

Toscana-C1a/C1b/C1bN
Machine Code: J012/J013/J014

SERVICE MANUAL

July 2007
Subject to change

Safety Instructions

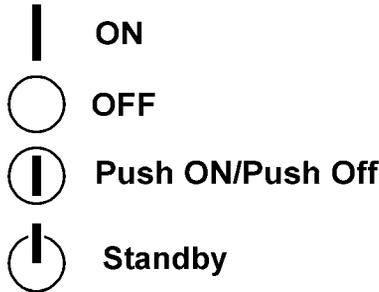
For your safety, please read this manual carefully before you service machine. Always keep this manual handy for future reference.

Safety Information

Always obey these safety precautions when using this product.

Switches and Symbols

Where symbols are used on or near switches on machines for Europe and other areas, the meaning of each symbol conforms with IEC60417.



_onoff

Responsibilities of the Customer Engineer

Maintenance

Maintenance shall be done only by trained customer engineers who have completed service training for the machine and all optional devices designed for use with the machine.

Installation

The main machine and options can be installed by either the customer or customer engineer. The customer or customer engineer must follow the installation instructions described in the operating instructions.

Reference Material for Maintenance

Maintenance shall be done with the special tools and the procedures prescribed for maintenance of the machine described in the reference materials (service manuals, technical bulletins, operating instructions, and safety guidelines for customer engineers).

★ Important

- Use only consumable supplies and replacement parts designed for use with the relevant machine.

Before Installation, Maintenance

Shipping and Moving the Machine

CAUTION

- Work carefully when lifting or moving the machine. If the machine is heavy, two or more customer engineers may be required to prevent injuries (muscle strains, spinal injuries, etc.) or damage to the machine if it is dropped or tipped over.
- Personnel moving or working around the machine should always wear proper clothing and footwear. Never wear loose fitting clothing or accessories (neckties, loose sweaters, bracelets, etc.) or casual footwear (slippers, sandals, etc.) when lifting or moving the machine.
- Always unplug the power cord from the power source before you move the machine. Before you move the machine, arrange the power cord so it will not fall under the machine.

Power

WARNING

- Always turn the machine off and disconnect the power plug before doing any maintenance procedure. After turning the machine off, power is still supplied to the main machine and other devices. To prevent electrical shock, switch the machine off, wait for a few seconds, and then unplug the machine from the power source.
- Before you do any checks or adjustments after turning the machine off, work carefully to avoid injury. After removing covers or opening the machine to do checks or adjustments, avoid touching electrical components or moving parts (gears, timing belts, etc.).
- After turning the machine on with any cover removed, keep your hands away from electrical components and moving parts. Never touch the cover of the fusing unit, gears, timing belts, etc.

Installation, Disassembly, and Adjustments

CAUTION

- After installation, maintenance, or adjustment, always check the operation of the machine to make sure that it is operating normally. This ensures that all shipping materials, protective materials, wires and tags, metal brackets, etc., (attached to protect the machine during shipping), have been removed and that no tools remain inside the machine.
- Never use your fingers to check moving parts that are causing spurious noise. Never use your fingers to lubricate moving parts while the machine is operating.

Special Tools

CAUTION

- Use only standard tools approved for machine maintenance.
- For special adjustments, use only the special tools and lubricants described in the service manual. Using tools incorrectly, or using tools that could damage parts, could damage the machine or cause injuries.

During Maintenance

General

CAUTION

- Before you begin a maintenance procedure always switch the machine off.
- Disconnect the power plug from the power source.
- Allow the machine to cool for at least 10 minutes.
- Avoid touching the components inside the machine that are labeled as hot surfaces.

Safety Devices

WARNING

- Never remove any safety device (a fuse, thermistor, etc.) unless it requires replacement. Always replace a safety device immediately.
- Never do any procedure that defeats the function of any safety device. Modification or removal of a safety device (fuse, thermistor, etc.) could cause a fire and personal injury. After removal and replacement of any safety device, always test the operation of the machine to ensure that it is operating normally and safely.
- For replacement parts use only the correct fuses, thermistors, circuit breakers, etc. rated for use with the machine. Using replacement devices not designed for use with the machine could cause a fire and personal injuries.

Organic Cleaners

CAUTION

- During preventive maintenance, never use any organic cleaners (alcohol, etc.) other than those described in the service manual. (Refer the "2. Preventive Maintenance" in the Service Manual.)
- Make sure the room is well ventilated before using any organic cleaner. Always use organic solvents in small amounts to avoid breathing the fumes and becoming nauseous.

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- Switch the machine off, unplug it, and allow it to cool before doing preventive maintenance. To avoid fire or explosion, never use an organic cleaner near any component that generates heat.
 - Wash your hands thoroughly after cleaning parts with an organic cleaner to avoid contamination of food, drinks, etc. which could cause illness.

Power Plug and Power Cord

CAUTION

- Before servicing the machine (especially when responding to a service call), always make sure that the power plug has been inserted completely into the power source. A partially inserted plug could lead to heat generation (due to a power surge caused by high resistance) and cause a fire or other problems.
- Always check the power plug and make sure that it is free of dust and lint. Clean it if necessary. A dirty plug can generate heat and cause a fire.
- Inspect the entire length of the power cord for cuts or other damage. Replace the power cord if necessary. A frayed or otherwise damaged power cord can cause a short circuit which could lead to a fire or personal injury from electrical shock.
- Check the length of the power cord between the machine and power supply. Make sure the power cord is not coiled or wrapped around any object such as a table leg. Coiling the power cord can cause excessive heat to build up and could cause a fire.
- Make sure that the area around the power source is free of obstacles so the power cord can be removed quickly in case of an emergency.
- Make sure that the power cord is grounded (earthed) at the power source with the ground wire on the plug.
- Connect the power cord directly into the power source. Never use an extension cord.
- When you disconnect the power plug from the power source, always pull the plug, not the cable.

After Installation Servicing

Disposal of Used Items

WARNING

- Ink is flammable. Never attempt to incinerate empty ink cartridges.

CAUTION

- Always dispose of used items in accordance with the local laws and regulations regarding the disposal of such items.

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- To protect the environment, never dispose of this product or any kind of waste from consumables at a household waste collection point. Dispose of these items at one of our dealers or at an authorized collection site.

Points to Confirm with Operators

At the end of installation or a service call, instruct the user about use of the machine. Emphasize the following points.

- Show operators how to remove jammed paper and troubleshoot other minor problems by following the procedures described in the operating instructions.
- Point out the parts inside the machine that they should never touch or attempt to remove.
- Confirm that operators know how to store and dispose of consumables such as ink cartridges, ammonia water, paper, etc.
- Make sure that all operators have access to an operating instruction manual for the machine.
- Confirm that operators have read and understand all the safety instructions described in the operating instructions.
- Demonstrate how to turn off the power and disconnect the power plug (by pulling the plug, not the cord) if any of the following events occur:
 1. Something has spilled into the product.
 2. Service or repair of the product is necessary.
 3. The product cover has been damaged.
- Caution operators about removing paper fasteners around the machine. They should never allow paper clips, staples, or any other small metallic objects to fall into the product.

Important

- Make sure the operators understand the following points:
- The operator must lift the output tray to release the paper cassette before loading paper.
- Paper is loaded in the standard paper cassette without removing it from the machine.
- The operator should never attempt to remove the paper cassette from the machine.

Special Safety Instructions For Ink Cartridges

Accidental Exposure To Ink

CAUTION

- If ink gets on the skin, wash the affected area immediately with soap and cold running water.

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- If ink gets into the eyes, immediately flush the eyes with cold running water. If there are signs of irritation or other problems, seek medical attention.
 - If ink is swallowed, drink a strong solution of cold water and table salt to induce vomiting. Seek medical attention immediately.
 - Ink is difficult to remove from fabric. Work carefully to avoid staining clothing when performing routine maintenance or replacing cartridges.

Handling and Storing Ink Cartridges

WARNING

- Ink is flammable. Never store ink cartridges in a location where they will be exposed to high temperature or an open flame.

CAUTION

- Always store ink cartridges out of the reach of children.
- Always store ink cartridges in a cool, dry location that is not exposed to direct sunlight.

Ink Cartridge Disposal

CAUTION

- Attach the caps to empty ink containers for temporary storage to avoid accidental spillage.
- Return empty ink cartridges to a local dealer who can accept such items for collection and recycling or disposal.
- If the customer decides to dispose of empty ink cartridges, make sure that they are disposed of in accordance with local laws and regulations.

Safety Instructions for This Machine

Introduction

- This manual contains detailed instructions and notes on the operation and use of this machine. For your safety and benefit, read this manual carefully before using the machine. Keep this manual in a handy place for quick reference.
- Important
- Contents of this manual are subject to change without prior notice. In no event will the company be liable for direct, indirect, special, incidental, or consequential damages as a result of handling or operating the machine.
- Do not copy or print any item for which reproduction is prohibited by law.

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- Copying or printing the following items is generally prohibited by local law: bank notes, revenue stamps, bonds, stock certificates, bank drafts, checks, passports, driver's licenses.
 - The preceding list is meant as a guide only and is not inclusive. We assume no responsibility for its completeness or accuracy. If you have any questions concerning the legality of copying or printing certain items, consult with your legal advisor.
 - This machine is equipped with a function that prevents making counterfeit bank bills. Due to this function the original images similar to bank bills may not be copied properly.

 **Note**

- Some illustrations in this manual might be slightly different from the machine.
- For good print quality, the supplier recommends that you use genuine print cartridges from the supplier.
- The supplier shall not be responsible for any damage or expense that might result from the use of parts other than genuine parts from the supplier with your office products.

Power Source

- 220-240 V or more, 50 / 60 Hz, A or more
- Voltage must not fluctuate more than 10%.
- Please be sure to connect the power cable to a power source as above.
- Confirm that the wall outlet is near the machine and freely accessible, so that in event of an emergency, it can be un-plugged easily.

 **WARNING**

- Disconnect the power plug (by pulling the plug, not the cable) if the power cable or plug becomes frayed or otherwise damaged.
- The supplied power cord is for use with this equipment only. Do not use with other appliances. Doing so may result in fire, electric shock, or injury.
- Connect the machine only to the power source described on the inside front cover of this manual. Connect the power cord directly into a wall outlet and do not use an extension cord.
- Avoid multi-wiring.
- Do not damage, break or make any modifications to the power cord. Do not place heavy objects on it. Do not pull it hard nor bend it more than necessary. These actions could cause an electric shock or fire.
- Do not plug or unplug the power cord with your hands wet. Otherwise, an electric shock might occur.
- To avoid hazardous electric shock, do not remove any covers or screws other than those specified in this manual. When the machine needs to be checked, adjusted, or repaired, contact your service representative.
- Do not take apart or attempt any modifications to this machine. There is a risk of fire, electric shock, explosion or loss of sight. If by any chance this machine falls over or a breakage occurs (e.g. the cover), turn off the main switch, unplug the power cable and contact your service representative. If you continue to use the machine in this state it could result in fire or electric shock.

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- If metal, liquid or foreign matter falls into the machine, turn off the operation and main power switches, and unplug the main power cord. Contact your service representative. Do not keep using the machine with a fault or defect.
 - If the power cord is damaged (exposure of the core, disconnection, etc.), contact your service representative to change to a new one. Operating the machine with a damaged power cord may cause an electric shock or fire.
 - Do not put any metal objects or containers holding water (e.g. vases, flowerpots, glasses) on the machine. If the contents fall inside the machine, a fire or electric shock could occur.
 - Keep the machine away from flammable liquids, gases, and aerosols. A fire or an electric shock might occur.
 - Disposal can take place at our authorized dealer.
 - Dispose of used ink containers in accordance with local regulations.
 - The wall outlet shall be installed near the machine and shall be easily accessible.

CAUTION

- Protect the machine from dampness or wet weather, such as rain and snow.
- Keep the machine away from humidity and dust. Otherwise a fire or an electric shock might occur.
- Do not place the machine on an unstable or tilted surface. If it topples over, an injury might occur.
- If you use the machine in a confined space, make sure there is a continuous air turnover.
- Unplug the power cord from the wall outlet before you move the machine. While moving the machine, you should take care that the power cord will not be damaged under the machine.
- Before moving the machine, be sure to disconnect all external connections, especially the power cord from the wall outlet. Damaged power cords are a fire and electric shock hazard.
- When the machine will not be used for a long time, unplug the power code.
- When you disconnect the power plug from the wall outlet, always pull the plug (not the cable).
- Our products are engineered to meet high standards of quality and functionality, and we recommend that you use only the expendable supplies available at an authorized dealer.
- Deliver to waste product collection areas. Do not dispose of via domestic refuse collection.
- The Toscana-C1a weighs approximately 20 kg (44 lb.), the Toscana-C1b 23 kg (50.7 lb.), and the Toscana-C1bN 23.5 kg (51.8 lb.)
- When moving the machine, use the indented sections on the side's lower edge, and lift slowly.
- During operation, rollers for transporting the paper and originals revolve. A safety device is being installed so that the machine can be operated safely. But take care not to touch the machine during operation. An injury might occur.
- When the optional paper tray unit is installed, do not push the upper part of the main unit horizontally. An injury might occur if the paper tray unit becomes detached from the main unit.

-
- For environmental reasons, do not dispose of the machine or expended supply waste at household waste collection points. Disposal can take place at an authorized dealer.
 - If ink or used ink is inhaled, gargle with plenty of water and move into a fresh air environment. Consult a doctor if necessary.
 - If ink is ingested, induce vomiting by drinking a strong saline solution. Consult a doctor immediately.
 - If ink gets into your eyes, immediately rinse your eyes under running water. Consult a doctor if you have a problem.
 - Avoid getting ink on your clothes or skin when removing a paper jam or replacing ink cartridges. If your skin comes into contact with ink, wash the affected area thoroughly with soap and water.
 - If ink gets on your clothing, wash with cold water. Hot water will set the ink into stain impossible.
 - Keep the ink or ink container out of reach of children.
 - Do not look into the lamp - it can damage your eyes.

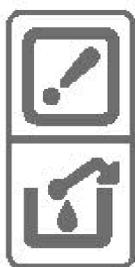
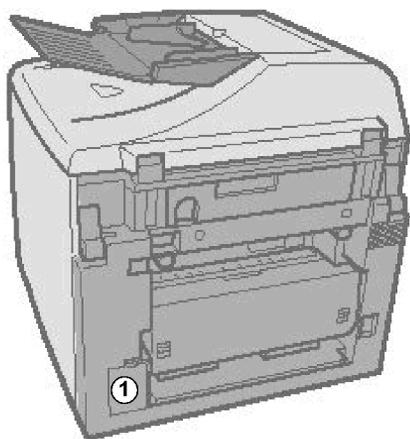
 **Important**

- **Rating voltage of the connector for option: Max. DC 37 V.**

 **Note**

- When you use this machine for a long time in a confined space without good ventilation, you may detect an odd smell. To keep the workplace comfortable, we recommend that you keep it well ventilated.

Ink Collection Caution Labels



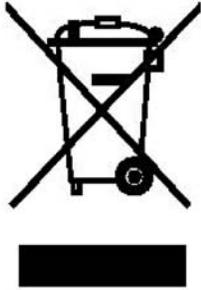
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Caution labels are affixed on the ink collector unit ① to remind you to handle it carefully to avoid ink spillage.

User Information on Electrical & Electronic Equipment

Users in the EU, Switzerland and Norway

- Our Products contain high quality components and are designed to facilitate recycling.
- Our products or product packaging are marked with the symbol below.



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- The symbol indicates that the product must not be treated as municipal waste. It must be disposed of separately via the appropriate return and collection systems available. By following these instructions you ensure that this product is treated correctly and help to reduce potential impacts on the environment and human health, which could otherwise result from inappropriate handling. Recycling of products helps to conserve natural resources and protect the environment.
- For more detailed information on collection and recycling systems for this product, please contact the shop where you purchased it, your local dealer or sales/service representatives.

All Other Users

- If you wish to discard this product, please contact your local authorities, the shop where you bought this product, your local dealer or sales/service representatives.

International ENERGY STAR® Office Equipment Program



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- The International ENERGY STAR® Office Equipment Program encourages energy conservation by promoting energy efficient computers and other office equipment.
- The program backs the development and dissemination of products that feature energy saving functions.
- It is an open program in which manufacturers participate voluntarily.
- Targeted products are computers, monitors, printers, facsimiles, copiers, scanners, and multifunction devices. Energy Star standards and logos are internationally uniform.

 WARNING

- Never attempt to replace a battery on a printed circuit board. Replacing a battery with the incorrect type could cause the battery to explode. If there is a problem with a circuit board replace the entire board as a single unit.
- Always obey the local laws and regulations regarding the disposal of used batteries, PCBs and other electrical components.

Conventions Used in This Manual

Machine References

This service manual describes servicing and maintenance of the three Toscana-C1 machines:

Toscana-C1a (J012), Toscana-C1b (J013), and Toscana-C1bN (J014). The "Model No." is not used in this Service Manual.

Machine No.	Production Name	Model No.	Comments
J012	Toscana-C1a	GX3000S	No ARDF, no fax, NIB is an option (requires installation)
J013	Toscana-C1b	GX3000SF	NIB an option (requires installation).
J014	Toscana-C1bN	GX3000SFN	NIB standard (no NIB installation required)

The following options are available for the J012, J013, and J014.

No.	Option Name	For Machine
J509	Paper Feed Unit TK2000	J012/J013/J014
J507	Multi Bypass Tray Type BY1000	J012/J013/J014
J510	Network Interface Board Type GX4	J012/J013 (Standard for J014)

Note

- The duplex unit attached to the back of the machine is standard for the J012/J013/J014 and must always remain installed for the machines to operate properly. The duplex unit can be easily removed, however, for servicing.

The J012/J013/J014 machines are provided with four starter print cartridges for installation. Thereafter, the following print cartridges are used for all three machines.

No.	Name
J737	Print Cartridge GC 21Y
J736	Print Cartridge GC 21M
J735	Print Cartridge GC 21C

No.	Name
J734	Print Cartridge GC 21K

Operation Panel Procedures

Symbol	What It Means
[]	Square brackets denote keys on the operation panel.
[107]	Press the [1] key and release, press the [2] and release, then press the [7] key and release.
[Form Feed]*[Clear/Stop]	The asterisk indicates keys that should be pressed at the same time.
>	A right angle bracket denotes what should appear on the display, or the next key to press.
" "	Quotation marks denote items (selections, messages, etc.) that appear for selection on the display panel of the machine.
[▲] or [▼]	Press either the up or down arrow on the scroll key
[◀] or [▶]	Press either the left or right arrow on the scroll key.

Example

Machine operation panel procedures are abbreviated to reduce the needless repetition of words and make procedures easier to read.

What You See	What This Means
1.[Menu]	1. Press the [Menu] key.
2. [▲] or [▼] > "System Settings?" > [Yes].	2. Press either the [▲] or [▼] key to display "System Settings" then press the [Yes] key.
3. [▲] or [▼] > "Language?" > [Yes]	3. Press either the [▲] or [▼] key to display "Language" then press the [Yes] key.
4. [▲] or [▼] to select the desired language > [Yes]	4. Press either the [▲] or [▼] to show the desired language then press the [Yes] key.
5. [No] to return to the previous display.	5. Press the [No] key to return to the previous display..

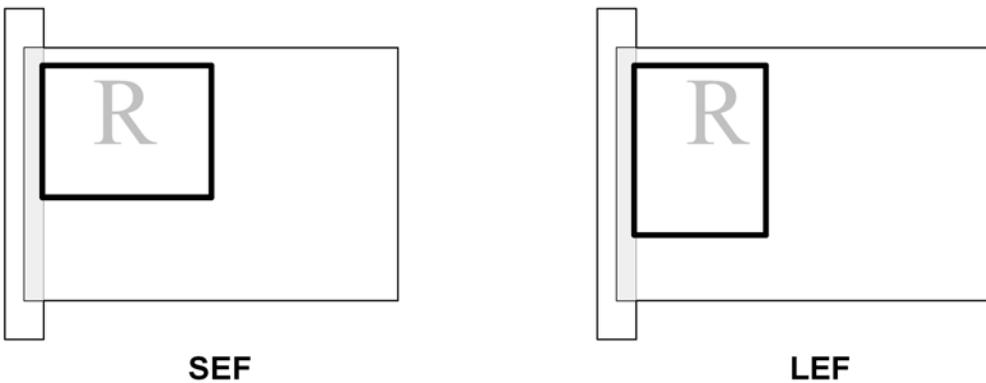
What You See	What This Means
6. [Clear Modes] to return to standby.	6. Press [Clear Modes] to close the menu and return to the standby (operation) mode.

Graphic Symbols and Abbreviations

This manual uses several symbols in section "3. Replacement and Adjustment".

Symbol	What It Means
	Screw
	Connector
	E-ring
	Clip ring
	Clamp

This manual uses SEF (Short Edge Feed) and LEF (Long Edge Feed) to denote paper orientation.



Warnings, Cautions, Notes

In this manual, the following important symbols and notations are used.

WARNING

- A Warning indicates a potentially hazardous situation. Failure to obey a Warning could result in death or serious injury.

CAUTION

- A Caution indicates a potentially hazardous situation. Failure to obey a Caution could result in minor or moderate injury or damage to the machine or other property.

Important

- Obey these guidelines to avoid problems such as misfeeds, damage to originals, loss of valuable data and to prevent damage to the machine

Note

- This information provides tips and advice about how to best service the machine.

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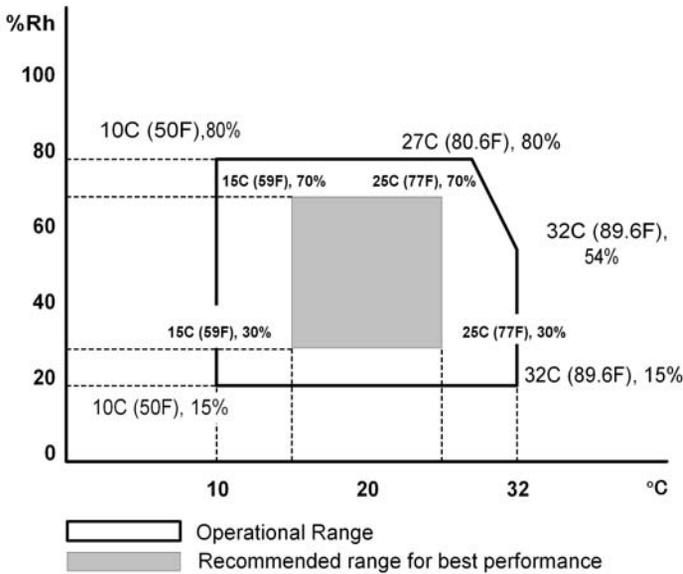


1. Installation

Preparation

1

Environment



Set up the machine in a location that meets these minimum requirements:

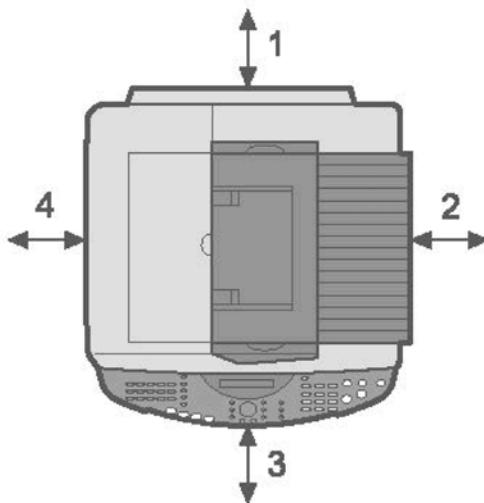
Temperature Range:	10°C to 32°C (50°F to 89.6°F)
Humidity Range:	15% to 80% RH
Ambient Illumination:	Less than 1,500 Lux (never expose to direct sunlight).
Ventilation:	More than 30 m ³ /hr/person in the work area
Ambient Dust:	Less than 0.10 mg/m ³

Choosing a Location

1. Always install the machine:
 - On a sturdy, level surface.
 - Where it will not be exposed to either very low or very high humidity.

2. Make sure the machine is never exposed to:
 - Extreme changes from low to high temperature or high to low temperature.
 - Cold or cool air directly from an air conditioner.
 - Heat from a space heater.
3. Never install the machine in areas near:
 - Dust, lint, or corrosive fumes.
 - Strong vibration.
4. Do not use the machine at any location higher than 2,000 m (6,500 ft) above sea level.
5. Set up and use the machine on a sturdy, level surface.
 - Place a carpenter's level on the machine front-to-back, and side-to-side and confirm that it is level.
 - Variations between the front/back and left/right level readings should be less than 2 degrees.

Minimum Space Requirements



j014i902

No.	Minimum Clearance	Comments
1	120 mm (4.8 in.)	Without Multi Bypass Tray
	230 mm (9.1 in.)	With Multi Bypass Tray
2	50 mm (2 in.)	Applies to J012

No.	Minimum Clearance	Comments
	75 mm (3 in.)	Applies to J013/J014
3	190 mm (7.5 in.)	
4	50 mm (2 in.)	

Power Source

North America	100-120 V, 50-60 Hz
Europe	220-240V 50-60 Hz

Computer Hardware and Software

Here are some important notes about computer hardware and software.

- Minimum requirements.

Computer	PC/AT compatible with USB interface	
OS	Windows 98, Windows Me, Windows 2000, Windows XP, Windows Server 2003, Windows NT 4.0 or later	
HDD	Toscana-C1a (J012)	240 MB
	Toscana-C1b (J013)	295 MB
	Toscana-C1bN (J014)	300 MB

- For Windows NT 4.0, IE 4.0 or later is required.
- Windows NT 4.0 does not support USB connection with this machine. Connect the machine through a network connection.
- The following operating systems support USB connection: Windows 98, Windows Me, Windows 2000, Windows XP, Windows Server 2003.
- The following memory capacities are required for optimum performance. These are minimum requirements. More memory is strongly recommended.

Operating System	Minimum Memory Required
Windows 98	64 MB

Operating System	Minimum Memory Required
Windows 2000	128 MB
Windows XP	128 MB
Windows Server 2003	256 MB
Windows NT 4.0	64 MB

- This machine does not support operation with Windows XP 64-Bit Edition or Windows Server 2003 64-Bit Edition.

Using the Operation Panel

Here is a brief description of how to use the keys on the operation panel. The operation panel below is for the J012. It has fewer keys because it does not support the fax function.



j014:935

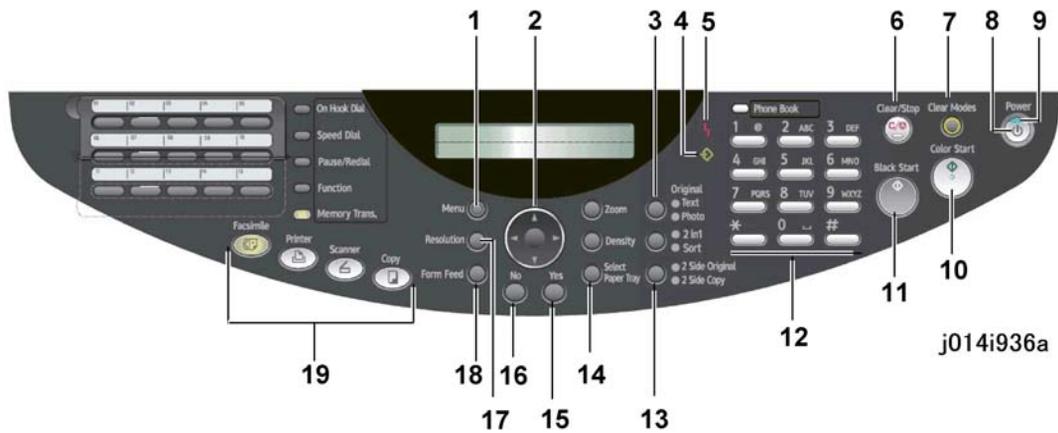
The operation panel below is common for the J013/J014 and has all the fax keys on the left because both machines support the fax function.



j014:936

Summary of Important Operation Panel Keys

For a more detailed summary about the operation panel keys, please refer to the User Guide. Only the most important keys that may be required for servicing and maintenance are described below.



	Key/Indicator	What It Does
1	Menu	Displays the menus for machine settings.
2	Scroll	Scrolls menu items in the direction indicated by the arrow on the edge of the round jogger button. The menus are rotational. If you press [▼] or [▶] with the last item displayed, the display will rotate to the first item of the list. Similarly, if you press [▲] or [◀] with the first items displayed, the display will rotate to the last item of the list.
3	Text/Photo	Press to select the optimum scanning method for the original. Pressing this key toggles the setting between "Text", "Photo", and "Text/Photo". <ul style="list-style-type: none"> • Text. Text LED on. For documents that contain only text. • Photo. Photo LED on. For photographs, printed matter with photos (magazines, etc.) • Text and Photo. Both LEDs on. Allows the machine to set automatically the optimum settings for an original that contains both text and photos.
4	Data-in ⇄	Flashes while the machine is receiving a print job. Lights and remains on when there is data in the machine that has not printed.
5	Alert ⚠	Lights when an error occurs. <ul style="list-style-type: none"> • Red. An error has occurred and printing cannot continue. Follow the instructions on the computer screen to solve the problem. • Yellow. Indicates a potential problem (precedes the red alert).
6	Clear/Stop	Has two functions: <ul style="list-style-type: none"> • Stops a print job in progress.

	Key/Indicator	What It Does
		<ul style="list-style-type: none"> Clears all text from the line in the menu mode during text entry (line delete to erase a line of entered text).
7	Clear Modes	Clears the current settings and resets the default settings. Settings other than those specified for the current job are also reset.
8	Power	Depress for at least 1 sec. to switch the machine on and off.
9	Power LED	Lights and remains on while the machine is powered on. Flashes while the machine is warming up.
10	Color Start	Press to scan in color.
11	B&W Start	Press to scan in black and white.
12	Numbers	Use to enter numbers (and text) in the operation display panel.
13	2-Sided Original / 2-Sided Copy	<p>Pressing this key toggles the settings. The LED shows which function is selected.</p> <ul style="list-style-type: none"> 2-Sided Original. Enables scanning of double-sided originals 2-Sided Copy. Duplex prints an original with pages printed on one side.
14	Select Paper Tray	Selects the paper feed source: Tray 1, Tray 2 (option), Multi Bypass Tray (option).
15	Yes	Press to enter an item selected from a menu or a value entered with the 10-key pad.
16	No	Cancels an operation or returns to the previous display in the menu mode.
17	Resolution	Toggles the resolution settings for scanning: STD (Standard), H.Qty. (High Quality), Fast (draft). Also selects the resolution for fax sending: Std, Detail, S-Fine, F/Ht.
18	Form Feed	Press to print all data that remains in the machine when the Data-in LED is on. Do this to force the machine too print data received but not printed because the paper size or paper type settings do not match.
19	Function	Displays the operation screens of the printer, copier, or fax.

Entering Text

Occasionally you may need to enter text to do machine settings. Text entry is limited to these keys:

- All numbers and letters of the alphabet are entered with the number keys.
- The asterisk key (*****) is used to toggle between number and letter entry modes.

Press [*****] to toggle between the number and text entry mode.

- "[1]" appears on the operation panel display in the number entry mode.
- "[A]" appears on the operation panel in text entry mode.

To enter numbers

Enter numbers with "[1]" on the operation panel display.

1. Press the number key to enter the number.
2. To enter the same number again, press [▶] then press the same number key again.
3. To delete a number move [◀] or [▶] the cursor to the number to delete then press [No]. This deletes the number at the cursor position.
4. To enter a plus sign (+), minus sign (-), ampersand (&), or slash (/) press [#] then [▶] to select the symbol that you want to enter.

To enter text

The number keys are used to enter text. Enter text with "[A]" on the operation panel display.

5. If "[1]" is on the display, press [*****] to change it to "[A]".
6. Press the appropriate number key (see table below).
7. [◀] or [▶] the letter to enter then press the same number key again.
8. To delete a letter, move the cursor [◀] or [▶] to the letter to delete then press [No]. This deletes the letter at the cursor position.

Number Key	Characters available by pressing the key more than once
1	. → @ → _ → - * ¹
2	A → B → C → a → b → c → Ä * ² → ä * ² → Å * ² → å * ² → Æ * ² → æ * ² → ð * ² → Ç * ² → ç * ²
3	D → E → F → d → e → f → É * ² → é * ² → È * ²
4	G → H → I → g → h → i * ² → j * ² → k * ² → l * ²
5	J → K → L → j → k → l
6	M → N → O → m → n → o * ² → Ñ * ² → ñ * ² → Ö * ² → ö * ² → Ø * ² → ø * ² → ù * ²
7	P → Q → R → S → p → q → r → s → ß * ²
8	T → U → V → t → u → v * ² → Ü * ² → ü * ² → Ů * ² → ů * ²
9	W → X → Y → Z → w → x → y → z
0	0
*	
#	Space → - → . → * → # → → " → ' → , → ; → ^ → ` → _ → = → / → → ? → \$ → @ → % → & → + → (→) → { → } → < → >

*¹ This appears when entering an e-mail address.

*² This appears when entering a name.

j014i937

Quick Summary of Important Procedures

Here are some more details about how to use these keys. For more about correcting image problems, please refer to section "4. Troubleshooting" of this Service Manual.

↓ Note

- During the following procedures in the menu mode, the machine will automatically leave the menu mode and return to standby mode if a key is not pressed for 60 sec.

To turn the machine on and off

1. To turn the machine on, press and hold the [Power] key for at least 1 sec.

The [Power] LED lights and "Please Wait" appears on the operation panel display until the machine has warmed up. When the machine is ready for operation, the [Power] key LED lights and the Copy mode display appears.

2. Press [Power] and hold for at least 1 sec. The power LED flashes slowly for a few seconds and then goes off.

To print the Config. Page (System Summary)

1. [Menu]> "System Settings"
2. [▲] or [▼] > "Engine Settings?"> [Yes]
3. [▲] or [▼] > "2 List/Test Print?"> [Yes]> "Configuration Page?"
4. [Yes]> "Please Wait" displays as the report prints.

To print a Nozzle Check Pattern

1. [Menu]> "System Settings"
2. [▲] or [▼] > "Maintenance" > [Yes]> "Nozzle Check?"
3. [Yes]> "*Please Wait*" displays as the pattern prints.
4. [▲] or [▼] > "Nozzle Check" > [Yes]. The Nozzle Check pattern prints.
5. [Clear Modes] to return to the initial screen.

Note

- For more about how to use the Nozzle Check pattern to diagnose and correct problems, see Section 4 "Troubleshooting".

To clean the print heads

★ Important

- **Before cleaning the print heads always do a Nozzle Check to determine which color is not printing. The print heads should be cleaned only if a problem exists.**

To clean the print heads:

Do print head cleaning at least three times before you do head-flushing. Print a Nozzle Check to check the results of each cleaning.

1. Pull the release under the operation panel forward and raise the scanner unit.
2. Confirm that the envelope selector is forward.
3. [Menu]> "System Settings?"
4. [▲] or [▼] > "Maintenance" > [Yes]> "1 Nozzle Check?"
5. [▲] or [▼] > "2 Head-cleaning"> [Yes]> "All Heads"
6. [◀] or [▶] > Select the print heads to be cleaned: "All" (all print heads), "Print-head 1" (Black/Cyan), "Print-head 2" (Magenta/Yellow) > [Yes]
 "*Please Wait*" displays until cleaning is finished. Do not start any other operation until cleaning stops.
7. [Clear Modes]

- If the problem is solved by print head cleaning, print head flushing is not required.
- If print head cleaning does not solve the problem, flush the print heads (described in the next procedure).

↓ Note

- You can also clean all the print heads by pressing and holding down [Form Feed] for 3 sec. and then releasing it.

1

To flush the print heads

1. Pull the release under the operation panel forward and raise the scanner unit.
2. Confirm that the envelope selector is forward.
3. [Menu]> "System Settings?"
4. [▲] or [▼] > "Maintenance" > [Yes]> "1 Nozzle Check?"
5. [▲] or [▼] > "2 Head-flushing"> [Yes]> "All Heads"
6. [◀] or [▶] > Select the print heads to be flushed: "All" (all print heads), "Print-head 1" (Black/Cyan), "Print-head 2" (Magenta/Yellow) > [Yes]
 "**Please Wait**" displays until flushing is finished. Do not start any other operation until cleaning stops.
7. [Clear Modes]

★ Important

- **Print head cleaning and flushing both consume ink, but flushing consumes more ink than cleaning. Flush the print head nozzles only if three cleanings do not solve the problem.**

To feed 1 blank sheet (paper feed test):

1. [Menu]> "System Settings?"
2. [▲] or [▼] > "Maintenance?" > [Yes]> "1 Nozzle Check?"
3. [▲] or [▼] > "7 Paper Feed Test?" > [Yes]. One blank sheet of paper feeds.
4. [Clear Modes] > Standby

To feed 3 blank sheets (to remove moisture):

1. [Menu]> "System Settings?"
2. [▲] or [▼] > "Maintenance?" > [Yes]> "1 Nozzle Check?"
3. [▲] or [▼] > "8 De-condensation?" > [Yes]. Three blank sheets of paper feed.
4. [Clear Modes] > Standby

Installation Procedure

1

What You Need

- LAN cable.
- USB cable

These items are not supplied with the machine.

Accessory Check

Check the accessories and their quantities against this list.

No.	Item	Qty
1	Paper Tray	1
2	Output Tray	1
3	Duplex Unit	1
4	Branding Plaque * 1	3
5	Print cartridges *2	4
7	Power Cord *3	1
8	CD-ROM (Printer Driver, HTML Manual)	1
9	CD-ROM (Printer Driver, HTML Manual) EU languages	1
10	Quick Installation Procedure (English)	1
11	Quick Installation Procedure (10 Languages)	1
12	Safety Information (English)	1
13	Safety Information (10 languages)	1
14	Warranty Statement	1
15	User Registration Card	1
16	Help Desk Guide	1
17	Energy Star Sticker	1

No.	Item	Qty
18	Fax Operation Panel Decal (J013/J014 only)	1
19	Rating Nameplate	1
20	Display Initial Language	1
21	WEEE Decal	1
22	CD-ROM Page Manager	1
23	Contact for Page Manager Support	

* 1 Nashuatec, Rexrotary, Gestetner

* 2 Starter Print cartridges

J737	Print Cartridge GC 21Y
J736	Print Cartridge GC 21M
J735	Print Cartridge GC 21C
J734	Print Cartridge GC 21K

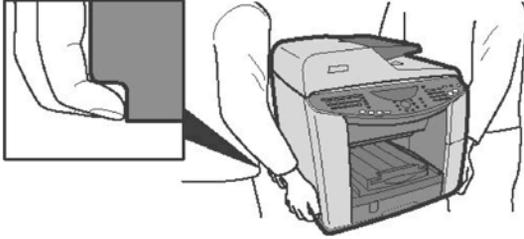
* 3 The power cord is attached to the NA model. The power cord is provided as a separate item for the EU model only.

Remove the Shipping Material

CAUTION

- Before you do any of the procedures in this manual, make sure the printer is turned off and unplugged from the power source. Do not turn the printer on until you instructed to do so.
1. Remove the protective covering.
 2. Remove the plastic bag.

Carrying the Printer



j014i904

1. Lift the machine by the grooves on both sides as shown .

Machine Weight

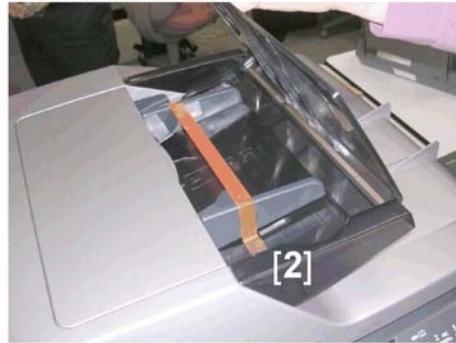
Machine	Weight
J012	20 kg (44 lb.)
J013	23 kg (50.7 lb.)
J014	23.5 kg (51.8 lb.)

2. Move the machine to the location where you want to install it.

★ Important

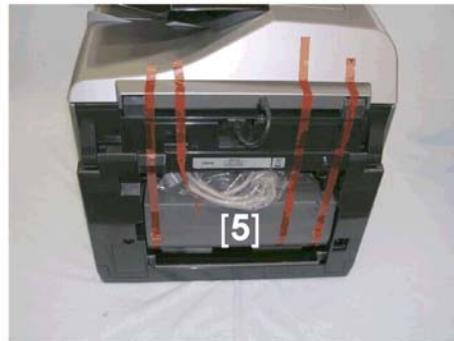
- To prevent damage to the printer, always carry the printer as shown above.

3. Remove all of the orange tape from the machine body.



j014i904a

- [1] Front
- [2] Inside ADF
- [3] Under platen/scanner unit



j014i904b

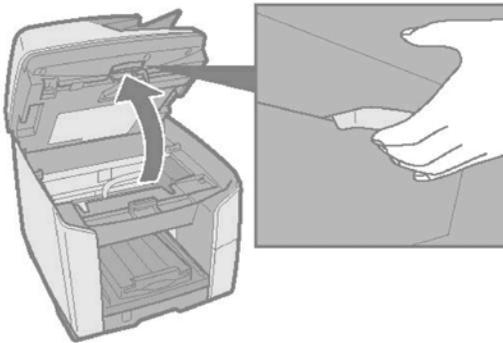
- [4] Under open scanner unit
- [5] Back of machine (remove power cord)



j014i904c

[6] Inside paper cassette

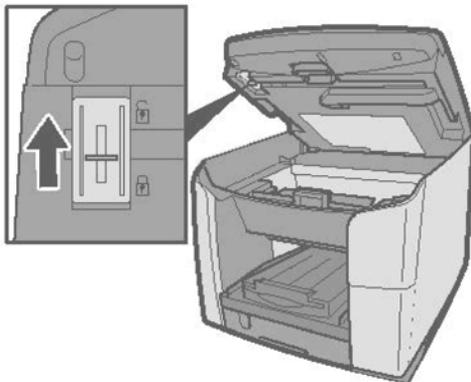
[7] Read instruction sheet and remove



j014i905

4. Pull the scanner unit release lever.

5. Lift the scanner unit.



j014i906

6. Push the shipping lock up to the unlock position.
7. Lower the scanner unit.

★ Important

- Keep the boxes so they can be used again to ship the printer. Before shipping the printer, raise the scanner unit and push the shipping lock down to the lock position. This locks the scanning mechanism so it cannot move during handling and shipping.

1

Install the Print Cartridges

⚠ CAUTION

- If ink gets on the skin, wash the affected area immediately with soap and cold running water.
 - If ink gets into the eyes, immediately flush the eyes with cold running water. If there are signs of irritation or other problems, seek medical attention immediately.
 - If ink is swallowed, drink a strong solution of cold water and table salt to induce vomiting. Seek medical attention immediately.
 - Ink is difficult to remove from fabric. Work carefully to avoid staining clothing when performing routine maintenance or replacing cartridges.
 - Always store print cartridges out of the reach of children.
1. Unpack the four cartridges provided with the printer.

★ Important

- The "Starter" print cartridges provided for installation contain a limited supply of ink. Make sure an additional set of print cartridges (purchased separately) is available. Use only Ricoh Print Cartridges designed for use with this printer.



j014i911

2. Open the right front cover.

3. Remove the Black Print cartridge from its package.

★ Important

- **Never touch the metal contact plate on the rear side.**
 - **Each cartridge is marked with a color label.**
 - **The Cartridge End LED marks below the display show you the order of insertion from left to right (K (Black), C (Cyan), M (Magenta), Y (Yellow)).**
4. Insert the black print cartridge in the first slot on the left.
 5. Press on the area marked "PUSH" to insert the cartridge completely.
 6. Install the other print cartridges.
 7. Make sure that the four cartridges are inserted in this order, from left to right: K (Black), C (Cyan), M (Magenta), Y (Yellow)

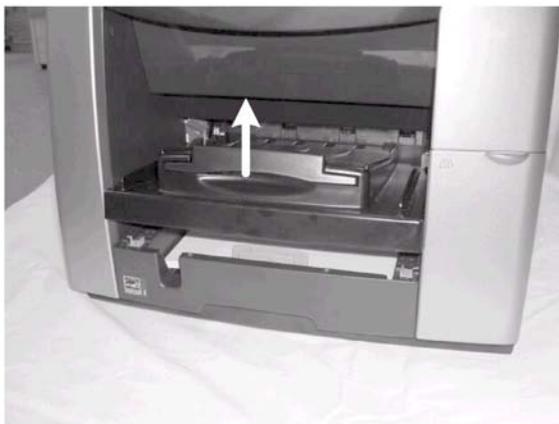


j014i913

8. Close the right front cover.

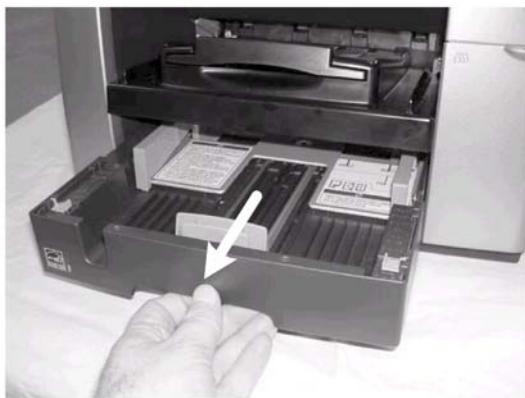
Load Paper

1



j014i914

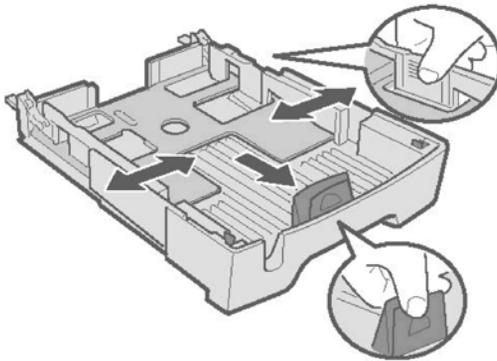
1. Raise the output tray.



j014i915

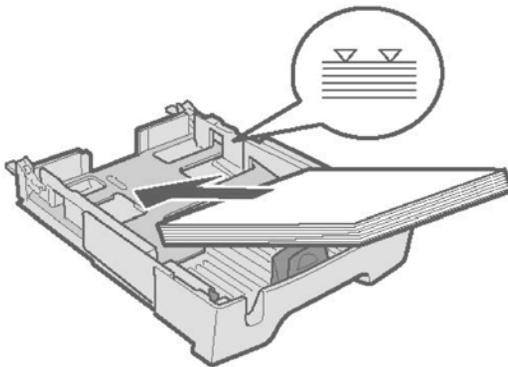
2. Pull the paper tray out of the machine.

1



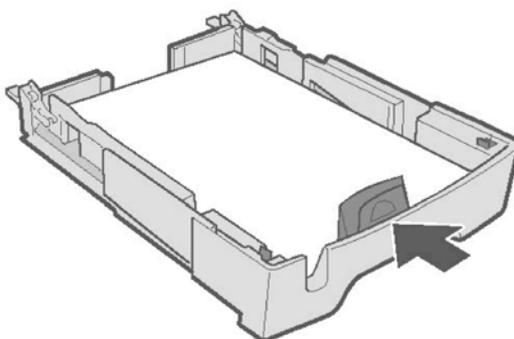
j014i916

3. Squeeze to release the paper guides then slide the guides to a position slightly wider than the paper.
4. Fan the stack to remove static cling.



j014i917

5. Load the stack with the print side face down.
6. Make sure the top of the stack does not exceed the load limit mark.



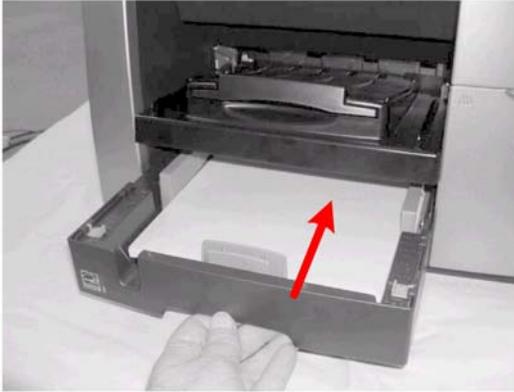
j014i918

- Squeeze the paper guides and slide them to the sides of the paper stack.

Note

- The width side fences and bottom fence should not be too tight against the sides and bottom of the stack.
- If the stack bows upward, the fences are too tight.

- Adjust the side fence positions so the top of the stack is perfectly flat.



j014i919

- Push the tray slowly into the printer until it stops.



j014i920

- Lower the output tray.

Connect the Power Cord

⚠ WARNING

- Always connect the printer to a correct power source.
- Do not share the printer power source with another electrical device or appliance.

- Connect the power cord directly into the power source. Never use an extension cord.
 - Never attempt to modify the power cord in any way.
 - Never put heavy objects on the power cord.
 - Make sure that the area around the power source is free of unwanted obstacles so you can disconnect the power cord quickly in case of an emergency.
 - Make sure the power cord is not coiled or wrapped around any object such as a table or desk leg.
 - Never coil the power cord around itself to make it shorter. This can cause the cord to overheat and cause a fire.
 - Never handle the power cord with wet hands.
1. Remove the orange tape from around the power cord.
 2. Plug the power cord into the power source.
 3. Ground the power cord at the power source with the ground wire attached to the plug.

Complete the Installation

Power On

1. Press the [Power] key.
 - The printer starts pumping ink into the ink tanks.
 - Two alternating messages are displayed with a progress bar to keep you informed about the progress of ink filling.
 - Filling the ink tanks requires about 6 to 10 minutes.
 - Do not use the printer or touch any key on the operation panel until you see the "Ready" message on the operation panel display.
 - As soon as the "Ready" message is displayed, the Power lamp lights and remains on.

★ Important

- **Never switch off the printer or disconnect the power cord while the tanks in the print head are being filled for the first time.**
- **If you accidentally turn the printer off while the ink tanks are filling, the printer will dump the ink and empty the tanks. The next time the printer is turned on, it will display the 'ink out' alert**
- **You might hear a clicking sound while the ink tanks are filling. This is normal and the noise will stop after a few minutes.**

★ Important

- **This printer has no mechanism to automatically detect tray paper size and type.**

- The paper size and type must be set with the menu on the operation panel.
- Do the paper type setting for the paper loaded in the printer cassette (A4, Plain or LT Plain, for example).

Select Country and Language

↓ Note

- The default settings for "Country" and "Language" are "USA" and "English".
1. [Menu]> "System Settings?"> [Yes]>"1 Auto Reset Time?".
 2. [▲] or [▼] > "7 Country?"> [Yes]> "USA?"
 3. [▲] or [▼] > Select country name> [Yes]> "System Settings"> [Yes]> "1 Auto Reset Time?"
 4. [▲] or [▼] > "4 Language"> [Yes]> "English?"
 5. [▲] or [▼] > Select the language> [Yes]

Please Re-start
Power Off On

6. Cycle the machine off/on to set the language for the menu displays.

Set Paper Type and Size for Tray 1

1. [Menu]> "System Settings?"
2. [▲] or [▼] > "Tray Paper Setting?"> [Yes]> "Tray 1?"
3. [Yes]> "Paper Type?"> [Yes]> "Plain Paper?"
4. [▲] or [▼] > Select the type of paper that will be loaded in Tray 1
5. [Yes]> "Tray Paper Setting?"> [Yes] "Tray 1?"> [Yes]> "Paper Type?"
6. [▲] or [▼] > "Paper Size?"> [Yes]
7. [▲] or [▼] > Select the size of paper that will be loaded in Tray 1
8. [Yes]> "Tray Paper Setting?"
9. [Clear Modes> Standby
10. Cycle the machine off/on.

Do a Nozzle Check

1. [Menu]> "System Settings?"
2. [▲] or [▼] > "Maintenance" > [Yes]> "Nozzle Check?"
3. [Yes]> "*Please Wait*" displays as the pattern prints.

4. [▲] or [▼] > "Nozzle Check" > [Yes]. The Nozzle Check pattern prints.
5. [Clear Modes]> Standby

For more about how to use the Nozzle Check pattern to diagnose and correct problems, see Section "4 Troubleshooting".

1

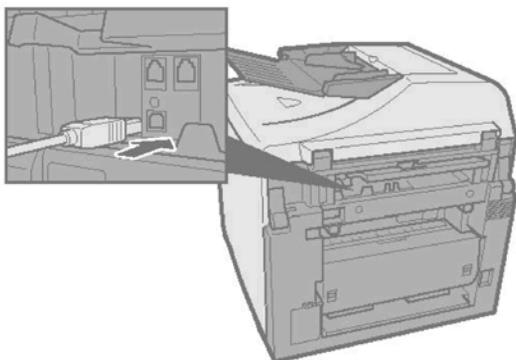
Print a System Summary

1. [Menu]> "System Settings"
2. [▲] or [▼] > "Engine Settings?"> [Yes]
3. [▲] or [▼] > "2 List/Test Print?"> [Yes]> "Configuration Page?"
4. [Yes]> "Please Wait" displays as the report prints.
5. [Clear Modes]> Standby
6. Check the settings.

Install USB and Printer Driver

Connect the USB Cable

1. If the machine is on, switch it off.
2. Turn the computer on and start Windows.



j014i923

3. Remove the seal from the USB slot on the back of the machine.
4. Insert the Type B plug (hexagonal) of the USB cable into the slot.
5. Insert the other plug of the USB cable (Type A: Flat) into a USB slot of the computer.
6. Make sure that both USB cable plugs are firmly inserted.

Install the Printer Driver

The following items are also installed during installation of the printer driver:

- TWAIN Driver (scanner)
- LAN-Fax driver (network and fax operation)
- Device Setting utility
- Online User Guide

↓ Note

- Only the Toscana-C1b and Toscana-C1bN support the LAN-Fax driver and the Device Setting Utility.
- You must log on as a user with administrator rights to do this installation for Windows 2000, Windows XP, or Windows Server 2003

1. Make sure that the machine is off.
2. If the computer is off, turn it on to start Windows.
3. Mount the "Drivers, Manual & Utilities" CD-ROM in the CD-ROM drive.
4. If any other applications are running, close them.
5. If the "Add New Hardware Wizard" appears, click [Cancel] and make sure that the machine power is off.
6. Select an language for the interface and click [OK].
7. Click [Quick Install for USB].
8. Read the license agreement, then click [I accept the agreement]> [Next].
9. Confirm that the machine power is off, then click [Next].
You are prompted to once again confirm that the machine power is off.
10. Make sure the machine power is off, then click [Next].
You should see the "Install Driver" window for "Auto Detect USB Port". Follow the instructions.
11. Press the [Power] key.
12. The installation begins.
If the computer connection was not confirmed, do the port settings again after installation is completed.
If you see one of these messages or dialog boxes, refer to the "Installation Notes" below:
 - Digital Signature Not Found
 - Found New Hardware Wizard
 - Hardware Installation
13. Follow the instructions on the screen to complete the installation.

Installation Notes

If the message "Digital Signature Not Found" appears or if the "Software Installation" or "Hardware Installation" dialog box opens, just click [Yes] or [Continue Anyway] to continue with the installation.

If the "Found New Hardware" dialog box opens:

1. Click [Install from a list or specific location...] then click [Next].
2. Click [Include this location in the search] then click [Browse].
3. Browse to find "DRIVERS" on the CD-ROM then click [OK].
4. Select the folder for your operating system.
5. Clear the [Search remove media...] checkbox.

Note

- The "Drivers, Manual & Utilities" dialog box should appear after the CD-ROM is inserted. If it does not appear, open Explorer or the Control Panel, double-click the CD-ROM icon and then double-click "Setup.exe" to start the installation.
- The User Guide icon appears on the desktop immediately after the installation is finished.
- If you are prompted to restart the computer, restart the computer immediately.

Options

Three options are available for the J012/J013/J014 Series machines.

Option		Tos-C1B J012	Tosc-C1b J013	Tos-C1bN J014
J507	Multi Bypass Tray	Yes	Yes	Yes
J509	Paper Feed Unit	Yes	Yes	Yes
J510	NIB	Yes	Yes	Std* ¹

*¹ Standard (no installation required)

Paper Feed Unit

Install the Paper Feed Unit

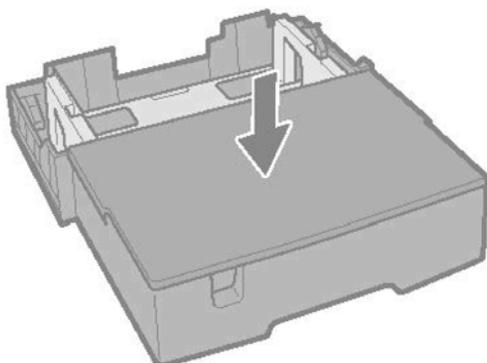
The paper feed unit must be prepared and set up before the machine is placed on top of the unit. Two people are required to lift the machine and place it on top of the Paper Feed Unit (PFU).

Machine Weight

Machine	Weight
Toscana-C1a	20 kg (44 lb.)
Toscana-C1b	23 kg (50.7 lb.)
Toscana-C1bN	23.5 kg (51.8 lb.)

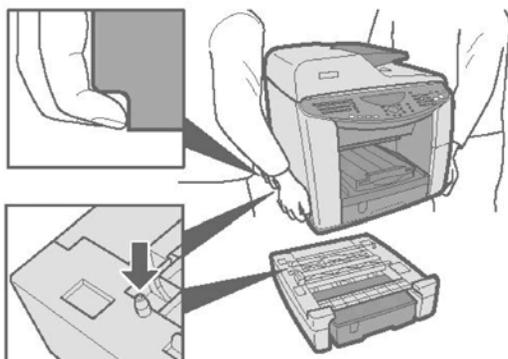
1. Make sure that the machine power cord is not connected to the power source.
2. Remove the paper feed unit (PFU) from its box.
3. Remove all of the orange tape and other shipping materials from the paper feed unit and its paper cassette.

1



j014i907

4. Remove the paper cassette cover from its wrapping and set it on the PFU.
5. Position the PFU where the machine will be set up.
6. Mount the cover on the paper tray.



j014i908

7. Align the connection point holes in the bottom of the machine with the pegs of the paper tray while you hold the machine as shown.
8. Slowly set the machine on top of the PFU.

Load Paper in the Paper Feed Unit

1. Raise the paper tray slightly and pull it toward you to remove it.
2. Remove the paper tray cover.
3. Pinch the tabs of the bottom fence then slide it completely forward.
4. Fan a stack of paper to remove static cling.

5. Load the paper into the cassette.
6. Add paper until it as far as the load limit marks .

★ Important

- To prevent paper jams, never load paper higher than the load limit mark.

7. Pinch the tabs of the bottom fence . Then move it to the edge of the stack.
8. Make sure the top of the stack is perfectly flat. Do this if the top of the stack bends upward:
9. Adjust the positions of the side fences and bottom fence.
10. Reattach the paper tray cover .
11. Slowly insert the paper tray into the machine.
12. Make sure that the paper tray is correctly inserted.

Do the Paper Type/Size Settings for Tray 2

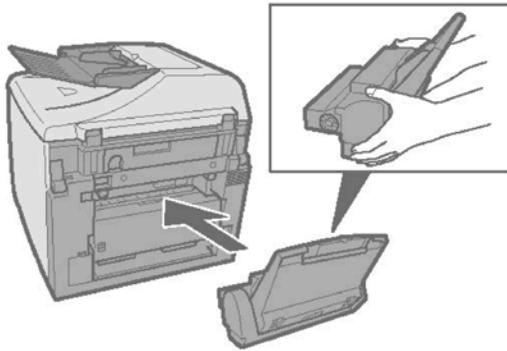
1. [Menu]> "System Settings?"
2. [▲] or [▼] > "Tray Paper Setting?"> [Yes]> "Tray 1?"
3. [▲] or [▼] > "Tray2?"> [Yes]> "Paper Type?"> [Yes]> "Plain Paper?"
4. [▲] or [▼] > Select the type of paper that will be loaded in Tray 2
5. [Yes] > "Tray Paper Setting?"> [Yes] "Tray2?"> [Yes]> "Paper Type?"
6. [▲] or [▼] > "Paper Size?"> [Yes]
7. [▲] or [▼] > Select the size of paper that will be loaded in Tray 2
8. [Yes] > "Tray Paper Setting?"
9. [Clear Modes> Standby
10. Cycle the machine off/on.

Multi Bypass Tray J507

The multi-bypass tray is an option that can be installed on any J012, J013, or J014 machine.

Installing the Multi Bypass Tray

1. Make sure that the machine is switched off and disconnected from its power source.
2. Remove the multi-bypass tray from its box.
3. Remove all the orange shipping tape and plastic from the bypass tray.



j014i910

4. Push the multi-bypass tray into the back of the machine as shown unit it clicks.
5. Pull out the extension of the multi-bypass tray.
6. Load paper in the tray with the print side facing up.

★ Important

- **Never remove the duplex unit from the back of the machine.**
- **The duplex unit is part of the paper feed path and must be installed, even if the customer is not doing duplex printing.**

Set Paper Type and Size for the Multi Bypass Tray

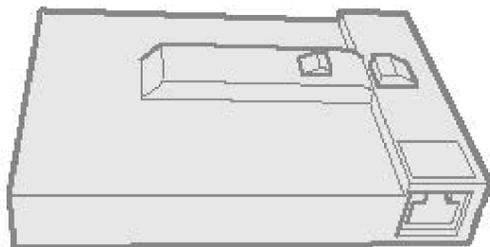
Do the Paper Type/Size Setting for the Multi Bypass Tray

1. [Menu] > "System Settings?"
2. [▲] or [▼] > "Tray Paper Setting?"> [Yes]> "Tray 1?"
3. [▲] or [▼] > "Bypass Tray"
4. [Yes] > "Paper Type?"> [Yes]> "Plain Paper?"
5. [▲] or [▼] > Select the type of paper that will be loaded the Multi Bypass Tray.
6. [Yes] > "Tray Paper Setting?"> [Yes] "Tray 1?"
7. [▲] or [▼] > "Bypass Tray"
8. [▲] or [▼] > "Paper Size?"> [Yes]
9. [▲] or [▼] > Select the size of paper that will be loaded in the Multi Bypass Tray.
10. [Yes] > "Tray Paper Setting?"
11. [Clear Modes]> Standby
12. Cycle the machine off/on.

Network Interface Board J510

The Network Interface Board J510 is an option for the J012/J013 machine only. The network board is built into the J014.

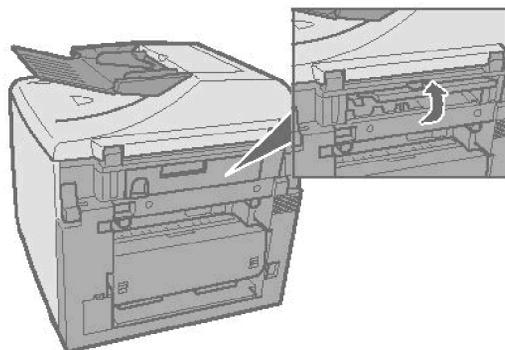
1



j014i933

Install the NIB

1. Check the type of machine to be installed:
 - The network interface board is built into the J014, so the installation procedure described below is not necessary for the J014.
 - However, the Network Interface Board J510 is an option for the J012/J013 and must be installed.
2. Make sure that the machine is switched off and disconnected from its power source.

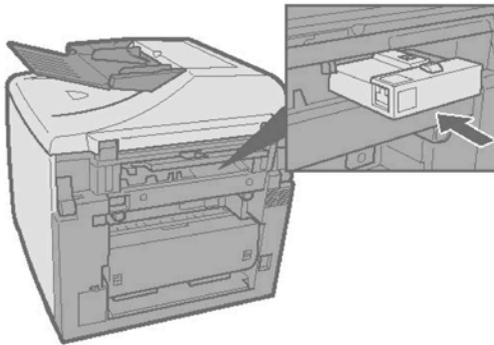


j014i934

3. Lift the connector cover.
4. Before you touch the network interface board, touch a metal surface to ground any static charge.

★ Important

- Handle the network interface board carefully.



j014i909

5. Slowly push the NIB into the machine until it stops.
6. [Power]> Cycle the machine off/on
7. [Menu]> "System Settings?"
8. [▲] or [▼] > "Network Settings?".

If you see "Network Settings" this means the NIB is installed correctly.

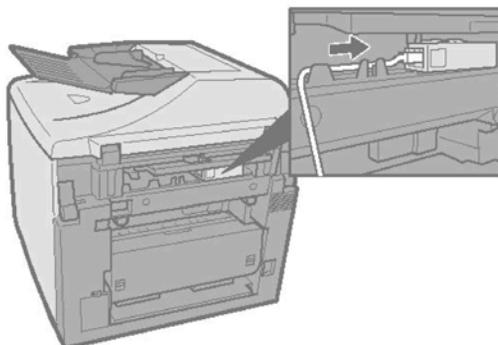
For more about how to connect the Ethernet cable and do the network settings, see the "Quick Installation Guide".

Connect the NIB

Be sure to install the necessary network equipment (a hub, for example) before connecting the Ethernet cable to the machine.

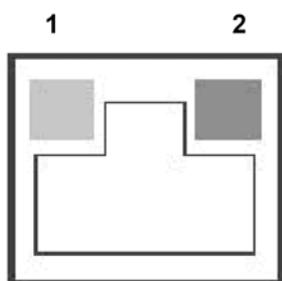
★ Important

- **An Ethernet cable is not provided with the machine. Select a proper cable for the network environment.**
1. Plug the Ethernet cable into the Ethernet port of the machine.



j014i925

2. Connect the other end of the Ethernet cable to the network hub.



j014i926

1 LED 1	Lights GREEN to indicate that the machine is properly connected to the network.
2 LED 2	Lights RED to indicate that 100 Base-TX is operating, and remains off when 10 Base-TX is operating.

Do the Network Settings

Before doing this procedure ask the network administrator for the IP address.

1. If the machine is off, press [Power] to switch it on.
2. [Menu] > "System Settings?"
3. [▲] or [▼] > "Network Settings" > [Yes].

These are the settings on the Network Settings menu.

Setting	Default
1. Machn. IP Address?	Auto
2. Subnet Mask?	0.0.0.0
3. Gateway Address?	0.0.0.0
4. DNS Settings?	Inactive
5. Ethernet Speed?	Auto
6 Reset Ethernt Bd?	

1. [▲] or [▼] > "1 Machn. IP Adress" > [Yes].
2. [◀] or [▶] > "Specify" > [Yes] > "ADDR=169.254.224.136
3. [Number keys] > Enter the IP address > [Yes] > "Network Settings?"

4. [Yes]> "1 Machin. IP Address"
5. Do the settings for "2. Subnet Mask" and "3. Gateway Address".
6. Do the settings for "4. DNS Settings" and "5. Transfer Speed" if these settings are required.

Please Re-start
Power Off On

7. [Power]> Cycle the machine off/on to save the settings.

Important Information

Make sure that the customer understands the following points about moving, storing, and using the machine.

1

Checklist Before Moving the Machine

- Turn the machine off. Disconnect the power cord.

★ Important

- **Never disconnect the power cord without first turning off the machine.**
- To lift the machine, grip it at the center of each side by the hand recesses provided.

Machine	Weight
J012	20 kg (44 lb.)
J013	23 kg (50.7 lb.)
J014	23.5 kg (51.8 lb.)

- Never grip the Duplex Unit on the back of the machine.
- Make sure the covers and trays are closed. Secure them with tape. Attach the tape to the same area you removed it from at the time of installation.
- Disconnect the power cord. Tape the power cord to the back of the machine.
- Remove all paper in the feed trays.
- Do a test print to confirm that the machine operates correctly after you move it to another location. Do the print head cleaning procedures with the machine driver, if necessary.
- The print cartridges should remain in the machine. It is not necessary to remove them before transporting the machine.

★ Important

- **To avoid ink spillage, always hold the machine level when you move it. Never tilt the machine more than 45° from horizontal. Work carefully to avoid dropping it or colliding with other objects in the work area.**

If the Machine Is Not Used Frequently...

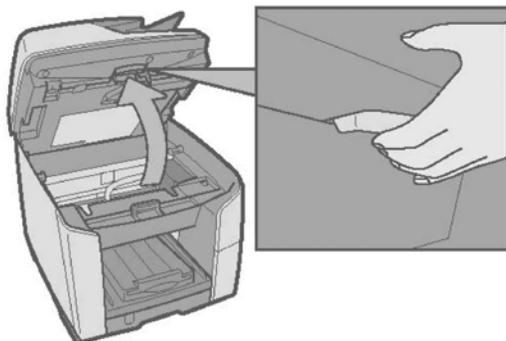
For more information about printing Nozzle Checks, print head cleaning, and flushing, please refer to Section "4. Troubleshooting".

1. Turn the power off, disconnect the USB cable, and unplug the power cord.

2. To prevent the print nozzles from drying out, periodically print something.
3. Turn the machine on for a few minutes once a month.
4. After storage or a long period of disuse, use the printer driver to print a Nozzle Check pattern and then clean the printhead nozzles if necessary. (Be sure to print a Nozzle Check between each cleaning.)
5. Do print head flushing if three consecutive cleanings do not solve the problem.
6. If flushing does not solve the problem, allow the printer to sit idle for about 10 minutes then print another Nozzle Check.
7. If the Nozzle Check print is still not satisfactory, allow the printer to sit idle for at least 8 hours and then print another Nozzle Check.

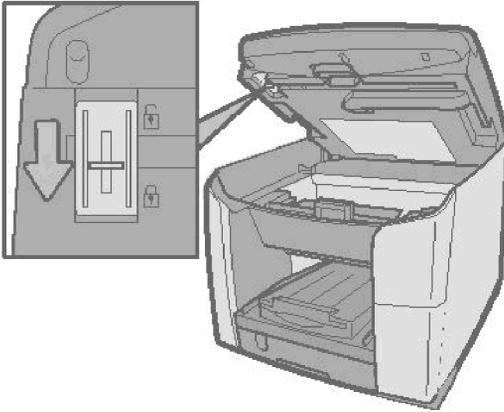
Moving the Printer

1. Switch the printer off.
2. Disconnect all cables (USB, Ethernet, power cord).



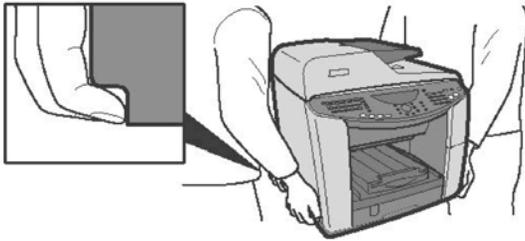
j014i938

3. Pull the scanner release lever and raise the scanner unit.



j014i939

4. Push the shipping lock lever to the lock position. This locks the scanning mechanism so it cannot move during handling.



j014i904

5. Lift the machine by the grooves on the sides of the machine.

★ Important

- Hold the machine level. Never allow it to tilt more than 45° from horizontal.

6. Carry it slowly and avoid tilting the machine.
7. If the machine is being moved a long distance, pack it in its original box.

★ Important

- Be sure to unlock the shipping lock after the machine arrives at its new location.

2. Preventive Maintenance

PM Table

There are no PM parts in this machine.

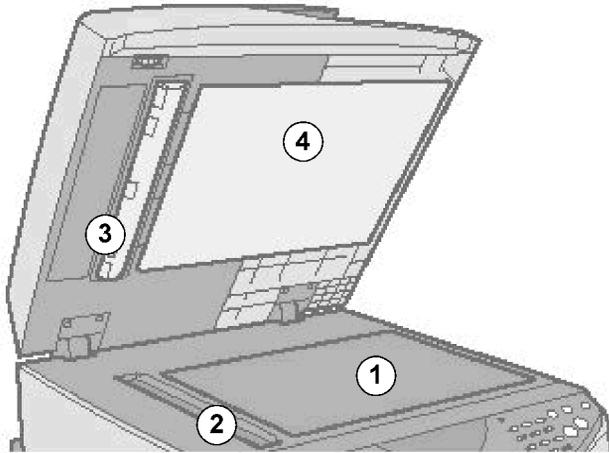
Service Call Procedures

The "Service Call Procedures" listed below should be done by the service technician. For more details about how to do these procedures, please refer to "Cleaning Procedures" in Section 3.

Description	At Service Call, or As Required
External Covers	Damp cloth.
Feed Roller	Damp cloth. Release the feed clutch lock. Rotate the roller freely as you clean it.
Flushing Unit Gate	Dry cloth. Always remove the ink that has hardened around the flushing gate when you replace the waste ink tank. To remove hardened ink, you may need to use a small screwdriver or similar tool.
Friction Pad	Damp cloth. This is the cork friction pad on the front edge of the standard paper cassette.
Maintenance Unit	Dry cloth. Always use a tightly wrapped dry cloth to remove the ink that has hardened around the suction cap and wiper blade when you replace the waste ink tank.
Printer Operation, Print Quality	Print a Nozzle Check Pattern and check the results. Clean the print heads if necessary. For more, see "Image Adjustment" in section "3. Replacement and Adjustment".
Transport Belt	Damp cloth. Then dry cloth. Important: To protect the surface of the transport belt, never use alcohol or any other type of organic solvent.

Regular Cleaning

2



j014p901

The following items should be cleaned regularly:

①	Exposure glass
②	Scanning glass
③	White plate Note: Avoid bending the exposed edges of the mylars.
④	Platen background plate

3. Replacement and Adjustment

Before Replacing Parts

Removal Table

The swap-and-repair system is used for this printer. The table below lists the level of difficulty for replacement of each item.

Level 1: Replaced by User

	Component	Comments
1	ARDF Auxiliary Tray	J013/J014
2	ARDF Friction Pad	
3	Duplex Unit	Installed on back of machine
4	End Fence	Inside paper cassette
5	End Fence	Inside PFU
6	Firmware Update	Through USB Connection
7	Ink Cartridge	
8	Ink Collector Unit	
9	Ink Tank Cover	Top
10	Key Switch Panel	Operation Panel
11	NIB Cover	Protects inserted NIB
12	Operation Panel Fax Seal	
14	Original Cover	
16	Paper Cassette	Standard
17	Paper Cassette (PFU)	Option
18	Paper Output Tray	On top of paper cassette
19	Platen (J012)	J012 Only

	Component	Comments
20	Right Front Cover	Ink Cartridge Cover
21	Tray Upper Cover (PFU)	Option

Level 2: Replaced by Service Technician

3

	Component	Comments
1	2nd Registration Sensor	Difficult
2	ARDF Left Hinge (J013/J014)	
3	ARDF Mylar	Protruding white mylar.
4	ARDF Original Tray (J013/J014)	Easy
5	ARDF Pickup Roller (J013/J014)	Easy
6	ARDF Right Hinge (J013/J014)	Easy
7	ARDF Unit	Easy
8	ARDF Unit (J013/J014)	Easy
9	Air Release Solenoid	Easy
10	Carriage Position Sensor	Easy
11	Carriage Unit	Easy
12	Controller Board (J012)	Easy
13	Controller Board (J013)	Easy
14	Controller Board (J014)	Easy
15	Cooling Fan	Difficult
16	Cover: Rear	Easy
17	Covers: Front, Left, Right	Easy
18	Duplex Unit Detection Board	Difficult
19	Feed Roller	Easy
20	Flushing Unit	Easy

	Component	Comments
21	Friction Pad	Difficult
22	High Voltage Power Supply (HVPS)	Easy
23	Horizontal Motor	Difficult
24	Maintenance Unit	Easy
25	NCU (EU)	Easy
26	NCU (NA)	Easy
27	PSU	Easy
28	Scanner Unit (J012 EU)	Difficult
29	Scanner Unit (J012 NA)	Difficult
30	Scanner Unit (J013 EU)	Difficult
31	Scanner Unit (J013 NA)	Difficult
32	Scanner Unit (J014 EU)	Difficult
33	Scanner Unit (J014 NA)	Difficult
34	Scanner Unit Hinges	Left, Right
35	Transport Belt	Easy
36	Vertical Encoder Sensor	Easy
37	Vertical Encoder Wheel	Easy
38	Vertical Motor	Easy

Easy:

- These procedures require setting the scanner unit in the full upright position.
- Removal of left, right, and front cover may be required.
- Removal of the scanner unit and back cover are not required.

Difficult:

- Removal of all covers and the scanner unit and back cover are required.

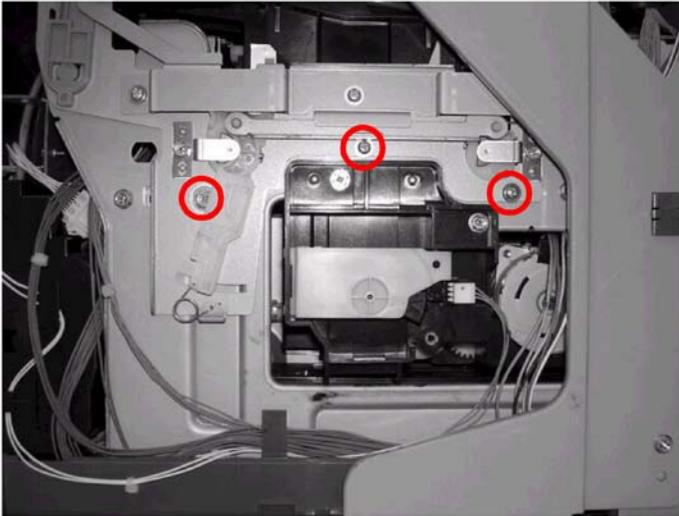
Level 3: Require precision adjustment at factory (Not Replace in the field)

	Component	Comments
1	Carriage Unit	
2	Ink Supply Pump Unit	
3	Transport Belt	
4	Charge Roller	
5	Temperature/Humidity Sensor	
6	Paper End Sensor	
7	Paper Feed Roller	

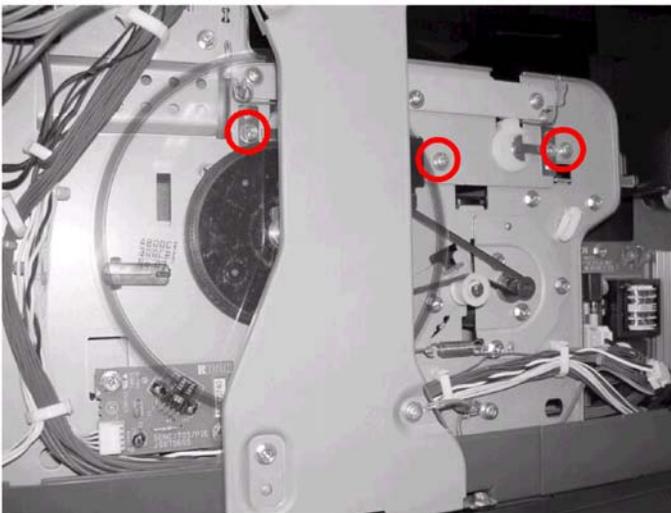
Important Notice

During parts removal never remove any of the screws shown below.

Right Cover Removed



Left Cover Removed



j014r001

These screws fasten the carriage brackets that keep the carriage unit correctly aligned. If these screws are loosened or removed, this could throw the carriage mechanism out of alignment.

Procedure Summary

The reference table below is a list of components in alphabetic order.

- The left column lists the item to be removed.

- The right column tells you what other parts must be removed before the item in the left column can be removed. Before you use this table for reference, you must know the procedures described "Common Procedures" (the next section).
- There is a detailed description in this service manual for every item listed in the left column. Be sure to refer to the appropriate section of the manual for more details.
- No prior procedures are required for items marked "---" in the right column.

3

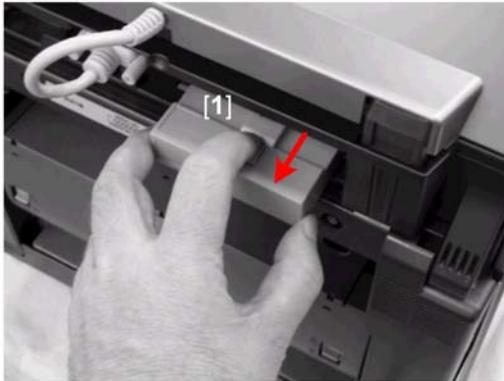
To remove:	First, remove in this order:
1st Registration Sensor	1) Platen or ADF, 2) Scanner to Full Upright, 3) Paper Cassette, Output Tray, 4) Right Front Cover, 5) Right Cover, 6) Right Inner Cover, 7) Left Cover, 8) Front Cover
2nd Registration Sensor	1) Platen or ADF, 2) Scanner to Full Upright, 3) Paper Cassette, Output Tray, 4) Right Cover, 5) Left Cover, 6) Scanner Unit, 7) Rear Cover
ADF (J013/J014)	---
Air Release Solenoid	1) Platen or ADF, 2) Scanner Unit to Upright, 3) Paper Cassette, Output Tray, 4) Right Cover
CTL Board, NVRAM	1) Platen or ADF, 2) Scanner to Full Upright, 3) Paper Cassette, Output Tray, 4) Right Cover, 5) Left Cover, 6) Scanner Unit, 7) Rear Cover
Carriage Position Sensor	1) Platen or ADF, 2) Scanner to Full Upright, 3) Paper Cassette, Output Tray, 4) Right Cover
Cleaning – Feed Roller	1) Platen or ADF, 2) Scanner to Full Upright, 3) Paper Cassette, Output Tray
Cleaning – Flushing Gate	1) Platen or ADF, 2) Scanner to Full Upright
Cleaning – Friction Pad	---
Cleaning – Horizontal Encoder Strip	1) Platen or ADF, 2) Scanner to Full Upright
Cleaning – Maintenance Unit	1) [Menu]> ▲> "Maintenance"> [Yes]> "1 Nozzle Check?"> ▲> "9 Move Print Heads?"> [Yes]> "Please Wait", 2) Open scanner unit
Cleaning – Transport Belt	1) Platen or ADF, 2) Scanner to Full Upright, 3) ` Paper Cassette, Output Tray, 4) Duplex Unit, 5) Flushing Gate
Duplex Unit	---

To remove:	First, remove in this order:
Duplex Unit Detection Board	1) Platen or ADF, 2) Scanner to Full Upright, 3) Paper Cassette, Output Tray, 3) Right Cover, 4) Left Cover, 5) Scanner Unit, 6) Rear Cover
Flushing Unit	1) Platen or ADF, 2) Scanner to Full Upright, 3) Left Cover
Front Cover	1) Platen or ADF, 2) Scanner to Full Upright, 3) Paper Cassette, Output Tray, 4) Right Cover, 5) Right Inner Cover, 6) Left Cover
Front Fan	1) Platen or ADF, 2) Scanner to Full Upright, 3) Paper Cassette, Output Tray, 4) Right Front Cover, 5) Right Cover
HVPS	1) Platen or ADF, 2) Scanner to Full Upright, 2) Paper Cassette, Output Tray, 3) Left Cover, 4) Right Cover, 5) Front Cover
Horizontal Encoder Strip	1) Platen or ADF, 2) Scanner to Full Upright, 3) Scanner Unit, 4) Left Cover, 5) Right Cover, 6) Rear Cover
Horizontal Motor	1) Platen or ADF, 2) Scanner to Full Upright, 3) Paper Cassette, Output Tray, 4) Right Cover, 5) Left Cover, 6) Scanner Unit, 7) Rear Cover
Ink Collector Unit	---
Ink Level Sensor	1) Platen or ADF, 2) Scanner to Full Upright, 3) Paper Cassette, Output Tray, 4) Right Cover
Left Cover	1) Platen or ADF, 2) Scanner to Full Upright, 3) Paper Cassette, Output Tray
Maintenance Unit	1) Platen or ADF, 2) Scanner to Full Upright, 3) Paper Cassette, Output Tray, 4) Right Cover
Maintenance Unit Motor	1) Platen or ADF, 2) Scanner to Full Upright, 3) Paper Cassette, Output Tray, 4) Right Cover
Network Interface Board	---
Original Pressure Plate	1) Platen or ADF
PSU	1) Platen or ADF, 2) Scanner to Full Upright, 3) Paper Cassette, Output Tray, 4) Left Cover
Paper Cassette, Output Tray	---
Platen (J012)	---

To remove:	First, remove in this order:
Engine Unit Swap	1) Platen or ADF, 2) Scanner to Full Upright, 3) Paper Cassette, Output Tray, 4) Right Cover, 5) Left Cover, 6) Scanner Unit
Rear Cover	1) Platen or ADF, 2) Scanner Unit to Full Upright, 3) Duplex Unit, 4) Paper Cassette, Output Tray, 5) Right Cover, 6) Left Cover, (6) Scanner Unit
Rear Fan	1) Platen or ADF, 2) Scanner to Full Upright, 3) Paper Cassette, Output Tray, 4) Right Cover, 5) Left Cover, 6) Scanner Unit, 7) Rear Cover
Right Cover	1) Platen or ADF, 2) Scanner to Full Upright, 3) Right Front Cover
Right Front Cover	---
Right Inner Cover	1) Platen or ADF, 2) Scanner to Full Upright, 3) Paper Cassette, Output Tray, 4) Right Front Cover, 5) Right Cover
Scanner CTL Board, NCU	Swap the Scanner Unit. See "Scanner Unit" in this table.
Scanner Unit	1) Platen or ADF, 2) Scanner to Full Upright, 3) Paper Cassette, Output Tray, 4) Right Cover, 5) Left Cover Note: If scanner unit will be replaced, download address book data to a computer with the Device Setting Utility. After replacement upload address book data to new scanner unit.
Scanner Unit Sensor (Platen Sensor)	1) ADF, 2) Scanner to Full Upright, 3) Paper Cassette, Output Tray, 4) Right Front Cover, 5) Right Cover, 6) Right Inner Cover, 7) Front Cover, 8) Front Cover
Scanner to Full Upright	1) Platen or ADF
Vertical Encoder Sensor	1) Platen or ADF, 2) Scanner to Full Upright, 2) Paper Cassette, Output Tray, 3) Left Cover
Vertical Encoder Wheel	1) Platen or ADF, 2) Scanner to Full Upright, 3) Paper Cassette, Output Tray, 4) Left Cover
Vertical Motor	1) Platen or ADF, 2) Scanner to Full Upright, 3) Paper Cassette, Output Tray, 4) Left Cover

Common Procedures

Network Interface Board (NIB)

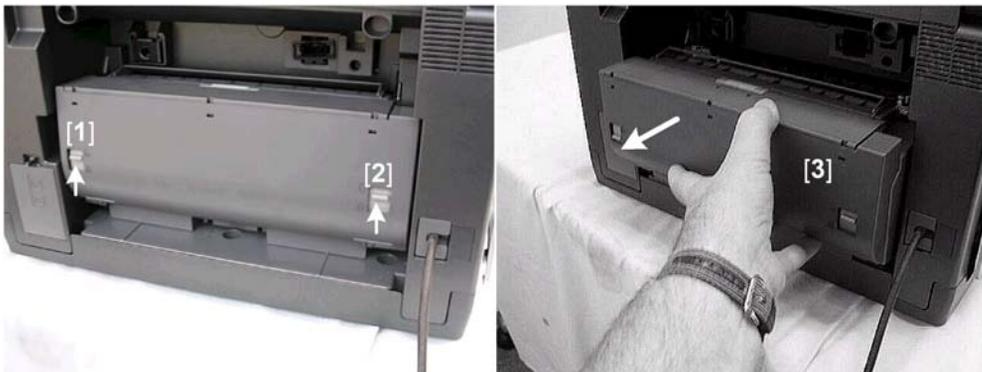


j014r015

This procedure applies to the J012/J013 only. The NIB is built into the J014.

1. Press down on the tab release [1].
2. Pull the NIB out of the machine.

Duplex Unit

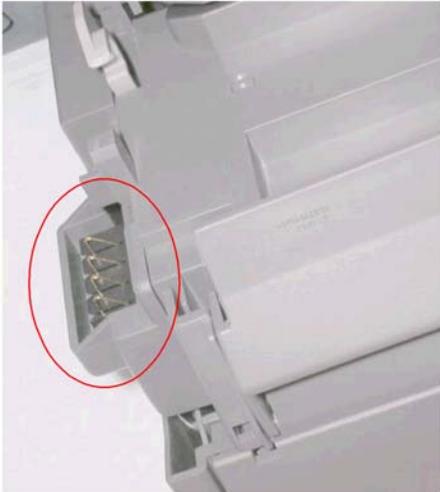


j014r020

1. Raise the left and right release tabs [1] and [2] together to unlock the duplex unit.
2. Pull the duplex unit [3] out of the machine.

Reinstallation

- The duplex unit must be installed in the machine at all times, even for simplex printing. The machine will not operate without the duplex unit.
- Reinstall the duplex unit carefully to avoid bending the contact pins.



j014r020a

- After reinstalling the duplex unit, push the locks down. They do not reset themselves automatically.

Ink Collector Unit

Before you begin:

Never remove the ink collector unit unless it requires replacement. A message will appear and tell you that the ink collector needs to be replaced.

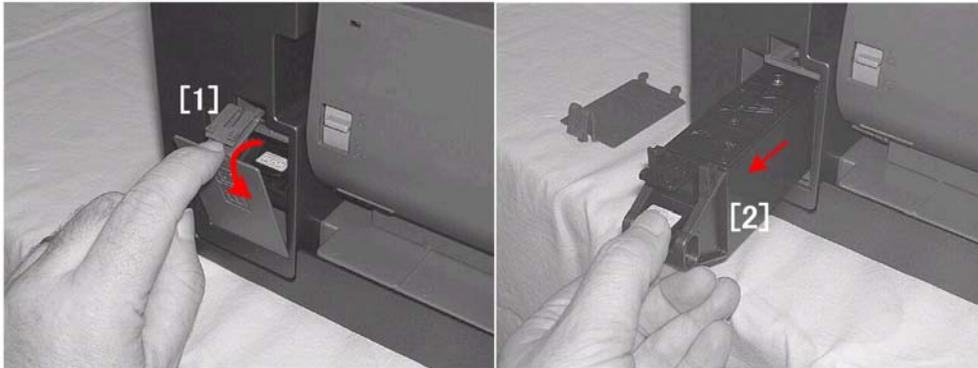
To confirm that the ink collector needs to be replaced, do this procedure:

1. [Menu]>"System Settings?"
2. [▼] or [▲]> "Engine Settings"> [Yes]> "1. Paper Tray Prty?"
3. [▼] or [▲]> "7. Replace InkCollct?"> [Yes]
4. The message "Unit Replacement Is Not Required" displays if the unit does not require replacement.
 - You will need a self-sealing plastic bag to hold the ink collector unit.
 - When you dispose of the used ink collector unit always obey the local laws and regulations regarding the disposal of such items.

CAUTION

- Never attempt to clean and re-use an ink collector unit.

To remove the ink collector unit:



j014r030

3

1. Press the lock release [1] and remove the cover.
2. Pull the ink collector unit [2] out of the machine.
3. If you are replacing the ink collector tank, insert the new tank.
4. Reattach the cover.
5. Do SP5003 to reset the ink collector tank counter.
6. Discard the used ink collector tank.

★ Important

- Obey the local laws and regulations regarding disposal of items such as the full ink collector tank.
- Never attempt to clean a full ink collector tank and use it again.

Platen (J012 only)

3



j014r040

This procedure applies to the J012 only.

1. Raise the platen.
2. Pull the platen straight up to remove it.

ADF (J013/J014)

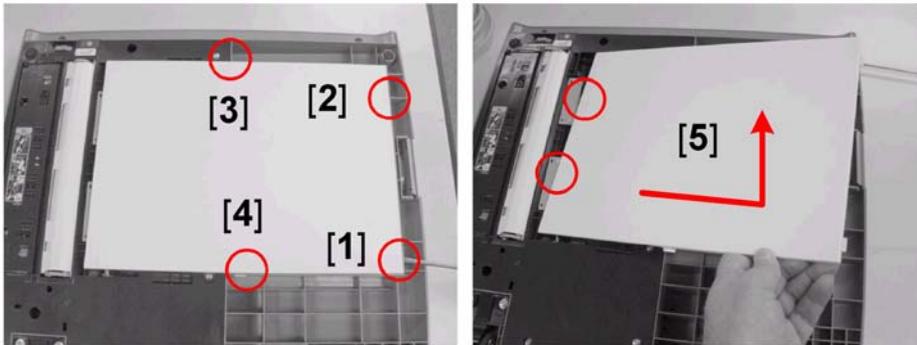


j014r050

This procedure applies to the J013/J014.

1. Loosen the knob screws (x2) of the ADF connector [1] and disconnect it.
2. Raise the ADF [2] while tilting it slightly toward the back of the machine to disengage the feet of the ADF.
3. Raise the feet out of the holes and remove the ADF.

Original Pressure Plate



j014r045

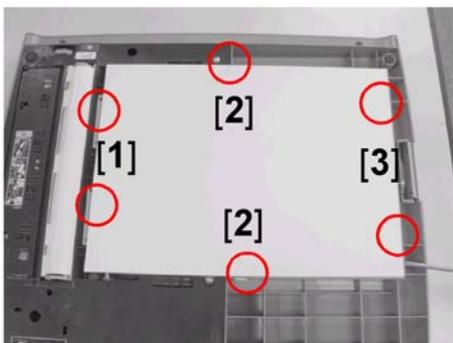
1. Remove the platen or ADF (see above).

★ Important

- To avoid damaging the mylars or the exposure glass, remove the platen or ADF before removing the original pressure plate.

2. Set the platen or ADF on a flat surface.
3. Use the tip of a flat-head screw driver to release tabs [1] and [2].
4. Release tabs [3] and [4].
5. Pull the plate to the left and lift it out (the tabs on the left should disconnect easily).

Reinstallation



j014r046

1. While holding the plate at about a 30 degree angle, set the left tabs [1] in the holes.
2. Lower the original pressure plate and set center tabs [2].
3. Use a flat-head screwdriver to set right tabs [3].

Scanner to Full Upright

Preparation

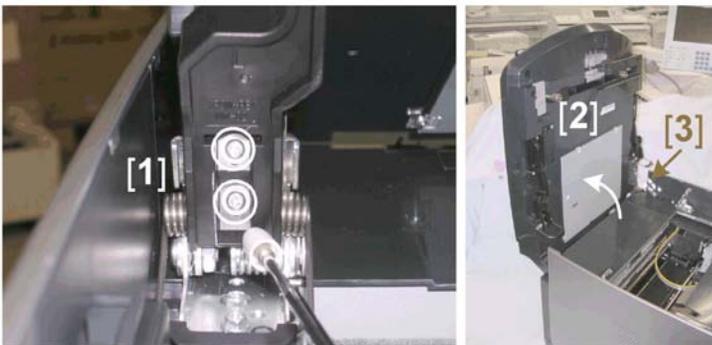
3

- Remove platen (J012) or ADF (J013/J014).



j014r060a

1. Pull forward the release lever under the operation panel [1] and raise the scanner unit.
2. Disconnect the right hinge [2] (⚙️x2).



j014r060b

3. Disconnect the left hinge [1] (⚙️x2).
4. Raise the scanner unit [2] to the full upright position.

★ Important

- Do not remove the stopper belt [3].

⚠ CAUTION

- Always work carefully around the machine with the scanner unit in the full upright position to avoid hitting it and knocking it down onto the exposure glass.

Reinstallation

- Position both hinges on the left and right before you reattach the screws.
- Fasten one screw on the left hinge and one screw on the right hinge to make sure both hinges are aligned, then reattach the other screws.

Paper Cassette, Output Tray

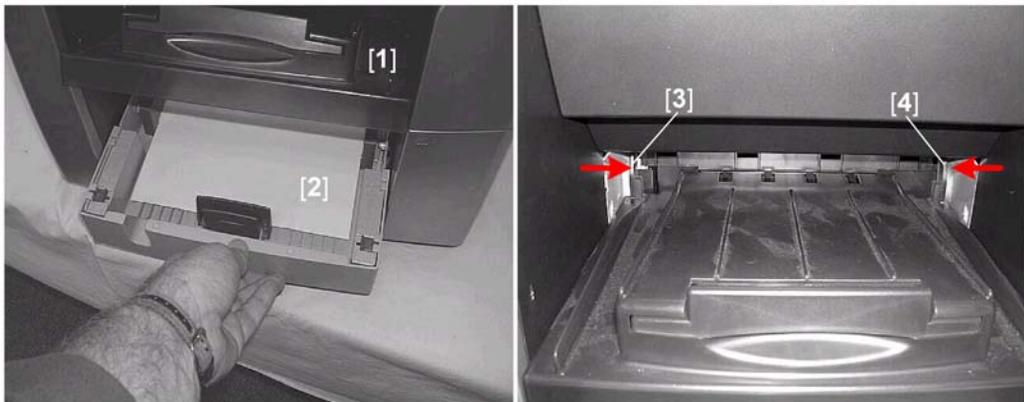
3

Here are some important points about cover removals:

- The scanner unit must be raised to the full upright position to remove the left and right covers.
- The scanner unit must be removed in order to remove the rear cover.
- The right inner cover does not need to be removed in order to remove the scanner unit.

★ Important

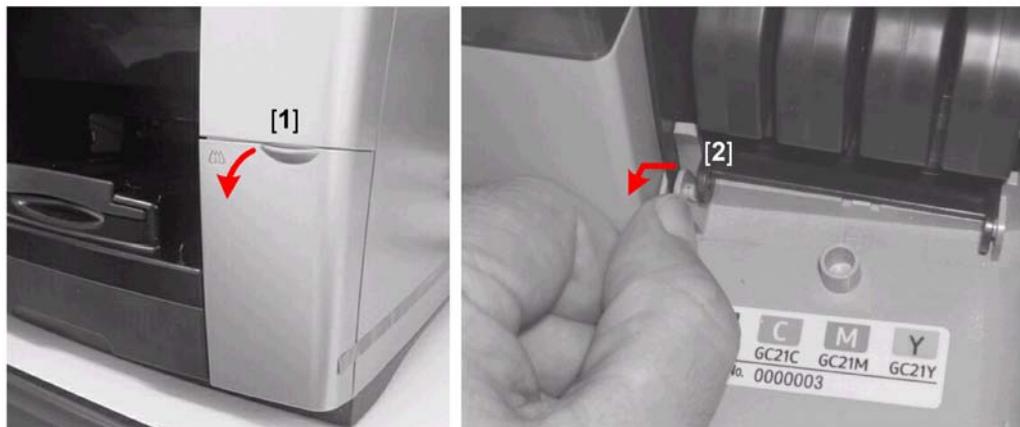
- The tabs of the covers are fragile. Work carefully to avoid breaking the tabs during cover removal and reinstallation.



j014r070

1. Raise the output tray [1].
2. Pull the paper cassette [2] out partially, raise it slightly, then pull it out of the machine.
3. Lower the paper output tray.
4. Use the middle fingers of both hands to press the output tray arms [3] and [4] inward to release them, then pull the output tray out of the machine.

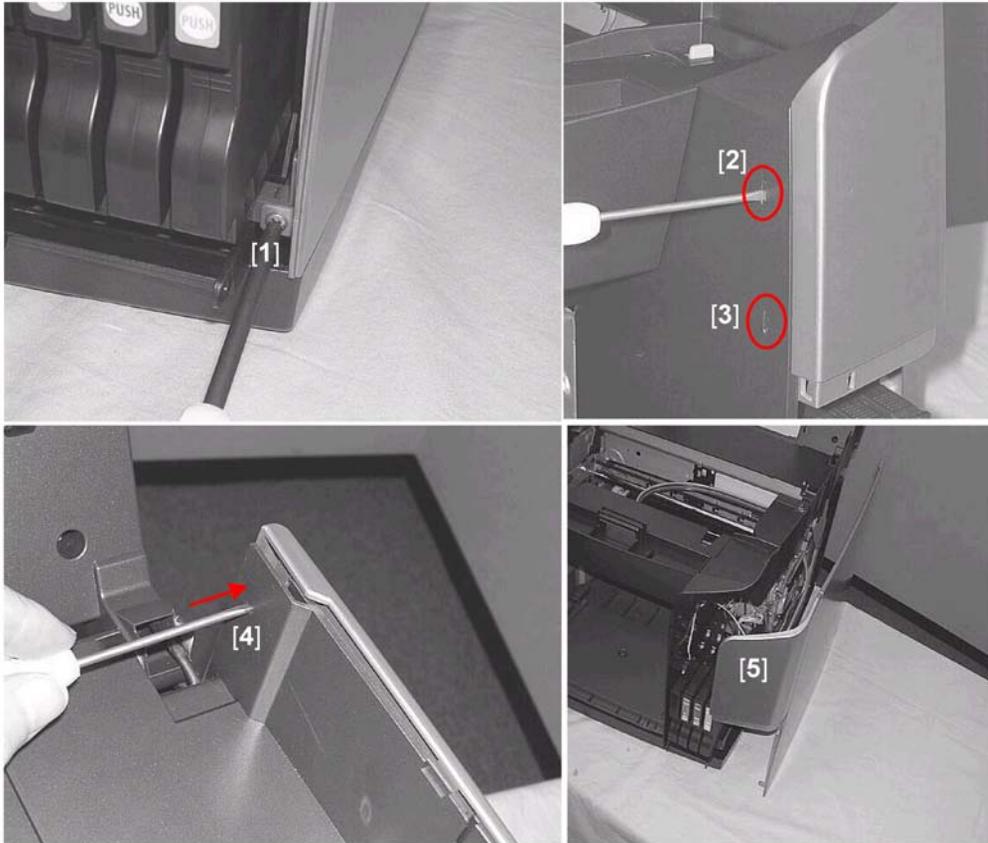
Right Front Cover



j014r080

1. Pull on the latch [1] and lower the right front cover.
2. Disengage left arm [2] of the cover from its hole and remove the cover.

Right Cover



j014r090

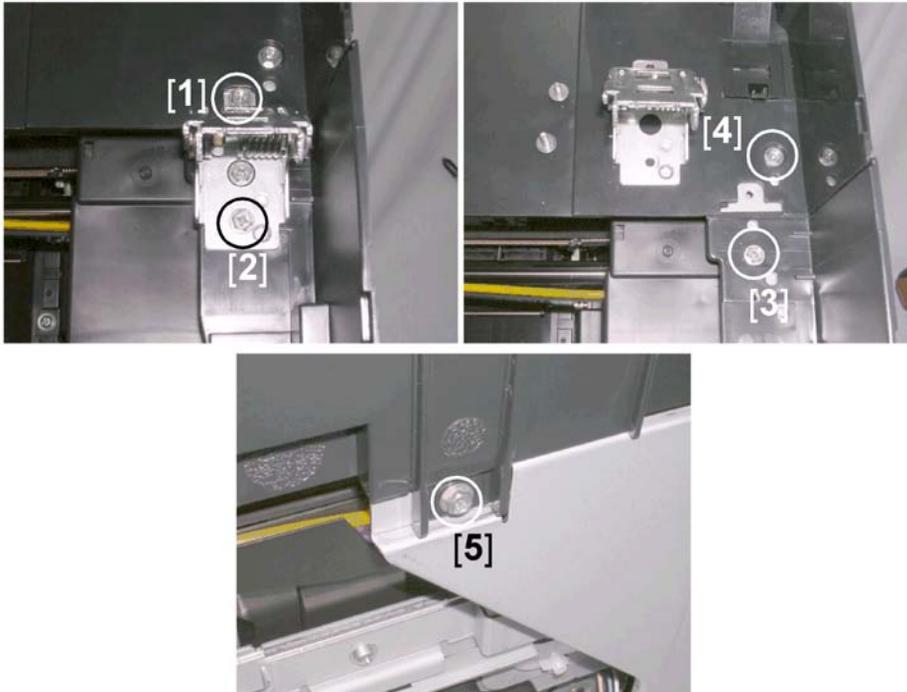
Preparation:

- Remove platen or ADF
 - Raise the scanner unit to full upright.
 - Remove the right front cover.
1. Remove screw [1] (⌀x1).
 2. While pulling the right tray forward gently, use the tip of a small flat-head screwdriver to press and release tabs [2] and [3].
 3. At the right, rear cover of the machine use the tip of a small flathead screwdriver to press and release the tab [4].
 4. Remove the right cover [5] carefully to avoid damaging the snap tabs on the top, bottom, and rear edge of the cover.

Right Inner Cover

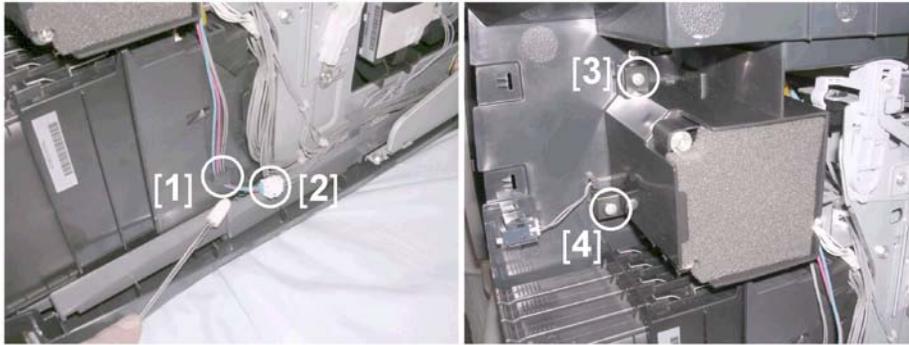
Preparation

- Remove platen or ADF
- Raise the scanner unit to full upright.
- Remove: (1) paper cassette, (2) paper output tray, (3) right front cover, (4) right cover



j014r100a

1. Remove screws [1] and [2] then remove the hinge.
2. Remove screw [3].
3. Loosen screw [4] (do not remove it).
4. On the right side of the machine remove screw [5].



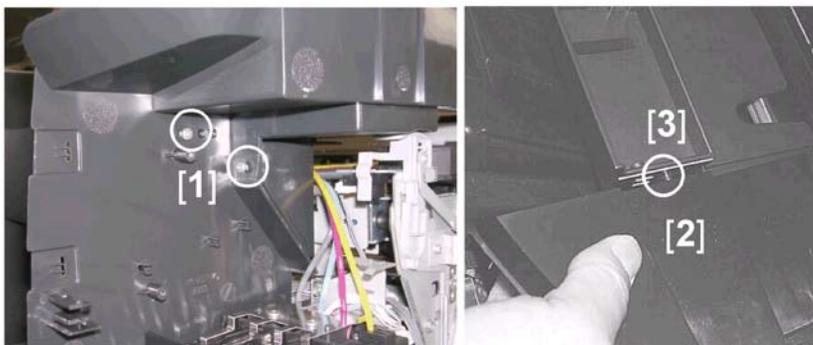
j014r100b

5. Pull the fan connector harness [1] out of its L-clamp.
6. Disconnect the fan harness connector [2] (⚙️x1).
7. Remove fan bracket screws [3] and [4] then remove the fan (🔧x2).



j014r100c

8. Raise the latch and remove the right front door sensor [1].
9. Remove the harness [2] of the right front door sensor from the lamps (🔧x3).

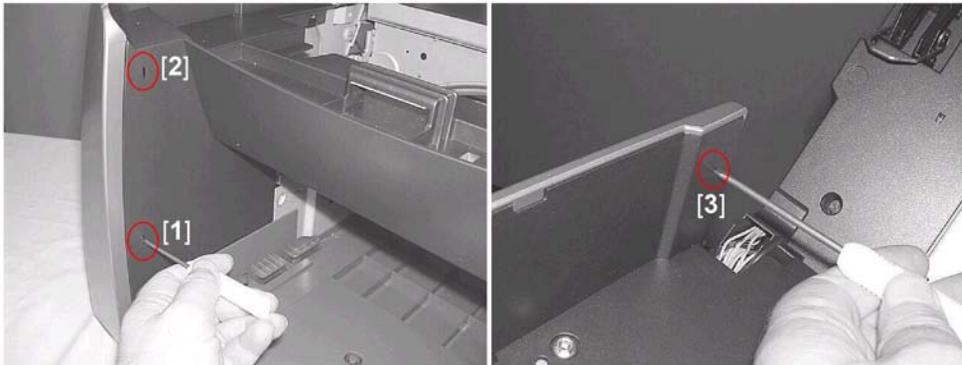


j014r100d

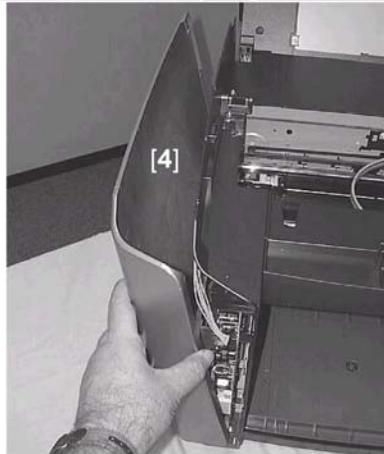
10. Under the right front corner of the inner cover [1] remove the screws (🔧x2).

11. Separate the corner of the inner cover [2] from the top cover [3].
12. Slide the right inner cover forward to remove it.

Left Cover



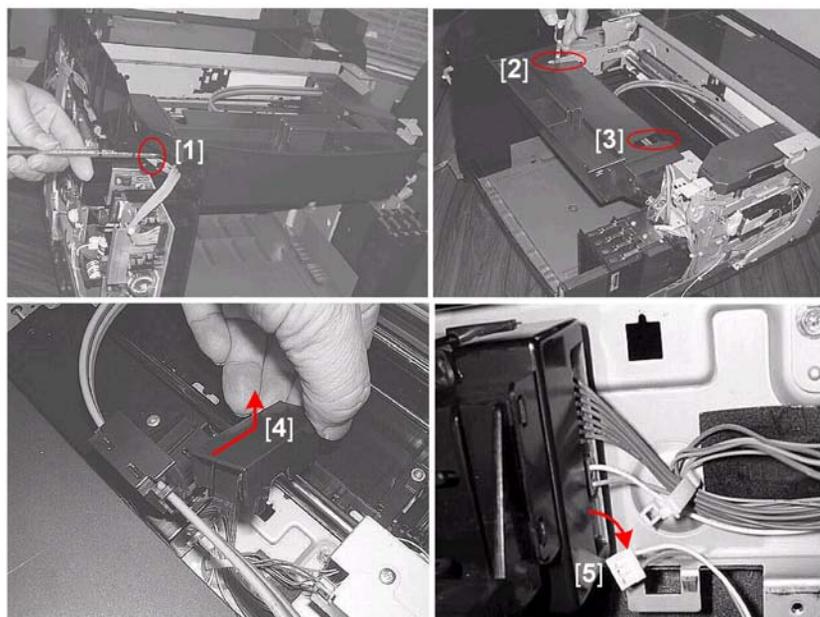
j014r110



Preparation

- Remove platen or ADF
 - Raise the scanner unit to full upright.
 - Remove: (1) paper cassette, (2) paper output tray
1. Use the tip of a small flat-head screwdriver to press and release tabs [1] and [2] at the front and tab [3] at the top rear corner.
 2. Carefully remove the left cover to prevent damaging the other tabs on the top and bottom edges of the cover.

Front Cover



j014r120

3

Preparation

- Remove platen or ADF
- Raise the scanner unit to full upright.
- Remove: (1) paper cassette, (2) paper output tray, (3) right cover, (4) right inner cover, (5) left cover

1. Remove screw [1] (⚙️x1)

2. Remove screws [2] and [3] (⚙️x2).

3. Push the connector cover [4] toward the back of the machine then raise its front edge to remove it..

4. Disconnect connector [5] (⚙️x1, ⚙️x1).

5. Remove the front cover.

⚠️ CAUTION

- Never attempt to remove the front cover without first disconnecting the connector. This is the harness connector of the scanner unit detection sensor attached under the top of the top cover. (This sensor detects the opening and closing of the scanner unit.)

Scanner Unit

Before replacing the scanner unit:

- The address book data should be downloaded from the machine to a file on a computer with the Device Setting Utility.
- After the scanner unit has been replaced, the address book data must be uploaded from the file to the machine.

To install the Device Setup Utility:

1. Mount the CD-ROM in the CD-ROM drive.
2. Follow the instructions to install the utility.

To download address book data from the machine:

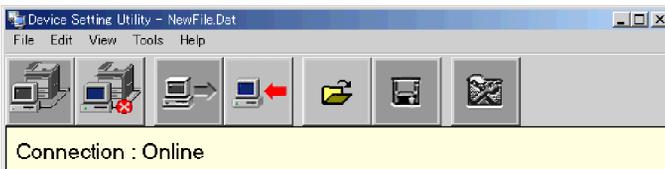
Do this procedure before removing the scanner unit.

1. Confirm:
 - Printer drive installed?
 - TWAIN driver installed?
 - Machine connected and switched on?
 - Printer in standby mode?
2. Use the Web Browser to print a list of all the settings in the address book.
3. Start the Device Setup Utility.



j012r125a

4. Click the "Connect to Device" icon.



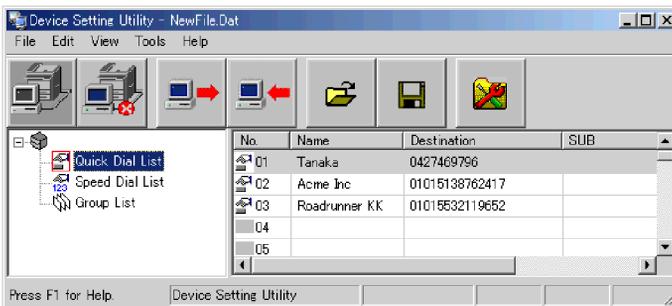
j012r125b

1. In the menu bar click [Tools]> [Download].



j012r125c

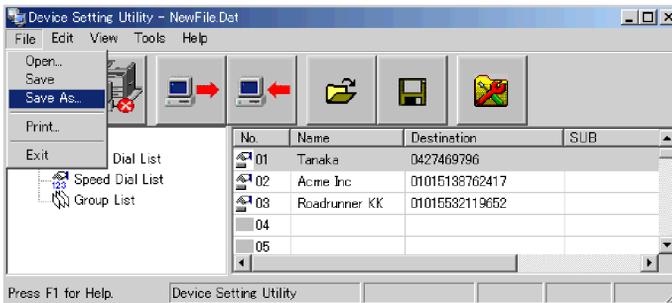
2. On the left click "Quick Dial List", "Speed Dial List", or "Group List" to display the address book information on the right.



j012r125d

The downloaded data is in the computer memory and must be saved to a file.

3. From the "File" menu select "Save As".



j012r125e

The "Save As" screen opens.



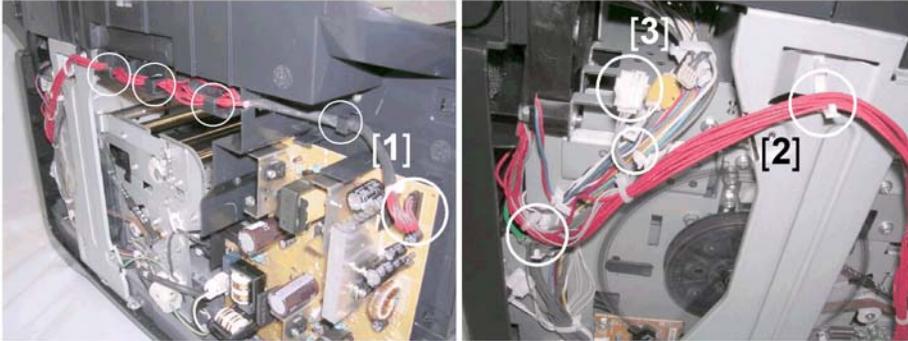
j012r125f

Create a folder to hold the file or navigate to another target folder, enter a filename of your choice or use the default filename "NewFile.dat" and save it.

4. Follow the procedure below to replace the scanner unit.

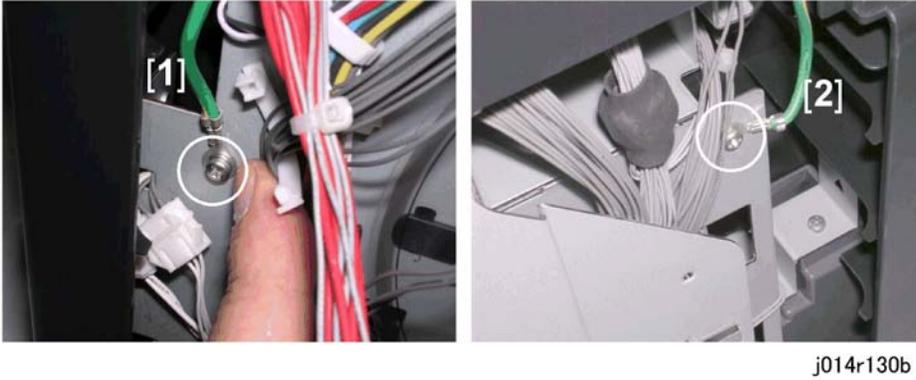
Preparation for Removal

- Remove platen or ADF
- Raise the scanner unit to full upright.
- Remove: (1) paper cassette, (2) paper output tray, (3) right cover, (3) left cover



j014r130a

1. At the left front corner of the machine, disconnect the scanner power cable harness [1] CN4 from the PSU (🔌x1).
 2. Pull the harness out from behind the four L-clamps.
 3. At the left rear corner of the machine, release the harness [2] from the white harness clamps (🔌x3).
1. Disconnect the harness [3].



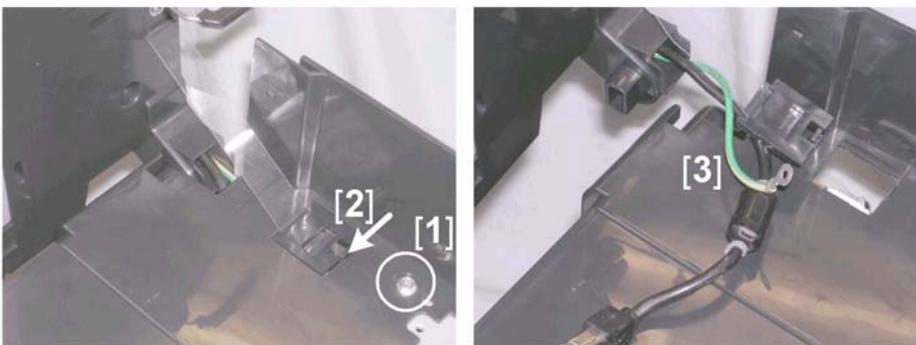
j014r130b

2. Disconnect the ground wire [1] (⚠x1).
3. At the right rear corner of the machine, disconnect the ground wire [2] (⚠x1).



j014r130c

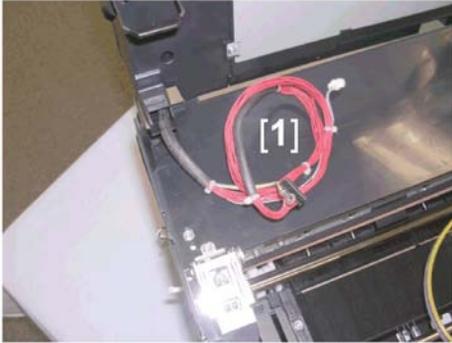
4. Lower the scanner unit.
5. At the back of the machine, remove the USB connection cover [1] (⚠x1).
6. Pull out the USB connector [2].



j014r130d

7. If screw [1] is loose, tighten it.

- While supporting the upright scanner unit with one hand to prevent it from falling back, raise the latch [2] to disconnect the support strap.
- While still supporting the upright scanner unit, pull the USB harness and ground wire out [3] out of the machine.



j014r130e

- At the left rear corner [1], pull the scanner power harness, small harness, and ground wire out of the machine.
- Lift the scanner unit off the machine and place it on a flat, clean surface.

To upload address book data to the machine:

Do this procedure after the scanner unit has been replaced.

- Start the Device Setup Utility.
- From the "File" select "Open".
- Navigate to the folder where the address book was stored using the "Download" command and open the file.



j012r125g

- In the menu bar click [Tools]> [Upload].



j012r125h

- Click the [Yes] button to start the uploading the address book data from the file to the machine.

While the data is uploading to the machine, you will see "*Please Wait* Setting from PC..." displayed on the printer operation panel.

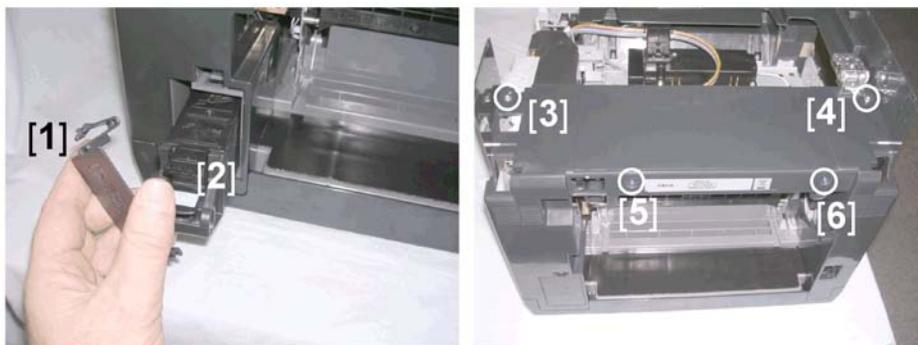
- After the upload has finished, close the Device Setting Utility and cycle the machine off/on.
- Use the Web Browser to print a list of all dial settings to confirm that all the settings have been restored.

Rear Cover

3

Preparation

- Remove platen or ADF
- Raise the scanner unit to full upright.
- Remove: (1) duplex unit, (2) paper cassette, (3) paper output tray, (4) right cover, (5) left cover, (6) scanner unit



j014r135a

- Remove the ink collector unit cover [1] and pull the ink collector unit [2] out of the machine.
- On top of the rear cover remove silver screws [3] and [4] (⌀x2)
- On the back of the machine, remove blue screws [5] and [6] (⌀x2).
- Position on a table so its rear edge overhangs the edge of the table so you can see the tab locks.

★ Important

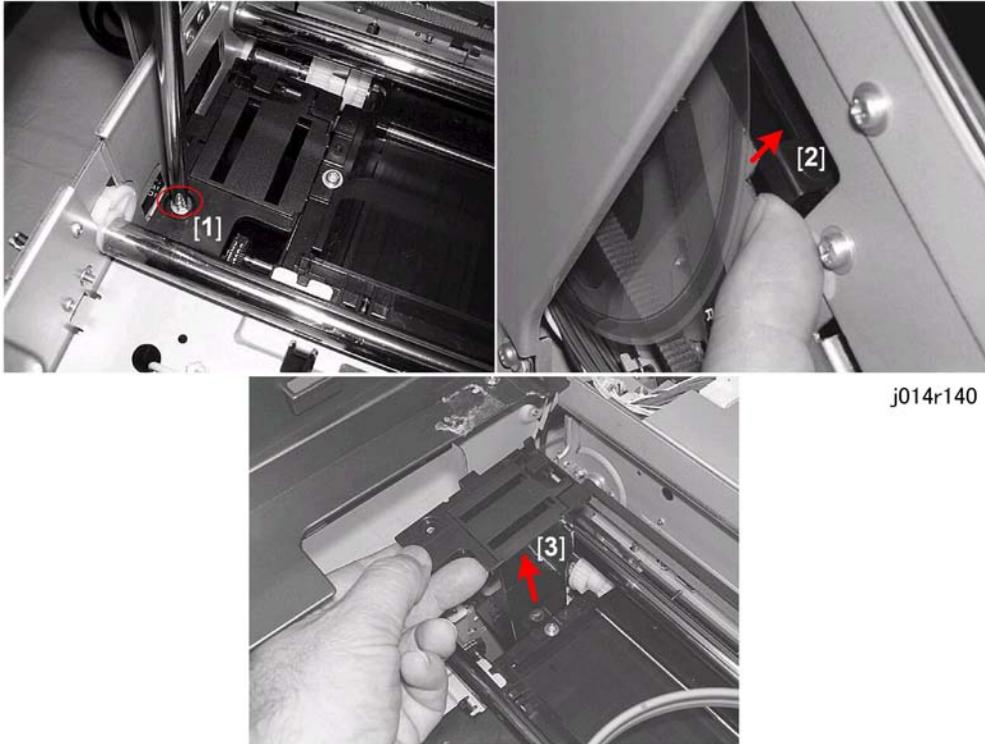
- To prevent ink spillage from the print head tanks, do not turn the machine on its side or on its front edge.



j014r1

5. While pulling the back cover away from the machine, use the tip of a small flat-head screwdriver [1] to gently disengage first the right tab and then the left tab.
6. After the tabs have been released pull the back cover away from the machine.

Flushing Unit



j014r140

3

Preparation:

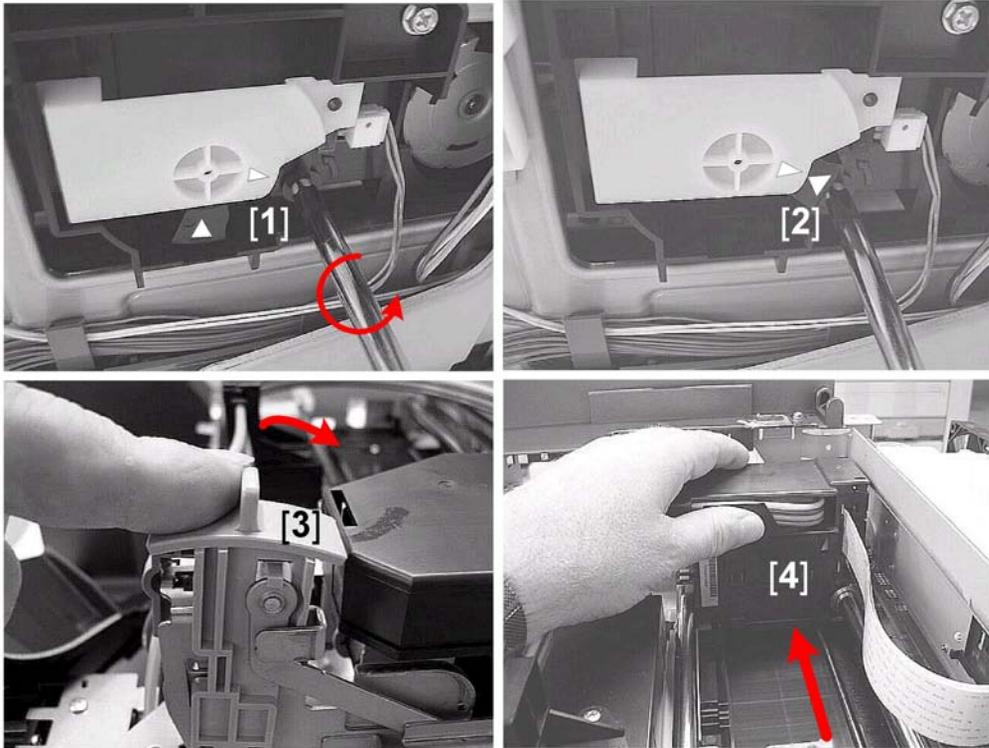
- Remove platen or ADF
 - Raise the scanner unit to full upright.
 - Remove: (1) left cover
1. Remove screw [1] (⌀x1).
 2. Lift the hook [2] behind the vertical encoder wheel.

★ Important

- **Never touch the surface vertical encoder wheel around its edges.**
3. Lift the flushing unit [3] out of the machine.

Maintenance Unit

3



j014r150

Preparation:

- Remove platen or ADF
- Raise the scanner unit to full upright.
- Remove: (1) paper cassette, (2) paper output tray, (3) right cover

★ Important

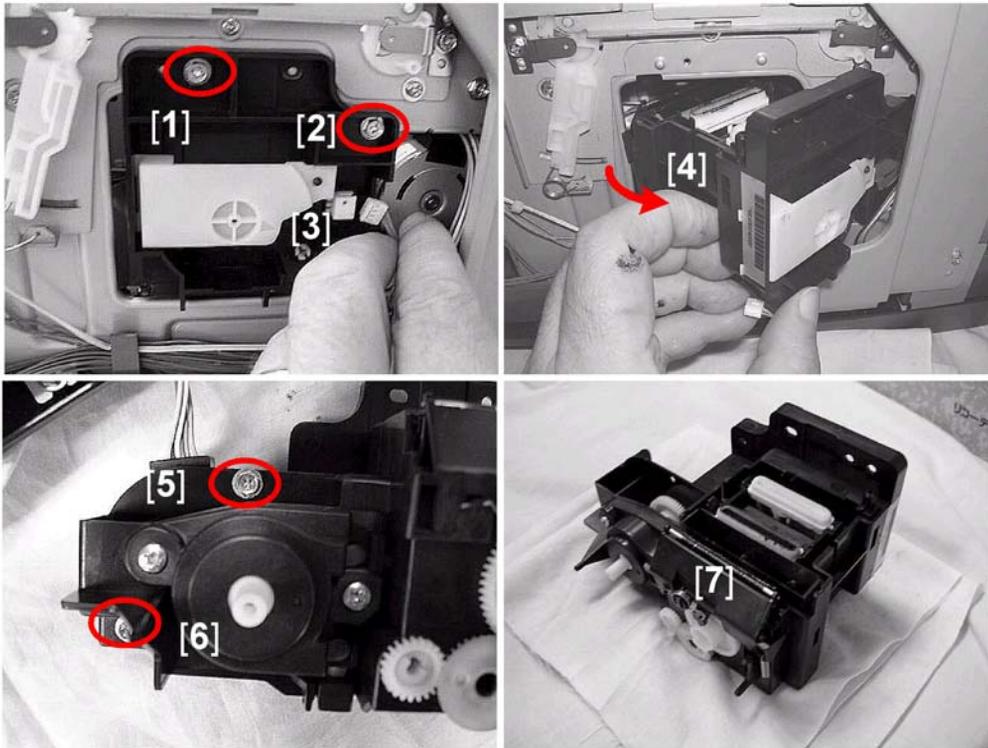
- **The bottom edges of the maintenance unit are covered with ink. Spread a cloth or a sheet of paper to set the unit after it is removed. Avoid touching the bottom of the maintenance unit.**

1. To unlock the carriage use a plus (+) screwdriver to turn the screw [1] counter-clockwise until the tips of the triangles [2] align.
2. Push the envelope selector [3] to the rear.
 - Pushing the envelope selector to the rear raises the print head unit. This prevents damaging the print head unit when the carriage is moved manually.

★ Important

- **Always push the envelope selector to the rear before you move the carriage manually.**

3. Push the carriage [4] to the left side of the machine.



j014r151

4. Remove screws [1] and [2] (⌘ x2).
 5. Disconnect the unit [3] (⌘ x1).
 6. Pull the unit [4] out of the unit as shown.

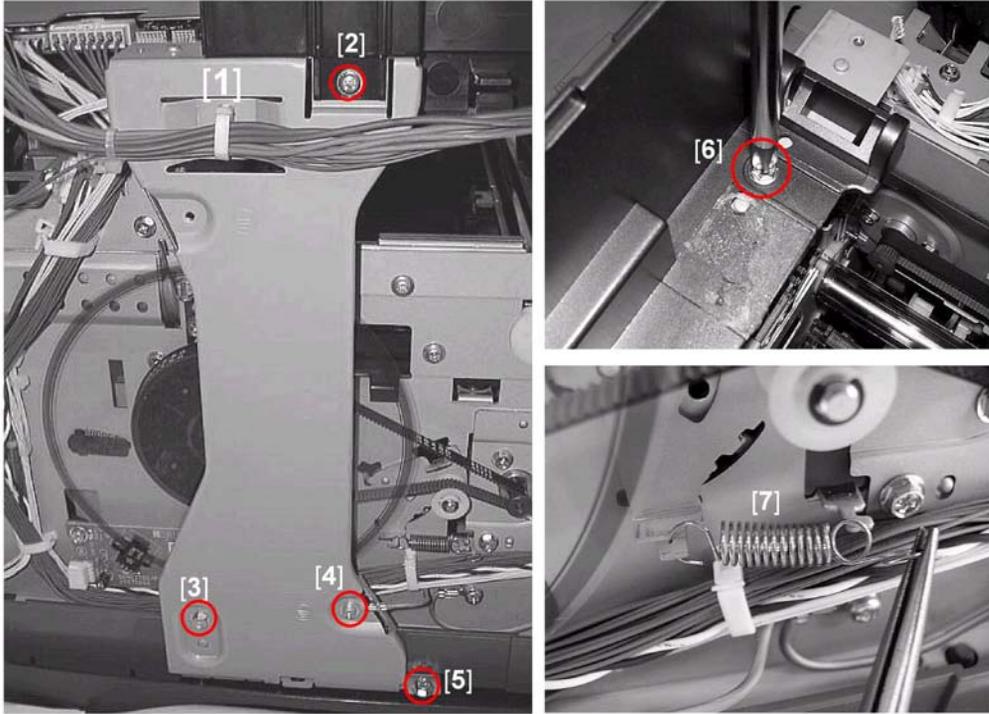
★ Important

- Handle the maintenance unit carefully. The bottom of the unit may be covered with ink. Do not touch the bottom of the unit.
7. Remove screws [5] and [6], to disconnect the maintenance unit motor from the maintenance unit (⌘ x2)
 8. Set the maintenance unit [7] on a cloth or sheet of paper.

Encoders

Vertical Encoder Wheel

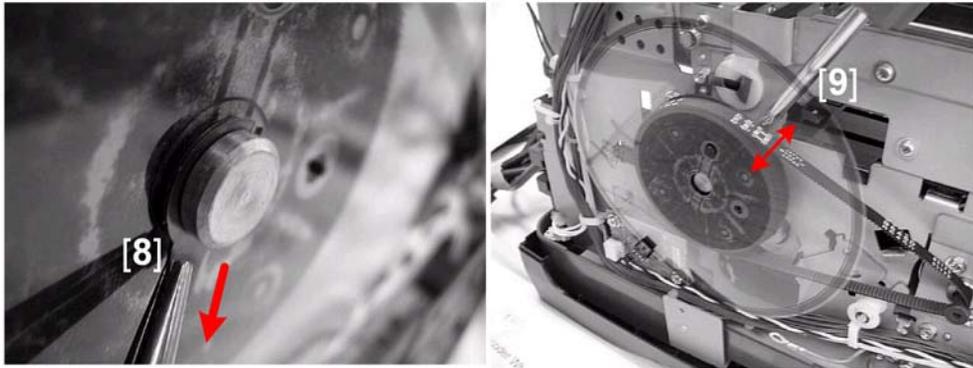
3



j014r160

Preparation:

- Remove platen or ADF
 - Raise the scanner unit to full upright.
 - Remove: (1) paper cassette, (2) paper output tray, (3) left cover
1. Release the scanner unit power harness [1] ($\text{T}25$ x 1).
 2. Remove screws [2], [3], [4], [5] on the side of the vertical stay ($\text{T}6$ x 4).
 3. Remove the screw [6] on top of the vertical stay ($\text{T}6$ x 1).
 4. Disconnect the spring [7] to release the tension on the timing belt.



j014r161

5. Use a pair of radio pliers to pull the flexible plastic clamp [8] from the tip of the shaft.

★ Important

- Do not touch the edges of the vertical encoder sensor wheel.

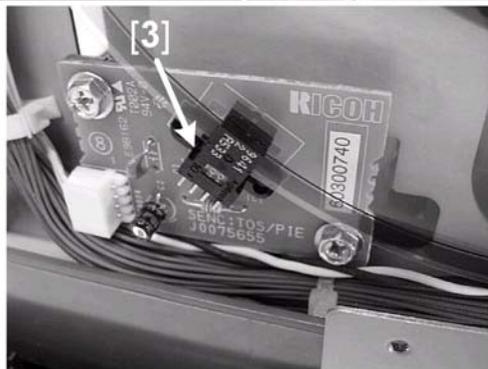
6. Insert the tip of a flathead screwdriver [9] between the frame and the hub of the wheel.

7. Very slowly twist the screwdriver slightly to the left and right to free the wheel from the shaft.

Reassembly



j014r162



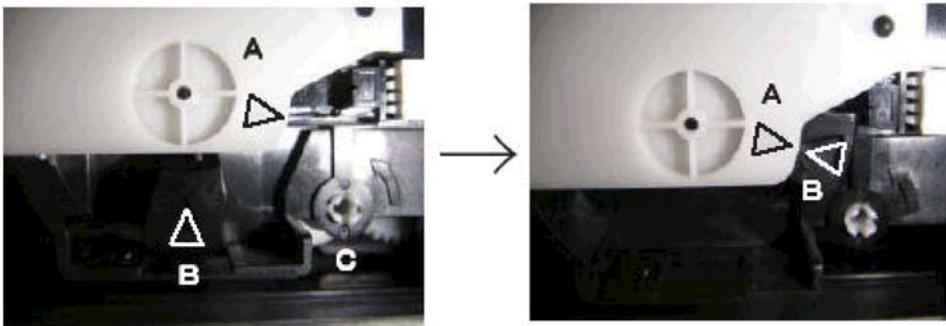
1. Rotate the shaft so the long pin [1] is vertical.
2. Hold the wheel so the numbers [2] are horizontal. (This should align the pin on the shaft and groove on the back of the wheel.)
3. Insert the edge of the wheel into the gap of the vertical encoder sensor [3].
4. Push the wheel onto the shaft.
5. Make sure that the wheel groove is locked onto the long pin.

3

Horizontal Encoder Strip

Preparation:

- Remove platen or ADF
- Raise the scanner unit to full upright.
- Remove: (1) scanner unit, (2) left cover, (3) right cover, (4) rear cover



j014r163

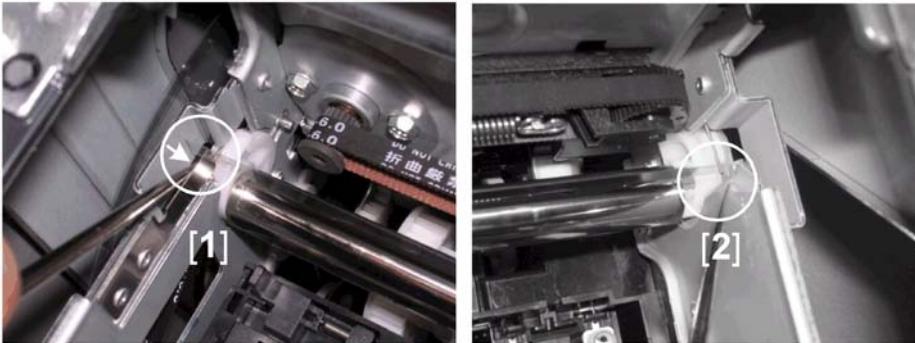
The carriage is locked when the triangles [A] and [B] are at the positions shown on the left.

1. Insert the tip of a plus (+) screwdriver into the hole at [C] and turn in counter-clockwise until the triangles [A] and [B] are aligned as shown on the right.



j014r164

2. Push the carriage unit [1] to the center of the machine.

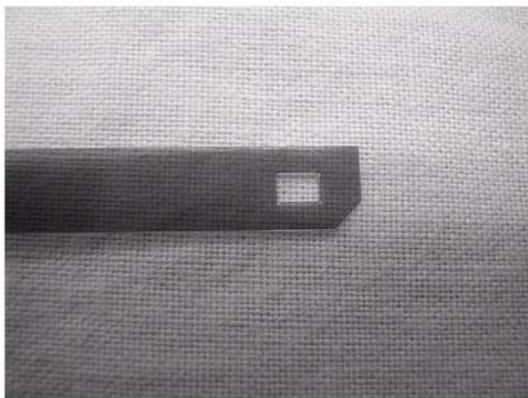


j014r165

3. On the left side of the machine use the tip of a small flat-head screw driver to press the leaf spring [1] in toward the center of the machine to release the tension on the strip, then disconnect the end of the strip from the spring.
4. On the right side of the machine, disconnect the other end of the film strip [2].
5. Remove the strip from the machine.

Reinstallation

3



j014r221

When you reinstall the horizontal encoder film:

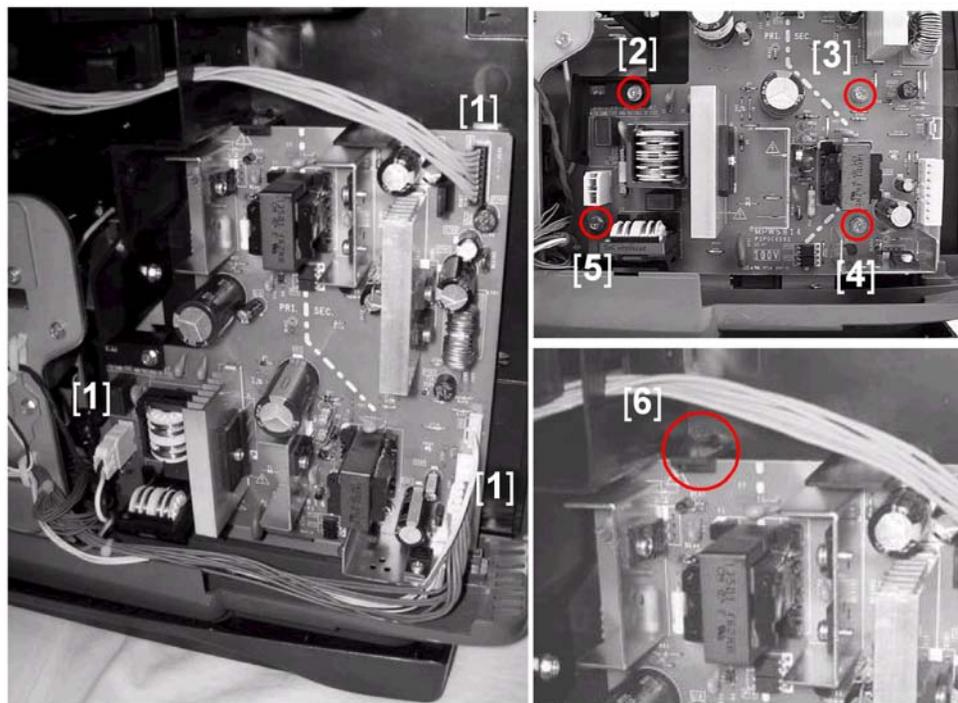
- First, on the right side of the machine attach the end of the strip with its beveled corner down as shown above.
- Next, attach the other end to the leaf spring on the left side of the machine.

★ Important

- **The machine will malfunction if the horizontal encode strip is installed incorrectly.**

Boards

PSU



j014r170

Preparation:

- Remove platen or ADF
- Raise the scanner unit to full upright.
- Remove: (1) paper cassette, (2) paper output tray, (3) left cover

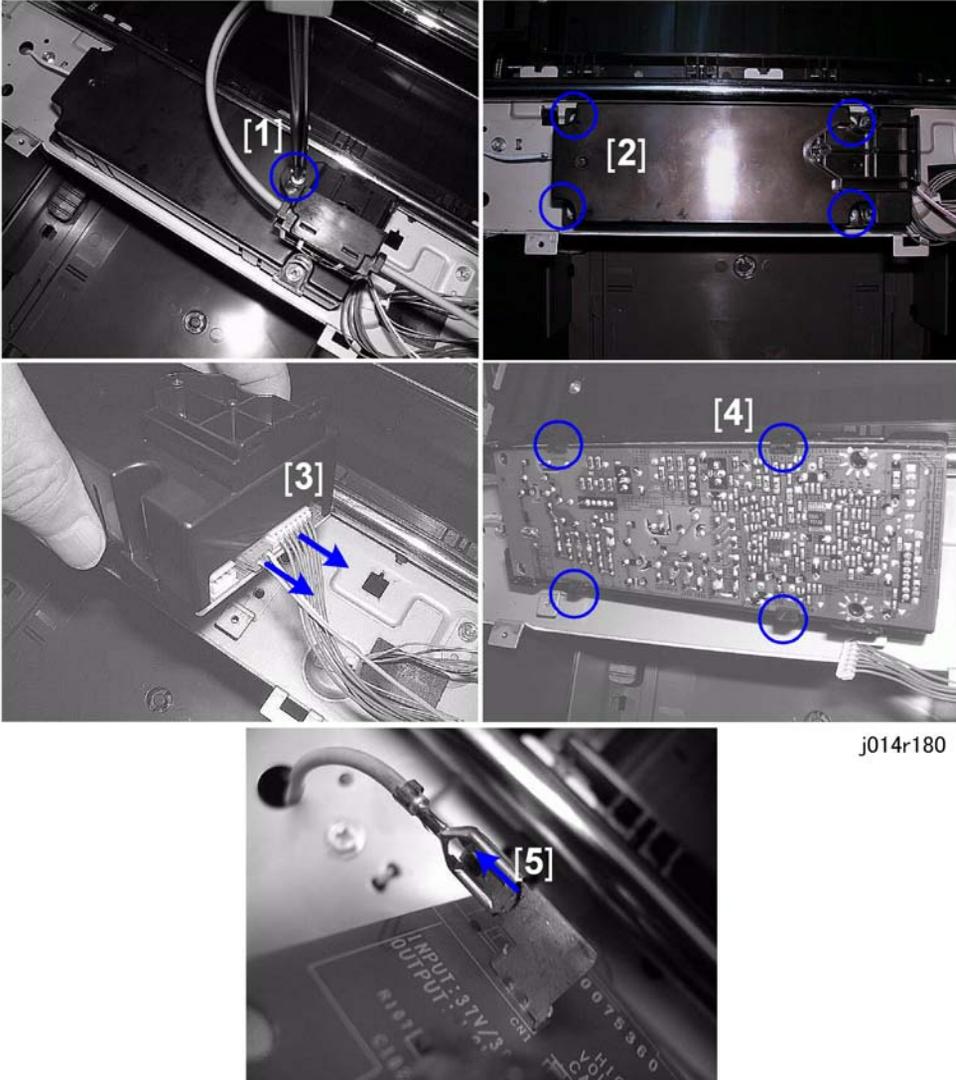
1. Disconnect the connectors [1] (⚡x4).
2. Remove PSU board screws [2], [3], [4], [5] (🔩x4).

↓ Note

- A plastic corner cap is attached at [2]. Remove it from the machine if it falls off.
3. Release the tab [6] then remove the PSU.

HVPS

3



Preparation:

- Remove platen or ADF
- Raise the scanner unit to full upright.
- Remove: (1) paper tray, (2) paper output tray, (3) right cover, (4) front cover

1. Remove screw [1] (⚙️x1).
2. Remove cover screws [2] (⚙️x4).
3. Disconnect connectors [3] (🔌x2).
4. Disengage the hooks [4] (x4)

5. Disconnect the bayonet connector [5].



Printer Engine CTL Board, NVRAM

Before replacing the control board and NVRAM together, you should always print a System Summary, Service Summary, and Engine Summary Chart.

★ Important

- You will need these reports to refer to previous settings that may require resetting.

To print the System Summary:

1. Confirm that paper is loaded in the paper tray.
2. [Menu]> "System Settings?"
3. [▲] or [▼] > "Engine Settings?"> [Yes]
4. [▲] or [▼] > "2 List/Test Print?"> [Yes]> "Configuration Page?"
5. [Yes]> "Please Wait" displays as the report prints.
6. [Clear Modes]> Standby

To print the Service Summary:

1. Confirm that paper is loaded in the paper tray.
2. To enter the SP mode: [Clear Modes]> [107]> [Clear/Stop] for 3 sec.

```
SYSTEM Ver.0.51
```

```
Service Menu
```

3. [Yes]> "Bit Switch"
4. [▲] or [▼] > "Service Summary"> [Yes]> "Press Yes Key"> [Yes]
5. [No] > [▲] or [▼] > "End"> [Yes]> Machine switches off.
6. [Power] to switch the machine on.

To print the Engine Summary Chart:

Do SP5200 (Print SMC). (Printing requires about 2 minutes.)

1. Confirm that paper is loaded in the paper tray.
2. To enter the SP mode: [Clear Modes]> [107]> [Clear/Stop] for 3 sec.

```
SYSTEM Ver.0.51
```

```
Service Menu
```

3. [▼] > "Engine Maint."

```
SP No.
```

1000

4. [▲] 4 times > "5000" > [Yes]
5. [▲] twice > "5200" > [Yes] x 3 times

PRINT SMC
5200

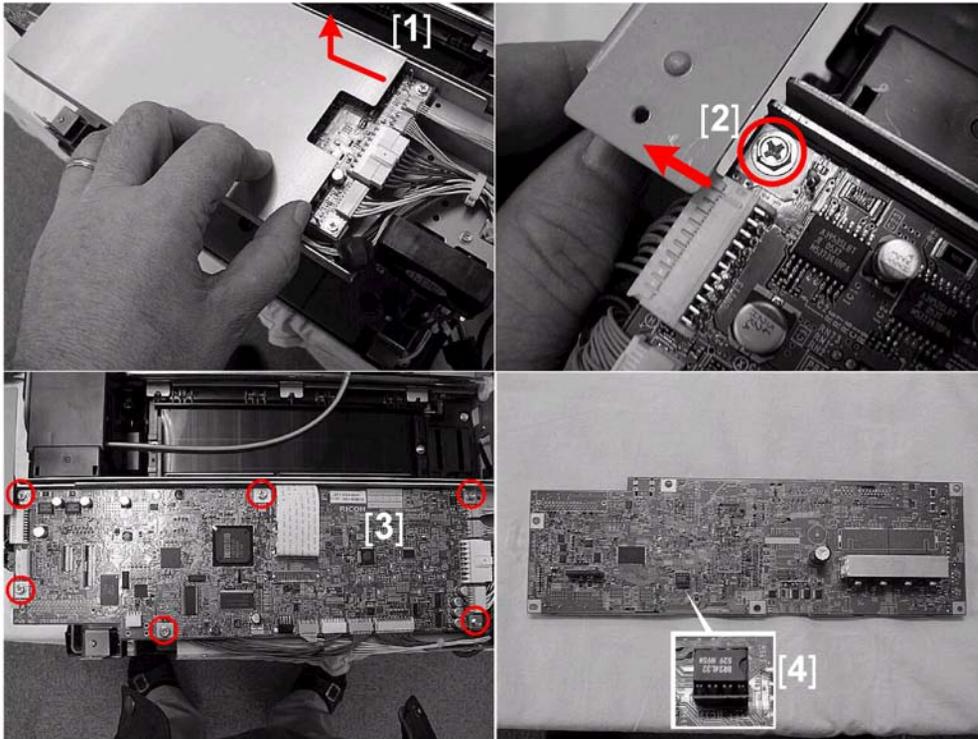
6. [Yes]

PRINT SMC
EXEC

7. [Yes] > "RUNNING"
 - Wait for the report to print (it does not start immediately).
 - Printing requires about 2 min.
1. [No] x 3 times > [▲] or [▼] > "End" > [Yes] > Machine switches off.
2. [Power] to switch the machine on.

Note

- For more details about these reports, please refer to Section "4. Troubleshooting".



j014r190

3

Preparation:

- Remove platen or ADF
- Raise the scanner unit to full upright.
- Remove: (1) paper cassette, (2) paper output tray, (3) right cover, (4) left cover, (5) scanner unit, (6) rear cover

1. Slowly push the cover bracket from the right [1] about 4 cm (1 ½") to the left to disengage the hook below then lift the plate to remove it.

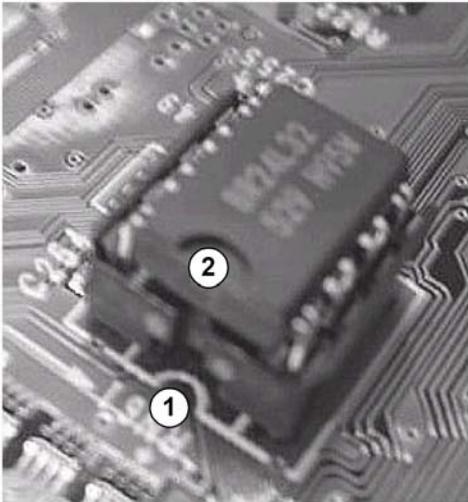
⚠ CAUTION

- Apply only enough force to slide the bracket off of its hook.
- If you push too hard, the bracket may release suddenly from the frame and the edge of the cover may shear components from the control board.

2. Touch a metal surface before you touch the control board.
3. Push the corner of the back cover [2] aside to expose the screw.
4. Remove the control board [3] (⚙x12, FFC x2, ⚙x6).
5. The NVRAM is on the bottom of the board. Turn the board over and lay it on a flat, clean surface so you can see the NVRAM [4].

If the control board is being replaced...

1. Pull the NVRAM from the control board removed from the printer.
2. Install the NVRAM on the new control board.



j014r191

3. Attach the new NVRAM so the curvature of the white line on the board ① matches the curvature of the indentation on the NVRAM chip.

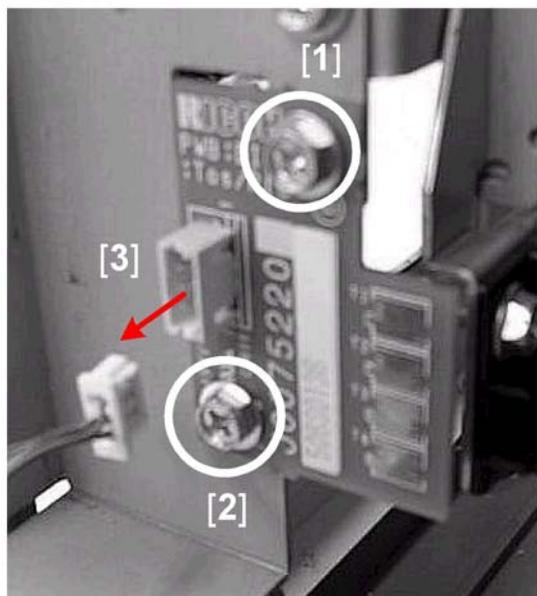


The table below lists the counters and other items that are cleared as a result of replacing the controller board with a new controller board and new NVRAM, or replacing only the NVRAM. Some items require manual resetting, and others do not require resetting.

Item	SP/UP	Reset Procedure
User Menu - Paper Size - System Setting - I/F Setting	All User Menu Items	Print a System Summary. Confer with the operator to determine how to do the settings.
Bit Switches	---	Print a Service Summary. See "5. Service Tables".
Settings Clear	---	Initial System Settings/Counter Settings
Plug-and-Play	---	Print a Service Summary. Confirm that the printer model numbers are correct, reset if necessary.
Counter Display Settings	---	Print a Service Summary and reset.
FAX number setting	---	Consult operator and reset

Item	SP/UP	Reset Procedure
Print Head Rank	SP3100-3107	Do SP5200 to print Engine Summary. Refer to the previously printed summary chart and re-enter the SP settings.
Print Head Gap Adjustment	User Menu "Maintenance"	Do some test prints and adjust. This setting can be done with one execution of SP5102 for all print heads.
LF Adjustment	User Menu, "Maintenance"	Do some test prints and adjust.
Registration Adjustment (Vertical/Horizontal)	User Menu, "Maintenance"	Do some test prints and adjust.
Print Gamma	SP3300-3303	Enter the number recorded on the print head cover. This setting can be done with SP5102 for all print heads.
Ink Collection Tank Replace	---	The software counts for those items lost after NVRAM replacement and cannot be reset. These items must be replaced.
Flushing Unit Replace	---	

Duplex Unit Detection Board



j014r210

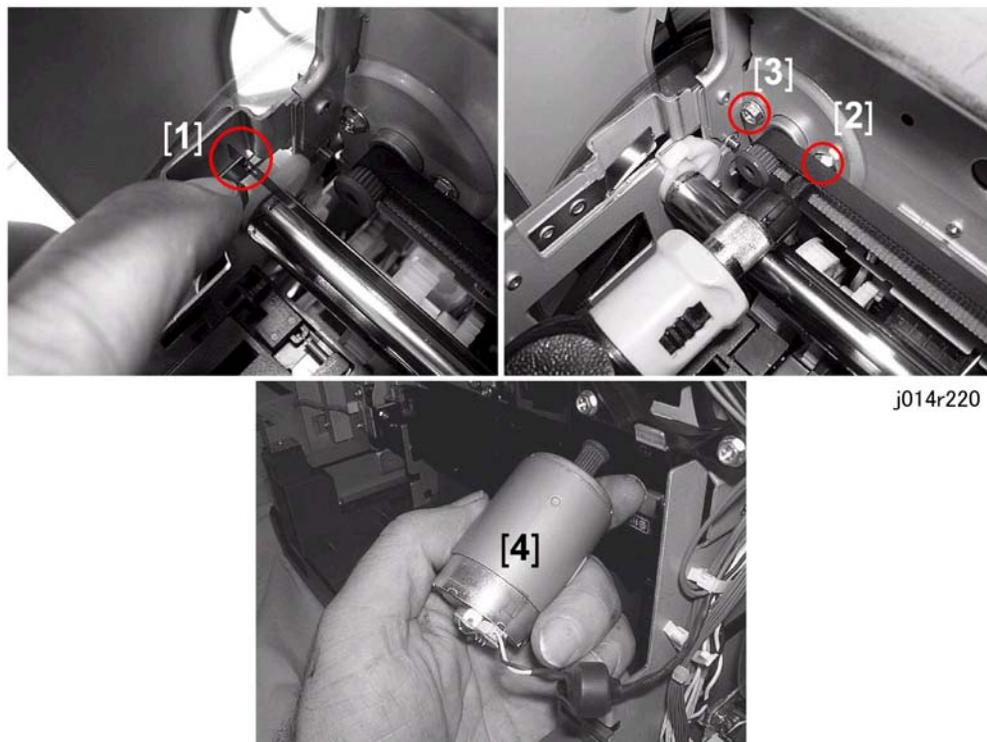
Preparation:

- Remove platen or ADF
- Raise the scanner unit to full upright.
- Remove: (1) paper cassette, (2) paper output tray, (3) right cover, (4) left cover, (5) scanner unit, (6) rear cover

1. Remove screws [1], [2] (🔩x2).
2. Disconnect the PCB [3] (🔌x1)

Motors

Horizontal Motor



3

Preparation:

- Remove platen or ADF
- Raise the scanner unit to full upright.
- Remove: (1) paper cassette, (2) paper output tray, (3) right cover, (4) left cover, (5) scanner unit, (6) rear cover

1. Gently (to avoid bending) push the leaf spring [1] to the right to release pressure on the horizontal encoder strip, then disconnect both ends of the strip and remove it.
2. Remove screws [2] and [3].
3. At the rear corner of the printer, remove the horizontal motor [4] (🔧x1).

Reassembly

3



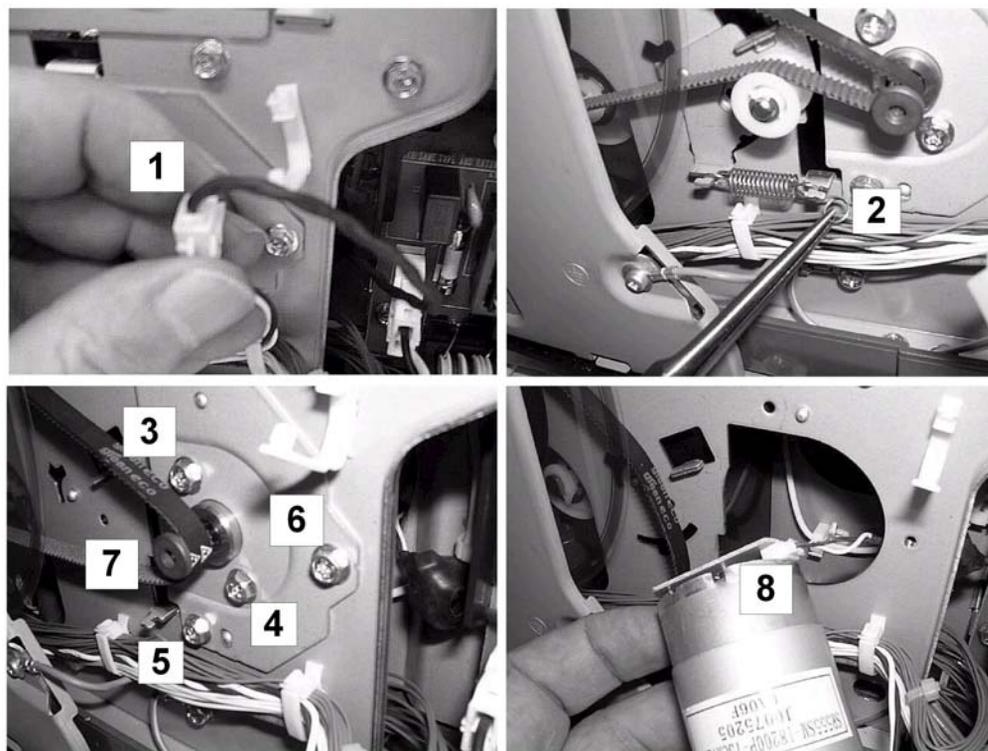
j014r221

On the right side reattach the right notched end of the encoder strip first, with the beveled corner facing down.

★ Important

- Attaching the film encoder strip incorrectly causes the machine to operate incorrectly.

Vertical Motor



j014r230

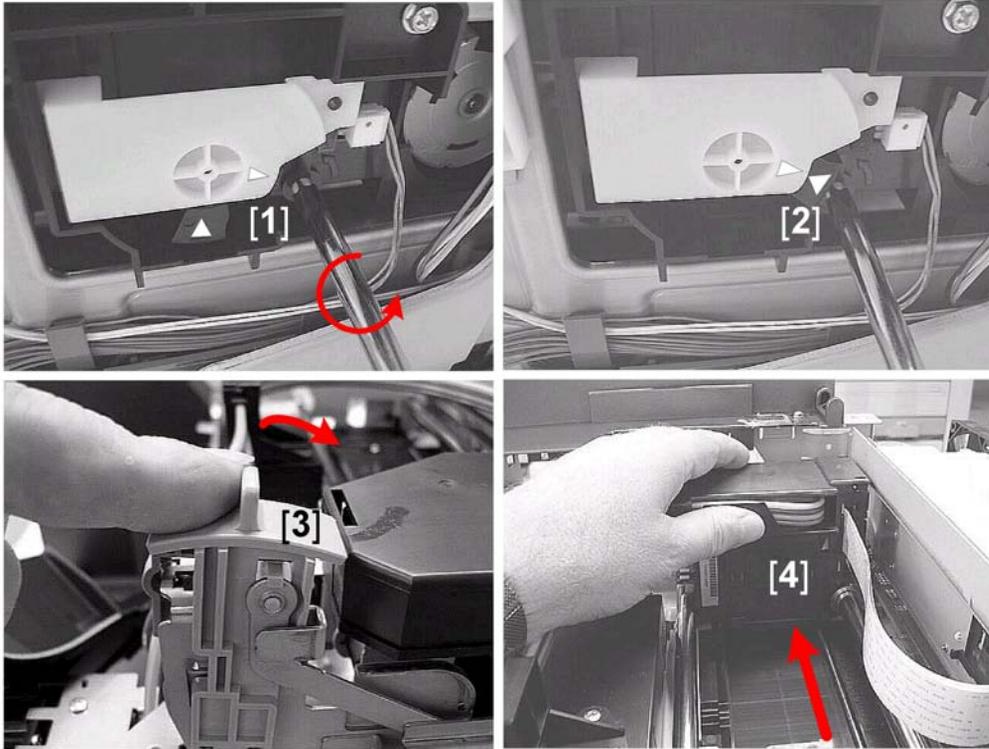
Preparation:

- Remove platen or ADF
- Raise the scanner unit to full upright.
- Remove: (1) paper cassette, (2) paper output tray, (3) left cover

1. Release harness [1] (🔌x1)
2. Remove spring [2]. (🔧x1).
3. Remove the motor screws [3], [4] (🔧x2).
4. Remove the motor plate screws [5], [6] (🔧x2).
5. Disconnect the timing belt [7].
6. Pull out the motor [8] and disconnect it (🔌x1).

Maintenance Unit Motor

3



j014r150

Preparation:

- Remove platen or ADF
- Raise the scanner unit to full upright.
- Remove: (1) paper cassette, (2) paper output tray, (3) right cover

★ Important

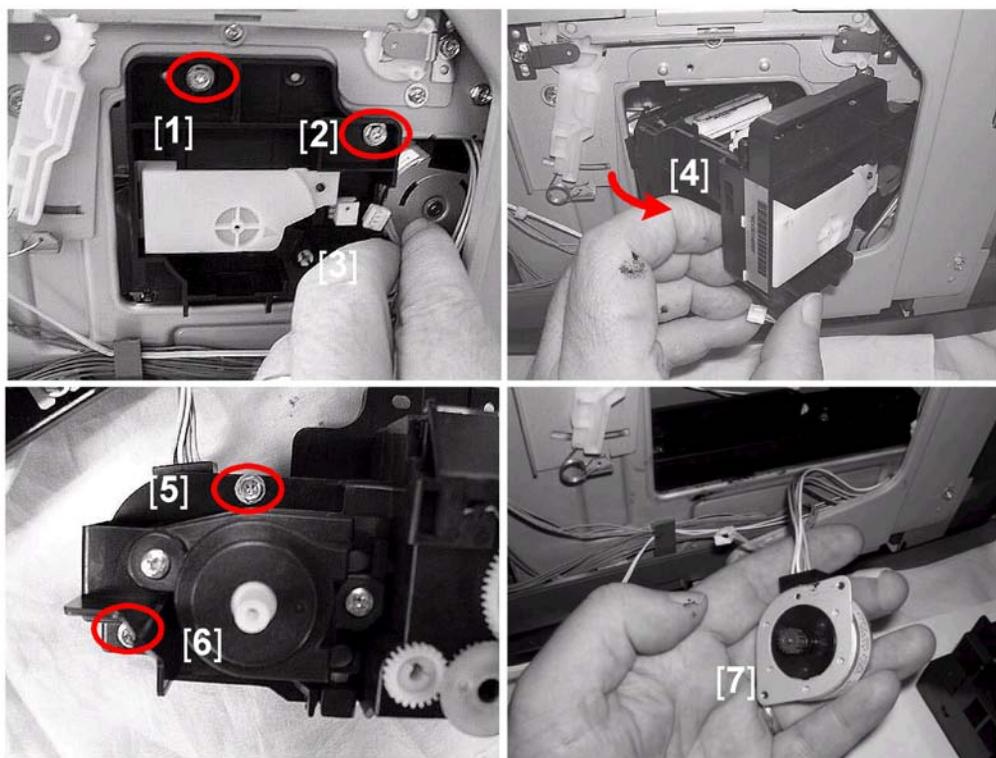
- The bottom edges of the maintenance unit are covered with ink. Spread a cloth or a sheet of paper to set the unit on after it is removed. Avoid touching the bottom of the maintenance unit.

1. To unlock the carriage, use a plus (+) screwdriver to turn the screw [1] counter-clockwise until the tips of the triangles [2] align.
2. Push the envelope selector [3] to the rear to raise the print head unit. Pushing the envelope selector to the rear raises the print head unit. This prevents damaging the print head unit when the carriage is moved manually.

★ Important

- Always push the envelope selector to the rear before you move the carriage manually.

3. Push the carriage [4] to the left side of the machine.



j014r246

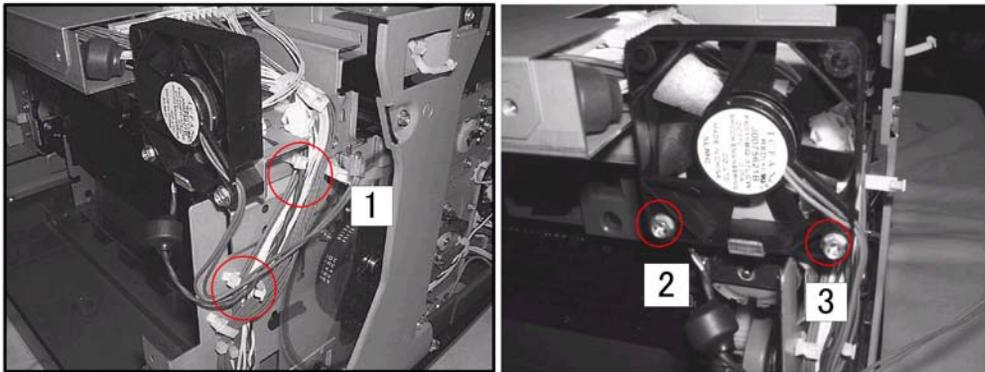
4. Remove screws [1] and [2] ($\phi \times 1$).
5. Disconnect the unit [3] ($\text{E} \times 1$).
6. Pull the unit [4] out of the unit as shown.
 - ★ **Important**
 - Handle the maintenance unit carefully. Do not touch the bottom of the unit because it may be covered with ink.
7. Remove screws [5] and [6], to disconnect the maintenance unit motor [7] from the maintenance unit ($\phi \times 2$).
8. Set the maintenance unit on a cloth or sheet of paper.



j014r247

9. Pull back the tab [1] between the frame and right vertical support to release the maintenance unit motor harness.
10. Disconnect the motor harness [2] (🔧x1).

Rear Fan



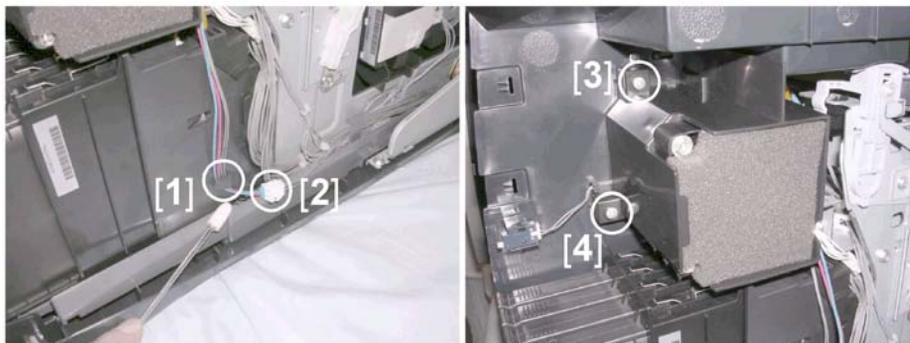
j014r240

- Remove platen or ADF
 - Raise the scanner unit to full upright.
 - Remove: (1) paper cassette, (2) paper output tray, (3) right cover, (4) left cover, (5) scanner unit, (6) rear cover
1. Disconnect the fan harness [1] (🔧x2, 🔌x1).
 1. Remove screws [2], [3] (🔩x2).
 2. Remove the cooling fan.

Front Fan

Preparation

- Remove platen or ADF
- Raise the scanner unit to full upright.
- Remove: (1) paper cassette, (2) paper output tray, (3) right front cover, (4) right cover.



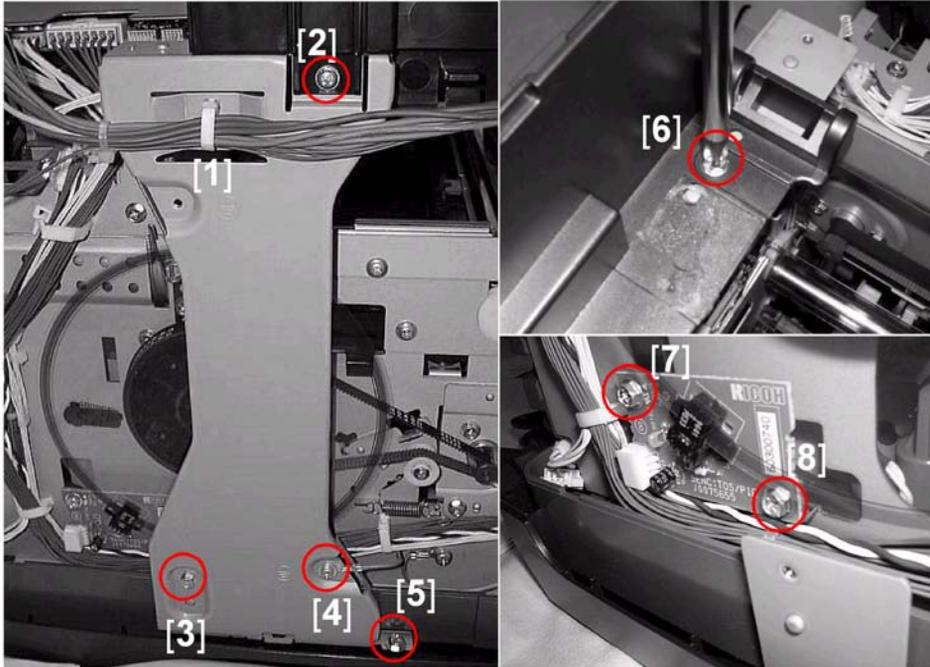
j014r100b

1. Pull the fan connector harness [1] out of its L-clamp.
1. Disconnect the fan harness connector [2] (⚙️x1).
2. Remove fan bracket screws [3] and [4] then remove the fan (⚙️x2).

Sensors

Vertical Encoder Sensor

3



j014r250

Preparation:

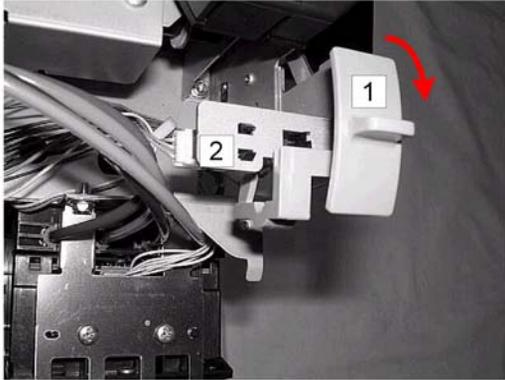
- Remove platen or ADF
- Raise the scanner unit to full upright.
- Remove: (1) paper cassette, (2) paper output tray, (3) left cover

⚠ CAUTION

- Work carefully to avoid bending or scratching the edge of the vertical encoder sensor wheel.

1. Release the scanner unit power harness [1] (⚙ x1).
2. Remove screws [2], [3], [4], [5] on the side of the vertical stay (⚙ x4).
3. Remove the screw [6] on top of the vertical stay (⚙ x1).
4. Remove screws [7], [8] (⚙ x2).

Carriage Position Sensor



j014r260

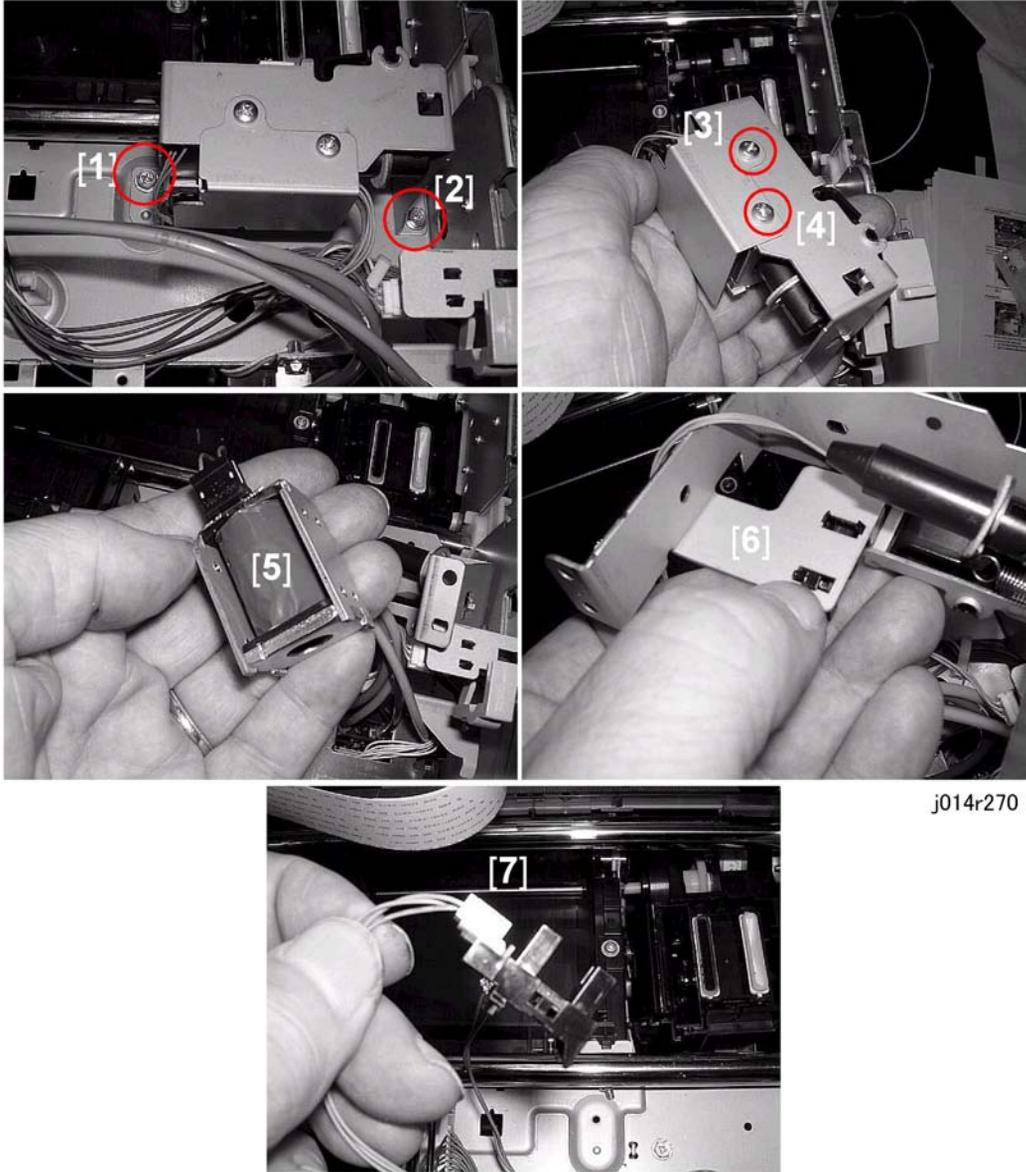
3

Preparation:

- Remove platen or ADF
 - Raise the scanner unit to full upright.
 - Remove: (1) paper cassette, (2) paper output tray, (3) right cover
1. Move the envelope selector [1] forward.
 2. Remove the sensor from under the air release solenoid bracket (Hooks x3)
 3. Disconnect the sensor [2] (🔌x1)

Ink Level Sensor

3



j014r270

Preparation:

- Remove platen or ADF
- Raise the scanner unit to full upright.
- Remove: (1) paper cassette, (2) paper output tray, (3) right cover

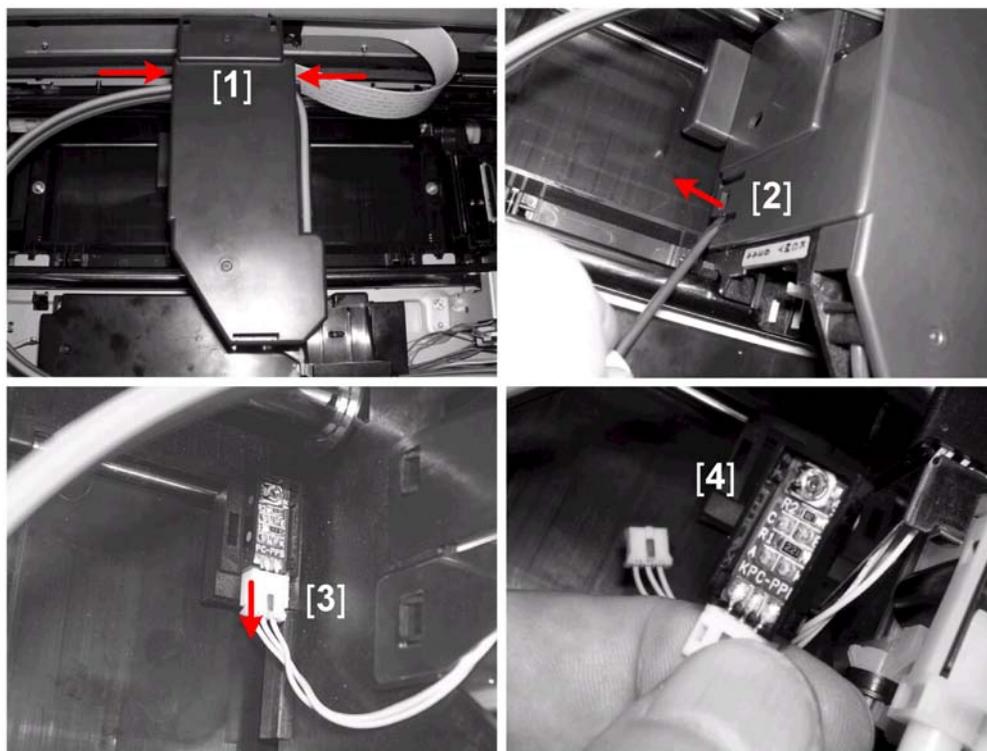
1. Remove the bracket screws [1], [2] (⌀x2)

2. Remove the air release solenoid screws [3], [4] (⌀x2).

3. Remove the air release solenoid [5].
4. Disconnect the sensor from the bracket frame (🔌x1).
5. Release the sensor tabs [6].
6. Pull out the sensor [7] and disconnect it.

1st Registration Sensor

3



j014r275

Preparation:

- Remove platen or ADF
- Raise the scanner unit to full upright.

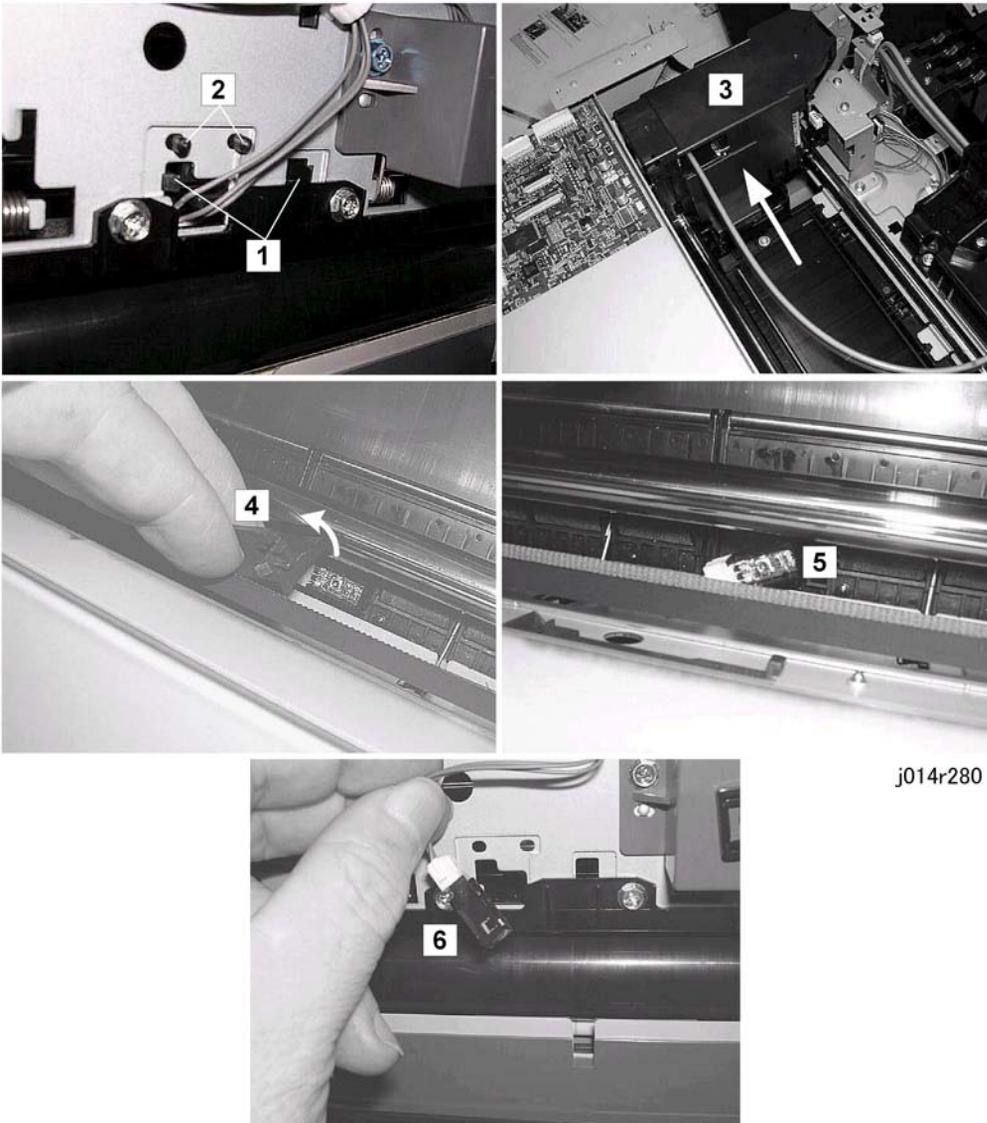
Remove: (1) paper cassette, (2) paper output tray, (3) right front door, (4) right cover, (5) right inner cover, (6) left cover, (7) front cover

1. Press in on both sides [1] of the carriage unit cover to release the side hooks.
2. Use the tip of your finger or a small screwdriver to separate the tab from its hole on the side of the cover [2], then lift the cover off.

3. Pull the connector off of the 1st registration sensor [3].
4. Remove the 1st registration sensor [4].

2nd Registration Sensor

3



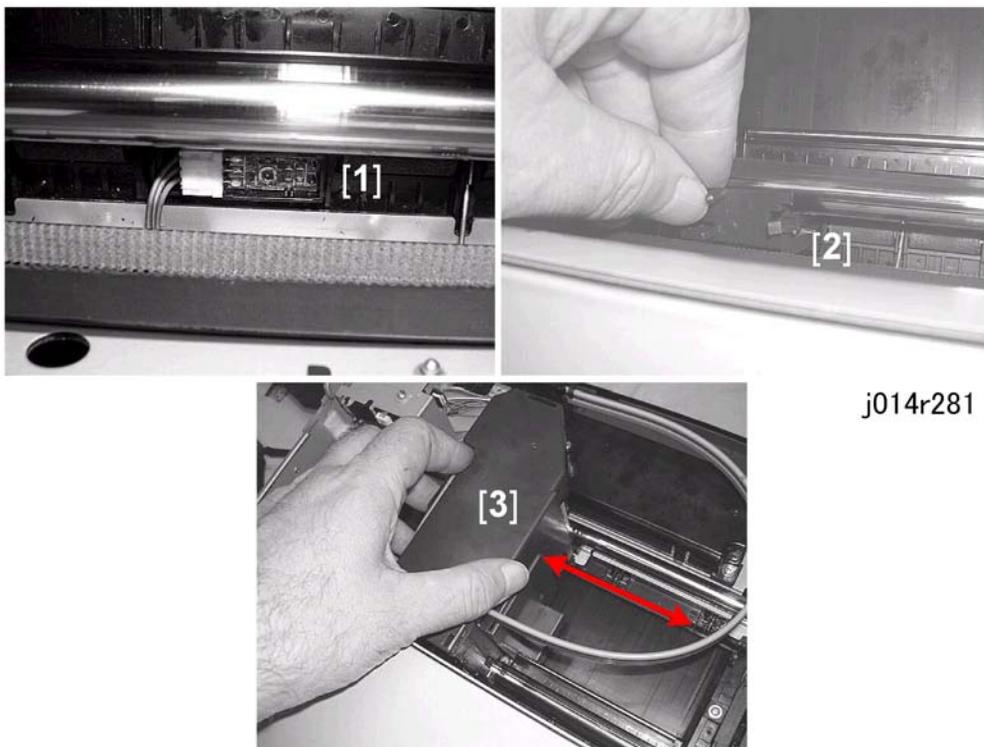
j014r280

Preparation:

- Remove platen or ADF
- Raise the scanner unit to full upright.

- Remove: (1) paper cassette, (2) paper output tray, (3) right cover (unlock the carriage so you can push it left/right), (4) left cover, (5) scanner unit, (6) rear cover
1. To dislodge the sensor cover pinch the hooks inward [1] to release them as you push on the boss pins [2].
 2. Push the carriage [3] to the right side of the machine.
 3. Remove the dislodged sensor cover [4].
 4. Remove the sensor [5].
 5. Pull out the sensor [6] and disconnect it (⏏ x1).

Reassembly

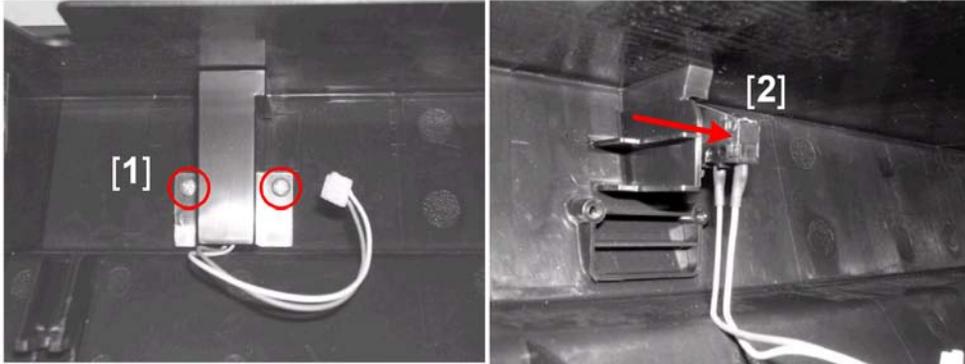


1. Push the sensor through the hole on the back of the machine.
2. Push the sensor [1] down to lock it in place.
3. Reattach the sensor cover [2].

⚠ Note

- The cover cannot pass below the steel shaft.
 - With its front edge down, lower the cover between shaft and the timing belt.
4. Slowly move the carriage [3] left and right to confirm that the carriage does not hit the sensor cover.

Scanner Unit Sensor



j014r285

3

Preparation:

- Remove platen or ADF
- Raise the scanner unit to full upright.
- Remove: (1) paper cassette, (2) paper output tray, (3) right front cover, (4) right cover, (5) right inner cover, (6) front cover

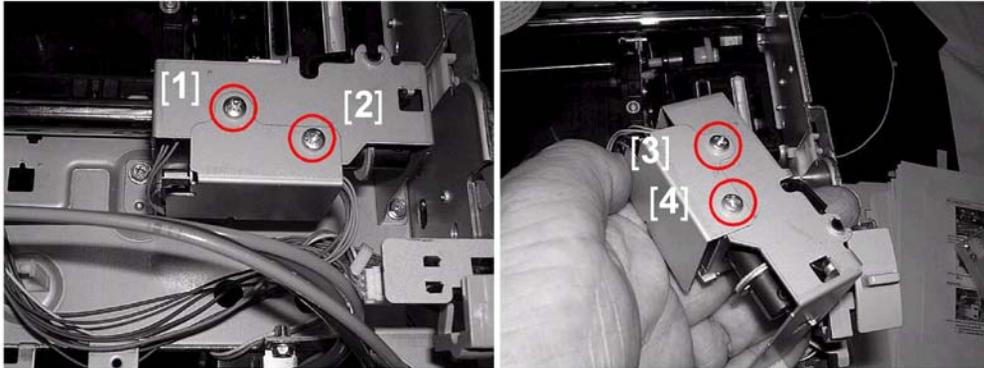
The scanner unit sensor is inside the front cover.

1. Remove the screws of the sensor cover [1] (⚙ x2).
2. Push the scanner unit sensor [2] to the right to slide it off its pegs (x2).

Reassembly

- Make sure the sensor is mounted on both pegs before you try to reattach the cover.
- The cover will not fit over the sensor until the sensor is set correctly on both pegs.

Air Release Solenoid



j014r290

3

Preparation:

- Remove platen or ADF
- Raise the scanner unit to full upright.
- Remove: (1) paper cassette, (2) paper output tray, (3) right cover

1. Remove the bracket screws [1], [2] (⌘x2)
2. Remove the air release solenoid screws [3], [4] (⌘x2).
3. Remove the air release solenoid [5] (⌘x1).

Cleaning Procedures

The responsibility of the service technician is limited because this machine is adjusted for optimum performance at the factory before it is shipped.

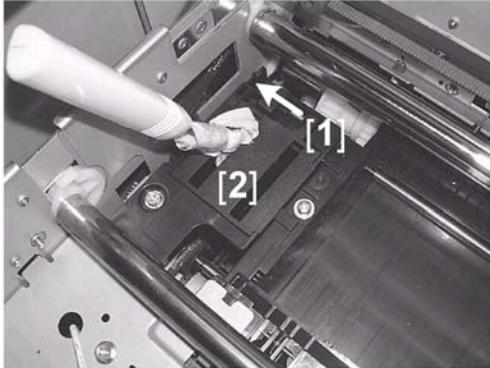
Return the printer to the repair center or replace the machine if a serious problem occurs.

There are no parts that require scheduled maintenance or replacement. However, the service technician should do the procedures described in this section when a service call is requested.

3

Description	At Service Call (or When Necessary)
External Covers	Damp cloth.
Feed Roller	Damp cloth. Release the feed clutch lock. Rotate the roller freely as you clean it.
Friction Pad	Damp cloth. This is the cork friction pad on the front edge of the standard paper cassette (Tray 1).
Printer Operation, Print Quality	Print a Nozzle Check Pattern and check the results. Clean the print heads if necessary. For more, see "Image Adjustment" "3. Replacement and Adjustment".
Ink Collector Tank	A message on the printer operation panel prompts you to replace the ink collector unit after it has become full. For more, see "3. Replacement and Adjustment".
Flushing Unit Gate	Dry cloth. Always remove the ink that has hardened around the flushing gate slots when you replace the ink collector tank. To scrape away hardened ink, you may need to use a small screwdriver
Maintenance unit	Wet cloth (use water). Always use a tightly wrapped dry cloth to remove the ink that has hardened around the suction cap and wiper blade when you replace the ink collector tank.

Flushing Gate Cleaning



j014r300

Dry ink flakes that collect around the flushing gate can cause streaking in printouts.

Preparation:

- Remove platen or ADF
 - Raise the scanner unit to full upright.
1. Wrap the tip of a screwdriver or other tool with a piece of soft cloth.
 2. While pushing the lever [1] to the left, use the tip of the screwdriver [2] to remove ink that has hardened inside the slits of the flushing gate.
 3. Use a damp cloth to wipe clean the ink splatter around the flushing gates.

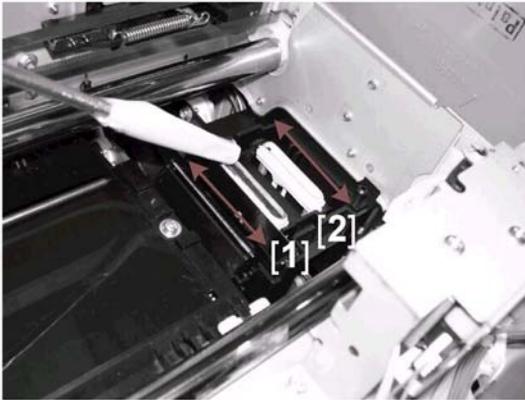
Maintenance Unit Cleaning

1. Move the carriage to the left.
 - [Menu]> ▲> "Maintenance"> [Yes]> "1 Nozzle Check?"
 - ▲> "9 Move Print Heads?"> [Yes]> "Please Wait"

After a few seconds the carriage will move the left and the printer will go off.
2. Open the scanner unit.
3. Wrap the tip of a screwdriver or similar tool with a piece of finely woven cloth which is slightly damp.

★ Important

- The damp cloth prevents scratching the suction cup. A scratched suction cup could cause poor print quality. Never use tissue, cotton, or any other type of material to wrap the tip of the screwdriver. Such material can contaminate the maintenance unit with loose fibers.



j014r312



4. Use the wrapped tip of the screwdriver to clean inside and around the right air vent [1] and suction cap [2].

Clean the vent and cap carefully to avoid:

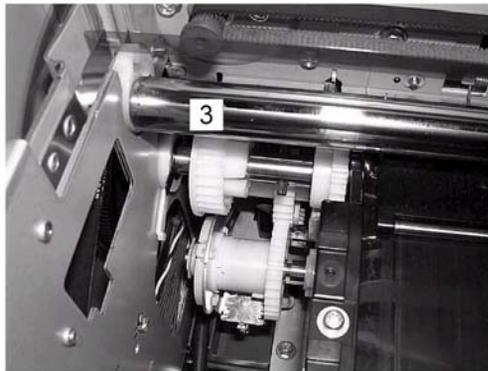
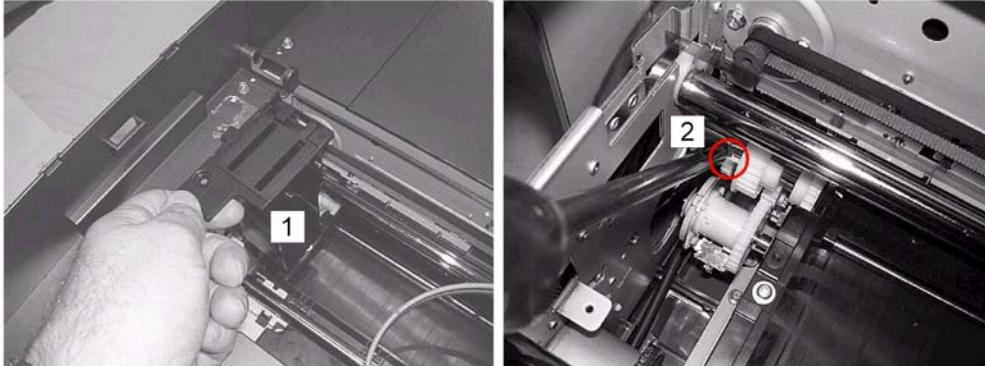
- Damaging the movable feeler inside the right air vent [1]
- Damaging the fragile lip of the suction cap [2].

★ Important

- **Do not insert the tip of the screwdriver down into either the right air vent or suction cap.**

5. Close the scanner unit.
6. Press the power button to switch the printer on.

Feed Roller Cleaning



j014r320

3

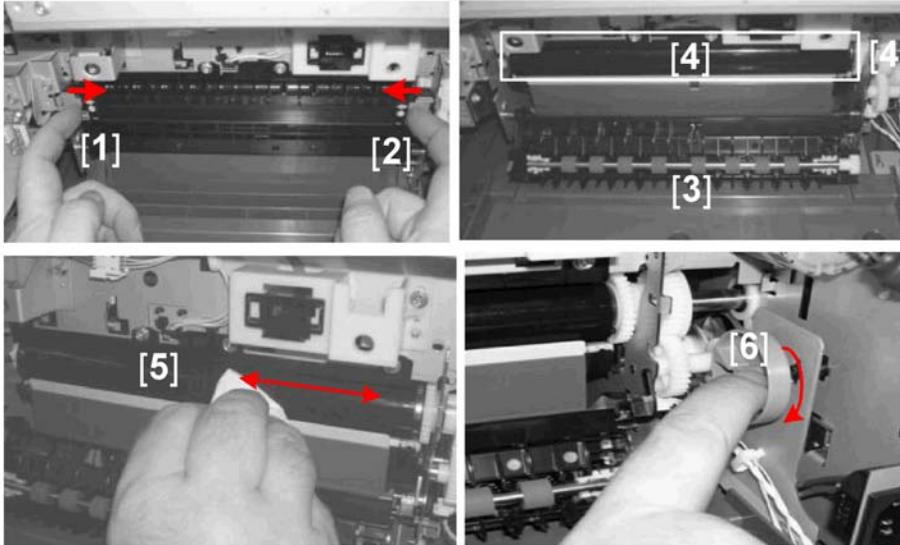
Preparation:

- Remove platen or ADF
 - Raise the scanner unit to full upright.
 - Remove: (1) paper cassette, (2) paper output tray
1. Remove the flushing unit [1] (1x1).
 2. Use the tip of a long flat-head screwdriver to release the Teflon lock tab [2] of the transport roller.
 3. Push the transport roller gear [3] to the left. This unlocks the roller and allows it to rotate freely.
 4. Rotate the roller and clean it with a dry cloth.

★ Important

- Be sure to lock the roller in place after cleaning.

Transport Belt Cleaning



J014r330

Preparation:

- Remove platen or ADF
 - Raise the scanner unit to full upright.
 - Remove: (1) paper cassette, (2) paper output tray, (3) duplex unit (4) flushing gate
1. Release the left and right locks [1] and [2] (marked "PUSH").
 2. Lower the plate [3] to expose the surface of the transport roller [4].
 3. Use a dry cloth to wipe the belt [5].
 4. Rotate the feed guide [6] to expose the next area of the belt.
 5. Repeat Steps 3 and 4 until the entire surface of the belt is clean.
 6. Make sure that the entire surface of the belt is completely dry.

★ Important

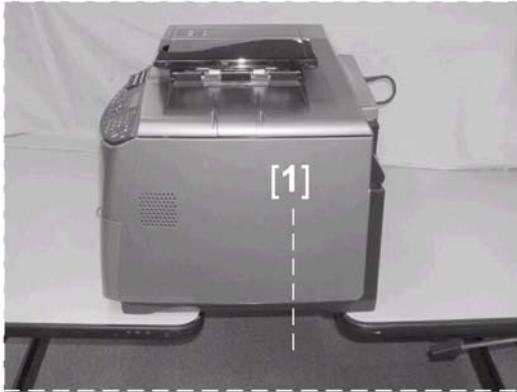
- Water on the surface of the transport belt could interfere with the operation of the printer.

Friction Pad Cleaning

The friction pad is located on the bottom of the machine.

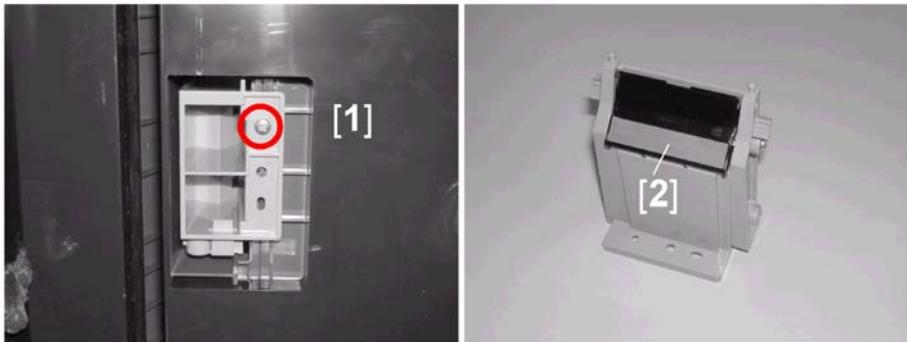
★ Important

- To avoid ink spillage never set the machine on its side or turn it upside down to remove the friction pad.



j014r950

1. Position the machine [1] with the front and back supported by two tables as shown above. (The white line shows the position of the friction pad under the machine.)



j014r951

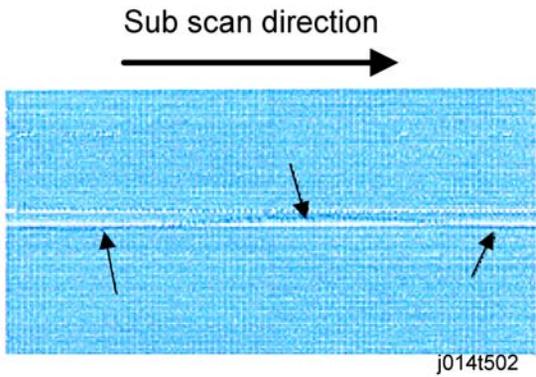
2. Under the machine remove the screw [1] and remove the friction pad.
3. Use a damp cloth to clean the surface of the friction pad [2].

Horizontal Encoder Strip Cleaning

Clean the horizontal encoder strip if the following conditions occur:

- Vertical white lines on an image
- Double image
- Broken vertical lines
- JAM 14

Sample image of vertical white lines



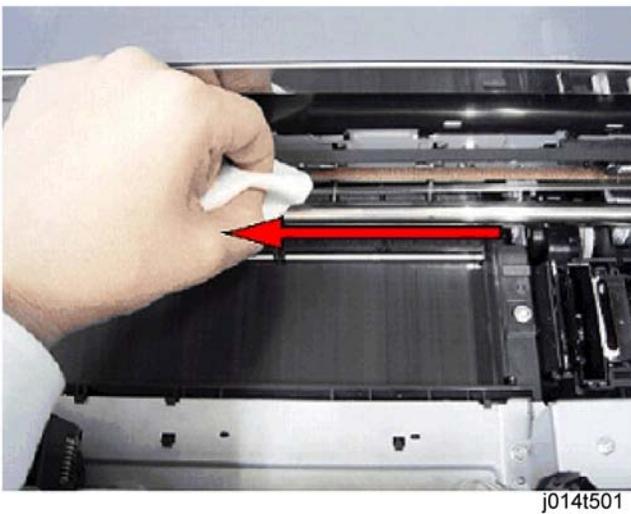
3

Cleaning procedure

Preparation:

- Remove platen or ADF
 - Raise the scanner unit to full upright.
1. Move the carriage to the left.
 - [Menu]> ▲> "Maintenance"> [Yes]> "1 Nozzle Check?"
 - ▲> "9 Move Print Heads?"> [Yes]> "Please Wait"

After a few seconds the carriage will move the left and the printer will go off.



2. Dampen a small piece of clean linen cloth with a small amount of alcohol.

★ Important

- **Never use cotton, soft tissue, or any other type of material that could shred and leave fibers on the encoder film strip.**
3. Gently wipe the horizontal encoder strip always from **right to left** in one direction.

★ Important

- **To avoid bending the spring plate on the left end of the encoder strip, always wipe the strip from right to left. The horizontal encoder strip is fragile. Never apply excessive tension to the horizontal encoder strip when cleaning it.**
4. Push the carriage unit to the right with your hand.
 5. Repeat Step 3 to clean the left end of the strip.
 6. Push the carriage unit to the left again, and then turn on the machine.
 7. Confirm that the machine is in standby mode and ready to operate.

★ Important

- **Switch on the printer immediately after cleaning to ensure that the carriage returns to the right side of the machine and caps the print heads. If this is not done immediately, the print heads may dry out.**
8. Do the "Nozzle Check" after cleaning, and then check the patterns for missing or broken lines.
 9. Do "Print Head Cleaning" if the pattern is not satisfactory.
 10. Do "Print Head Flushing" if the pattern is not satisfactory, even after three print head cleanings..
 11. Do "Print-Head Flushing" and print another Nozzle Check Pattern.
 12. If the Nozzle Check Pattern is still not satisfactory after flushing the print heads, replace the horizontal encoder strip.

Swapping the Engine Unit

The engine unit includes the main engine components and does not include the:

- ADF unit
- Scanner unit
- Main CTL board in the scanner unit

To swap the engine unit:

3

1. Remove the ADF.
2. Remove the scanner unit
3. Replace the engine unit.

Firmware Update

By performing firmware updates, you are allowing your printer to obtain the newest internal control software available, providing improved operation.

This machine has three firmware modules. Update them in the following order:

- Printer
- Ethernet Board (Can be updated only if the network interface board is installed.)
- Master Controller

You can update the copier, scanner, and fax functions. Also, by using a batch file, you can update all three firmware modules together.

3

What You Need

The printer must be connected to the PC via a USB cable. These firmware modules cannot be updated over a network.

One of the following operating systems is required:

1. Windows 98 SE
2. Windows ME
3. Windows 2000
4. Windows XP
5. Windows Server 2003
6. Windows Vista

If you are using 3, 4, 5, or 6, you must login as an administrator or as a user with administrator privileges.

The RPCS raster printer driver for the machine must be installed on the computer.

The TWAIN driver for this machine must be installed on the computer.

Important Points

1. Computer Power Options

Before updating the firmware, in the computer power options confirm that "System Standby/System hibernates" is set to "Never". Checking the computer power options is slightly different for each operating system. Refer to the system online help for more information about this procedure.

1. During the Update Procedure

While the update procedure is in progress:

- Never switch off the printer
- Never disconnect the USB cable
- Do not start any print job or run an application that uses the printer driver, Status Monitor, or SmartDeviceMonitor
- Do not manually set the computer in system standby or hibernation mode

Before You Begin...

3

Before you start the update, confirm the following:

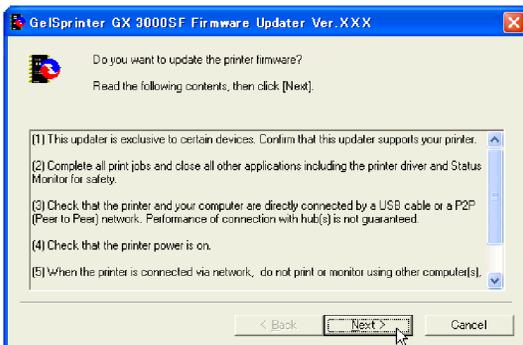
- The RPCS raster printer driver is installed on the computer.
- The TWAIN driver is installed on the computer.
- The machine is in standby mode ([Power] key is lit blue).
- No applications are running in the background.
- The printer is connected to the computer with a USB cable.

Note

- The following procedure uses Windows XP screenshots.

Update Procedure

1. Double-click [GelSprinterGX3000SF_Setup.bat] to start the update.
2. Select [English], and then click [OK].



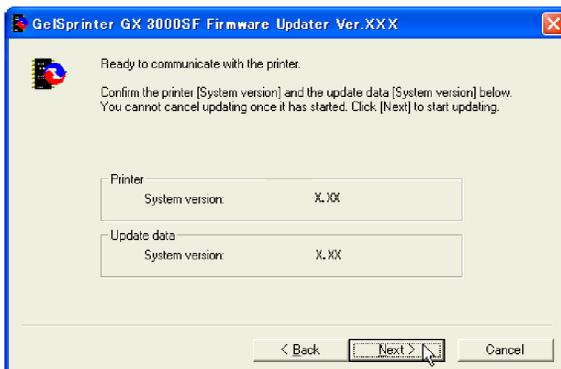
j014r940a

1. Check the displayed details, and then click [Next >].



j014r940b

1. Select the printer name, and then click [Next >].



j014r940c

1. Check that the system version for [Update Data] is newer than the system version for [Printer], and then click [Next >].

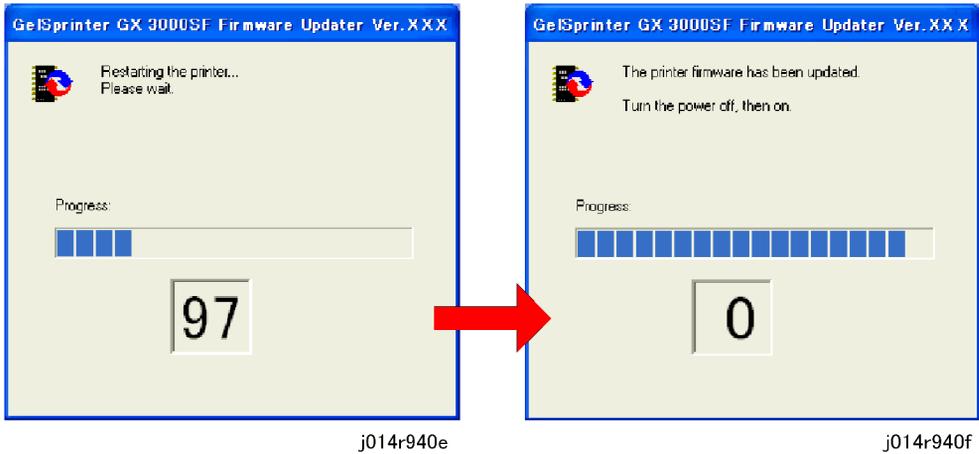
★ Important

- Once the firmware has been updated, you cannot restore to the previous version.

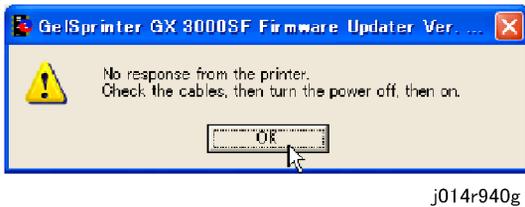


j014r940d

1. Click [OK] to start the update.



1. Switch the printer off , wait a few seconds, and then turn it back on.



j014r940g

If the screen above appears, switch the printer off and then back on, and then click [OK].

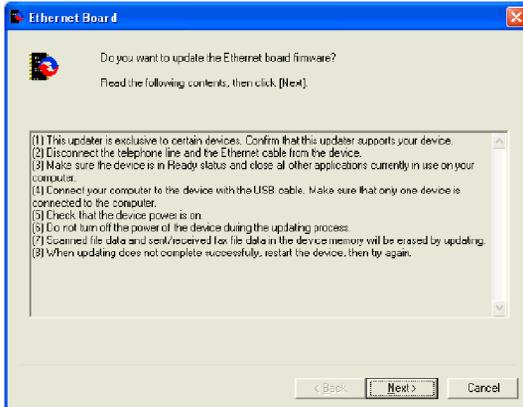


j014r940h

1. Check the version, and then click [Finish].

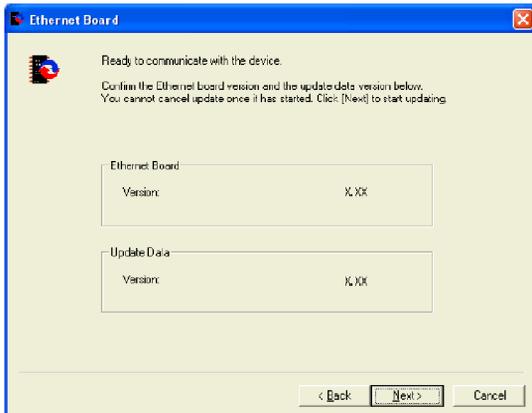
Next, the Ethernet Board Firmware Update Wizard starts.

- If the optional network interface board is not installed in the machine, the following message appears: "The Ethernet board is not installed. "
- If this message appears, press [OK] to cancel the Ethernet board firmware update.
- The Master Controller Firmware Update Wizard starts. Go to Step 14.



j014r940i

1. Click [Next >]

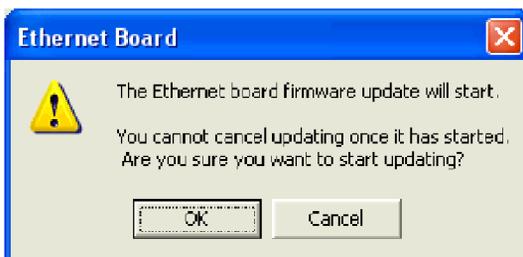


j014r940j

1. Check that the system version for [Update Data] is newer than the system version for [Ethernet Board], and then click [Next >].

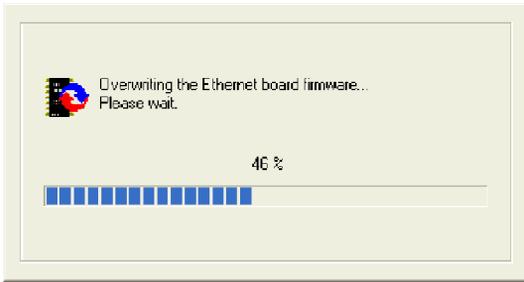
↓ **Note**

- Once the firmware has been updated, you cannot restore it to the previous version.

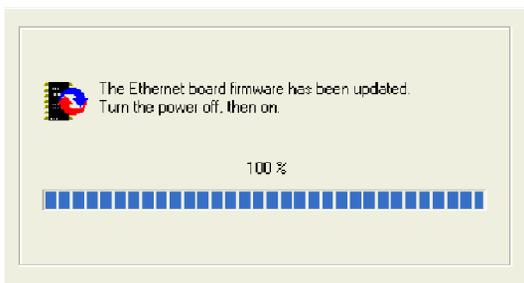


j014r940k

1. Click [OK] to start the update.

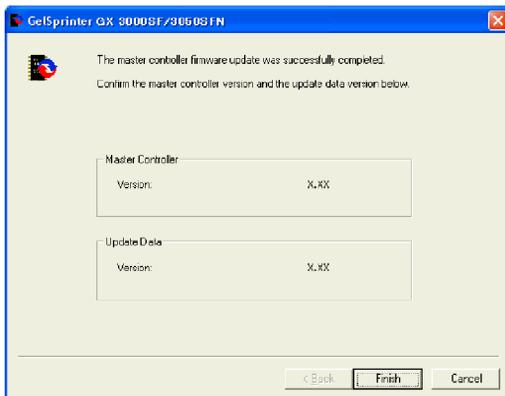


j014r940i



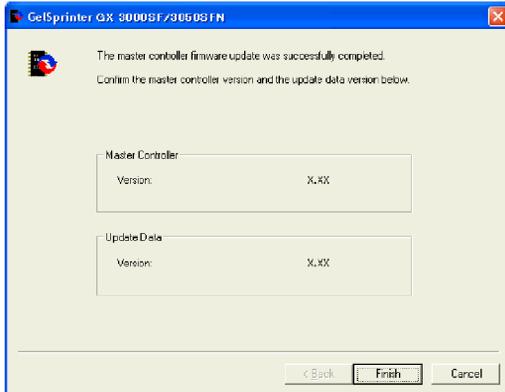
j014r940m

1. Switch the printer off, wait a few seconds, and then turn it back on.



j014r940o

1. Check the version, and then click [Finish] to start the master controller firmware update.
2. Click [Next >]



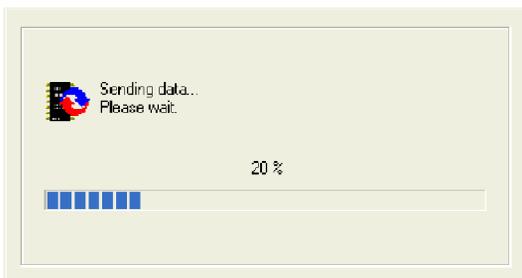
j014r940o

1. Check that the system version for [Update Data] is newer than the system version for [Master Controller], and then click [Finish].

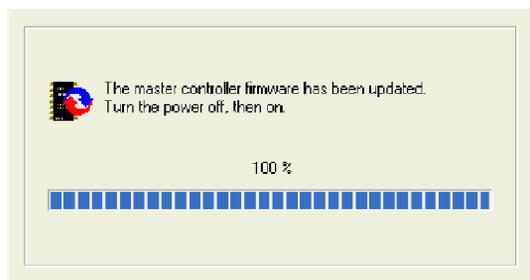


j014r940p

1. Click [OK] to start the update.



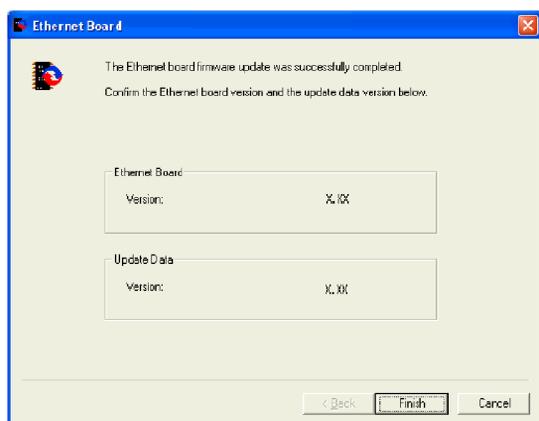
j014r940q



j014r940r

3

1. Switch the printer off, wait a few seconds, and then turn it back on.



j014r940s

1. Check the version, and then click [Finish].

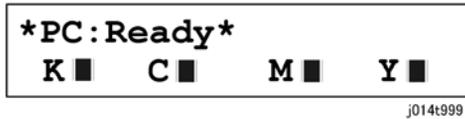
The update is complete.

4. Troubleshooting

Display Summary

Operation Panel Display

The operation has four screens that can be displayed by pressing the [Facsimile], [Printer], [Scanner], or [Copy] key on the operation panel. The display below appears after pressing the [Printer] key.



Note

- After one of these keys is pressed the machine will return automatically to the Copy screen if a key is not pressed within 60 sec. This feature can be shut off with the Auto Set Time function ([Menu]> "System Settings"> "Auto Set Time?").

Operation Panel Ink Low/Ink End Indicator

The machine shows a 6-level dynamic display that keeps the operator informed about the status of the ink levels in the tanks. The example below for Black (K) shows the progression in the display from full on the left to completely empty on the right.



- At 100% the print cartridge is completely full.
- The 0% display is the cartridge near end alert. Printing is still possible until the ink in the print head is gone.
- The arrow display on the far right is the print cartridge end alert. The machine cannot be used until the print cartridge has been replaced.

Display Menu Summary

Here is a brief summary of the function menus. The machine operates on the default settings until a setting is changed. The changed settings remain in effect after the machine is turned off and on.

Press [Menu] to put the printer in the menu mode.

[▲] or [▼] > To display an item.

[Yes]> Select the item and go to the next level down in the menu.

[No]> To return to the previous menu level. (Press repeatedly to return to standby.)

[Clear Modes]> Press once to return immediately to standby.

Menu/Menu Item	Function
System Settings?	
This menu includes important basic settings that affect operation of the machine.	
1 Auto Reset Time?	<p>Allows the machine to reset a job setting to its original values if the user pauses too long while setting up a job.</p> <p>[0.5 to 1/0/1 min.]</p> <p>0: OFF</p> <p>Press [▲] or [▼] to select how long the machine waits before it restores the original settings. These settings are available: 0.5, 1, 2, 3, 4, 5 min.</p>
2 Energ. Saver Timer?	<p>Switches the energy save function on/off. The default setting is off (15 min.)</p> <p>[1 to 240/15/ 1 min.]</p> <p>When this function is on, the machine will automatically shut down some of its functions after it remains idle for the prescribed amount of time.</p> <p>Note:</p> <ul style="list-style-type: none"> • The machine will require some time to recover after it receives a print job while in the energy saver mode. • The machine might not enter the energy save mode while an error message is displayed.
3 Auto Off Timer?	<p>The machine is set to return to the standby mode from the menu mode if a key is not pressed within 60 sec. This ensures that the machine is always ready for operation.</p> <p>Default: OFF (ON = 60 min.)</p> <p>Notes</p> <ul style="list-style-type: none"> • If this item is switched off, the machine will not reset automatically to standby mode. This can be convenient when doing long setup or testing procedures during installation and troubleshooting.

Menu/Menu Item	Function
	<ul style="list-style-type: none"> • After the installation or troubleshooting session is completed, switch this feature on again.
4 Language?	<p>Allows selection of 1 of 10 languages. The selected language is used for the menus, prompts, and messages on the operation panel display of the machine.</p> <p>Default: English</p> <p>German, French, Italian, Dutch, Swedish, Norwegian, Danish, Spanish, Portuguese</p> <p>Note: A message prompts you to cycle the machine off/on. The machine must be cycled off/on to enable the new setting.</p>
5 Adjust Sound Vol?	<p>The sound level can be adjusted for key presses, alerts, and speaker volume during on-hook mode.</p> <ul style="list-style-type: none"> • Key. Adjusts the volume of the beep that sounds when a key is pressed, or an original is loaded in the ARDF. • Alert. Adjusts the volume of the beep that sounds when a transmission error or other error occurs. • Line Vol. Adjusts the volume of the speaker used during on-hook mode with the fax.
6 Daylight-saving?	<p>Switches the daylight saving time function on and off.</p> <p>Default: On</p> <p>The date and time for switching from standard time to daylight saving time depends on which country is selected for "Country" under these "System Settings". (See below.)</p> <p>Note: This feature is not available in some countries.</p>
7 Country?	<p>Allows country selection.</p> <p>Default: USA</p> <p>The country selection automatically affects other settings such as "Daylight-saving", "Print Fax Header", and "Auto Reset". For more details, please refer to the Operating Instructions.</p> <p>Note: A message prompts you to cycle the machine off/on. The machine must be cycled off/on to enable the new setting.</p>
8 Func. Priority?	<p>Specifies the operation mode (Fax or Copy) immediately after the machine is turned on and after the Auto Reset Time elapses.</p> <p>Default: Copy</p>

Menu/Menu Item	Function
9 Parameter Setting	This feature presents a selection of bit switch settings that allow you to perform software settings.
Tray Paper Setting?	
The tray paper settings must be done for Tray 1 (standard) and both options, Tray 2, Multi Bypass Tray. These settings are required because there are no sensors in this machine that can automatically detect paper size.	
1 Tray1?	<p>Note: The "Tray2" and "Bypass" items do not appear until after these options have been installed.</p> <ul style="list-style-type: none"> • Paper Type? Selects the paper type for Tray 1 (Standard), the Tray 2 (option), and Multi Bypass Tray (option). Default: Plain For more about paper types for each tray, please see Section "7. Specifications". • Paper Size? Selects the paper size for Tray 1 (Standard), the Tray 2 (option), and Multi Bypass Tray (option). Default: A4/LT For more about paper sizes, please refer to Section "7. Specifications". • Auto Tray Select? Determines whether another paper source is selected after the current source runs out of paper. For example, if paper runs out while feeding from Tray 1, the machine will automatically select Tray 2 and continue the job without interruption. Default: On.
2 Tray2?	
3 Bypass Tray?	
User Restriction?	
Copier Features?	
Program Dest.?	
TX Settings?	
RX Settings?	
Line Settings?	
Auto Print Report?	
General Settings?	

Menu/Menu Item	Function
1 Date & Time?	Sets current date and time.
2 Fax No.?	For the fax models only. Sets the facsimile number.
3 User Name?	Sets the user name
Network Settings?	
Use to do the network settings. The network settings appear only after the NIB has been installed. (The NIB is standard on the J014, an option for the J012/J013.)	
1 Machn. IP Address?	<ul style="list-style-type: none"> • Auto. Get IP address from DHCP server. • Specify. Format "xxx.xxx.xxx.xxx"
2 Subnet Mask?	This setting is not available if "Auto" is selected for "Machn. IP Address". The value cannot be more that "255".
3 Gateway Address?	Format "xxx.xxx.xxx.xxx". Cannot be more than "255". This setting is not available if "Auto" is selected for "Machn. IP Address".
4 DNS Settings?	<ul style="list-style-type: none"> • Inaction. • Action. Format "xxx.xxx.xxx.xxx"
5 Ethernet Speed?	<p>5 Ethernet Speed</p> <p>The NIC supports 10Base/100Base full-duplex and half-duplex modes. Under normal conditions, setting "Auto" automatically determines the Ethernet speed appropriate for the network. However, some network administrators might want to set the Ethernet speed, or "Auto" might not work properly in some network environments.</p>
6 Reset Ethernet Bd?	<p>6 Reset Ethernet Brd</p> <p>This feature restores the default Ethernet setting values to the factory default settings. This feature is useful for example, when the user has configured IP filtering so no one can access the machine. In such a case, the user can recover the default network settings to erase incorrect filtering values.</p>
LDAP Settings?	For more details about these functions, please refer to the User's Guide.
SMTP Settings?	
POP3 Settings?	
Scanner Features?	

Menu/Menu Item	Function
TX/RX Result?	
Counter?	
	<p>Displays the counters that show how the machine is being used. The last item on this menu prints a summary of the counters.</p> <p>Note</p> <ul style="list-style-type: none"> • In order to conserve ink the printer can be set to the "Level Color Mode" to reduce the amount of ink used in graphic images only (text is not affected). This is a new feature • Once Level Color Mode is selected, the amount of ink used to print images and graphics is reduced by almost 50%, the text remains at the same density of the normal color mode.
	Scan=000000 Full Color=000000 B&W=000000 Level Color=000000 Print Counter?
Engine Settings?	
1 Paper Tray Prty?	<p>Specifies priority paper tray selection for paper feed. (Tray 1, Tray 2, Bypass). Default: Tray 1</p> <p>Note: This function is not available until either or both options (Tray 2 or Multi Bypass Tray) have been installed.</p>
2 List/Test Print?	<p>Prints the System Summary that shows how the printer is currently configured for operation.</p> <p>Configuration Page. Prints the System Summary.</p> <p>PCL Configuration. Available for the J014 only.</p>
3 Pg-dry Prt Delay?	<p>Sets longer intervals between printed pages to allow more time for ink to dry and prevent duplex-printed pages and transparencies from sticking together.</p> <ul style="list-style-type: none"> • Duplex Unit. On/Off. Default: Off. Select "On" then [◀] or [▶] to select the time interval: 1, 2, 5, 10, 15, 20 sec. • Trans. On/Off. Default: Off. Select "On" then [◀] or [▶] to select the time interval: 1, 2, 5, or 10 min.
4 Auto Continue?	<p>Determines how the machine handles a print job when the specified paper size and type is not loaded in the tray.</p>

Menu/Menu Item	Function
	<p>On/Off/Immediate. Default: Off</p> <p>Off: The job does not print if the specified paper size/type is not loaded in the tray. The job will execute once the specified paper size/type is loaded.</p> <p>On: The job prints even if the specified paper size/type is not loaded in the tray.</p>
5 Sub Paper Size?	<p>Determines whether to print on A4 paper if LT size paper is specified in the printer driver, or on LT if A4 is specified</p> <p>Auto/Off. Default: Off.</p>
6 Uni-directn Prnt?	<p>Specifies unidirectional or bi-directional printing. Unidirectional printer is better quality but bi-directional printing is faster.</p> <ul style="list-style-type: none"> • Env. Selector On? The direction of printing (uni- or bi-directional) is determined by the setting of the envelope selector. When the selector is set to the rear, printing is uni-directional for envelopes and when set forward printing is uni-directional or bi-directional depending on the paper type. • Auto Detect Ppr/Mode? Printing is uni-directional or bi-directional depending on the paper type. This position of the envelope selector is ignored. • Always Uni-dir? Printing is always uni-directional regardless of the envelope selector position and paper type. <p>Default: Env. Selector On</p>
7 Replace InkCollct?	<p>Resets the counter for the ink collector unit after the old unit is replaced with a new one.</p> <p>Note: If this item is executed and the ink collector unit does not require replacement, then this message appears: "Unit replacement is not required. Press Yes Key".</p>
Host I/F Settings?	
1 I/O Timeout?	<p>Determines how long the machine waits for the interface to respond. After the specified time elapses, the machine can receive data from another interface. If the specified time is too short, a timeout might occur while a data transfer is in progress. If this occurs, the print job will be interrupted by a new job from another interface.</p> <p>Range: 10, 15, 20, 25, 60 sec.</p> <p>Default: 15 sec.</p>

Menu/Menu Item	Function
2 USB Speed?	<p>Two settings are available:</p> <ul style="list-style-type: none"> • Auto: 480 Mbps or 12 Mbps automatically adjusted • Full Speed: 12 Mbps fixed <p>Default: Auto</p> <p>Normally, this setting does not require changing.</p>
3 Fixed USB Port?	<p>Specifies communication settings for a USB connection.</p> <p>On/Off</p> <p>Default: Off</p>
4 Auto Email Notif.?	<p>Determines whether a notification is sent to a specified email address when a machine error occurs. Be sure to cycle the machine off/on after doing this setting.</p> <p>[On or Off/Off]</p>
PCL Menu?	
<p>For more details, please refer to the User's Guide.</p> <p>Note:</p> <ul style="list-style-type: none"> • These settings are displayed for the J014 only. • The J012/J013 do not support PCL. • The settings take effect during PCL print jobs only. 	
Maintenance?	
<p>This menu contains all the functions used to test and clean the print head nozzles, align the print heads, and other important maintenance procedures.</p>	
1 Nozzle Check?	<p>Prints the cross-hatch test pattern so you can visually confirm whether inks are ejecting correctly from the print heads.</p>
2 Head-cleaning?	<p>Cleans the print heads. Clean the print heads when certain colors are missing or printing faintly. Head cleaning consumes ink.</p>
3 Head-flushing?	<p>Cleans the print heads more thoroughly than "Head-cleaning". Flushing consumes more ink. Use this function only after "Head-cleaning" fails to solve the problem.</p>
4 Head Position?	<p>Adjusts the alignment of the print head if the Nozzle Check test pattern shows broken vertical lines, or if printed images are blurred.</p>

Menu/Menu Item	Function
5 Adj. Paper Feed?	Adjusts the paper feed setting if the Nozzle Check test pattern shows horizontal misalignment, or if printed images appear uneven.
6 Registration?	Adjusts the print starting point for each paper tray. The starting point is defined in the upper left corner.
7 Paper Feed Test?	Feeds and ejects 1 blank sheet of paper to test the paper feed mechanism. Will also remove moisture in the paper feed path.
8 De-condensation?	Feeds 3 blank sheets through the paper feed path to remove moisture inside the machine.
9 Move Prnt-Heads?	Moves the print head unit to the right side of the machine to make it easier to remove a paper jam.
10 Reset Counter	Resets the ADF counter.

Status Reports

Five reports can be quickly printed to tell you what you know to need about the machine for setting and servicing. This section shows you how to print these reports:

- Page Counter
- System Summary
- Engine Summary Chart
- Service Data List
- Protocol Monitor Report

Here is a quick reference list that tells what type information is found in each report.

4

Item	Report Name
Color Usage	1. Page Counter
Current System Settings	2. System Summary
Fax Information	5. Protocol Monitor Report
Firmware Version	2. System Summary
Ink Collector Counter	2. System Summary
Ink Remaining	2. System Summary
Machine ID	2. System Summary
Page Count	1. Page Counter
Paper Tray Information	2. System Summary
SC Codes (Most Recent)	2. System Summary
SP Code List	3. Engine Summary Chart
Service Data	4. Service Data List

1. Page Counter

* ***** ***** ***** Page Counter	
Serial No.	J014-00006
Total Full Color	00000000
Total Mono Color	00000000
Total Level Color	00000000
Copy Mono Color	00000000
Fax Mono Color	00000000
Total Duplex	00000000

j014t941

4

The counter lists the number of prints. The print totals do not include the number of test patterns that have been printed. The counter keeps totals for these items:

- **Scan.** The total number of scanned originals.
- **Level Color.** The total number of sheets printed with "Level Color" selected for "Color" in the printer driver.
- **Full Color.** The total number of sheets printed with in color.
- **B&W.** The total number of sheets printed in monochrome.

1. [Menu]> "System Settings"
2. [▲] or [▼] > "Counter?" > [Yes]
3. [▲] or [▼] > "Print Counter?" > [Yes]

↓ Note

- A printed single-sided sheet counts as "1".
- A printed double-sided sheet counts as "2".
- The counter limit is 99,999.

2. System Summary (Config. List)

The System Summary lists information about the configuration of the machine.

System Summary	
BRAND NAME	xxx
Machine ID	xxx
Pages Printed	xxx
System Version	xxx
NV Version	xxx
UPD Version	xxx
Printer Language	xxx
Ink Remaining:	
Black	xxx
Cyan	xxx
Magenta	xxx
Yellow	xxx
Ink Collector Unit Counter	xxx
Paper Input	
Tray Priority	xxx
Tray 1	xxx
Tray 1	xxx

j014t942

To print the Service Summary:

1. Confirm that paper is loaded in the paper tray.
2. To enter the SP mode: [Clear Modes]> [1] [0] [7]> [Clear/Stop]

```
SYSTEM Ver.0.51
Service Menu
```

3. [Yes]> "Bit Switch"
4. [▲] or [▼] > "Service Summary" > [Yes] > "Press Yes Key" > [Yes]
5. [No] > [▲] or [▼] > "End" > [Yes] > Machine switches off.

- [Power] to switch the machine on.

3. Engine Summary Chart

The Engine Summary Chart lists all the current SP code settings.

```

ENGINE SUMMARY CHART
MODEL          :      IPSIO XXXXXXXXX
SER_NO        :      JXXX---XXXXXXXXX
DUMMY NO      :      JXXX---XXXXXXXXX
Firm Ver      :      XXX.XXX.XXX
SENSOR 1      :      XXXXXXXXXXXXXXXXX
SENSOR 2      :      XXXXXXXXXXXXXXXXX
SENSOR 3      :      XXXXXXXXXXXXXXXXX

SP No.        Name          Value
1000          REG:FD:NORM    100
.             .             .
.             .             .
2000          FULLPOS1     23
.             .             .
.             .             .
.             .             .

```

j014t943

4

To print the Engine Summary Chart:

- Confirm that paper is loaded in the paper tray. (The report is about 16 pages long.)
- To enter the SP mode: [Clear Modes]> [1] [0] [7]> [Clear/Stop] for 3 sec.

```

SYSTEM Ver.0.51
Service Menu

```

- [▼] > "Engine Maint."

```

SP No.
1000

```

- [▲] x 4 times > "5000" > [Yes]
- [▲] twice > "5200" > [Yes] x 3 times

```

PRINT SMC

```

5200

6. [Yes]

PRINT SMC
EXEC

7. [Yes]> "RUNNING"

- Wait for the report to print (it does not start immediately).
- Printing requires about 2 min.

8. [No] x 3 times> [▲] or [▼] > "End"> [Yes]> Machine switches off.

9. [Power] to switch the machine on.

Here is a brief summary of what is listed in the Engine Summary Chart.

Heading	Meaning
ENGINE SUMMARY CHART	Title
MODEL	Number of the Printer Model
SER_NO	Printer Serial Number
Firm Ver	Version number of the firmware in the printer
SENSOR1, SENSOR2	Sensor information
SP No, Name, Value	SP number, name, value of current setting

4. Service Data List

SERVICE DATA LIST

NAME :
TEL :
DATE :2006.Sep.30 13:07
COUNTRY/REGION CODE=JAPAN

--- ADJUST ---

CCD MAIN ZOOM : 100	CCD SUB ZOOM : 100
CCD MAIN REGIST : 100	CCD SUB REGIST : 100
ADF MAIN REGIST : 100	ADF SUB ZOOM : 100
ADF SUB REGIST : 100	ADF SUB REGIST2 : 100

RX IN MEMORY :
MAIN RAM SIZE : 96MG

--- ROM ID ---
09/14/2006 V0.47C-2

j014t944

1. [Menu]> [#]> [*]> [Yes]> "1. SERVICE'S CHOICE"
2. [▲] or [▼]> "4. REPORT"> [Yes]> "SERVICE DATA LIST"> [Yes]

5. T.30 Protocol List

Protocol Monitor Report

User :
Fax :
Date : 2006.Sep.29:14:13

Session	Function	No.	Destination	Date	Time	Page	RX/TX Time	Mode	Result

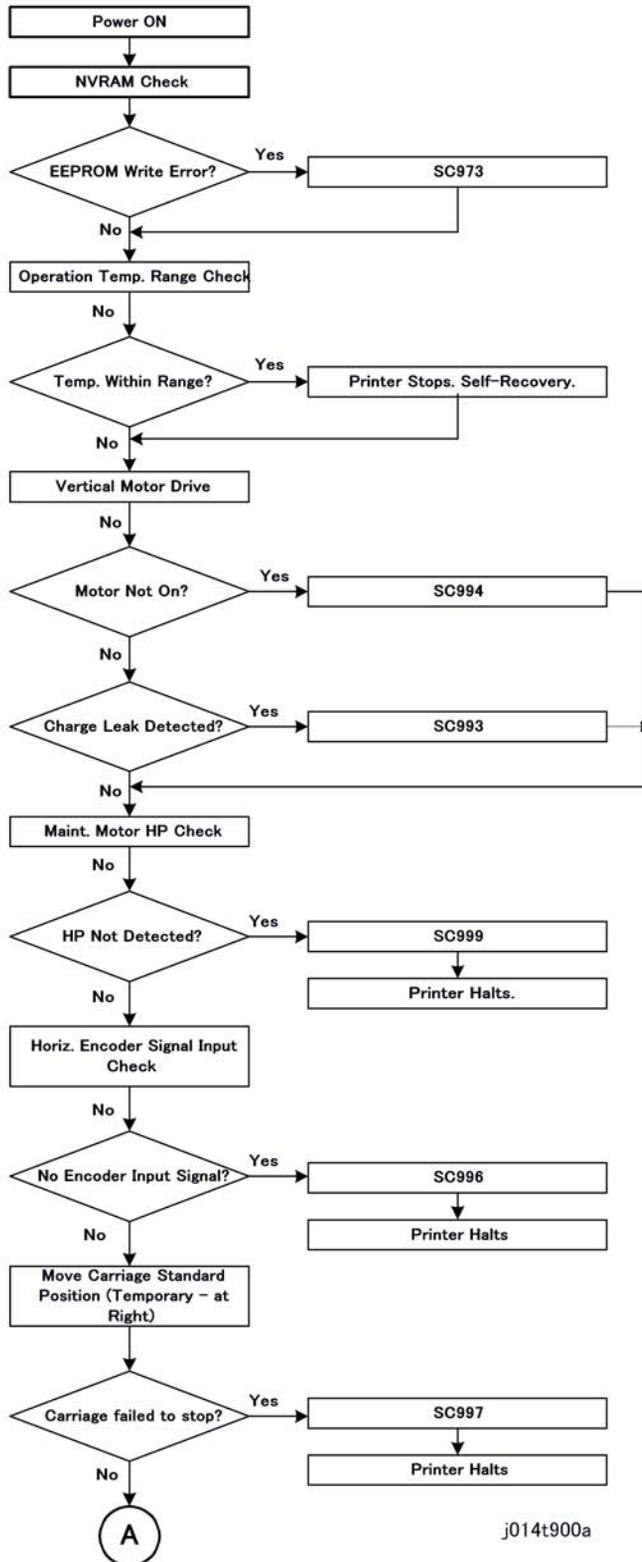
TX	RX	DATA

j014t945

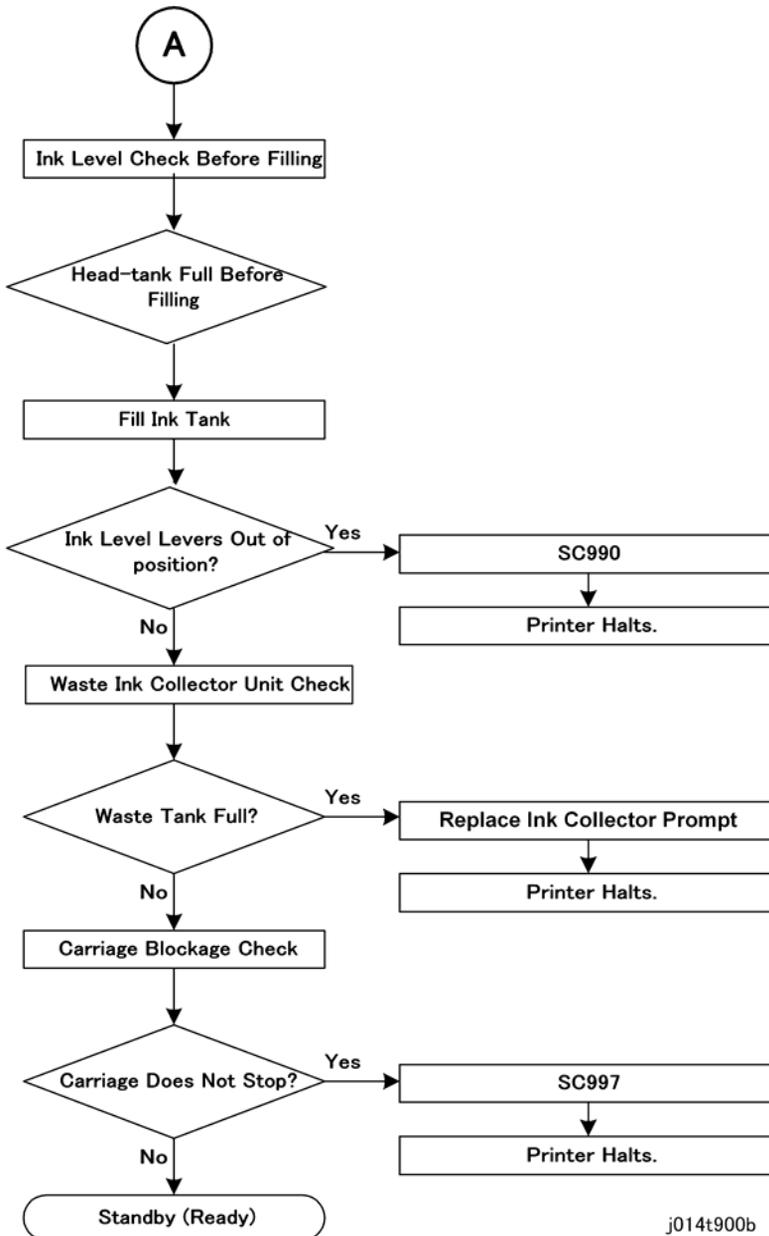
4

1. [Menu]> [#]> [*]> [Yes]> "1. SERVICE'S CHOICE"
2. [▲] or [▼]> "4. REPORT"> [Yes]> "SERVICE DATA LIST"
3. [▲] or [▼]> "T.30 PROTOCOL LIST"> [Yes]

Self-Diagnostic Test Flow



j014t900a



j014t900b

SC Error Codes

Summary of Error Levels

Level	Definition	Typical Errors
A	The printer is damaged or disabled, and the printer cannot operate. Even after removing the cause of the problem, turning the printer off and on does not solve the problem.	SC Error Code. This is a Service Call Error.
B	An abnormal condition exists in the printer, and the printer cannot operate until the problem is corrected. Once the operator removes the cause of the problem, turning the printer off and on should restore the printer to normal operation.	Cover open. Paper jams. Ink cartridge out. Ink cartridge missing. Ink cartridge installed incorrectly. Paper size error.
C	The printer can continue to print, but if the problem is not corrected soon the printer will no longer be able to operate. The operator must correct the problem as soon as possible.	Ink near end. Ink collector unit near full.

Out-of-Range Temperature Errors

	Printer Status at Error	Status After Error
Power ON	Power to the printer turns on, and printer enters and remains in standby mode.	As soon as the temperature of the print heads reaches the operational temperature range, the printer enters the "Ready" mode.
During Printing	Printer halts printing and enters the standby mode.	The printer remains in the "Standby" mode. The operator must switch the printer off and on again to restore normal operation.

★ Important

Make sure that the room temperature is within the allowed range 10°C to 32°C (50°F to 89.6°F) with RH 15% to 80%. For more details, see Section "1. Installation".

Let one hour pass for the printer to adjust to room temperature before you use it after moving to a new location. This is very important after the printer is moved from a cold location into a warm room.

SC Code Tables

Print the System Summary (Config. Page) to see the 5 most recent SC codes.

1. [Menu]> "System Settings?"
2. [▲] or [▼] > "Engine Settings?"> [Yes]
3. [▲] or [▼] > "2 List/Test Print?"> [Yes]> "Configuration Page?"
4. [Yes]> "Please Wait" displays as the report prints.



S001	Home Position Error	
	Scanning element did not move to the home position after power on and initialization of the CCD unit.	<ul style="list-style-type: none"> • Original path is blocked • Scanner unit not closed and locked • Cycle the machine off/on • Scanner motor defective • Scanner motor defective
S002	USB Communication Error	
	There was a communication error between the main board and the CTL board.	<ul style="list-style-type: none"> • USB connector loose or disconnected • Cycle the machine off/on • Scanner unit CTL board defective • Engine unit CTL board defective
S003	Exposure Lamp Error	
	At the beginning of the scanning job the correct data could not be read from the CCD.	<ul style="list-style-type: none"> • Scanner unit not closed and locked • Cycle the machine off/on • Exposure lamp defective • CCD board defective (replace scanner unit)
950	USB Chip ID Detection Error	
	At power on there was a power surge caused by unstable power supply.	<ul style="list-style-type: none"> • CTL board defective



951		USB Undefined Assignment Error	
		An undefined interrupt signal was detected at the ID chip.	<ul style="list-style-type: none"> • CTL board defective
970	A	Flash ROM Erase Error	
		The device erasing the Flash ROM generated an error.	<ul style="list-style-type: none"> • Flash ROM device defective.
971	A	Flash ROM Write Error	
		The device writing to the Flash ROM generated an error.	<ul style="list-style-type: none"> • Flash ROM device defective.
972	A	Flash ROM Verify Error	
		The verify operation after write failed (the data written to the Flash ROM did not match the content of the data in the Flash ROM).	<ul style="list-style-type: none"> • Flash ROM device defective.
973	A	EEPROM Write Error	
		An EEPROM write error was detected at power on, or during a print job.	<ul style="list-style-type: none"> • The EEPROM device is defective.
978	A	Ink Sump Full	
		<p>The ink sump on the left side of the printer is full.</p> <p>Note: A software counter monitors the usage of the ink sump. There are no sensors associated with the ink sump.</p>	<ul style="list-style-type: none"> • Replace the ink sump.
979	A	Ink Supply Timeout	
		This error code is issued if full auto cleaning is done before the bubbles inside the print head are consumed (within 72 hours after power on).	<ul style="list-style-type: none"> • Cycle the machine off/on
984	A	DRV Circuit Temperature Abnormal	
		The temperature of the DRV board (driver board) is out of range.	<ul style="list-style-type: none"> • The temperature of the DRV board (driver board) circuit is not within the specified range: -13°C to 55°C (11.2°F to 131°F)
985	A	Print head Temperature Sensor Abnormal	



		Print head temperature sensor was detected as abnormal when the printer was turned on.	<ul style="list-style-type: none"> Print head temperature sensor was detected as abnormal when the printer was turned on without the product number registered.
986	A	Humidity Sensor Abnormal	
		The printer detected that the humidity sensor was abnormal.	<ul style="list-style-type: none"> Sensor connector loose, damaged, or defective. Sensor defective
987	A	Protection During Transport	
		At power on the printer detected that the ink in a cartridge is non-standard ink.	<ul style="list-style-type: none"> Use only ink cartridges that are designed for use with this printer. Never use re-filled ink cartridges.
988	A	Ink Supply Error (Air Sensor Abnormal)	
		Printer detected air sensor was abnormal when suction was applied 3 times when the printer was powered on for the first time for ink tank filling or print head refreshing, but no air was detected.	<ul style="list-style-type: none"> Cycle the printer off and on and try again. If the problem persists, the print head air sensors may be defective.
990	A	Ink Level Lever Position Error	
		The position of one or more ink level levers could not be detected at initial filling. Correct voltage could not be created for operation of the print head tank, so the print heads cannot operate.	<ul style="list-style-type: none"> Ink level sensor defective Horizontal encoder film dirty, installed incorrectly, broken Maintenance unit dirty, defective Ink nozzles clogged
992	A	Ink Collector Unit Full Error	
		At power on, the printer detected that the left ink collector unit was full.	<ul style="list-style-type: none"> Replace the ink collector unit with a new tank. Never attempt to clean the old tank and reinstall it. Obey the local laws and guidelines regarding disposal of items such as the ink collector unit.
993	A	High Voltage Leak	



		At power on or during a print job, a leak detection signal was detected. The signal was triggered by the accumulation of condensation or ink spillage onto the transport belt.	<ul style="list-style-type: none"> This signal is triggered by the HVPS due to an accumulation of condensation or ink spillage onto the transport belt. Clean the transport belt.
994	A	Vertical Motor Error	
		The vertical encoder input signal was judged to be abnormal when the vertical motor was operating.	<ul style="list-style-type: none"> Vertical encoder connector loose, broken, or defective. SENC defective.
996	A	No Input Signal from the Horizontal Encoder	
		No input signal from the horizontal encoder was detected during operation of the horizontal motor.	<ul style="list-style-type: none"> Horizontal encoder sensor loose, broken, or defective. Horizontal encoder film broken, disconnected, or installed upside down. HRB defective
997	A	Input Signal from the Horizontal Encoder Abnormal	
		When the carriage moved to the right, the carriage did not stop at the HP. Or, the carriage scan check failed.	<ul style="list-style-type: none"> Horizontal encoder sensor loose, broken, or defective. Horizontal encoder film broken, disconnected, or installed upside down. HRB defective
999	A	Maintenance Stepping Motor Out of Home Position	
		The maintenance motor HP sensor failed to detect the motor at the home position.	<ul style="list-style-type: none"> Maintenance HP sensor connector loose, broken, or defective Maintenance motor connector loose, broken, or defective Movable Feeder connector loose, broken.



Jam Codes

Here is a list of jam codes and what they mean.

Original Feed Jam

Original Feed Jam	
Jam	An original failed to feed in the ADF.
Cause:	<ul style="list-style-type: none"> Original lag jam. The leading edge of the original failed to arrive at one of the sensors because the feed roller is slipping against the paper, or the original has wrapped around the paper feed mechanism.
Problem Site	<ul style="list-style-type: none"> 1) Registration sensor, 2) Duplex sensor, or 3) Paper feed clutch timing sensor in the ADF.
Action	<ol style="list-style-type: none"> Remove all the originals from the ADF. Open the ADF and turn the dial to free the jammed original. Open the top cover of the ADF and remove the jammed original or paper scraps.

4

Paper Feed Jams

Jam 1	Paper Misfeed in Paper Cassette(Failure to Feed: Tray 1)
Message:	Paper Misfeed: Tray 1
Jam	Paper late jam. The trailing edge sensor failed to detect the trailing edge of a sheet.
Cause:	<ul style="list-style-type: none"> Obstruction at TE sensor, or obstruction at TE sensor Bottom plate, bottom plate spring obstructed or damaged. Paper path blocked by obstruction Trailing edge sensor feeler obstructed or damaged
Problem Site	<ul style="list-style-type: none"> Paper cassette (standard) Trailing edge sensor Paper feed clutch CTL board
Action	<p>Perform check, take action in this order:</p> <ol style="list-style-type: none"> Check Tray 1 (standard paper cassette) for damaged parts and replace them. Check area around trailing edge sensor for obstruction and remove it. Replace paper cassette friction pad. Check paper feed clutch and replace if damaged.

Jam 2	Paper Misfeed in PFU (Failure to Feed: Tray 2)
Message:	Paper Misfeed: Tray 2
Jam	Paper did not arrive at the relay sensor, so no signal from relay sensor
Cause:	<ul style="list-style-type: none"> • Feeler of relays sensor failed to return to its correct position
Problem Site	<ul style="list-style-type: none"> • Optional PFU (Tray 2) • CTL board
Action	<p>Perform check, take action in this order:</p> <ol style="list-style-type: none"> 1. Inspect PFU for faulty parts and replace.

Jam 3	Paper Jam in Duplex Unit
Message:	Paper Misfeed: Duplex Unit
Jam	Jam occurred when inverting sheet or printing 2nd side of duplex sheet. Paper late jam. Trailing edge sensor failed to detect and signal the trailing edge of the sheet.
Cause:	<ul style="list-style-type: none"> • Duplex unit not operating correctly.
Problem Site	<ul style="list-style-type: none"> • Duplex unit
Action	<p>Perform check, take action in this order:</p> <ol style="list-style-type: none"> 1. Remove and reinstall duplex unit to confirm proper installation. 2. Open duplex unit cover and remove jammed paper, other obstruction. 3. Inspect duplex unit and replace damaged parts.

Jam 4	Paper Feed Jam in Duplex Unit
Message:	Paper Misfeed: Guide Plate
Jam	Jam occurred when inverting sheet or printing 2nd side of duplex sheet. Paper lag jam. Trailing edge sensor detected the leading edge of the paper but failed to detect and signal the trailing edge because the paper stopped.
Cause:	<ul style="list-style-type: none"> • Paper jam or other obstruction at the trailing edge sensor • Jammed paper or other obstruction in the paper path • Trailing edge sensor feeler obstructed or damaged
Problem Site	<ul style="list-style-type: none"> • Trailing edge sensor

Action	<p>Perform check, take action in this order:</p> <ol style="list-style-type: none"> 1. Replace inverter guide plate. 2. Replace trailing edge sensor. 3. Replace CTL board.
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Jam 5	Paper Misfeed in Standard Paper Cassette (Failure to Feed: Tray 1)
Message:	Paper Misfeed: Guide Plate
Jam	Paper lag jam. The trailing edge sensor detected the leading edge of the paper but failed to detect the trailing edge because the paper stopped.
Cause:	<ul style="list-style-type: none"> • Double-feed • Incorrect paper detection due to dirt or obstruction on the transfer belt • No signal from trailing edge sensor • Trailing edge sensor feeler positioned incorrectly
Problem Site	<ul style="list-style-type: none"> • Transfer belt unit • Trailing edge sensor
Action	<p>Perform check, take action in this order:</p> <ol style="list-style-type: none"> 1. Replace the inverter guide plate. 2. Replace trailing edge sensor. 3. Replace CTL board.

Jam 6	Multi Feed Bypass Unit Jam
Message:	Paper Misfeed: Bypass Tray
Jam	The registration sensor did not detect the leading edge of the paper during paper feed from the bypass tray.
Cause:	<ul style="list-style-type: none"> • The registration sensor did not signal detection of the leading edge. • Obstruction or dirt on the transfer belt interfered with proper detection.
Problem Site	<ul style="list-style-type: none"> • Transfer belt unit • 1st Registration sensor • 2nd Registration sensor
Action	<p>Perform check, take action in this order:</p> <ol style="list-style-type: none"> 1. Clean the transfer belt.

	<ol style="list-style-type: none"> 2. Replace 1st, 2nd Registration sensors. 3. Replace Multi Bypass Tray.
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Jam 7	PFU Paper Transport Jam
Message:	Paper Misfeed: Guide Plate
Jam	A paper lag jam occurred when feeding paper from the PFU. The trailing edge sensor detected the leading edge of the paper but not the trailing edge because the paper stopped at the trailing edge sensor.
Cause:	<ul style="list-style-type: none"> • Double-feed • Incorrect paper detection due to dirt or obstruction on the transfer belt • No signal from trailing edge sensor • Trailing edge sensor feeler positioned incorrectly
Problem Site	<ul style="list-style-type: none"> • Transfer belt unit • Trailing edge sensor
Action	<p>Perform check, take action in this order:</p> <ol style="list-style-type: none"> 1. Clean the transport belt. 2. Replace the trailing edge sensor. 3. Replace the PFU.

Jam 8	Multi Bypass Tray Exit Jam
Message:	Paper Misfeed: Bypass Tray
Jam	A paper lag jam occurred during paper feed from the Multi Bypass Tray. After the 2nd Registration sensor detected the leading edge of the paper, it failed to detect the trailing edge because the paper stopped.
Cause:	<ul style="list-style-type: none"> • The 2nd Registration sensor failed to signal detection of the trailing edge of the paper.
Problem Site	<ul style="list-style-type: none"> • 2nd Registration sensor
Action	<p>Perform check, take action in this order:</p> <ol style="list-style-type: none"> 1. Replace 2nd Registration sensor. 2. Replace CTL board.

Jam 9	Paper Jam from Tray 1 Between TE Sensor and Registration Sensors
Message:	Paper Misfeed: Tray 1
Jam	A paper late jam occurred during paper feed from Tray 1. The registration sensor detected both leading and trailing edges of the paper, but the 1st Registration sensor failed to detect the paper.
Cause:	<ul style="list-style-type: none"> • Registration sensors failed to signal paper detection.
Problem Site	<ul style="list-style-type: none"> • 1st Registration sensor • 2nd Registration sensor • CTL board
Action	<p>Perform check, take action in this order:</p> <ol style="list-style-type: none"> 1. Replace the inverter guide plate. 2. Replace the trailing edge sensor. 3. Replace 1st, 2nd Registration sensors. 4. Replace the CTL board.

Jam 10	Paper Jam from Tray 2 Between TE Sensor and Registration Sensors
Message:	Paper Misfeed: Tray 2
Jam	A paper late jam occurred during paper feed from Tray 2. The registration sensor detected both leading and trailing edges of the paper, but the 1st Registration sensor failed to detect the paper.
Cause:	<ul style="list-style-type: none"> • Registration sensors failed to signal paper detection.
Problem Site	<ul style="list-style-type: none"> • 1st Registration sensor • 2nd Registration sensor • CTL board
Action	<p>Perform check, take action in this order:</p> <ol style="list-style-type: none"> 1. Replace the inverter guide plate. 2. Replace the trailing edge sensor. 3. Replace 1st, 2nd Registration sensors. 4. Replace the CTL board.

Jam 11	Duplex Paper Jam Between TE Sensor and Registration Sensors
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Message:	Paper Misfeed: Inverter Guide Plate
Jam	A paper late jam occurred while printing the 2nd side of a duplex print or inverting paper. The trailing edge sensor detected the leading and trailing edge of the paper but the registration sensors failed to detect the paper because it stopped. (The registration sensor did, however, detect the leading edge of the inverted paper from the duplex unit.)
Cause:	<ul style="list-style-type: none"> • The registration sensors failed to signal detection of the paper.
Problem Site	<ul style="list-style-type: none"> • Trailing edge sensor • 1st Registration sensor • 2nd Registration sensor • CTL board
Action	<p>Perform check, take action in this order:</p> <ol style="list-style-type: none"> 1. Replace the inverter guide plate. 2. Replace the trailing edge sensor. 3. Replace 1st, 2nd Registration sensors. 4. Replace the CTL board.

Jam 12	Initial Jam
Message:	Paper Misfeed: Inverter Guide Plate
Jam	The trailing edge sensor switches ON when the printer is switched on or while printer is initializing.
Cause:	<ul style="list-style-type: none"> • The trailing edge sensor does not change (go OFF). • Paper feed clutch remains ON.
Problem Site	<ul style="list-style-type: none"> • Trailing edge sensor • Paper feed clutch
Action	<p>Perform check, take action in this order:</p> <ol style="list-style-type: none"> 1. Clean the transfer belt. 2. Replace inverter guide plate. 3. Replace trailing edge sensor. 4. Replace 1st Registration sensor. 5. Replace 2nd Registration sensor.

	6. Replace CTL board.
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Jam 13	Carriage Jam
Message:	Paper Misfeed: Upper Cover
Jam	The carriage was prevented from reaching its target position within the prescribed time.
Cause:	<ul style="list-style-type: none"> • A piece of paper or other object is obstructing the movement of the carriage. • A piece of paper or other object is obstructing the paper path. • The horizontal film encoder is dirty, slack, buckled, or damaged. • Horizontal feed motor belt is loose or broken.
Problem Site	<ul style="list-style-type: none"> • Horizontal encoder film strip • Horizontal feed motor belt • CTL board
Action	<p>Perform check, take action in this order:</p> <ol style="list-style-type: none"> 1. Clean the horizontal encoder film strip. 2. Inspect the path of the carriage and remove any jammed paper, paper scraps, or other objects. 3. Replace the horizontal encoder film strip. 4. Replace the CTL board.



Jam 14	Abnormal Paper Transport Sequence
Message:	Paper Misfeed: Inverter Guide Plate
Jam	The registration sensors detected the paper before the PFU relay sensor signaled detection of the leading edge.
Cause:	<ul style="list-style-type: none"> • The registration sensor signals did not change.
Problem Site	<ul style="list-style-type: none"> • 1st Registration sensor • 2nd Registration sensor
Action	<p>Perform check, take action in this order:</p> <ol style="list-style-type: none"> 1. Clean the transfer belt. 2. Replace the 1st Registration sensor. 3. Replace the 2nd Registration sensor.

Facsimile Errors

Here is a list of errors that may occur during fax sending and receiving.

Communication (RX)

Code	Possible Cause
0001	Manual RX mode, no G3 signal received within 35 sec.
0003	Received DIS after sending DIS signal.
0004	Received DCN after sending DTC signal.
0009	No signal received within 35 sec. in manual polling mode.
0010	Received DCN signal after sending DTC signal during polling RX.
0011	Cannot receive correct response after sending three DTC signals.
0012	Remote/local password mismatch during polling RX, or no local file to be polled.
0013	No carrier received within 6 sec. after sending CFR in data phase C.
0014	No T.30 signal received after sending FTT signal.
0016	Received DCN signal after sending PTT signal.
0017	No response received from remote machine after sending xxx_EOM signal.
0018	Nothing detected within 6 sec after sending FTT command
0019	Received DCN signal after sending CFR signal
001A	No power on line over 6 sec. within phase C before a corrected ECM frame.
001D	Detected flag but nothing after CFR.
001E	Timeout in V.17 ECM RX phase C
0x1F	Machine cannot detect V.21 or V.8 signal with 35 sec.
0020	Cannot correct frame within 6 sec., a decoding line over 6 sec in non-ECM mode..
0021	File full.
0022	Correct data not received within specified time due to noise interference on the line.

Code	Possible Cause
0023	Received PWD error in RSD or upgrade firmware.
0029	Mailbox password not set or password mismatch for mailbox receiving.
0030	No signal received within 6 sec. at phase D.
0031	Received incorrect signal at phase D (not EOP, MPS,EOM,DCS PPS_Q, PPS_Q, etc).
0032	No carrier received within 6 sec. after sending MCF, RTP, or RTN signal.
0033	Received DCN signal at phase D between pages (not last page) .
0039	Data received in non-ECM mode but did not receive next line within 13.1 seconds.
003F	Remote machine TSI not defined for one touch or speed dial directory.
0040	No carrier signal received within 6 sec. after sending CTR.
0041	No carrier signal within 6 sec. after sending PPR.
0042	No correct signal received after sending RNR signal.
0043	Received incorrect signal at phase D in ECM mode.
0044	No carrier /FSK signal received within 6 sec. after sending MCF in ECM mode.
0047	No correct signal received after sending ERR signal.
0048	No correct signal received after receive PPS_PRI_Q, PRI_Q, orEOR_PRI_Q .
004A	Line power over threshold for 60 sec. after MCF. No FSK or carrier signal detected in ECM mode.
004B	Correct FSK signal not detected even though FSK tone detected within 6 sec.
004C	Handshake failed during re-training or between page during V34 RX.
004E	Received DCN signal after DIS sent in V.34.
0050	No correct signal received after CJ signal sent in V.8 phase.
0051	No phase 3 signal sent after phase 2 within 20 sec. in V.34.
0053	Modem disconnected after phase 4 in V.34.
0054	Remote machine disconnected after phase 4 in V.8
0055	Received incorrect signal after DIS signal sent in V.34

Code	Possible Cause
0056	Modem disconnected after CFR sent in V.34.
0058	No image signal detected within 6 sec. after modem entered primary phase in V.34.
0059	Relay box deleted while relay job was being received.
005A	Modem did not detect a correct ECM frame with 3 min. in phase C.
005B	No phase 5 signal detected after primary channel within 6 sec.
005C	Busy tone detected on control channel after phase C.
005D	Modem did not detect a correct ECM frame within 12 sec. in phase C.
005E	No control channel signal detected within 6 sec. after RCP frame was received.
005F	No silence detected after JM signal was sent during TX polling.
0060	No bulletin files to be polled in V.34.
0061	No V.21 or V.8 signal detected with 35 sec.
0062	Modem disconnected in phase D after local machine sent flag sequence on control channel.
0063	No flag sequence on control channel within 6 sec. in phase D.
0064	No control channel signal received in phase D within 60 sec. even with power on the line.
0065	Cannot detect any control channel signal within 60 seconds after detect silence in phase D.
0066	No T.30 signal or carrier received after CFR was sent in V.34.
0069	Paper size mismatch after DCS signal received.
0070	Operator press [Stop] key during receiving.
0071	Memory became full during receiving.

Communication (TX)

Code	Possible Cause
0080	No G3 signal detected within 35 sec. in Phase B as specified by ITU-T.
0081	Received DTC signal in TX phase.

Code	Possible Cause
0082	TX unit received a signal other than DIS or DTC, or DCN in Phase B.
0083	FSK signal detected no signal received within 35 sec.
0084	Detected DCN signal in Phase B.
0085	TX unit sent DCS 3 times but each send met DIS/DTC response.
0086	After DCS sent response signal was other than DTC, DIS, FTT, DCN or CFR.
0087	Training attempt failed because machine speed could not adjust to low speed.
0088	Received DCN signal after DCS signal sent.
0089	Remote machine has no mailbox function or mailbox function is not compatible.
008B	Local RX machine received DIS protocol but protocol not compatible.
008C	Local machine memory insufficient for starting relay sending.
008D	Received RX machine DIS protocol but remote machine could not receive document because it was out of paper, or for some other reason.
008F	Modem was not ready to receive V.34 data within 6 sec. after it received CFR signal.
0090	Remote machine not ready for document polling.
0091	DCS+TCF signal sent 3 times but no response signal in response.
0093	DCN signal received after DCS signal sent for V.34
0094	Time-out during ECM frame or RCP command transmission.
0095	Wrong ID number for polling RX or mailbox TX.
0096	Sub-address or password mismatch in polling RX mode.
009A	No signal detected after CI signal sent.
009D	Remote machine hung up before V.34 modem entered Phase 2 during V.34 polling RX.
009E	Manual TX over 15 min. in Phase C of non-ECM mode.
00A0	Operator stopped or cancelled TX job.
00A1	Document jammed during transmission
00AE	V.8 procedure did not complete, or no V.21 signal detected after CM signal within 30 sec.



Code	Possible Cause
00AF	Modem did not enter control channel after TX side sent RCP signal for V.34
00B1	V.8 procedure did not complete, or V.21 signal not detected after ANSAM signal within 35 sec.
00B2	Phase 2 signal not detected within 30 sec. after local machine sent CJ signal.
00B3	V.21 or JM signal not detected after CM signal was sent.
00B4	No Phase 2 signal detected within 25 sec. after CM/JM signal exchange.
00B5	No Phase 3 signal detected within 25 sec. after Phase 2.
00B6	No Phase 4 signal detected within 25 sec. after CM/JM exchange.
00B8	Remote machine disconnected after local machine sent DCS signal in V.34.
00BA	No correct signal received after local machine sent DTC signal in V.34.
00BB	Every time our side received DIS signal after sending DTC in V.34.
00BC	Modem was not ready within 10 sec. after entering primary channel in V.34.
00BD	No correct V.21 or JM signal detection after FSK frequency detection.
00BE	No document to poll on remote machine after V8 handshake.
00BF	Capability mismatch after V8 handshake.
00C1	At Phase D TX unit cut out EOP 3 times but received no answer from RX unit.
00C2	Remote side disconnect after sending out V.8 CM signal.
00C4	After MPS signal received, data was not MCF, RTN, PIP, PIN, RTP, or DCN.
00C5	DCN signal received after MPS signal sent.
00C9	MPS was sent 3 times at Phase D but there was no answer from RX unit.
00CA	After EOP signal was sent, the data received was not MCF, RTN, PIP, PIN, PRI-EOP, or DCN.
00CB	After EOP signal was sent, the data received had no DCN signal.
00CC	After EOM signal was sent, the data received was not MCF, RTN, PIP, PIN, RTP, or DCN.
00CD	TX units sent EOM 3 times at Phase D, but no answer was received.

Code	Possible Cause
00CE	TX unit send EOM at Phase D but received DCN.
00CF	Incorrect signal received after sending DTC signal for V.34 polling.
00D0	Received ERR signal after sending EOR_NULL.
00D1	Received incorrect response after sending PPS_EOP signal in V.34.
00D2	Received DCN after sending PPS_EOP signal.
00D3	Received DCN after sending PPS_NULL signal.
00D4	Received DCN after sending PPS_EOM signal.
00D8	No correct phase 3 signal detected for polling within 25 sec.
00D9	No correct phase 3 signal detected when silence detected after phase 2.
00DA	No Phase 4 signal detected within 30 sec. or remote machine hung up longer than 6 sec.
00DB	Cannot received any T.30 signal within 15 seconds within phase 4.
00DC	T.30 signal received in Phase 4 was signal other than DCS, DIS or DTC.
00DD	Remote machine is not the same model, or no mailbox ID defined for mailbox TX.
00DE	Remote machine has no SUB capability in V34.
00E0	TX unit sent PPS_NULL 3 times at Phase D but received no answer.
00E1	Received incorrect response after sending PPS_NULL.
00E2	No response received during RR response procedure after PPS_NULL was sent.
00E4	TX unit sent PPS_MPS 3 times at Phase DTX but received no answer.
00E5	Received incorrect response after sending PPS_MPS.
00E6	No response received during RR response procedure after PPS_MPS was sent.
00E7	Received DCN after sending PPS_MPS.
00E8	TX sent PPS_EOP 3 times at Phase D but received no answer.
00E9	PIN signal received after last page was sent three times.
00EA	No RX response received during RR response procedure after PPS_EOP was sent.
00EB	TX unit sent PPS_EOM 3 times at Phase D but received no answer.

Code	Possible Cause
00EC	Received incorrect response after sending PPS_EOM.
00ED	No response received during RR response procedure after PPS_EOM was sent.
00EE	TX unit sent EOR_NULL 3 times at Phase D but received no answer.
00EF	Received incorrect response after sending EOR_NULL.
00F0	No response received after sending EOR_NULL.
00F1	TX unit sent EOR_MPS 3 times at Phase D but received no answer.
00F2	Received incorrect response after sending EOR_MPS.
00F3	Received ERR signal after sending EOR_MPS.
00F4	No response received during RR response procedure after EOR_MPS was sent.
00F5	TX unit sent EOR_EOP 3 times at Phase D but received no answer.
00F6	Received incorrect response after sending EOR_EOP.
00F7	After ERR was received the local machine could not receive response after sending EOR_EOP command
00F8	TX unit sent EOR_EOM 3 times at Phase D but received no answer.
00F9	Received incorrect response after sending EOR_EOM.
00FA	Received ERR signal after sending EOR_EOM.
00FB	No response received during RR response procedure after EOR_EOM was sent.
00FC	No response received after sending CTC.
00FD	Machine could not reduce speed in ECM mode
00FE	Memory full for TX.
00FF	All failed, redial

Image Correction

You can see the image adjustment features on the "Maintenance" menu of the machine operation panel.

Note

- The test prints and adjustments described in this section can also be done with the printer driver. For more details about doing these test prints and adjustments with the printer driver, please refer to the User Guide.

Preparing for Test Printing

1. Make sure A4 size or LTR size paper is loaded in the machine.
2. Make sure the machine is ready to print.

4

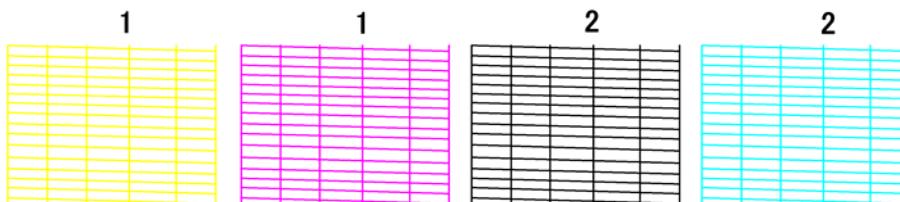
Nozzle Check

Main Nozzle Check Pattern

Do this procedure to print the Nozzle Check test pattern. Look at the pattern to determine if the printer is operating properly or not.

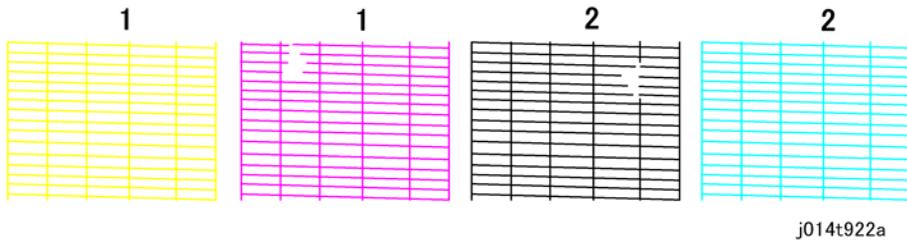
1. [Menu]> "System Settings"
2. [▲] or [▼] > "Maintenance" > [Yes]> "Nozzle Check?"
3. [Yes]> "*Please Wait*" displays as the pattern prints.
4. [▲] or [▼] > "Nozzle Check" > [Yes]. The Nozzle Check pattern prints.
5. [No] [No]> Standby
6. Check the patterns for missing or broken lines.

Normal Pattern



j014t921a

Abnormal Pattern



Print Head Cleaning

4

★ Important

- **Print head cleaning consumes ink. Do this procedure only if you see a problem in the Nozzle Check test pattern.**
1. Check the ink level indicator in the printer driver or the operation panel display to determine if the print cartridge is empty.
 2. Print a Nozzle Check test pattern.
 3. Look at the Nozzle Check pattern to determine which nozzles are blocked.

↓ Note

- If one or more color is missing, is extremely faint, or shows broken lines, this tells you where there is a blockage.
4. Pull the release under the operation panel forward and raise the scanner unit.
 5. Confirm that the envelope selector is forward.
 6. [Menu]> "System Settings?"
 7. [▲] or [▼] > "Maintenance" > [Yes]> "1 Nozzle Check?"
 8. [▲] or [▼] > "2 Head-cleaning"> [Yes]> "All Heads"
 9. [◀] or [▶] > Select the print heads to be cleaned: "All" (all print heads), "Print-head 1" (Black/Cyan), "Print-head 2" (Magenta/Yellow) > [Yes]
- "*Please Wait*" displays until cleaning is finished.

★ Important

- **Do not try to start another procedure and never switch the machine off while head-cleaning is in progress,.**
10. [No] > to return to the previous level.
 11. Print another Nozzle Check test pattern and check the result.
 12. If the Nozzle Check test pattern is normal, the procedure is finished.

-or-

If there is still a problem in the Nozzle Check pattern, repeat this procedure and print another Nozzle Check pattern. Do the procedure again if the results are still not satisfactory.

If three consecutive Nozzle Check pattern prints and head-cleanings do not solve the problem, then flush the print heads. (See procedure below.)

★ Important

- **Head flushing consumes ink. Do not flush the print heads unless three head cleanings have failed to correct the problem.**

Print Head Flushing

Flushing the print heads consumes much more ink than print head cleaning. Do not flush the print heads until you have done the print head cleaning procedure (see above) at least three times.

1. Confirm that the envelope selector is forward.
2. [Menu]> "System Settings?"
3. [▲] or [▼] > "Maintenance" > [Yes]> "1 Nozzle Check?"
4. [▲] or [▼] > "2 Head-flushing"> [Yes]> "All Heads"
5. [◀] or [▶] > Select the print heads to be flushed: "All" (all print heads), "Print-head 1" (Black/Cyan), "Print-head 2" (Magenta/Yellow)" > [Yes]

Please Wait displays until flushing is finished. Do not start any other operation until cleaning stops.

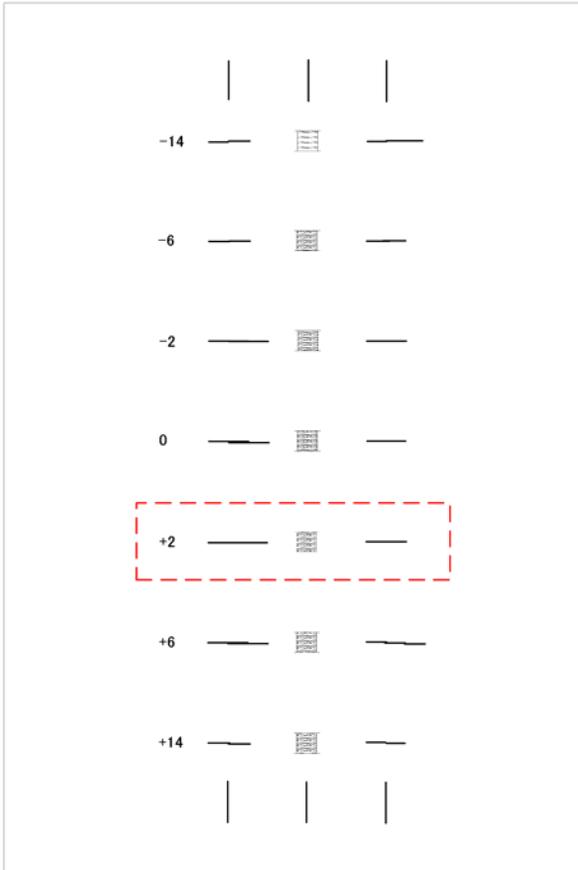
★ Important

- **Do not try to start another procedure and never switch the machine off while head-flushing is in progress.**
6. [No] > to return to the previous level.
 7. Print another Nozzle Check test pattern and check the result.
 8. If the Nozzle Check test pattern is normal, the procedure is finished.
 - If there is still a problem in the Nozzle Check pattern, allow the machine to remain idle for 10 minutes and repeat the procedure.
 - If the problem persists, allow the machine to remain idle for 8 hours, and then flush the print heads again.
 - If the problem still persists, execute drive cleaning with SP5301. Only the service technician can do this procedure.

Adjust Paper Feed

Print the 'Adjust Paper Feed Test Pattern' and do this adjustment if you see broken horizontal lines, patchy images, or white lines printed at regular intervals.

1. [Menu]> "System Settings?"
2. [▲] or [▼] > "Maintenance?"> [Yes]> "1 Nozzle Check?"
3. [▲] or [▼] > "5 Adj. Paper Feed?" > [Yes]> "Print Test Pattern?"
4. [Yes] to print the test pattern.
 "*Please Wait*" displays until pattern printing is finished. Do not start any other operation until printing stops.
5. Check the printed numbers and patterns.



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- The adjustment value appears to the left of the lightest gray square with straight horizontal lines on both sides.
- If this number is "+2", for example, then the adjustment value is "+2".
- If horizontal lines beside the gray square are broken, look at where the lines are broken in the opposite direction.
- For example, if the "+2" square is the lightest gray square and the "+6" lines are broken, then the best adjustment value is between "+3" and "+5".

6. [▶] > "Adjust" > [Yes]

Adj=0
 OK=Yes

7. [▲] or [▼] > Select the adjustment value read from the test print
- ▲ to select a + value
 - ▼ to select a - value
8. [Yes] > "Adjust"
9. [No] > "Cancel?" > [Yes] > Standby

Head Position

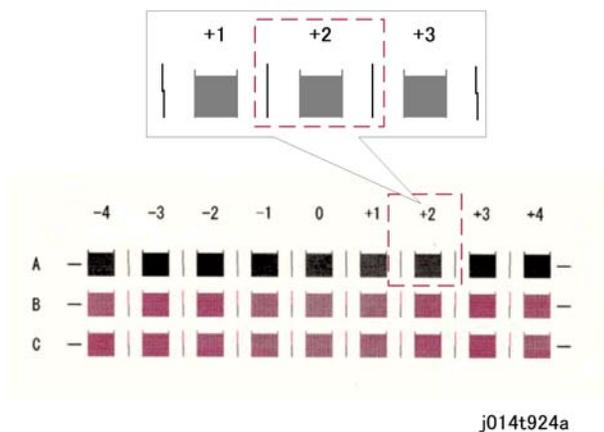
4

The print head is out of position if you see these:

- Broken vertical lines
- Blurred, smeared or streaked colors

Do the following procedure to correct these problems.

1. [Menu] > "System Settings?"
2. [▲] or [▼] > "Maintenance?" > [Yes] > "1 Nozzle Check?"
3. [▲] or [▼] > "4 Head Position?" > [Yes] > "Print Test Pattern?"
4. [Yes] > "Quality/Speed"
5. [◀] or [▶] > Select the test pattern ("High Quality", "Quality/Speed", "High Speed") > [Yes].
 "**Please Wait**" displays until pattern printing is finished. Do not start any other operation until printing stops.



6. Look at the patterns and determine which is the best.

- The best pattern is the gray square with straight vertical lines on both sides.
- The pattern setting is read as a matrix value from the pattern. For example, if the best pattern is in column "+2", line "A", the entry for adjustment will be "A" then "+2"

7. [▶] > "Adjust" > [Yes].

```
*A B C
◀, ▶ & Yes
```

8. [◀] or [▶] > Select letter for the row (A, B, C) > [Yes]

```
Adj=0
OK=Yes
```

9. [▲] or [▼] > Select the number for the column

- ▲ to select a + value
- ▼ to select a - value

10. [Yes] > "Adjust"

11. [No] > "Cancel?" > [Yes] > Standby

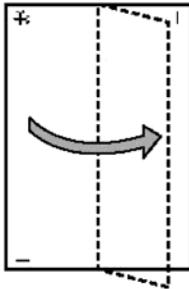
Registration

Do this procedure to adjust the print start position. The print start position is the point at the upper left corner of each sheet where printing begins. This procedure can be done for all the paper feed sources: Tray 1 (Standard), Tray 2 (Option), Multi-Bypass Tray (Option).

1. [Menu] > "System Settings?"
2. [▲] or [▼] > "Maintenance?" > [Yes] > "1 Nozzle Check?"
3. [▲] or [▼] > "6 Registration" > [Yes].
4. [◀] or [▶] > "Print Test Pattern?" > [Yes].
5. [◀] or [▶] > Select the paper tray ("Tray 1", "Tray 2" or "Bypass") > [Yes].

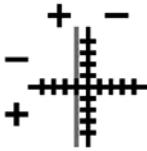
Note

- "Tray 2" and "Bypass" do not appear unless these options have been installed. .
6. [◀] or [▶] > Select the type of paper loaded in the tray ("Plain", "Glossy", "Transparency", etc) [Yes].
 "**Please Wait**" displays until pattern printing is finished. Do not start any other operation until printing stops.



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7. Fold the printed sheet in half lengthwise as shown.
8. Hold the corner of the folded paper in front of a light and look at the cross-pattern overlapping the single vertical line below.
9. Determine the 1st adjustment for the Read Direction.



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- The adjustment value in the Read Direction is the difference between the single vertical line and cross vertical line.
 - If the difference is one calibration mark on the "+" side, for example, the adjustment is +1.0.
10. Unfold the paper then fold the sheet in half widthwise.
 11. Determine the 2nd adjustment for the Feed Direction.
 - The value read after folding the sheet widthwise is the adjustment value for the Feed Direction.
 12. [◀] or [▶] > "Adjust" > [Yes] > "Tray1"
 13. [◀] or [▶] > Select the tray ("Tray1", "Tray2", "Bypass") > [Yes]
 14. [◀] or [▶] > Select item to adjust ("Plain()", "Plain(Y)", "Glossy", "Transparency").

Note

- The "Plain", "Glossy", and "Transparency" settings are provided because the sensor timing for each is different.
- Select "Plain()" to do the adjustment in the Read Direction (horizontal).
- Select "Plain (Y)" to do an adjustment for the Feed Direction (vertical).

Adj=0
OK=Yes

15. [▲] or [▼] > Select the number for adjustment (-40 to +40)

- ▲ to select a + value (Ma +40)
- ▼ to select a – value (Ma -40)

16. [Yes]> "Adjust"

17. [No] > "Cancel?" > [Yes]> Standby

Drive Cleaning

Follow the procedure below to do drive cleaning. Here are some important points you should know about drive cleaning.

- Drive cleaning should be done only after head cleaning and head flushing fail to clean the print heads successfully.
- Drive cleaning is done by changing a bit switch setting in the SP mode and should always be done by the service technician.
- Drive cleaning forces the piezo element to switch off and on repeatedly to force ink out of the nozzle ports. (The piezo element does not operate during head cleaning or head flushing done with the operator panel or the printer driver.)
- Drive cleaning consumes more ink than either head cleaning or head flushing and requires more time to complete.
- Only one print head at a time can be cleaned with this procedure.

↓ Note

- Before you do this procedure, make sure the print cartridge of the color that is causing problems is not almost empty. Drive cleaning cannot be performed if a print cartridge is almost empty.

1. [Clear Modes]> [1] [0] [7]> [Clear/Stop] for 3 sec.

```
SYSTEM Ver.0.51
Service Mode
```

2. [▼] > "Engine Maint."

```
SP No.
1000
```

3. [▲] 4 times> "5000"> [Yes]

4. [▲] 3 times> "5300"> [Yes]> [Yes]

5. [▲] 1 time> "5301"> [Yes]

```
ENGINE SW1
5301
```

6. [Yes]

```
ENG SW1 00001001
Bit0 _
```

7. Set Bit1 to "1"

- [▲] to move the cursor to Bit1 (2nd position from right)> [Yes]
- [▲] to toggle the setting to "1"> [Yes].

```
ENG SW1 00001011
Bit0 _
```

8. [No] 3 times > [▲] or [▼] > "End" > [Yes] > Machine switches off.

9. [Power] to switch the machine on.

10. Pull the release under the operation panel forward and raise the scanner unit.

11. Confirm that the envelope selector is forward.

12. [Menu]> "System Settings?"

13. [▲] or [▼] > "Maintenance" > [Yes]> "1 Nozzle Check?"

14. [▲] or [▼] > "2 Head-flushing"> [Yes]> "All Heads"

15. [◀] or [▶] > Select the print heads to be flushed: "All" (all print heads), "Print-head 1" (Black/Cyan), "Print-head 2" (Magenta/Yellow) > [Yes]

"*Please Wait*" displays until flushing is finished. Do not start any other operation until cleaning stops.

16. [No] [No]> Standby

- The print head is flushed while the piezo element is rapidly switched on and off.
- Once this operation is completed, Bit 1 resets to "0" automatically.
- If you need to do this procedure again for another print head, you must repeat this procedure and set Bit 1 to "1" again in the SP mode.

↓ Note

- Drive cleaning cannot be performed if the ink tank of the selected print head is almost empty.

Cleaning the Printheads Before Storage

Do this procedure to clean the print heads before storing the machine for one month or longer.

★ Important

- This procedure should be done at the Repair Center before storing a machine until it can be reused. This procedure is not intended for use at the job site by the customer.

1. Turn the machine on.
2. [Clear Modes]> [107]> [Clear/Stop] for sec.

SYSTEM Ver.0.51
Service Menu

3. [▲] or [▼] > "ENGINE MAINT.> [Yes]

SP No.
1000

4. [▲] 4 times> "5000"> [Yes] 3 times
5. [▲] 7 times> "5007"> [Yes]

WASHING
5007

6. [Yes]

WASHING
EXEC

7. Open the right front door, remove the print cartridges, replace them with the cleaning cartridges, then close the right front door.
8. Confirm that "WASHING" and "EXEC" are displayed, then push [Yes].
9. When you see "OK?" push [Yes].
 - "RUNNING" displays while the cleaning sequence executes.
 - When cleaning is finished, the display returns to "WASHING" and "EXEC"

Note

- If the "Alert" lamp lights red, this indicates that an error has occurred. At this step you cannot see the error displayed on the machine operation panel.
- Complete the procedure to return to standby mode, read the number of the error displayed to determine the cause of the error.

10. [No] 3 times> "Engine Maint."
11. [▲] or [▼] > "End" > [Yes]
12. The machine switches off.
13. Remove the cleaning cartridges and store the machine.

★ Important

- The initial ink fill counter resets at the end of washing. The next time the ink cartridges are installed and the machine is switched on, the initial filling sequence will begin.
- Do not install the ink cartridges and turn the machine on again after washing until you are ready to use or service the machine again.

Quick Reference

This alphabetized list shows important functions needed by service technicians. For more detailed information please refer to either "5. Service Tables" or "4. Troubleshooting".

Item	Path
ADF Adjustment	<ol style="list-style-type: none"> 1. [Menu]> [#]> [*]> [Yes]> "1. SERVICE'S CHOICE" 2. [▲] or [▼] > "2. ADJUST"> [Yes]> "CCD MAIN ZOOM" 3. [▲] or [▼] > To select "ADF SUB ZOOM", "ADF MAIN REGIST", "ADF SUB REGIST1", "ADF SUB REGIST2". 4. For more see "Service Mode" in "5. Service Tables"
ADF Feed Test	<ol style="list-style-type: none"> 1. [Menu]> [#]> [*]> [Yes]> "1. SERVICE'S CHOICE" 2. [▲] or [▼] > "6. FUNCTION"> [Yes]> "ADF FEED TEST"
Adjust Paper Feed	<ol style="list-style-type: none"> 1. [Menu]> "System Settings?" 2. [▲] or [▼] > "Maintenance?"> [Yes]> "1 Nozzle Check?" 3. [▲] or [▼] > "5 Adj. Paper Feed?" > [Yes] 4. For more see "Adjust Paper Feed" in "4. Troubleshooting".
Auto Reset Time	[Menu]> "System Settings"> [Yes]> "1. Auto Reset Time?"
Bit SW Settings (Hardware)	<ol style="list-style-type: none"> 1. [Clear Modes]> [107]> [Clear/Stop]> "Service Menu"> [Yes]> "Bit Switch"> [Yes] 2. For more see "Changing Bit Switch Settings" in "5. Service Tables".
Bit SW Settings (Soft Bit SW Settings for Fax)	<ol style="list-style-type: none"> 1. [Menu]> [#]> [*]> [Yes]> "1. SERVICE'S CHOICE" 2. [▲] or [▼] > "7. SOFT SETTING"> [Yes] 3. For more see "Service Mode Menus" in "5. Service Tables".
CCD Adjustment	<ol style="list-style-type: none"> 1. [Menu]> [#]> [*]> [Yes]> "1. SERVICE'S CHOICE" 2. [▲] or [▼] > "2. ADJUST"> [Yes]> "CCD MAIN ZOOM" 3. [▲] or [▼] > To select CCD MAIN ZOOM", "CCD SUB ZOOM", "CCD MAIN REGIST", "CCD SUB REGIST". 4. For more see "Service Mode" in "5. Service Tables"
Clear Data (DRAM, Memory)	<ol style="list-style-type: none"> 1. [Menu]> [#]> [*]> [Yes]> "1. SERVICE'S CHOICE" 2. [▲] or [▼] > "5. CLEAR DATA"> [Yes]> "DRAM CLEAR"

Item	Path
	3. [▲] or [▼] > To select "DRAM CLEAR" or "MEMORY CLEAR"> [Yes] 4. For more see "Service Mode" in "5. Service Tables"
Configuration Page (System Summary)	1. [Menu]> "System Settings" 2. [▲] or [▼] > "Engine Settings?"> [Yes] 3. [▲] or [▼] > "2 List/Test Print?"> [Yes]> "Configuration Page?"> [Yes].
Counters (View, Print)	1. [Menu]> "System Settings" 2. [▲] or [▼] > "Counter?"> [Yes] 3. [▲] or [▼] > "SCAN=", "FULL COLOR", "B&W=", or "LEVEL COUNTER" to view the count totals. 4. If you want to print a report of these totals [▲] or [▼] > "Print Counter?"> [Yes]
Counters – Clear ADF Counter <ul style="list-style-type: none"> • Total • Duplex 	1. [Menu]> "System Settings" 2. [▲] or [▼] > "Maintenance"> [Yes]> "1 Nozzle Check?" 3. [▲] or [▼] > "10 Reset Counter?"> [Yes]> "Reset ADF Counter?"> [Yes]
Counters: Clear All <ul style="list-style-type: none"> • Duplex Counter • Tray Counter • Paper Type Counter • Used Ink Cartridge Counter 	1. [Clear Modes]> [107]> [Clear/Stop]> "Service Menu"> [Yes]> "Bit Switch" 2. [▲] or [▼] > "Reset Settings"> [Yes]> "Initialize System" 3. [▲] or [▼] > "Clear Counters"> [Yes]> "Press Yes Key"> [Yes]
Counters: Clear Print Counters <ul style="list-style-type: none"> • COLOR PRINT • BLACK PRINT • LEVEL COLOR 	1. [Menu]> [0]> [2]> [Yes]> "1. COUNTER CLEAR"> "PRINT COUNTER" 2. [▲] or [▼] > To display "COLOR PRINT", "BLACK PRINT", or "LEVEL COLOR"> [Yes] 3. [Yes]> "COUNT IS CLEAR!" 4. For more see "Service Mode Menus" in "5. Service Tables".
Counters: Clear Scan Counters	1. [Menu]> [0]> [2]> [Yes]> "1. COUNTER CLEAR"> "PRINT COUNTER" 2. [▲] or [▼] > "SCAN COUNTER"> [Yes]> "COUNT IS CLEAR!" 3. For more see "Service Mode Menus" in "5. Service Tables".

Item	Path
Country & Language	<ol style="list-style-type: none"> 1. [Menu]> "System Settings?"> [Yes]>"1 Auto Reset Time?". 2. [▲] or [▼] > "6 Country?"> [Yes]> "USA?" 3. [▲] or [▼] > Select country name> [Yes]> "System Settings"> [Yes]> "1 Auto Reset Time?" 4. [▲] or [▼] > "4 Language"> [Yes]> "English?" 5. [▲] or [▼] > Select the language> [Yes]> "Please Re-start Power off on" 6. A message prompts you to cycle the machine off/on to set the language for the menu displays.
Date & Time	<ol style="list-style-type: none"> 1. [Menu]> "System Settings" 2. [▲] or [▼] > "General Settings"> [Yes]> "1 Date & Time?"
De-condensation	See "Feed 3-Sheets" below
Engine Summary Chart	<p>The Engine Summary Chart is printed with SP5200.</p> <ol style="list-style-type: none"> 1. Confirm that paper is loaded in the paper tray. (The report is about 16 pages.) 2. [Clear Modes]> [107]> [Clear/Stop] for 3 sec.> "Service Menu" 3. [▼] > "Engine Maint."> [Yes]> "SP NO./1000" 4. [▲] 4 times> "5000"> [Yes] 5. [▲] twice> "5200"> [Yes] 3 times> "PRINT SMC/EXEC"> [Yes] > "RUNNING"
Fax Resolution Test	<ol style="list-style-type: none"> 1. [Menu]> [#]> [*]> [Yes]> "1. SERVICE'S CHOICE" 2. [▲] or [▼] > "6. FUNCTION"> [Yes]> "ADF FEED TEST" 3. [▲] or [▼] > "FAX RES. COPY TEST"> "[Yes]"
Feed 1 Sheet	<ol style="list-style-type: none"> 1. [Menu]> "System Settings?" 2. [▲] or [▼] > "Maintenance?" > [Yes]> "1 Nozzle Check?" 3. [▲] or [▼] > "7 Paper Feed Test?" > [Yes]. One blank sheet of paper feeds.
Feed 3 Sheets (De-Condensation)	<ol style="list-style-type: none"> 1. [Menu]> "System Settings?" 2. [▲] or [▼] > "Maintenance?" > [Yes]> "1 Nozzle Check?" 3. [▲] or [▼] > "8 De-condensation?" > [Yes]. Three blank sheets of paper feed.

Item	Path
Ink Collection Counter Replacement Required?	<ol style="list-style-type: none"> [Menu]>"System Settings?" [▲] or [▼] > "Engine Settings"> [Yes]> "1. Paper Tray Prty?" [▲] or [▼] > "7. Replace InkCollct?"> [Yes]> "Unit Replacement Is Not Required"
Move CCD to HP	<ol style="list-style-type: none"> [Menu]> [#]> [*]> [Yes]> "1. SERVICE'S CHOICE" [▲] or [▼] > "6. FUNCTION"> [Yes]> "ADF FEED TEST" [▲] or [▼] > "CCD MOVE TO HOME"> "[Yes]> "HOME=START RET=STOP" [Start] to move the CCD to the HP if it is out of position [Clear/Stop] to move the CCD to the start position and then back to the home position.
Move Print Heads (Carriage) to the Left	<ol style="list-style-type: none"> [Menu]> "System Settings" [▲] or [▼] > "Maintenance"> [Yes]> "1 Nozzle Check?" [▲] or [▼] > "9 Move Prnt Heads?"> [Yes]. The carriage and print heads move to the left.
Network Settings	<p>This item does not appear in the "System Settings" until after the NIC has been installed.</p> <ol style="list-style-type: none"> [Menu]> "System Settings?" [▲] or [▼] > "Network Settings" > [Yes].
Nozzle Check	<ol style="list-style-type: none"> [Menu]> "System Settings" [▲] or [▼] > "Maintenance" > [Yes]> "1 Nozzle Check?" [Yes]> "*Please Wait*" displays as the pattern prints
Paper Type & Size <ul style="list-style-type: none"> Tray 1 Tray 2 Bypass 	<p>Note:</p> <ul style="list-style-type: none"> This is be done for Tray 1, Tray 2, and Bypass (Multi Bypass Tray). Tray 2 and the Multi Bypass Tray are options. The selections for "Tray2" and "Bypass" are not available until the option has been attached to the machine. <ol style="list-style-type: none"> [Menu]> "System Settings?" [▲] or [▼] > "Tray Paper Setting?"> [Yes]> "Tray 1?" ([▲] or [▼] > To select "Tray2" or "Bypass" if either option has been installed.)

Item	Path
	<ol style="list-style-type: none"> 3. [Yes]> "Paper Type?"> [Yes]> "Plain Paper?" 4. [▲] or [▼] > Select the type of paper that will be loaded in Tray 1 5. [Yes]> "Tray Paper Setting?"> [Yes] "Tray 1?"> [Yes]> "Paper Type?" 6. [▲] or [▼] > "Paper Size?"> [Yes] 7. [▲] or [▼] > Select the size of paper that will be loaded in Tray 1 8. [Yes]> "Tray Paper Setting?"
Power Off	[Power] Power LED flashes then extinguishes
Power On	[Power] Power LED flashes until warm-up finishes, then lights and remains on.
Print Head Position	<ol style="list-style-type: none"> 1. [Menu]> "System Settings?" 2. [▲] or [▼] > "Maintenance?" > [Yes]> "1 Nozzle Check?" 3. [▲] or [▼] > "4 Head Position?" 4. For more see "Head Position" in "4. Troubleshooting".
Print Head: Washing (Before Long Storage)	<ol style="list-style-type: none"> 1. Enter the SP mode 2. Select SP5007 and switch it on. 3. Open the right front door. 4. Remove the print cartridges and replace them with the cleaning cartridges. 5. Close the right front door. 6. Confirm that "WASHING" and "EXEC" are displayed, then push [Yes]. 7. When you see "OK?" push [Yes]. 8. "RUNNING" displays while the cleaning sequence executes. <ul style="list-style-type: none"> • For more see "Cleaning the Print Heads Before Long Term Storage" in "4. Troubleshooting".
Print Head: Cleaning (Drive Cleaning)	<p>This is the third and last procedure you should do to clean the print heads if normal print head cleaning and flushing fail to correct the problem. There are two ways the set the machine for drive cleaning in the SP mode. (The first method requires fewer steps.)</p> <p>Method 1</p>

Item	Path
	<ol style="list-style-type: none"> 1. [Clear Modes]> [107] for 3 sec.> [Clear/Stop]> "Service Menu"> [Yes]> "Bit Switch"> [Yes]> "BitSW#1 Setting"> [Yes]> "bit0" 2. [▲] > "bit1"> [Yes] "0" displays at Bit SW1 on 2nd line 3. [▲] > "1" displays at Bit SW1> at Bit SW1 on 2nd line. 4. [Yes]> "1" appears at Bit SW1 on the 1st line. The bit is set. 5. [No] 3 times> "Service Menu" 6. [▲] > "End"> [Yes]> to leave the SP mode and switch the machine off. 7. [Power] to switch on the machine. 8. Flush all print heads. (See "Print Head - Cleaning (Flushing)" in this table. <p>Method 2</p> <ol style="list-style-type: none"> 1. Enter the SP mode and set Bit 1 of SP5301 to "1". 2. Flush the print heads. (See "Print Head Cleaning (Flushing)" in this table.
Print Head: Cleaning (Flushing)	<p>This is the second procedure you should do if normal print head cleaning does not solve the problem. Print head flushing consumes more ink than print head cleaning.</p> <ol style="list-style-type: none"> 1. Pull the release under the operation panel forward and raise the scanner unit. 2. Confirm that the envelope selector is forward. 3. [Menu]> "System Settings?" 4. [▲] or [▼] > "Maintenance" > [Yes]> "1 Nozzle Check?" 5. [▲] or [▼] > "2 Head-flushing"> [Yes]> "All Heads" 6. [◀] or [▶] > Select the print heads to be flushed: "All" (all print heads), "Print-head 1" (Yellow/Magenta), "Print-head 2" (Black/Cyan) > [Yes] 7. For more see "Print Head Flushing" in "4. Troubleshooting".
Print Head: Cleaning (Normal)	<p>This is the first procedure you should do to clean the print heads if the Nozzle Check appears patchy or broken. Clean the print heads at least 3 times before you do print head flushing.</p> <ol style="list-style-type: none"> 1. Pull the release under the operation panel forward and raise the scanner unit.

Item	Path
	<ol style="list-style-type: none"> 2. Confirm that the envelope selector is forward. 3. [Menu]> "System Settings?" 4. [▲] or [▼] > "Maintenance" > [Yes]> "1 Nozzle Check?" 5. [▲] or [▼] > "2 Head-cleaning"> [Yes]> "All Heads" 6. [◀] or [▶] > Select the print heads to be cleaned: "All" (all print heads), "Print-head 1" (Black/Cyan), "Print-head 2" (Magenta/Yellow)" > [Yes] 7. For more see "Print Head Cleaning" in "4. Troubleshooting".
Registration	<ol style="list-style-type: none"> 1. [Menu]> "System Settings?" 2. [▲] or [▼] > "Maintenance?" > [Yes]> "1 Nozzle Check?" 3. [▲] or [▼] > "6 Registration" > [Yes]. 4. For more see "Registration" in "4. Troubleshooting".
Reset System	<ol style="list-style-type: none"> 1. [Clear Modes]> [107]> [Clear/Stop]> "Service Menu"> [Yes] > "Bit Switch" 2. [▲] or [▼] > "Reset Settings"> [Yes]> "Initialize Sys."> [Yes]> "Press Yes Key"> [Yes]
SMC Report	See "Engine Summary Chart" above.
SP Mode (Entering)	<ol style="list-style-type: none"> 1. [Clear Mode]> [107] 2. [Clear/Stop]> Hold 3 sec. and release> "Service Menu"
SP Mode – Changing SP Codes	<ol style="list-style-type: none"> 1. [Clear Mode]> [107] 2. [Clear/Stop]> Hold 3 sec. and release> "Service" menu" 3. [▲] or [▼] > "Engine Maint."> [Yes] 4. For more about changing SP codes, see "Using SP Mode Menus" in "5. Service Tables2.
Scanning Test	<ol style="list-style-type: none"> 1. [Menu]> [#]> [*]> [Yes]> "1. SERVICE'S CHOICE" 2. [▲] or [▼] > "6. FUNCTION"> [Yes]> "ADF FEED TEST" 3. [▲] or [▼] > "SCAN TEST"> "[Yes]> "SCAN TEST/ SCAN=START" 4. [B&W Start] to start the test 5. [Clear/Stop] to stop the test
Service Mode Entry	[Menu]> [#]> [*]> [Yes]> "1. SERVICE'S CHOICE"

Item	Path
(Controller or Fax/Scanner/ARDF)	
Service Data List (Controller or Fax/Scanner/ARDF)	<ol style="list-style-type: none"> 1. [Menu]> [#]> [*]> [Yes]> "1. SERVICE'S CHOICE" 2. [▲] or [▼]> "4. REPORT"> [Yes]> "SERVICE DATA LIST"> [Yes]
Service Mode	[Menu]> [#]> [*]> [Yes]> "1. SERVICE'S CHOICE"
Service Summary	<ol style="list-style-type: none"> 1. Confirm that paper is loaded in the paper tray. 2. [Clear Modes]> [107]> [Clear/Stop] for 3 sec. and release> "Service Menu"> [Yes]> "Bit Switch" 3. [▲] or [▼]> "Service Summary"> [Yes]> "Press Yes Key"> [Yes] to print the report
System Summary	See "Configuration Page" above
T.30 Protocol List	<ol style="list-style-type: none"> 1. [Menu]> [#]> [*]> [Yes]> "1. SERVICE'S CHOICE" 2. [▲] or [▼]> "4. REPORT"> [Yes]> "SERVICE DATA LIST" 3. [▲] or [▼]> "T.30 PROTOCOL LIST"> [Yes]
Version Display (All) <ul style="list-style-type: none"> • MAIN F/W VER. • ENGINE F/W VER. • NIC F/W VER. 	<ol style="list-style-type: none"> 1. [Menu]> [#]> [*]> [Yes]> "1. SERVICE'S CHOICE" 2. [▲] or [▼]> "2. ADJUST">"3. VERSION DISPLAY">[Yes] "MAIN F/W VERSION". 3. [▲] or [▼]> "MAIN F/W VERSION", "ENGINE F/W VERSION", "NIC F/W VERSION". 4. For more see "Service Mode" in "5. Service Tables"
Version Display (Printer Engine Only)	<ol style="list-style-type: none"> 1. [Clear Modes]> [107]> [Clear/Stop]> "Service Menu"> [Yes] > "Bit Switch" 2. [▲] or [▼]> "Version Display"> [Yes]

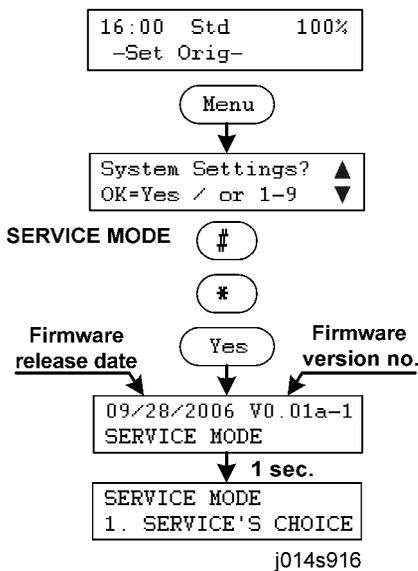
5. Service Tables

Before You Begin

There are two service modes for this machine:

- **Service Mode.** This mode is menu driven and includes important items for adjustments (CCD, ADF, scanner, etc.) as well as other important functions such as displaying the firmware version number, clearing the memory, printing reports, and so on.
- **SP mode.** Consists of SP codes SP1000 to SP7532. These are printer engine SP adjustments, primarily but not exclusively used by designers for machine adjustments.

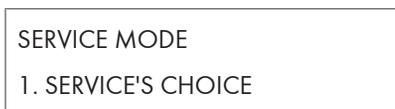
Service Mode



Entering/Exiting Service Mode

To enter Service Mode:

1. [Menu]> [#]> [*]> [Yes]



2. Use [◀] or [▶] to display the item to select.

1. SERVICE'S CHOICE
2. ADJUST
3. VERSION DISPLAY
4. REPORT
5. CLEAR DATA
6. FUNCTION
7. SOFT SETTING
8. H/W TEST
9. COUNTER SETTINGS

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3. [Yes]> To open the next level.

To Exit the Service Mode

[Clear Modes] to exit and return to standby.

-or-

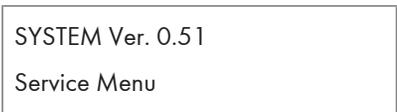
[No]> Keep pressing to return to each previous level until return to standby.

SP Mode

Entering/Exiting SP Mode

To enter SP Mode

1. [Clear Modes]> [107]> [Clear/Stop]



2. [▲] or [▼] > to display the SP mode item to select.
3. [Yes] to open the next lower level of the menu.
4. [No] to return to the previous level.

Service Menu

Bit Switch

Bit switches 1 to 8. (Described later in this section.)

Reset Settings

- **Initialize System.** Clears all SP code settings and restores their default settings.

	<ul style="list-style-type: none"> • Clear Counters. Clears all counters.
Service Summary	Prints the Service Summary. The service summary lists information about the current status of the machine.
Version Display	Displays the version number of the printer engine. <ul style="list-style-type: none"> • Counter Display. Switches the counter display on and off. • LevColor Disp. Switches the level counter display on and off. • Coverage Count. Switches the coverage counter on and off. • Double Count. Switches double counting on and off.
Counter Settings	<p>Note: The default setting for all these items is "Off".</p>
Fax No.	Allows entry of the machine fax number.
Engine Maint.	<p>Allows changing the settings of individual SP codes (SP1000 to SP7532). For more about individual SP code settings, refer to the tables in this section.</p> <p>Note: There are no settings available for the following groups: SP4000, SP6000, SP8000, SP9000.</p>
End	Select to leave the SP mode.

To exit SP mode

1. At any level in the SP mode press [No] to return to the first level.

SYSTEM Ver. 0.51
Service Menu

2. [▲] or [▼] > "End"> [Yes].
The machine leaves the SP mode and switches off.
3. Press [Power] to switch the machine on.

Using SP Mode Menus

Entering an Engine SP Code Directly

Do this procedure to enter an SP code directly if you know the number.

1. In the service tables of this section look up the number and name of the SP code to set.

Example: Set SP1164 HUMI:B for -2.5%

Calibrate Humidity Setting for Duplex

Range: [-128 to +127/0/1/0.1%]

2. [Clear Modes]> [1] [0] [7]> [Clear/Stop]

```
SYSTEM Ver. 0.51
Service Menu
```

3. [▲] or [▼] > "Engine Maint."> [Yes]

```
SP No.
1000
```

4. [Yes] to enter "1" at the first digit and move the cursor to the 2nd digit.
5. [Yes] x1 time> "1100"> [Yes] to enter "1" at the 2nd digit and move the cursor to the 3rd digit.
6. [Yes] x6 times> "1160"> [Yes] to enter "6" at the 3rd digit and move the cursor to the 4th digit.
7. [Yes] x4 times> "1164"> [Yes].

```
CHG:HUMI:B
1164
```

8. [Yes]

```
CHG:HUMI:B
_000
```

Note

- The first digit is blank. This is the digit for the sign (plus or minus).
- When this digit is empty, the value is set for plus (+) but the plus sign is not displayed.

9. [▲] or [▼] > "-000" > [Yes] > Cursor moves to 1st zero

```
CHG:HUMI:B
-000
```

10. [Yes]> "-000"> To enter the first "0", cursor moves to 2nd "0".
11. [Yes] x2 times> "-020"> [Yes] To enter "2" at the 2nd zero, cursor moves to 3rd "0".
12. [Yes] x5 times> "-025"> [Yes]

```
CHG:HUMI:B
-025
```

13. [Yes] To save the setting.

SP No. 1164

14. [No]> "Engine Maint."
 15. [▲] or [▼] > "End"> [Yes]> Machine switches off.
 16. [Power] to switch the machine on.

Browsing the Engine SP Codes

Do this SP to browse the SP code numbers from Group 1.

1. [Clear Modes]> [1] [0] [7]> [Clear/Stop]

SYSTEM Ver. 0.51 Service Menu

2. [▲] or [▼] > "Engine Maint."> [Yes]

SP No. 1000

3. [Yes] x 4 times

REG:FD:NORM:F 1000

[▼] To display "1001", "1002", "1003", etc.

[▲] To display the last SP (7532).

[Yes] To select the SP code to open.

[No] To return to the previous level and continue browsing.

4. [No]> "Engine Maint."
 5. [▲] or [▼] > "End"> [Yes]> Machine switches off.
 6. [Power] to switch the machine on.

Service Mode

Access to Service Mode

The table below describes when you can safely enter service mode to change settings.

Letter Code	What It Means to Service Technician
Y	Yes. You can enter the service mode to view and change settings.
N	No. You cannot enter service mode.
V	You enter service mode only to view settings. If you attempt to execute or change a setting, the machine may hang up or power down.

5

Machine Status			Comment
[Menu]		Y	Do your browsing and settings here.
Copy Mode	Copy Settings	N	
	Stop Copy	N	
	Copy Start	N	
GDI Mode	Data RX (USB)	V	
	Data RX (NIC)	V	
	Print	N	
	Transmission(Mode)	V	If a job is in progress it will complete. A new job cannot be processed until the machine leaves service mode.
Transmission (NIC)	V		
Fax Mode	Fax Settings	N	
	Start Scan for Fax	N	
	Data RX (Modem)	V	
	Data RX (NIC)	V	
	Data RX (USB)	V	If a job is in progress when you enter service mode it will complete, a new transmission cannot start until the machine leaves service mode.

Machine Status			Comment
	Print	N	
Scan Mode	Set Original for Scan	N	
	Scan Original	N	
	Send via NIC	V	If a job is in progress when you enter service mode it will complete, a new transmission cannot start until the machine leaves service mode.
TWAIN USB		N	
TWAIN NIC		N	
LSD		N	
PWM		N	

★ Important

- To avoid problems, disconnect the USB and network cables before using these service mode menus. Be sure to advise the operator that USB and network data transmissions will not be available while the machine is being serviced. Be sure to reconnect the cables when you are finished.

Service Mode Menus

1. SERVICE'S CHOICE

This group of settings is used to set up the base settings for operation of the machine.

TX SPEED	Transmission (Sending) Speed
Sets the transmission speed for fax sending.	
Note: For the fax model only.	
Default: V.34 -33600	

RX SPEED	Receiving Speed
Sets the transmission speed for fax receiving.	
Note: For the fax model only.	
Default: V.34 -33600	

TX LEVEL	Transmission Level
Transmission signal level. Note: For the fax model only. -15 dB to -4 db/ -10 dBm /1 dBm	

DTMF HIGH FREQ. LEVEL	Dial Tone Multi Frequency
DTM high frequency level (transmission level of high DTMF TX) Note: For the fax model only. [0 to -15/ -7 /1 dBm]	

DTMF LOW FREQ. LEVEL	Dial Tone Multi Frequency
DTM low frequency level (transmission level of low DTMF TX) Note: For the fax model only. [0 to -15/ -11 /1 dBm]	

CNG LEVEL	
CNT transmission level. Note: For the fax model only. [-15 to -4/ -10 /1 dBm]	

CED LEVEL	
CED transmission level. Note: For the fax model only. [-15 to -4/ -10 /1 dBm]	

ECM MODE	
Switches ECM mode off and on. Default: On Note: For the fax model only. ON/OFF ON: When an error occurs during transmission, the frame where the error occurred is resent automatically.	

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OFF: Errors are ignored during transmission.

CODING SCHEME

Sets the compression mode for fax transmission. Choose the compression method from among the following: JBIG (best, most complex), MMR, MR, MH (simplest).

Default: **JBIG**

Note: For the fax model only

ENERGY SAVER

Disables/enables the energy save mode item on the "System Settings" menu ([Menu]> "System Settings"> "2. Energ. Saver Mode?")

[On/Off]

On: The "2. Energ. Saver Mode" item is added to the "System Settings" menu.

Off: The item does not appear in the "System Settings" menu.

Note: This setting should remain on to ensure that the machine remains Energy Star compliant.

ADJUST ZOOM (FAX)

Enables or disables the zoom feature for fax transmissions.

ENABLE/DISABLE

ADJUST ZOOM (OTHERS)

Enables or disables the zoom feature for features other than fax.

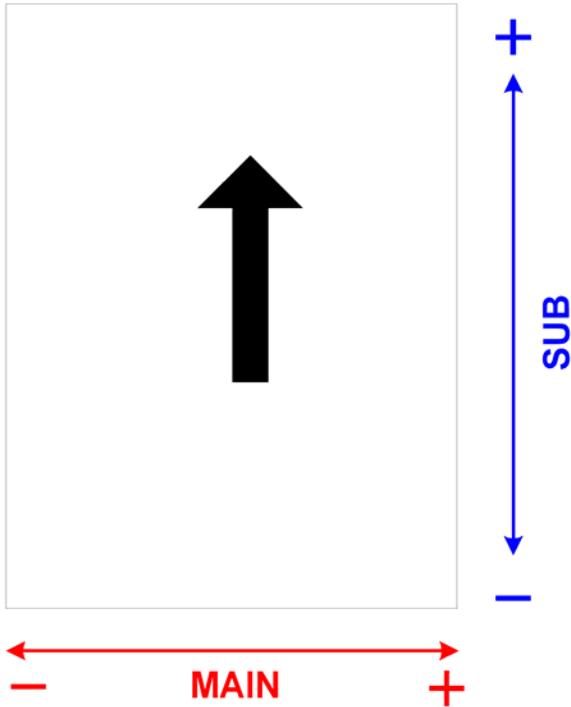
ENABLE/DISABLE

2. ADJUST

This group of settings is used to adjust the scanning and printing start positions. Scan Color Chart-4 to do these adjustments:

- **MAIN REGIST.** The horizontal adjustment perpendicular to the direction of paper feed.
- **SUB REGIST.** The vertical adjustment in the direction of paper feed.

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j014s906

CCD MAIN ZOOM	
Adjusts rate of magnification in main scan direction. [95 to 105/100/0.4%]	
CCD SUB ZOOM	
Adjusts rate of magnification in sub scan direction. [95 to 105/100/0.4%]	
CCD MAIN REGIST	
Adjusts the scan start position in the main scan direction. [90 to 110/100/0.5 mm]	
CCD SUB REGIST	
Adjusts the scan start position in the sub scan direction.	

[90 to 110/100/0.5 mm]

ADF SUB ZOOM	
--------------	--

Adjusts ADF scan magnification in the sub scan direction.

[95 to 105/100/0.4%]

ADF MAIN REGIST	
-----------------	--

Adjusts ADF scan magnification in the main scan direction.

[90 to 110/100/0.5%]

ADF SUB REGIST1	
-----------------	--

Adjusts ADF scan magnification in sub scan direction for single-side (simplex) scanning jobs.

[90 to 110/100/0.5%]

ADF SUB REGIST2	
-----------------	--

Adjusts ADF scan magnification in sub scan direction for 2nd side of two-side (duplex) scanning jobs.

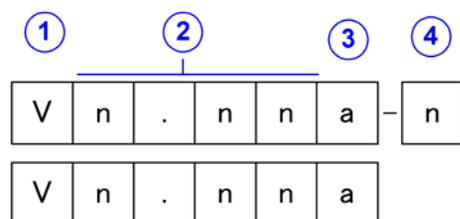
[90 to 110/100/0.5%]

3. VERSION DISPLAY

This function displays the firmware version numbers.

MAIN F/W VERSION	Ver. number of main firmware.
ENGINE F/W VERSION	Ver. number of engine firmware
NIC F/W VERSION	Ver. number of NIC firmware

Example



j014s907

The top block is the format of the version number of the main firmware, and the bottom block is the format of the engine and NIC version numbers.

- The initial letter ① is always a "V" followed by a 3-digit version number .
- The lower case letter ③ ("a" above) is an "a", "b", "c" etc. to indicate a temporary update of a version number that has not yet been changed.
- The "-n" ④ number (1, 2, 3, or 4) appears only for the main firmware version number to indicate the machine model/market:

No.	What It Means	
1	C1b DOM	Toscana-C1b J013/J014 for Japan
2	C1b EXP	Toscana-C1b J013/J014 for EU/NA/Other
3	C1a DOM	Toscana-C1b J012 for Japan
4	C1a EXP	Toscana-C1b J012 for EU/NA/Other

5

4. REPORT

SERVICE DATA LIST

Lists important information about the machine, including the current status of the CCD and ADF adjustments.

SERVICE DATA LIST

NAME :
 TEL :
 DATE : 2006.Sep.30 13:07
 COUNTRY/REGION CODE=JAPAN

--- ADJUST ---

CCD MAIN ZOOM : 100	CCD SUB ZOOM : 100
CCD MAIN REGIST : 100	CCD SUB REGIST : 100
ADF MAIN REGIST : 100	ADF SUB ZOOM : 100
ADF SUB REGIST : 100	ADF SUB REGIST2 : 100

RX IN MEMORY :
 MAIN RAM SIZE : 96MG

--- ROM ID ---

09/14/2006 V0.47C-2

j014t944

T.30 PROTOCOL MONITOR REPORT

Protocol Monitor Report

User :
 Fax :
 Date : 2006.Sep.29:14:13

Session	Function	No.	Destination	Date	Time	Page	RX/TX Time	Mode	Result

TX	RX	DATA

j014t945

5. CLEAR DATA

These settings clear memory and all memory settings.

DRAM CLEAR	
This function clears only image memory to restore fax mode memory size to 100%	

MEMORY CLEAR	
Executing this feature clears all the items marked "YES" in the table below.	

Group	Item	Reset?	
Menu	System Settings?	YES	
	Tray Paper Setting?	YES	
	User Restriction? (password)	YES	
	Copier Features?	YES	
	Program Dest.?	YES	
	TX Settings?	YES	
	RX Settings?	YES	
	Line Settings?	YES	
	General Settings?	1. Date & Time	NO
		2. User Fax No.	YES
		3. User name	YES
	Network Settings? (including IP filter)		YES
	LDAP Settings?		YES
	SMTP Settings?		YES
	POP3 Settings?		YES
	TX/RX Result?		
	Scanner Features?		YES
	Maintenance?		NO
	Engine Settings?		YES
	Host I/F Settings?		YES

	Maintenance?	NO
Service Mode	1. SERVICE'S CHOICE	YES
	2. ADJUST	YES
	3. VERSION DISPLAY	NO
	5. CLEAR DATA	NO
	6. FUNCTION	NO
	8. H/W TEST	NO
	9. COUNTER SETTING	NO

6. FUNCTION

5

Use these items to test the machine operation.

ADF FEED TEST	Tests original feed
---------------	---------------------

Use this function to test the operation of original feed through the ARDF. Originals fed through the ARDF for this test are not counted.

To do the test:

1. Set the originals in the ARDF.
2. Press [Start] to start the test.
3. Choose either "1-sided" or "2-sided" for either simplex or duplex testing.
4. Press [Clear/Stop] to stop the test at any time.

CCD MOVE TO HOME	Moves the CCD to its home position
------------------	------------------------------------

Use this function to move the slider to the home position on the left. This prepares the machine for shipping from the factory or moving the machine to another location. This operation does not affect the scan counter.

FAX RES. COPY	Tests the fax resolution
---------------	--------------------------

Use this function to test fax resolution. This allows testing without actually sending a fax to a remote machine; the data is redirected to the machine's own coding unit and printed out.

Note:

- This function is available for the fax models only.

- The tray selection for this test is always set for Tray 1 (this cannot be changed).

SCAN TEST	Tests the function of the CCD
-----------	-------------------------------

This test conducts repeat CCD scanning. To stop the test, press [Clear/Stop].

7. SOFT SETTING

There are a total of 14 8-bit switches in machine flash ROM, mainly used for PTT regulation. The "Country Code" selection in the Service Mode determines the default settings. For more details, please refer to the Facsimile Manual.

Bit SW Quick Reference Table

Here is a quick summary of the software setting bit switches.

Bit SW	Function
01	<ul style="list-style-type: none"> • Initial TX selection open to user
02	<ul style="list-style-type: none"> • Detect dial tone before dialing • PSTN/PBX setting • Dial mode select
03	<ul style="list-style-type: none"> • Send tone 1400 Hz 3 sec in fax/tel mode • Force user to register fax no./user name • TSI/CSI append "+"
04	<ul style="list-style-type: none"> • Dial registered limit for tel. no. • Visible alarm for RTN (Return To Negative) signal
05	<ul style="list-style-type: none"> • Redial attempt counter
06	<ul style="list-style-type: none"> • Redial
07	<ul style="list-style-type: none"> • Redial interval
08	<ul style="list-style-type: none"> • Minimum redial interval • Maximum redial interval
09	<ul style="list-style-type: none"> • Continue redial after failure • Redial attempt failure limitation count
10	<ul style="list-style-type: none"> • RX print mode • Header for fax TX

Bit SW	Function
11	<ul style="list-style-type: none"> • Footer
12	<ul style="list-style-type: none"> • Activity Report • RX Result Report • TX Result Report
13	<ul style="list-style-type: none"> • Number of rings
14	<ul style="list-style-type: none"> • Minimum number of rings • Maximum number of rings

★ Important

- The default settings for the bit switches described in the table below are different, depending on your location.

5

Bit SW01		Function
Bit	Name	Function
7	Reserved	
6	Reserved	
5	Initial TX selection open to user	1:On, 0:Off
4	Reserved	
3	Reserved	
2	Reserved	
1	Reserved	
0	Compromise Equalizer Enable	0: Enable, 1:Disable
<p>Note: If Bit 5 is set to "0", the header select function can no longer be set by the user. It can only be changed by the service technician.</p>		

Bit SW 02		Function
Bit	Name	Function
		<ul style="list-style-type: none"> • Detect dial tone before dialing • PSTN/PBX setting • Dial mode select

7	Detect dial tone before dialing	0:Disable, 1:Enable
6	PSTN/PBX setting	0:PSTN, 1:PBX (select PBX line type)
5	PBX Dial Tone Detect	0: No detection of tone before PBX prefix 1: Detects tone before PBX prefix
4	Dial mode select	0:DTMF-PB, 1:Pulse-DP
3	Reserved	
2	Reserved	
1	Reserved	
0	Reserved	

5

Bit SW03		<ul style="list-style-type: none"> Send tone 1400 Hz 3 sec in fax/tel mode Force user to register fax no./user name TSI/CSI append "+"
Bit	Name	Function
7	Send tone 1400 Hz 3 sec in fax/tel mode	0:Disable, 1:Enable
6	Reserved	
5	Force user to register fax no./user name	0:Disable, 1:Enable
4	TSI/CSI append "+"	0: Do not append "+" before TSI/CSI 1: Append "+" automatically
3	Reserved	
2	Reserved	
1	Reserved	
0	Reserved	

Bit SW04		<ul style="list-style-type: none"> Dial registered limit for tel. no. Visible alarm for RTN (Return To Negative) signal
Bit	Name	Function
7	Dial registered limit for tel no.	0: 50 digits, 1: 40 digits

6	Protocol Signal Display Mode	0: No, 1: Yes
5	Reserved	
4	Detect dial tone after prefix number	0: No display 1: Display V.8 or T.30
3	Audible Alarm for RTN signal	0:No 1:Yes (Alarm for TX/RX of RTN signal)
2	Reserved	
1	Reserved	
0	Reserved	

Bit SW 05		Redial attempt counter
Bit	Name	Function
7	Reserved	
6	Reserved	
5	Reserved	
4	Reserved	
3	Redial attempt counter	See table below
2		
1		
0		

Counter	Bit 3	Bit 2	Bit 1	Bit 0
1	0	0	0	1
2	0	0	1	0
3	0	0	1	1
4	0	1	0	0
5	0	1	0	1

Counter	Bit 3	Bit 2	Bit 1	Bit 0
6	0	1	1	0
7	0	1	1	1
8	1	0	0	0
9	1	0	0	1
10	1	0	1	0

Bit SW 06		Redial
Bit	Name	Function
7	Reserved	
6	Reserved	
5	Reserved	
4	Redial	0:Disable, 1:Enable (on)
3	Reserved	
2	Reserved	
1	Reserved	
0	Reserved	

Bit SW 07		Redial Interval
Bit	Name	Function
7	Detect busy tone after dialing	0: No – Not to detect 1: Yes – Detect busy tone after dialing
6	Redial Interval	See table below
5		
4		
3		
2		

1		
0		

Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0	Interval (min.)
0	0	0	0	0	1	0	2
0	0	0	0	0	1	1	3
0	0	0	0	1	0	0	4
0	0	0	0	1	0	1	5
~	~	~	~	~	~	~	~
1	1	0	0	0	1	1	99

5

Bit SW08		<ul style="list-style-type: none"> • Minimum redial interval • Maximum redial interval
Bit	Name	Function
7		
6	Min. redial interval (see below)	
5		
4		
3	Max. redial attempts (see below)	
2		
1		
0		

Interval	Bit 6	Bit 5	Bit 4
1	0	0	1
2	0	1	0
3	0	1	1

Interval	Bit 6	Bit 5	Bit 4
4	1	0	0
5	1	0	1

Interval	Bit 3	Bit 2	Bit 1	Bit 0
1	0	0	0	1
2	0	0	1	0
3	0	0	1	1
4	0	1	0	0
5	0	1	0	1
6	0	1	1	0
7	0	1	1	1
8	1	0	0	0
9	1	0	0	1
10	1	0	1	0
11	Reserved			
12	Reserved			
13	Reserved			
14	Reserved			
15	Reserved			

Bit SW09		<ul style="list-style-type: none"> • Continue redial after failure • Redial attempt failure limitation count
Bit	Name	Function
7	Continue redial after failure	0: No limitation 1: Limit determined by Bit 0 to 3
6	Reserved	

5	Reserved	
4	Reserved	
3	Redial attempt failure limitation count	
2	Redial attempt failure limitation count	
1		
0		

Note: Bit 7. The redial failure counter will increment 1 for each auto redialing, unless the operator interrupts the job or the job finishes.

Counter	Bit 3	Bit 2	Bit 1	Bit 0
0	0	0	0	0
1	0	0	0	1
2	0	0	1	0
3	0	0	1	1
4	0	1	0	0
~	~	~	~	~
10	1	0	0	0
~	~	~	~	~
13	1	1	1	1
14	1	1	1	0
15	1	1	1	1

Bit SW10		<ul style="list-style-type: none"> • RX print mode • Header for fax TX
Bit	Name	Function
7	Reserved	
6	Reserved	

5	Reserved	
4	Reserved	
3	RX print mode	0: RX 1 page then print 1 page (Print RX) 1: Start printing after receiving all pages (Memory RX)
2	Reserved	
1	Header for fax TX	0: Off 1: On (transmit header at top of each page)
0	Reserved	

Note: Bit 3. Some countries require sending the header at the top of each page (according to PTT regulations in the USA, for example)

5

Bit SW11		Footer
Bit	Name	Function
7	Reserved	
6	Reserved	
5	Reserved	
4	Footer	0: Off 1: On. Printer footer information on each RX page.
3	Reserved	
2	Reserved	
1	Reserved	
0	Reserved	

Note: Bit 4. The footer information includes the machine number, receiving time, remote machine TSI number, session, and page number. These details are also included in the T.30 report.

Bit SW 12		<ul style="list-style-type: none"> • Activity Report • RX Result Report • TX Result Report
Bit	Name	Function

7	Activity Report	0: No 1: Yes
6	Reserved	
5	RX Result Report	See below
4		
3	TX Result Report	See below
2		
1	Reserved	
0	Reserved	

Bit 5	Bit 4	Status
0	0	Prints
0	1	Prints when RX error occurs
1	0	Never prints

Bit 3	Bit 2	Status
0	0	Prints
0	1	Prints when TX error occurs
1	0	Never prints

Bit SW13		Number of rings
Bit	Name	Function
7		
6		
5		
4		
3	Number of rings	See below

2		
1		
0		

Bit 3	Bit 2	Bit 1	Bit 0	Number of Rings
0	0	0	0	1
0	0	0	1	2
0	0	1	0	3
0	0	1	1	4
0	1	0	0	5
~	~	~	~	~
1	1	1	1	16

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Bit SW14		<ul style="list-style-type: none"> • Minimum number of rings • Maximum number of rings
Bit	Name	Function
7	Min. number of rings	See below
6		
5		
4		
3	Max. number of rings	See below
2		
1		
0		

Bit 7	Bit 6	Bit 5	Bit 4	Number of Rings
0	0	0	0	1

Bit 7	Bit 6	Bit 5	Bit 4	Number of Rings
0	0	0	1	2
0	0	1	0	3
0	0	1	1	4
0	1	0	0	5
0	1	0	1	6
0	1	0	0	7
~	~	~	~	~
1	1	1	1	16

Bit 3	Bit 2	Bit 1	Bit 0	Number of Rings
0	0	0	0	1
~	~	~	~	~
0	1	0	1	6
0	1	1	0	7
0	1	1	1	8
1	0	0	0	9
1	0	0	1	10
1	0	1	0	11
1	0	1	1	12
1	1	0	0	13
1	1	0	1	14
1	1	1	0	15
1	1	1	1	16

8. H/W TESTING

All these functions (with the exception of "Key Test" are for the fax operation testing.

SIGNAL TEST	Fax model only.
TX FSK	Output sync. char.
TX PSK	Output zero at each data rate
2100 Hz (CED)	Output answer tone
1100 Hz (CNG)	Output calling tone
V.34 SIGNAL TX	Output carrier at each sample rate
RING SIGNAL	Output ring signal

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RELAY TEST	Fax model only.
.CMLD RELAY	.Tel/fax relay. 1: Fax, 0: Tel
.PRL RELAY	.Pulse dial relay. 1: Make 0: Break
.SPC RELAY	.Incoming ring 1: Without ring 0: Ring
.DCLIM RELAY	AC impedance 0: Inactive 1: Active
.DCSEL RELAY	AC impedance 0: Inactive 1: Active

SENSOR TEST	Fax model only.
HOOK1 TEST	Displays handset status OFF: Inactive

	ON: Active
HOOK2 TEST	OFF: Inactive ON: Active
RING DETECT	Detects ring function OFF: Inactive ON: Active

DIAL TEST	Fax model only.
DTMF	.Outputs the DTMF frequency in sequence (0, 1 to 9, #, *) then stops.
PULSE	Outputs the PULSE frequency in sequence (1 to 9, 0) then stops.
PB	Outputs DTMF frequency number input continuously until [Clear/Stop] key is pressed.

Low Frequency	High Frequency		
	1209 Hz	1336 Hz	1477 Hz
697 Hz	1	2	3
770 Hz	4	5	6
852 Hz	7	8	9
941 Hz	*	0	#

VOLUME TEST	Fax model only.
.LOW	[◀] or [▶] to scroll through "LOW", "MIDDLE", "HIGH". You will hear the tone change as each item is selected.
.MIDDLE	
HIGH	

Volume	Frequency (Hz)	db Value
LOW	2K	- 55 db
MIDDLE	2K	-65 db
HIGH	2K	-80 db

KEY TEST	All models
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1. [Yes]> to select "KEY TEST"

123456789*#ABCDEFGH
IJKLMNOPQRSTU

2. As you press each key to test it you will see its display on the screen disappear. (See table below.)

3. [Clear Modes]> To cancel testing.

KEY	LCD	KEY	LCD
[0]	0	[2 in 1/Sort]	Q
[1]	1	[2 Sided Original/2 Sided Copy]	R
[2]	2	[Clear/Stop]	S
[3]	3	[B&W Start]	T
[4]	4	[Color Start]	U
[5]	5	[On Hook Dial]	a
[6]	6	[Speed Dial]	b
[7]	7	[Pause/Redial]	c
[8]	8	[Fax Options]	d
[9]	9	[Memory Trans]	e
[*]	*	[Facsimile]	f
[#]	#	[Address Book]	g
[Printer]	A	[One Touch 01]	h
[Scanner]	B	[One Touch 02]	i
[Copy]	C	[One Touch 03]	j
[Menu]	D	[One Touch 04]	k
[Resolution]	E	[One Touch 05]	l
[Form Feed]	F	[One Touch 06]	m

KEY	LCD	KEY	LCD
[▲]	G	[One Touch 07]	n
[▼]	H	[One Touch 08]	o
[◀]	I	[One Touch 09]	p
[▶]	J	[One Touch 10]	q
[No]	K	[One Touch 11]	r
[Yes]	L	[One Touch 12]	s
[Zoom]	M	[One Touch 13]	t
[Density]	N	[One Touch 14]	u
[Select Paper Tray]	O	[One Touch 15]	v
[Original]	P		

9. COUNTER SETTING

COUNTER MENU	Disables/enables the "Counter?" item in the Menu mode. Default: Enable (on). The "Counter?" selection is available in the Menu mode ([Menu]> [▲] or [▼]> "Counter?"> [Yes]). If this function is set to "Disable" the "Counter?" item will not appear in the menu.
LEVEL COUNTER	Disables/enables the "Level Counter" item of the "Counter?" item in the Menu mode. The "Counter?" item is still available in Menu mode but only the "Scan", "Full Color", "B&W", and "Print Counter?" are available for viewing (or printing).

SP Mode Service Tables

SP Table Key

Notation	What It Means	
[range/ default /step/units]	Example: [-127 to +128/ 4.5 /1/0.1 mm].	
	-127 to +128	Range
	4.5	Default
	1	Screen increments
	0.1 mm	Unit change for every screen increment.

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Here is a summary of common terms and abbreviations used in the SP code descriptions.

Term	What It Means
DFU	Denotes "Design or Factory Use". Do not change this value.
DOM	"Domestic" market only (Japan)
EXP	"Export" markets (North America, Europe, Asia)
NA	North America
EUA	Europe/Asia
Sub Scan	This is printing vertically down the length of an SEF (portrait) page.
Main Scan	This is printing horizontally across the width of an SEF (portrait) page.
LEF	Long Edge Feed (paper feeds sideways with the long edge feeding first)
SEF	Short Edge Feed (paper feeds lengthways with the short edge feeding first)
FA	"Factory Adjusted". The default setting is set at the factory or service center.
LE	Leading Edge
TE	Trailing Edge
LE/TE	Leading Edge/Trailing Edge

Group 1000

Main Scan, Sub Scan Registration

1000	REG:FD:NORM:F	Adjust Sub Scan Registration (Normal Paper)
	Use this SP code to adjust writing in the sub scan registration for normal paper. Do this setting when registration does not match the direction of paper feed selected in the user image adjustment menu. [-128 to +127/FA/1/0.1 mm]	
1001	REG:TR1:NORM:F	Adjust Main Scan Registration (Normal Paper: Tray 1)
	Use this SP code to adjust writing in the main scan direction for normal paper loaded in Tray 1. Do this setting when registration does not match the image start position on the user image adjustment menu. [-128 to +127/FA/1/0.1 mm]	
1002	REG:TR2:NORM:F	Adjust Main Scan Registration (Tray 2: Normal Paper: FA)
	Use this SP code to adjust writing in main scan direction for normal paper loaded in Tray 2. Do this setting when registration does not match the image start position on the user image adjustment menu. [-128 to +127/FA/1/0.1 mm]	
1003	REG:MAN:NORM:F	Adjust Main Scan Registration (Bypass: Normal Paper: FA)
	Use this SP code to adjust writing in the main scan direction for normal paper loaded in the bypass tray. Do this setting when registration does not match the image start position on the user image adjustment menu. [-128 to +127/FA/1/0.1 mm]	
1004	REG:FD:GLOS:F	Adjust Sub Scan Registration (Glossy Paper: FA)
	Use this SP code to adjust writing in the the sub scan registration for glossy paper. Do this setting when registration does not match the direction of paper feed selected in the user image adjustment menu. [-128 to +127/FA/1/0.1 mm]	
1005	REG:TR1:GLOS:F	Adjust Main Scan Registration (Glossy Paper: FA)
	Use this SP code to adjust writing in the main scan direction for glossy paper loaded in Tray 1. Do this setting when registration does not match the image start position on the user image adjustment menu. [-128 to +127/FA/1/0.1 mm]	

1006	REG:TR2:GLOS:F	Adjust Main Scan Registration (Tray 2: Glossy Paper: FA)
	<p>Use this SP code to adjust writing in the main scan direction for glossy paper loaded in Tray 2. Do this setting when registration does not match the image start position on the user image adjustment menu.</p> <p>[-128 to +127/FA/1/0.1 mm]</p>	
1007	REG:MAN:GLOS:F	Adjust Main Scan Registration (Bypass: Glossy Paper: FA)
	<p>Use this SP code to adjust writing in the main scan direction for glossy paper loaded in the bypass tray. Do this setting when registration does not match the image start position on the user image adjustment menu.</p> <p>[-128 to +127/FA/1/0.1 mm]</p>	
1008	REG:FD:OHP:F	Adjust Sub Scan Registration (OHP: FA)
	<p>Use this SP code to adjust writing in the sub scan direction for transparencies (OHP). Do this setting when registration does not match the direction of paper feed selected in the user image adjustment menu.</p> <p>[-128 to +127/FA/1/0.1 mm]</p>	
1009	REG:TR1:OHP:F	Adjust Main Scan Registration (Tray 1: OHP: FA)
	<p>Use this SP code to adjust writing in the main scan direction for transparencies (OHP) loaded in Tray 1. Do this setting when registration does not match the image start position on the user image adjustment menu.</p> <p>[-128 to +127/FA/1/0.1 mm]</p>	
1010	REG:MAN:OHP:F	Adjust Main Scan Registration (Bypass: OHP: FA)
	<p>Use this SP code to adjust writing in the main scan direction for transparencies (OHP) loaded in the bypass tray. Do this setting when registration does not match the image start position on the user image adjustment menu.</p> <p>[-128 to +127/FA/1/0.1 mm]</p>	
1011	REG:FD2:NORM:F	Adjust Sub Scan Registration (Normal Paper: 2nd Registration: FA)
	<p>Use this SP code to adjust writing in the sub scan registration for normal paper. Do this setting when it is necessary to fine adjust the line feed position.</p> <p>[-128 to +127/FA/1/0.1 mm]</p>	
1012	REG:FD2:GLOS:F	Adjust Sub Scan Registration (Glossy Paper: 2nd Registration: FA)

	For Future Use. Use this SP code to adjust writing in the sub scan registration for glossy paper. Do this setting when it is necessary to fine adjust the line feed position. [-128 to +127/FA/1/0.1 mm]	
1013	REG:FD2:OHP:F	Adjust Sub Scan Registration (OHP: 2nd Registration: FA)
	For Future Use. Use this SP code to adjust writing in the sub scan direction for transparencies (OHP). Do this setting when it is necessary to fine adjust the line feed position. [-128 to +127/FA/1/0.1 mm]	

Paper Feed

1014	FDLEN:F	Adjust Amount of Paper Feed (FA)
	Do this SP adjust the amount of line feed for 1 scan line. Do this setting only if the line feed amount cannot be adjusted on the user menu of the printer operation panel with "Adj. Paper Feed". [-1000000 to +1000000/FA/1 μm]	
1015	FDLEN:OFFSET	Adjust Amount of LF Offset in Sub Scan Direction
	Use this SP to set the amount of line feed before the print head begins its 2nd pass during bi-directional printing. Do this SP when it is necessary to correct color offset that occurs during bi-directional printing. [-128 to +128/FA/1/Vertical Encoded Pulse Count]	

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Carriage

1016	ADJ:SIDEBOARD	Adjust Sideboard (Carriage Home Position)
	Use this SP to set the reference position for installation of the right plate. Do this SP to correct the alignment of the capping position with the carriage. [-128 to +128/FA/1/0.1 mm]	

Suction Vents

1017	PRGPOS:R	Adjust Position of Right Suction Vent DFU
	Use this SP to adjust the venting position of the right air vent. Do this SP after it has been determined that the ink is not venting at the center of the right ink suction vent.	

	[-128 to +128/FA/1/0.1 mm]	
1018	PRGPORS:L	Adjust Position of Left Suction Vent DFU
	Use this SP to adjust the venting position of the left ink suction vent. (Do this SP after it has been determined that the ink is not venting at the center of the left ink suction vent.) [-128 to +128/FA/1/0.1 mm]	

Charge Width Setting Mj1: Simplex (DFU)

1100	CHG:W1:EDGE:1	LE/TE: Mj1: ID1
1102	CHG:W1:EDGE:2	LE/TE: Mj1: ID2
1104	CHG:W1:EDGE:3	LE/TE: Mj1: ID3
1106	CHG:W1:EDGE:4	LE/TE: Mj1: ID4
1101	CHG:W1:MIDLL:1	MIDLL: Mj1: ID1
1103	CHG:W1:MIDLL:2	MIDLL: Mj1: ID2
1105	CHG:W1:MIDL:3	MIDL: Mj1: ID3
1107	CHG:W1:MIDL:4	MIDL: Mj1: ID4

Charge Width Setting Mj2: Simplex (DFU)

1108	CHG:W1:EDGE:5	LE/TE: Mj2: ID1
1110	CHG:W1:EDGE:6	LE/TE: Mj2: ID2
1112	CHG:W1:EDGE:7	LE/TE: Mj2: ID3
1114	CHG:W1:EDGE:8	LE/TE: Mj2: ID4
1109	CHG:W1:MIDL:5	MIDL: Mj2: ID1
1111	CHG:W1:MIDL:6	MIDL: Mj2: ID2
1113	CHG:W1:MIDL:7	MIDL: Mj2: ID3
1115	CHG:W1:MIDL:8	MIDL: Mj2: ID4

Charge Width Setting Mj3: Simplex (DFU)

1116	CHG:W1:EDGE:9	LE/TE: Mj3: ID1
1118	CHG:W1:EDGE:10	LE/TE: Mj3: ID2
1120	CHG:W1:EDGE:11	LE/TE: Mj3: ID3
1122	CHG:W1:EDGE:12	LE/TE: Mj3: ID4

Charge Width Setting Mj3: Simplex (DFU)

1117	CHG:W1:MIDL:9	MIDL: Mj3: ID1
1119	CHG:W1:MIDL:10	MIDL: Mj3: ID2
1121	CHG:W1:MIDL:11	MIDL: Mj3: ID3
1123	CHG:W1:MIDL:12	MIDL: Mj3: ID4

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Charge Width Setting Mj4: Simplex (DFU)

1124	CHG:W1:EDGE:13	LE/TE: Mj4: ID1
1126	CHG:W1:EDGE:14	LE/TE: Mj4: ID2
1128	CHG:W1:EDGE:15	LE/TE: Mj4: ID3
1130	CHG:W1:EDGE:16	LE/TE: Mj4: ID4

Charge Width Setting Mj4: Simplex (DFU)

1125	CHG:W1:MIDL:13	MIDL: Mj4: ID1
1127	CHG:W1:MIDL:14	MIDL: Mj4: ID2
1129	CHG:W1:MIDL:15	MIDL: Mj4: ID3
1131	CHG:W1:MIDL:16	MIDL: Mj4: ID4

Charge Width Setting Mj1: Duplex (DFU)

1132	CHG:W2:EDGE:1	LE/TE: Mj1: ID1
1134	CHG:W2:EDGE:2	LE/TE: Mj1: ID2
1136	CHG:W2:EDGE:3	LE/TE: Mj1: ID3
1138	CHG:W2:EDGE:4	LE/TE: Mj1: ID4
1133	CHG:W2:MIDL:1	MIDL: Mj1: ID1
1135	CHG:W2:MIDL:2	MIDL: Mj1: ID2
1137	CHG:W2:MIDL:3	MIDL: Mj1: ID3
1139	CHG:W2:MIDL:4	MIDL: Mj1: ID4

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Charge Width Setting Mj2: Duplex (DFU)

1140	CHG:W2:EDGE:5	LE/TE: Mj2: ID1
1142	CHG:W2:EDGE:6	LE/TE: Mj2: ID2
1144	CHG:W2:EDGE:7	LE/TE: Mj2: ID3
1146	CHG:W1:EDGE:8	LE/TE: Mj2: ID4
1141	CHG:W2:MIDL:5	MIDL: Mj2: ID1
1143	CHG:W2:MIDL:6	MIDL: Mj2: ID2
1145	CHG:W2:MIDL:7	MIDL: Mj2: ID3
1147	CHG:W2:MIDL:8	MIDL: Mj2: ID4

Charge Width Setting Mj3: Duplex (DFU)

1148	CHG:W2:EDGE:9	LE/TE: Mj3: ID1
1150	CHG:W2:EDGE:10	LE/TE: Mj3: ID2
1152	CHG:W2:EDGE:11	LE/TE: Mj3: ID3
1154	CHG:W2:EDGE:12	LE/TE: Mj3: ID4

1149	CHG:W2:MIDL:9	MIDL: Mj3: ID1
1151	CHG:W2:MIDL:10	MIDL: Mj3: ID2
1153	CHG:W2:MIDL:11	MIDL: Mj3: ID3
1155	CHG:W2:MIDL:12	MIDL: Mj3: ID4

Charge Width Setting Mj4: Duplex (DFU)

1156	CHG:W2:EDGE:13	LE/TE: Mj4: ID1
1158	CHG:W2:EDGE:14	LE/TE: Mj4: ID2
1160	CHG:W2:EDGE:15	LE/TE: Mj4: ID3
1162	CHG:W2:EDGE:16	LE/TE: Mj4: ID4
1157	CHG:W2:MIDL:13	MIDL: Mj4: ID1
1159	CHG:W2: MIDL:14	MIDL: Mj4: ID2
1161	CHG:W2: MIDL:15	MIDL: Mj4: ID3
1163	CHG:W2: MIDL:16	MIDL: Mj4: ID4

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Calibrate Humidity/Temperature for Duplex

1164	CHG:HUMI:B	Calibrate Humidity Setting for Duplex
	<p>Use this SP to calibrate the temperature/humidity sensor for humidity readings during duplex printing. Do this SP to update the charge pitch table for duplex printing. This SP setting is linked to the humidity steps in the charge pitch tables (SP1200 to SP1231).</p> <p>[-128 to +127/0/1/0.1%]</p>	
1165	CHG:TEMP:B	Calibrate Temperature Setting for Duplex
	<p>Use this SP to calibrate the temperature readings for duplex printing. Do this SP to update the charge pitch table for duplex printing. This SP setting is linked to the temperature steps in the charge pitch tables (SP1200 to SP1231).</p> <p>[-128 to +127/0/1/0.1%]</p>	

Charge ID Tables: Mj1

1200	CHG:PITCH:A1	Mj1: Less Than 10% Lookup Table
1201	CHG:PITCH:A2	Mj1: 10% → 25% Lookup Table
1202	CHG:PITCH:A3	Mj1: 25% → 35% Lookup Table
1203	CHG:PITCH:A4	Mj1: 35% → 45% Lookup Table
1204	CHG:PITCH:A5	Mj1: 45% → 55% Lookup Table
1205	CHG:PITCH:A6	Mj1: 55% → 65% Lookup Table
1206	CHG:PITCH:A7	Mj1: 65% → 75% Lookup Table
1207	CHG:PITCH:A8	Mj1: More than 75% Lookup Table
<p>Use this SP to configure the charge ID table for printing on normal paper in High Speed (Draft) mode. Do this SP when mist build-up on the paper in use is clogging the print head nozzles.</p> <p>This setting is linked to the charge pitch settings (SP1100 to 1107, SP1133 to 1139).</p> <p>[0 to 0xffff ffff/0/1/---]</p> <p>For more details, please refer to Section 4 "Transport Belt Charge Adjustments".</p>		

Charge ID Tables: Mj2

1208	CHG:PITCH:B1	Mj2: Less Than 10% Lookup Table
1209	CHG:PITCH:B2	Mj2: 10% → 25% Lookup Table
1210	CHG:PITCH:B3	Mj2: 25% → 35% Lookup Table
1211	CHG:PITCH:B4	Mj2: 35% → 45% Lookup Table
1212	CHG:PITCH:B5	Mj2: 45% → 55% Lookup Table
1213	CHG:PITCH:B6	Mj2: 55% → 65% Lookup Table
1214	CHG:PITCH:B7	Mj2: 65% → 75% Lookup Table
1215	CHG:PITCH:B8	Mj2: More than 75% Lookup Table
<p>Use this SP to configure the charge ID table for printing on any paper in any mode except: normal paper in High Speed (Draft) mode and glossy paper in High Quality mode. Do this SP when mist build-up on the paper in use is clogging the print head nozzles during printing with any paper in any mode, except: normal paper in High Speed (Draft) mode and glossy paper</p>		

	<p>in High Quality mode. This setting is linked to the charge pitch settings (SP1 108 to 1 115, SP1 140 to 1 147).</p> <p>[0 to 0xffff ffff/0/1/---]</p> <p>For more details, please refer to Section 4 "Transport Belt Charge Adjustments".</p>
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Charge ID Tables: Mj3

1216	CHG:PITCH:C1	Mj3: Less Than 10% Lookup Table
1217	CHG:PITCH:C2	Mj3: 10% → 25% Lookup Table
1218	CHG:PITCH:C3	Mj3: 25% → 35% Lookup Table
1219	CHG:PITCH:C4	Mj3: 35% → 45% Lookup Table
1220	CHG:PITCH:C5	Mj3: 45% → 55% Lookup Table
1221	CHG:PITCH:C6	Mj3: 55% → 65% Lookup Table
1222	CHG:PITCH:C7	Mj3: 65% → 75% Lookup Table
1223	CHG:PITCH:C8	Mj3: More than 75% Lookup Table
	<p>For Future Use. Use this SP to configure the charge ID table for future print modes. Do this SP when mist build-up on the paper in use is clogging the print head nozzles. This setting is linked to the charge pitch settings (SP1 116 to SP1 123, SP1 148 to SP1 155).</p> <p>[0 to 0xffff ffff/0/1/---]</p>	

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Charge ID Tables: Mj4

1224	CHG:PITCH:D1	Mj4: Less Than 10% Lookup Table
1225	CHG:PITCH:D2	Mj4: 10% → 25% Lookup Table
1226	CHG:PITCH:D3	Mj4: 25% → 35% Lookup Table
1227	CHG:PITCH:D4	Mj4: 35% → 45% Lookup Table
1228	CHG:PITCH:D5	Mj4: 45% → 55% Lookup Table
1229	CHG:PITCH:D6	Mj4: 55% → 65% Lookup Table
1230	CHG:PITCH:D7	Mj4: 65% → 75% Lookup Table

1231	CHG:PITCH:D8	Mj4: More than 75% Lookup Table
	<p>Use this SP to configure the charge ID table for printing on glossy paper in Quality mode. Do this SP when mist build-up on glossy paper in use is clogging the print head nozzles. This setting is linked to the charge pitch settings (SP1 124 to 1 131, SP1 156 to 1 163).</p> <p>[0 to 0xffff ffff/0/1/---]</p>	

Set Charge Area 1

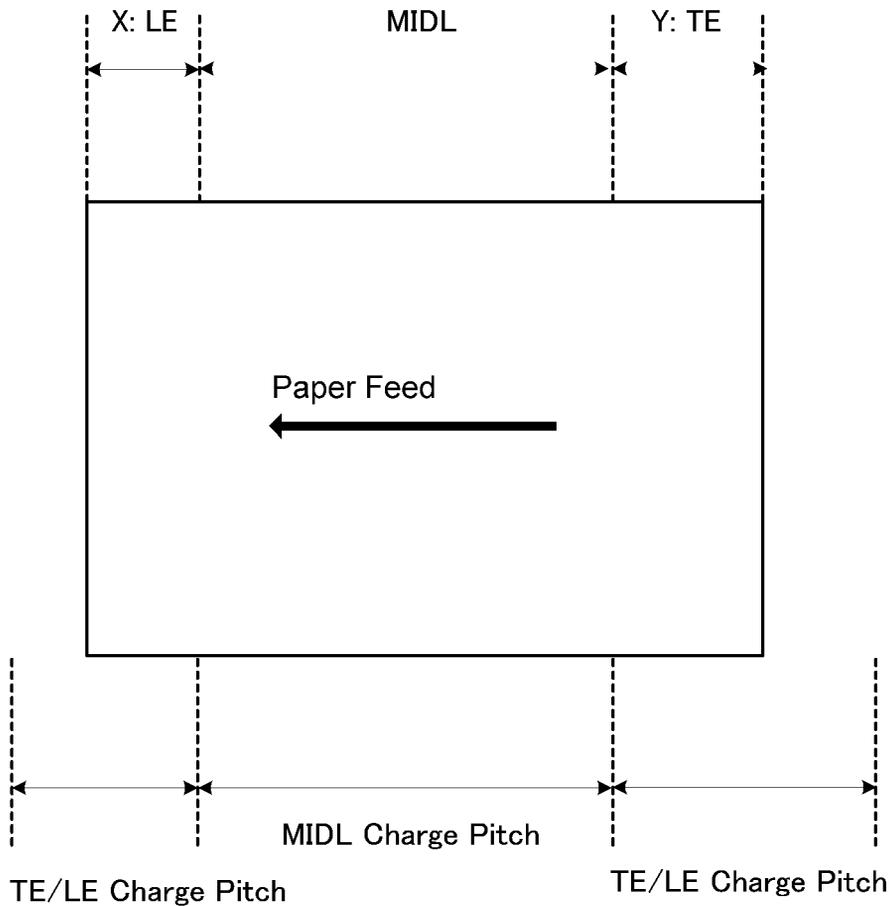
1232	CHG:AREA1:OHP	Set Charge of Area 1 for LE/TE: OHP
	<p>Use this SP to set the size of the leading and trailing edges of transparencies (OHP). Do this setting when you want to adjust pitch amount of the charge applied to the leading and trailing edge of transparencies for printing. The areas of the leading and trailing edges is shown below.</p> <p>[0 to 0xffff ffff/0/1/---]</p>	
1233	CHG:AREA1:F	Set Charge of Area 1 for LE/TE: Simplex: Any Other Than OHP
	<p>Use this SP to set the size of the leading and trailing edges for the 1st side of any paper except transparencies (OHP). Do this setting when you want to adjust pitch amount of the charge applied to the leading and trailing edges on the 1st side any paper except transparencies. The areas of the leading and trailing edges is shown below.</p> <p>[0 to 0xffff ffff/0/1/---]</p>	
1234	CHG:AREA1:B	Set Charge of Area 1 for LE/TE: Duplex: Any Other Than OHP
	<p>Use this SP to set the size of the leading and trailing edges for the 2nd side (duplex printing) of any paper except transparencies (OHP). Do this setting when you want to adjust pitch amount of the charge applied to the leading and trailing edges on the 2nd side any paper except transparencies for duplex printing. The areas of the leading and trailing edges are shown below.</p> <p>[0 to 0xffff ffff/0/1/---]</p>	

Set Charge Area 2

1235	CHG:AREA2:OPH	Set Charge of Area 2 for MIDL: OHP
	<p>Use this SP to set the size of the MIDL area of transparencies (OHP).</p> <p>Do this setting when you want to adjust pitch amount of the charge applied to the MIDL area of transparencies for printing. The MIDL area is shown below.</p> <p>[0 to 0xffff ffff/0/1/---]</p>	

1236	CHG:AREA2:F	Set Charge of Area 2 for MIDL: Simplex: Any Other Than OHP
	<p>Use this SP to set the size of the MIDL on the 1st side of any paper except transparencies (OHP). Do this setting when you want to adjust pitch amount of the charge applied to the MIDL area on the 2nd side of any paper other than transparencies. The MIDL area is shown below.</p> <p>[0 to 0xffff ffff/0/1/---]</p>	
1237	CHG:AREA2:B	Set Charge of Area 2 for LE/TE: Duplex: Any Other Than OHP
	<p>Use this SP to set the size of the MIDL on the 2nd side of any paper except transparencies (OHP) for duplex printing. Do this setting when you want to adjust pitch amount of the charge applied to the MIDL area on the 2nd side of any paper other than transparencies for duplex printing. The MIDL area is shown below.</p> <p>[0 to 0xffff ffff/0/1/---]</p>	

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j014t911

Set Charge for Target Market

1238	CHG:REGION	Set Charge for Geographic Region
	<p>Use the SP to set the charge for the areas listed below.</p> <p>0: Enable geographical area setting</p> <p>1: Japan</p> <p>2: NA (North America)</p> <p>3: Europe</p> <p>4: China (Mainland)</p> <p>5: China (Taiwan) "5" and "4" refer to same pitch table.</p> <p>6: Asia. "4" "5" "6" refer to same charge pitch table</p> <p>If any item other than "0" is selected that item and its setting is enabled and takes priority.</p> <p>[0 to 255/0/1/---]</p>	

5

Print Head Temperature Thresholds

1300	HTEMP:H:STOP	Trigger Shutdown: Standby, Printing
1301	HTEMP:H:JUDG	Trigger Shutdown: Power On
1302	HTEMP:H:RCVR	Recovery After High Temp Shutdown
1303	HTEMP:L:RCVR	Recovery After Low Temp Shutdown
1304	HTEMP:L:JUDG	Trigger Shutdown: Power On
1305	HTEMP:L:STOP	Trigger Shutdown: Standby, Printing
	<p>Use this SP to set the threshold for the operating temperature range of the print head.</p> <p>[0 to 65535/0/1/0.1°C</p>	

Ambient Temperature Thresholds

1306	ETEMP:H:STOP	High Temperature to Trigger Shutdown: Standby, Printing
1307	ETEMP:H:JUDG	High Temperature to Trigger Shutdown: Power On
1308	ETEMP:H:RCVR	Recovery After High Temp Shutdown

1309	ETEMP:L:RCVR	Recovery After Low Temp Shutdown
1310	ETEMP:L:JUDG	Low Temperature to Trigger Shutdown: Power On
1311	ETEMP:L:RCVR	Low Temperature to Trigger Shutdown: Standby, Printing
	Use this SP to set the threshold for the operating humidity range of the print head. [0 to 65535/0/1/0.1°C]	

Group 2000

Set Threshold for Near-Full Alert

2000	TH:WASTE:R:SNS	Ink Collector Unit Sensor
	Use this SP to set the threshold value to trigger near full alert for the Ink Collector tank sensor. [0 to 1023/0/1/---]	
2001	TH:WASTE:R:SOFT	Software Count : Ink Collector Unit Near Full
	Use this SP to set the threshold value to trigger the near-full alert for the Ink Collector tank sensor. [0 to 4294967295/0/1/nl]	
2002	TH:WASTE:R:FULL	Software Count : Ink Collector Unit Full Alert
	Use this SP to set the threshold value of the firmware counter to trigger the full alert for the right Ink Collector tank sensor. [0 to 4294967295/0/1/nl]	
2003	TH:WASTE:L:NEAR	Software Count : Left Ink Collector Unit Near Full
	Use this SP to set the threshold value of the firmware counter to trigger the near-full alert for the left Ink Collector tank sensor. [0 to 4294967295/0/1/nl]	
2004	TH:WASTE:L:FULL	Software Count: Left Ink Collector Unit Full Alert
	Use this SP to set the threshold value of the firmware counter to trigger the full alert for the left Ink Collector tank sensor. [0 to 4294967295/0/1/nl]	

Set Threshold for Automatic Print Head Cleaning

↓ Note

- SP2100 to SP2110 are for future use and not used at the present time.

2100	TH:ACL:MIST:B	Before Capping (Mist Count)
	Use this SP to set the threshold value of the mist counter that triggers automatic print head cleaning before capping at the end of a print job. [0 to 4294967295/0/1/nl]	
2101	TH:ACL:MIST:P	During Printing
	Use this SP to set the threshold value of the mist counter that triggers automatic print head cleaning between pages during a print job. [0 to 4294967295/0/1/nl]	
2102	TH:ACL:FEED	Before Capping (Paper Dust Count)
	Use this SP to set the threshold value of the paper dust counter that triggers automatic print head cleaning before capping at the end of a print job. [0 to 65535/0/1/Pages]	
2103	TH:ACL:AL:T1H1	Idle Time (1 Hour): Humidity Step 1
2104	TH:ACL:AL:T1H2	Idle Time (1 Hour): Humidity Step 2
2105	TH:ACL:AL:T1H3	Idle Time (1 Hour): Humidity Step 3
2106	TH:ACL:AL:T1H4	Idle Time (1 Hour): Humidity Step 4
	Use this SP to set the threshold value for the de-capping time for automatic print head cleaning done before the start of printing. [0 to 65535/0/1/sec.]	
2107	TH:ACL:AL:T2H1	Idle Time (2 Hours): Humidity Step 1
2108	TH:ACL:AL:T2H2	Idle Time (2 Hours): Humidity Step 2
2109	TH:ACL:AL:T2H3	Idle Time (2 Hours): Humidity Step 3
2110	TH:ACL:AL:T2H4	Idle Time (2 Hours): Humidity Step 4
	Use this SP to set the threshold value for the de-capping time for automatic print head cleaning done before the start of printing. [0 to 65535/0/1/sec.]	

Set Threshold Idle Time for Maintenance Alarm

↓ Note

- SP2111 to SP2114 are for future use and not used at the present time.

2111	TH:ALM:TM1	Time 1: 20 Hours
2112	TH:ALM:TM2	Time 2: 7 Days
2113	TH:ALM:TM3	Time 3: 1 Month
2114	TH:ALM:TM4	Time 4: 3 Months
<p>For Future Use. Use this SP to set the threshold time for the printer to remain idle for maintenance to execute before the start of a print job. (Default: 7 Days). These threshold values are related to SP2115 to 2118.</p> <p>[0 to 65535/0/1/sec.]</p>		

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Set Maintenance Method

↓ Note

- SP2115 to SP2118 are for future use and not used at the present time.

2115	TH:ALM:TM1:MNT1	After Time 1 Alarm (SP2111): Venting
2116	TH:ALM:TM1:MNT2	After Time 2 Alarm (SP2112): Cleaning
2117	TH:ALM:TM1:MNT3	After Time 3 Alarm (SP2113): Cleaning *1
2118	TH:ALM:TM1:MNT4	After Time 4 Alarm (SP2114): Cleaning *2
<p>Use this SP to select the type of maintenance that will be executed before the first print job begins after the idle time threshold has elapsed.</p> <p>*1 Air venting/filling is done if Bit 1 of SW8-3 is ON.</p> <p>*2 Print head refreshing (flushing) is done if Bit 2 of SW8-3 is ON.</p> <p>[0 to 65535/0/1/hours.]</p> <p>Note: These SP codes are not available for this machine.</p>		

Set Threshold for Venting During Printing

↓ Note

- SP2200 to SP2202 are for future use and not used at the present time.

2200	TH:PRG:HUMI1	35% Humidity
2201	TH:PRG:HUMI2	65% Humidity
	<p>Use this SP to set the threshold value in the humidity table switches to the table for air venting during printing.</p> <ul style="list-style-type: none"> • SP2200: Looks up the low humidity table (35%). • SP2201: Looks up the high humidity table (65%). <p>[0 to 100/0/1/°C.]</p>	

2202	TH:PRG:TM	
	<p>For Future Use. Use this SP to set the threshold time for the printer to flush the print heads before the start of a print job.</p> <p>[0 to 4294967295/0/1/nl]</p>	

Group 3000

Adjust Printhead Gap for dpi

3000	GAP:300:H1:G:F	Print Head 1: 300 dpi: 1st Pass
3001	GAP:300:H1:B:F	Print Head 1: 300 dpi: 2nd Pass
3002	GAP:300:H2:B:F	Print Head 2: 300 dpi: 2nd Pass
3003	GAP:300:H3:G:F	Print Head 3: 300 dpi: 1st Pass
3004	GAP:300:H3:B:F	Print Head 3: 300 dpi: 2nd Pass
3005	GAP:300:H4:G:F	Print Head 4: 300 dpi: 1st Pass
3006	GAP:300:H4:B:F	Print Head 4: 300 dpi: 2nd Pass
	[-128 to +127/FA/1/count.]	
3007	GAP:600:H1:G:F	Print Head 1: 600 dpi: 1st Pass
3008	GAP:600:H1:B:F	Print Head 1: 600 dpi: 2nd Pass
3009	GAP:600:H2:B:F	Print Head 2: 600 dpi: 2nd Pass
3010	GAP:600:H3:G:F	Print Head 3: 600 dpi: 1st Pass

3011	GAP:600:H3:B:F	Print Head 3: 600 dpi: 2nd Pass
3012	GAP:600:H4:G:F	Print Head 4: 600 dpi: 1st Pass
3013	GAP:600:H4:B:F	Print Head 4: 600 dpi: 2nd Pass
	Use this SP to adjust the print head gap for 600 dpi printing. [-128 to +127/FA/1/count.]	
3014	GAP:1200:H1:G:F	Print Head 1: 1200 dpi: 1st Pass
3015	GAP:1200:H1:B:F	Print Head 1: 1200 dpi: 2nd Pass
3016	GAP:1200:H2:B:F	Print Head 2: 1200 dpi: 2nd Pass
3017	GAP:1200:H3:G:F	Print Head 3: 1200 dpi: 1st Pass
3018	GAP:1200:H3:B:F	Print Head 3: 1200 dpi: 2nd Pass
3019	GAP:1200:H4:G:F	Print Head 4: 1200 dpi: 1st Pass
3020	GAP:1200:H4:B:F	Print Head 4: 1200 dpi: 2nd Pass
	Use this SP to adjust the print head gap for 1200 dpi printing. [-128 to +127/FA/1/count.]	

Set Print Head Rank (Wave)

3100	HRANK:H1:W	Print Head 1
3101	HRANK:H2:W	Print Head 2
3102	HRANK:H3:W	Print Head 3
3103	HRANK:H4:W	Print Head 4
	Use this SP to set the print head rank (wave rank) [0 to 7/FA/1/---]	

Set Print Head Rank (Voltage)

3104	HRANK:H1:V	Print Head 1
3105	HRANK:H2:V	Print Head 2
3106	HRANK:H3:V	Print Head 3

3107	HRANK:H4:V	Print Head 4
	Use this SP to set the print head rank (voltage rank) [0 to 7/FA/1/---]	

Set Amount for Standard Ink Coverage

3200	COVER:REG:B	Black: 319 u1
3201	COVER:REG:M	Magenta: 273 u1
3202	COVER:REG:C	Cyan: 187 u1
3203	COVER:REG:Y	Yellow: 276 u1
	Use this SP to adjust the standard amount of ink to be applied for full coverage areas. [0 to 65535/0/1/um]	

5

Gamma: K, C, M, Y

3300	GAMMA:K	
3301	GAMMA:C	
3302	GAMMA:M	
3303	GAMMA:Y	
	This SP prints the Gamma Adjustment Chart and allows you to set the optimum settings for gamma adjustment. The optimum settings are printed on a decal attached to the carriage.	

Group 4000

Not used.

Group 5000

Reset and Restoration Settings

5000	RST:FACT	Restore Factory Default Setting
		Resets and threshold settings and user adjusted values.
5001	RST:INIT CNT:F	Reset Initial Tank Fill Count to Manufacturing Operation Count
		Resets the initial fill counter to the initial factory setting (-2).
5002	RST:INIT CNT:A	Reset Initial Tank Fill Count to Factory Shipping
		Resets the initial fill counter to the initial factory setting before shipping (-1).
5003	RST:WASTE:R	Reset Ink Collector Count/Flag: Right Ink Collector Unit
		Resets the ink flag and ink counter for the right Ink Collector tank.
5004	RST:WASTE:L	Reset Ink Collector Count/Flag: Left Ink Collector Unit
		Resets the ink counter for the left Ink Collector tank.

5

Firmware Upload, Download

5005	NV:DOWNLOAD	Download Printer Firmware : Computer → Printer
		For Future Use. Downloads the firmware data from a PC to NVRAM (EEPROM) in the printer.
5006	NV:UPLOAD	Upload Printer Firmware: Printer → Computer
		For Future Use. Uploads the firmware data from the NVRAM (EEPROM) to a PC.

Maintenance, Replacement

5007	WASHING	Execute Auto Washing
		Executes the automatic flushing procedure.
5100	INK DISCHARGE	Purge Maintenance: Right Vent

	For Future Use. Moves the carriage in order to access the right air vent for cleaning.	
5101	CARRIAGE CHANGE	Set Printer in Carriage Replace Mode
	<p>Use this SP to reset the print head rank setting after print head replacement and to re-initialize the initial filling counter.</p> <p>Carriage Replacement</p> <ol style="list-style-type: none"> 1. Enter the print head rank (wave) of <ul style="list-style-type: none"> • Print head 1. • Print head 2. • Print head 3. • Print head 4. 2. Enter the print head rank (voltage) of <ul style="list-style-type: none"> • Print head 1. • Print head 2. • Print head 3. • Print head 4. <p>Initial Fill Counter Reset</p> <ol style="list-style-type: none"> 1. Turn the printer off. 2. After executing this menu, turn the printer on to start initial filling of the print head tanks. 3. After executing this menu, the carriage adjustment mode can be executed. 	
5102	CARRIAGE ADJUST	Set Printer n Carriage Adjust Mode
	<p>Use this SP to adjust the print head gap after print head replacement and print the Nozzle Check pattern.</p> <p>Carriage Adjustment Mode Flow</p> <p>Before executing this menu, you must execute the carriage replacement mode.</p> <ol style="list-style-type: none"> 1. Print the print head gap adjustment chart (High Speed). 2. Adjust the gap (High Speed). 3. Print the print head gap adjustment chart (High Speed). 4. Print the print head gap adjustment chart (Std. (Speed Priority). Std. (Quality Priority)). 5. Adjust the gap (Std. (Quality Priority), Std. (Speed Priority)). 6. Print the print head gap adjustment chart (Std. (Speed Priority). Std. (Quality Priority)). 7. Print the print head gap adjustment chart (High Quality). 	

	<p>8. Adjust the gap (High Quality).</p> <p>9. Print the print head gap adjustment chart (High Quality).</p> <p>10. Print the Nozzle Check test pattern.</p>	
5200	PRINT SMC	Print an Engine Maintenance Summary
	<p>Use this SP to print an engine maintenance summary. You need at least 8 sheets of paper to do this print. It will take at least 3 minutes before the print will start.</p>	
5300	DUMMY NUMBER	Set a Dummy Number
	<p>Use this SP to set the dummy number.</p>	
5301	ENGINE SW1	Engine Switch 1
	Bit	Setting
	0	<p>Controls the operation of the suction cap on the maintenance unit.</p> <p>Never change this setting.</p> <p>1: On (default)</p> <p>0: Off</p>
	1	<p>Switches drive cleaning control on and off.</p> <p>1: Executes drive cleaning. Automatically resets to "0" (off) after drive cleaning is finished. Do this type of cleaning only after print head cleaning and print head flushing have failed to recover operation of the machine.</p>
	2	<p>This SP shows the cleaning execution flag after flushing the printer heads.</p> <p>Never change this setting.</p> <p>1: Cleaning</p> <p>0: No cleaning (default)</p>
	3	<p>Controls operation of the ink supply pumps.</p> <p>[0 to 1/1/1]</p> <p>1: Disables operation of ink supply pumps after long period of storage.</p> <p>0: Allows pumps to operate after long period of storage.</p>
	4	<p>Never change these settings.</p>
	5	
	6	
	7	

5302	ENGINE SW2		Engine Switch 2
	Bit	Setting	
	8 - 15	Not used	

Input Check: Sensors 1/2

5400	INPUT CHK1	Check Input Sensors (1)
Use this SP to display the on/off status of each sensor. The status of each sensor (0, 1) is displayed on the 2nd line of the display.		

5

I	N	P	U	T	C	H	K	1							
0	0	0	1	1	1	0	1	1	0	0	1	1	0	0	0
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

j014d001

No.	Meaning	No.	Meaning
1	Ink Cartridge Set Switches	9	Trailing Edge Sensor
2	Maintenance HP Sensor	10	2nd Registration Sensor
3	Ink Collector Tank Sensor	11	1st Registration Sensor
4	Carriage Position Sensor	12	Optional Bank Unit Sensor
5	Not Used	13	Bypass tray set Sensor
6	Paper End Sensor – Tray 2	14	Duplexer Set Sensor
7	Paper End Sensor – Tray 1	15	Duplex Cover Sensor
8	Bank Relay Sensor	16	Right Front Cover Sensor

Input Check: Sensors 2/2

5401	INPUT CHK2	Check Input Sensors (2)
Use this SP to display the on/off status of each sensor. The status of each sensor (0, 1) is displayed on the 2nd line of the display.		

I	N	P	U	T	C	H	K	2								
0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
j014s002

No.	Meaning
15	NIC Detection Sensor
16	USB Connection Sensor

Input Check: Temperature and Humidity

5402	INPUT CHK HTEMP	Display Print Head Temperature
	Displays the temperature reading of the print head temperature sensor. Units: 0.1°C	
5403	INPUT CHK HUTMP	Display Temperature/Humidity Sensor Reading: Temperature
	Use this SP to display the temperature reading of temperature/humidity sensor. Units: 0.1°C	
5404	INPUT CHK HUM1	Display Temperature/Humidity Sensor Reading: Humidity
	Use this SP to display the humidity reading of temperature/humidity sensor. Units: 0.1%	

Input Check: Air

5405	INPUT CHK AIR1	Tank 1: Analog
	Use this SP to display the analog reading of the air sensor in print head tank 1.	
5406	INPUT CHK AIR2	Tank 2: Analog
	Use this SP to display the analog reading of the air sensor in print head tank 2.	
5407	INPUT CHK AIR3	Tank 3: Analog
	Use this SP to display the analog reading of the air sensor in print head tank 3.	

5408	INPUT CHK AIR4	Tank 4: Analog
	Use this SP to display the analog reading of the air sensor in print head tank 4.	
5409	INPUT CHK AIR5	Tank 5: Analog
	Use this SP to display the analog reading of the air sensor in print head tank 5.	
5410	INPUT CHK AIR6	Tank 6: Analog
	Use this SP to display the analog reading of the air sensor in print head tank 6.	

Input Check: Ink Cartridge Set Sensors

5

5411	INPUT CHK CART	Display Status of Ink Cartridge Set Sensors
	Use this SP to display the status of the cartridge set sensor. The status of each sensor is assigned to a column in the 2nd line of the operation panel display as shown below.	

I	N	P	U	T		C	H	K		C	A	R	T			
0	0	0	0	0	0	1	0	0	1	0	0	1	0	0	1	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	

j014s003

No.	Meaning	No.	Meaning
1 to 4	Not Used	11	Cyan Ink Cartridge: Re-Fill
5	Yellow Ink Cartridge: Re-Fill	12	Cyan Ink Cartridge: Brand New
6	Yellow Ink Cartridge: Brand New	13	Cyan Ink Cartridge: Set Sensor
7	Yellow Ink Cartridge: Set	14	Black Ink Cartridge: Re-Fill
8	Magenta Ink Cartridge: Re-Fill	15	Black Ink Cartridge: Brand New
9	Magenta Ink Cartridge: Brand New	16	Black Ink Cartridge: Set Sensor
10	Magenta Ink Cartridge: Set		

Input Check: Ink Cartridge Levels

5412	INPUT CHK RES:Y	Yellow Ink Cartridge
5413	INPUT CHK RES:M	Magenta Ink Cartridge
5414	INPUT CHK RES:C	Cyan Ink Cartridge
5415	INPUT CHK RES:K	Black Ink Cartridge
	Use this SP to display the amount of ink that remains in each ink cartridge. Units: %	

Input Check: Ink Collector Unit Sensor

5416	INPUT CHK WASTE	Current Analog Reading
	Use this SP to display the analog reading of the Ink Collector tank sensor.	

5

Encoder Readings

5417	INPUT CHK MENC	Horizontal Encoder
	Use this SP to display the current reading of the main scan encoder.	
5418	INPUT CHK SENC	Vertical Encoder
	Use this SP to display the current reading of the sub scan encoder.	

Board Temperature Sensors

5419	INPUT CHK PTEMP	PSU Ambient Temperature Sensor
	Displays the temperature reading of the PSU ambient temperature sensor. Note: At present nothing displays because there is no temperature sensor in the PSU. Units: 0.1°C	
5420	INPUT CHK DTEMP	Drive Board Temperature Sensor
	Displays the temperature reading of the temperature sensor in the DRV board circuits. Units: 0.1°C	

Group 6000

Not Used

Group 7000

Display Charge Count

7000	CHG CNT:S:P:M	Single Counter: Monochrome Application
7001	CHG CNT:S:P:L	Single Counter: Multi-Level Color Application
7002	CHG CNT:S:P:C	Single Counter: Color Application
7003	CHG CNT:W:P:M	Double Counter: Monochrome Application
7004	CHG CNT:W:P:L	Double Counter: Multi-Level Color Application
7005	CHG CNT:W:P:C	Double Counter: Color Application
	Use this sensor to display the charge counts.	

Display Coverage Count

7006	COVER CNT:P:M	Monochrome Application
7007	COVER CNT:P:L	DColor Application
7008	COVER CNT:P:C	Multi-Level Color Application
	Use this sensor to display the charge counts.	

Display User Cleaning Count

7100	USER CL CNT:H1	Print Head 1
7101	USER CL CNT:H2	Print Head 2
7102	USER CL CNT:H3	Print Head 3
7103	USER CL CNT:H4	Print Head 4

	Use this SP to display the total number of print head cleanings executed from the printer driver and from the printer operation panel.
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Display User Flushing Count

7104	USER RF CNT:H1	Print Head 1
7105	USER RF CNT:H2	Print Head 2
7106	USER RF CNT:H3	Print Head 3
7107	USER RF CNT:H4	Print Head 4
	Use this SP to display the total number of print head flushings executed from the printer driver and from the printer operation panel.	

5

Display Count: Air Purges/Re-fillings After SC990

7108	AOFL CNT:S:H1	Print Head 1
7109	AOFL CNT:S:H2	Print Head 2
7110	AOFL CNT:S:H3	Print Head 3
7111	AOFL CNT:S:H4	Print Head 4
	Use this SP to display the number of air purge/ink tank re-fillings after SC990 has occurred.	

Display Count: Air Purges/Re-fillings After Ink End

7112	AOFL CNT:I:H1	Print Head 1
7113	AOFL CNT:I:H2	Print Head 2
7114	AOFL CNT:I:H3	Print Head 3
7115	AOFL CNT:I:H4	Print Head 4
	Use this SP to display the number of air purge/ink tank re-fillings after an ink tank has run out of ink.	

Display Count: Air Purges/Re-Fillings After Air Detected

7116	AOFL CNT:A:H1	Print Head 1
7117	AOFL CNT:A:H2	Print Head 2
7118	AOFL CNT:A:H3	Print Head 3
7119	AOFL CNT:A:H4	Print Head 4
	Use this SP to display the number of air purge/ink tank re-fillings after the air sensor detected air in a print head ink tank.	

Display Count: Air Detected at Power On

5

7120	AIR CNT:P:T1	Print Head Tank 1
7121	AIR CNT:P:T2	Print Head Tank2
7122	AIR CNT:P:T3	Print Head Tank3
7123	AIR CNT:P:T4	Print Head Tank4
7124	AIR CNT:P:T5	Print Head Tank5
7125	AIR CNT:P:T6	Print Head Tank6
	Use this SP to display the number of times air was detected by the air sensor a print head tank at power on.	

Display Count: Air Detected Before Capping, Between Pages, or When Ink Cartridge Replaced

7126	AIR CNT:BPC:T1	Print Head Tank 1
7127	AIR CNT:BPC:T2	Print Head Tank 2
7128	AIR CNT:BPC:T3	Print Head Tank 3
7129	AIR CNT:BPC:T4	Print Head Tank 4
7130	AIR CNT:BPC:T5	Print Head Tank 5
7131	AIR CNT:BPC:T6	Print Head Tank 6

	Use this SP to display the number of times the air sensor detected air in an ink tank (1) re-filling before capping at the end of a print job, (2) re-filling between pages, (3) after replacing and ink cartridge.
--	---

Display Count: Air Detected in Print Head Tank After During Maintenance After Purge

7132	AIR CNT:A:T1	Print Head Tank 1
7133	AIR CNT:A:T2	Print Head Tank 2
7134	AIR CNT:A:T3	Print Head Tank 3
7135	AIR CNT:A:T4	Print Head Tank 4
7136	AIR CNT:A:T5	Print Head Tank 5
7137	AIR CNT:A:T6	Print Head Tank 6
	Use this SP to display the number of times air was detected by the air sensor in a print head tank during automatic print head maintenance triggered by the printer remaining idle.	

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Display Count: Automatic Cleanings Between Page Prints

7138	ACL CNT:P:H1	Print Head 1
7139	ACL CNT:P:H2	Print Head 2
7140	ACL CNT:P:H3	Print Head 3
7141	ACL CNT:P:H4	Print Head 4
	Use this SP to display the number of automatic print head cleanings between page prints while print jobs were executing.	

Display Count: Automatic Cleanings Before Print Head Capping

7142	ACL CNT:B:H1	Print Head 1
7143	ACL CNT:B:H2	Print Head 2
7144	ACL CNT:B:H3	Print Head 3
7145	ACL CNT:B:H4	Print Head 4

	Use this SP to display the number of automatic print head cleanings before print head capping.
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Display Count: Automatic Cleanings After Printer Has Remained Idle

7146	ACL CNT:A:TM1	Idle Time 1
7147	ACL CNT:A:TM2	Idle Time 2
7148	ACL CNT:A:TM3	Idle Time 3
7149	ACL CNT:A:TM4	Idle Time 4
<p>For Future Use (SP7148 / 7149)</p> <p>Use this SP to display the number of automatic print head cleanings triggered by automatic maintenance after the printer remained idle longer than the specified threshold time.</p>		

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Display Count: Maintenance Operations After Printer Idle

7150	AMNT CNT:TM1	Idle Time 1
7151	AMNT CNT:TM2	Idle Time 2
7152	AMNT CNT:TM3	Idle Time 3
7153	AMNT CNT:TM4	Idle Time 4
Use this SP to display the number of times maintenance executed automatically.		

Display Count: Total Ink Cartridge Out

7154	EMPTY CNT:C1	Ink Cartridge 1
7155	EMPTY CNT:C2	Ink Cartridge 2
7156	EMPTY CNT:C3	Ink Cartridge 3
7157	EMPTY CNT:C4	Ink Cartridge 4
Use this SP to display the number of times that each ink cartridge has become empty.		

Display Count: Ink Cartridge Out (Equal or More Than Guaranteed Service Life)

7158	END CNT:C1	Ink Cartridge 1
7159	END CNT:C2	Ink Cartridge 2
7160	END CNT:C3	Ink Cartridge 3
7161	END CNT:C4	Ink Cartridge 4
	Use this SP to display the number of times that each ink cartridge equaled or surpassed the guaranteed service life of the cartridge.	

Display Software Count: Near End for Ink Collector Unit

7200	WASTE CNT:R:NEAR	Right Ink Collector Unit
	Use this SP to display the current software count for the flushing tank. Note: The near-end threshold is 413 ml.	

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Display Count: Tank Full: Ink Collector Unit

7201	WASTE CNT:R:FULL	Right Ink Collector Unit
	Use this SP to display the current count for the number of times the status of the right Ink Collector tank has changed from near-full to full. Note: The full threshold is 3 ml.	

Display Count: Tank Full: Ink Collector Unit

7202	WASTE CNT:L:FULL	Left Ink Collector Unit
	Use this SP to display the current count for the number of times the status of the left Ink Collector tank has changed from near-full to full.	

Display Count: Swing Plate Contacts With Carriage

7203	SWNG PLATE CNT	Left Ink Collector Unit
	This SP code is for future use and not used at this time.	

	This SP logs the number of times the swing plate operates to rid itself of accumulated ink due to air purging.
--	--

Display Count: Mist Counter for Automatic Cleaning

7204	MIST CNT:T1	Print Head Tank 1
7205	MIST CNT:T2	Print Head Tank 2
7206	MIST CNT:T3	Print Head Tank 3
7207	MIST CNT:T4	Print Head Tank 4
7208	MIST CNT:T5	Print Head Tank 5
7209	MIST CNT:T6	Print Head Tank 6
	Use this SP to display the number of times that the swing plate of the left Ink Collector tank has made contact with the carriage.	

5

Display Count: Paper Dust Counter for Automatic Cleaning

7210	FEED:CNT:H1	Print Head Tank 1
7211	FEED:CNT:H2	Print Head Tank 2
7212	FEED:CNT:H3	Print Head Tank 3
7213	FEED:CNT:H4	Print Head Tank 4
	Use this SP to display the current reading of the ink mist counter that determines when to execute automatic cleaning.	

Display Count: Cap Off Time for Automatic Print Head Cleaning

7214	DECAP TIME	
	Use this SP to display the de-capping time used to determine whether automatic cleaning is executed after the printer returns from idle mode.	

Display Humidity Reading Before Automatic Print Head Cleaning

7215	HUMI:ACL:AL	
	Use this SP to display the temperature reading before capping operation used to determine whether automatic print head cleaning is done after the printer returns from idle mode.	

Display Count: Ink Cartridge Replacements

7300	CART CHG CNT:K	K (Black)
7301	CART CHG CNT:C	C (Cyan)
7302	CART CHG CNT:M	M (Magenta)
7303	CART CHG CNT:Y	Y (Yellow)
	Use this SP to display the number of times the carriage has been replaced.	

7304	CART RFIL CNT:K	Print cartridge refill count: K (Black)
7305	CART RFIL CNT:C	Print cartridge refill count: C (Cyan)
7306	CART RFIL CNT:M	Print cartridge refill count: M (Magenta)
7307	CART RFIL CNT:Y	Print cartridge refill count: Y (Yellow)
	Use this SP to display the number of times the print cartridges have been refilled.	

Display Date of Ink Collector Unit Replacement

7400	WASTE:DATE	YY:MM:DD
	Use this SP to display the date the Ink Collector tanks were replaced. Date Standard: 2000	

Display Standby Time

7401	PWAIT:DATE	YY:MM:DD
	Display the total time the printer has remained in standby mode.	

	Date Standard: 2000
--	---------------------

Display Operation Start Date

7402	START:DATE	YY:MM:DD
	Display the total time the printer has remained in full operation. Date Standard: 2000	

Display SC Code Log

7403	SC CODE1	Log 1: Previous
7404	SC CODE2	Log 2: Previous -1
7405	SC CODE3	Log 3: Previous -2
7406	SC CODE4	Log 4: Previous -3
7407	SC CODE5	Log 5: Previous -4
	Use this SP to display the SC code history. <ul style="list-style-type: none"> • The occurrences of SC codes are stored in the order 1, 2, 3, 4, 5. • Duplicate occurrences of SC codes are not recorded (each SC code recorded only once). 	

Display Jam Log

7408	JAM CODE1	Log 1: Previous
7409	JAM CODE2	Log 2: Previous -1
7410	JAM CODE3	Log 3: Previous -2
7411	JAM CODE4	Log 4: Previous -3
7412	JAM CODE5	Log 5: Previous -4
	Use this SP to display the jam code history. The occurrences of jam codes are stored in the order 1, 2, 3, 4, 5.	

Display Total Count: Jam Log

7413	JAM COUNT1	Log 1: Previous
7414	JAM COUNT2	Log 2: Previous -1
7415	JAM COUNT3	Log 3: Previous -2
7416	JAM COUNT4	Log 4: Previous -3
7417	JAM COUNT5	Log 5: Previous -4
	Use this SP to display the number of times jam codes have been issued. The occurrences of jam codes are stored in the order 1, 2, 3, 4, 5.	

Display Total Count: Ink Fill Log

5

7418	FILL PROGRESS1	Log 1: Previous
7419	FILL PROGRESS2	Log 2: Previous -1
7420	FILL PROGRESS3	Log 3: Previous -2
7421	FILL PROGRESS4	Log 4: Previous -3
	Use this SP to display the number of times initial tank filling has been performed.	

Display Maintenance Log

7422	LAST MNT:TM1	Log 1: Previous
7423	LAST MNT:TM2	Log 2: Previous -1
7424	LAST MNT:TM3	Log 3: Previous -2
	Use this SP the total time for all maintenance executions.	

Display Maintenance Log: By Type of Maintenance

7425	LAST MAINT1	Log 1: Previous
7426	LAST MAINT2	Log 2: Previous -1

7427	LAST MAINT3	Log 3: Previous -2
	Use this SP to display the types of maintenance executed. The types of maintenance are number coded as shown below:	
	1	Maintenance at power on
	6	Maintenance idle operation
	7	Auto print head cleaning after idle time elapsed
	8	Maintenance air detection
	9	Ink tank filling before maintenance page
	10	Ink tank filling between maintenance pages
	11	Ink tank filling before maintenance capping
	12	Maintenance cartridge replacement
	13	Cleaning between maintenance pages
	14	Cleanings before maintenance capping
	15	Maintenance manual cleaning
	16	Maintenance manual flushing

Display Maintenance Log: Total Count

7428	LAST MNT CNT1	Log 1: Previous
7429	LAST MNT CNT2	Log 2: Previous -1
7430	LAST MNT CNT3	Log 3: Previous -2
	Use this SP to display the total count for all maintenance executions.	

Display Near Full Flag: Right Ink Collector Unit

7431	WASTE NEAR FLG	
	Use this SP to display the near-full flag of the right Ink Collector tank.	

Display Position of Tank Full Feeler for Each Print Head Tank After Air Purge

7500	INIT POS:T1	Print Head Tank 1
7501	INIT POS:T2	Print Head Tank 2
7502	INIT POS:T3	Print Head Tank 3
7503	INIT POS:T4	Print Head Tank 4
7504	INIT POS:T5	Print Head Tank 5
7505	INIT POS:T6	Print Head Tank 6
	Use this SP to display the detected position of the print head tank full sensor at air venting/ink filling.	

5

Display Normal Position for Detection of Full Print Head Tank

7506	FULL POS:T1	Print Head Tank 1
7507	FULL POS:T2	Print Head Tank 2
7508	FULL POS:T3	Print Head Tank 3
7509	FULL POS:T4	Print Head Tank 4
7510	FULL POS:T5	Print Head Tank 5
7511	FULL POS:T6	Print Head Tank 6
	Use this SP to display the usual position of the print tank full sensor when the ink tank is filled	

Display Count: Number of Drive Cleanings

7512	DCL CNT:H1	Print Head 1
7513	DCL CNT:H2	Print Head 2
7514	DCL CNT:H3	Print Head 3
7515	DCL CNT:H4	Print Head 4
	Use this SP to display the number of automatic print head cleanings done during printing	

Display Count: Ink Supply Time Up

7516	PTMOUT:CNT:T1	Print Head Tank 1
7517	PTMOUT:CNT:T2	Print Head Tank 2
7518	PTMOUT:CNT:T3	Print Head Tank 3
7519	PTMOUT:CNT:T4	Print Head Tank 4
7520	PTMOUT:CNT:T5	Print Head Tank 5
7521	PTMOUT:CNT:T6	Print Head Tank 6
	Use this SP to display the number of times near-end/end was detected by timeup while ink was being supplied to the ink tanks.	

5

Display Count: Automatic Print Head Cleanings (After De-Cap Time Elapsed)

7522	ACL:CNT:D:H1	Print Head 1
7523	ACL:CNT:D:H2	Print Head 2
7524	ACL:CNT:D:H3	Print Head 3
7525	ACL:CNT:D:H4	Print Head 4
	Use this SP to display the number of times the automatic print head cleaning executed triggered by time exceeded the threshold set for the de-capping time.	

Display Count: Maintenance Cleanings of Right Vent

7526	PMT:CNT	Right Vent Purges
	Use this SP to display the number of times the right air vent was cleaned during maintenance.	

Display Count: Air Detections Before Maintenance Cleanings

7527	PMT CNT:A:T1	Print Head Tank 1
7528	PMT CNT:A:T2	Print Head Tank 2
7529	PMT CNT:A:T3	Print Head Tank 3

7530	PMT CNT:A:T4	Print Head Tank 4
7531	PMT CNT:A:T5	Print Head Tank 5
7532	PMT CNT:A:T6	Print Head Tank 6
	Use this SP to display the number of times air was detected during maintenance cleaning of the right ink suction vent.	

Bit Switches

Soft bit switches are used to do some basic function settings that determine how the printer operates. This section describes the functions of these bit switches.

Changing Bit Switch Settings

1. [Clear Modes]> [1]> [0]> [7]> [Clear/Stop]

```
SYSTEM Ver.0.51
Service Menu
```

2. [Yes]> "Bit Switch"
3. [Yes]

```
Bit Switch:
BitSW#1 Setting
```

4. [▲] or [▼] > Select the bit switch (1 to 8).
5. [Yes]

```
SW#1 00000000
Bit0 _
```

6. [▲] or [▼] To move cursor left or right.
7. [Yes] To select the bit to change.
8. [▲] or [▼] To toggle the setting between "0" and "1".
9. [Yes] To enter the setting.
10. Repeat Steps 6 to 8 to set other bits.
11. [No] To save the setting and return to previous level.
12. [No]> [No]> [▲] or [▼] > "End"> [Yes]> To save setting and switch off machine.
13. [Power] to switch the machine on.

Bit Switch Summary

"BitSW#1 Setting": Not used. Do not change these settings.

"BitSW#2 Setting": Not used. Do not change these settings.

"BitSW#3 Setting": Emulation

Bit	Function	Setting		Default	Details
		0	1		
0	Not Used				
1	Not Used				
2	PCL5e/5c	OFF	ON	0	Makes the printer compatible with old HP PCL printer drivers (HP4000, HP8000, etc.)
3	Not Used				
4	Not Used				
5	Not Used				
6	Not Used				
7	Not Used				

"BitSW#4Setting": Not used. Do not change these settings.

"BitSW#5Setting": Functions Common to All Models

Bit	Function	Setting		Default	Details
		0	1		
0	Not Used				
1	Counter menu display for charge on printer use, printing enabled after coverage counted up.	OFF	ON	0	This is a GW specification. 0: Does not print. 1: Prints
2	Error skip.	All	PPC only	0	Switches error skip on/off 0: Errors skipped regardless of paper size, paper type. 1: Error skipped only for PPC.
3	Not Used				
4	Not Used				
5	Counter Display	OFF	ON	0	Switches the counter display on/off.

Bit	Function	Setting		Default	Details
		0	1		
					0: Counter not displayed. 1: Counter is displayed
6	Color Level Display	OFF	ON	0	Switches the color lever display on/off. 0: Color level not displayed 1: Color level displays
7	Repair Information	OFF	ON	0	Displays whether the machine has been repaired. 0: Machine not repaired 1: Machine repaired This bit should be set to "1" after repair so the CE can determine whether machine has been previously repaired.

5

"BitSW#6Setting": Enable Functions for Individual Printer Models

Bit	Function	Setting		Default	Details
		0	1		
0	Flushing Mist Prevention	ON	OFF	0	This switch determines whether the machine waits for a while before printing in low temperature (15°C or less). OFF: No waiting ON: Waiting until the flushing mist in low temperature goes off.
1	Paper Error Detection	OFF	ON	0	This switch sets whether the paper error detection executes. OFF: No detection ON: Paper error detection

Bit	Function	Setting		Default	Details
		0	1		
2	Double-Count	OFF	ON	0	This switch sets whether the double-count counter is printed out in the system summary. OFF: No printing ON: Printing
3	Not Used				
4	Not Used				
5	Not Used				
6	USB Serial Signal	0	1	0	Determines how the USB signal is fixed. 0: Serial signal is set with the value in NVRAM. 1: USB serial signal fixed at "0" (value in NVRAM is not changed).
7	Hidden Functions	0	1	0	Determines whether hidden functions (hidden paper sizes A5 SEF, B6 SEF) are displayed. 0: No A5 SEF, B6 SEF display 1: A5 SEF, B6 SEF displayed

"BitSW#7Setting": Not Used

"BitSW#8Setting": GW Bit Switch

Bit	Function	Setting		Default	Details
		0	1		
1	Design Waveform Switching	OFF	ON	0	Designates waveform switch (DFU) 0: For product 1: For design
2	Speed Mode Priority	OFF	ON	0	

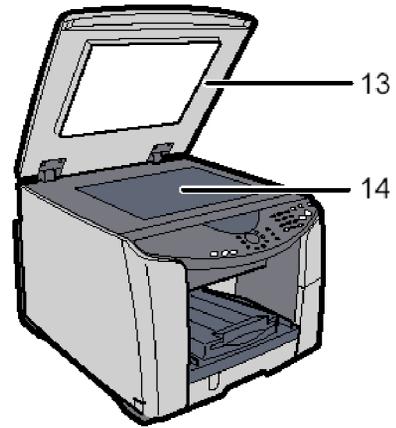
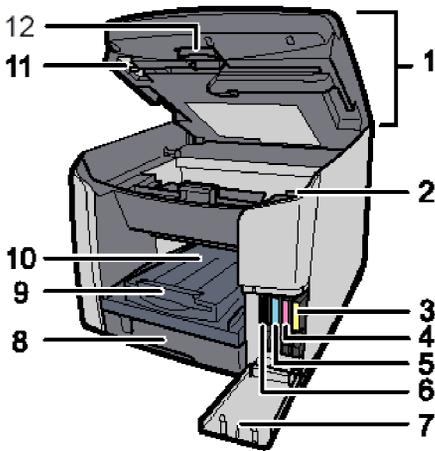
Bit	Function	Setting		Default	Details
		0	1		
3	Operation Control Mode After Printer Idle	OFF	ON	0	
4	Maintenance Mode	OFF	ON	0	
5	Recycled Paper Menu Display	OFF	ON	0	This switch sets whether the recycled paper charge menu of the operational panel. 0: Not displayed 1: Displayed
6	Charge Setting for Recycled Paper	OFF	ON	0	This switch sets whether the charge bias is selected for normal paper or recycled paper. 0: Normal paper charge 1: Recycled paper charge
7	Not Used				

6. Detailed Section Descriptions

Important Parts

J012

Front View: J012



j014d907

1. Scanner unit

Open to access the envelope selector, to access the shipping lock, and to remove jams. Otherwise, keep the scanner unit cover closed.

2. Envelope selector

Push back to print on envelopes. Pull forward to print on all other types of paper.

3. Print cartridge (Y)

4. Print cartridge (M)

5. Print cartridge (C)

6. Print cartridge (K)

7. Right front cover

Open only to install or replace Ink cartridges. Otherwise, this cover should be closed.

8. Tray 1

This is the standard tray that holds paper fed to the machine.

9. Output extension tray

Pull out this extension to print on paper longer than A4 or LTR size paper.

10. Paper output tray

Holds paper that has exited the printer. Pull out the output tray extension when printing on paper longer than A4 or LTR.

11. Shipping lock

Locks and unlocks the scanning mechanism. Locked only before moving the machine to keep the scanning mechanism from moving. Be sure to unlock after the machine has been moved to its new location.

12. Scanner unit release lever

Pull this lever to raise the scanner unit.

13. Exposure glass cover (platen)

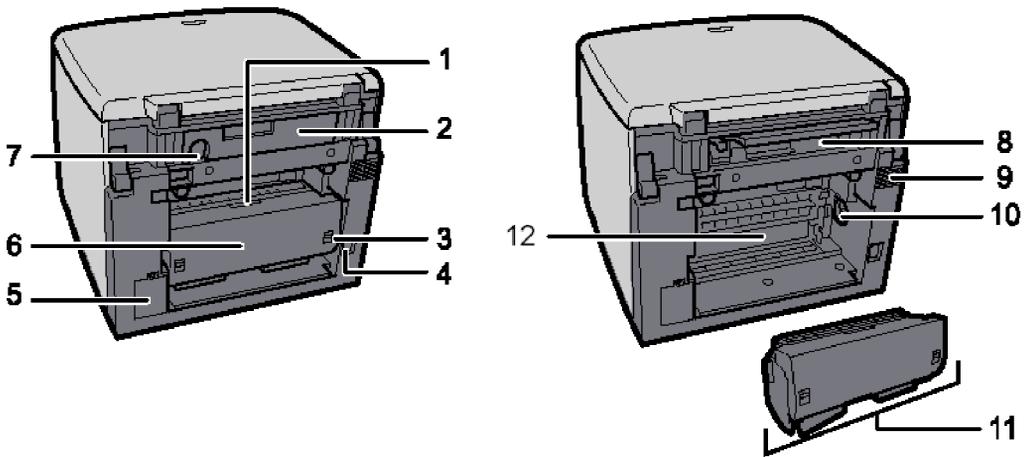
Place the original on the exposure glass then lower this cover..

14. Exposure glass

Place originals here face-down ..

6

Rear View: J012



j014d908

1. Duplex cover button

Press to open the duplex unit cover.

2. Connector cover

Open to connect telephone line, extension telephone, USB cable, or install the NIB. (The NIB is standard for the J014.)

3. Duplex unit locks

Unlocks and locks the duplex unit for removal and installation. The duplex unit must always remain installed on the machine. The will not print with the duplex unit removed.

4. Power cord

The connection point for the power cord. Use only the power cord provided with the printer. Make sure you ground (earth) the head of the plug at the power source.

- The detachable power cord is provided with the EU model only.
- The power cord of the NA model is permanently attached.

5. Ink collector unit cover

Open and remove the ink collector tank when it needs to be replaced, or before servicing the printer.

6. Duplex unit cover

Open to remove paper jams from the duplex unit.

7. USB slot

This is the connection point for the USB cable from the PC.

8. Ethernet Port

Connect the Ethernet cable here if the optional NIB is installed. (The NIB is standard for the J014.)

9. Vent

Vents air from inside the machine to prevent overheating. Never block this vent.

10. Paper feed wheel

Rotate to remove paper that has jammed and wrapped around the guide board.

11. Duplex unit

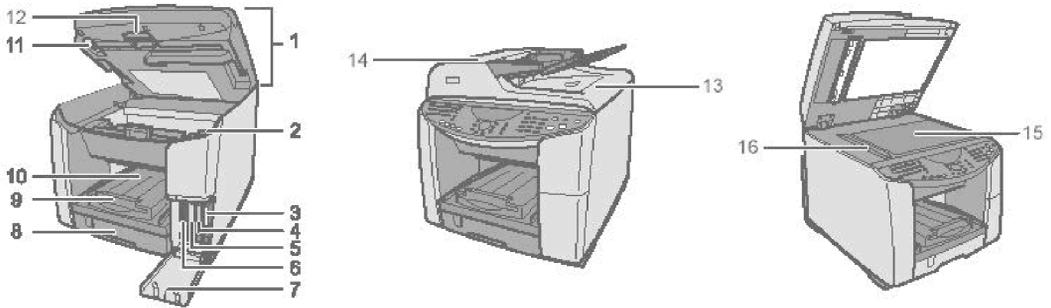
This is the mechanism that inverts paper for duplex printing (printing on the second side).

12. Guide board

Open to remove paper jammed in the machine.

J013/J014

Front View: J013/J014



j014d901

1. Scanner unit

Open to access the envelope selector, to access the shipping lock, and to remove jams. Otherwise, keep the scanner unit cover closed.

2. Envelope selector

Push back to print on envelopes. Pull forward to print on all other types of paper.

3. Print cartridge (Y)

4. Print cartridge (M)

5. Print cartridge (C)

6. Print cartridge (K)

7. Right front cover

Open only to install or replace Ink cartridges. Otherwise, this cover should be closed.

8. Tray 1

This is the standard tray that holds paper fed to the machine.

9. Output extension tray

Pull out this extension to print on paper longer than A4 or LTR size paper.

10. Paper output tray

Holds paper that has exited the printer. Pull out the output tray extension when printing on paper longer than A4 or LTR.

11. Shipping lock

Locks and unlocks the scanning mechanism. Locked only before moving the machine to keep the scanning mechanism from moving. Be sure to unlock after the machine has been moved to its new location.

12. Scanner unit release lever

Pull this lever to raise the scanner unit.

13. ARDF

Holds one or more sheets automatic feed during scanning or single or doubled sided originals.

14. ARDF cover

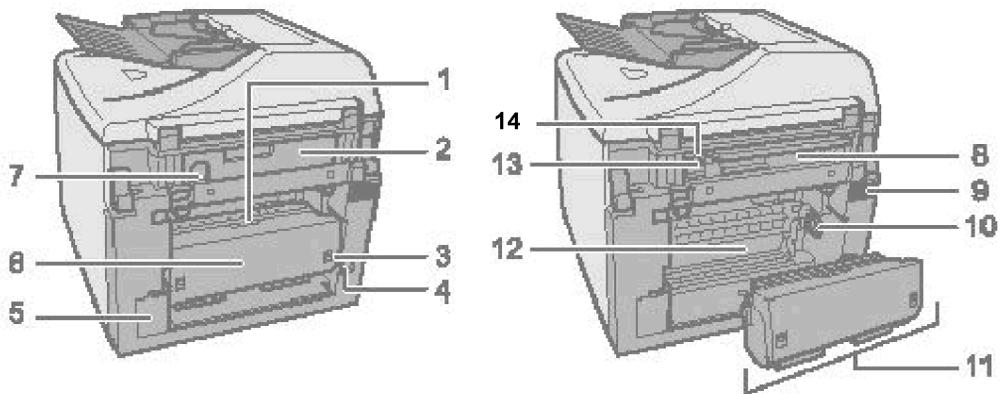
Open to remove an original jammed in the ARDF.

15. Exposure glass

Place one original here for single-sided scanning in book mode.

16. Scanning glass

Scans originals fed automatically from the ARDF for single or double-sided scanning.

Rear View: J013/J014

j014d902

1. Duplex cover button

Press to open the duplex unit cover.

2. Connector cover

Open to connect telephone line, extension telephone, USB cable, or install the NIB. (The NIB is standard for the J014.)

3. Duplex unit locks

Unlocks and locks the duplex unit for removal and installation. The duplex unit must always remain installed on the machine. The will not print with the duplex unit removed.

4. Power cord

The connection point for the power cord. Use only the power cord provided with the printer. Make sure you ground (earth) the head of the plug at the power source.

- The detachable power cord is provided with the EU model only.

- The power cord of the NA model is permanently attached.

5. Ink collector unit cover

Open and remove the ink collector tank when it needs to be replaced, or before servicing the printer.

6. Duplex unit cover

Open to remove paper jams from the duplex unit.

7. USB slot

This is the connection point for the USB cable from the PC.

8. Ethernet Port

Connect the Ethernet cable here if the optional NIB is installed. (The NIB is standard for the J014.)

9. Vent

Vents air from inside the machine to prevent overheating. Never block this vent.

10. Paper feed wheel

Rotate to remove paper that has jammed and wrapped around the guide board.

11. Duplex unit

This is the mechanism that inverts paper for duplex printing (printing on the second side).

12. Guide board

Open to remove paper jammed in the machine.

13. G3 (analog) line interface connector

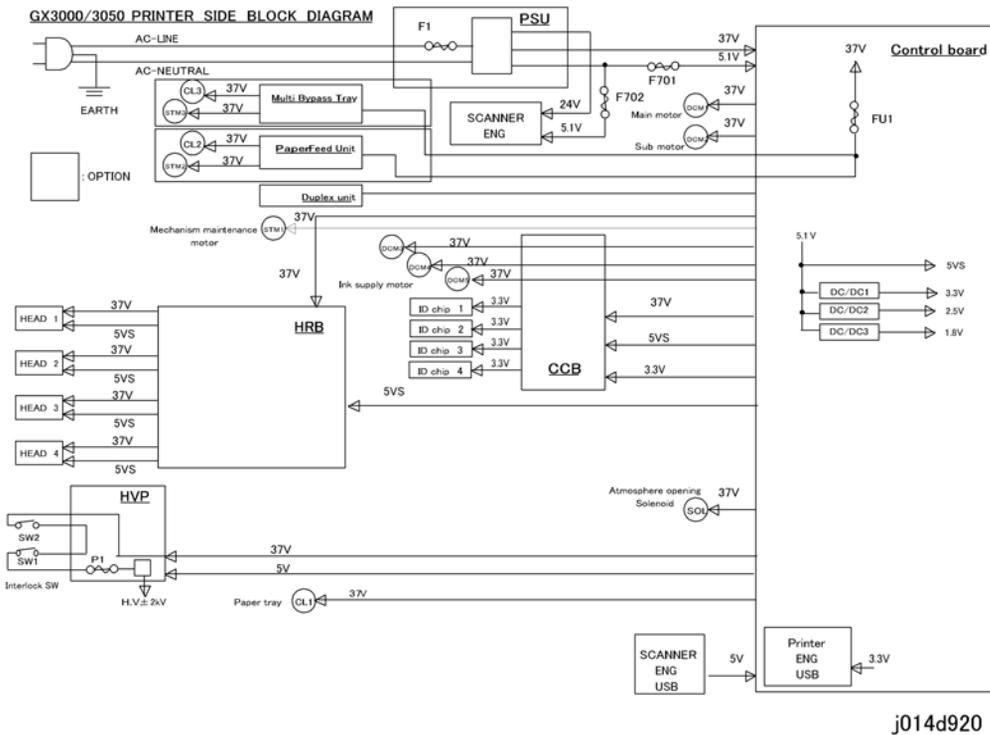
This is the connection point for a telephone line.

14. External telephone connector

This is the connection point for an extension telephone.

Boards

Board Circuit Diagram



Control Board (Engine CTL Board). (Engine Controller Board)

The control board exerts overall control of the machine, including

- Image data processing
- Interface management: USB and all the other boards
- Controls all sensors, and motors for all I/O devices

Scanner ENG (CTL Board). (Scanner Controller Board)

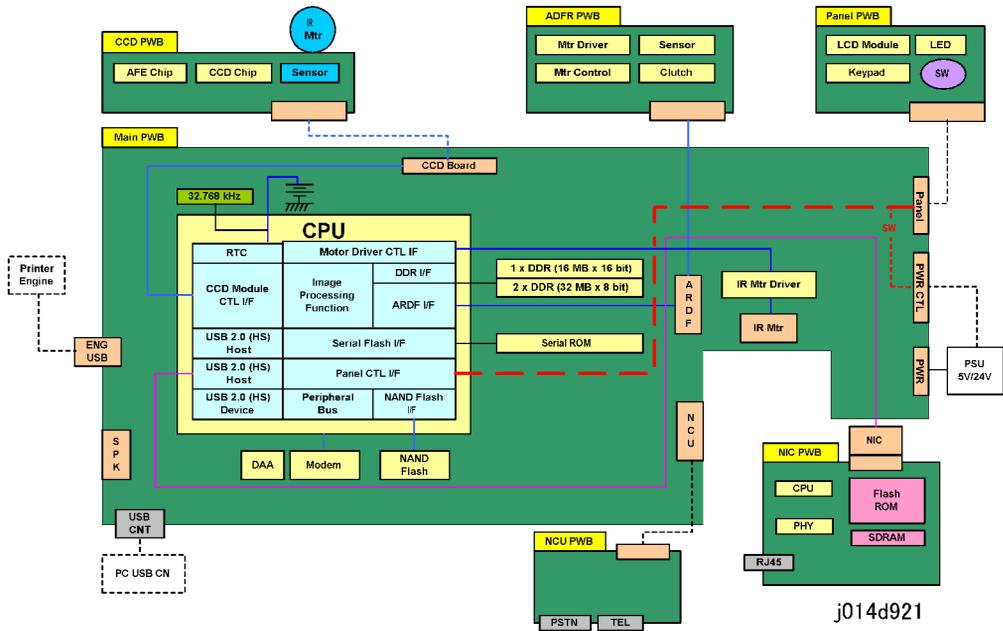
Controls the operation of the scanner unit

PSU. (Power Supply Unit). Mounted on the left side of the machine. Supplies power to the HVPS (HVP), all motors, and the scanner unit.

CCB. (Cartridge Control Board). Mounted in the cartridge holder behind the right front door of the printer. This PCB relays signals between the control board on top of the printer and the ink pump motors that supply ink to the ink tanks. It also relays the ID chip signals that detect whether the ink cartridges are installed properly in the correct slots of the cartridge holder.

HVPS. (High Voltage Power Supply). Mounted under the top cover and above the transport belt. Generates the voltages applied to the transport belt that hold the paper on the belt during printing. Two interlock switches, one connected to the top cover and the other to the duplexer cover, prevent the HVPS from operating if either or both covers are open.

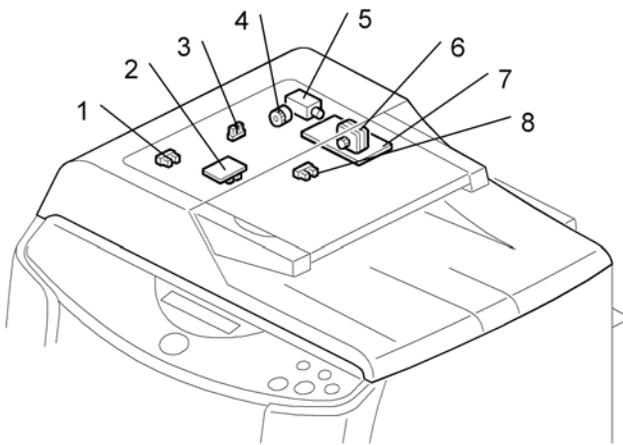
Board Layout Diagram



Electrical Components

Overview

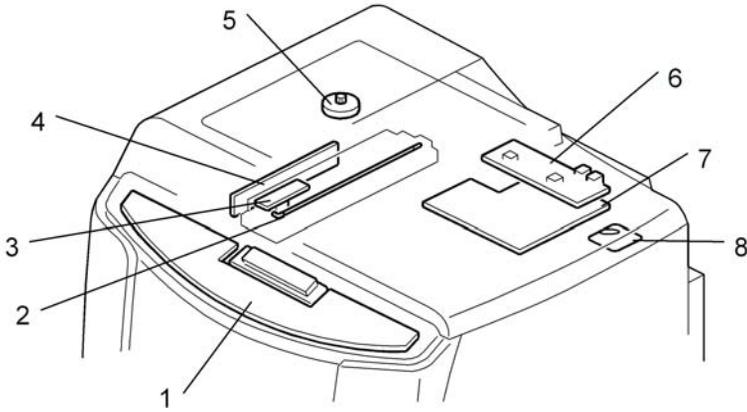
ARDF Unit



j012v101

1	Registration Sensor
2	Document Set Sensor
3	Duplex Sensor
4	Paper Feed Clutch
5	Original Exit Roller Solenoid
6	Original Feed Motor
7	Original Feed Motor Driver
8	Paper Feed Clutch Timing Sensor

Scanner Unit

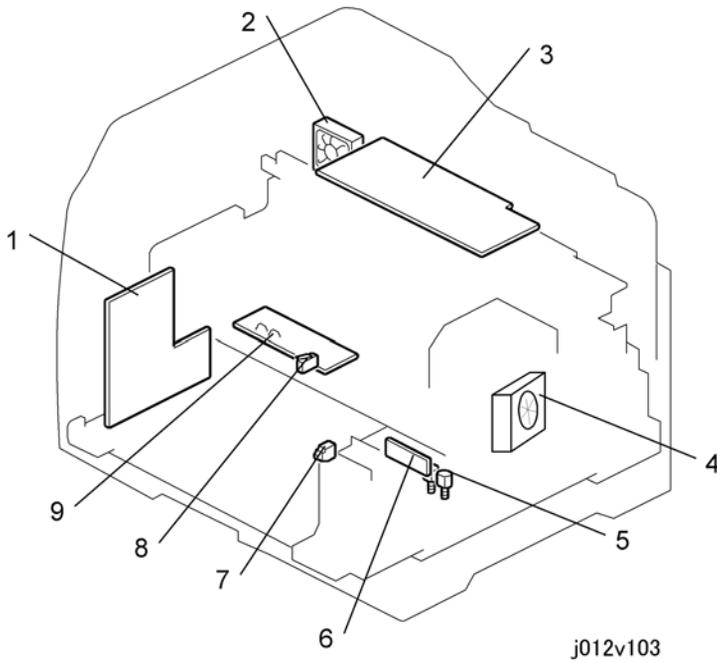


j102v102

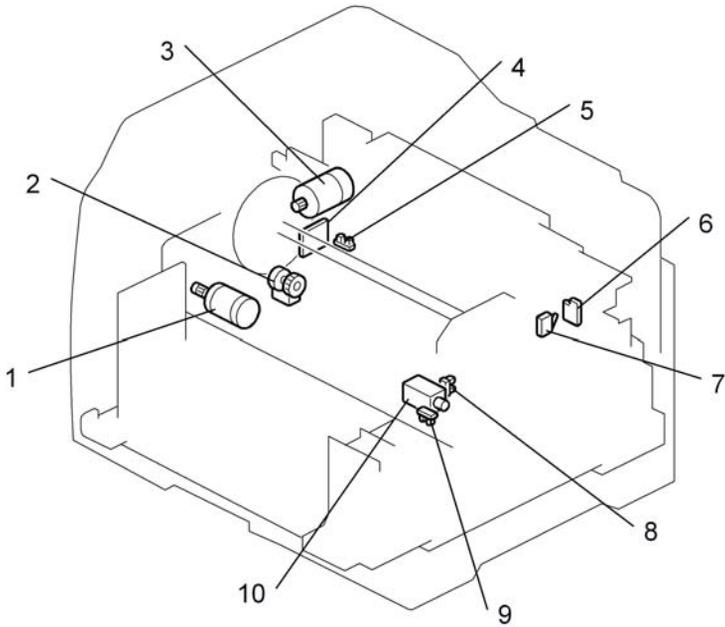
6

1	Operation Panel
2	Exposure Lamp
3	Lamp Regulator
4	CCD Board
5	Scanner Motor
6	Network Communication Unit
7	Main Board
8	Network Interface Card

Printer Engine



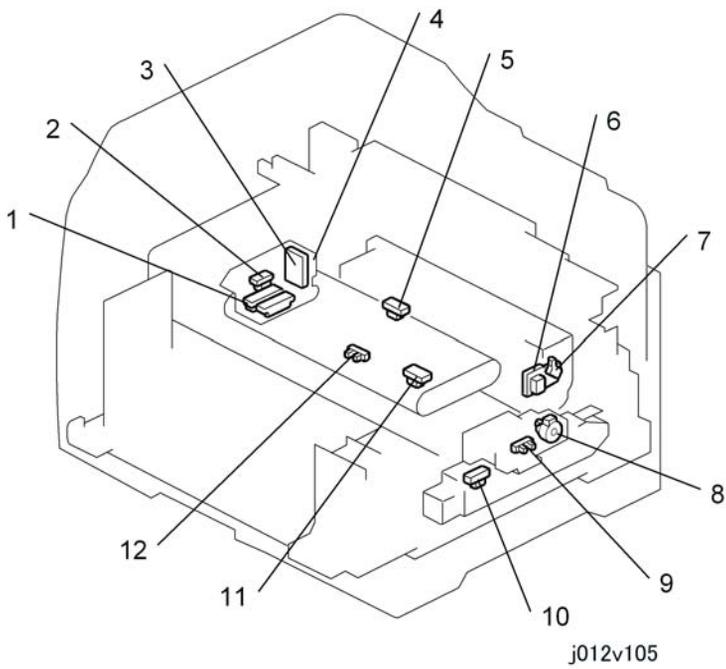
1	PSU
2	Rear Fan
3	CTL Board (Control Board)
4	Front Fan
5	Ink Pump Motors x2
6	CCB (Cartridge Control Board)
7	Right Front Door Switch
8	Top Cover Switch
9	HVPS (High Voltage Power Supply)



j012v104

6

1	Vertical Motor
2	Paper Feed Clutch
3	Horizontal Motor
4	SENC (Sub Scan Encoder)
5	Trailing Edge Sensor
6	Duplex Detection Board
7	Duplex Set Sensor
8	Ink Level Sensor
9	Carriage Position Sensor
10	Air Release Solenoid



1	Print Heads
2	1st Registration Sensor
3	HRB
4	Horizontal Encoder Sensor
5	2nd Registration Sensor
6	DIB
7	Duplexer Cover Switch
8	Maintenance Motor
9	Maintenance HP Sensor
10	Ink Collection Tank Sensor
11	Temperature/Humidity Sensor
12	Paper End Sensor

Electrical Component Summary

ADF

No.	Component	Function
Clutches		
CL	Paper Feed Clutch	Connected to the original feed motor, engages and disengages the original feed roller for original feeding.
CL	Paper Feed Clutch Timing Sensor	Detects the leading and trailing edge of the original to control operation of the paper feed clutch.
Motors		
MT	Original Feed Motor	Drives all the rollers in the ADF.
Boards		
PCB	Original Feed Motor Driver	Controls operation of the original feed motor.
Sensors		
SN	Registration Sensor	Performs two functions: 1) Detects the leading and trailing edge of the original and detects a jam if the trailing edge does not exit within the prescribed time, and 2) Delays switching on paper feed clutch to buckle the leading edge against the paper feed roller to correct skew.
SN	Document Set Sensor	Performs two functions: 1) Detects the originals on the original feed tray to prepare the ADF for feed, and 2) Determines whether the ADF is open or closed.
SN	Duplex Sensor	Detects the paper during duplexing.
Solenoid		
SOL	Original Exit Roller Solenoid	Lowers and raises the original exit roller.

Scanner

No.	Component	Function
Motor		
MT	Scanner Motor	Moves the exposure lamp across the original on the exposure glass.
Boards		
PCB	Lamp Regulator	Converts the ac power input to a stable, high frequency ac output to the exposure lamp. This provides a more stable light source and better latent image.
PCB	CCD Board	Controls operation of the exposure lamp.
PCB	Network Communication Unit	Controls network communication
PCB	Main Board	Controls operation of the scanner unit.
PCB	Network Interface Card	Installed on the back of the machine. Provides connection point for the network cable. Built into the J014. Provided as an option for the J012/J013 and requires installation.
Other		
Other	Operation Panel	Provides the keys for operation of the copier and fax.
Other	Exposure Lamp	Cold Cathode Fluorescent Lamp. Illuminates the original for scanning. Converts the ac power input to a stable, high frequency ac output to the exposure lamp. This provides a more stable light source and better latent image.

Printer Engine

No.	Component	Function
Clutches		
CL	Bypass Paper Feed Clutch – CL4	A one-way clutch that controls the operation of the pick-up roller. Releases and allows the pick-up roller (a half roller) to rotate and pick-up the sheet and feed it. When the roller reaches its point of half-rotation, the pawl of the clutch stops the pick-up roller. The

No.	Component	Function
		paper feed motor continues to rotate and drive the paper feed rollers that transport the paper out of the bypass unit.
CL	PFU Paper Feed Clutch – CL2	A one-way clutch that controls the operation of the pick-up roller. Releases and allows the pick-up roller (a half roller) to rotate and pick-up the sheet and feed it. When the roller reaches its point of half-rotation, the pawl of the clutch stops the pick-up roller. The paper feed motor continues to rotate and drive the paper feed rollers that transport the paper out of the PFU paper tray.
CL	Paper Feed Clutch - CL1	This is the magnetic clutch that controls the operation of the paper feed roller.
Motors		
MT	Bypass Paper Feed Motor – STM4	Mounted in the multi bypass tray. Drives the pick-up roller and paper feed rollers that feed paper from the bypass tray into the printer.
MT	Cooling Fan	Mounted on the right rear corner of the printer (viewed from the back). This fan pulls hot air from the interior of the printer and pushes it out through a ventilation port.
MT	Horizontal Motor - DCM1	Mounted on the left side of the printer, drives forward and reverse to control the timing belt that moves the carriage left and right during printing. The operation of the motor is controlled by the horizontal encoder sensor (a long film strip) mounted behind the carriage.
MT	Ink Pump Motor (KC) – DCM3	Runs forward to pump cyan (C) to Print Head 2, reverses to pump black (K) to Print Head 2.
MT	Ink Pump Motor (M) – DCM4	Runs forward to pump yellow (Y) to Print Head 1, reverses to pump magenta (M) to Print Head 1.
MT	Maintenance Motor – MT STM1	Mounted in the maintenance unit. Drives the maintenance unit: 1) Rotates forward to drive the shaft that raises and lowers the caps during print head cleaning, 2) Reverses to drive the simple tube pump that siphons ink from the print head through the right, 3) Raises and lowers the wiper that removes ink collected around the print head.
MT	PFU Paper Feed Motor – STM2	Mounted in the PFU. Drives the pick-up roller and paper feed rollers that feed paper from the PFU tray into the printer.

No.	Component	Function
MT	Vertical Motor (DCM2)	Mounted behind the vertical encoder wheel and to the left of the PSU. This motor, controlled by the rotation of the vertical encoder wheel and SENC board, drives the paper rollers that drive the transport belt.
PCBs		
PCB	CCB (Cartridge Control Board)	Mounted in the cartridge holder behind the right front door of the printer. This PCB relays signals between the control board on top of the printer and the ink pump motors that supply ink to the ink tanks. It also relays the ID chip signals that detect whether the ink cartridges are installed properly in the correct slots of the cartridge holder.
PCB	CTL (Control Board)	Mounted on top of the printer and below the top cover (protected by a metal plate). Controls overall operation of the printer, mainly: 1) image data processing, 2) interface management (USB, duplexer, bypass tray, PFU, etc.) 3) all sensors, motors, other devices.
PCB	DIB (Duplex Interface Board)	Mounted in the duplex unit. This PCB controls the operation of the duplexer. This PCB also contains the duplexer cover switch that detects when the duplexer cover is open and closed. The printer will not operate if the duplexer is not installed properly, or if the duplexer cover is open.
PCB	Duplexer Detection Board	Mounted behind the printer. The metal prongs of the DIB contact this board make the connection between the DIB and the duplexer cover switch mounted on the DIB. This contact must be closed for the printer to operate. The duplexer is not an option. It must be installed at all times, even when printing on only one side.
PCB	HRB (Head Relay Board)	Mounted behind the print heads on the carriage. This board performs many important functions: 1) contains the horizontal encoder sensor that reads the horizontal encoder (the film strip) that controls the reverse/forward timing of the horizontal motor that moves the carriage during printing, 2) relays the readings of the 1st registration sensor mounted on the left edge of the carriage, 3) contains a small thermistor that detects the temperature around the print heads, 4) receives and relays signals from the ink collection tank to the control board.

No.	Component	Function
PCB	HVPS (High Voltage Power Supply)	Mounted under the top cover and above the transport belt. Generates the voltages applied to the transport belt that hold the paper on the belt during printing. Two interlock switches, one connected to the top cover and the other to the duplexer cover, prevent the HVPS from operating if either or both covers are open.
PCB	ID Chip 1	The identification chip of the black (K) ink cartridge.
PCB	ID Chip 2	The identification chip of the cyan (C) ink cartridge.
PCB	ID Chip 3	The identification chip of the magenta (M) ink cartridge.
PCB	ID Chip 4	The identification chip of the yellow (Y) ink cartridge.
PCB	Multi Bypass Tray Control Board	Mounted inside the multi bypass tray. This is the main control board that controls operation of the bypass tray and interfaces with the printer.
PCB	OPU (Operation Panel Unit)	Mounted under the operation panel LCD and keypad. Controls the operation of the operation panel. The right front door sensor is also mounted on this PCB.
PCB	PFU Main Board	Mounted in the optional paper feed unit. This is the board that controls operation of the paper feed unit and interfaces with the printer.
PCB	PSU (Power Supply Unit)	Mounted under the left front cover. Supplies both 37V and 5.1V power to the HVPS and all motors in the printer.
PCB	SENC (Sub Scan Encoder)	A small PCB mounted below and slightly to the left of the vertical encoder wheel. The vertical encoder sensor is mounted and positioned on this PCB so the rim of the vertical encoder wheel passes through its gap as the wheel rotates. The sensor reads the code on the rim of the wheel to control the operation of paper feed timing and operation of the vertical feed motor.
Print Heads		
PH	Print Head 1	Contains 2 ink tanks: M, Y
PH	Print Head 2	Contains 2 ink tanks: C, K
Sensors		

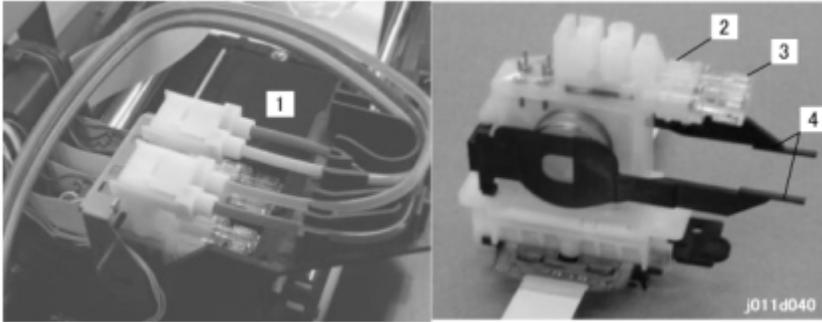
No.	Component	Function
SN	1st Registration Sensor	Attached to the left side of the carriage. As the carriage moves from side to side during printing. The registration sensor performs two important functions for print control: 1) It detects the leading edge of every sheet, and 2) it detects the width of the 1st sheet of every print job when the carriage and sensor pass horizontally over the vertical edge of the 1st sheet as it feeds.
SN	2nd Registration Sensor	Located in the center of the printer above the transport belt and behind the horizontal motor timing belt. This photosensor detects the leading and trailing edge of each sheet when the printer is printing at high speed. These readings are used to control job timing and to detect paper jams.
SN	Air Sensors	A pair of vertical pins at the top of each ink tank. This pair of pins detects changes in the voltage differential on the surface of the ink inside the print head tank. When these terminals detect air in the tank, this actuates the air release solenoid and vents air from the tank through the air release valve. This allows more ink to enter the tank.
SN	Carriage Position Sensor	Mounted under the right, front corner of the top cover. Detects the position of the carriage and print heads above the paper. When the envelope selector is pulled forward, the feeler leaves the gap and switches the sensor off. This mechanism is used to detect the up and down position of the carriage and print heads.
SN	Ink Cartridge Set Switches	A microswitch for each ink cartridge connected in series and mounted on the ink cartridge detection plate at the back of the right front cover that holds the ink cartridges. A metal contact on the back of the ink cartridge makes contact with the microswitch when the ink cartridge is inserted. This tells the machine whether the ink cartridge is inserted or inserted correctly.
SN	Ink Collection Tank Sensor	A "smart" reflective sensor mounted at the back of the ink collection tank. Detects when the ink collection tank is almost full and alerts the operator that the ink collection tank needs to be replaced.
SN	Ink Level Sensor	Mounted above the front guide rail. Monitors the positions of the ink level lever of each ink tank. The vacuum created inside the ink tanks as ink is consumed gradually draws the base of the spring-loaded arms in against the sides of the tank. Drawing the base closer to the side of the tank forces the tip of the arm out. The ink level

No.	Component	Function
		sensor detects the position of the tip every time it passes through the gap of the sensor.
SN	Maintenance HP Sensor	An interrupt sensor mounted in the maintenance unit that controls the operation of the maintenance motor in the print head cleaning cycle. At the beginning of the cleaning cycle, a feeler leaves the gap of this sensor and switches the motor on. At the end of the cleaning cycle the feeler rotates into the gap, switches the sensor off. This switches the motor off and the caps and wiper remain down at the home position.
SN	PFU Paper Sensor 1	Located below the bottom plate of the paper cassette in Tray 2 (the optional paper feed unit). A spring loaded bottom plate keeps the top of the stack against the pick-up roller for paper feed. A free-swinging feeler rests on top of the stack. After the last sheet feeds, one end of the feeler falls down through a cutout in the bottom plate. An actuator on the other end of the feeler swings up and out of the gap in the paper end sensor. This signals paper end.
SN	Paper End Sensor – Tray 1	Located below the transport belt. A spring loaded bottom plate keeps the top of the stack against the pick-up roller for paper feed. A free-swinging feeler rests on top of the stack. After the last sheet feeds, one end of the feeler falls down through a cutout in the bottom plate. An actuator on the other end of the feeler swings up and out of the gap in the paper end sensor. This signals paper end.
SN	Temperature/ Humidity Sensor	Located inside the printer near the transport belt. The temperature/ humidity sensor constantly measures temperature and humidity around the transport belt. The printer uses these readings to adjust the amount of charge applied to the areas of the belt that contact the leading edge, center, and trailing edge of the paper. For more, please refer to Section "4. Troubleshooting".
SN	Trailing Edge Sensor	Mounted at the right, rear corner of the printer (viewed from the back). The feeler of this interrupt sensor is mounted in the center of the paper path and connected to a long shaft. The end of the shaft has an actuator that moves in and out of the sensor gap. The feeler is pushed down by every sheet of paper and the actuator leaves the gap, then the feeler pops up again after the trailing edge passes and the actuator enters the gap and switches the sensor off. The length of time the sensor remains on is used to measure the length of the paper for print timing control. The sensor issues a paper end

No.	Component	Function
		alert if the sensor does not turn on after two rotations of the paper feed roller.
SN	Vertical Encoder Sensor	Mounted on the SENC PCB with the rim of the vertical encoder wheel positioned in its gap. This sensor reads the code on the rim of the vertical encoder wheel as it rotates to control the operation of the vertical motor during paper feed.
SN	Horizontal Encoder Sensor	Mounted on the carriage with the horizontal encoder (a film strip) positioned in its gap. This sensor reads the code on the edge of the horizontal encoder as the carriage and print heads move horizontally to control the operation of the horizontal motor during printing as the carriage moves left and right during printing.
Solenoids		
SOL	Air Release Solenoid – SOL 1	Located under the right corner of the front cover, near the envelope selector. When the air level sensors detect that there is air in a tank, the system activates the air release solenoid to suck air from the tank. The partial vacuum pulls in the sides of the tank. This changes the position of the feeler on the side of the tank (used for ink level detection) and pulls ink into the tank from the ink supply tube.
Switches		
SW	Top Cover Switch	Mounted under the front edge of the top cover of the printer. Detects when the top cover of the printer is open or closed. The printer will not operate if the top cover is open.
SW	Duplexer Cover Switch	Mounted on the DIB inside the duplexer. Detects when the duplexer cover is open or closed. The printer will not operate if the duplexer cover is open.
Thermistor		
TH	Thermistor	This is a small bulb thermistor on the end of a wire and attached to the HRB. This thermistor measures the temperature around the print heads.

Print Heads

Overview



1	Carriage Unit
2	Print Head Tank
3	Air Release Valve
4	Ink Level Levers

6

Print Head

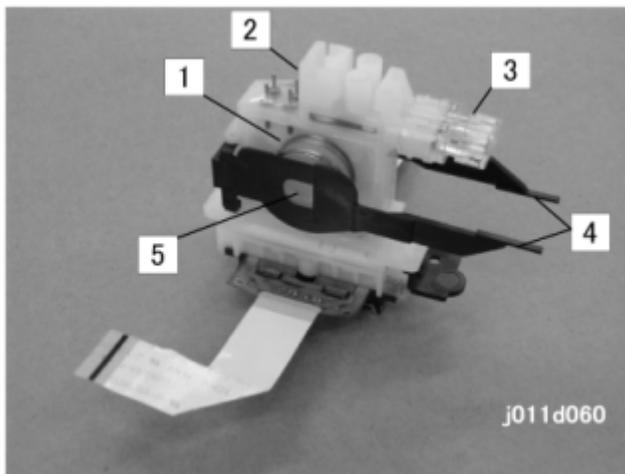


The wide print head increases the width of the band printed with one pass. This lets the machine print faster.

Print Head Specifications

Item	J012/J013/J014
Number of Print Heads	2 (Y/M, K/C)
Number of Nozzles	192 x 4 colors 192 nozzles x 2 lines/head
Array	Cross-Hatch (150 dpi x 2 lines)
Voltage Element	Piezoelectric

Print Head Tank



1	Ink Supply Port
2	Ink Reservoir
3	Air Release Valve
4	Ink Level Levers
5	Plastic Bellows

The printer employs a dual-tank system.

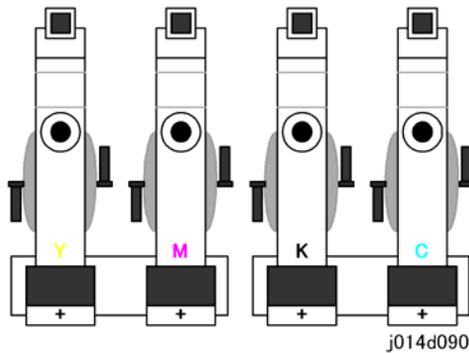
Each ink cartridge (Y, M, C, K) is connected to a print head tank via a plastic tube.

The first tank of the dual-tank system is the ink cartridge that supplies the ink through a tube to the print head tank unit. The second tank is the small ink reservoir inside the print head tank unit.

The high volume ink cartridges and the carriage components are extremely lightweight.

A print head tank has four main parts as shown above:

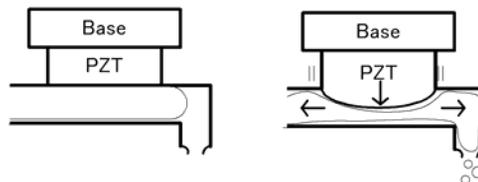
- **Ink supply port.** Ink enters here from the ink cartridge mounted under the operation panel.
- **Ink reservoir.** This is where ink collects before it is fed to the print head below.
- **Plastic bellows.** A spring forces out the flexible, thin plastic film on the left side of the ink tank.
- **Ink level lever.** When the ink tank is mounted in the printer, this lever pushes the bellows down to increase pressure in the ink reservoir. The ink level sensor mounted on the carriage detects the position of these arms to determine the amount of ink remaining in a tank. (The actuator spreads outward when the bellows gradually collapses as ink is consumed.)
- **Air release valve.** Purges air periodically to keep the ink inside the ink tank unit under the prescribed pressure and the amount of air in the tank low.



The illustration above shows the arrangement of the print heads and print head tanks.

- Two print head tanks are mounted on one print head unit.
- Each print head tank unit feeds to its own nozzle array (one for each color).
- Each print head tank holds 4.3 ml of ink.

Ink Ejection Device

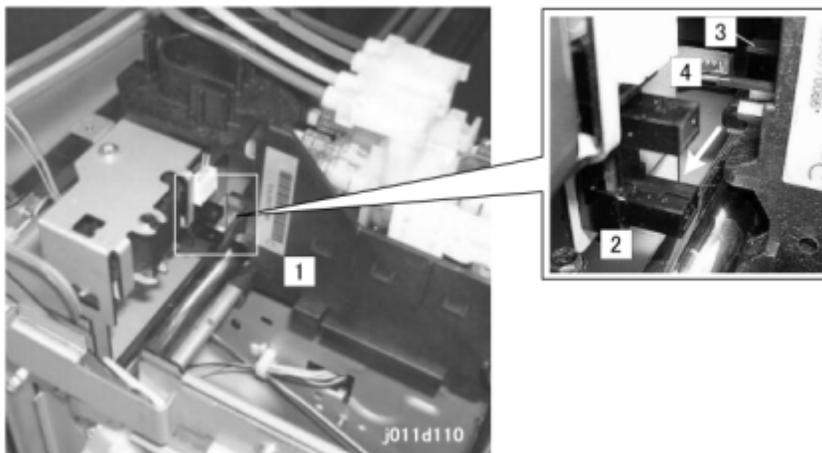


Each print head uses a piezo-electric element (PZT) . This forces ink from the ink reservoirs out of the ink nozzles and onto the paper.

This is done with pressure. At the prescribed time, an electric charge is applied to the PZT. This makes the PZT expand. The expansion of the PZT puts pressure on the ink below. This makes the ink move in both directions. The ink on the right is forced out the ejection port.

This device is unique. Other printers on the market use small heaters that form bubbles to eject ink from the ports.

Ink Near End



The printer detects ink near-end in two ways:

- The printer software maintains a count of how much ink is consumed from each cartridge and signals near-end when a cartridge is nearly empty.
- As a backup method, the ink level sensor monitors the positions of the ink level levers on the sides of the ink tanks. This is described below.

Each print head in the ink tank unit [1] has a ink level lever. This lever presses against a spring loaded bellows in the center of the print head tank. The right side of each tank is constructed of flexible plastic:

- As ink enters the tank, the pressure of the ink pushes against the side of the tank and moves the lever away from the side of the print head tank.
- As ink is consumed during printing, the vacuum created by the ink leaving the tank pulls the lever toward the side of the print head tank.

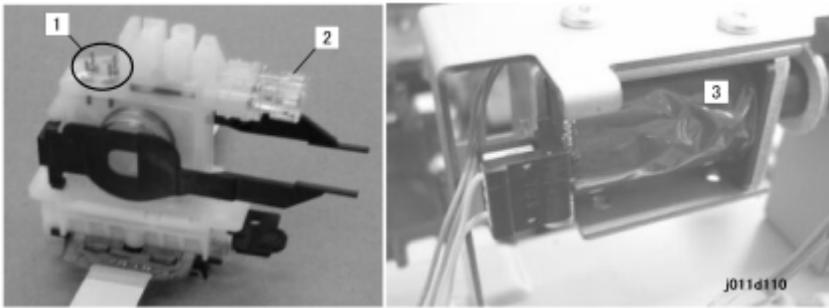
The ink level sensor [2], mounted above the front guide rail, checks the left and right positions of the ink level levers [3] and [4] every time the carriage passes.

When the ink level sensor detects that a lever is completely flat against the side of the tank, the printer sends a prescribed amount of ink to the tank from the ink cartridge.

The sensor signals the 'ink near-end' if the ink level lever does not return to the full position (away from the side of the tank) within the prescribed time after the printer requests a refill from the ink cartridge.

After the near-end alert, the printer will continue to print with the ink that remains in the partially filled tank until the printer issues the ink end alert.

Ink Out



A pair of vertical sensor pins [1] is provided for each tank. These pins detect changes in the voltage differential on the surface of the ink inside the print head tank to detect the presence of air. When these terminals detect air in the tank, air escapes through the air release valve [2] opened by the air release solenoid [3]. This allows more ink to enter the tank.

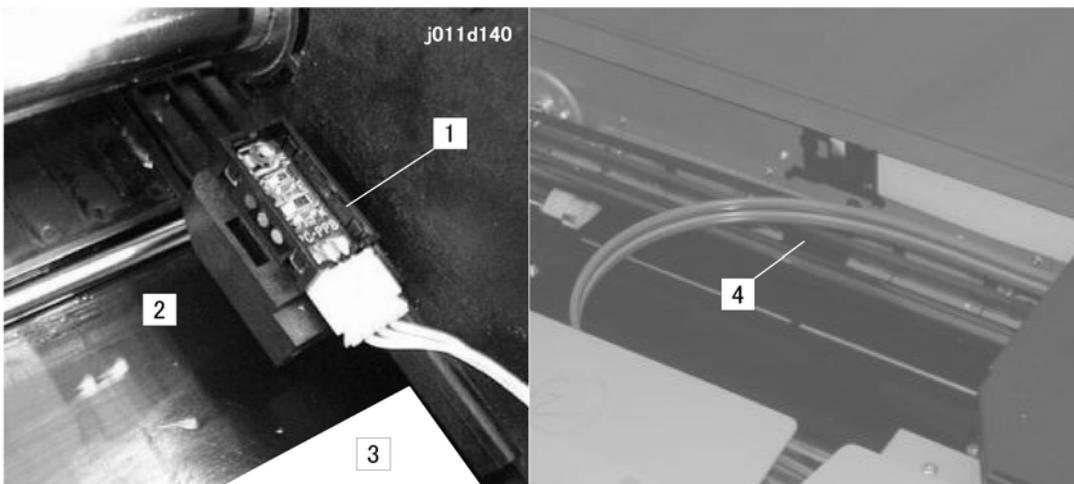
6

This is a continuous operation. The sensor pin readings signal the ink-out condition when:

- The ink near-end alert has been issued.
- The continued presence of air in the tank indicates that no ink remains in the tank.

As a backup measure, the firmware counts the amount of ink consumed after every near end occurrence. When this count reaches the value prescribed for the ink cartridge, this will also signal an ink-out condition.

Registration Sensors



1	1st Registration Sensor
2	Transport Belt
3	Paper (Leading Edge)
4	2nd Registration Sensor

1st Registration Sensor

The 1st registration sensor is attached to the left side of the carriage and moves side to side with the carriage during printing.

The 1st registration sensor performs two important functions for print control:

- Detects the leading edge of every sheet
- Detects the width of the paper when the carriage and sensor pass horizontally over the vertical edge of the paper as it feeds.

★ Important

- This is not automatic paper size detection. The paper size must be set with the printer driver.
- The printer will signal an alert if the detected size does not match the size selected for the print job.

2nd Registration Sensor

The 2nd registration sensor is a photosensor mounted over the transport belt in the middle of the transport belt. The 2nd registration sensor detects the leading and trailing edge of each sheet during high speed printing. The printer uses this information for print control timing.

Ink

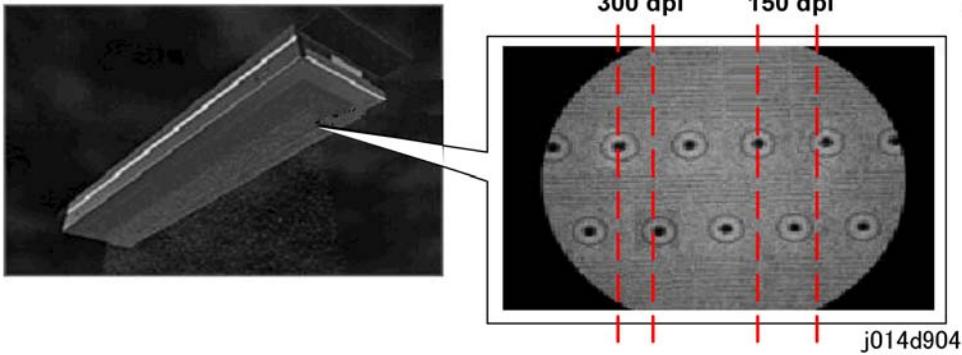
Viscous ink (liquid gel)

All four colors (Y, M, C, K) are fast drying pigment based ink suitable for high-speed simplex and duplex printing without stains on the backs of printed sheets. Due their high viscosity, the inks do not soak through the paper. Once the inks have dried they are resistant to the effects of exposure to water and sunlight so they will neither smear nor fade. There are two steps in the drying process. First, the ink quickly loses about 35% of its water content and gelatinizes, then the ink dries. .

Wide Print Head

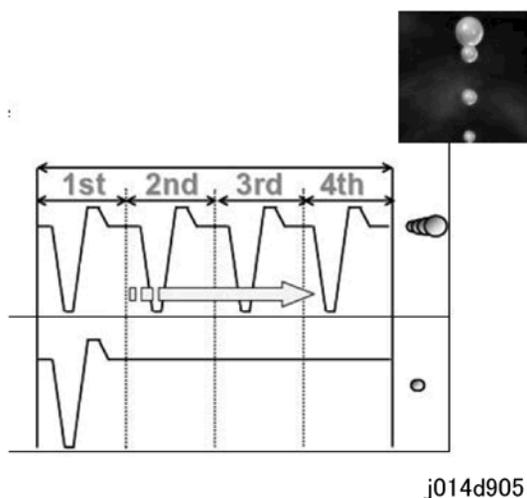
The large print heads are 1.27 in. wide (32.3 mm). Each head has 2 lines of nozzles for each color with 192 nozzles in each line (Total: 384 nozzles).

6



During 150 dpi printing only one line of nozzles eject ink as shown above. During 300 dpi printing the nozzle ports (alternately offset as shown above) of both lines eject ink.

The printing system employs Modulation Dot Technology through a piezo electric element that strictly controls the ink flow to form dots.

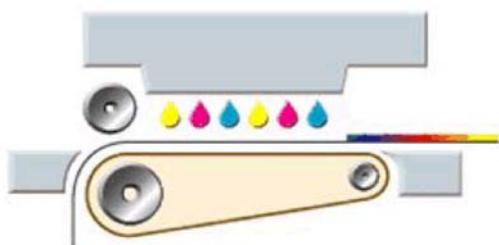


Four dots are required to form a large drop but only one is sufficient for a small drop. The four dots for a large drop are ejected very quickly as they form one dot before they reach the surface of the paper. The 4th dot in this case is ejected extremely fast under high pressure (1 Mega Pascal).

1. Dual Tank System

A dual tank arrangement means no waste of liquid gel (ink). The ink is stored at two locations, in the print cartridge and in a tank in the print head. When the level of the ink in the print head drops below a prescribed level, the tank will be refilled. The ink is vacuum fed from the print cartridge, into the print head ink tank, then to the print head nozzles. Vacuum feeding guarantees that a print cartridge is completely empty when the machine signals ink end. When a print cartridge needs to be replaced, it is completely empty.

Belt Transfer System



The machine employs an electrostatic transfer belt system to hold the paper in place during printing. The strong electrostatic charge on the belt holds the paper tightly to the surface of the belt as the paper is fed below the print heads that move above the surface of the paper. This system positions the paper more efficiently than a roller system and holds it in place. The printer can print over a wider area, the margins at

the top and bottom of the paper are only 4.2 mm (0.165"). The belt transfer system also allows use of wider print heads at faster printing speeds.

Level Color Mode

In order to conserve ink the printer can be set to the "Level Color Mode" to reduce the amount of ink used in graphic images only (text is not affected). Once Level Color Mode is selected the amount of ink used to print images and graphics is reduced by almost 50%, the text remains at the same density of the normal color mode.

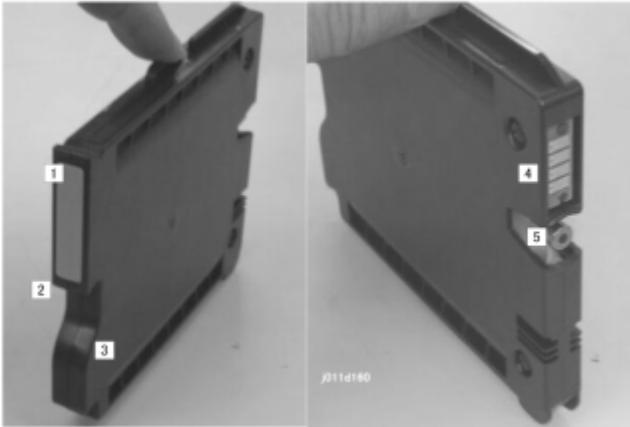
Ink Supply

Overview



1	Ink cartridges (x 4): Y, M, C, K
2	Ink Pump Unit
3	Ink Supply Tubes

Print Cartridges



1	Color index tab
2	Grip
3	Release
4	Contacts
5	Ink supply port

6

There is a separate print cartridge for each color (Y, M, C, K). Each print cartridge is vacuum packed. Ink cartridges are available in different sizes.

Note

- The starter cartridges are provided with purchase of the printer and contain less ink than the medium and large capacity print cartridges that must be purchased.

Size	Color
Starter	K
	C
	M
	Y
Medium (for purchase)	K
	C

Size	Color
	M
	Y

↓ Note

- The estimated service life of an print cartridges is only a rough estimate.
- The estimated service life may vary significantly due to the amount of coverage on a page, environmental conditions, and so on.
- After the printer signals the near end alert for an print cartridge, approximately 40 pages can be printed before the end alert is issued.

All the colors (Y, M, C, K) are pigment inks.

- These inks require only standard PPC to get quality printouts (special print media are not required).
- The inks do not smear because they dry more quickly.
- They do not fade in bright light. This makes their colors highly durable.

Print Cartridge Set Sensors



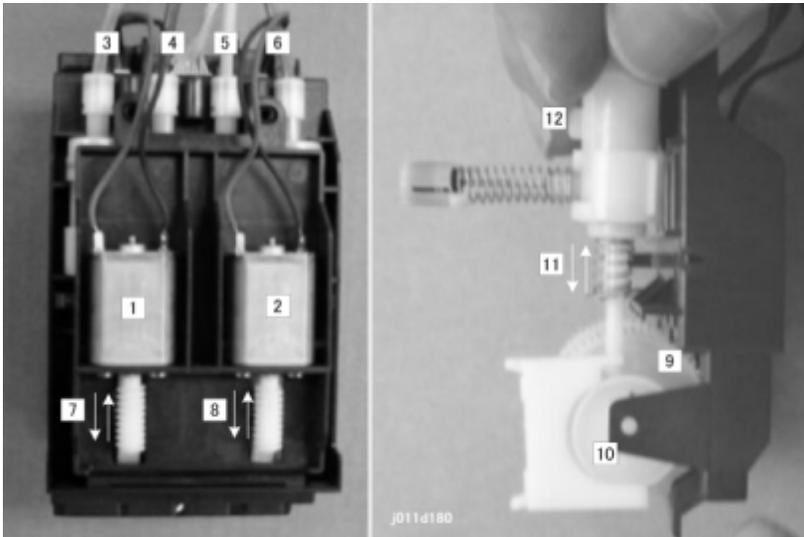
Four micro switches detect the print cartridges. The switches are connected in series above the cartridge set detection plate [1]. Each tank is provided with a micro-switch. The machine can specifically detect which print cartridge is not set correctly. An open switch signals when:

- A cartridge is not in the machine
- A cartridge is not installed correctly

To solve this problem, the operator must open the print cartridge cover and confirm whether:

- A cartridge is not in the machine
- A cartridge is not installed properly

Ink Pumps



6

1	Ink Pump Motor 1
2	Ink Pump Motor 2
3 to 6	Ink Supply Tubes for Y, M, C, K ink.
7	Worm Gear (1st supply motor)
8	Worm Gear (2nd supply motor)
9	Gear
10	Cam
11	Plunger
12	Pump

The ink supply pump is divided into two compartments:

- M/Y compartment (for Magenta, Yellow Ink cartridges)
- K/C compartment (For Black, Cyan Ink cartridges)

Each compartment contains:

- 1 pump motor.
- 2 pumps (one for each print cartridge)
- 2 cams

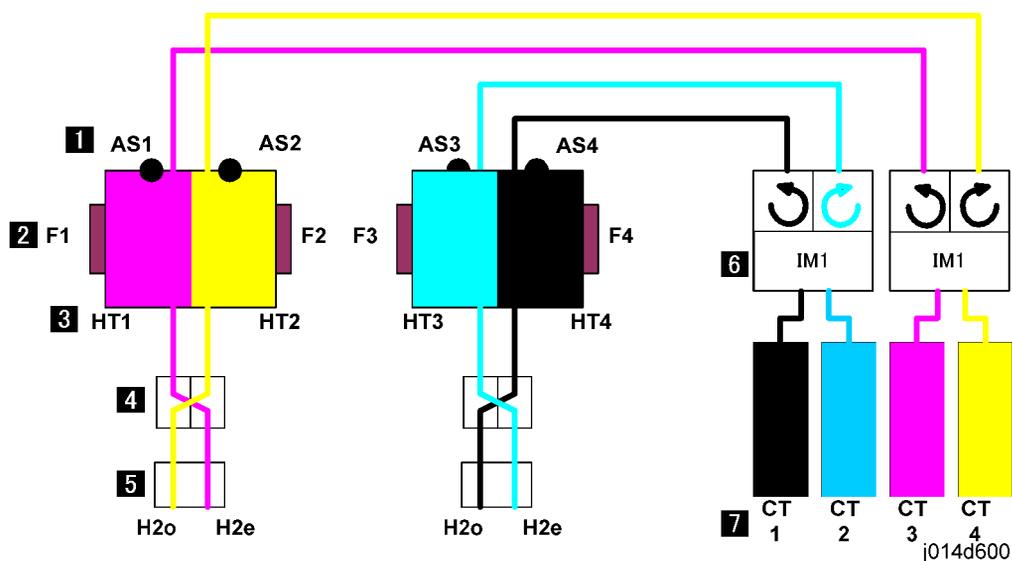
When a print head tank needs ink:

- The printer switches on one ink pump motor. The motor and its worm gear are rotated forward or reverse (depending on which type of ink is requested). Only one pump operates at a time.
- One or the other pump is operated, depending on whether the ink pump motor rotates forward or reverse. (Two pumps that share a motor cannot operate together at the same time.)
- A cam striking a plunger vibrates the plunger to form the vacuum in the line that sucks ink from the cartridge.
- The supply motor operates long enough to pump the prescribed amount of ink to the tank. Then it switches off.

Print Heads

6

The mechanisms that supply the ink from the print cartridges to the print heads are identical for the machines of this series.



No.	Component	
1	AS	Air Sensors x2

No.	Component	
2	F	Feelers x4
3	HT	Head Tanks x4
4	---	Filter Units x2
5	H	Print Heads x2
6	IM	Ink Pump Motors x2
7	CT	Print Cartridges x4

An air sensor [1], two feelers [2], and head tank [3] comprise the reservoir of the ink supply system.

The ink flows from the head tank through a filter [4] that contains the piezoelectric element that expands upon application of a electrical charge to force ink out of the nozzles of the print head [5].

Two ink pump motors [6] drive the simple pump mechanisms that draw ink out of the print cartridges [7] and send it to the head tanks.

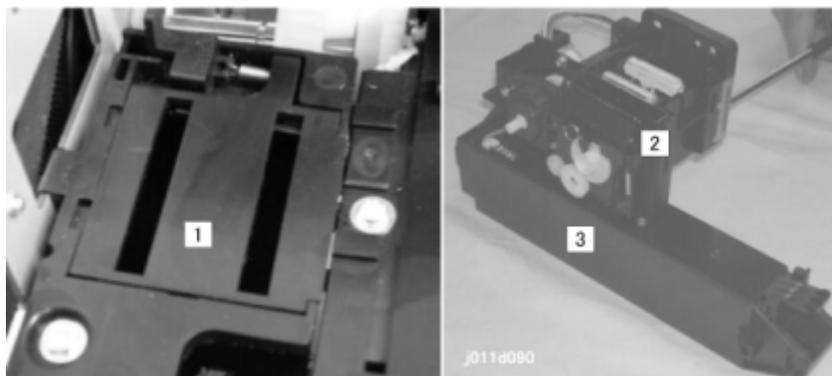
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One ink pump motor operates the pumps of two print cartridges. The ink pump motor drives a single worm gear. The direction of rotation of the gear determines which pump is operated. For example, when the KC ink pump motor in the illustration above rotates the worm gear forward, the pump draws cyan ink (C) from the C print cartridge, and when the motor reverses, it draws black ink (K) from the K print cartridge.

The ink pump motor switches on in response to a request for more ink when the ink level sensor detects that the position of a feeler on the side of a tank indicates that a tank is low. Ink is also drawn into the tank from the ink supply tubes when the air sensors detect too much air in a tank and not enough ink. The air sensor activates the air release solenoid which creates a partial vacuum inside the tank that purges the air from the tank through a vent and at the same time draws more ink from the supply tubes into the tank.

Print Head Maintenance

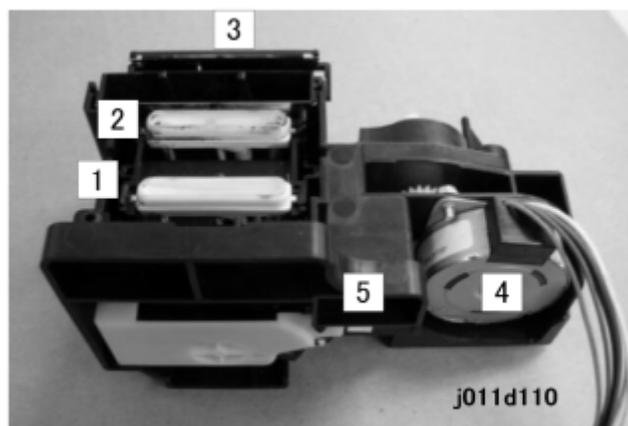
Overview



1	Flushing Gate
2	Maintenance Unit
3	Ink Collector Tank

Maintenance Unit

Overview



The maintenance unit performs two important functions:

- Keeps the surface of the print heads moist when they are not being used.

- Cleans the print heads with suction during print head cleaning. (The print heads are also cleaned automatically at prescribed intervals.)

Caps [1] and [2] cover the print heads when the carriage is at the home position on the right side of the printer.

- Cap [2] is the only cap that can siphon excess ink from a print head. The ink gets siphoned from the head with a simple, pressure tube-pump mechanism.

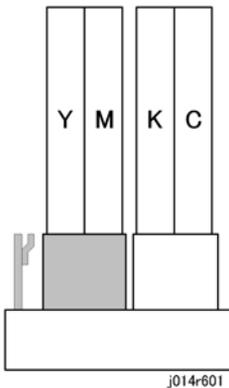
During print head cleaning:

- The maintenance motor [4] runs forward. Two cams lower the bottom of the unit.
- Next, the motor reverses. When the motor reverses, it disengages a one-way clutch attached to the main shaft. This allows it to rotate a second shaft that rotates a cam against the side of the plastic tube. This alternating pressure and release on the side of the tube comprises a very simple pump mechanism.
- At the prescribed time, the motor runs forward again until a feeler on the main shaft reaches the gap of the maintenance HP sensor (located at [5] (but not shown). This switches the motor off.
- Another cam attached to the main shaft raises and lowers the wiper [3]. The wiper cleans the surface of the print head above as the carriage moves left and then right.

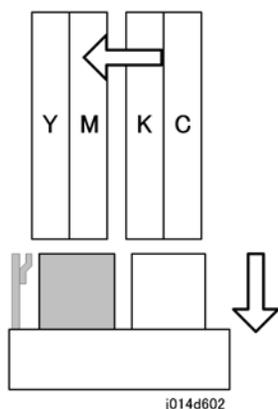
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Maintenance Unit Cleaning Cycle

The operator can start the cleaning operation from the printer driver or the operation panel. You can Print Head 1 or Print Head 2 (or clean them both) if you start the clean job with the printer driver.

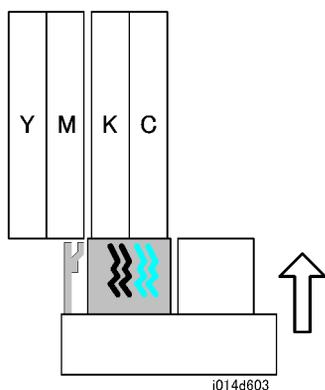


Cleaning starts with the carrier and print heads capped and resting on top of the maintenance unit as shown above.

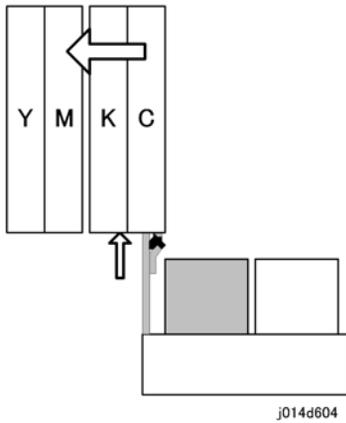


When the cleaning cycle starts, the maintenance unit is lowered by the rotation of the main shaft. The cams rotate away from the bottom of the unit.

At the same time, the carriage moves the print head unit to the left.

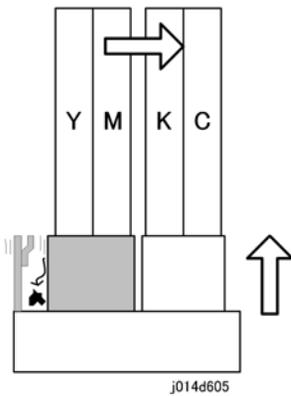


The carriage moves the first print head above the first vent of the maintenance unit (in this example, Print Head 2 "K, C"). Only the first vent can siphon ink from the print head into the ink collector tank. Another cam on the main shaft presses the maintenance unit up so the C print head covers the first vent. Next, the maintenance motor reverses. The one-way clutch disengages the main shaft and engages the second shaft. This operates the tube-pump. The suction from the pump sucks ink from the surface of the print head.



Next, the maintenance unit lowers, and another cam raises the wiper. At the same time the carriage moves the print heads left far enough so the vacuumed print head brushes past the wiper. The wiper cleans the ink from the print head.

6



Next, the carriage moves the print heads back to the home position. The maintenance unit caps the print heads. A cam on the main shaft below vibrates the small scraper. This removes the ink bolus from the wall of the trap and sends it to the ink collector tank.

★ Important

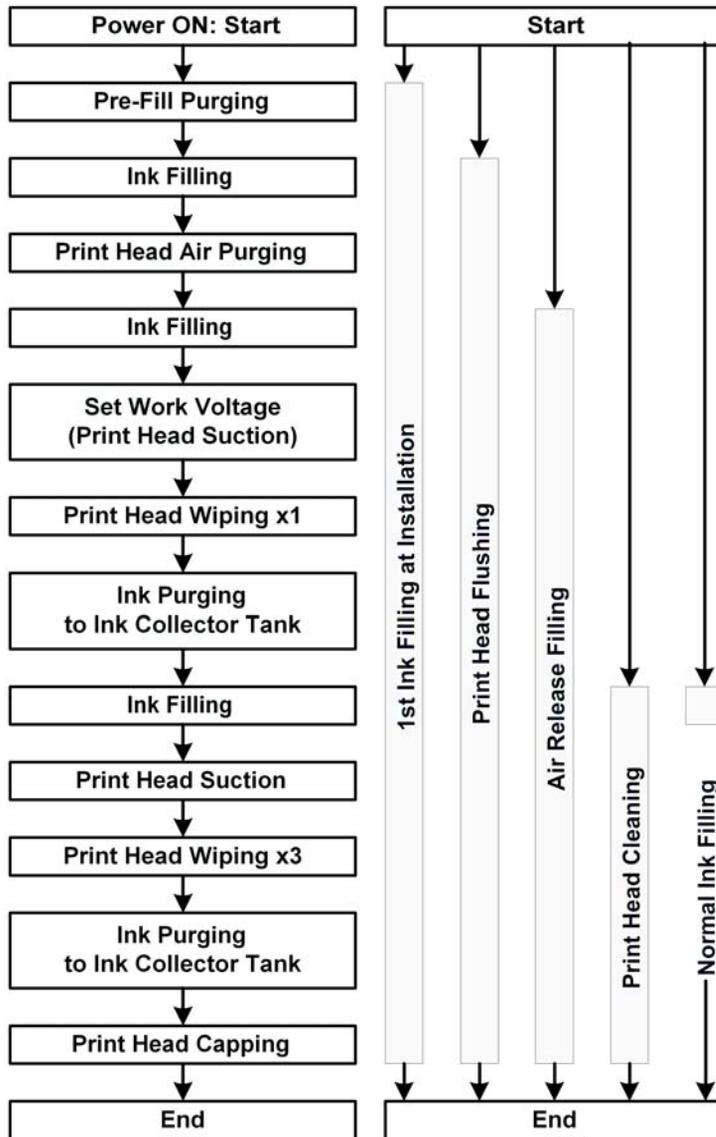
- This cycle is repeated for each print head selected for cleaning. For more, see Section "4. Troubleshooting".
- This cleaning cycle is also done automatically for all print heads if the printer stays idle for the time intervals shown in the table below.

Cleaning Table

Idle Time	BitSW 8-3: Off (Value is "0")	BitSW 8-3: Off (Value is "0")
0 < 10hours	No auto maintenance	

Idle Time	BitSW 8-3: Off (Value is "0")	BitSW 8-3: Off (Value is "0")
< 10hours, < 7days	Ink spit before printing	
< 7days, < 1 month	Cleaning	
< 1 month, < 3months	Air release and cleaning	
> 3 Months	Air Purge/Ink Filling	Flushing

Print Head Maintenance Cycles



j012d902

There are three basic ink supply operations:

- Initial Filling
- Normal Filling
- Air Release Filling

Initial Filling

This occurs with the print head ink tanks empty the first time the printer is switched on with ink cartridges in the printer, or after a new ink cartridge has been installed to replace an empty cartridge after the print head ink tank has emptied. Ink supply to the empty print head ink tank from the ink cartridge starts automatically after the printer is switched on.

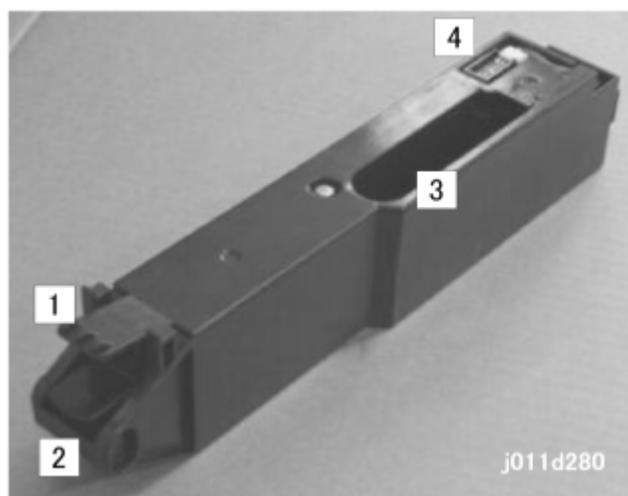
Normal Filling

The machine monitors the level of ink in each ink tank and replenishes the ink supply as soon as the amount of ink drops below the prescribed level.

Air Release Filling

If air is detected inside a print head ink tank at power on, at the beginning of normal filling, at the start of automatic cleaning (done at prescribed intervals), or after air purging (also done at prescribe intervals), then all the ink is purged from the ink tank and replaced immediately with fresh ink.

Ink Collector Tank



1	Ink Collector Tank Release
2	Tank Handle
3	Tank Entrance Slot
4	Ink Collector Tank Sensor

The ink collector unit holds the used ink sent to it from the maintenance unit above.



Inside the printer, the maintenance unit [1] sits on top of the ink collector tank [2].

The ink from the maintenance unit enters the tank through the slot [3].

The ink collector tank [4] sensor detects when the tank is full and needs to be replaced.

Once the ink collector tank is full, discard it.

★ Important

- Obey the local laws and regulations regarding the disposal of items such as the ink collector tank.
- Never attempt to clean an ink collector tank and use it again.

The printer should be able to use one ink collector tank for about 5 years of normal use.

Ink Collector Ink level sensor



The ink collector ink level sensor [1] is a “smart” reflective photosensor.

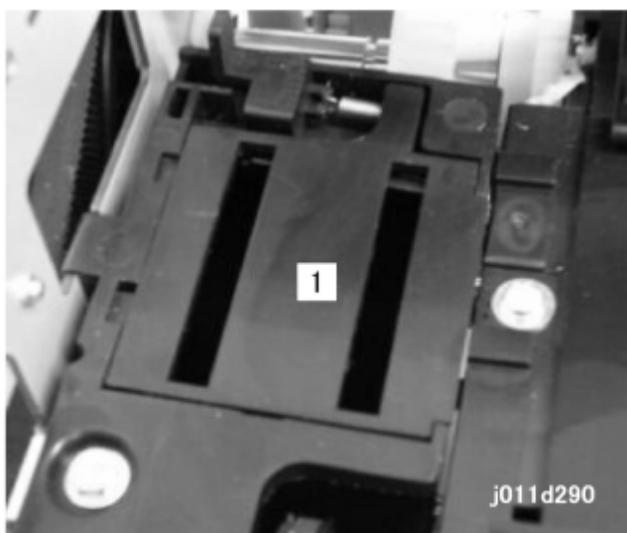
The photosensor measures the changes in the density of the ink materials in the tank. This lets the printer know when the tank is full.

A prompt tells the operator when the printer needs maintenance as soon as this sensor detects the near-full condition. After the near-full alert prompt appears, the printer is allowed to do up to 200 prints

Note

- These are only rough estimates. Fewer pages are printed if many normal and full print head cleanings are done after the maintenance alert.
- SC 992 (Ink Collector Tank Full Error) appears if no maintenance procedures are done. The printer cannot be used once SC992 has appeared. The ink collector tank must be replaced before the printer can be used.

Flushing Unit



During a long print job, the machine flushes all the nozzles with a very small amount of ink at 15 second intervals. The ink flushed from the nozzles goes through the slots of the flushing gate [1] into a sump below. This keeps the nozzles clear and in good working condition.

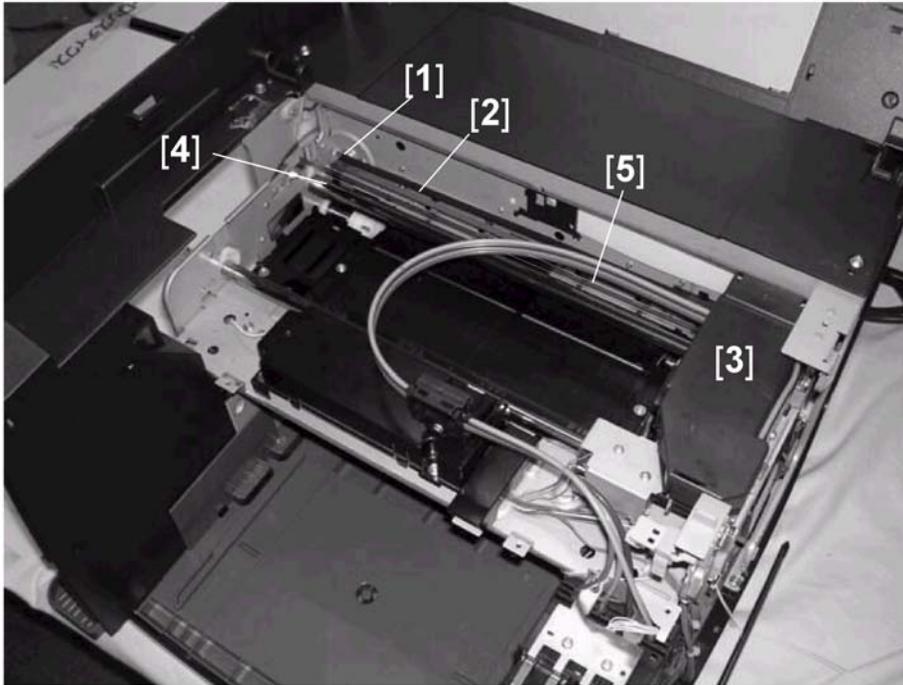
The flushing gates [1] and the ink collector sump (below the gate) are located on the left side of the printer.

Note

- The sump is not connected to the ink collector tank. Ink flushed into the sump remains there.
- The sump of the collection unit should never fill to capacity for the service life of the printer.
- The flushing gate and sump should never require replacement.

Carriage Drive

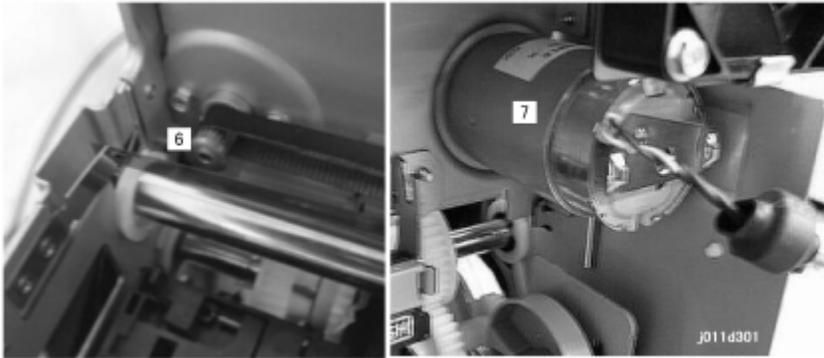
Overview



j014d610

1	Horizontal Motor Drive Gear
2	Timing Belt
3	Carriage (Print Heads)
4	Guide Rod
5	Horizontal Encoder (Translucent Film)

A horizontal motor drive gear turning [1] drives a timing belt [2] connected to the carriage [3]. The forward and reverse rotation of the horizontal drive motor moves the carriage to the left and right side of the printer. The horizontal encoder strip [5], mounted in front of the timing belt is threaded through the horizontal encoder sensor mounted on the carriage. This sensor detects the position of the carriage at the time the carriage moves from side to side during printing.



The picture above shows the horizontal driver gear [6] of the horizontal drive motor [7] mounted on the left rear corner of the printer behind the duplex unit.

Envelope Selector



j014d611

Move the envelope selector [1] to adjust size of the gap between the print heads and the surface of the paper.

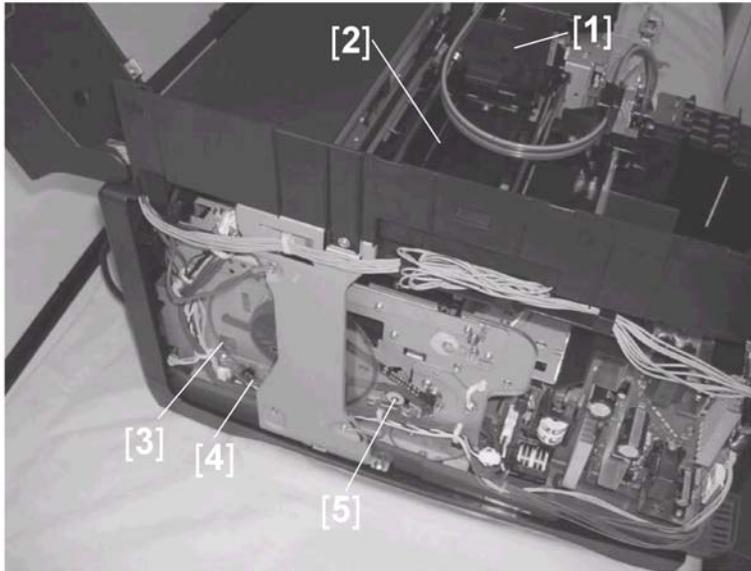
Pushing the lever to the back moves the print heads slightly away from the surface of thick paper and envelopes. This prevents chaffing the printed surface and smearing ink.

A cam operates when the envelope selector pushed back for printing on thick paper or envelopes. This moves a guide rod to create a gap about 0.8 mm wider than the gap for normal printing. Normally, this lever should be set forward for printing on normal paper.

When the envelope selector is pushed back, this raises a feeler into the gap of the carriage position sensor. When the envelope selector is pulled forward, the feeler leaves the gap and switches the sensor off. This mechanism is used to detect the up and down position of the carriage and print heads.

Paper Feed, Transport, Paper Exit

Overview

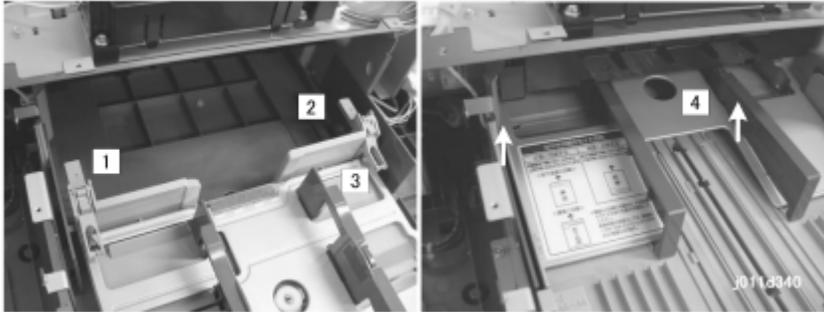


j014d612

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1	Transport Belt Unit
2	HVPS (High Voltage Power Supply)
3	Vertical Encoder
4	Vertical Encoder Sensor
5	Vertical Motor

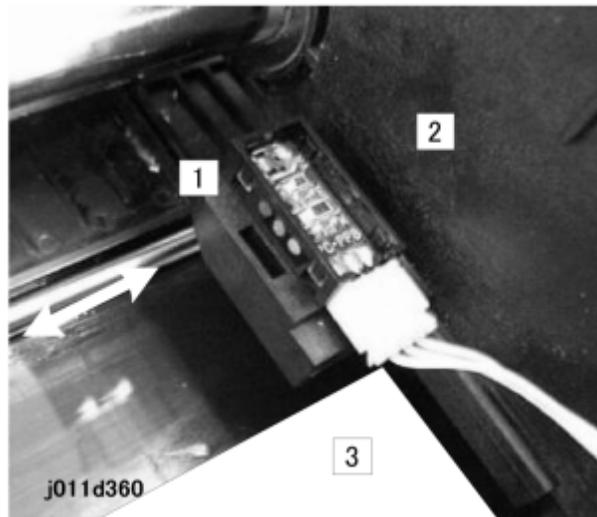
Cassette Lock/Release



The arms [1] and [2] on both sides of the cassette [3] (guided by rails slanting upward) raise the bottom plate [4] when the paper cassette is pushed into the printer. This raises the paper in the cassette to the correct height for paper feed.

Leading Edge and Paper Size Detection

6



There is no paper size sensor in the standard paper cassette or in the optional 500-Sheet Paper Tray. The paper size can be set on the printer operation panel. The paper size can also be selected with the software application or the printer driver.

★ Important

- The paper size (and other settings) in the software application always have priority over the printer driver settings.

The 1st registration sensor [1] is mounted on the carriage unit [2] and moves from side to side with the carriage during printing.

- The 1st registration sensor detects the leading edge of the sheet [3] for feed timing.
- The 1st registration sensor also detects the width of the paper when it passes over and detects the left vertical edge of the paper. This ensures that the paper below is wide enough for the maximum printing area specified by the paper size selection for the print job.

Paper Jam, Trailing Edge Detection



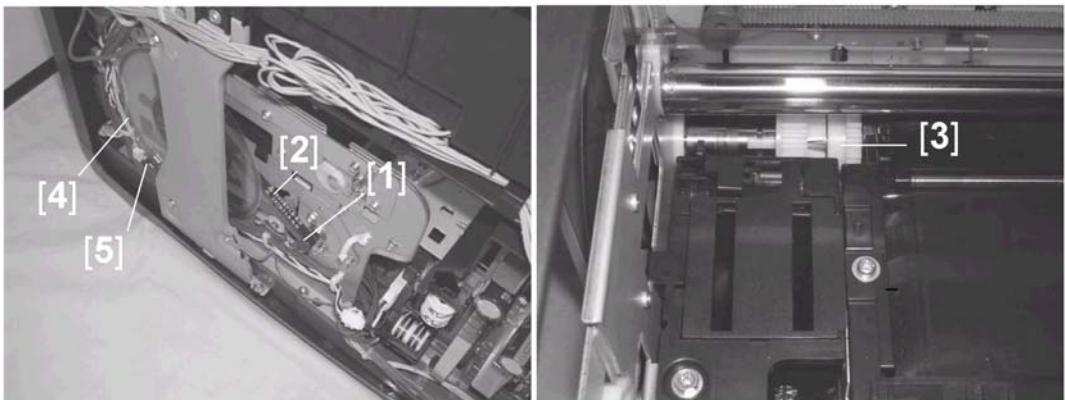
6

The feeler [1] is pushed down by every sheet of paper that arrives and then pops up again when the trailing edge of the sheet passes over the feeler. When the paper presses down the feeler, this turns on the trailing edge sensor [2]. The length of time the trailing edge sensor remains on is used to measure the length of the paper for printing control.

A paper jam alert occurs when:

- The paper feed roller rotates forward twice.
- The trailing edge sensor does not go on after 2 rotations of the paper feed roller.

Paper Transport Drive



j014d613

The vertical motor [1] drives the timing belt [2] that rotates the transport roller [3].

The rotation of the transport roller also drives the paper feed roller when the paper feed clutch engages the feed roller (not shown above).

The edge of the vertical encoder [4], attached to the shaft of the transport roller, passes through the gap of the vertical encoder sensor [5] as the encoder wheel rotates. The vertical encoder sensor reads the coded markings on the rim of the vertical encoder and sends this information to the CPU. The CPU uses these readings to control the on/off timing of the transport belt and the paper feed roller:

★ Important

- When servicing the machine, work carefully to prevent scratching, breaking, or bending the vertical encoder wheel.

Paper Path

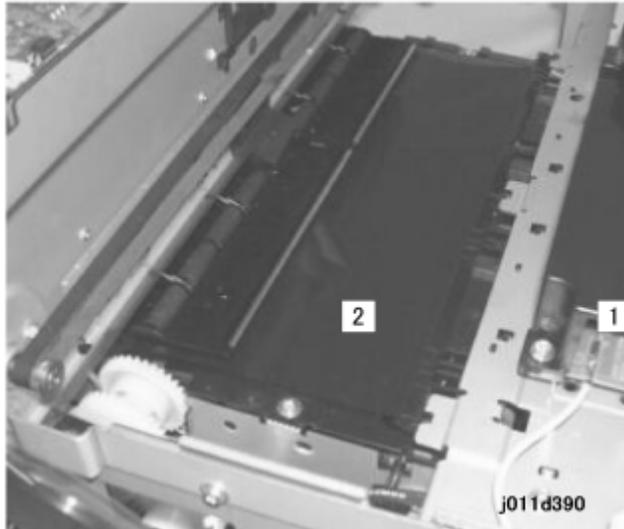
Here is a summary of the operation that sends paper through the printer:

1. The feed clutch energizes and engages the feed roller, then the rotation of the vertical motor drives the feed roller.
2. Paper feed roller feeds 1 sheet from the top of the stack in the paper cassette. A friction pad at the lip of the paper cassette prevents double-feeding.
3. The charge roller charges the transport belt. The electrostatic charge on the transport belt keeps the paper on the transport belt.
4. The sheet feeds onto the transport belt.
5. The feeler of the trailing edge sensor depresses and switches the trailing edge sensor on.
6. When the trailing edge sensor goes on, the carriage moves to the right of center. This lets the 1st registration sensor detect the leading edge of the paper.
7. The 1st registration sensor also detects the right edge of the sheet when the carriage and sensor move toward the carriage HP sensor on the right.
8. The detection of the right edge by the 1st registration sensor is used to determine the width of the paper in the paper path.

↓ Note

- The 1st registration sensor reads the right edge of only the 1st sheet of the print job. Thereafter, the 1st registration sensor does not right edge for any until the beginning of the next print job.
9. An area equal to the length of each print head gets printed when the carriage goes across the sheet from right to left.
 10. When the last line prints, the transport roller rotates only long enough to feed the length of the last sheet.
 11. The print job count increases by 1 after the paper exits.

Transport Belt



6

This printer uses the BT (Belt Transfer) system to transport paper through the paper path.

A high voltage power supply pack (HVPS) [1] energizes the charge roller below the transport belt [2].

The charge roller applies a charge to the transport belt. This static charge attracts the paper to the transport belt and holds it in place so it does not move during printing.

A temperature/humidity sensor below the transport belt monitors the temperature and humidity near the charge roller and transport belt. The temperature/humidity readings of this sensor are matched with values in lookup tables cross-indexed with combinations of temperature and humidity readings. The values read from the tables are used to adjust the width of the bias (bias pitch) applied to the transport belt. This operation, called belt charge control, operates within the following ranges of temperature and humidity:

Temperature:	0C to 35C (32F to 95F)	Adjusted in 2.5C (4.5F) steps
Humidity:	0% to 100%	Adjusted in 10% steps

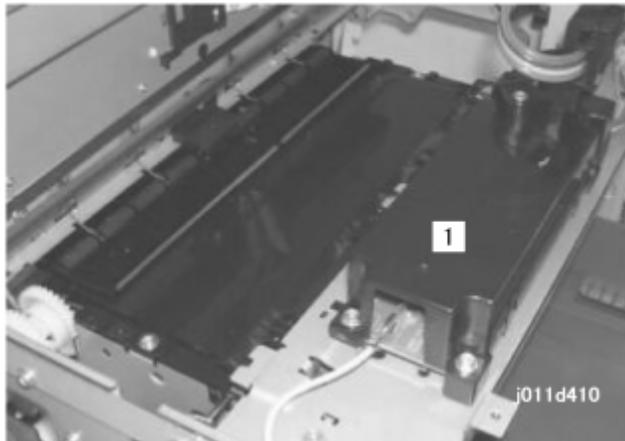
The machine uses the feedback of the temperature/humidity sensor to reduce the width of the charge applied to the transport belt below the print heads. This reduces the size of the electrical field to the smallest size that can still provide the optimum charge to keep the paper on the belt at the leading edge, center, and trailing edge of the paper without interfering with the operation of the print nozzles.

Belt charge control is done for every paper feed station (Tray 1, Tray 2, and bypass) and for every paper type (normal paper, envelopes, thick paper, and OHP).

The sharp curvature of the paper path separates the paper from the transport belt at the time paper gets fed out the paper exit.

For more details about how to adjust the transport belt charge control, please refer to Section "4. Troubleshooting".

Charge Leak Detection



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The printer checks for charge leaks:

- Immediately after the printer is turned on.
- When it gets a leak detection signal from the high voltage power pack at the time of printer operation.

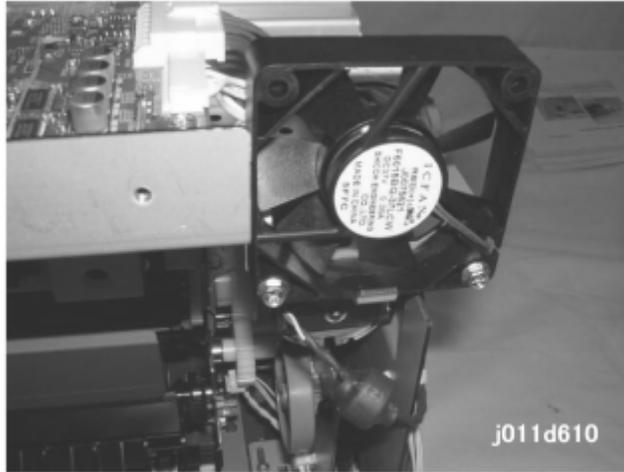
When a charge leak is detected:

- The voltage supply from the power pack [1] gets interrupted immediately
- The printer stops the current print job in progress.
- The carriage goes back to its home position.
- The print heads gets capped. The printer cannot operate.

To restore the printer to normal operation:

- Remove the cause of the leak.
- Turn the printer off and on.

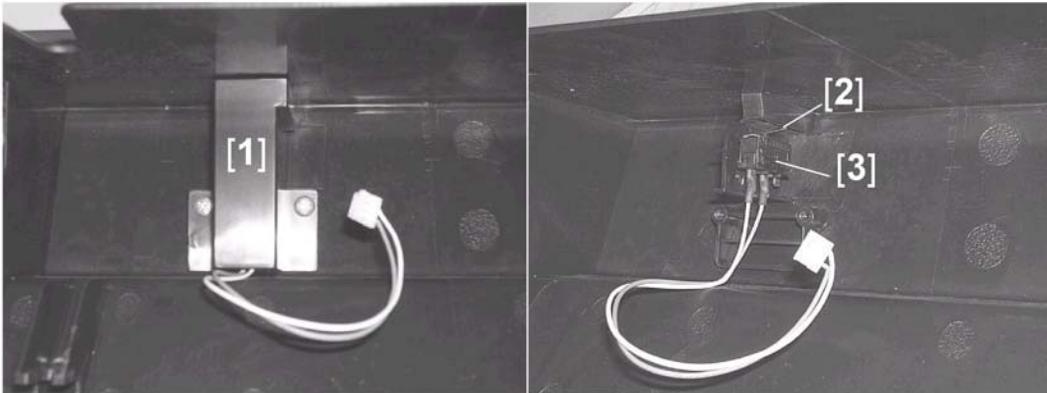
Cooling Fan



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The fan mounted behind the ventilation slots on the left rear corner of the printer draws hot air out of the printer and blows it out of the machine through the ventilation slots. This prevents a temperature rise inside the printer.

Scanner Unit Switch



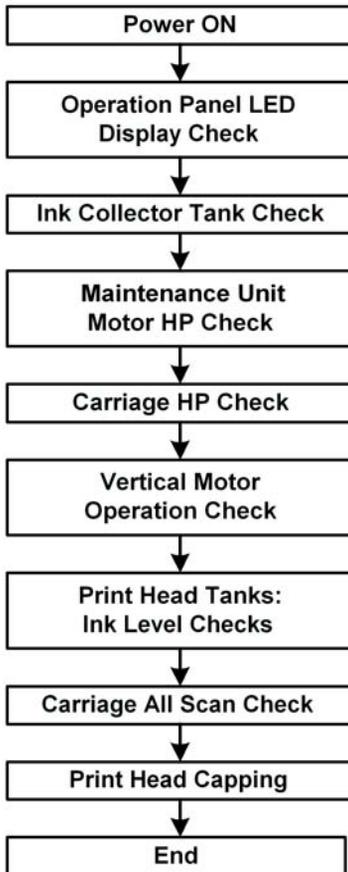
j014d614

The scanner unit sensor, mounted inside the front cover, is protected by a cover [1].

A plastic tab attached to the scanner unit depresses a feeler [2] which activates the sensor [3]. This tells the printer that the top cover is closed. The printer will not operate until the top cover is closed and this sensor has been activated.

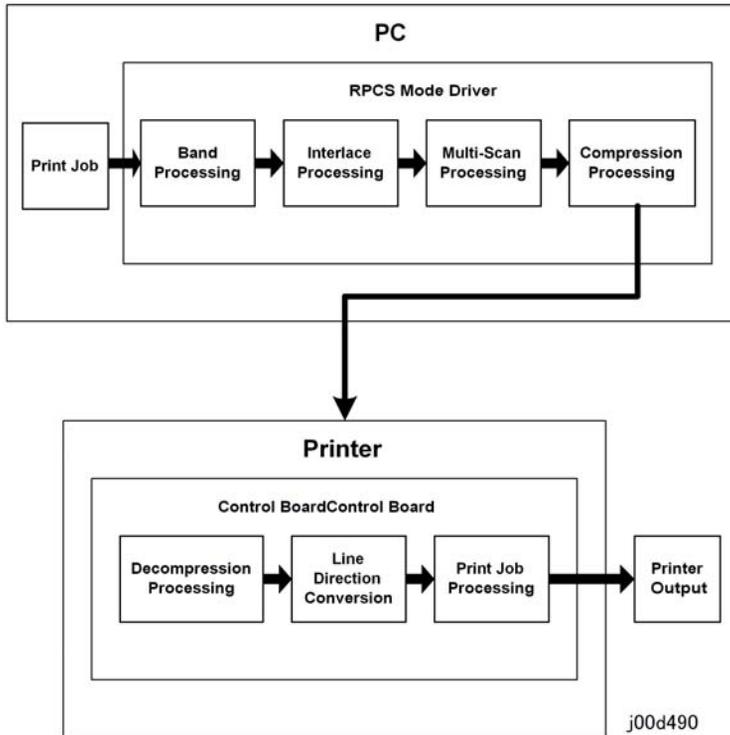
Basic Operation

Initialization Sequence at Power On



j012d901

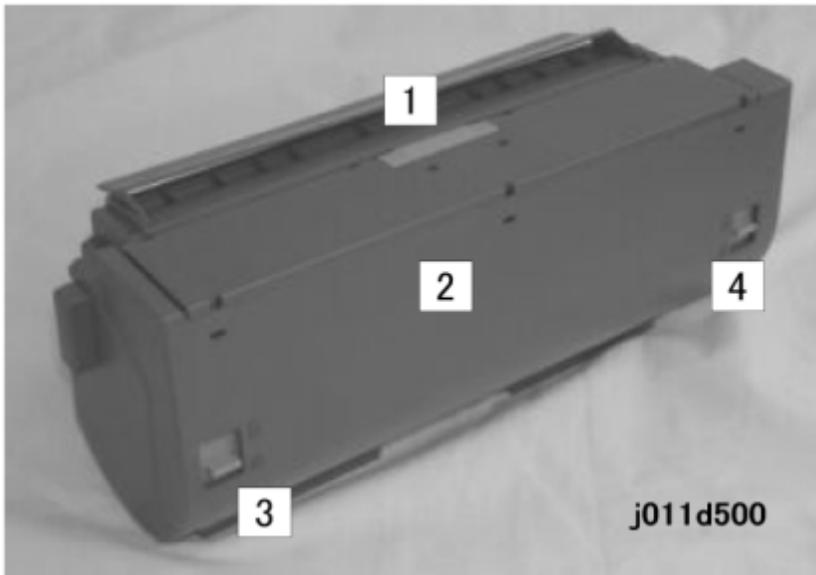
Image Processing



- Here is a brief summary of the steps in image processing:
- **Print Job.** The software application sends the print job to the printer driver.
- **Band Processing.** The print job gets divided into units of bands.
- **Interlace Processing.** The bands get broken into scan (print) units. Then the bits get converted for the direction of printing.
- **Multi-Band Processing.** Processing for individual lines.
- **Compression Processing.** The data gets compressed on the PC side. Then it goes to the printer.
- **Decompression.** The data gets decompressed when it gets to the printer.
- **Line Direction Conversion.** The lines get converted to match the direction of printing. It gets rotated 90 degrees depending on whether the print job is for Portrait or Landscape orientation.
- **Print Job Processing.** The print job gets output.
- **Printer Output.** The print heads on the carriage print the job.

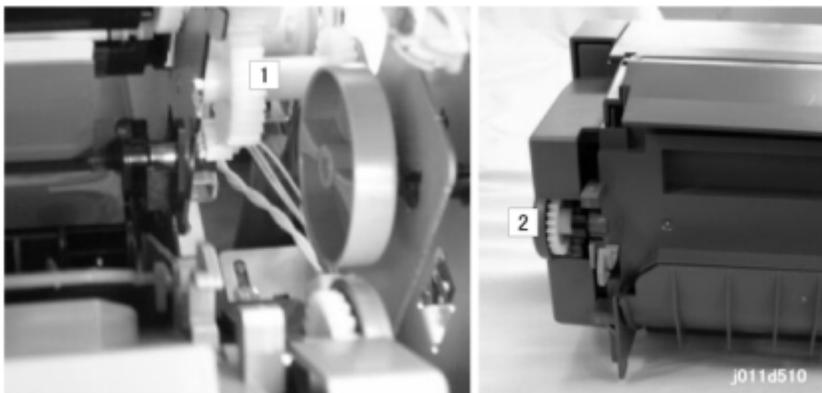
Duplex Unit

Overview



1	Duplexer Cover Button
2	Duplexer Cover
3/4	Duplexer Locks (x 2)

Duplex Drive



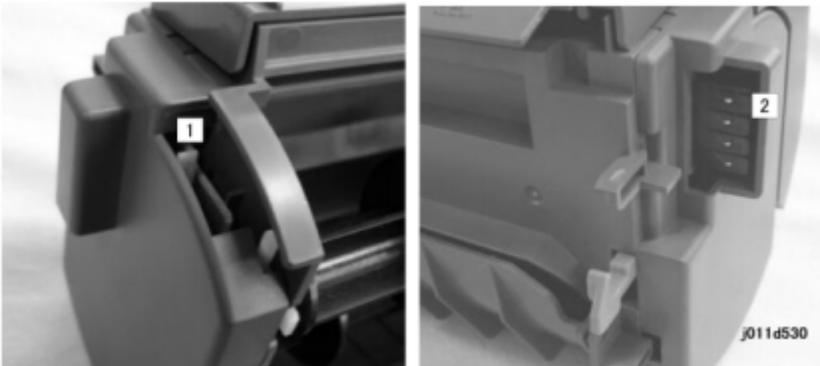
The main gear [1] of the vertical motor of the printer drives the duplex drive gear [2].

Here is a brief summary of how the duplex unit operates:

- The trailing edge sensor goes off after the trailing edge of the sheet passes overhead and the front side has printed.
- The vertical motor stops, and paper transport stops.
- The vertical motor reverses.
- The printed sheet feeds into the Duplex Unit.
- Once again, the vertical motor reverses.
- The inverted sheet feeds into the printer.
- The 2nd side of the sheet prints.

Duplexer Cover Switch

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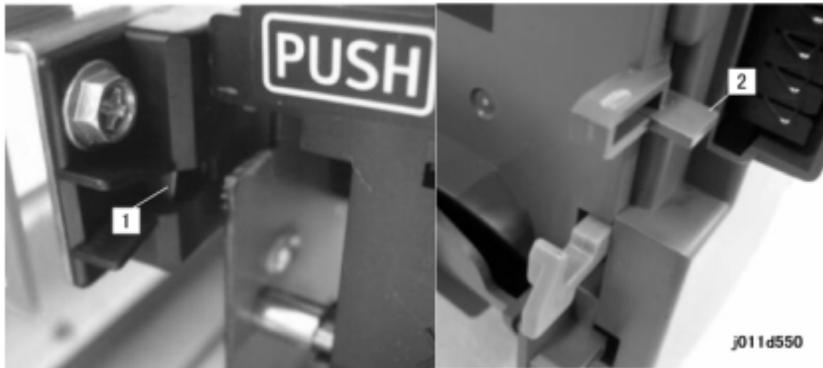
The Duplex Unit cover open switch [1] is a microswitch.

This switch detects if the cover is open or closed.

When the cover is closed the switch is closed. The circuit is closed at the 4 terminal pins [2] that connect to the DIB. The printer controls the Duplex Unit through the DIB.

The switch breaks the connection between the printer and Duplex Unit when the cover is open.

Duplexer Set Switch



The Duplex Unit set switch [1], a micro-switch in the printer, detects the presence of the Duplex Unit.

This occurs when the Duplex Unit is installed correctly on the back of the printer:

The unit the set lever [2] depresses the Duplex Unit set switch. Then it turns it on.

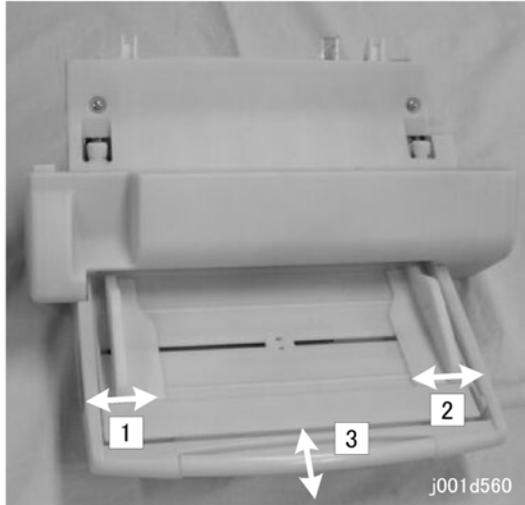
The printer signals an error (Paper Jam – Type 1) at these times:

- The Duplex Unit is not installed correctly
- The set lever has not fully depressed the Duplex Unit set switch

★ Important

- The duplex unit is not an option for this printer.
- The duplex unit must be installed at all times in order for the printer to operated properly.

Multi Bypass Tray (Option)

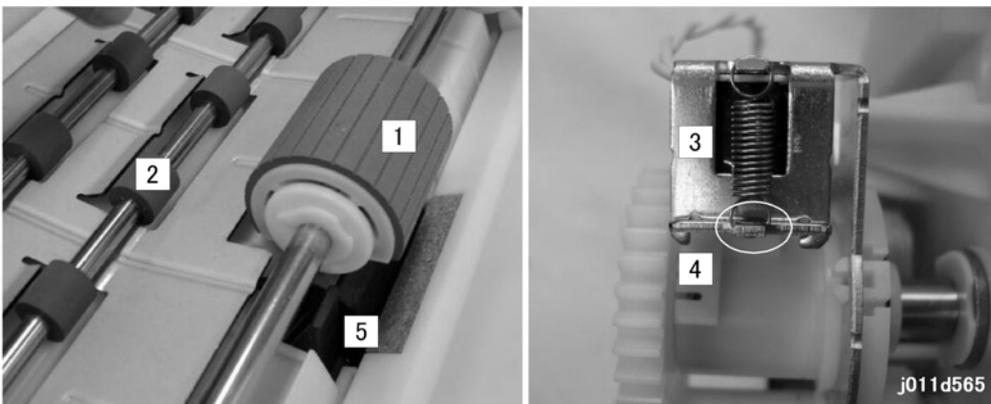


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The Multi Bypass tray is an external tray that can be detached and then reattached whenever it is needed. The bypass tray is equipped with side fences [1] and [2] that can be adjusted to accept a variety of standard paper sizes and envelopes.

The tray extension [3] can be extended for long paper sizes.

The tray can hold 100 sheets of standard weight paper (60 to 105 g/m²). For more details, please refer to the Section 7 "Specifications".



When a print job starts with the bypass specified as the feed source:

- The bypass paper feed motor switches on and rotates the pick-up roller [1] and paper feed rollers [2].

- The bypass paper feed clutch [3] activates and raises its pawl [4]. This releases the pick-up roller and allows it to rotate.
- When the pick-up roller, a half roller, rotates through its arc of 180 degrees it picks up one sheet of paper and pulls it out of the tray.
- A rubber friction pad [5] below the pick-up roller provides enough resistance to stop any sheet other than the one in contact with the pick-up roller from double feeding.
- Once the pick-up roller completes its arc of rotation (as shown above), the pawl [4] of the paper feed clutch [3] locks the pick-up roller and will not release it until the next sheet feeds.
- However, the clutch allows the paper feed rollers [2] to continue to rotate and feed the sheet out of the bypass tray.

Paper Feed Unit (Option)

Overview

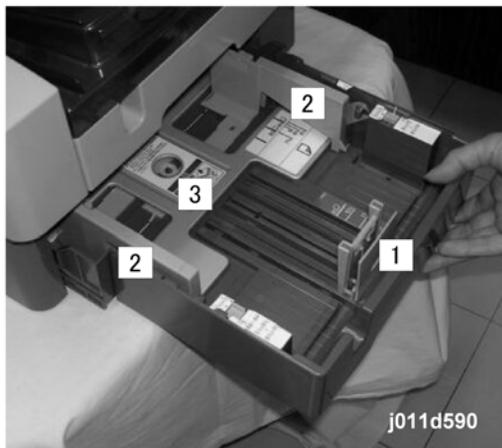


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The Paper Feed Unit (PFU) J506:

- Can be installed with the J008 only.
- Contains one universal paper cassette with adjustable fences that can hold a variety of standard paper and envelope sizes.
- Holds approximately 500 sheets of standard (80 g/m² (20 lb.)) A4/LT size paper

For more details, please refer to Section 7 "Specifications".



You can adjust and lock the end fence [1] and two side fences [2] to a variety of standard paper sizes.

When the paper cassette is inserted into the tray unit:

- Two guides force down the cassette arms on both sides of the bottom plate [3].

- The bottom plate rises against the bottom of the paper stack as guide rails raises the bottom stack when the cassette is pushed into the printer.
- The pressure of the bottom plate on the bottom of the stack keeps the top of the stack at the correct position to feed the paper.

Paper Feed

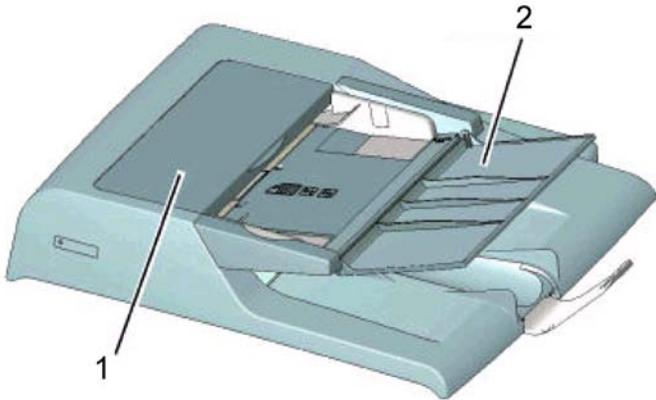


The paper feed motor [1] in the tray drives the feed roller [2]. The control board [3] controls the operation of the feed clutch (not shown). This engages the shaft where the feed roller is mounted. Then it rotates it at the prescribed times to feed paper from the tray.

A friction pad at the edge of the cassette below the feed roller does not let sheets double feed.

ADF

Overview

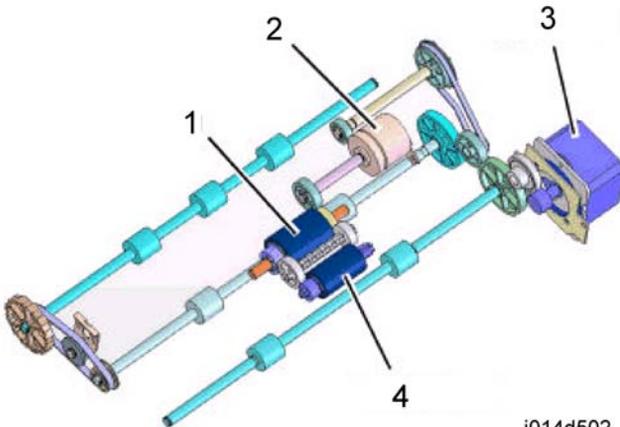


j014d501

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- 1. ADF
- 2. Original Tray

Drive



j014d502

- 1. Paper Feed Roller
- 2. Paper Feed Clutch

3. Original Feed Motor

4. Pick-up Roller

7. Specifications

General Specifications

ADF

Capacity	30 sheets (80g/m ² , 20 lb, 70 kg)		
Original size	Max.	216 x 356 mm (8.5 x 14 in.)	
	Min.	140 x 140 mm (5.5 x 5.5 in.)	
Original Weight	60 – 105g/m ² (16 – 28 lb, 52 – 90 kg)		
Original Feed Speed (Copying A4)		300 x 300 dpi	600 x 600 dpi
	B&W	60.476 mm/s	15.119 mm/s
	Color		

Scanner

Scanning Speed			
B&W	Copy	Fast (300 dpi)	60.6 mm/s
		Normal (300 dpi)	60.5 mm/s
		Best (600 dpi)	15.1 mm/s
	Fax	Standard (300 dpi)	60.5 mm/s
		Fine (300 dpi)	60.5 mm/s
		S-Fine (600 dpi)	30.2 mm/s
	TWAIN	B&W (300, 600 dpi)	60.5, 15.1 mm/s
		Gray (300, 600, 1200)	30.2, 15.1, 3.9 mm/s
Color	Copy	Fast (300 dpi)	60.5 mm/s
		Normal (300 dpi)	60.5 mm/s
		Best (600 dpi)	15.1 mm/s
	Fax	Fine (300 dpi)	60.5 mm/s

	TWAIN	Color (300,600,1200 dpi)	30.2, 15.1, 3.9 mm/s
Copy Scan Resolution			
Max	1200 x 1200 dpi		
TWAIN	100/150/200/300/400/600/1200 dpi 8bit/1bit grayscale		
Scan-to-Email	150/300/600 dpi		
Scan to FTP	150/300/600 dpi		

General Specifications

Basic Specifications

Type	Desktop	
Technology	GelSprinter method Dual print heads (192 nozzle x 2 lines x 2 heads = 192 ch x 4 colors)	
Printer Interface	USB 2.0 (high speed), Ethernet 10BASE-T/100BASE-T	
Printer Languages	J012/J013	RPCS Raster
	J014	RPCS Raster, PCL
Resolution	1200 x 1200, 600 x 600, 600x 300, 300 x 300 dpi (2bit) Max. 3600 x 1200 dpi equivalent	

Printing Speed			Toscana-C1a/b		Toscana-C1b	
			Raster		PCL	
			Mono	Color	Mono	Color
Fast	Print		18.5 or >	14.5 or >	18.5 or >	14.5 or >
	Copy		18.5 or >	14.5 or >	18.5 or >	14.5 or >
Normal	Print		10.5 or >	8.5 or >	10.5 or >	8.0 or >
	Copy		10.5 or >	8.5 or >	10.5 or >	8.5 or >
Fine	Print		5.5 or >	4.5 or >	5.0 or >	4.0 or >

	Copy	-	-	-	-
Max. Speed		28.5 ppm			

Print direction	Supports bi-directional printing	
Print Heads	Number of Heads	2 Heads (4-Color)
	Lines/Head	2 Lines/Head
	Number of Nozzles	192 Nozzles/Line
	Nozzle Pitch	0.169 mm (150 dpi)
First Print After Warm-up (A4/LT, LEF, Std. Tray)	B&W	Less than 8 s
	Color	Less than 8 s
Duplex Printing	Paper Sizes	A4 SEF, B5 SEF, A5 LEF, A6 SEF, LT SEF, HLT LEF, Executive SEF, Postcard SEF, Double Postcard SEF, 16-Kai SEF
	Paper Type	Plain paper, postcard, inkjetpostcard. Note: Never attempt to duplex OHP transparency, thick paper, envelopes, glossy paper, inkjet plain paper.
Dimensions (w x d x h)	J012	436 x 490.5 x 366 (17.2 x 19.3 x 14.4 in.)
	J013/J014	436 x 490.5 x 431 (17.2 x 19.3 x 17 in.)
Weight	J012	20.5 kg (45.1 lb)
	J013/J014	23.7 kg (52.1 lb)
Paper Capacity	T1	250 sheets (80g/m ² , 20 lb, 70 kg)
	Tray 2 (option)	500 sheets (80g/m ² , 20 lb, 70 kg)
	Multi Bypass (option)	100 sheets (80g/m ² , 20 lb, 70 kg)
	Total (both options)	850 sheets
Output Tray Capacity	Print Output	150 sheets

	Original (ADF)	50 sheets
Paper Sizes	T1	A4, A5, A6, B5, LT, LG, HLT, EXE, F, Foolscap, Folio, 16-Kai, Custom Size, Postcard, Double postcard, COM10, Monarch, C6, C5, DL Env.
	Tray 2 (option)	A4, B5, LT, LG, HLT, EXE, Foolscap, Folio, 16-Kai, Custom Size
	Multi Bypass (option)	A4, A5, A6, B5, LT, LG, HLT, EXE, F, Foolscap, Folio, 16-Kai, Free, Postcard, Double postcard, COM10, Monarch, C6, C5, DL Env.
	Duplex	A4 SEF, A6 SEF, B5 SEF, LT SEF, HLT LEF, EXE SEF, 16-Kai SEF, Postcard SEF, Double postcard SEF
	ADF	A4, A6, B5, LT, LG, HLT, EXE, 16-Kai, Custom Size, Double postcard
Paper Type	T1	Plain paper, postcard, ink-jet postcard, glossy paper, inkjet transparency, envelopes
	Tray 2 (option)	Plain paper, inkjet plain paper
	Multi Bypass (option)	Plain paper, postcard, ink-jet postcard, glossy paper, inkjet transparency, envelopes, thick paper
	Duplexing	Plain Paper, inkjet plain paper
	ADF	Plain paper, inkjet plain paper
Paper Weight	T1	60 – 163g/m ² (52 – 135 kg, 16 – 42 lb)
	Tray 2 (option)	60 – 105g/m ² (52 – 90 kg, 16 – 28 lb)
	Multi Bypass (option)	60 – 255g/m ² (52 – 220 kg, 16 – 68 lb)
Power Supply	NA	100 – 120V (±10%), 50/60Hz (±3Hz)
	EU/Asia	220 – 240V (±10%), 50/60Hz (±3Hz)
Power Consumption	Operating	55W or less
	Energy Save Mode	15W or less
	Power Off	Not over 1W

Warm-up Time	Cold Start	Not more than 30 s
	Energy Save Recovery	Not more than 16 s

T1 (Standard)

Method	Universal paper cassette		
Paper Sizes			
Plain/inkjet plain	A4 SEF, A5 SEF, A6 SEF, B5 SEF, LT SEF, HLT SEF, LG SEF, Executive SEF		
	Max. Capacity: 250 sheets		
	Max. Output: 150 sheets (on output tray)		
	Custom Size	Min.	90 x 139 mm (3.5 x 5.5 in.)
		Max.	216 x 356 mm (8.5 x 14 in.)
Glossy paper	A4 SEF		
	Max. Capacity: 200 sheets		
	Max. Output: 150 sheets (on output tray)		
Inkjet transparency	A4 SEF		
	Max. Capacity: 1 sheet		
	Max. Output: 1 sheet (on output tray)		
Envelopes	COM 10 SEF, Monarch Env. SEF, DL Env. SEF, C6 Env. SEF, C5 Env. SEF		
	Max. Capacity: 20 envelopes		
	Max. Output: 20 envelopes (on output tray)		
Size Detection	None. Printer operation panel setting required.		
Paper Out	Detected by sensor.		
Paper Weight	Plain/inkjet plain	60 to 255 g/m ² (52 to 220 kg, 16 to 68 lb)	
	Thick Paper	60 to 105 g/m ² (16 to 20 lb, 52 to 90 kg)	

Paper Output Tray

Delivery	Face-up	
Output Tray Capacity	Plain/inkjet plain paper	50 sheets
	Envelopes	30 sheets
	Glossy Paper	20 sheets
	Transparencies	1 sheet only recommended
Paper Size	Same as paper feed	
Paper Detection	No	
Tray Full Detection	No	

ADF

Copy Original	Width	139.7 to 215.9 mm (5.5 to 8.5 in.)
	Length (simplex)	139.7 to 255.6 mm (5.5 to 14 in.)
	Length (duplex)	139.7 to 255.6 mm (5.5 to 14 in.)
Fax Original	Length	139.7 to 1000 mm (5.5 to 39.3 in.)
Output Tray	A4, LT (80 g/m ²)	50 sheets
	LG (80 g/m ²)	30 sheets
	Other (80 g/m ²)	30 sheets
Paper Weight	50-100 g/m ² (13 -28 lb)	

Target Yields

General

Print Cartridges	Starter	Black (K)	400 sheets
		Color (Y, M, C)	400 sheets



	Standard	Black (K)	1,500 sheets
		Color (Y, M, C)	1,000 sheets
Ink Collector Unit	At least 55 K sheets		
Estimated Service Life	3 Years (average), 5 Years (maximum) <ul style="list-style-type: none"> • Duty: 150 K • Monthly print volume: 10 K sheets 		

Target Yields calculated for:

- Continuous printing on A4 (8.5" x 11") with 5% of the standard color chart at standard temperature and humidity.
- Yield numbers may change depending on the environmental conditions, amount of coverage on pages, and the number of print head cleanings/flushing that has been done.

Print Cartridges

Here are some more details about print cartridge specifications.

J734	M size Print Cartridge Black – K
J735	M size Print Cartridge Cyan – C
J736	M size Print Cartridge Magenta – M
J737	M size Print Cartridge Yellow – Y

↓ Note

- Four starter ink cartridges (K, C, M, Y) are provided with each printer. Thereafter, replacement ink cartridges must be purchased separately.

Ink cartridges are available in two sizes: Large and Medium. The following tables compares the supply capacity of the Starter (small), Medium, and Large ink cartridges.

Size	Color	Weight (g)/ Volume (cc)	Est. Service Life (Sheets)	
Starter (Small)	K	27.3/25.28	400	These are very approximate estimates. The estimated service life may vary significantly due to the amount of coverage on a page, environmental conditions, and so on. After the printer signals the near end alert for an ink
	C	20.1/19/14	400	
	Y	20.1/19/14	400	

Size	Color	Weight (g)/ Volume (cc)	Est. Service Life (Sheets)	
	M	20.1/19/14	400	cartridge, approximately 40 pages can be printed before the end alert is issued.
Medium	K	35.5/32.87	1,500	
	C	26.7/25.43	1,000	
	Y	26.7/25.43	1,000	
	M	26.7/25.43	1,000	

Environment

Operating Environment

Operating Range	10° to 32°C (50° to 89.6°F), 15 to 80% RH			
Recommended Range	15° to 25°C (59° to 77°F) , 30 to 70% RH			
Altitude	Use below 2,500 m (1.5 mi)			
Ambient Light	Less than 2,000 Lux			
Energy Star Mode	Default	15 min		
	Selectable	1 to 240 min (at 1 minute interval)		
	US	Compliant with Energy star.		
	EU/ASIA	Compliant with BAM, Support RoHS, WEEE		
Sound Power Level	Standby	Not over 40 dB		
	Copying	Flatbed:	Not over 64 dB	
ADF:		Not over 65 dB		
	Printing	Standard	Normal:	Not over 63 dB
			Fine	Not over 61 dB
		With Tray 2	Normal:	Not over 61 dB
			Fine	Not over 67 dB

Sound Pressure Level	ISO7779	Standby	Not over 34 dB
		Printing	64 dB (J012) 65 dB (J013/J014)!

Storage Environment

Temperature	-20 to 43°C (-36° to 109°F)
Humidity	15 to 80% RH

Operation Specifications

Copy Operation

1st Copy Speed	B&W	Fine: Less than 13 s		
	Color	Fine: Less than 16 s		
Max. Original Size	Platen	A4/LT		
	ADF (Single Sheet)	216 x 1000 mm (8.5 x 39.4 in.), DLG		
Multi Copy Speed	Plain Paper	B&W	Fast	18.5 cpm
			Normal	10.5 cpm
			Fine	5.5 cpm
		Color	Fast	14.5 cpm
			Normal	8.5 cpm
			Fine	4.5 cpm
	ADF 1-to-1	B&W	Normal	8 cpm
		Color	Normal	6 cpm
Number of Copies	1 to 99			
Reduction/Enlargement	mm	5 Step 200%, 141%, 93%, 71%, 50%		

	in.	5 Step 155%, 129%, 93%, 78%, 65%
Zoom Range	25% to 400% (selectable)	

Copy/Print Resolution	Plain Paper	Fast	Read	300 x 300 dpi/8 bit
			Write	300 x 150 dpi/4-bit value, duplex/1 pass
		Normal	Read	300 x 300 dpi/8 bit
			Write	600 x 300 dpi/ 4-bit value, duplex/1 pass
		Fine	Read	600 x 600 dpi/ 8bit
			Write	600 x 600 dpi/4-bit value, duplex/1 pass
	Inkjet Plain Paper	Fast	Read	300 x 300 dpi/8 bit
			Write	600 x 300 dpi/4-bit value, duplex/1 pass
		Normal	Read	600 x 600 dpi/8 bit
			Write	600 x 300 dpi/ 4-bit value, duplex/1 pass
		Fine	Read	600 x 600 dpi/ 8bit
			Write	600 x 600 dpi/4-bit value, Simplex/2 pass
	Glossy Paper	Normal	Read	600 x 600 dpi/8 bit
			Write	600 x 600 dpi/4-bit value, simplex/4 pass
		Fine	Read	600 x 600 dpi/ 8bit
			Write	1200 x 1200 dpi/4-bit value, simplex/4 pass
	OHP Transparency	Fine	Read	600 x 600 dpi/ 8bit
			Write	600 x 600 dpi/4-bit value, Simplex/4 pass

Grayscale	4-Levels in Photo Mode(for Y, M, C, K)
Reduction/Enlargement	Range: 25% to 400% (1% Steps)

Image Density	Manual	5-Steps
	Auto	2-Step (Text mode, Text/Photo mode only)
Copy Modes	3 modes: Text & Photo (default), Photo mode, Text mode	
Memory Copy	Fast	300 x 150 dpi 2-bit, J6:60 sheets, A4 F/C:24 sheets
	Std	600 x 300 dpi 2-bit, J6:15 sheets, A4 F/C:6 sheets
	Fine	600 x 600 dpi 2-bit, J6:7 sheets, A4 F/C:3 sheets
Combine Copy	Yes	Only when ADF selected (2-in-1)

Printing Operation

Printing Speed (A4/LT)	Fast (ppm)	Mono: 18.5 or >, F/C: 14.5 or >
	Normal (ppm)	Mono: 10.5 or >, F/C: 8.0 or >
	Fine (ppm)	Mono: 5.5 or >, F/C: 4.5 and above

First Print	B&W	Not over 8 seconds		
	Color	Not over 8 seconds		
Resolution	Plain Paper	Fast	300 ×150 dpi / 4-bit value Duplex/1 pass	
		Normal	600×300 dpi / 4-bit value Duplex/1 pass	
		Fine	600×600 dpi / 4-bit value Duplex/1 pass	
		High quality	600×600 dpi / 4-bit value Simplex/2 pass	
		Inkjet plain paper	Fast	600×300 dpi / 4-bit value Simplex/1 pass
			Normal	600×600 dpi / 4-bit value Simplex/1 pass
Fine	600×600 dpi / 4-bit value Simplex/2 pass			
	Glossy Paper	Fast	600×600 dpi / 4-bit value Simplex/4 pass,	
		Normal	1200×1200 dpi / 4-bit value Simplex/2 pass	

	OHP Transparenc y	Fine	600×600 dpi / 4-bit value simplex/4 pass
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Printer Language	J012/J013	RPCS
	J014	RPCS, PCL5C/XL
Operating System	Windows 98 SE, Windows Me, Windows NT4 (SP4.0 and above), Windows 2000, Windows XP, Windows 2003 Server	
HDD	None	

Print Area	Paper	Maximum	Top, Bottom, Left, Right	3 mm (0.2 in.)
		Recommended	Top, Bottom, Left, Right	4.2 mm ($\frac{1}{6}$ in.)
	Envelopes	Maximum	Top	8 mm (0.32 in.)
			Bottom	38 mm (1½ in.)
			Left, Right	3 mm (0.12 in.)
		Recommended	Top	8 mm (0.32 in.)
			Bottom	38 mm (1½ in.)
			Left, Right	4.2 mm ($\frac{1}{6}$ in.)

Scanning Operation

Scanning	Color / Black		
Method	ADF, Book Mode		
Interface	USB2.0 (High Speed) High speed, Ethernet 10BASE-T/100BASE-T		
Speed (8-bit)	B&W	150 dpi	10 ipm
		300 dpi	10 ipm
		600 dpi	2.5 ipm
	Grayscale	150 dpi	10 ipm
		300 dpi	10 ipm

		600 dpi	2.5 ipm
	Color	150 dpi	10 ipm
		300 dpi	10 ipm
		600 dpi	2.5 ipm
TWAIN Compliance	TWAIN/WIA		
File Formats	Selectable: TIFF, JPEG, PDF		
Image Compression	B&W	TIFF (MH, MR, MMR)	
	Color	JPEG	
Color Depth	B&W: 1bit/ 1bit halftone/ 8bit, Color: 8bit		
Resolution	Basic	300 x 300	
	Max.	1200 x 1200	
	Email/Scan-to-FTP	B&W (1-bit): 150, 300, 600 dpi Gray (8-bit) 150, 300 dpi Color (8-bit): 150, 300 dpi	
	TWAIN Scanner	Selectable: 100, 150, 200, 300, 400, 600, 1200	
Document Size	Max.: A4, LG		
Scanning Width	Flatbed	Width max.: 216mm, Length max.: 297 mm	
	ADF	Width max.: 216mm, Length max.: 1000 mm (simplex FAX) & 357 mm (duplex)	
Gray scale	1bit/8bit halftone		
Scanner utilities & Drivers	TWAIN/WIA driver, Web management utility		
Protocols	Network	TCP/IP	
	Email	SMTP, POP3	
	FTP	FTP	

Fax Operation

Standard	Super G3	
Scan Line Density	8 x 3.85/mm, 8 x 7.7/mm, 8 x 15.4/mm	
Transmission Time	G3: 3 s	
Compression Method	MH, MR, MMR, JBIG	
Transmission Speed	G3: 33.6k-2400 bps (Auto shift down method)	
Document Size	A4, Letter, Legal, A3*, B4* (*Automatically scaled to A4).	
Max. Scan Size	A4 or LG	
Polling Type	Not sequential but available during TX/RX.	
Resolution (Loading to Printing)	200 x 400 dpi to 600 x 600 dpi	
	200 x 200 dpi to 300 x 300 dpi	
	200 x 100 dpi to 300 x 300 dpi	
One-touch dial	30 (15 x 2)	
Speed-dial	90 stations	
Broadcasting	130 stations	
Automatic redial	Yes	
Auto Answer	The number of calling: Between 1 and 16.	
Communication Source	Super G3	
Memory Transmission	No	
Out of paper reception	Buzzer notification	
PC Fax utility	Transmitting function only	

Internet Fax		
Network	LAN Ethernet 10BASE-T/100BASE-T	Network
Scan Line Density	8x3.85/mm, 8x7.7/mm, 8x15.4/mm	Scan Line Density
Max. Scan Size	A4 or LG	Max. Scan Size

Protocols	TX	SMTP, TCP/IP
	RX	POP3, SMTP, TCP/IP
Email Format	Single/Multi MIME Conversion	
	Attachments: TIFF-F (MH, MR, MMR compression)	
Authentication Method	SMTP-AUTH, POP-before-SMTP	

Options

Paper Feed Unit (J509) (Tray 2)

Method	Universal Paper Cassette (printed mounted on cassette unit)			
Installable Units	1 Only, below printer			
Paper Size	Plain/inkjet plain	Standard	A4 SEF, B5 SEF, LG SEF, LT SEF, Executive SEF, F SEF, Foolscap SEF, Folio SEF, 16-Kai SEF,	
		Custom	Min. (W x L)	148 x 210 48 mm (5.8 x 8.3 in.)
			Max. (W x L)	216 x 356 mm (8.5 x 14 in.)
Paper capacity	500 sheets (80g/m ² , 20 lb, 70 kg)			
Paper Output	150 sheets (on paper output tray)			
Size Detection	Printer operation panel setting required.			
Paper Type	Plain paper, inkjet plain paper, recycled paper, color paper			
Paper Weight	60 to 105g/m ² (52 to 90 kg, 16 to 28 lb)			
Weight	5 kg (11 lb)			

Multi Bypass Tray Type (J507)

Method	Universal Paper Cassette
Plain/inkjet plain	A4 SEF, A5 LEF, A6 SEF, B5 SEF, LT SEF, HLT SEF, LG SEF, Executive SEF, 8-Kai SEF, 16-Kai SEF

	Max. Capacity: 100 sheets		
	Max. Output: 150 sheets (on output tray)		
	Custom Size	Min.	55 x 127 mm (2.2 x 5 in.)
		Max.	216 x 1295.4 mm (8.5 x 51 in.)
Glossy paper	A4 SEF		
	Max. Capacity: 20 sheets		
	Max. Output: 20 sheets (on output tray)		
Inkjet transparency	A4 SEF		
	Max. Capacity: 1 sheet		
	Max. Output: 1 sheet (on output tray)		
Envelopes	COM 10 SEF, Monarch Env. SEF, DL Env. SEF, C6 Env. SEF, C5 Env. SEF		
	Max. Capacity: 10 envelopes		
	Max. Output: 20 envelopes (on output tray)		
Thick (heavier than 163 g/m ²)	A4 SEF, A5 LEF, A6 SEF, B5 SEF, LT SEF, HLT SEF, LG SEF, Executive SEF, 8-Kai SEF, 16-Kai SEF		
	Max. Capacity: 20 sheets		
	Max. Output: 20 sheets (on output tray)		
Size Detection	Printer operation panel setting required		
Paper Weight	60 to 255g/m ² (52 to 220 kg, 16 to 68 lb)		
Paper capacity	100 sheets (80g/m ² , 70 kg, 20 lb)		
Paper Out	Sensor Detection		
Weight	1.2 kg (2.6 lb)		

Network Interface Board Type GX4 (J510)

The NIB is an option for the J012/J013 but standard for J014.

Interface Connector	Ethernet (10 BASE-T, 100 BASE-TX)
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Data Transmission Speed	10 Mbps, 100 mbps	
Protocols	Network Printers	TCP/IP
	Network Scanner	TCP/IP
	Email	SMTP, POP3
	Scan-to-FTP	FTP
	LAN Fax	TCP/IP
	Internet Fax	TCP/IP, SMTP, POP3

Paper Size Table

Table Key

A	Supported and the size is automatically detected.
B	Need to select paper size by operation panel.
C	Need to input paper size by operation panel and driver.
D	Need to specify paper size by using dial.
N	Not supported.

Plain Paper						
		T1	T2	Bypass	Duplexer	ADF
A4 SEF	210x297	A	A	A	A	A
A4 LEF	297x210	N	N	N	N	N
B5 SEF	182x257	A	A	A	A	A
B5 LEF	257x182	N	N	N	N	N
A5 SEF	148x210	TBA	TBA	TBA	TBA	A
A5 LEF	210x148	A	N	A	A	A
B6 SEF	128x182	TBA	N	TBA	TBA	A (Simplex)
A6 SEF	105x148	A	N	A	A	N

Legal SEF	8½" x 14"	A	A	A	N	A
Letter SEF	8½" x 11"	A	A	A	A	A
Letter LEF	11" x 8½"	N	N	N	N	N
Half letter SEF	5½" x 8½"	N	N	N	N	N
Half letter LEF	8½" x 5½"	A	A	A	A	A
Executive SEF	7¼" x 10½"	A	A	A	A	A
Executive LEF	10½" x 7¼"	N	N	N	N	N
F SEF	8" x 13"	A	A	A	N	A
Foolscap SEF	8½" x 13"	A	A	A	N	A
Folio SEF	8¼" x 13"	A	A	A	N	A
Govt LG SEF	8¼" x 14"					
8 Kai SEF	267x390	N	N	N	N	N
16 kai SEF	195x267	A	A	A	A	A
16 Kai LEF	267x195	N	N	N	N	N

Envelopes						
		T1	T2	Bypass	Duplexer	ADF
Com 10 SEF	4 ¹ / ₈ " x 9½"	A	N	Y	N	N
Monarch SEF	3 ⁷ / ₈ " x 7½"	A	N	Y	N	N
C6 SEF	114x162	A	N	Y	N	N
C5 SEF	162x229	A	N	Y	N	N
DL Env SEF	110x220	A	N	Y	N	N

Custom Size						
		T1	T2	Bypass	Duplexer	ADF
Width	Max.	216 mm (8.5")	216 mm (8.5")	216 mm (8.5")	TBA	216 mm (8.5")

	Min.	90 mm	148 mm	55 mm	TBA	140 mm
Length	Max.	356 mm (14")	356 mm (14")	1295.4 mm (51")	TBA	356 mm (14")
	Min.	139.7 mm (5.5")	210 mm (8.3")	127 mm (5")	TBA	140 mm (5.5")

North America/Europe/Asia

Type	Name	Feed	Size	Bypass	T1	T2	Face-up	Duplex
Plain	A3 W	SEF	12" x 18"	N	N	N	N	N
Paper	A3	SEF	297 x 420 mm	N	N	N	N	N
	A4	SEF	210 x 297 mm	Y	Y	Y	Y	Y
	B4	SEF	257 x 364 mm	N	N	N	N	N
	B5	SEF	182 x 257 mm	Y	Y	Y	Y	Y
	B5	LEF	257 x 182 mm	N	N	N	N	N
	B6	SEF	125 x 176 mm	N	N	N	N	N
	B6	LEF	176 x 125 mm	N	N	N	N	N
	DLT	SEF	11" x 17"	N	N	N	N	N
	LT	SEF	8 ¹ / ₂ " x 11"	Y	Y	Y	Y	Y
	LT	LEF	11" x 8 ¹ / ₂ "	N	N	N	N	N
	LG	SEF	8 ¹ / ₂ " x 14"	Y	Y	Y	Y	N
	HLT	SEF	5 ¹ / ₂ " x 8 ¹ / ₂ "	N	N	N	N	N
	HLT	LEF	8 ¹ / ₂ " x 5 ¹ / ₂ "	Y	Y	Y	Y	Y
	Exe	SEF	7 ¹ / ₄ " x 10 ¹ / ₂ "	Y	Y	Y	Y	Y
	Exe	LEF	10 ¹ / ₂ " x 7 ¹ / ₄ "	N	N	N	N	N
	F	SEF	8" x 13"	Y	Y	Y	N	N
	Fscap	SEF	8 ¹ / ₂ " x 13"	Y	Y	Y	N	N

Type	Name	Feed	Size	Bypass	T1	T2	Face-up	Duplex
	Folio	SEF	8 ¹ / ₄ " x 13"	Y	Y	Y	N	N
	8 Kai	SEF	267 x 390 mm	N	N	N	N	N
	16 Kai	SEF	195 x 267 mm	Y	Y	Y	N	Y
	16 Kai	LEF	267 x 195 mm	N	N	N	N	N
Env.	Com10	LEF	4 ¹ / ₈ " x 7 ¹ / ₂ "	Y	Y	N	Y	N
	Mon.	LEF	3 ⁷ / ₈ " x 7 ¹ / ₂ "	Y	Y	N	Y	N
	C6	LEF	114 x 162 mm	Y	Y	N	Y	N
	C5	LEF	162 x 229 mm	Y	Y	N	Y	N
	DL Env	LEF	110 x 220 mm	Y	Y	N	Y	N

Remarks:

Y	Supported
N	Not supported.
TBA	To Be Announced (Pending)

Controller

Basic Controller Specifications

CPU	TBA
RAM	J013/J014: 32 MB
	J014: 96 MB
Hard Disk Drive	None
PDL	RPCS raster (T-MF1a & MF1b), PCL, RPCS raster (T-MF1bN)
	NA
Fonts	Standard PCL: 58 fonts

Connectivity	Host Interface	Standard.	USB2.0 (Support HighSpeedMode) Ethernet 10/100BASE-TX (NIB)	
		Option	Ethernet 10/100BASE-TX (J012/J013)	
	Network Protocol	TCP/IP, SNMP		
	MIB support	Private MIB	YES	
		Standard MIB (SNMP Printer MIB)	YES	
	Network/Operating Systems	Windows98 SE, Windows Me, Windows 2000, Windows XP, Windows NT 4.0, Windows 2003 Server Note: PC-FAX, LSD excluded for NT 4.0.		
Citrix Meta Frame Presentation Server 4.0 and above.				
Options	Network Interface Board GX4 Option for J012/J013, standard for J014.			

Interface Specifications

7

USB

Data Transmission Speed	480 Mbps (High Speed: USB 2.0), 12 Mbps (Full Speed)		
Protocol	TCP/IP		
Operating Systems	USB 1.1	Windows 98SE, Windows Me, Windows 2000, Windows XP	
	USB 2.0 only	Windows 2000, Windows XP	
Max. Distance Between Devices	5 m (16.4 ft)		

Network Interface Board GX4

Data Transmission Speed	10 Mbps, 100 Mbps
Protocol	TCP/IP

Supported OS	Windows 9x, Windows Me, Windows /NT, Windows 2000, Windows XP, Windows Server 2003
Max. Distance Between Devices	100 m

Supported Utilities

- SmartNetMonitor for Admin
- SmartNetMonitor for Client

MEMO

MEMO

