOTE***

- *Use the utmost care not to snap off the flat cable.*




4. Remove two screws and the Flat Cable Guide.

PagePro 1380 MF



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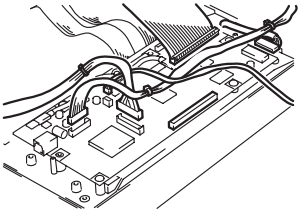

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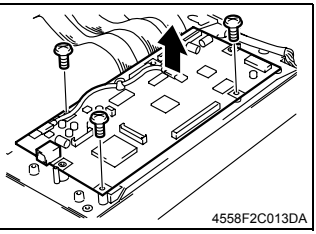
5. Disconnect all connectors from the Controller/ Image Control Board.



4558F2C013DA

6. Remove three screws and the Controller/Image Control Board.

***NOTE***

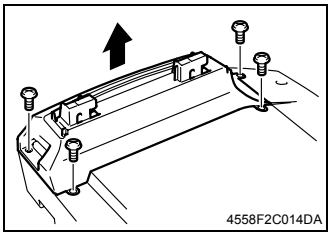
- *When the Controller/Image Control Board is replaced, upgrade the Firmware to the latest version.*

☞ D-30

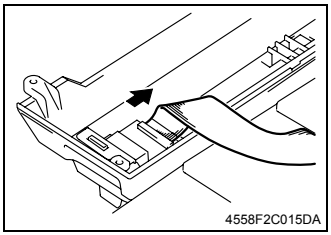
### (11) Removing the Socket Board (PWB-S)

1. Remove the IR Unit.

☞ D-18



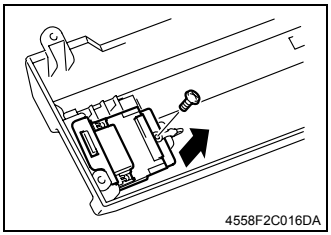

2. Remove four screws and the Socket Board Cover.




3. Disconnect the flat cables from the Socket Board.

***NOTE***

- *Use the utmost care not to snap off the flat cable.*




4. Remove the screw and the Socket Board Assy.

## 2-3. Removal of Units

### (1) Removing the IR Unit

1. Remove the Left Cover.

☞ D-2

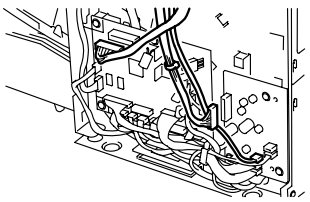
2. Remove the Right Cover.

☞ D-2

3. Remove the Rear Cover.

☞ D-2

PagePro 1380 MF



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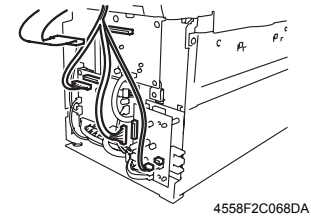
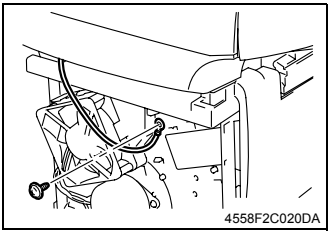
4. Disconnect three connectors.
   (Page Pro 1380 MF Only)
5. Disconnect four connectors.
   (Page Pro 1390 MF Only)

PagePro 1390 MF



4558F2C068DA



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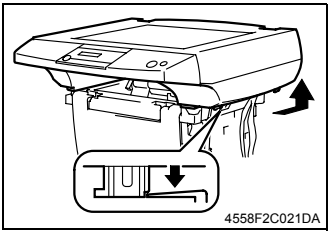
6. Remove the screw.



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7. Unhook two tabs, and then remove the IR Unit.

### (2) Removing the PH Unit

## ⚠ CAUTION

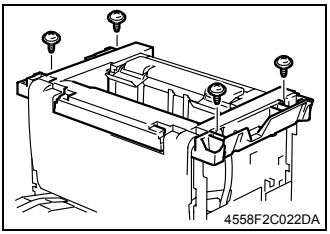
- NEVER attempt to replace the PH Unit while power is being supplied to the printer. Doing so could lead to exposure to the laser beam, resulting in blindness.
- NEVER attempt to disassemble or adjust the PH Unit. Doing so could lead to exposure to the laser beam, resulting in blindness.

1. Remove the IR Unit.

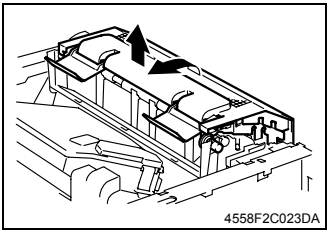
☞ D-18

2. Remove the Exit tray.

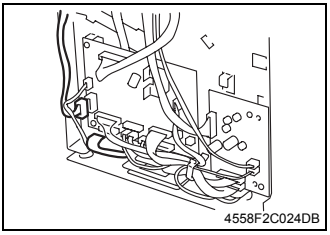
☞ D-2




3. Remove four screws and the Upper Cover.



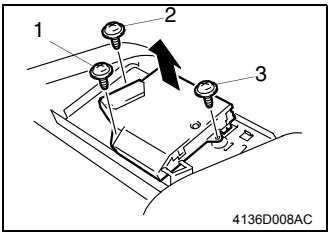

4. Remove the Upper Door.




5. Disconnect the flat cable and the connector from the Mechanical Control Board.

***NOTE***

- *Use the utmost care not to snap off the flat cable.*



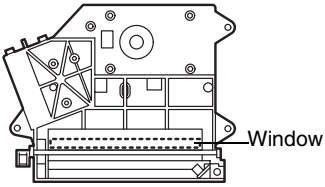

6. Remove three screws.
7. Remove the PH Unit.

***NOTE***

- *When reinstalling the PH Unit, tighten the screws in the numerical order shown in the illustration.*

***Precautions for Removal/Reinstallation of the PH Unit***

- *NEVER touch the window on the back of the PH Unit. A dirty window can cause image quality problems.*

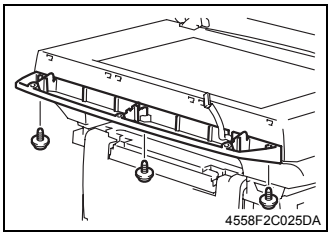


## 2-4. Disassembly of the Image Reading Section

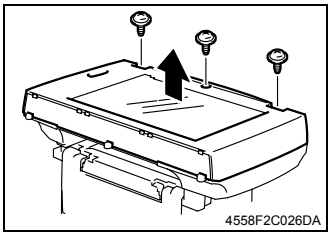
### (1) Removing the IR Upper Cover (Original Glass)

1. Remove the Document Cover.
2. Remove the Control Panel Assy.

☞ D-12




3. Remove the three screws.
4. Remove the Control Panel bottom housing.

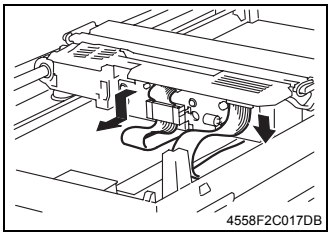



5. Remove the three screws.
6. Remove the IR Upper Cover (Original Glass).

### (2) Removing the Scanner Unit.

1. Remove the IR Upper Cover (Original Glass).

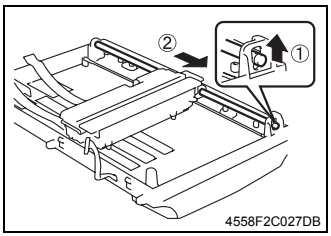
☞ D-21



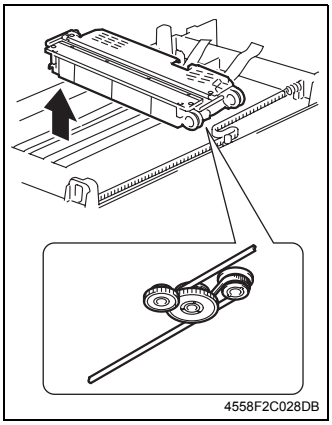

2. Disconnect two Flat Cables from the Scanner Unit.

***NOTE***

- *Use the utmost care not to snap off the flat cable.*




3. Remove the Sliding Rod.




4. Remove the Belt from the Scanner Unit.

***NOTE***

- *When installing the Belt, route it as shown in the illustration.*

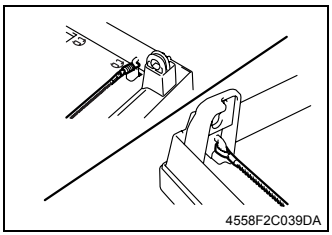
**(3) Removing the Timing Belt**

1. Remove the Upper Cover Assy. (Original Glass).

☞ D-21

2. Remove the Scanner Unit.

☞ D-21



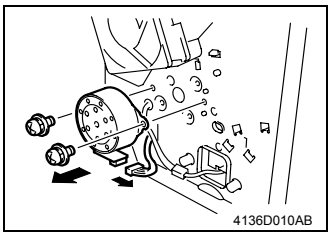

3. Remove the Timing Belt by unhooking it on both sides.

## 2-5. Disassembly of the Main Drive Section

### (1) Removing the Main Motor (M1)

1. Remove the Left Cover.

☞ D-2




2. Disconnect the connector.
3. Remove two screws.
4. Remove the Main Motor.

### (2) Removing the Tray 1 Paper Empty Sensor (PE1)

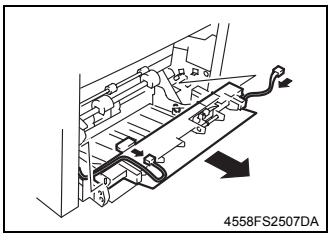
1. Remove the Imaging Cartridge.

***NOTE***

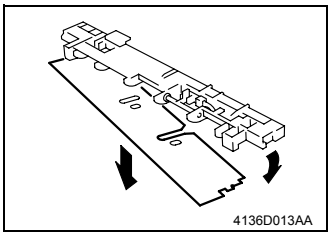
- *The Imaging Cartridge is the Drum Cartridge, to which the Toner Cartridge is mounted.*

2. Remove the Front Door.
3. Remove the Left and Right Covers.

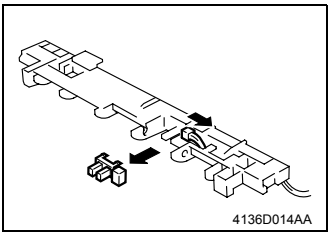
☞ D-2




4. Disconnect one connector from the Mechanical Control Board.
5. Unhook two tabs, disconnect one connector, and remove the Paper Take-Up Upper Guide Assy.




6. Unhook two tabs and remove the tray.

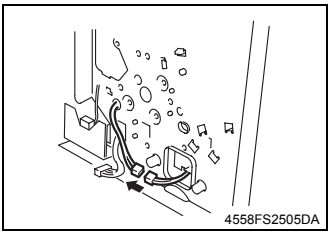



7. Disconnect one connector and remove the Tray 1 Paper Empty Sensor.

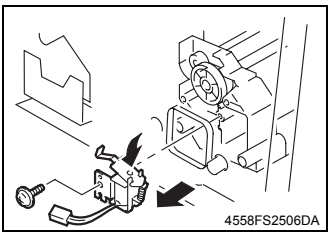
### (3) Removing the Paper Take-Up Solenoid (SL1)

1. Remove the Left Cover.

☞ D-2




2. Disconnect one connector of the Paper Take-Up Solenoid.

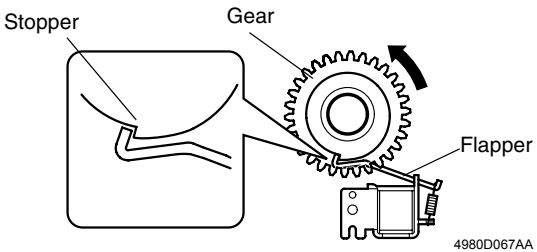



3. Remove one screw.
4. Remove the Paper Take-Up Solenoid.

***Precautions for Installation of the Paper Take-Up Solenoid***

*1. Mount the Paper Take-Up Solenoid and tighten one screw.*

*2. Turn the gear in the direction of the arrow shown below so that the flapper of the Paper Take-Up Solenoid catches the stopper of the gear.*



### (4) Removing the Paper Take-Up Clutch Gear

1. Remove the IR Unit.

☞ D-18

2. Remove the Fusing Unit.

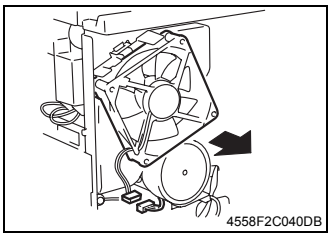
☞ E-8

3. Remove the Power Supply Unit 1.

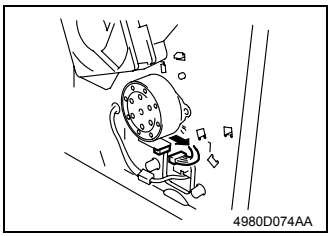
☞ D-14

4. Remove the Paper Take-Up Upper Guide Assy.

☞ D-23

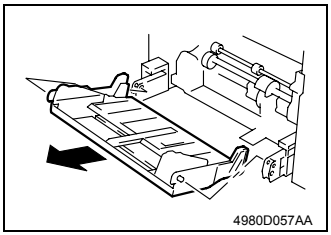



5. Disconnect the connector and remove the Cooling Fan Motor.




6. Disconnect the connector of the Main Motor.

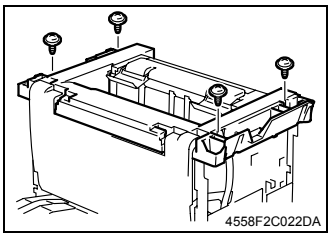
☞ D-23



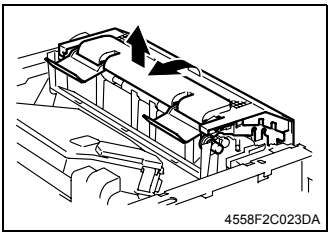

7. Remove the Tray 1.

☞ D-2

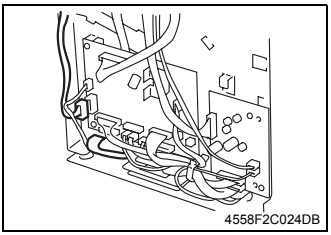
8. Remove the Paper Lifting Plate Assy.
9. Remove two springs.




10. Remove four screws and the Upper Cover.



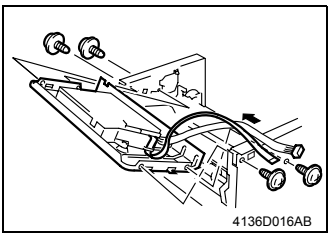

11. Remove the Upper Door.



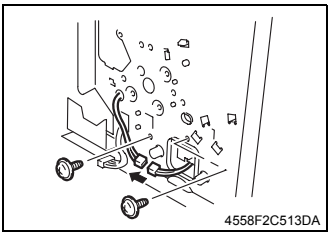

12. Disconnect the flat cable and the connector from the Mechanical Control Board.

***NOTE***

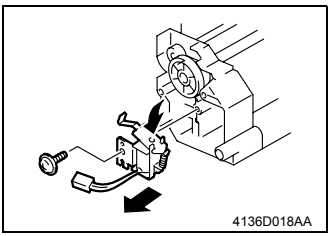
- *Use the utmost care not to snap off the flat cable.*



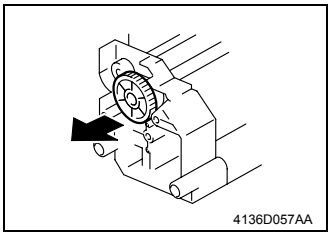

13. Remove four screws.
14. Remove the PH Base Plate Assy.




15. Disconnect the connector of the Paper Take-Up Solenoid.
16. Remove two screws.
17. Remove the Left Frame.




18. Remove the screw.
19. Remove the Paper Take-Up Solenoid.

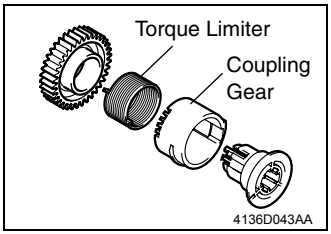



20. Unhook two tabs and remove the Paper Take-Up Clutch Gear.

**(5) Removing the Torque Limiter**

1. Remove the Paper take up Clutch Gear.

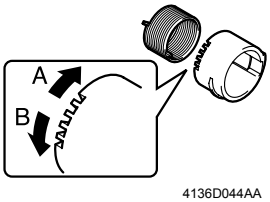
☞ D-25

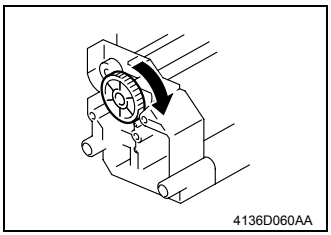



2. Unhook three tabs and take apart the Paper Take-Up Clutch Gear then, remove the Torque Limiter.

***Precautions for Installation of the Torque Limiter***

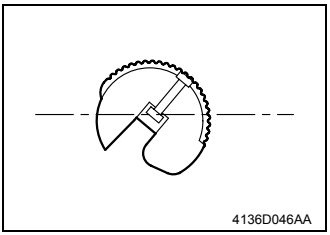
*The Coupling Gear has five notches for adjustment of the Take-up Roller position. When the Torque Limiter is replaced, adjust the set position of the Coupling Gear so that the Take-up Roller becomes level. The procedure is as follow.*



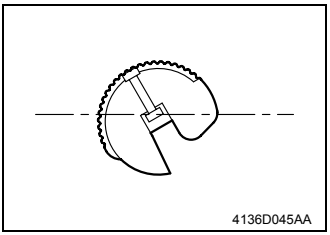




After replacing the Paper Take-Up Clutch Gear (Torque Limiter) on the shaft, rotate the Paper Take-Up Clutch Gear by hand (the Solenoid Flapper needs to be released).

Look at the stop position of the Take-Up Roller from the Clutch Gear side.




1. When the Roller is leaning in the clockwise direction, move the coupling Gear in the A direction.




2. When the Roller is leaning in the counter clockwise direction, move the coupling Gear in the B direction.

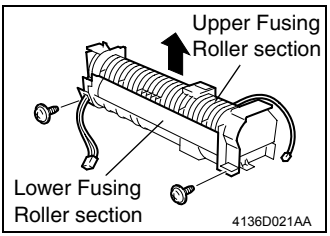
### (6) Disassembling the Fusing Unit

***NOTE***

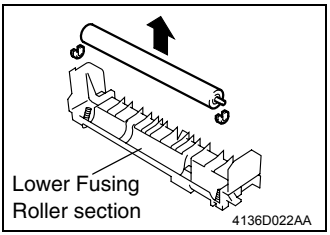
- *The Fusing Unit is extremely hot immediately after the Power Switch has been turned OFF. Allow a sufficient time to let it cool down before starting the procedure to prevent burn.*

1. Remove the Fusing Unit.

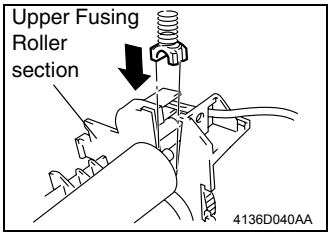
☞ E-8




2. Remove the two screws.
3. Remove the Fusing Unit is divided into the Upper Fusing Roller section and Lower Fusing Roller section.

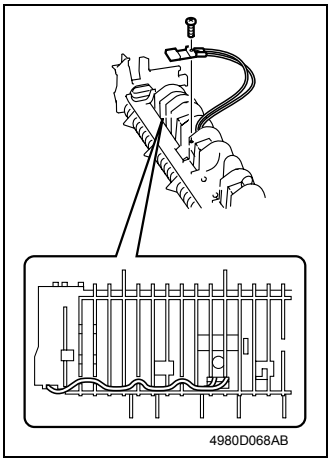



4. Remove two bushings and the Pressure Roller.




***Precautions for Installation of the Bushings***

- *Make sure that the slits in the bushing are properly aligned with the rib of the Fusing Unit.*




5. Remove one screw and the Thermistor.

***NOTE***

- *When reinstalling the Thermistor, route the harness as shown in the illustration.*

## 2-6. Upgrading the Firmware

***NOTES***

- *The PagePro 1380 MF or The PagePro 1390 MF TWAIN driver and printer driver must already be installed on the host computer before firmware can be updated.*
- *If the PagePro 1380 MF or The PagePro 1390 MF TWAIN driver or printer driver is not installed, follow the procedure described below to install the driver.*
- *If the drivers are already installed, skip to "Procedure for Upgrading the Firmware" and upgrade the firmware.*

### (1) Minimum System Requirements

| | |
|---|---|
| Operating System | • Windows XP or Windows 2000 (Windows ME/98SE cannot be used) |
| Host Computer | • Pentium III 500MHz and above, 64 MB RAM |

### (2) Install the TWAIN Driver Software

1. Make sure that the machine is not connected to the host computer.
2. Insert the PagePro 1380 MF or The PagePro 1390 MF Utilities & Documentation CD-ROM into the CD-ROM/DVD drive.
3. The CD-ROM Installer automatically starts.

***NOTE***

- *If the Installer does not automatically start, use Windows Explorer to browse the CD-ROM and double-click "setup.exe."*

4. Follow the instructions on the screen.
5. Connect the PagePro 1380 MF or The PagePro 1390 MF to the host computer.
6. The "Found New Hardware" (Windows XP/2000) on the host computer shows up.
7. Follow the instructions on the screen.

### (3) Install the Printer Driver

1. After installing the TWAIN driver, the "Found New Hardware" (Windows XP/2000) on the host computer appears.
2. Follow the instructions on the screen.

***NOTE***

- *Do not the "Add Printer" wizard to install the PagePro 1380 MF or The PagePro 1390 MF driver and utilities.*

**(4) Procedure for Upgrading the Firmware**

1. Turn OFF the PagePro 1380 MF or The PagePro 1390 MF and the host computer.
2. Turn ON the PagePro 1380 MF or The PagePro 1390 MF.
3. Start up the host computer (Windows 2000/XP).
4. Copy the firmware grade data to the host computer.
5. After the hardware is detected, use a USB cable to connect the PagePro 1380 MF or The PagePro 1390 MF to the host computer.
6. Double-click the “FWUpdate.exe” file to begin the firmware upgrade procedure.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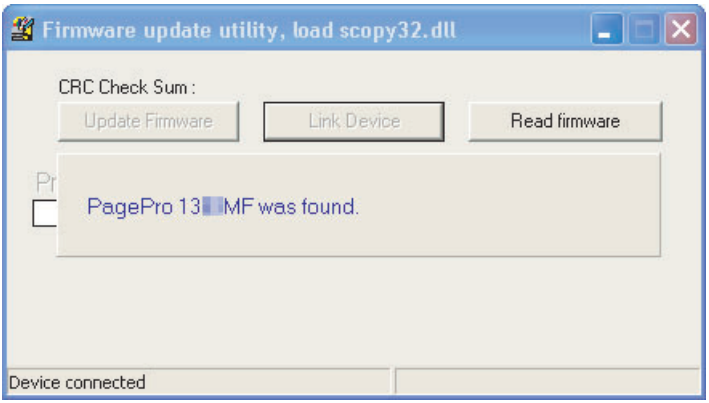
7. The “Firmware update utility” window appears, and the firmware upgrading starts automatically.

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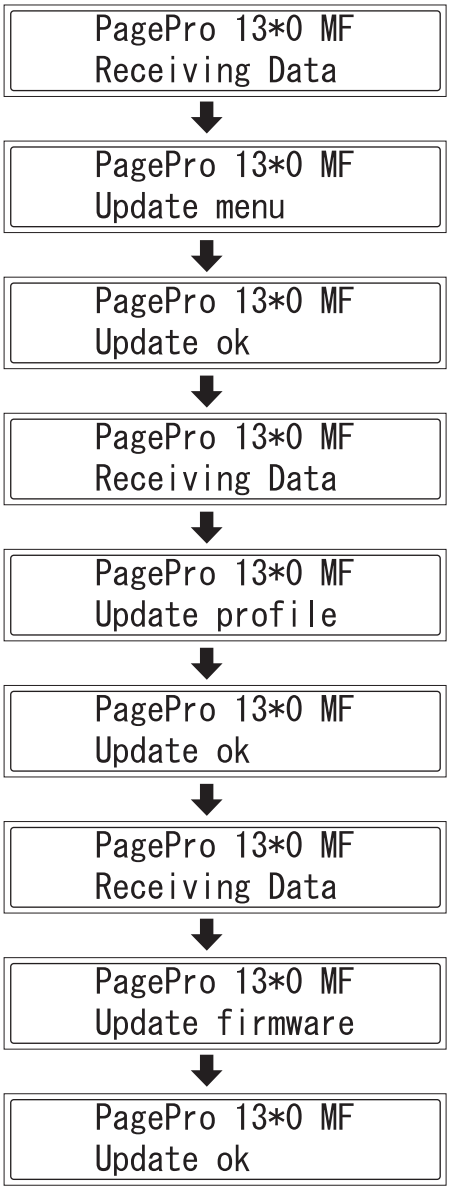
8. Check the firmware upgrade status in the LCD display.

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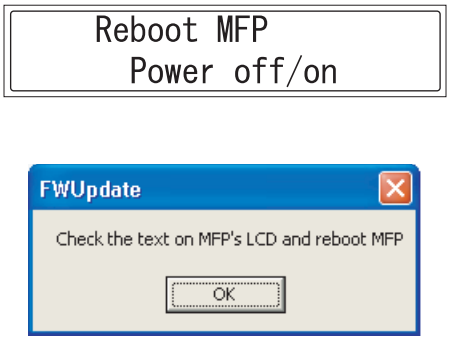
***NOTE***

- *Do not turn the PagePro 1380 MF's or The PagePro 1390 MF's Main Power Switch OFF or ON while the message shown above is displayed.*

9. Check that the following message appears in the PagePro 1380 MF's or The PagePro 1390 MF's LCD display and the computer screen to indicate that the firmware upgrade procedure is complete.

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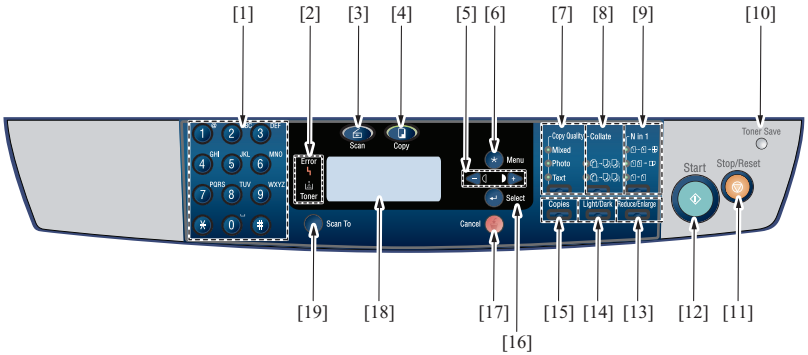
10. Turn the PagePro 1380 MF's or The PagePro 1390 MF's Main Switch OFF, and then ON again.

# CONTROL PANEL/SERVICE MODE DESCRIPTIONS

# 1. CONTROL PANEL DESCRIPTIONS

## 1-1. Names and Functions of Control Panel Parts

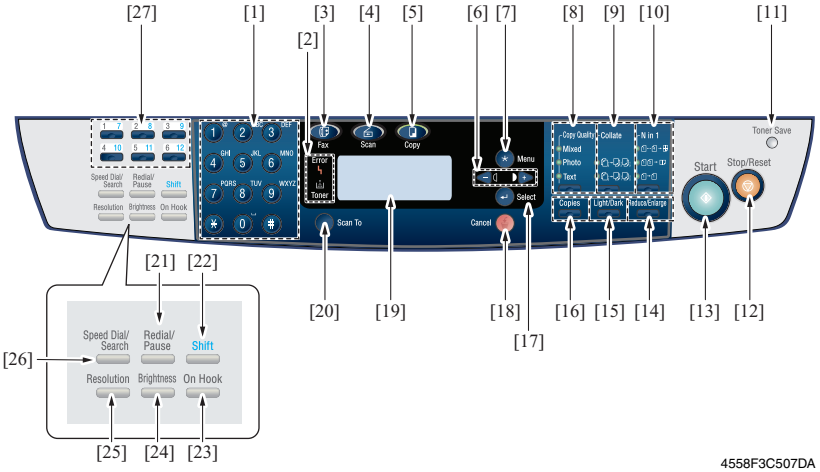
### (1) PagePro 1380MF




| No. | Key Name | Function |
|---|---|---|
| [1] | 10-Key pad | • Use to enter the number of copies to be made and any other numeric data. |
| [2] | Error LED | • Lights when an error or malfunction occurs. |
| | Toner LED | • Flashes when the toner cartridge is empty or the drum needs to be replaced.<br>• Stays on when the toner has been completely consumed, a wrong toner cartridge is used, or the drum needs to be replaced. |
| [3] | Scan key | • Press to enter the Scan mode. |
| [4] | Copy key | • Press to enter the Copy mode. |
| [5] | -/+ key | • Displays the options available for the selected menu. |
| [6] | Menu key | • Press to enter the configuration menu. |
| [7] | Copy Quality key | • Selects the document type for the current copy job. |
| [8] | Collate key | • Automatically collates multiple copies into sets. |
| [9] | N in 1 key | • Reduces original images to fit onto one sheet of media. |
| [10] | Toner Save key | • Saves toner by using less toner to print a document. |
| [11] | Stop/Reset key | • Stops an operation at any time.<br>• In Standby mode, clears the copy options. |
| [12] | Start key | • Starts a copy or scan job. |
| [13] | Reduce/Enlarge key | • Makes a copy smaller or larger than the original document. |

| No. | Key Name | Function |
|---|---|---|
| [14] | Light/Dark key | • Adjusts the document brightness for the current copy job. |
| [15] | Copies key | • Sets the number of copies.<br>(Each time the key is pressed, the count increases by one page.) |
| [16] | Select key | • Selects the item displayed. |
| [17] | Cancel key | • Deletes entered data or exits from the current menu when pressed repeatedly. |
| [18] | LCD Display | • Shows the number of copies to be made, the zoom ratio, and other settings. |
| [19] | Scan To key | • Scans the original document to a designated software program. |

**(2) PagePro 1390MF**




| No. | Key Name | Function |
|---|---|---|
| [1] | 10-Key pad | • Use to enter the number of copies to be made and any other numeric data. |
| [2] | Error LED | • Lights when an error or malfunction occurs. |
| | Toner LED | • Flashes when the toner cartridge is empty or the drum needs to be replaced.<br>• Stays on when the toner has been completely consumed, a wrong toner cartridge is used, or the drum needs to be replaced. |
| [3] | Fax key | • Press to enter the Fax mode. |
| [4] | Scan key | • Press to enter the Scan mode. |
| [5] | Copy key | • Press to enter the Copy mode. |

| No. | Key Name | Function |
|---|---|---|
| [6] | -/+ key | • Displays the options available for the selected menu. |
| [7] | Menu key | • Press to enter the configuration menu. |
| [8] | Copy Quality key | • Selects the document type for the current copy job. |
| [9] | Collate key | • Automatically collates multiple copies into sets. |
| [10] | N in 1 key | • Reduces original images to fit onto one sheet of media. |
| [11] | Toner Save key | • Saves toner in Copy mode by using less toner to print a document. |
| [12] | Stop/Reset key | • Stops an operation at any time.<br>• In Standby mode, clears the copy options. |
| [13] | Start key | • Starts a copy, scan or fax job. |
| [14] | Reduce/Enlarge key | • Makes a copy smaller or larger than the original document. |
| [15] | Light/Dark key | • Adjusts the document brightness for the current copy job. |
| [16] | Copies key | • Sets the number of copies.<br>(Each time the key is pressed, the count increases by one page.) |
| [17] | Select key | • Selects the item displayed. |
| [18] | Cancel key | • Deletes entered data or exits from the current menu when pressed repeatedly. |
| [19] | LCD Display | • Shows the number of copies to be made, the zoom ratio, fax settings and other settings. |
| [20] | Scan To key | • Scans the original document to a designated software program. |
| [21] | Redial/Pause key | • Recalls the last number dialed.<br>• Inserts a pause when a number is dialed. |
| [22] | Shift key | • Hold down to select one-touch dial keys 7 through 12. |
| [23] | On Hook key | • Sends and receives transmissions with the receiver on the hook. |
| [24] | Brightness key | • Adjusts the brightness of the fax document. |
| [25] | Resolution key | • Adjusts the image quality of fax documents. |
| [26] | Speed Dial/Search key | • Recalls a speed dial number. |
| [27] | One Touch key | • Registers and recalls one-touch dial numbers. To select a one-touch dial number registered with one-touch dial keys 7 through 12, hold down the [Shift] key. |

## 1-2. List of Error Status Message

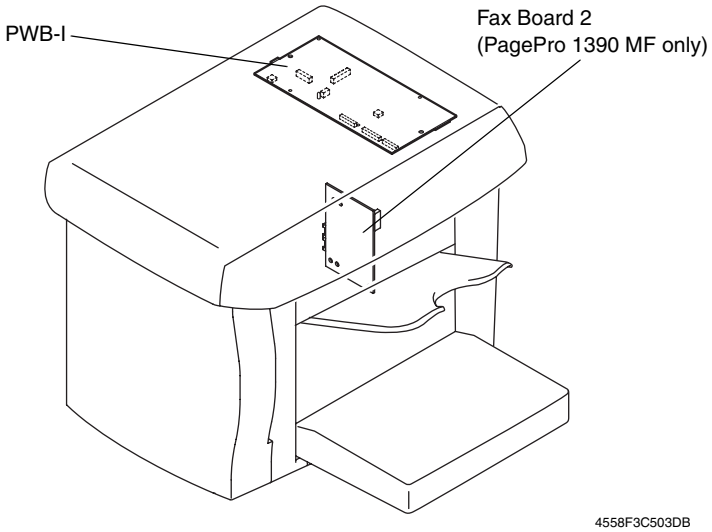
| Message | Description |
|---|---|
| Paper Empty<br>PLS add paper | • No media in the tray. |
| Front Cover Open<br>PLS close cover | • The Front Door is open. |
| [Printer Error]<br>Toner Low | • The Toner Cartridge is nearly empty (80 % consumed).<br>The error message appears, and the Toner LED flashes on and off five times. Then the display returns to the ordinary conditions. (At this time, the Toner LED goes out.)<br>This display warning occurs again when the printer is restarted and at the end of a print cycle. |
| [Printer Error]<br>Toner Empty | • The Toner Cartridge is empty (100 % consumed).<br>The Toner Cartridge LED lights and stays on, and the error message display and ordinary display alternate five times. Then the display returns to the ordinary conditions. (At this time, the Toner LED stays lit.)<br>This display warning occurs again when the printer is restarted and or at the end of a print cycle. |
| Open front cover<br>Remove the paper | • A media jam has occurred in the machine.<br>☞ For troubleshooting procedures, see “Troubleshooting.” |
| Open ADF cover<br>Remove the paper | • A paper jam has occurred in the ADF.<br>☞ For troubleshooting procedures, see “Troubleshooting” in the Auto Document Feeder Service Manual. |
| Paper Mismatch | • The appropriate media is not loaded in the tray. |
| Mem Low. 1 Copy<br>Press Stop/Clear | • The volume of data to be printed exceeds the permissible amount of data to be processed by the machine memory. |
| [PRINTER ERROR]<br>Service Call-XXX | • The engine is faulty.<br>☞ For details of troubleshooting procedures, see “Troubleshooting.” |

- The following Error Messages are related to the Fax Mode. These messages are only for the PagePro 1390 MF.

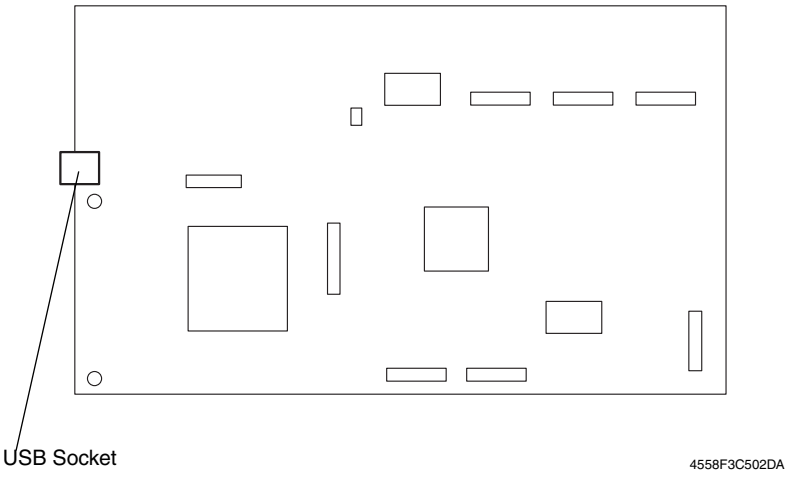
| Message | Description |
|---|---|
| Fax Memory Low | • The memory will soon become full. |
| No more room | • In Timer TX when you register the sixth reservation after five reservations that are the numbers of registration upper bounds have already been registered.<br>• When you newly register the number of Group Dial with 50 numbers have already been registered in one group.<br>• In Broadcast when you register the 51st with 50 destinations have already been registered. |
| No record | • No recipient is registered. |
| Bad fax job ID | • The number of a job that does not exist in the memory was entered. |
| Fax job busy | • Specified job is being executed now. |
| Line is busy | • When you do the operation that uses the line while communicating the fax. |
| Number busy | • The recipient's line is busy. |
| No connection | • The DialTone Det. parameter is set to "On" and a dial tone could not be detected. |
| Comm.Err.:xxxxxx | • When fax communication failed in Fax mode.<br>☞ For details of troubleshooting procedures, see "Troubleshooting." |
| Dial Fail | • The recipient's machine is set for manual reception, but the reception operation was not performed.<br>• The recipient may not have a fax machine.<br>• The recipient's fax machine is not answering. |

# 2. FUNCTIONS OF SWITCHES AND PARTS ON PWBs

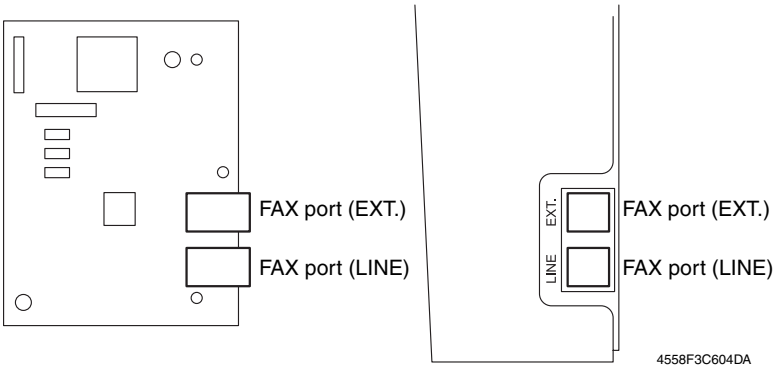
## 2-1. Circuit Board Locations




**(1) PWB-I: Controller/Image Control Board**



**(2) PWB-FAX2: NCU Board (PagePro 1390 MF only)**

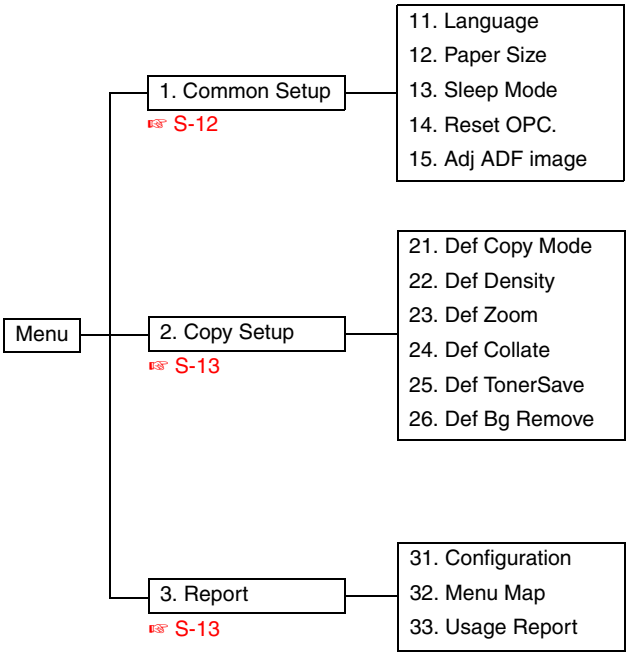


# 3. CONFIGURATION MENU

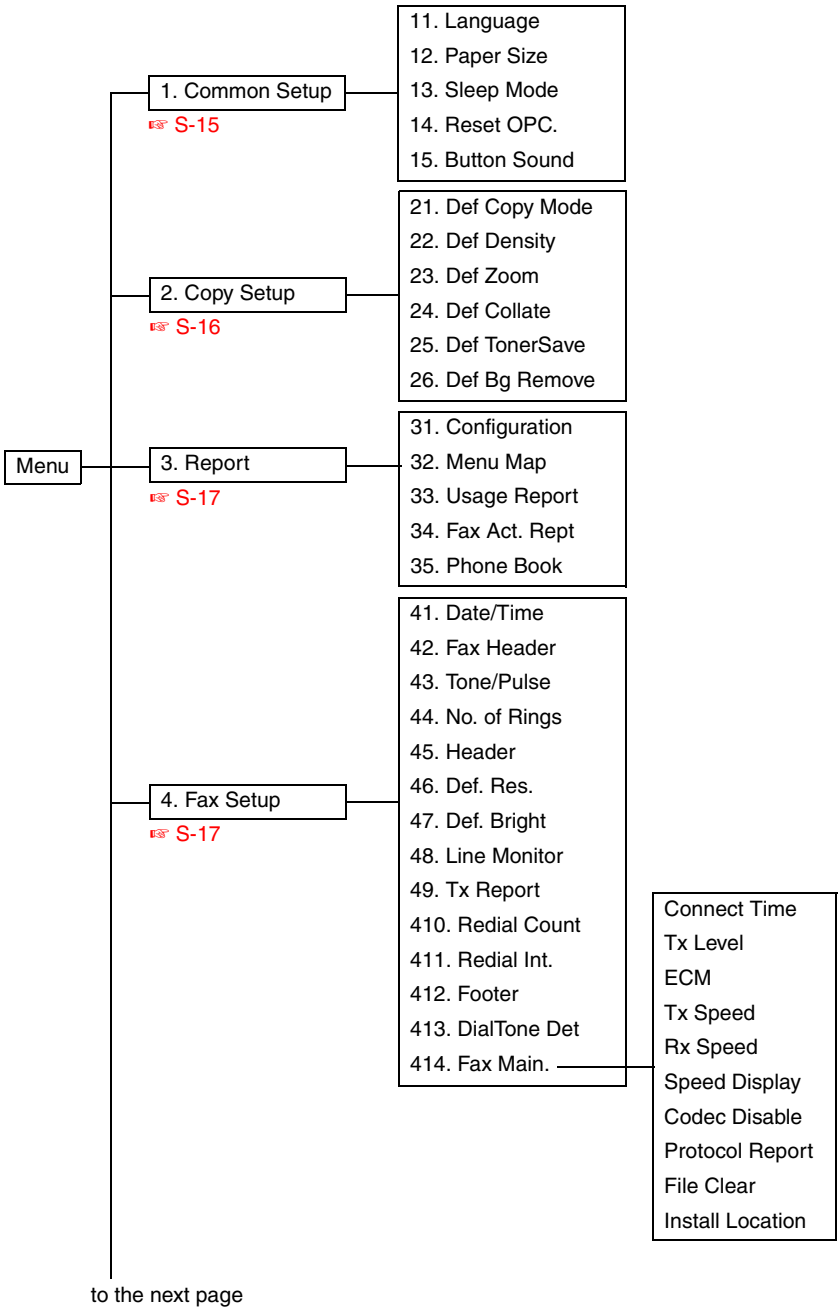
- The Configuration Menu is used to set various machine functions.

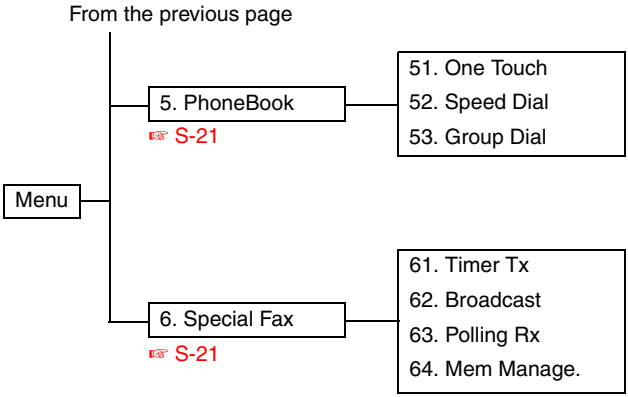
## 3-1. Configuration Menu

**(1) Page Pro 1380 MF**



**(2) PagePro 1390 MF**




From the previous page
Menu
5. PhoneBook
☞ S-21
51. One Touch
52. Speed Dial
53. Group Dial
6. Special Fax
☞ S-21
61. Timer Tx
62. Broadcast
63. Polling Rx
64. Mem Manage.

## 3-2. Configuration Menu Procedures (PagePro 1380 MF)

<Entering Procedure>

1. Press the Menu key.
2. The first message screen appears.
3. Press the -/+ key or a numeric key (1 to 3) to select from the following menu items: "1. Common Setup," "2. Copy Setup," or "3. Report."
4. Press the Select key to select an item when it appears on the LCD display. The LCD displays the next menu level.
5. Press the -/+ key to view the next menu item.

<Exiting Procedure>

- Press the Cancel key.

<Changing the Settings>

1. Press the -/+ key to select the desired function.
2. Press the Select key to apply the setting.
3. To return to the previous screen, press the Cancel key.

**(1) Common Setup**

<table>
<tr><th>No.</th><th>Function</th><th>Purpose</th><th>Setting Details/Precautions</th></tr>
<tr><td>1</td><td>Language</td><td>To specify the configuration menu language.</td><td>• The default setting is English.<br>“English” French German Italian Spanish Portuguese Czech Polish Hungarian Slovak Russian</td></tr>
<tr><td>2</td><td>Paper Size</td><td>To specify size of media loaded.</td><td>• The default setting is A4.<br>“A4” Letter Legal A5 B5</td></tr>
<tr><td>3</td><td>Sleep Mode</td><td>To specify the amount of time the machine waits after a copy cycle has been completed before entering Sleep Mode.</td><td>• The default setting is 15 min.<br>5 min “15 min” 30 min 1 hr 2 hr</td></tr>
<tr><td>4</td><td>Reset OPC.</td><td>To reset the Drum Cartridge life counter.<br>When the Drum Cartridge is replaced, use this function to reset the counter.</td><td>1. Select “14. Reset OPC.” and press the Select key.</td></tr>
<tr><td rowspan="2">5</td><td rowspan="2">Adj ADF Edge</td><td>To adjust the ADF scanning center position.<br>When the image is not centered on the printed page, use this function to center it.</td><td>• The default setting is 0.<br>-4 -3 -2 -1 “0” 1 2 3 4 5 6</td></tr>
<tr><td colspan="2">• Refer to the following table for the necessary adjustment direction
<table>
<tr><th>Document</th><th>Result</th><th>Adjustment Direction</th></tr>
<tr><td rowspan="2">  </td><td>  </td><td>When angled to the right, adjust the position toward + (plus).</td></tr>
<tr><td>  </td><td>When angled to the left, adjust the position toward – (minus).</td></tr>
</table></td></tr>
</table>

**(2) Copy Setup**

| No. | Function | Purpose | Setting Details/Precautions |
|---|---|---|---|
| 1 | Def Copy Mode | To specify the default Copy Mode. | • The default setting is Text.<br>"Text" Photo Mixed |
| 2 | Def Density | To specify the default density level. | • The default setting is 4.<br>The setting range is 1 to 7. |
| 3 | Def Zoom | To specify the default zoom ratio. | • The default setting is Original.<br>"Original" (100 %)<br>Custom (25 % to 400 %)<br>Fit to Page A4 to Letter<br>Letter to A4 Legal to Letter<br>Legal to A4 |
| 4 | Def Collate | To specify the default collation setting. | • The default setting is Off.<br>On "Off" |
| 5 | Def TonerSave | To specify the default Toner Save setting. | • The default setting is Off.<br>On "Off" |
| 6 | Def Bg Remove | To specify the default background remove setting for each Copy Mode. | • The following are the default settings:<br>Text mode: On "Off"<br>Mixed mode: On "Off" |

**(3) Report**

| No. | Function | Purpose | Setting Details/Precautions |
|---|---|---|---|
| 1 | Configuration | Prints a configuration page.<br>Use this page to check configuration of the machine. The following items can be checked:<br>• Product Information<br>• Memory Information<br>• Toner Information<br>• Default Settings | 1. Select "31. Configuration." and press the Select key. |
| 2 | Menu Map | Prints a configuration menu map.<br>Use this page to check the available menu settings. | 1. Select "32. Menu Map." and press the Select key. |
| 3 | Usage Report | Prints a system usage page.<br>Use this page to identify the usage statistics for the machine. | 1. Select "33. Usage Report." and press the Select key. |

## 3-3. Configuration Menu Procedures (PagePro 1390 MF)

<Entering Procedure>

1. Press the Menu key.
2. The first message screen appears.
3. Press the -/+ key or a numeric key (1 to 6) to select from the following menu items: “1. Common Setup,” “2. Copy Setup,” “3. Report,” “4. Fax Setup,” “5. PhoneBook or “6. Special Fax.”
4. Press the Select key to select an item when it appears on the LCD display. The LCD displays the next menu level.
5. Press the -/+ key to view the next menu item.

<Exiting Procedure>

- Press the Cancel key.

<Changing the Settings>

1. Press the -/+ key to select the desired function.
2. Press the Select key to apply the setting.
3. To return to the previous screen, press the Cancel key.

**(1) Common Setup**

| No. | Function | Purpose | Setting Details/Precautions |
|---|---|---|---|
| 1 | Language | To specify the configuration menu language. | • The default setting is English.<br>"English" German French Italian Spanish Portuguese Czech Polish Hungarian Slovak Russian |
| 2 | Paper Size | To specify size of media loaded. | • The default setting is;<br>USA/Canada: Letter<br>Europe, China, Taiwan: A4<br>A4 Letter Legal A5 B5 |
| 3 | Sleep Mode | To specify the amount of time the machine waits after a copy cycle has been completed before entering Sleep Mode. | • The default setting is 15 min.<br>5 min "15 min" 30 min 1 hr 2 hr |
| 4 | Reset OPC. | To reset the Drum Cartridge life counter.<br>When the Drum Cartridge is replaced, use this function to reset the counter. | 1. Select "14. Reset OPC." and press the Select key. |
| 5 | Button Sound | To set whether to sound the beep sound when a key is pressed. | • The default setting is ON.<br>OFF "ON" |

**(2) Copy Setup**

| No. | Function | Purpose | Setting Details/Precautions |
|---|---|---|---|
| 1 | Def Copy Mode | To specify the default Copy Mode. | • The default setting is Text.<br>"Text" Photo Mixed |
| 2 | Def Density | To specify the default density level. | • The default setting is 4.<br>The setting range is 1 to 7. |
| 3 | Def Zoom | To specify the default zoom ratio. | • The default setting is Original.<br>"Original" (100 %)<br>Custom (25 % to 400 %)<br>Fit to Page A4 to Letter<br>Letter to A4 Legal to Letter<br>Legal to A4 |
| 4 | Def Collate | To specify the default collation setting. | • The default setting is Off.<br>"OFF" ON |
| 5 | Def TonerSave | To specify the default Toner Save setting. | • The default setting is Off.<br>"OFF" ON |
| 6 | Def Bg Remove | To specify the default background remove setting for each Copy Mode. | • The following are the default settings:<br>Text mode: "OFF" ON<br>Mixed mode: "OFF" ON |

### (3) Report

| No. | Function | Purpose | Setting Details/Precautions |
|---|---|---|---|
| 1 | Configuration | Prints a configuration page. Use this page to check configuration of the machine. The following items can be checked:<br>• Product Information<br>• Memory Information<br>• Toner Information<br>• Default Settings | 1. Select “31. Configuration.” and press the Select key. |
| 2 | Menu Map | Prints a configuration menu map. Use this page to check the available menu settings. | 1. Select “32. Menu Map.” and press the Select key. |
| 3 | Usage Report | Prints a system usage page. Use this page to identify the usage statistics for the machine. | 1. Select “33. Usage Report.” and press the Select key. |
| 4 | Fax Act. Rept | Prints a Activity Report manually. ☞ S-23 | 1. Select “34. Fax Act. Rept.” and press the Select key. |
| 5 | Phone Book | Prints a Phone Book list. ☞ S-24 | 1. Select “35. Phone Book.” and press the Select key. |

### (4) Fax Setup

| No. | Function | Purpose | Setting Details/Precautions |
|---|---|---|---|
| 1 | Date/Time | Set the machine to the current date and time. This date and time appears in the message window in Fax mode and is printed in received faxes. | • The time is displayed in the 24-hour format. The display format differs depending on the setting selected for Install Location.<br>USA/Canada: MM/DD/YYYY<br>Europe: DD/MM/YYYY<br>China: YYYY/MM/DD<br>Taiwan: YYYY/MM/DD |
| 2 | Fax Header | Specify user name and fax number.<br>The specified name and fax number are printed in the header of sent faxes. | <Name><br>• A maximum of 20 characters can be entered. (All characters that can be entered with the keypad) |
| | | | <Fax><br>• A maximum of 20 characters can be entered. (1,2,3,4,5,6,7,8,9,0,+, ) |

| No. | Function | Purpose | Setting Details/Precautions |
|---|---|---|---|
| 3 | Tone/Pulse | Select the type of telephone line that is being used.<br><br>If Pulse is selected, press the [*] key to temporarily change the telephone line type to Tone.<br>After using the machine with the receiver on the hook, return the setting to Pulse. | • The default setting is Tone.<br><br>USA/Canada: Tone, Pulse 10PPS<br>Europe: Tone, 10PPS 33/67, 10PPS 40/60<br>China: Tone, Pulse 10PPS, Pulse 20PPS<br>Taiwan: Tone, Pulse 10PPS |
| 4 | No. of Rings | Select the number of rings that are sounded when a fax is received. | • The default setting is 2.<br><br>1 “2” 3 4 Manual<br><br>If Manual is selected, a fax cannot be received automatically. |
| 5 | Reduction Rx | Select whether or not a received fax is reduced if it does not fit within the size of paper loaded into the machine. | • The default setting is On.<br><br>“On” OFF |
| 6 | Header | Select whether or not the header information is printed on sent faxes. | • The default setting is On.<br><br>“OFF” ON |
| 7 | Def. Res. | Specify the default resolution.<br><br>STD. : For documents containing normal text (such as handwriting)<br>Fine : For documents containing small text<br>S-Fine : For documents such as newspaper or those containing detailed illustrations<br>Photo : For documents with color shades, such as photos | • The default setting is STD.<br><br>“STD.” Fine S-Fine Photo<br><br>Press the Resolution key to temporarily change the resolution before a transmission. |
| 8 | Def. Bright | Specify the default brightness.<br><br>Normal : Sends the document without any adjustments.<br>Light : Lightens dark documents.<br>Dark : Darkens light documents. | • The default setting is Normal.<br><br>Dark “Normal” Light<br><br>Press the Brightness key to temporarily change the brightness before a transmission. |
| 9 | Line Monitor | Select the volume of the connection monitor for the line. | • The default setting is Mid.<br><br>Off Low “Mid” High |

| No. | Function | Purpose | | Setting Details/Precautions |
|---|---|---|---|---|
| 10 | Tx Report | Select whether or not a report is printed after a transmission.<br>On : Prints the report after each transmission.<br>Off : Does not print the report after each transmission.<br>Error : Prints the report after a transmission only if an error occurred. | | • The default setting is Error.<br>Off On “Error” |
| 11 | Redial Count | Select the number of times an auto redial is attempted. | | • The default setting is 2<br>0 1 “2” 3 4 5 6<br>When the Install Location is set to “Taiwan”, the choices are only 0, 1, 2.<br>If 0 is selected, the auto redial is not performed. |
| 12 | Redial Int. | Select the length of time in seconds (s) or minutes (min) that redials are attempted. | | • The default setting is 2min.<br>10s 30s 1min “2min” 3 min |
| 13 | Footer | Select whether or not the sender’s information is printed on received faxes. | | • The default setting is Off.<br>“Off” On |
| 14 | DialTone Det | Select whether or not to detect a dial tone. | | • The default setting is Off.<br>“Off” On |
| 15 | Fax Main. | Connect Time | Select the amount of time until the connection times out. | • The default setting is 90 secs.<br>60 secs 70 secs<br>80 secs “90 secs” |
| | | Tx Level | Select the transmission level. | • The default setting is -10dbm.<br>0dbm 1dbm<br>-2dbm -10dbm -15dbm |
| | | ECM | Select whether or not the automatic error correction mode (ECM) is used to automatically send the fax again if an error occurs during the transmission of the document, for example, due to a disturbance in the line. | • The default setting is On.<br>OFF “On” |

| No. | Function | Purpose | | Setting Details/Precautions |
|---|---|---|---|---|
| 15 | Fax Main. | Tx Speed | Select the modem speed for sending faxes. | • The default setting is 33.6.<br>"33.6" 31.2 28.8 26.4 24.0 21.6 19.2 16.8 14.4 12.0 9.6 7.2 4.8 2.4 |
| | | Rx Speed | Select the modem speed for receiving faxes. | • The default setting is 33.6.<br>"33.6" 31.2 28.8 26.4 24.0 21.6 19.2 16.8 14.4 9.6 4.8 2.4 |
| | | Speed Display | Select whether or not the modem speed is displayed during a transmission. | • The default setting is Off.<br>"Off" On |
| | | Codec Disable | MMR and MR CODEC can be disabled.<br>• When MMR is disabled, CODEC can be set to MH and MR.<br>• When MR is disabled, CODEC can only be set to MH. | • The default setting is Off.<br>"Off" MMR MR |
| | | Protocol Report | Select whether or not to print the protocol report.<br>On : Prints the report.<br>Off : Does not print the report.<br>Error : Prints the report only if an error occurred. | • The default setting is Off.<br>"Off" On Error |
| | | File Clear | Clears the all fax image files stored in the memory. | 1. Select "File Clear" and press the Select key.<br>2. Press the Select key to clear the files. |
| | | Install Location | Set the install location. If you change the install location, the following settings will be changed.<br>• Tone/Pulse setting<br>• Tx Level setting<br>• Paper Size setting<br>• Length of the flatbed scan<br>• Display format of Date/Time | USA/Canada Europe China Taiwan |

**(5) PhoneBook**

| No. | Function | Purpose | Setting Details/Precautions |
|---|---|---|---|
| 1 | One Touch | This function can be used to one-touch keys with fax numbers, allowing the recipient to be specified easily and accurately without the need to manually enter the number using the 10-key pad. | • A maximum of 12 fax numbers can be programmed.<br>The contents of registration.<br>• Name : 20 characters.<br>• Fax No. : 40 digits. |
| 2 | Speed Dial | This function can be used to speed dial numbers with fax numbers, allowing the recipient to be specified easily and accurately without the need to manually enter the number using the 10-key pad. | • A maximum of 100 fax numbers (00 to 99) can be programmed.<br>The contents of registration.<br>• Name : 20 characters.<br>• Fax No. : 40 digits. |
| 3 | Group Dial | This function can be used to program a single one-touch dial key with a maximum of 50 different fax numbers as one group. Programming a one-touch dial key with a group of fax numbers is convenient when documents are frequently sent to a set group of multiple recipients. | • In order to program a group dial, the fax recipient's number must be registered as a one-touch dial key or a speed dial. |

**(6) Special Fax**

| No. | Function | Purpose | Setting Details/Precautions |
|---|---|---|---|
| 1 | Timer Tx | This function is used to send a document at a specified time. | 1. Load the document into the ADF or place it on the flatbed glass.<br>2. Call the Timer Tx screen, and then press the Select key.<br>3. Use the keypad to enter the desired transmission time, and then press the Select key.<br>4. Type in the fax number of the recipient.<br>5. Press the Start key. The document is scanned and the fax is sent at the specified time. |

| No. | Function | Purpose | | Setting Details/Precautions |
|---|---|---|---|---|
| 2 | Broadcast | This function is used to send a document to multiple recipients in a single transmission operation. | | 1. Load the document into the ADF or place it on the flat-bed glass.<br>2. Call the Broadcast screen, and then press the Select key.<br>3. Type in the fax number of the recipient. (A maximum of 50 recipients can be specified.)<br>4. Press the Select key.<br>5. Repeat steps 3 and 4 until the fax numbers of all desired recipients are specified, and then press the [Start] key. The fax transmission begins. |
| 3 | Polling Rx | With Polling Rx, a document loaded in the sender's fax machine or the document reserved for polling transmission is sent when a request is sent. | | 1. Call the Polling Rx screen, and then press the Select key.<br>2. Type in the fax number of the sender.<br>3. Press the Start key. Dialing begins, and then the fax is received. |
| 4 | Mem Manage. | Mem. Job List | Prints a Memory Job List. | 1. Select "Mem. Job List" and press the Select key. |
| | | Mem. Clear | Clears the job data stored in the memory. | 1. Select "Mem. Clear" and press the Select key.<br>2. Enter the desired job number using 10-key pad and press the Select key.<br>3. Press the Select key to clear the data. |

# 4. Fax Report (PagePro 1390 MF only)

## 4-1. Activity Log Report

- Activity Log Report is printed automatically after 100 communications.
- Activity Log Report can also be printed manually by Report Menu.

☞ S-17

- Activity Report includes following information.

A. Job Number : Shows the managing job number (3 digits) used by this machine.

B. Date : Shows the date that the fax transmission/reception began.

C. Time : Shows the time that the fax transmission/reception began.

D. Type : Shows the type of transmission/reception (Send, or Receive).

E. Identification : Shows the recipient's name or fax number for a transmission job.
Shows the recipient name if one-touch dial keys or speed dial numbers were used in the transmission. Shows the fax number if the number was entered directly or if one-touch dial keys or speed dial numbers with no recipient name registered were used.
Shows the sender's fax number for a reception job.

F. Duration : Shows the length of time of the transmission/reception.

G. Page(s) : Shows the total number of pages transmitted/received successfully.

H. Result : Shows the transmission/reception results and error codes.

**<Sample of the Activity Log Report>**

PagePro 1390MF Activity Log Report

Page 1

| Job # | Date | Time | Type | Identification | Duration | Page | Result |
|---|---|---|---|---|---|---|---|
| 001 | 10/21/2005 | 01:37:15 | Send | 2 | 00:26 | 4 | 0:OK |
| 002 | 10/23/2005 | 01:39:19 | Receive | | 00:37 | 6 | 0:OK |
| 003 | 10/28/2005 | 09:15:02 | Receive | | 00:05 | 2 | 110001:Cancelled |
| 004 | 11/02/2005 | 14:52:30 | Send | 2 | 00:51 | 12 | 110001:Cancelled |

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## 4-2. Phone Book

- Phonebook can be printed manually by Report Menu.

☞ S-17

- Phonebook list include following information.

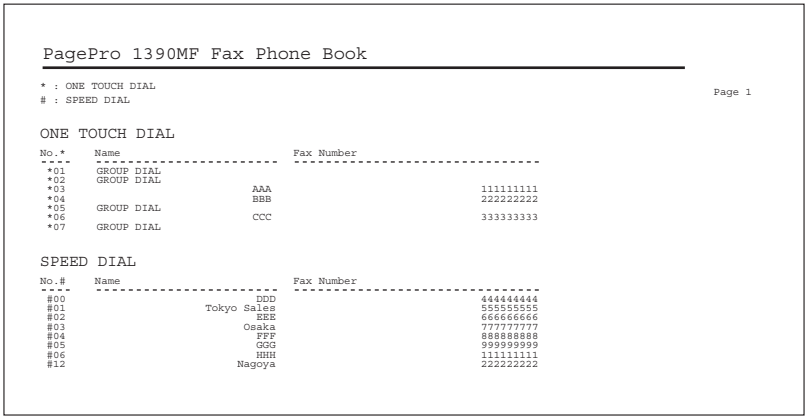
A. No. # or * : Shows the number of the dial key set for one-touch (*)/speed dialing (#).

B. Name : Shows the name of the recipient. If a group dial is set for the one-touch dial key, “GROUP DIAL” appears.

C. Fax Number : Shows the fax number.

D. GROUP DIAL: Shows the group dialing information.

**<Sample of the Phone Book>**



PagePro 1390MF Fax Phone Book

* : ONE TOUCH DIAL
# : SPEED DIAL

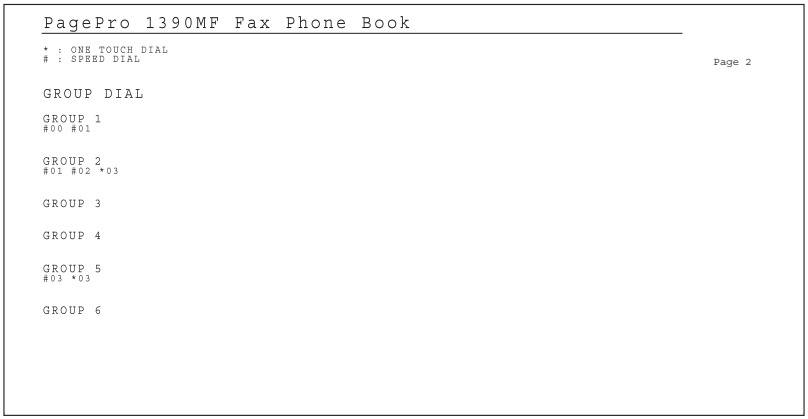
Page 1

ONE TOUCH DIAL

| No.* | Name | Fax Number |
|---|---|---|
| *01 | GROUP DIAL | |
| *02 | GROUP DIAL | |
| *03 | AAA | 111111111 |
| *04 | BBB | 222222222 |
| *05 | GROUP DIAL | |
| *06 | CCC | 333333333 |
| *07 | GROUP DIAL | |

SPEED DIAL

| No.# | Name | Fax Number |
|---|---|---|
| #00 | DDD | 444444444 |
| #01 | Tokyo Sales | 555555555 |
| #02 | EEE | 666666666 |
| #03 | Osaka | 777777777 |
| #04 | FFF | 888888888 |
| #05 | GGG | 999999999 |
| #06 | HHH | 111111111 |
| #12 | Nagoya | 222222222 |



PagePro 1390MF Fax Phone Book

* : ONE TOUCH DIAL
# : SPEED DIAL

Page 2

GROUP DIAL

GROUP 1
#00 #01

GROUP 2
#01 #02 *03

GROUP 3

GROUP 4

GROUP 5
#03 *03

GROUP 6

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## 4-3. Tx Report

- TX report is printed automatically after each transmission (No manual print).
  User can select whether or not a report is printed after a transmission in Fax Setup.

☞ S-17

### (1) Transmit Report

- Transmit Report includes following information.

A. TIME : Shows the time that the transmission report was printed.

B. NAME : Shows the name specified in Fax Setup for the machine.

C. FAX : Shows the fax number specified in Fax Setup for the machine.

D. Date,Time : Shows the date and time that the transmission began.

E. Identification : Shows the recipient name or fax number.
Shows the recipient name if one-touch dial keys or speed dial numbers were used in the transmission. Shows the fax number if the number was entered directly or if one-touch dial keys or speed dial numbers with no recipient name registered were used.

F. Duration : Shows the length of time of the transmission.

G. Page(s) : Shows the total number of pages transmitted.

H. Mode : ECM/Resolution/Coding/Speed (Only when “Speed display” is ON).
If error happen during negotiation, this field may be blank.

I. Result : Shows the transmission results and error codes.

J. Image : Reduced 1st page image is printed.

☞ For definition of Fax error code, refer to T-37.

**<Sample of the Transmit Report>**

PagePro 1390MF Transmit Report

TIME : 10/25/2005 10:42:23
NAME : ABCDEFG
FAX : 000111222

| | |
|---|---|
| Date,Time | 10/25/2005 10:41:59 |
| Identification | 111222333 |
| Duration | 00:19 |
| Page | 1 |
| Mode | ECM<br>STANDARD<br>MMR<br>V34 33600 |
| Reault | 0:OK |

1st page image

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### (2) Multi TX Report

- Multi TX Report includes following information.

A. TIME : Shows the time that the transmission report was printed.

B. NAME : Shows the name specified in Fax Setup for the machine.

C. FAX : Shows the fax number specified in Fax Setup for the machine.

D. Date,Time : Shows the date and time that the transmission began.

E. Identification : Shows the recipient name or fax number.
Shows the recipient name if one-touch dial keys or speed dial numbers were used in the transmission. Shows the fax number if the number was entered directly or if one-touch dial keys or speed dial numbers with no recipient name registered were used.

F. Duration : Shows the length of time of the transmission.

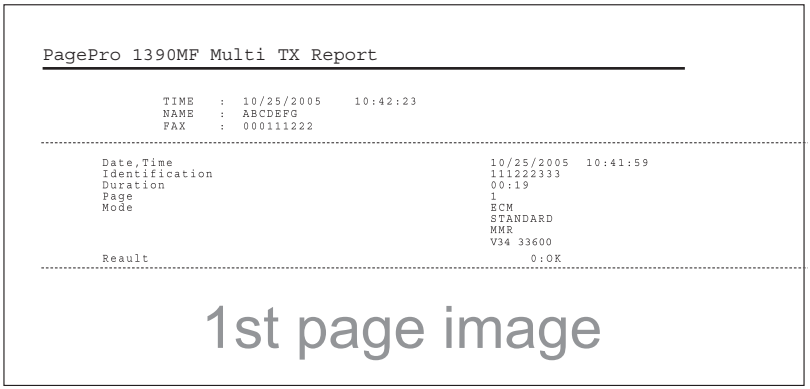
G. Page(s) : Shows the total number of pages transmitted.

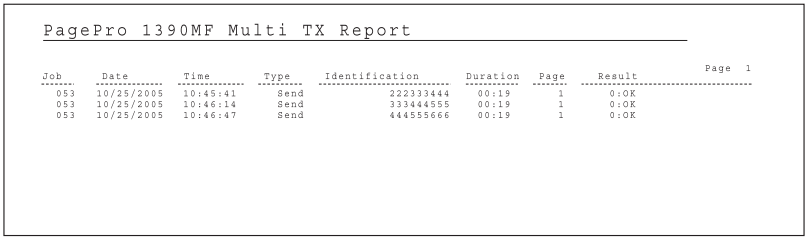
H. Mode : ECM/Resolution/Coding/Speed (Only when “Speed display” is ON).
If error happen during negotiation, this field may be blank.

I. Result : Shows the transmission results and error codes.

☞ For definition of Fax error code, refer to T-37.

**<Sample of the Multi TX Report>**

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## 4-4. Lost Job Report

- If there is any scheduled job not start before power off, once power recovered, this report will be printed. There is no way to print it manually.
- Lost Job Report include following informations.

A. Job : Shows the managing job number (3 digits) used by this machine.
B. Date : Shows the start date of the job.
C. Time : Shows the scheduled time for this job.
D. Type : Shows the type of data that was lost (Send).
E. Identification : Shows the recipient name or fax number.
Shows the recipient name if one-touch dial keys or speed dial numbers were used in the transmission. Shows the fax number if the number was entered directly or if one-touch dial keys or speed dial numbers with no recipient name registered were used.
F. Duration :"--:--" appears.
G. Page : Show the total number of pages stored.
H. Result : "Lost job" appears.

**<Sample of the Lost Job Report>**

PagePro 1390MF Lost Jobs

Page 1

| Job | Date | Time | Type | Identification | Duration | Page | Result |
|---|---|---|---|---|---|---|---|
| 032 | 08/10/2005 | 22:47:39 | Send | 333444555 | --:-- | 5 | 18:Lost job |
| 030 | 08/10/2005 | 22:47:39 | Send | 000111222 | --:-- | 2 | 18:Lost job |
| 031 | 08/10/2005 | 22:47:39 | Send | 111222333 | --:-- | 8 | 18:Lost job |

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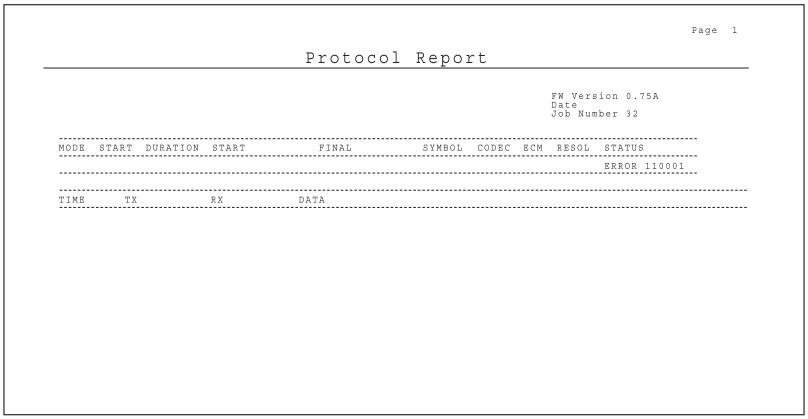
## 4-5. Protocol Report

**<Sample of the Protocol Report>**



Page 1

Protocol Report

FW Version 0.75A
Date
Job Number 32

| MODE | START | DURATION | START | FINAL | SYMBOL | CODEC | ECM | RESOL | STATUS |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | ERROR 110001 |

| TIME | TX | RX | DATA |
|---|---|---|---|

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## 4-6. Memory Job List

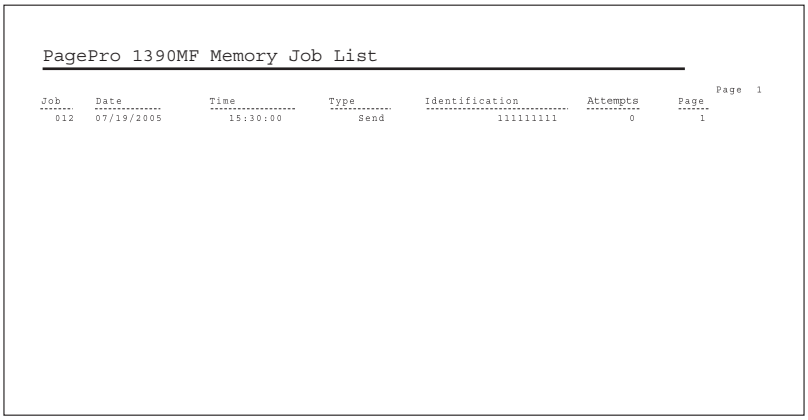
- The data for faxes queued to be sent at a specified time or waiting to be sent, for example, with the Auto Redial function, are stored in the memory. The memory job list can be printed so that the status of stored data can be checked.
- Memory Job List can be printed manually by Mem Manage.

☞ S-22

- Memory Job List include following informations.

A. Job : Shows the managing job number (3 digits) used by this machine.
B. Date : Shows the date that the fax data was stored in the memory.
C. Time : Shows the time that the fax data was stored in the memory.
D. Type : Shows the type of transmission (Send).
E. Identification : Shows the recipient name or fax number.
F. Attempts : Shows the number of dialing.
G. Page : Shows the number of scanned pages.

**<Sample of the Memory Job List>**


PagePro 1390MF Memory Job List

Page 1

| Job | Date | Time | Type | Identification | Attempts | Page |
|---|---|---|---|---|---|---|
| 012 | 07/19/2005 | 15:30:00 | Send | 111111111 | 0 | 1 |

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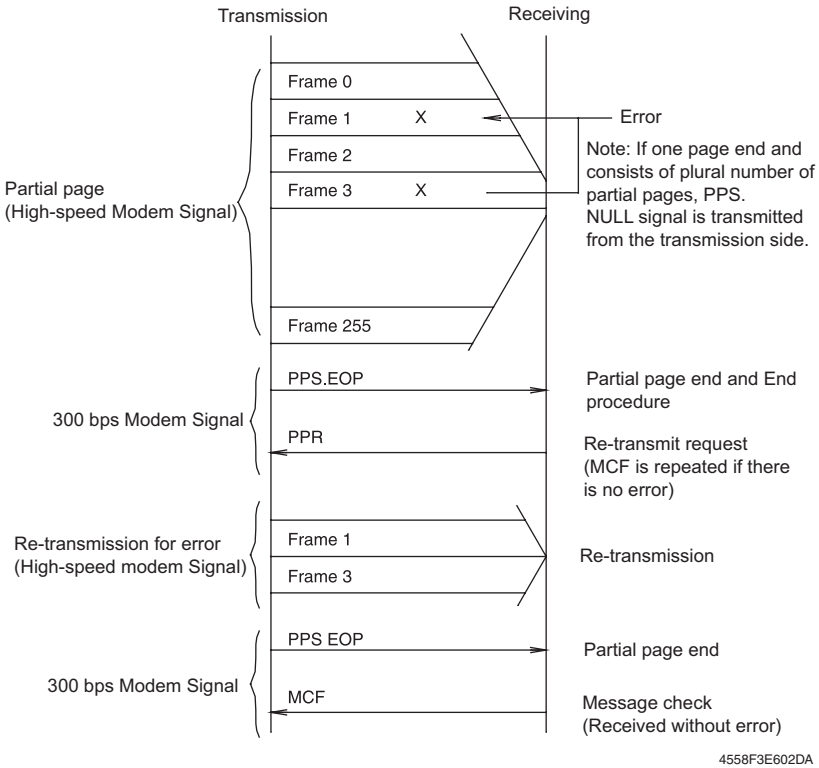
# 5. Fax Protocols (PagePro 1390 MF only)

## 5-1. G3 ECM (G3 Error Correction Mode)

- G3 ECM is the error correction system newly recommended by Consultative Committee of International Telephone & Telegraph of 1988.
- By G3 ECM, documents are divided into blocks (called partial page) for transmission. If any error takes place in any frame (one partial page consists of 256 frames) on a partial page, the receiving party generates the retransmit request with erroneous frame numbers.

  Here is an example where frame 1 and frame 3 are subjected to error:

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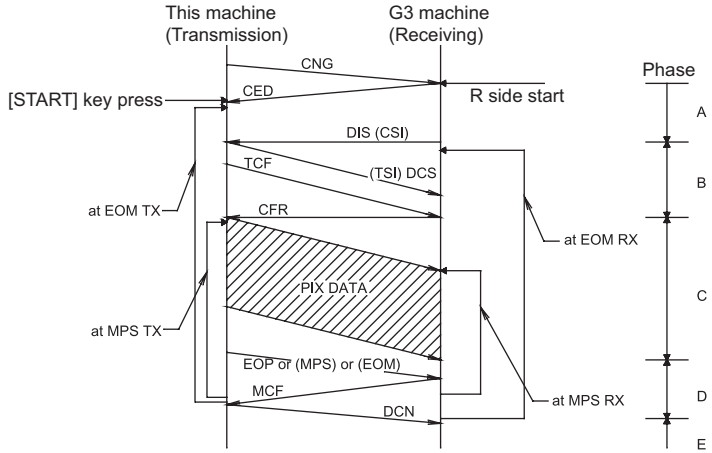
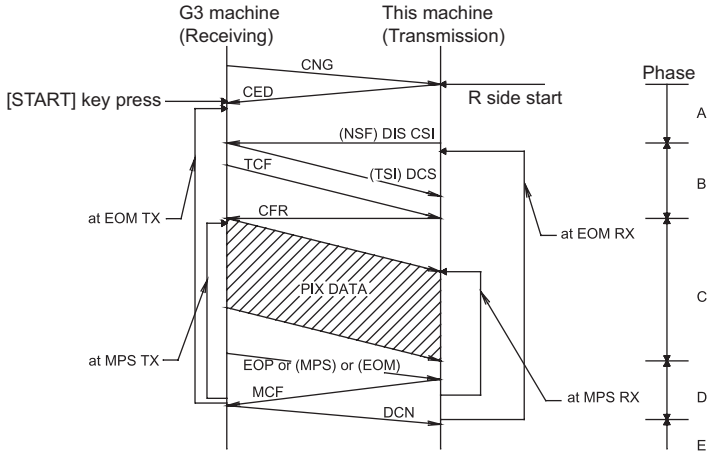
## 5-2. Line control

### (1) Procedure of G3 mode communication

- Basic communications diagram of G3 mode.




Drawing: Line Control

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## 5-3. Definition of Abbreviation / Terms

### (1) Definition of Abbreviation

| Abbreviation | Function | Signal Format |
|---|---|---|
| CED | Called terminal identification | 2100Hz |
| CFR | Confirmation to receive | X010 0001 |
| CIG | Calling subscriber identification | 1000 0010 |
| CNG | Calling tone | 1100Hz for 500ms |
| CRP | Command repeat | X101 1000 |
| CSI | Called subscriber identification | 0000 0010 |
| CTC | Continue to correct | X100 1000 |
| CTR | Response for continue to correct | X010 0011 |
| DCN | Disconnect | X101 1111 |
| DCS | Digital command signal | X100 0001 |
| DIS | Digital identification signal | 0000 0001 |
| DTC | Digital transmit command | 1000 0001 |
| EOM | End of message | X111 0001 |
| EOP | End of procedure | X111 0100 |
| EOR | End of retransmission | X111 0011 |
| ERR | Response for end of retransmission | X011 1000 |
| FCD | Facsimile coded data | 0110 0000 |
| FCF | Facsimile control field | — |
| FDM | File diagnostic message | X011 1111 |
| FIF | Facsimile information field | — |
| FTT | Failure to train | X010 0010 |
| HDLC | High-level data link control | — |
| MCF | Message confirmation | X011 0001 |
| MPS | Multipage signal | X111 0010 |
| NSC | Non-standard facilities command | 1000 0100 |
| NSF | Non-standard facilities | 0000 0100 |
| NSS | Non-standard set-up | X100 0100 |
| PID | Procedure interrupt disconnect | X011 0110 |
| PIN | Procedure interrupt negative | X011 0100 |
| PIP | Procedure interrupt positive | X011 0101 |
| PPR | Partial page request | X011 1101 |
| PPS | Partial page signal | X111 1101 |
| PRI-EOM | Procedure interrupt-EOM | X111 1001 |
| PRI-EOP | Procedure interrupt-EOP | X111 1100 |
| PRI-MPS | Procedure interrupt-MPS | X111 1010 |
| PWD | Password (for polling) | 1000 0011 |

| Abbreviation | Function | Signal Format |
|---|---|---|
| PWD | Password (for transmission) | X100 0101 |
| RCP | Return to control for partial page | 0110 0001 |
| RNR | Receive not ready | X011 0111 |
| RR | Receive ready | X111 0110 |
| RTN | Retrain negative | X011 0010 |
| RTP | Retrain positive | X011 0011 |
| SEP | Selective polling | 1000 0101 |
| SUB | Sub address | X100 0011 |
| TCF | Training check | Zeros for 1.5s |
| TSI | Transmitting subscriber identification | X100 0010 |

**(2) Definition of Terms**

| Terms | Explanation |
|---|---|
| DTMF | Dial Tone Multi Frequency |
| ECM | Error Correction Mode |
| PBX | Private Branch Exchange |
| Phase A | Call set-up |
| Phase B | Pre-message procedure for identifying and selecting the required facilities |
| Phase C | Message transmission (including phasing and synchronization where appropriate) |
| Phase D | Post-message procedure including end-of -message and confirmation and multi-document procedures |
| Phase E | Call release |
| PSTN | Public Switched Telephone Network |

# TROUBLESHOOTING

# 1. INTRODUCTION

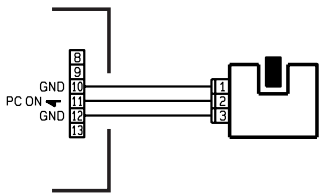
- This chapter discusses the items required or used when troubleshooting various printer problems.

## 1-1. Electrical Components Check Procedures

- The following procedures can be used to check to see if an electrical component is fully operational when a media misfeed or a malfunction occurs in the printer.

### (1) Sensors

| Step | Check | Result | Action |
|---|---|---|---|
| 1 | Does the input signal to the Controller/Mechanical Control Board go from HIGH to LOW, or vice versa, when the sensor is blocked? | NO | Replace the sensor. |
| | | YES | Replace the Mechanical Control Board. |

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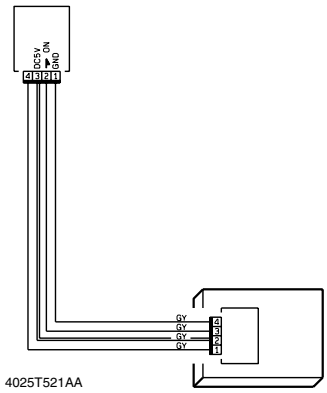


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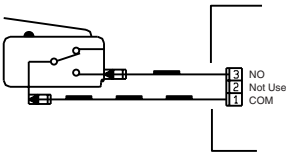
**(2) Switches**

| Step | Check | Result | Action |
|---|---|---|---|
| 1 | Does the input signal (NO) to the Mechanical Control Board go from LOW to HIGH when the switch is actuated? | NO | Replace the switch. |
| | | YES | Replace the Mechanical Control Board. |

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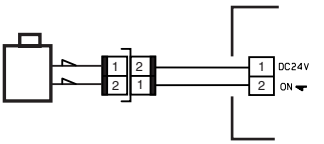
**(3) Solenoids**

| Step | Check | Result | Action |
|---|---|---|---|
| 1 | Does the output signal from the Mechanical Control Board go from HIGH to LOW when the solenoid is energized? | NO | Replace the Mechanical Control Board. |
| | | YES | Replace the solenoid. |

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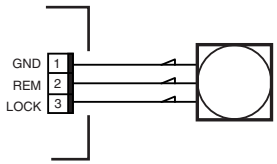
**(4) Motors**

| Step | Check | Result | Action |
|---|---|---|---|
| 1 | Is the LOCK signal of the Mechanical Control Board HIGH when the printer is in the standby state? | NO | Replace the Mechanical Control Board.<br>Replace the motor. |
| 2 | Does the REM signal of the Mechanical Control Board go from HIGH to LOW when the motor is energized? | YES | Replace the motor. |
| | | NO | Replace the Mechanical Control Board. |

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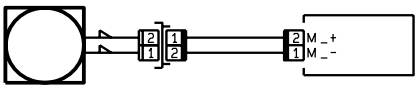
| Step | Check | Result | Action |
|---|---|---|---|
| 1 | Does the input signal to the Mechanical Control Board go from HIGH to LOW when the motor is energized? (The input signal varies depending on the direction of rotation.) | YES | Replace the motor. |
| | | NO | Replace the Mechanical Control Board. |

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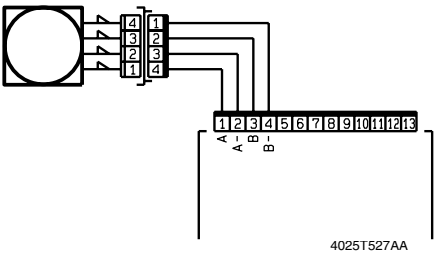
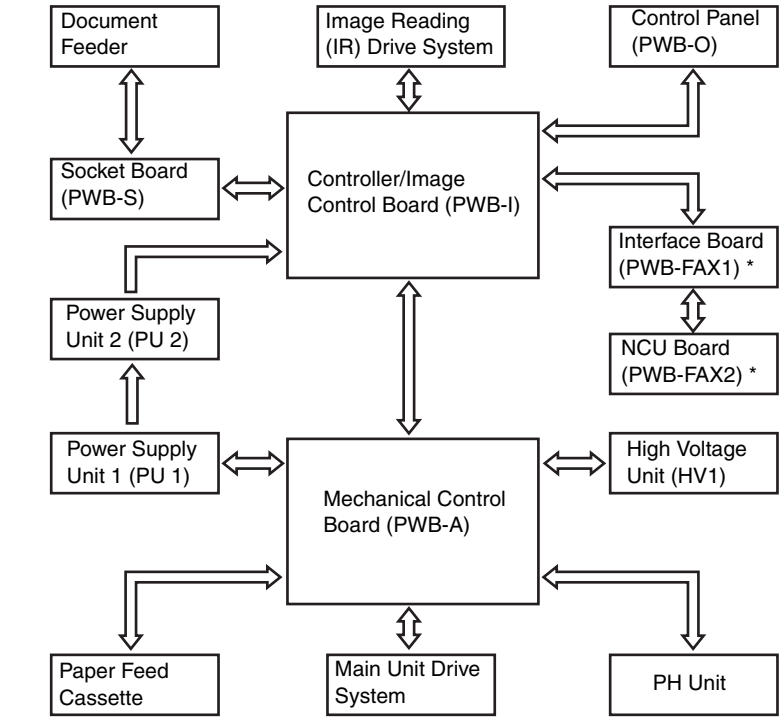
| Step | Check | Result | Action |
|---|---|---|---|
| 1 | Are the hookup connector of the motor and print jack on the Mechanical Control Board connected properly? | YES | Replace the motor or the Mechanical Control Board. |
| | | NO | Connect the connector or the print jack properly. |



## 1-2. Overall Control Configuration

- Understanding the overall control configuration will help you perform the troubleshooting procedures for media misfeeds, malfunctions, and image problems.



# 2. PAPER MISFEED

## 2-1. Initial Check Items

- When a media misfeed occurs in the printer, first make the following initial checks.

| Check | Action |
|---|---|
| Does the media meet product specifications? | Replace the media. |
| Is the paper curled, wavy, or damp? | Replace the paper.<br>Instruct the user in correct paper storage. |
| Is the media transport path deformed, dirty, or obstructed with foreign matter? | Clean the media path and replace if necessary. |
| Are the Paper Separator Fingers dirty, deformed, or worn? | Replace the Fusing Unit. |
| Is the roller dirty, deformed, or worn? | Clean the roller and replace it if necessary. |
| Are Edge Guides at correct position to accommodate the media? | Slide the Edge Guides up against the edges of the media stack. |
| Does the actuator operate correctly when checked? | Correct or replace the actuator. |

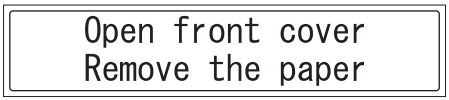
***Precautions for Clearing a Misfeed***

- *Reset the misfeed condition by opening and closing the Front Door after the misfeed has been cleared.*

## 2-2. Media Misfeed Displays

- The Error indicator lights up and a message appears in the display when a media misfeed occurs.

<Printer Section Misfeed>

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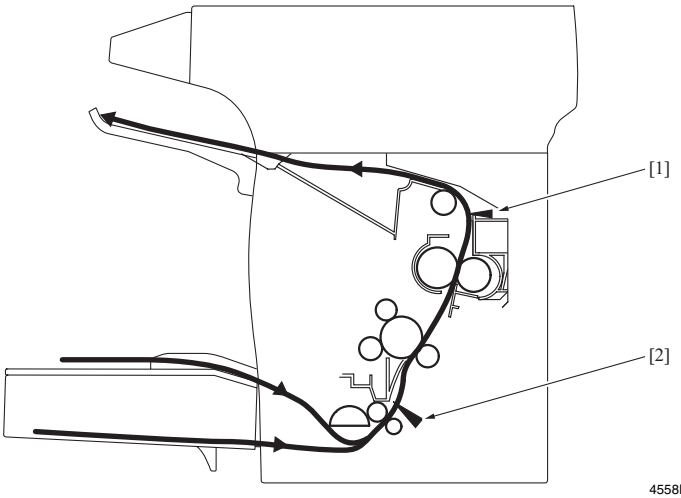
<Procedure for cancelling the misfeed display>

1. Open the appropriate covers, remove the misfed media and any remaining media, and then close the covers.
2. Open and then close the Front Door.

## 2-3. Locations of Misfeed Detection Sensors

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[1] Exit Sensor (PS1)

[2] Paper Take-Up Switch (S1)

## 2-4. Misfeed Detection Timing and Troubleshooting Procedures

### (1) Paper Take-Up/Transport Misfeed

<Detection Timing>

| Type | Description |
|---|---|
| MP tray Pick-up Jam | The Paper Take-Up Switch does not turn on after the predetermined period of time has elapsed after media take-up began. |
| Bypass tray Pick-up Jam | |
| Separator Jam | The Exit Sensor is not blocked after the predetermined period of time has elapsed after the Paper Take-Up Switch is turned on.<br>The Paper Take-Up Switch is not turned off after the predetermined period of time has elapsed after the Paper Take-Up Switch is turned on. |

<Troubleshooting Procedure>

| Relevant Electrical Parts | |
|---|---|
| Paper Take-Up Switch (S1)<br>Exit Sensor (PS3)<br>Paper Take-Up Solenoid (SL1) | Mechanical Control Board (PWB-A) |

| Step | Action | Ref. Page | WIRING DIAGRAM | |
|---|---|---|---|---|
| | | | Control Signal | Location (Electrical Parts) |
| 1 | Initial checks | ☞ T-6 | – | – |
| 2 | SL1 solenoid check | ☞ T-2 | PWB-A PJ3A-2 (ON) | H-3 |
| 3 | S1 switch check | ☞ T-2 | PWB-A PJ10A-1 (ON) | H-2 |
| 4 | PS3 sensor check | ☞ T-1 | PWB-A PJ8A-3 (ON) | H-2 |
| 5 | Replace PWB-A. | – | – | – |

### (2) Fusing/Exit Misfeed

<Detection Timing>

| Type | Description |
|---|---|
| Fuser Jam | The Exit Sensor is not unblocked after the predetermined period of time has elapsed after the Paper Take-Up Switch is turned on. |
| Paper left at Fusing/Exit Section | If all of the following conditions are met:<br>• The Front Door or Exit Cover is opened and then closed or the machine is turned on.<br>• The Paper Take-Up Switch is turned on or the Exit Sensor is blocked. |
| Paper Exit Jam | The Exit Sensor is unblocked but not during the predetermined period of time after the Paper Take-Up Switch is turned on. |

<Troubleshooting Procedure>

| Relevant Electrical Parts | |
|---|---|
| Paper Take-Up Switch (S1)<br>Exit Sensor (PS3) | Mechanical Control Board (PWB-A) |

| Step | Action | Ref. Page | WIRING DIAGRAM | |
|---|---|---|---|---|
| | | | Control Signal | Location (Electrical Parts) |
| 1 | Initial check items | ☞ T-6 | – | – |
| 2 | S1 switch check | ☞ T-2 | PWB-A PJ10A-1 (ON) | H-2 |
| 3 | PS3 sensor check | ☞ T-1 | PWB-A PJ8A-3 (ON) | H-2 |
| 4 | Replace PWB-A. | – | – | – |

# 3. MALFUNCTIONS/WARNINGS

- The CPU performs a self-diagnosis on the condition of the unit, and if a malfunction is detected, the warning appears alternately with the error code in the display.


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<Procedure for cancelling a malfunction display>

- Cancel the malfunction display by turning the machine off and then on again.

## 3-1. List of Malfunctions

| Malfunction Code | Malfunction Name | Description |
|---|---|---|
| 008 | Polygon mirror motor error | • The LOCK signal is not detected within a predetermined period of time that begins 1 second after the Polygon Motor has been energized.<br>• No new LOCK signal is detected for a 1 second period that begins 1.5 seconds after the first LOCK signal was detected.<br>• The LOCK signal is not detected for a continuous 0.5 second period in a state in which the Polygon Motor runs stably.<br>• The LOCK signal remains ON for a continuous 5 second period or more when the Polygon Motor remains deenergized. |
| 010 | Fuser fan motor error | • The LOCK signal remains HIGH or LOW continuously for a predetermined period of time while the Cooling Fan Motor remains energized. |
| 020 | H. V. abnormal | • The Drum Charge Monitor Voltage (HVC_MON) signal falls outside a predetermined range at any time after the lapse of a predetermined period of time after the Power Switch has been turned ON.<br>• The Image Transfer Voltage Monitor signal (T_MON_V) and Image Transfer Current Monitor signal (T_MON_I) fall outside a corresponding predetermined range. |
| 040 | Laser error | • The laser output exceeds the upper limit value.<br>• The laser output remains lower than the lower limit value. |

| Malfunction Code | Malfunction Name | Description |
|---|---|---|
| 080 | Fuser warm up error | • The voltage of the Thermistor remains low for a predetermined period of time after a warm-up cycle is started.<br>• The temperature detected by the Thermistor remains lower than a reference value for a 9 second period of time beginning 5 seconds after the start of the warm-up cycle (where the temperature detected by the Thermistor is 80 °C or less).<br>• The temperature detected by the Thermistor does not increase for a 3 second or longer period between the time beginning after the lapse of a predetermined period of time after the Fusing Roller Heater Lamp has been turned ON and ending when the lamp is turned OFF.<br>• The Fusing Roller Heater Lamp remains ON for a 30 second or longer period of time (except during the period during which the Main Motor remains energized). |
| 100 | Fuser temperature low | • The temperature detected by the Thermistor remains lower than the set temperature continuously for a predetermined period of time while the fusing temperature control is being provided.<br>(The set temperatures are as follows: 140 °C during a print mode at 600 dpi; 70 °C during the standby mode.) |
| 200 | Fuser overheat | • The temperature detected by the Thermistor remains higher than 235 °C for a predetermined period of time while the fusing temperature control is being provided. |

## 3-2. Malfunction Detection Timing and Troubleshooting Procedures

### (1) 008: Polygon mirror motor error

<Detection Timing>

| Description |
|---|
| • The LOCK signal is not detected within a predetermined period of time that begins 1 second after the Polygon Motor has been energized.<br>• No new LOCK signal is detected for a 1 second period that begins 1.5 seconds after the first LOCK signal was detected.<br>• The LOCK signal is not detected for a continuous 0.5 second period in a state during which the Polygon Motor runs stably.<br>• The LOCK signal remains ON for a continuous 5 second or longer period during which the Polygon Motor remains deenergized. |

<Troubleshooting Procedure>

| Relevant Electrical Parts | |
|---|---|
| PH Unit | Mechanical Control Board (PWB-A) |

| Step | Action | Ref. Page | WIRING DIAGRAM | |
|---|---|---|---|---|
| | | | Control Signal | Location (Electrical Parts) |
| 1 | Check the cables for connection and correct as necessary. | – | – | – |
| 2 | Replace the PH Unit. | ☞ D-19 | – | – |
| 3 | Replace PWB-A. | ☞ D-11 | – | – |

### (2) 010: Fuser fan motor error

<Detection Timing>

| Description |
|---|
| • The LOCK signal remains HIGH or LOW continuously for a predetermined period of time during which the Cooling Fan Motor remains energized. |

<Troubleshooting Procedure>

| Relevant Electrical Parts | |
|---|---|
| Cooling Fan Motor (M2) | Mechanical Control Board (PWB-A)<br>Power Unit (PU1) |

| Step | Action | Ref. Page | WIRING DIAGRAM | |
|---|---|---|---|---|
| | | | Control Signal | Location (Electrical Parts) |
| 1 | Check the Motor connectors for connection and correct as necessary. | ☞ D-23 | – | – |
| 2 | Check the fan for possible overload and correct as necessary. | – | – | – |
| 3 | M2 operation check | ☞ T-3 | PWB-A PJ13A-2 (LOCK)<br>PWB-A PJ13A-3 (REM) | H-3 |
| 4 | Replace PWB-A. | ☞ D-11 | – | – |

### (3) 020: H.V. abnormal

<Detection Timing>

| Description |
|---|
| • The Drum Charge Monitor Voltage (HVC_MON) signal falls outside a predetermined range at any time after the lapse of a predetermined period of time after the Power Switch has been turned ON.<br>• The Image Transfer Voltage Monitor signal (T_MON_V) and Image Transfer Current Monitor signal (T_MON_I) fall outside a corresponding predetermined range. |

<Troubleshooting Procedure>

| Relevant Electrical Parts | |
|---|---|
| Fusing Unit | Mechanical Control Board (PWB-A)<br>High Voltage Unit (HV1) |

| Step | Action | Ref. Page | WIRING DIAGRAM | |
|---|---|---|---|---|
| | | | Control Signal | Location (Electrical Parts) |
| 1 | Replace the Fusing Unit. | ☞ E-8 | – | – |
| 2 | Replace HV1. | ☞ D-15 | – | – |
| 3 | Replace PWB-A. | ☞ D-11 | – | – |

### (4) 040: Laser error

<Detection Timing>

| Description |
|---|
| • The laser output exceeds the upper-limit value.<br>• The laser output remains lower than the lower-limit value. |

<Troubleshooting Procedure>

| Relevant Electrical Parts | |
|---|---|
| PH Unit | Mechanical Control Board (PWB-A) |

| Step | Action | Ref. Page | WIRING DIAGRAM | |
|---|---|---|---|---|
| | | | Control Signal | Location (Electrical Parts) |
| 1 | Check the cables for connection and correct as necessary. | – | – | – |
| 2 | Replace the PH Unit. | ☞ D-19 | – | – |
| 3 | Replace PWB-A. | ☞ D-11 | – | – |

### (5) 080: Fuser warm up error

<Detection Timing>

| Description |
|---|
| • The voltage of the Thermistor remains low for a predetermined period of time when a warm-up cycle is started.<br>• The temperature detected by the Thermistor remains lower than a reference value for a 9 second period of time for the period of time that begins 5 seconds after the start of the warm-up cycle (where the temperature detected by the Thermistor is 80 °C or less).<br>• The temperature detected by the Thermistor does not increase for a 3 second or longer period of time beginning after the lapse of a predetermined period of time after the Fusing Roller Heater Lamp has been turned ON and ending when the lamp is turned OFF.<br>• The Fusing Roller Heater Lamp remains ON for a 30 second or longer period of time (except during the period through which the Main Motor remains energized). |

<Troubleshooting Procedure>

| Relevant Electrical Parts | |
|---|---|
| Fusing Unit<br>Thermistor (TH1) | Mechanical Control Board (PWB-A)<br>Thermostat (TS1)<br>Power Unit (PU1) |

| Step | Action | Ref. Page | WIRING DIAGRAM | |
|---|---|---|---|---|
| | | | Control Signal | Location (Electrical Parts) |
| 1 | Replace the Thermistor (TH1). | ☞ D-28 | – | – |
| 2 | Replace the Fusing Unit. | ☞ E-8 | – | – |
| 3 | Replace PWB-A. | ☞ D-11 | – | – |
| 4 | Replace the Power Unit (PU1). | ☞ D-14 | – | – |

### (6) 100: Fuser temperature low

<Detection Timing>

| Description |
|---|
| • The temperature detected by the Thermistor remains lower than the set temperature continuously for a predetermined period of time while the fusing temperature control is being provided. (The set temperatures are as follows: 140 °C during a print mode at 600 dpi; 70 °C during the standby mode.) |

<Troubleshooting Procedure>

| Relevant Electrical Parts | |
|---|---|
| Fusing Unit<br>Thermistor (TH1) | Mechanical Control Board (PWB-A)<br>Thermostat (TS1)<br>Power Unit (PU1) |

| Step | Action | Ref. Page | WIRING DIAGRAM | |
|---|---|---|---|---|
| | | | Control Signal | Location (Electrical Parts) |
| 1 | Replace the Thermistor (TH1). | ☞ D-28 | – | – |
| 2 | Replace the Fusing Unit. | ☞ E-8 | – | – |
| 3 | Replace PWB-A. | ☞ D-11 | – | – |
| 4 | Replace the Power Unit (PU1). | ☞ D-14 | – | – |

### (7) 200: Fuser overheat

<Detection Timing>

| Description |
|---|
| • The temperature detected by the Thermistor remains higher than 235 °C for a predetermined period of time while the fusing temperature control is being provided. |

<Troubleshooting Procedure>

| Relevant Electrical Parts | |
|---|---|
| Fusing Unit<br>Thermistor (TH1) | Mechanical Control Board (PWB-A)<br>Thermostat (TS1)<br>Power Unit (PU1) |

| Step | Action | Ref. Page | WIRING DIAGRAM | |
|---|---|---|---|---|
| | | | Control Signal | Location (Electrical Parts) |
| 1 | Replace the Thermistor (TH1). | ☞ D-28 | – | – |
| 2 | Replace the Fusing Unit. | ☞ E-8 | – | – |
| 3 | Replace PWB-A. | ☞ D-11 | – | – |
| 4 | Replace the Power Unit (PU1). | ☞ D-14 | – | – |

# 4. MALFUNCTIONS RELATED TO POWER SUPPLY

## 4-1. Power is not Turned ON.

| Relevant Electrical Parts | |
|---|---|
| Mechanical Control Board (PWB-A)<br>Controller/Image Control Board (PWB-I) | Power Unit 1 (PU1)<br>Power Unit 2 (PU2) |

| Step | Check | Wiring Diagram (Location) | Result | Action |
|---|---|---|---|---|
| 1 | Is the power cord plugged into the power outlet? | – | NO | Plug the power cord into the power outlet. |
| 2 | Is the power cord connected properly to the printer? | – | NO | Plug the power cord into the printer. |
| 3 | Is the Power Switch turned ON? | – | NO | Turn ON the Power Switch. |
| 4 | Are the fuses (F101 and F102) on the Power Unit conducting? | – | NO | Replace the Power Unit (PU1). |
| | | – | YES | Replace the Controller/ Image Control Board (PWB-I). |

# 5. Miscellaneous Errors

## 5-1. List of Miscellaneous Malfunctions

| Message on the Display | Description |
|---|---|
| Unlock scanner | • When the Home Sensor remains High (5 V) even after the lapse of a predetermined period of time after the Scanner Motor is turned ON, an unlock scanner error occurs. |
| [Scanner Error]<br>Lamp Error | • When the gray level value can't reach 10 (0 to 255) even after the lapse of a predetermined period of time after the warmup.<br>• When the gray level value can't reach 35 (0 to 255) even after the lapse of a predetermined period of time after the warmup. |
| [Scanner Error]<br>AFE R/W Error | • The firmware writes a pattern to all AFE registers and reads the values back. If there is any difference between the write/read values, an AFE R/W Error occurs. |
| [Scanner Error]<br>Home Sensor | • When the scanning job is finished, the Scanner Unit travels 14 inches back to the home position. After the Scanner Unit has moved 14 inches, if the Home Sensor can't be pressed, a Home Sensor error occurs. |
| [Scanner Error]<br>Motor Stall | • When scanning a job, the firmware calculates the distance that the Scanner Unit has travelled. If the distance between the home position and the scan stopped position is different than the distance between the scan stopped position and the home position, a Motor Stall error occurs. |
| [Printer Error]<br>Incorrect Toner | • The Toner Cartridge is not a genuine KONICA MINOLTA Toner Cartridge or not the correct type. |
| [Printer Error]<br>IC Read Fail | • A Toner IC Read Fail has occurred. |
| [Printer Error]<br>IC Write Fail | • A Toner IC Write Fail occurred. |

## 5-2. Miscellaneous Malfunction Detection Timing and Trouble-shooting Procedures

### (1) Unlock scanner

<Detection Timing>

| Description |
|---|
| • When the Home Sensor remains High (5 V) even after the lapse of a predetermined period of time after the Scanner Motor is turned ON, an unlock scanner error occurs. |

<Troubleshooting Procedures>

| Relevant Electrical Parts | |
|---|---|
| Scanner Unit | Controller/Image Control Board (PWB-I) |

| Step | Action | Ref. Page | WIRING DIAGRAM | |
|---|---|---|---|---|
| | | | Control Signal | Location (Electrical Parts) |
| 1 | Turn OFF the main switch, and unlock the scanner.<br>Then, restart the machine. | — | — | — |
| 2 | Change Scanner Unit. | ☞ D-21 | — | — |
| 3 | Change PWB-I. | ☞ D-15 | — | — |

### (2) [Scanner Error] Lamp Error

<Detection Timing>

| Description |
|---|
| • When the gray level value can't reach 10 (0 to 255) even after the lapse of a predetermined period of time after the warmup.<br>• When the gray level value can't reach 35 (0 to 255) even after the lapse of a predetermined period of time after the warmup. |

<Troubleshooting Procedure>

| Relevant Electrical Parts | |
|---|---|
| Scanner Unit | Controller/Image Control Board (PWB-I) |

| Step | Action | Ref. Page | WIRING DIAGRAM | |
|---|---|---|---|---|
| | | | Control Signal | Location (Electrical Parts) |
| 1 | Check the connectors on PWB-I for proper connection and correct as necessary. | — | — | — |
| 2 | Change Scanner Unit. | ☞ D-21 | — | — |
| 3 | Change PWB-I. | ☞ D-15 | — | — |

### (3) [Scanner Error] AFE R/W Error

<Detection Timing>

| Description |
|---|
| • The firmware writes a pattern to all AFE registers and reads the value back. If there is any difference between the write/read values, an AFE R/W Error occurs. |

<Troubleshooting Procedure>

| Relevant Electrical Parts | |
|---|---|
| Controller/Image Control Board (PWB-I) | |

| Step | Action | Ref. Page | WIRING DIAGRAM | |
|---|---|---|---|---|
| | | | Control Signal | Location (Electrical Parts) |
| 1 | Check the connectors on PWB-I for proper connection and correct as necessary. | — | — | — |
| 2 | Change PWB-I. | ☞ D-15 | — | — |

### (4) [Scanner Error] Home Sensor

<Detection Timing>

| Description |
|---|
| • When the scanning job is finished, the Scanner Unit travels 14 inches back to the home position. After the Scanner Unit has moved 14 inches, if the Home Sensor can't be pressed, a Home Sensor error occurs. |

<Troubleshooting Procedure>

| Relevant Electrical Parts | |
|---|---|
| Scanner Unit | Controller/Image Control Board (PWB-I) |

| Step | Action | Ref. Page | WIRING DIAGRAM | |
|---|---|---|---|---|
| | | | Control Signal | Location (Electrical Parts) |
| 1 | Check the connectors on PWB-I for proper connection and correct as necessary. | — | — | — |
| 2 | Change Scanner Unit. | ☞ D-21 | — | — |
| 3 | Change PWB-I. | ☞ D-15 | — | — |

### (5) [Scanner Error] Motor Stall

<Detection Timing>

| Description |
|---|
| • When scanning a job, the firmware calculates the distance that the Scanner Unit has travelled. If the distance between the home position and the scan stopped position is different than the distance between the scan stopped position and the home position, a Motor Stall error occurs. |

<Troubleshooting Procedure>

| Relevant Electrical Parts | |
|---|---|
| Scanner Unit | Controller/Image Control Board (PWB-I) |

| Step | Action | Ref. Page | WIRING DIAGRAM | |
|---|---|---|---|---|
| | | | Control Signal | Location (Electrical Parts) |
| 1 | Check the connectors on PWB-I for proper connection and correct as necessary. | | | |
| 2 | Change Scanner Unit. | ☞ D-21 | — | — |
| 3 | Change PWB-I. | ☞ D-15 | — | — |

### (6) [Printer Error] Incorrect Toner

<Troubleshooting Procedure>

| Step | Action | Ref. Page | WIRING DIAGRAM | |
|---|---|---|---|---|
| | | | Control Signal | Location (Electrical Parts) |
| 1 | Install the correct Toner Cartridge. | — | — | — |

### (7) [Printer Error] IC Read Fail

<Troubleshooting Procedure>

| Relevant Electrical Parts | |
|---|---|
| Controller/Image Control Board (PWB-I) | Toner Cartridge |

| Step | Action | Ref. Page | WIRING DIAGRAM | |
|---|---|---|---|---|
| | | | Control Signal | Location (Electrical Parts) |
| 1 | Check the Toner Cartridge contact and correct or clean it as necessary. | — | — | — |
| 2 | Check the connectors on PWB-I for proper connection and correct as necessary. | — | — | — |
| 3 | Replace the Toner Cartridge. | ☞ E-5 | — | — |
| 4 | Change PWB-I. | ☞ D-15 | — | — |

### (8) [Printer Error] IC Write Fail

<Troubleshooting Procedure>

| Relevant Electrical Parts | |
|---|---|
| Controller/Image Control Board (PWB-I) | Toner Cartridge |

| Step | Action | Ref. Page | WIRING DIAGRAM | |
|---|---|---|---|---|
| | | | Control Signal | Location (Electrical Parts) |
| 1 | Check the Toner Cartridge contact and correct or clean it as necessary. | — | — | — |
| 2 | Check the connectors on PWB-I for proper connection and correct as necessary. | — | — | — |
| 3 | Replace the Toner Cartridge. | ☞ E-5 | — | — |
| 4 | Change PWB-I. | ☞ D-15 | — | — |

# 6. IMAGE QUALITY PROBLEMS

## 6-1. Troubleshooting Image Quality Problems

- This chapter is divided into two parts: “Initial Checks” and “Troubleshooting Specific Image Quality Problems.”
- If an image quality problem occurs, first go through the “Initial Checks” and, if the cause is still not identified, continue to “Troubleshooting Specific Image Quality Problems.”

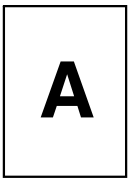
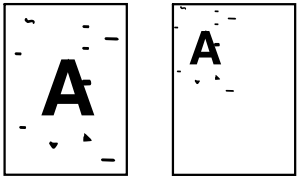
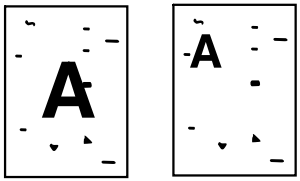
## 6-2. Initial Checks

- Determine if the failure is attributable to a basic cause or causes.

| Section | Step | Check | Result | Action |
|---|---|---|---|---|
| Installation site | 1 | The installation site complies with the requirements. | NO | Change the installation site. |
| Media | 2 | The media meets product specifications. | NO | Instruct the user to use recommended media that meets product specifications. |
| | 3 | The paper is damp. | YES | Change the paper. Instruct the user on the correct methods for storing media. |
| Original document | 4 | The document is not flat. | YES | Correct the document. |
| | 5 | Copies of a faint document (written in light pencil, etc.) are being made. | YES | Instruct the user to use a document with an appropriate image density. |
| | 6 | Copies of a highly transparent document (OHP transparencies, etc.) are being made. | YES | Instruct the user on how to copy transparent documents. |
| | 7 | The Original Glass is dirty or scratched. | YES | Clean or replace the Original Glass. |
| PM parts | 8 | PM parts relating to image formation have reached the end of their service life. | YES | Clean or replace the PM parts. |
| Adjustments | 9 | There are adjustments that can improve image quality problems by being performed again. | YES | Perform the adjustment again. |

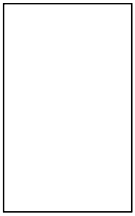
## 6-3. Troubleshooting for Specific Image Quality Problems

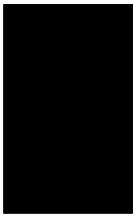
- Determine if the failure is attributable to the input system (Image Reading Section) or the output system (Engine section).

<table>
<tr><th>Check</th><th>Result</th><th>Cause</th></tr>
<tr><td rowspan="2">Copy made at a reduced zoom ratio<br>  <br>1177T03YA</td><td>Full-size copy Reduced-size copy<br>  <br>1177T04YA</td><td>Input (image reading) system</td></tr>
<tr><td>Full-size copy Reduced-size copy<br>  <br>1177T05YA</td><td>Output (engine) system</td></tr>
</table>

**(1) Image reading system: Blank or black prints**

<Typical Faulty Image>


4011T035AA

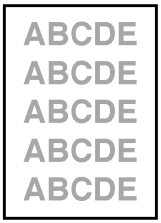

4011T036AA

<Troubleshooting Procedure>

| Step | Check | Result | Action |
|---|---|---|---|
| 1 | Are there any bent connector pins on the cables connecting the control boards, are any connectors incorrectly plugged in, or are any cables broken? | YES | Correctly plug in the connectors. Replace the connection cables. |
| 2 | Does the Exposure Lamp light up? | NO | Replace the Scanner Unit. |

**(2) Image reading system: Low image density**

<Typical Faulty Image>



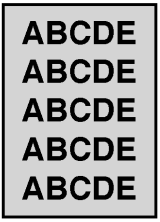

4011T003AA

<Troubleshooting Procedure>

| Step | Check | Result | Action |
|---|---|---|---|
| 1 | Is the surface of the Original Glass dirty? | YES | Clean it. |
| 2 | Is the Shading Sheet or back surface of the Original Glass dirty? | YES | Clean them. |
| 3 | Is the mirror or lens dirty? | YES | Clean them.<br>Replace the Scanner Unit. |
| 4 | Is the Exposure Lamp dirty? | YES | Clean it.<br>Replace the Scanner Unit. |
| 5 | Are there any bent connector pins on the cables connecting the control boards, are any connectors incorrectly plugged in, or are any cables broken? | YES | Correctly plug in the connectors.<br>Replace the connection cables. |

**(3) Image reading system: Foggy background or rough image**

<Typical Faulty Image>



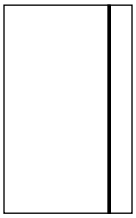

4011T004AA

<Troubleshooting Procedure>

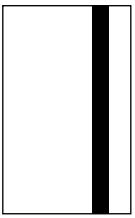
| Step | Check | Result | Action |
|---|---|---|---|
| 1 | Is the machine in direct sunlight or subject to any other extraneous light? | YES | Protect the machine from direct light. |
| 2 | Is the document damaged or dirty? | YES | Replace the document. |
| 3 | Is the Original Pad dirty? | YES | Clean it. |
| 4 | Does the Original Cover lie flat? | NO | If the Document Cover is deformed or the hinges are damaged, replace the Document Cover. |
| 5 | Is the surface of the Original Glass dirty? | YES | Clean it. |
| 6 | Is the Shading Sheet or back surface of the Original Glass dirty? | YES | Clean them. |
| 7 | Is the mirror or lens dirty? | YES | Clean them.<br>Replace the Scanner Unit. |
| 8 | Is the Exposure Lamp dirty? | YES | Clean it.<br>Replace the Scanner. |
| 9 | Are there any bent connector pins on the cables connecting the control boards, are any connectors incorrectly plugged in, or are any cables broken? | YES | Correctly plug in the connectors.<br>Replace the connection cables. |

**(4) Image reading system: Black streaks or bands**

<Typical Faulty Image>



4011T017AA



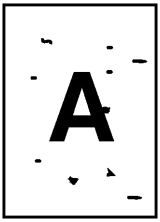
4011T023AA

<Troubleshooting Procedure>

| Step | Check | Result | Action |
|---|---|---|---|
| 1 | Is the document damaged or dirty? | YES | Replace the document. |
| 2 | Is the Original Pad dirty? | YES | Clean it. |
| 3 | Does the Original Cover lie flat? | NO | If the Document Cover is deformed or the hinges are damaged, replace the Document Cover. |
| 4 | Is the surface of the Original Glass dirty? | YES | Clean it. |
| 5 | Is the Shading Sheet or back surface of the Original Glass dirty? | YES | Clean them. |
| 6 | Is the mirror or lens dirty? | YES | Clean them.<br>Replace the Scanner Unit. |
| 7 | Is the Exposure Lamp dirty? | YES | Clean it.<br>Replace the Scanner Unit. |
| 8 | Are there any bent connector pins on the cables connecting the control boards, are any connectors incorrectly plugged in, or are any cables broken? | YES | Correctly plug in the connectors.<br>Replace the connection cables. |

**(5) Image reading system: Black spots**

<Typical Faulty Image>




4011T521AA

<Troubleshooting Procedure>

| Step | Check | Result | Action |
|---|---|---|---|
| 1 | Is the document damaged or dirty? | YES | Replace the document. |
| 2 | Is the Original Pad dirty? | YES | Clean it. |
| 3 | Is the Original Glass dirty? | YES | Clean it. |
| 4 | The problem has been eliminated after performing step 3. | NO | Replace the Scanner Unit. |

**(6) Image reading system: Blank streaks or bands**

<Typical Faulty Image>

4011T015AA

4011T020AA

<Troubleshooting Procedure>

| Step | Check | Result | Action |
|---|---|---|---|
| 1 | Is the document damaged or dirty? | YES | Replace the document. |
| 2 | Is the Original Pad dirty? | YES | Clean it. |
| 3 | Does the Original Cover lie flat? | NO | If the Document Cover is deformed or the hinges are damaged, replace the Document Cover. |
| 4 | Is the surface of the Original Glass dirty? | YES | Clean it. |
| 5 | Is the Shading Sheet or back surface of the Original Glass dirty? | YES | Clean them. |
| 6 | Is the mirror or lens dirty? | YES | Clean them.<br>Replace the Scanner Unit. |
| 7 | Is the Exposure Lamp dirty? | YES | Clean it.<br>Replace the Scanner Unit. |
| 8 | Are there any bent connector pins on the cables connecting the control boards, are any connectors incorrectly plugged in, or are any cables broken? | YES | Correctly plug in the connectors.<br>Replace the connection cables. |

**(7) Image reading system: Uneven image**

<Typical Faulty Image>

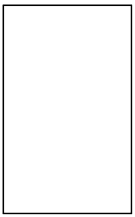
4011T528AA

<Troubleshooting Procedure>

| Step | Check | Result | Action |
|---|---|---|---|
| 1 | Is the Scanner Motor drive being transmitted? | NO | Correct the drive coupling mechanisms.<br>Replace the Scanner Unit. |
| 2 | Is the harness of the Exposure Lamp catching? | YES | Correct it. |
| 3 | Is there enough slack in the Timing Belt? | NO | Correct it.<br>Replace the Timing Belt. |
| 4 | Are the Scanner Rails scratched or dirty? | YES | Clean them. |
| 5 | Are there any bent connector pins on the cables connecting the control boards, are any connectors incorrectly plugged in, or are any cables broken? | YES | Correctly plug in the connectors.<br>Replace the connection cables. |
| 6 | The problem has been eliminated after performing step 5. | NO | Replace the Scanner Unit. |

**(8) Printer system: Blank or black prints**

<Typical Faulty Images>



4011T035AA

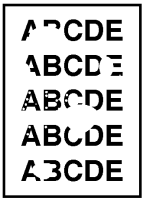
4011T036AA

<Troubleshooting Procedure>

| Step | Check | Result | Action |
|---|---|---|---|
| 1 | Is a printed page blank? | YES | Check the PH Unit connectors for proper connection. |
| 2 | Is the coupling of the drive mechanism of the Imaging Cartridge properly connected? | NO | Check the coupling of the drive mechanism for connection and correct it as necessary, or replace the Imaging Cartridge (Drum Cartridge, Toner Cartridge). |
| 3 | Is the drum charge voltage contact point or PC Drum ground contact point of the Imaging Cartridge properly connected? | NO | Check, clean, or correct the contact point. |
| 4 | Is the High Voltage Unit (HV1) connector connected properly? | NO | Connect it properly. |
| 5 | Was the problem eliminated when step 4 was checked? | NO | Replace the High Voltage Unit (HV1). |
| | | | Replace the Controller/Image Control Board (PWB-I). |
| | | | Replace the PH Unit. |

**(9) Printer system: Blank spots**

<Typical Faulty Image>



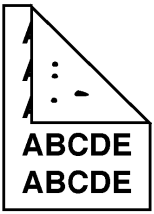

4011T008AA

<Troubleshooting Procedure>

| Step | Check | Result | Action |
|---|---|---|---|
| 1 | Is the paper damp? | YES | Replace the paper with paper that was just unwrapped. |
| 2 | Is the PC Drum scratched? | YES | Replace the Drum Cartridge. |
| 3 | Is there foreign matter in the media path? | YES | Remove the foreign matter. |
| 4 | Is the Image Transfer Roller dirty or scratched? | YES | Replace the Image Transfer Roller. |
| | | | Replace the High Voltage Unit (HV1). |
| | | | Replace the Controller/Image Control Board (PWB-I). |

**(10) Printer system: Smears on back**

<Typical Faulty Image>



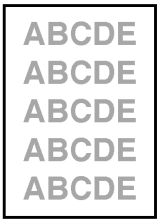

4011T009AA

<Troubleshooting Procedure>

| Step | Check | Result | Action |
|---|---|---|---|
| 1 | Is there foreign matter in the media path? | YES | Remove the foreign matter. |
| 2 | Is the Fusing Roller dirty or scratched? | YES | Replace the Fusing Unit (Fusing Roller). |
| 3 | Is the Image Transfer Roller dirty or scratched? | YES | Replace the Image Transfer Roller. |

**(11) Printer system: Low image density**

<Typical Faulty Image>



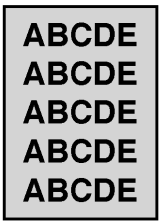

4011T003AA

<Troubleshooting Procedure>

| Step | Check | Result | Action |
|---|---|---|---|
| 1 | Is the paper damp? | YES | Replace the paper with paper that was just unwrapped. |
| 2 | Is there toner left in the Toner Cartridge? | NO | Replace the Toner Cartridge. |
| 3 | Is the PC Drum faulty (life)? | YES | Replace the Drum Cartridge. |
| 4 | Is the developing bias faulty? | YES | Replace the High Voltage Unit (HV1).<br>Replace the Controller/Image Control Board (PWB-I). |
| 5 | Is the image transfer faulty? | YES | Replace the Image Transfer Roller. |
| | | | Replace the High Voltage Unit (HV1). |
| | | | Replace the Controller/Image Control Board (PWB-I). |

**(12) Printer system: Foggy background**

<Typical Faulty Image>




4011T004AA

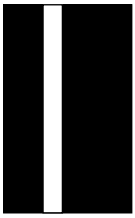
<Troubleshooting Procedure>

| Step | Check | Result | Action |
|---|---|---|---|
| 1 | Is the PC Drum scratched? | YES | Replace the Drum Cartridge. |
| 2 | Is the developing bias contact terminal in good contact with its mating part? | NO | Clean the contact terminal or check the terminal position. |
| 3 | Is the PH window dirty? | YES | Clean it. |
| 4 | Is the problem eliminated after checks have been made through step 3? | NO | Replace the High Voltage Unit (HV1). |
| | | | Replace the Controller/Image Control Board (PWB-I). |

**(13) Printer system: Blank streaks or bands**

<Typical Faulty Images>

4011T015AA



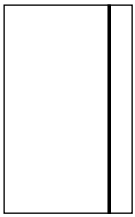
4011T020AA

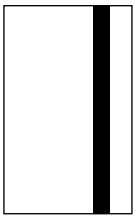
<Troubleshooting Procedure>

| Step | Check | Result | Action |
|---|---|---|---|
| 1 | Is the Image Transfer Roller dented, scratched, or dirty? | YES | Replace the Image Transfer Roller. |
| 2 | Is PC Drum scratched or dirty? | YES | Replace the Drum Cartridge. |
| 3 | Is the Fusing Roller scratched or dirty? | YES | Replace the Fusing Unit (Fusing Roller). |
| 4 | Is the PH window dirty? | YES | Clean it. |
| 5 | Is the problem eliminated after checks have been made through step 4? | NO | Replace the Controller/Image Control Board (PWB-I). |

**(14) Printer system: Black streaks or bands**

<Typical Faulty Images>


4011T017AA

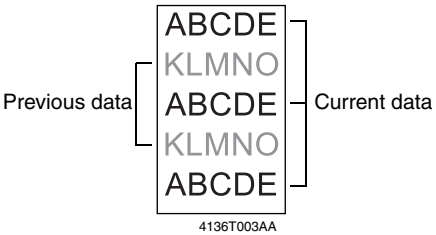

4011T023AA

<Troubleshooting Procedure>

| Step | Check | Result | Action |
|---|---|---|---|
| 1 | Is the media path dirty with toner? | YES | Clean it. |
| 2 | Is the PC Drum scratched or dirty? | YES | Replace the Drum Cartridge. |
| 3 | Is the Fusing Roller scratched or dirty? | YES | Replace the Fusing Unit (Fusing Roller). |
| 4 | Is the problem eliminated after checks have been made through step 3? | NO | Replace the Controller/Image Control Board (PWB-I). |

**(15) Printer system: Offset image**

<Typical Faulty Image>



4136T003AA

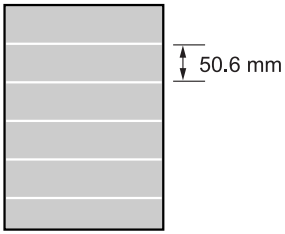
<Troubleshooting Procedure>

| Step | Check | Result | Action |
|---|---|---|---|
| 1 | Is the Fusing Roller faulty? | YES | Replace the Fusing Unit (Fusing Roller). |
| 2 | Is the Image Transfer Roller faulty? | YES | Replace the Image Transfer Roller. |

**(16) Printer system: Uneven image**

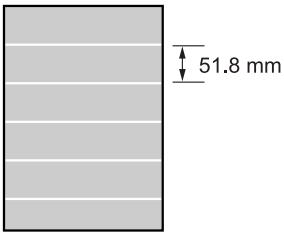
<Typical Faulty Images>

51 mm-pitch uneven image



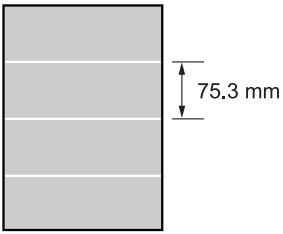

4136T004AA

51.8 mm-pitch uneven image



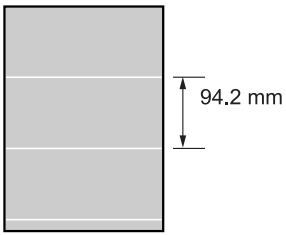

4136T008AA

75.3 mm-pitch uneven image




4136T005AA

94.2 mm-pitch uneven image




4136T006AA

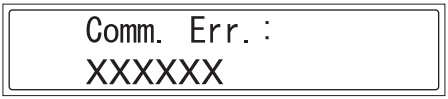
<Troubleshooting Procedure>

| Step | Check | Cause | Result | Action |
|---|---|---|---|---|
| 1 | Is the uneven image at a pitch of 51 mm? | The Image Transfer Roller is scratched or dirty. | YES | Replace the Image Transfer Roller. |
| 2 | Is the uneven image at a pitch of 51.8 mm? | The Flexible Sleeve is scratched or dirty. | YES | Replace the Toner Cartridge. |
| 3 | Is the uneven image at a pitch of 75.3 mm? | The Pressure Roller is scratched or dirty. | YES | Replace the Fusing Unit. |
| 4 | Is the uneven image at a pitch of 94.2 mm? | The PC Drum is scratched or dirty. | YES | Replace the Drum Cartridge. |
| | | The Fusing Roller is scratched or dirty. | YES | Replace the Fusing Unit. |

# 7. FAX ERROR (PagePro 1390 MF only)

## 7-1. Outline

- When some errors occur as the Fax function is used, the kind of the error can be confirmed with Error Code of six digits.
  The Error Code is displayed on the LCD display or in the item of “Result” of Activity Report or TX Report.




PagePro 1390MF Activity Log Report

Page 1

| Job # | Date | Time | Type | Identification | Duration | Page | Result |
|---|---|---|---|---|---|---|---|
| 001 | 10/21/2005 | 01:37:15 | Send | 2 | 00:26 | 4 | 0:OK |
| 002 | 10/23/2005 | 01:39:19 | Receive | | 00:37 | 6 | :OK |
| 003 | 10/28/2005 | 09:15:02 | Receive | | 00:05 | 2 | 110001:Cancelled |
| 004 | 11/02/2005 | 14:52:30 | Send | 2 | 00:51 | 12 | 110001:Cancelled |

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## 7-2. Types of Error

- There is the following types of error.

### (1) STOP

STOP is indicated as “Cancelled” in activity report and not classified as error.
Error code “xxxx01” is assigned.

### (2) RX T1 Time Out

RX T1 time out is not classified as error. This might be caused by wrong dial from caller. This is NOT even listed in activity report and RX operator will not even notice that call came in and there was no fax RX.

**(3) Local mechanical error/resource error**

This error can be recovered by operator.

- ADF JAM for Manual TX
- ADF Cover Open during manual TX
- Power off during TX
- RX Memory Full

ADF JAM for memory TX happens before dialing and not logged in activity report.
RX paper JAM/Cover open activate memory RX and not logged in activity report.

**(4) Dial failure**

Operator should confirm TEL line connection and remote fax number. If these are correct, these error can be recovered by redial (resend).

- No Connection (when DT detect is ON)
- Redial All Fail

**(5) TX Comm. Error**

This error might be caused by bad TEL line. This can be recovered by redial/resend. If not some setting adjustment in Fax Maintenance might be needed. Error code must give enough information which includes modem speed/Mode etc.

**(6) RX Comm. Error**

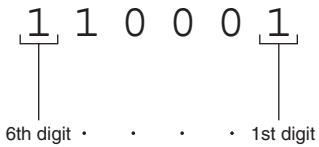
This error might be caused by bad TEL line. It is up to TX operator's action but operator might be prompted to inform TX operator that RX was not successfully completed. Error code must give enough information which includes modem speed/Mode etc.

**(7) Compatibility Error**

This is compatibility error which needs remote operator's action Polling RX and remote machine is not capable to be polled.

## 7-3. Definition of Error Code

- Error Code is composed of six digits, and displayed based on the following definition.

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### (1) The 6th digit

- It is assigned to indicate TX/RX/Polling RX.

| | |
|---|---|
| 1xxxxx | TX |
| 2xxxxx | RX |
| 3xxxxx | Polling RX |

### (2) The 5th digit

- It is assigned to indicate Coding (MH/MR/MMR).

| | |
|---|---|
| x1xxxx | MH |
| x2xxxx | MR |
| x3xxxx | MMR |

### (3) The 4th / 3rd digits

- It is assigned to indicate modem standard/speed.

| | |
|---|---|
| xx01xx | V34 |
| xx02xx | V.17/14.4 kbps |
| xx03xx | V.17/12.0 kbps |
| xx04xx | V.17/9.6 kbps |
| xx05xx | V.17/7.2 kbps |
| xx06xx | V.33/14.4 kbps |
| xx07xx | V.33/12.0 kbps |
| xx08xx | V.29/9.6 kbps |
| xx09xx | V.29/7.2 kbps |
| xx10xx | V.27/4.8 kbps |
| xx11xx | V.27/2.4 kbps |

**(4) The 2nd / 1st digits**

- It is assigned to indicate detail error description.

| Code | Status | Description | Cause | Action |
|---|---|---|---|---|
| 000000 | Normal Status | — | — | — |
| 000001 | Stop | — | — | — |
| Local mechanical error | | | | |
| 1xxx11 | ADF JAM during TX | — | — | — |
| 1xxx12 | ADF Cover Open during TX | — | — | — |
| 1xxx13 | Power Fail during TX | — | — | — |
| 2xxx14 | Memory Full during RX | — | — | — |
| 1xxx18 | TX Job Lost | — | — | — |
| 1xxx19 | TX Job deleted | — | — | — |
| Dial failure | | | | |
| xxxx15 | No Dial Tone | — | — | — |
| xxxx16 | Redial All Failed (Number Busy) | — | — | — |
| Comm. Error (at Phase-B) | | | | |
| xxxx31 | TX T1 Time Out | • Did not receive any response from other side within the time set by [Connect Time] of [415. Fax Maintenance] in Automatic transmission<br>• Did not receive any response from other side within 35 seconds in Manual transmission. | • Automatic transmission:<br>1.The fax number is wrong<br>2.Response delay in reception side<br>• Manual transmission:<br>Failure in remote machine | • Automatic transmission:<br>1.Check the fax number<br>2.Extension of Connect Time<br>• Manual transmission:<br>Check the status of the remote machine |
| xxxx32 | V8 negotiation Fail | • V.8 negotiation has failed. | • Line failure | • Retry TX |
| Comm. Error (at Phase-B) | | | | |
| xxxx40 | Retry Out | • Did not receive any response from other side after three retries of DCS (TCF). | • Failure in remote machine<br>• Line failure | • Check the status of the remote machine<br>• Retry TX |

| Code | Status | Description | Cause | Action |
|---|---|---|---|---|
| xxxx41 | Too many FTT | • Received Failure to Train (FTT) from other side even with the minimum speed of 2400 bps. | • Failure in remote machine<br>• Line failure | • Check the status of the remote machine<br>• Retry TX |
| xxxx42 | Too many CRP | • Received Command Repeat (CRP) from other side more than 3 times after sending DCS (TCF). | • Failure in remote machine<br>• Line failure | • Check the status of the remote machine<br>• Retry TX |
| xxxx43 | T2 Time Out | • Did not receive DCS from other side within 6 seconds after sending DIS. | • Failure in remote machine<br>• Line failure | • Check the status of the remote machine<br>• Retry TX |
| xxxx44 | DCN received | • Received Disconnect command (DCN) from other side at Phase B. | • Failure in remote machine | • Check the status of the remote machine |
| xxxx45 | DTC Received | • Received Digital Transmit Command (DTC) from other side. | • Failure in remote machine | • Check the status of the remote machine |
| xxxx46 | Remote not capable for Polling | • Other side was not in Polling TX when Polling RX. | • Error in operation on remote side<br>• The fax number is wrong | • Check the Polling TX setting of the remote machine<br>• Check the fax number |
| Comm. Error (at Phase-C) | | | | |
| xxxx50 | T2 Time Out | • Did not receive PIX/ECM from other side within 6 seconds after sending CFR. | • Failure in remote machine<br>• Line failure | • Check the status of the remote machine<br>• Request retry TX |
| xxxx51 | Image Data not ready | • Scanner/Encode delayed in Manual transmission. | • ADF Jam | • Clear the ADF Jam and retry TX |
| xxxx52 | Phase-C Time Out | • Cannot be ready for Image data within 10 seconds after starting Image transmission. | • System failure | • Replace the Controller/ Image Control Board (PWB-I) |
| Comm. Error (at Phase-D) | | | | |
| xxxx60 | Retry Out | • Did not receive any response from other side after three retries of (PPS-) Q command. | • Line failure | • Retry TX |
| xxxx61 | T2 Time Out | • Did not receive (PPS-) Q Command from other side within 6 seconds after sending PIX/ECM signal at receiving. | • Failure in remote machine<br>• Line failure | • Check the status of the remote machine<br>• Retry TX |

| Code | Status | Description | Cause | Action |
|---|---|---|---|---|
| xxxx62 | DCN received | • Received Disconnect command (DCN) from other side at Phase D. | • Failure in machine of TX side | • Check the status of the machine of TX side |
| xxxx63 | Too many CRP | • Received Command Repeat (CRP) from other side more than 3 times after sending (PPS-) Q Command. | • Line failure | • Retry TX |
| xxxx64 | Too many PPR | • Received Failure to Train (FTT) from other side even with the minimum speed of 2400 bps. | • Line failure | • Retry TX |
| xxxx65 | RNR time Out | • Other side was not in RX mode within 60 seconds in Flow Control. | • Failure in remote machine | • Check the status of the remote machine |
| xxxx66 | RTN/PIN Received | • Received Negative response from other side for Q Command. | • Line failure | • Retry TX |
| Comm. Error (at Phase-E) | | | | |
| xxxx70 | Time Out | • Did not receive DCN within 6 seconds at Phase E. | • Failure in remote machine<br>• Line failure | • Check the status of the remote machine<br>• Retry TX |

# PagePro 1380 MF
# PagePro 1390 MF
# Auto Document Feeder

## Service Manual

# CONTENTS

# INDEX (Field Service)

## GENERAL

## DIS/REASSEMBLY, ADJUSTMENT

## TROUBLESHOOTING

# GENERAL

# 1. SPECIFICATIONS

| | | |
|---|---|---|
| Name | : | Automatic Document Feeder (ADF) |
| Installation method | : | Inserted at upper-rear side of main unit |
| Original type | : | Plain paper: 35 to 128 g/m$^2$ (9 to 34 lb.) |
| Detectable original sizes | : | A5 R, B5 R, A4 R, Legal R, Letter R, Invoice R<br>Custom size width: 4.5 inch to 8.5 inch (138 to 216 mm)<br>Length: 5.5 inch to 14 inch (130 to 356 mm) |
| Paper capacity | : | Maximum 50 sheets (80 g/m$^2$) (21 lb.) |
| Registration | : | Center |
| Original loading orientation | : | Face up |
| Productivity | : | 10 sheets/minute (with plain A4 R or Letter R paper) |
| Original feeding mode | : | Standard mode |
| Power source | : | DC 24 V, DC 5 V (supplied by main unit) |
| Power consumption | : | Less than 30 W |
| Dimensions | : | W: 497 mm (19.5 inch) x D: 355 mm (14 inch)<br>x H: 80 mm (3.25 inch) |
| Weight | : | 3.2 kg (7 lb.) |
| Operating environment | : | Same as the main unit |

| Original types | Possible problems |
|---|---|
| Originals bound with staples or paper clips | Incorrect paper take-up, damaged originals or drive malfunctions due to jammed paper clips |
| Originals bound with glue | Incorrect paper take-up or damaged originals |
| Folded, torn or extremely wrinkled originals | Incorrect paper take-up or damaged originals |
| Curled originals<br>(more than 10 mm/0.4 inch from front edge) | Paper misfeeds due to folded or skewed originals |

# DIS/REASSEMBLY, ADJUSTMENT

# 1. MAINTENANCE SCHEDULE

- To ensure that the machine produces good printed pages and to extend its service life, it is recommended that the maintenance jobs described in this schedule be carried out as instructed.

| Part | Replace After . . . | Ref. Page in This Manual |
|---|---|---|
| Take-up Roller | 200,000 scans | ☞ D-2 |
| Separator Pad | 50,000 scans | ☞ D-4 |

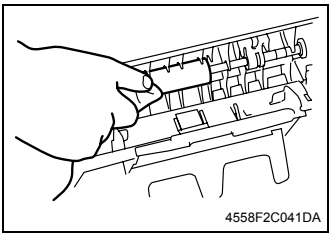
***NOTES***

- *The contents of the Maintenance List are subject to change without notice.*
- *For the part numbers, see the Parts Guide Manual and Parts Modification Notices.*

# 2. CLEANING/REPLACEMENT OF PARTS

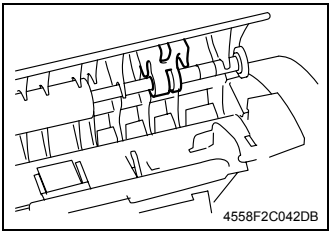
### (1) Cleaning the Take-up Roller

1. Open the Auto Document Feeder (ADF) Cover.

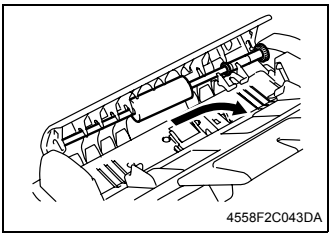



2. Using a soft cloth, wipe clean the surface of the Take-up Roller.

### (2) Replacing the Take-up Roller




1. Open the Auto Document Feeder (ADF) Cover.
2. Unlock the Take-up Roller fixing levers.

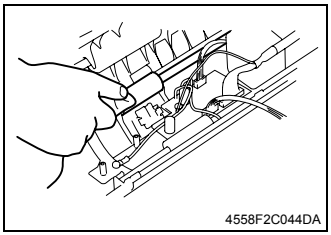



3. Remove the Take-up Roller Assy.
4. Insert the new Take-up Roller Assy.
5. Lock the Take-up Roller fixing levers.
6. Close the ADF Cover.

### (3) Cleaning the Transport Roller

1. Remove the Auto Document Feeder (ADF) Paper Feed Guide.

☞ D-5

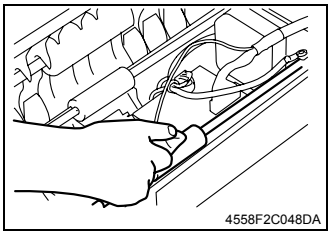



2. Using a soft cloth, wipe clean the surface of the Transport Roller.

### (4) Cleaning the Exit Roller

1. Remove the Auto Document Feeder (ADF) Paper Feed Guide.

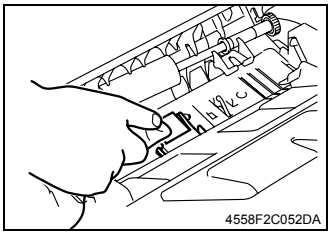
☞ D-5




2. Using a soft cloth, wipe clean the surface of the Exit Roller.

### (5) Cleaning the Separator Pad

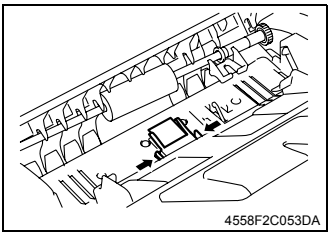
1. Open the Auto Document Feeder (ADF) Cover.




2. Using a soft cloth, wipe clean the surface of the Separator Pad.

**(6) Replacing of the Separator Pad**

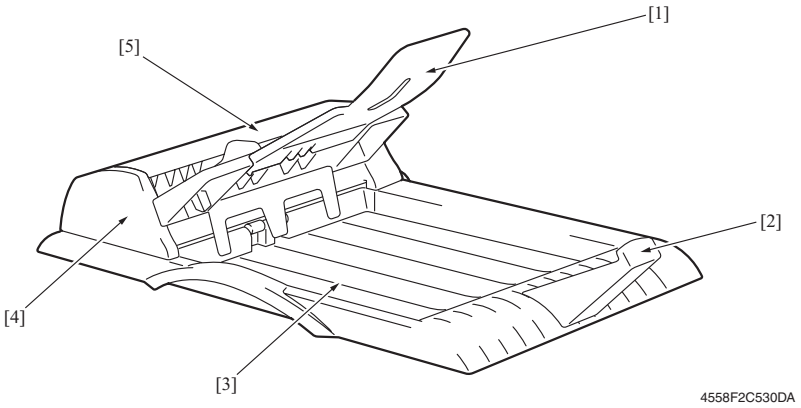
1. Open the Auto Document Feeder (ADF) Cover.




2. Pushing inward the tabs at the front and rear, remove the Separation Pad.
3. Insert the new Separation Pad.
4. Close the ADF Cover.

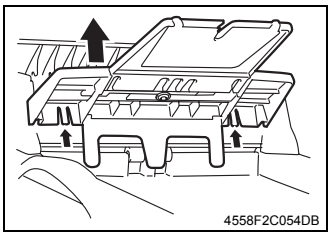
# 3. DISASSEMBLY/REASSEMBLY

## 3-1. Names/Removal of External Parts

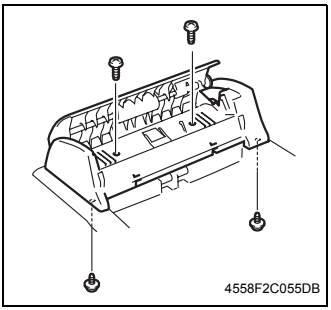



| No. | Name | Removal Procedure |
|---|---|---|
| [1] | Auto Document Feeder (ADF) Input Tray | Unhooking the two tabs, slide the Auto Document Feeder (ADF) Input Tray upward and off. |
| [2] | Paper Stopper | Remove four screws, and then remove the Paper Stopper. |
| [3] | Document Exit Tray | — |
| [4] | Auto Document Feeder (ADF) Paper Feed Guide | ☞ D-5 |
| [5] | Auto Document Feeder (ADF) Cover | — |

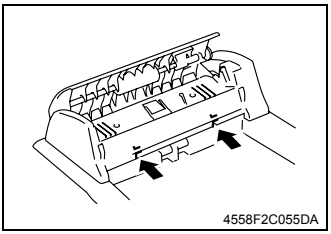
### (1) Removing the Auto Document Feeder (ADF) Paper Feed Guide



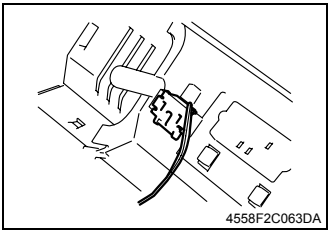

1. Unhooking the two tabs, slide the Auto Document Feeder (ADF) Input Tray upward and off.




2. Open the Auto Document Feeder (ADF) Cover.
3. Remove four screws.




4. Unhook the two tabs.

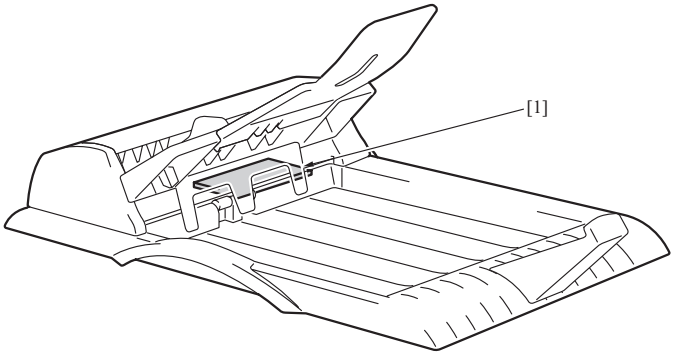



5. Remove the Paper Feeding Sensor and then remove the Auto Document Feeder (ADF) Paper Feed Guide.

## 3-2. Removal of Circuit Boards

***NOTES***

- *When removing a circuit board, refer to the precautions for handling printed circuit boards and follow the corresponding removal procedures.*
- *The following removal procedures omit the removal of the applicable component from connectors and circuit board supports.*
- *When it is necessary to touch ICs and other electrical components on the circuit board, be sure to first ground yourself.*

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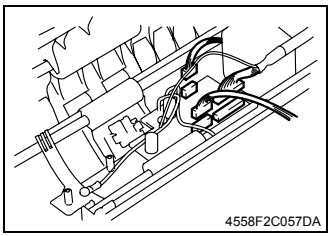
| No. | Symbol | Name | Removal Procedure |
|---|---|---|---|
| [1] | PWB-A AF | AF Control Board | ☞ D-7 |

### (1) Removing the AF Control Board (PWB-A AF)

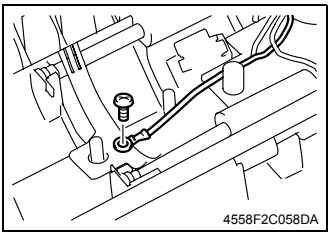
1. Remove the Auto Document Feeder (ADF) Paper Feed Guide.

☞ D-5

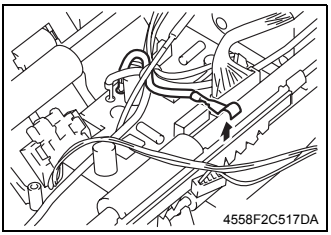


4558F2C057DA

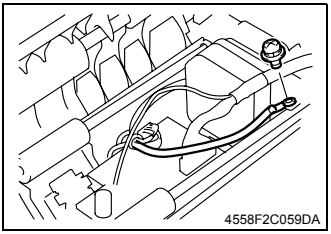
2. Unplug all connectors connected to the AF Control Board.



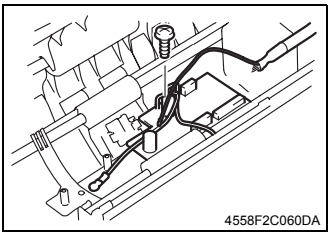

3. Remove the ground wire.




4. Remove the ground wire.



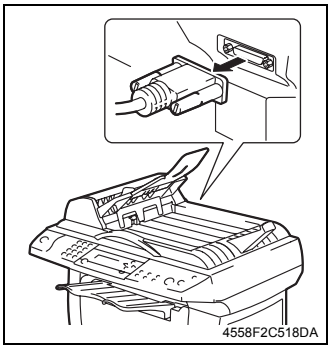

5. Remove the ground wire.



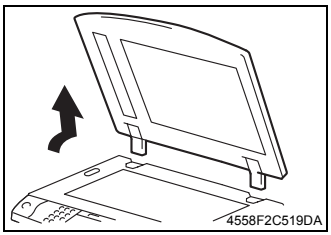

6. Remove the screw, and then remove the AF Control Board.

## 3-3. Disassembly

### (1) Removing the Automatic Document Feeder




1. Disconnect the ADF connector from the main unit.

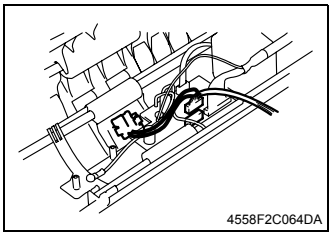



2. Open the Auto Document Feeder (ADF).
3. Remove the Auto Document Feeder (ADF) from the main unit.

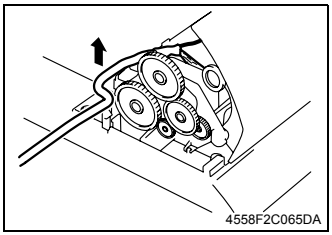
### (2) Removing the Drive Unit Assy

1. Remove the Auto Document Feeder (ADF) Paper Feed Guide.

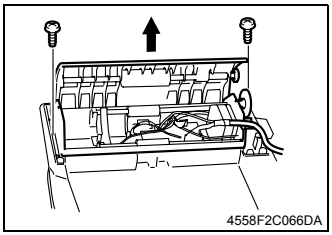
☞ D-5




2. Unplug the connector on the AF Control Board and remove the Paper Feeding Sensor Assy.




3. Remove the harness from the harness holder.

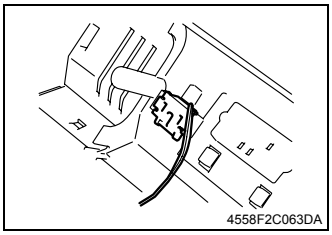



4. Remove two screws and the Drive Unit Assy.

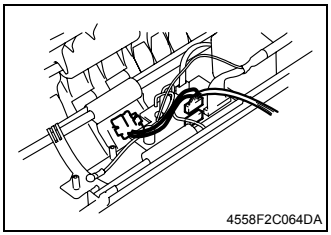
### (3) Removing the Paper Feeding Sensor Assy

1. Remove the Auto Document Feeder (ADF) Paper Feed Guide.

☞ D-5




2. Unhook two tabs and remove the Paper Feeding Sensor.




3. Unplug the connector on the AF Control Board and remove the Paper Feeding Sensor Assy.

# TROUBLESHOOTING

# 1. INTRODUCTION

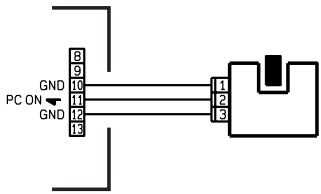
- This chapter contains the items required or used when troubleshooting various machine problems.

## 1-1. Electrical Components Check Procedures

- The following procedures can be used to check to see if an electrical component is fully operational when a paper misfeed or other malfunction occurs in the machine.

**(1) Sensors**

| Step | Check | Result | Action |
|---|---|---|---|
| 1 | Does the input signal to the Controller/Mechanical Control Board go from HIGH to LOW, or vice versa, when the sensor is blocked? | NO | Replace the sensor. |
| | | YES | Replace the AF Control Board. |

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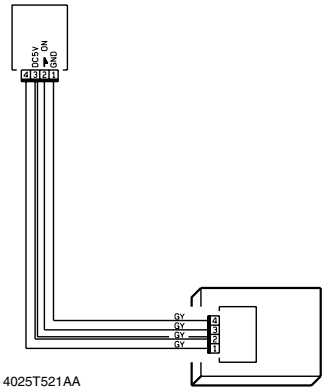


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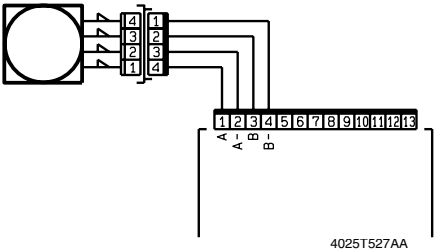
**(2) Motors**

| Step | Check | Result | Action |
|---|---|---|---|
| 1 | Are the hookup connector of the motor and print jack on the Controller/Mechanical Control Board connected properly? | YES | Replace the AF Control Board. |
| | | NO | Connect the connector or the print jack properly. |



# 2. PAPER MISFEED

## 2-1. Initial Check Items

- When a paper misfeed occurs in the printer, first make the following initial checks.

| Check | Action |
|---|---|
| Does the paper meet product specifications? | Replace the paper. |
| Is the paper curled, wavy, or damp? | Replace the paper.<br>Instruct the user in correct paper storage. |
| Is the paper transport path deformed, dirty, or obstructed with foreign matter? | Clean the paper path and replace the paper if necessary. |
| Is the roller dirty, deformed, or worn? | Clean the roller and replace if necessary. |
| Are Edge Guides at correct position to accommodate the paper? | Slide the Edge Guides up against the edges of the paper stack. |
| Does the actuator operate correctly when checked? | Correct or replace the actuator. |

***Precautions for Clearing a Paper Misfeed***

- *Reset the misfeed condition by opening and closing the Front Door after the misfeed has been cleared.*

## 2-2. Paper Misfeed Displays

- The Error indicator lights up and a message appears in the display when a paper misfeed occurs.

<Automatic Document Feeder Misfeed>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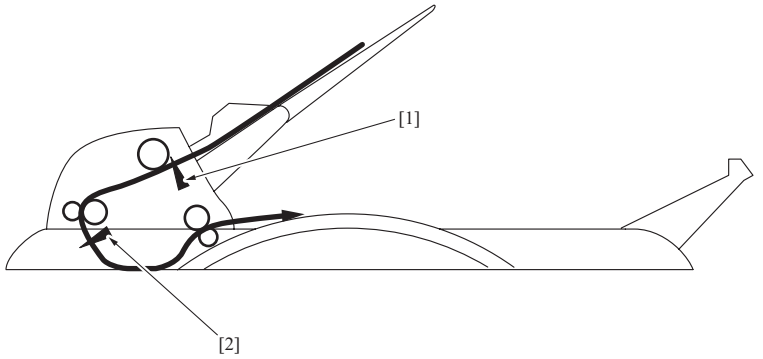
<Procedure for cancelling the misfeed display>

1. Open the Auto Document Feeder (ADF) cover, remove the misfed paper and any remaining paper, and then close the Auto Document Feeder (ADF) cover.
2. The error indicator will go off.

## 2-3. Locations of Misfeed Detection Sensors




[1] Original Detection Sensor

[2] Exit Sensor

## 2-4. Misfeed Detection Timing and Troubleshooting Procedures

### (1) Original misfeeds

<Detection Timing>

| Type | Description |
|---|---|
| ADF Jam | • The Take-up Roller starts to turn after the Original Detection Sensor is pressed for 2 seconds.<br>• 2.8 seconds after the Take-up roller starts turning, if the Exit Sensor remains pressed, a paper jam error occurs.<br>• 3.3 seconds after the scanning job is completed, if the Exit Sensor is still pressed, a paper jam error occurs. |

<Troubleshooting Procedures>

| Relevant Electrical Parts | |
|---|---|
| Paper Feeding Sensor Assy (PC2) | AF Control Board (PWB-A AF) |

| Step | Action | Ref. Page | WIRING DIAGRAM | |
|---|---|---|---|---|
| | | | Control Signal | Location (Electrical Component) |
| 1 | Initial checks | ☞ T-3 | – | – |
| 3 | PC2 sensors check | ☞ T-1 | | |
| 5 | Replace PWB-A AF. | – | – | – |

KONICA MINOLTA



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

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