Alsace/Provence

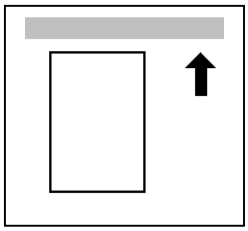
(Machine Code: J001/J003)

17 September 2004
Subject to Change

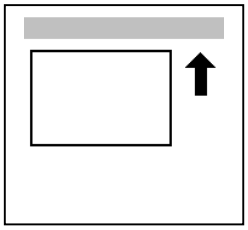
Conventions Used in this Manual

This manual uses several symbols.

Symbol	What it means
☛	Refer to section number
CT	See Core Tech Manual for details
	Screw
	Connector
	E-ring
	Clip ring
	Clamp



Lengthwise, SEF
(Short Edge Feed)



Sideways, LEF
(Long Edge Feed)

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.

Safety Instructions

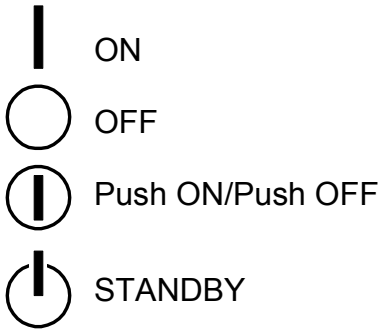
For your safety, please read this manual carefully before you service this product. Always keep this manual handy for future reference.

Safety Information

Always obey the 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.



SAFE-SYM.WMF

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).

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

Before Installation, Maintenance

Shipping and Moving the Machine

⚠CAUTION

1. 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.
2. 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.
3. 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

1. 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, then unplug the machine from the power source.
2. 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.).
3. 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

1. 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.
2. 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

1. Use only standard tools approved for machine maintenance.
2. 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

1. 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.
2. Avoid touching the components inside the machine that are labeled as hot surfaces.

Safety Devices

⚠ WARNING

1. Never remove any safety device (a fuse, thermistor, etc.) unless it requires replacement. Always replace a safety device immediately.
2. 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.
3. 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

1. 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.)
2. 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.
3. 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.
4. 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

⚠WARNING

1. 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.
2. 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.
3. 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.
4. 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.
5. 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.
6. Make sure that the power cord is grounded (earthed) at the power source with the ground wire on the plug.
7. Connect the power cord directly into the power source. Never use an extension cord.
8. 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 GELJET cartridges.

⚠CAUTION

1. Always dispose of used items in accordance with the local laws and regulations regarding the disposal of such items.
2. 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 GELJET 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 printer.
- The operator should never attempt to remove the paper cassette from the printer.

Special Safety Instructions For GELJET cartridges

Accidental Physical Exposure To Ink

⚠CAUTION

1. If ink gets on the skin, wash the affected area immediately with soap and cold running water.
2. 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.
3. If ink is swallowed, drink a strong solution of cold water and table salt to induce vomiting. Seek medical attention immediately.
4. Ink is difficult to remove from fabric. Work carefully to avoid staining clothing when performing routine maintenance or replacing cartridges.

Handling and Storing GELJET cartridges

⚠WARNING

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

⚠CAUTION

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

GELJET cartridge Disposal

⚠CAUTION

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

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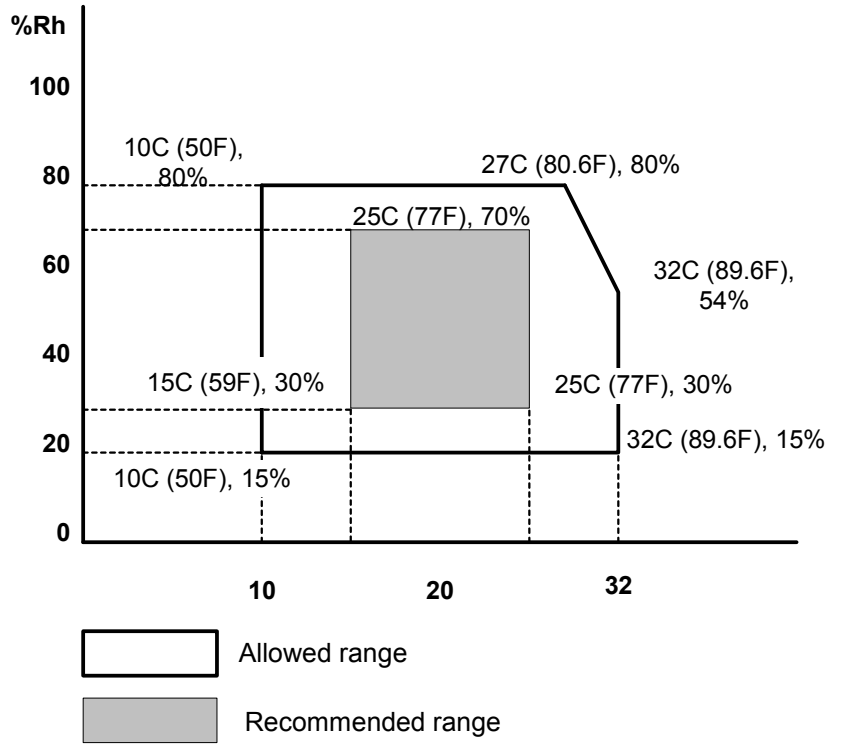
SPECIFICATIONS

1. INSTALLATION

1.1 PREPARATION

1.1.1 ENVIRONMENT



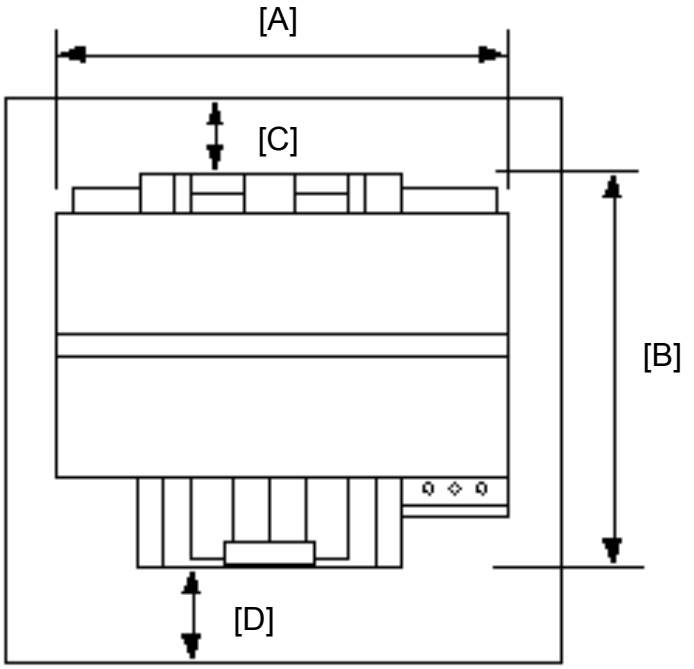
Put the machine in a location with these requirements:

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

1.1.2 CHOOSING A LOCATION

1. Always install the machine in these areas:
   - On a sturdy, level surface.
   - Where it will not get damp.
2. Make sure the machine does not get exposed to these:
   - Extreme changes from low to high temperatures, or high to low temperatures.
   - Cold or cool air from an air conditioner.
   - Heat from a space heater.
3. Never install the machine in areas that get these:
   - Dust, lint, or corrosive fumes in the air.
   - Strong vibrations.
   - Locations higher than 2,000 m (6,500 ft) above sea level.
4. Put the machine on a sturdy, level surface.
   - Put a level on the machine in these areas:
     - Front/back
     - Left/right side.
   - Make sure variations between the front/back and left/right level readings are less than 2 degrees.

1.1.3 MINIMUM SPACE REQUIREMENTS



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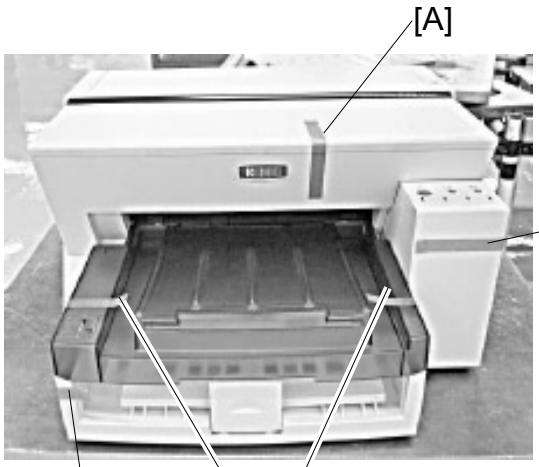
J001	A =	403 mm	15.9 in.
	B =	440 mm	17.3 in.
	C =	At least 12 cm	At least 5 in.
	D =	At least 17 cm	At least 7 in.
J003	A =	490 mm	20 in.
	B =	460 mm	18 in.
	C =	At least 12 cm	At least 5 in.
	D =	At least 17 cm	At least 7 in.

1.1.4 POWER SOURCE

North America	120 V, 60 Hz, more than 0.8 A

1.1.5 REMOVING THE SHIPPING MATERIAL



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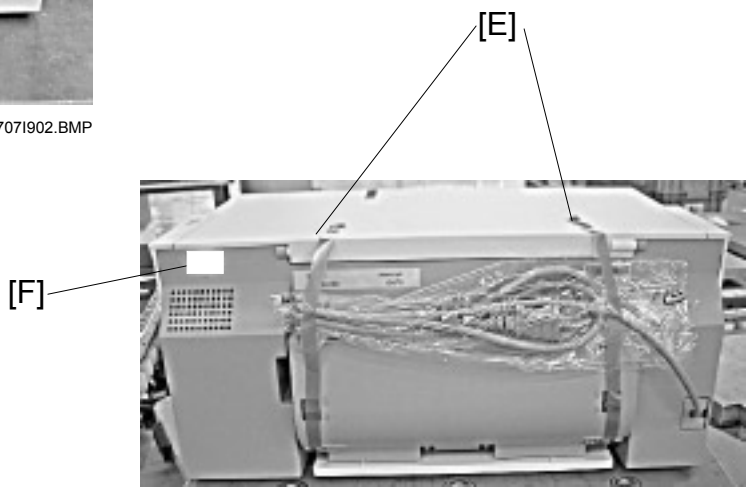

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Tape from the machine:

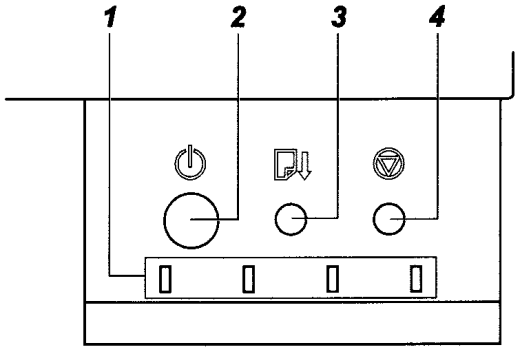
[A]: Top cover (x1)
[B]: Right front door (x1)
[C]: Output tray (x3)
[D]: Paper cassette (x1)
[E]: Power cord (x3)

Important:

- Do not remove the paper seal from the USB port [F] until you are ready to connect the USB cable. Keep the port covered until you are instructed to connect the USB cable at the time you install the printer driver.
- Re-attach tape at the points shown in the illustrations above before you move or ship the printer to another location.

1.1.6 USING THE OPERATION PANEL

Here is a brief description of how to use the keys on the printer operation panel.



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1 Low Ink Indicators

Each LED shows the position of each Print cartridge in the printer:

K (Black), C (Cyan), M (Magenta), and Y (Yellow).

Flashing	The cartridge is empty. You can use the printer for a short time. Replace the cartridge as soon as possible.
On	There is no ink in the printer. At this time, you cannot print. Replace the ink cartridge.
All On	A Print cartridge is not in the machine, or, is not installed correctly. Open the right front door. Check all the cartridges.

2 [Power] key

To turn the printer on and off

1. To turn the printer on, press and hold the [Power] key for at least 1 sec.
   - The [Power] key flashes and stays in this condition until the printer warms up.
   - When the printer is ready for operation, the [Power] key goes on and stays in this condition. At this time the printer is in standby mode and ready to print.
2. Press the [Power] key once to turn the printer off. The power LED flashes slowly for a few moments. Then it goes off.

To print a Sample Print

1. Press the [Power] key to switch the printer off. Wait for the power LED to not flash.
2. Press and hold down [Cancel] + [Paper Feed]. Then press [Power] for at least 3 seconds
3. Release the keys when the low ink indicators LEDs show red.

3 [Paper Feed] Key

To restart an interrupted print job

Press the [Paper Feed] key to start a print job again after you remove the cause of an error (paper jam, for example). The [Cancel] key flashes or lights and stays in this condition for errors. For more, see Section “4. Troubleshooting”.

To feed a sheet manually

Set a sheet of paper in the bypass tray on top of the duplexer. Then press the [Paper Feed] key at the time the software application prompts you to do so when you manually feed paper.

To print a blank sheet (cleaning)

1. Press the [Power] key to switch the printer off.
2. Wait for the power LEDs to not flash.
3. Press and hold down [Paper Feed]. Then press and hold down [Power] for at least 3 seconds.

   The ink level LEDs go on. Then 1 blank sheet feeds through the paper path. Then the paper exits the printer.

4 [Cancel] key

Press the [Cancel] key to cancel a print job. This procedure erases all the data from the printer memory.

To clean all the print heads

Press the [Cancel] key and hold it down for at least 3 seconds to make the [Power] key flash. Then release it. The printer cleans all four print heads (Normal Cleaning).

To print a Nozzle Check Pattern

1. Press the [Power] key to turn the printer off.
2. Wait for the power LED to not flash.
3. Press and hold down the [Cancel] key. Then press [Power] for at least 3 seconds. The four ink level LEDs go on. The printer prints the Nozzle Check Pattern.

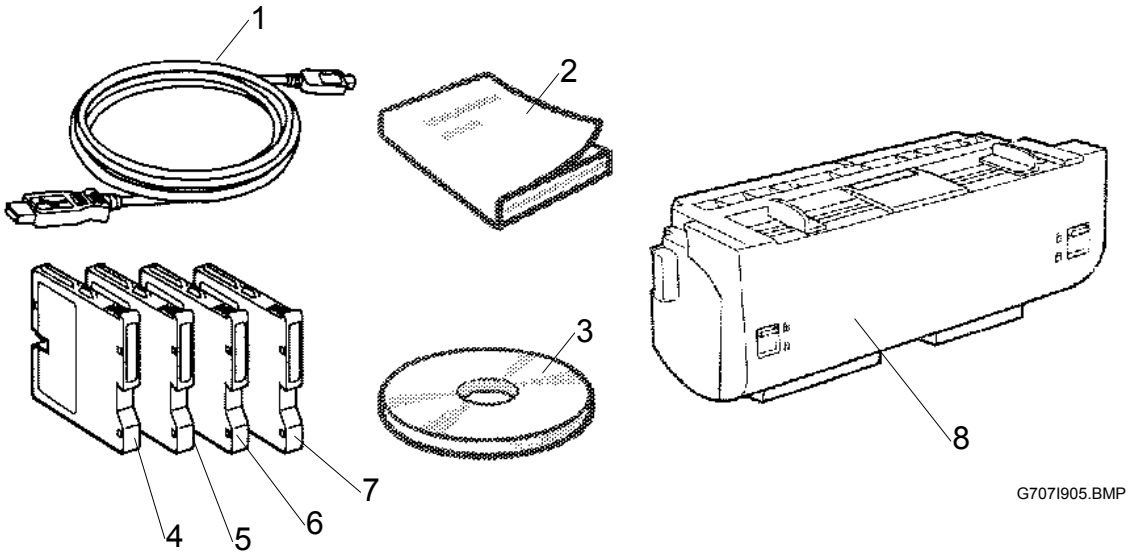
1.2 INSTALLATION PROCEDURE

1.2.1 ACCESSORY CHECK

Check the accessories and their quantities against this list:

Description	Q'ty
1. USB Cable	1
2. Setup Guide	1
3. Printer Driver Installer & Manual CD-ROM	1
4. Print Cartridge (Yellow)	1
5. Print Cartridge (Magenta)	1
6. Print Cartridge (Cyan)	1
7. Print Cartridge (Black)	1
8. Duplex Unit *1	1
Registration Card	1
Warranty Card	1

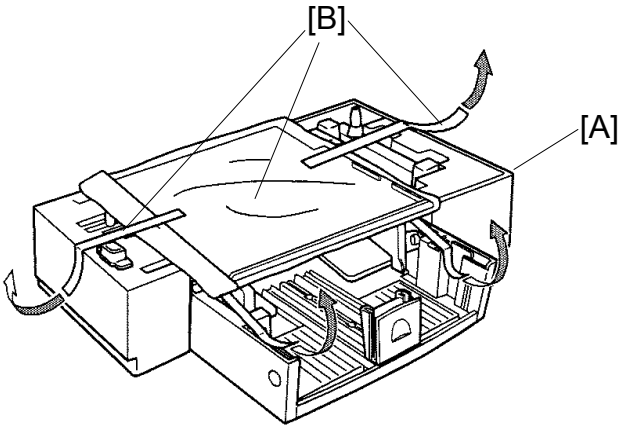
***1** The J003 is shipped with the Duplex Unit installed. The Duplex Unit is optional for the J001.



⚠CAUTION

Always set the machine off and unplug the machine before you do the following procedures.

1.2.2 TRAY 2 (500-SHEET PAPER TRAY – J003 OPTION)



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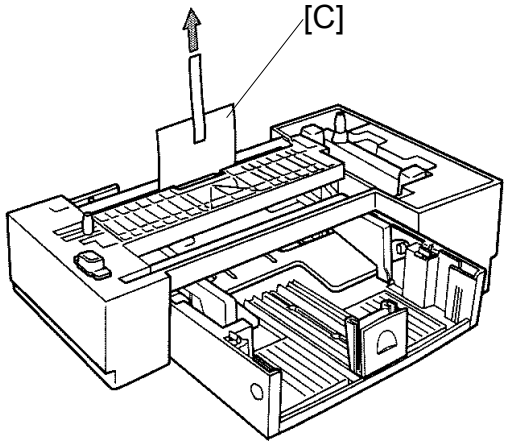

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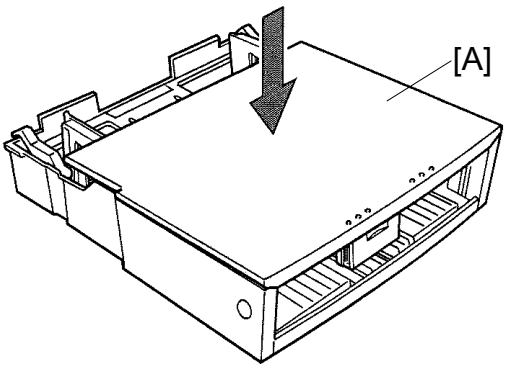
Important

- You must set up the 500-Sheet Paper Tray first before you put the printer on top of it.
- You can only install this option on the J003 machine.
- Go to the next section if you will not install the paper tray.

1. Make sure that the printer power cord is not connected to the power source.
2. Remove the paper tray [A] from its box.
3. Position the 500-Sheet Paper Tray paper tray where the printer will be set up.
4. Remove all of the orange tape [B] and other shipping materials.
5. Remove the tape and sheet [C].



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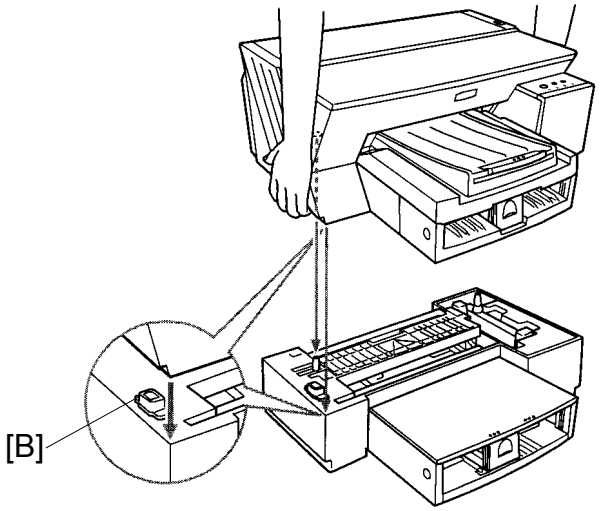

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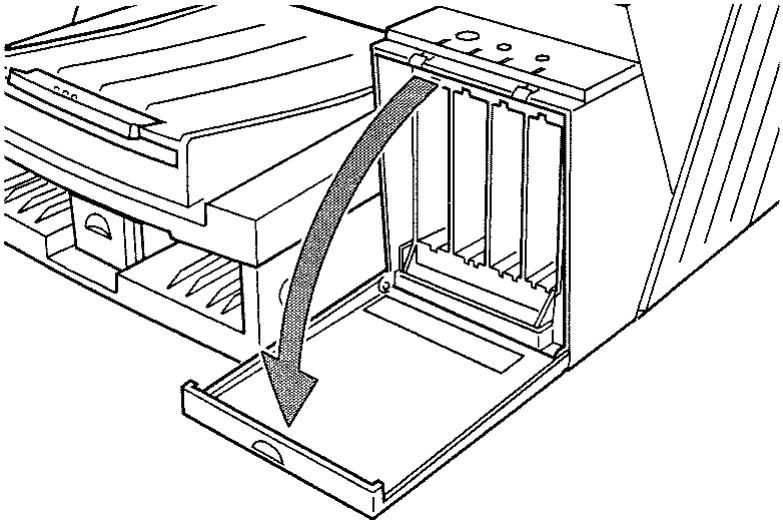
6. Attach the tray cover [A] on the paper tray.
7. Align the connection point holes [B] in the bottom of the printer with the pegs of the paper tray while you hold the printer as shown.
8. Slowly set the printer on top of the paper tray.
9. This completes the installation of the printer on the paper tray.

1.2.3 INSTALL THE PRINT CARTRIDGES

⚠CAUTION

1. If ink gets on the skin, wash the affected area immediately with soap and cold running water.
2. 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.
3. If ink is swallowed, drink a strong solution of cold water and table salt to induce vomiting. Seek medical attention immediately.
4. Ink is difficult to remove from fabric. Work carefully to avoid staining clothing when performing routine maintenance or replacing cartridges.
5. Always store ink cartridges out of the reach of children.



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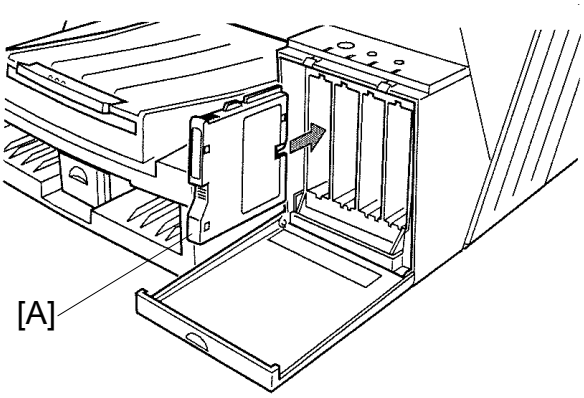
1. Get the four cartridges provided with the printer.

   Important

   - The "Starter" ink cartridges provided for installation contain a limited supply of ink. Make sure that you have and additional set of ink cartridges available for replacement before you use the printer.
   - Use only Ricoh Print Cartridges designed for use with this printer.

2. Open the front cover.



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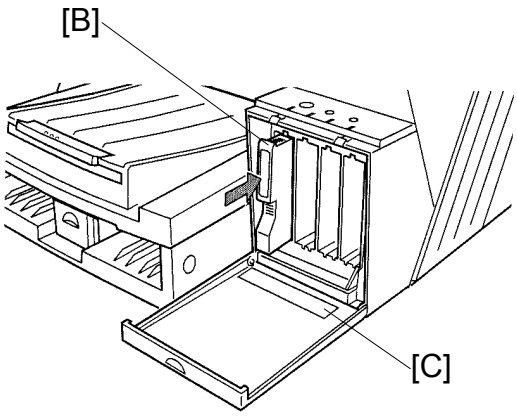

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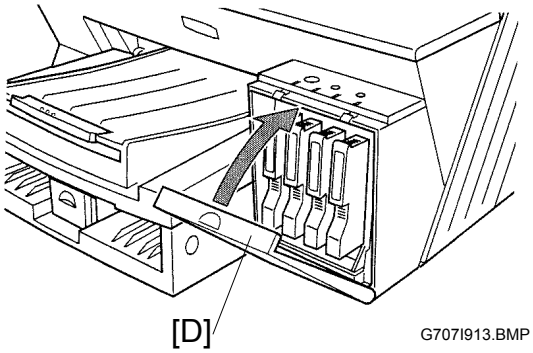

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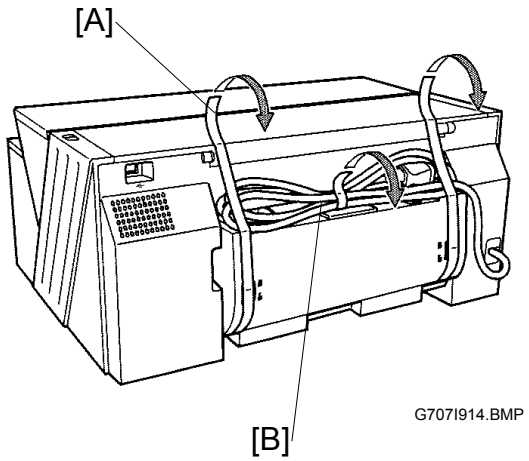
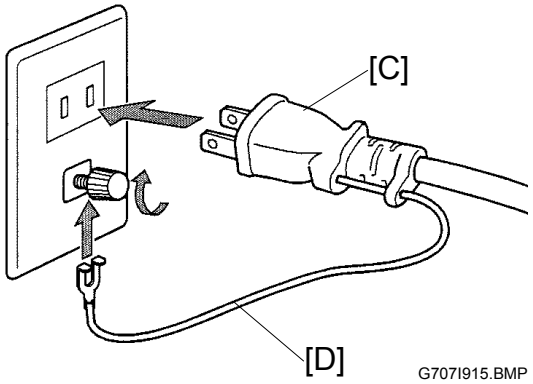
3. Remove the Black Print cartridge from its package.
4. Hold the black cartridge [A] as shown. Then set it in the first slot on the left.
5. Press the “PUSH” label [B] on the cartridge to install it.
6. Make sure that the cartridge is correctly inserted.
7. Continue from the left. Do Steps 3-6 again to insert the other cartridges.
   NOTE: Follow the order of the color decals [C] on the right front door to match each color cartridge with the correct position.
8. Make sure that the cartridges are inserted in this order, from left to right:
   - K (Black)
   - C (Cyan)
   - M (Magenta)
   - Y (Yellow)
9. Close the right front door [D].

1.2.4 CONNECT THE POWER CORD



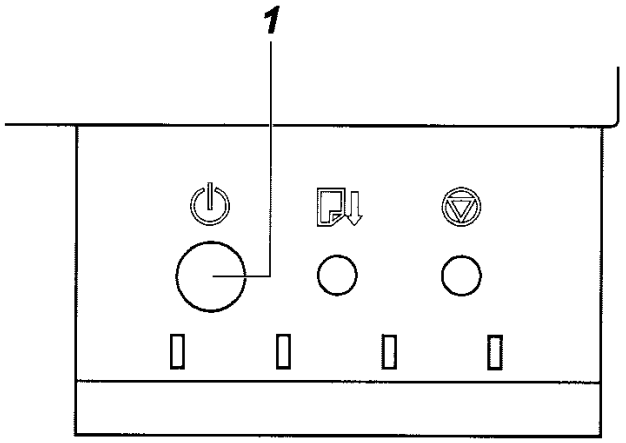


1. Remove the tape [A] and power cord [B] from the back of the printer.
2. Plug the power cord [C] into the power source.
3. Ground the power cord at the power source with the ground wire [D] attached to the plug.

⚠ WARNING!

1. Always connect the printer to a correct power source.
2. Do not share the printers power source with another electrical device or appliance.
3. Connect the power cord directly into the power source. Never use an extension cord.
4. Never attempt to modify the power cord in any way.
5. Never put heavy objects on the power cord.
6. Make sure that the area around the power source is free of unwanted things so you can remove the power cord quickly in case of an emergency.
7. Make sure the power cord is not coiled or wrapped around any object. The power cord can get excessive heat build up and could cause a fire if it gets coiled.
8. Never handle the power cord with wet hands.

1.2.5 POWER ON/OFF



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Important!

- **It takes approximately 6 minutes for the J001 and 9 minutes for the J003 to fill the tanks.**
- **Never switch off the printer at the time the print head tanks get filled.**
- **The printer dumps the ink and empty the tanks if you set the power on at the time the tanks get filled. The printer will show 'ink out' alert the next time the printer is set on.**

1. Remove all paper from the standard paper cassette (or the optional 500-sheet Paper Tray for the J003).
2. Press and hold down the [Power] key for at least 1 sec.

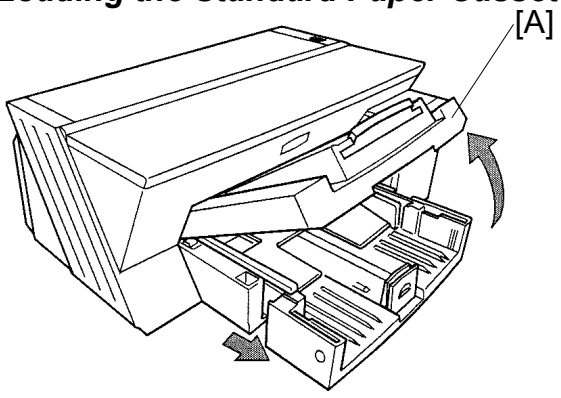
   The power LED flashes and stays in this condition at the time the print head tanks fill with ink.

   The printer needs **6 to 9 minutes** to fill the print head tanks. You must wait for this period of time when you set the printer on for the first time after you have installed the printer. You cannot use the printer until after all the print head tanks get filled.

   The [Power] key ⏻ lights and stays on. At this time the printer is in standby mode and ready for operation.

1.2.6 LOAD PAPER

Loading the Standard Paper Cassette



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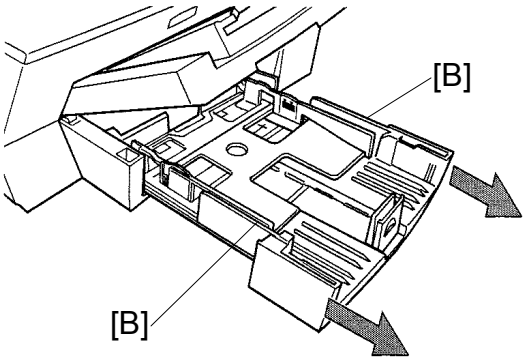

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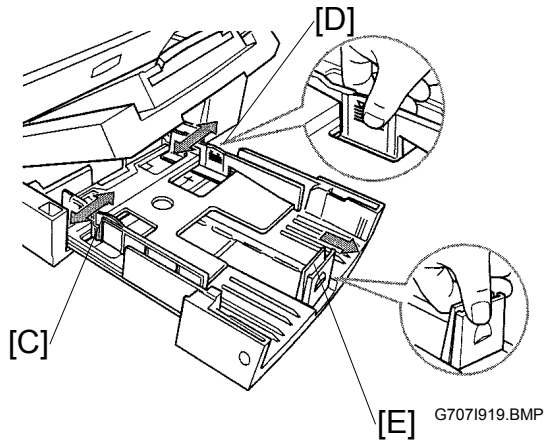

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1. Raise the output tray [A]. The paper cassette ejects slightly from the printer after the output tray is raised.

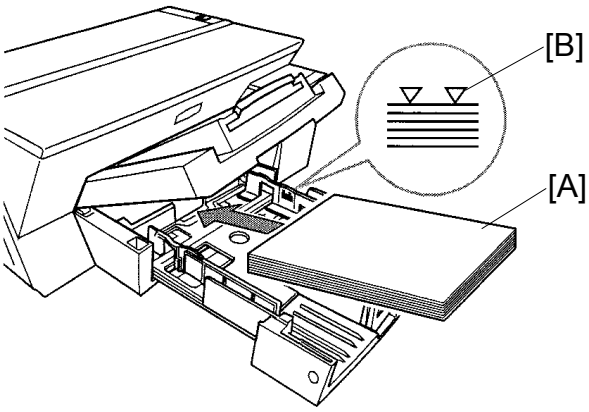
   Important: Always raise the output tray before you pull the paper cassette partially out of the printer.

2. Hold the paper cassette [B] on both sides. Then slowly pull it out until it stops.

   Important: Do not attempt to remove the paper cassette from the printer. You do not have to fully remove the paper tray from the printer to load it with paper.

3. Pinch the side fence tabs [C], [D] on the left and right side of the paper cassette. Then move them to correct position for the paper size you want to set (A4 or LTR).

4. Pinch the bottom fence tabs [E]. Then slide the bottom fence out.



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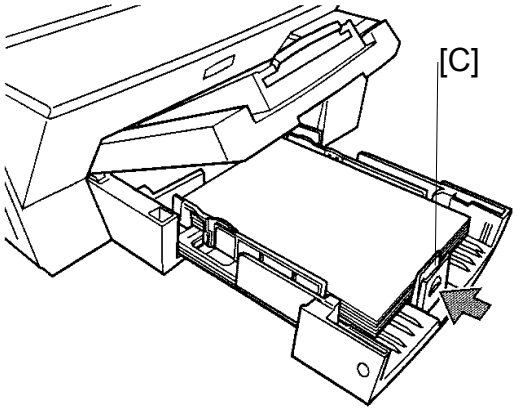

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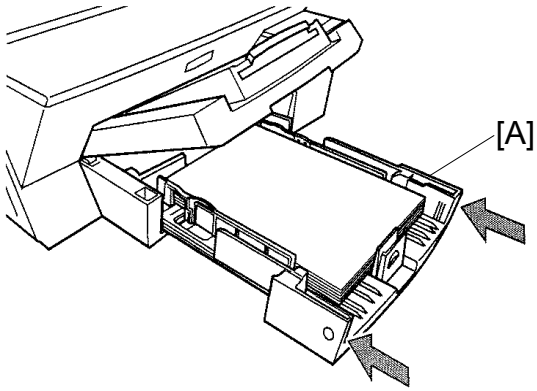
5. Get a stack of paper. Then fan it to remove static cling.
6. Load the paper [A] into the cassette.
7. Add paper until it gets to the load limit marks [B].

   Important: Never load paper higher than the load limit mark. This stops paper jams.
8. Pinch the bottom fence tabs [C]. Then move the bottom fence to the edge of the stack.
9. Check the positions of the side fences.
   - The width side fences and bottom fence should not be to tight against the sides and bottom of the stack.
   - If the stack goes upward, the fences are too tight. Adjust their positions so the top of the stack is perfectly flat.



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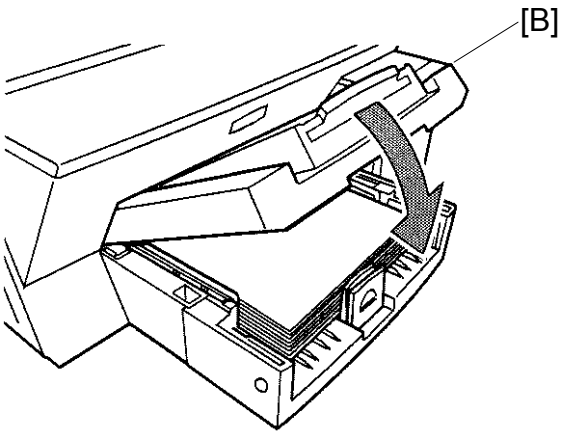

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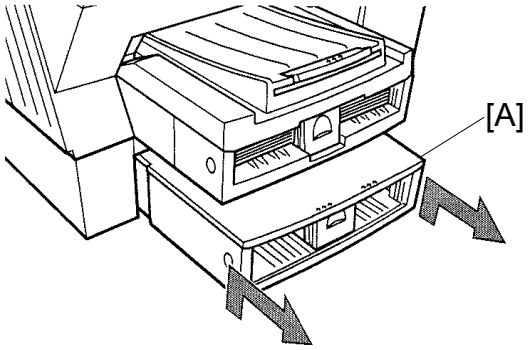
10. Hold the paper cassette [A] on both sides. Then push it slowly into the printer.
11. Lower the output tray [B].

Loading the Tray 2 (500-Sheet Paper Tray J003 Option)



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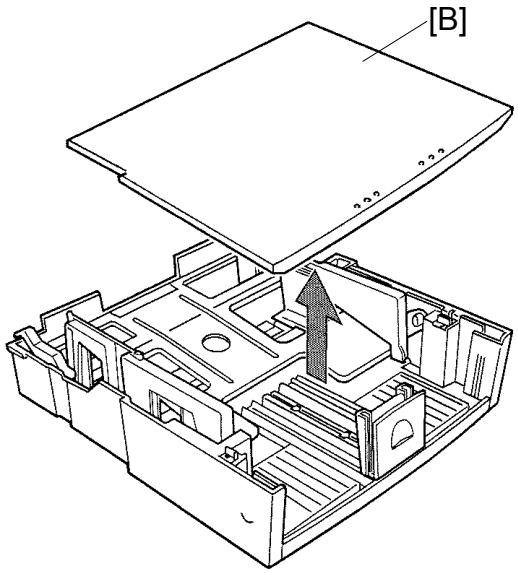

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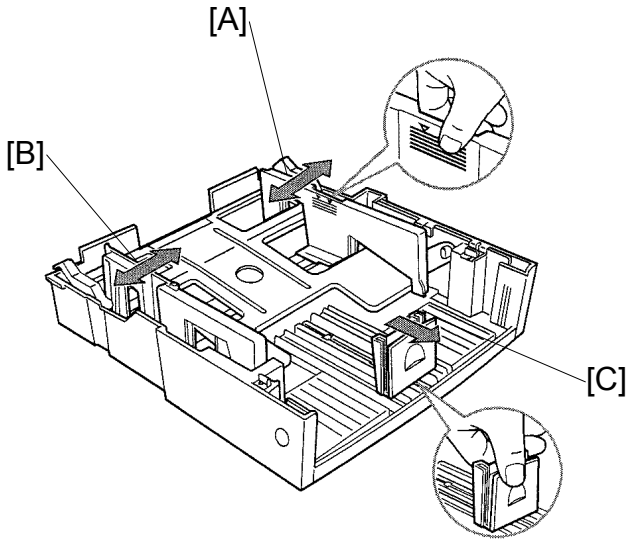
1. Raise the paper tray [A] slightly. Then pull it toward you to remove it.
2. Remove the paper tray cover [B].



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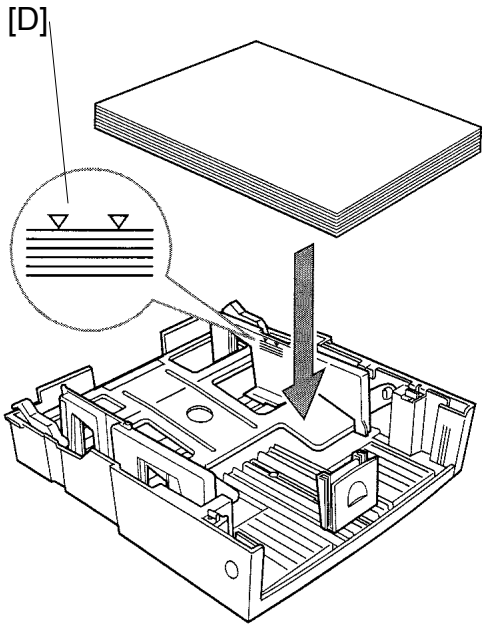

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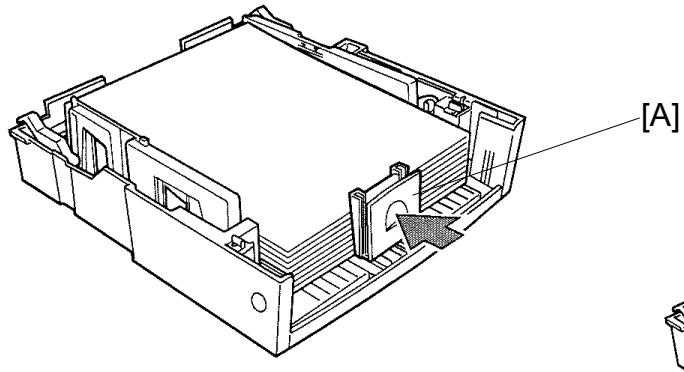
3. Pinch the tabs of the side fences [A], [B] on the left and right side of the paper cassette. Then move them to correct position for the paper size you want (A4 or LTR).
4. Pinch the tabs of the bottom fence [C]. Then slide it forward completely.
5. Get a stack of paper. Then fan it to remove static cling.
6. Load the paper into the cassette.
7. Add paper until it gets to the load limit marks [D].

   Important: Never load paper higher than the load limit mark. This stops paper jams.



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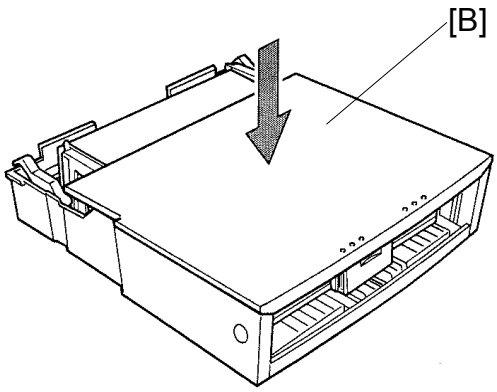

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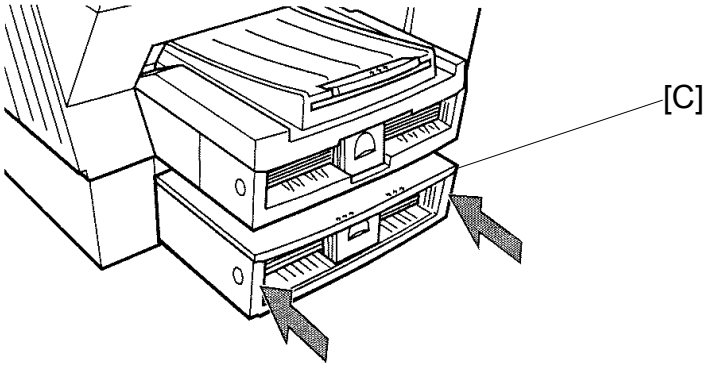
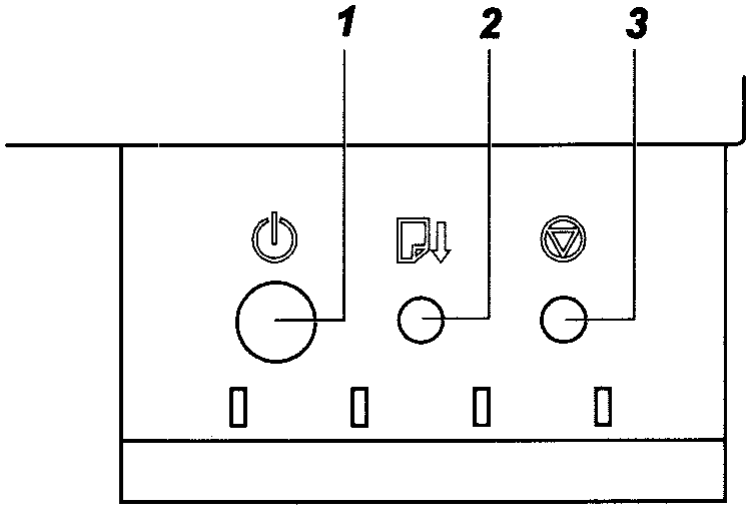


G707I930.BMP

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

1.2.7 CLEAN THE PRINT HEADS, DO A TEST PRINT



G707I931.BMP

1 [Power]

2 [Paper Feed]

3 [Cancel]

To clean all the print heads

1. Press the [Power] key to turn the printer on if the printer is off.
2. Press and hold down [Cancel] for at least 3 seconds to make the [Power] key flash. Then release it.
   - The printer cleans all four print heads (Normal Cleaning).
   - The cleaning takes about 1.5 min.

To print a Nozzle Check Pattern

1. Press the [Power] key to turn the printer off.
2. Wait for the [Power] key to not flash.
3. Press and hold down [Cancel]. Then press [Power] for at least 3 seconds.
4. Release the keys when the four red LEDs go on. The printer prints the Nozzle Check Pattern.
5. Check the four ladder patterns of the Nozzle Check Pattern. (☛3.7.4)

1.2.8 INSTALL PRINTER DRIVER: USB CONNECTION

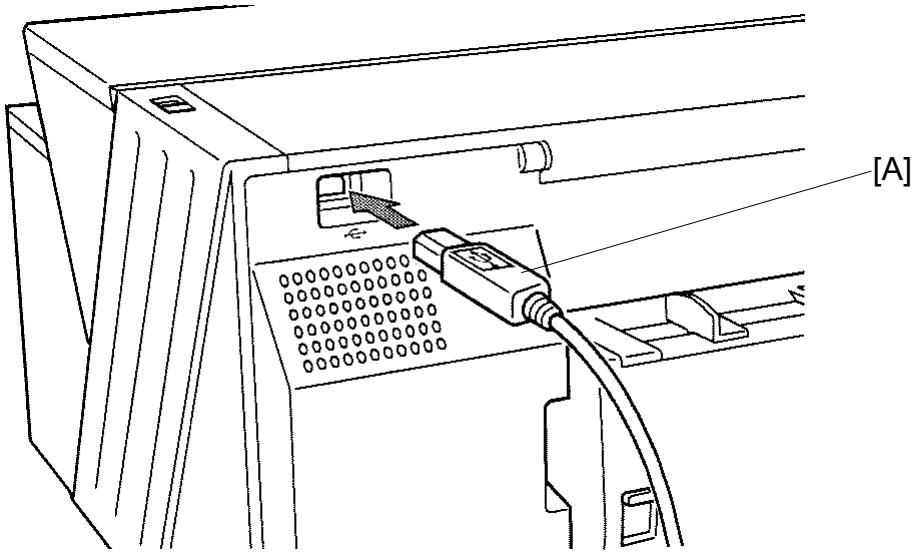
You can get the printer driver and USB driver on the installer CD-ROM provided with the printer.

Important:

- You cannot use the USB cable to connect the printer and PC if you use Windows 95 or Windows NT 4.0. You must use a network connection.
- You can only use the USB cable with Windows 98, Windows Me, Windows 2000, Windows XP, or Windows Server 2003.
- You must use USB 1.1if you use Windows 98 or Windows Me. The printer is set for "Auto Detection" by default. In this mode the printer can use either USB 1.1 or USB 2.0.

1. Remove the paper seal from the USB port of the printer.
2. Put the installer CD-ROM in the CD-ROM drive of the computer.
3. Do the instructions on the screen to install the printer driver and USB driver.
   NOTE: Do not connect the USB cable to the printer until you are instructed to do so.

To connect the printer to the PC with the USB cable



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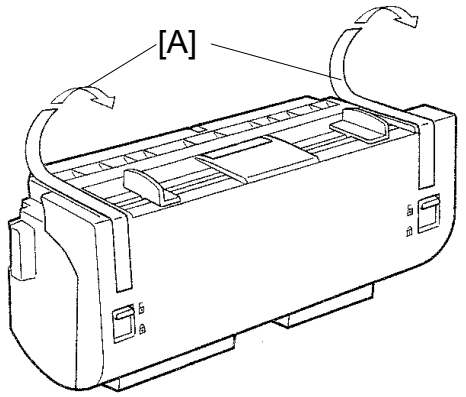
1. Put the square connector of the USB cable [A] into the connection point on the back of the printer.
2. Connect the flat connector of the USB cable into the PC.

1.3 OPTIONS

1.3.1 DUPLEX UNIT (OPTION FOR J001)

The Duplex Unit optional for the J001. You must install this option The J003 is shipped with the Duplex Unit installed. You do not have to install it.

1. Make sure that the printer is switched off and that the power cord is disconnected from the power source.
2. Remove the Duplex Unit from its box.
3. Remove the shipping tape [A] from the Duplex Unit.



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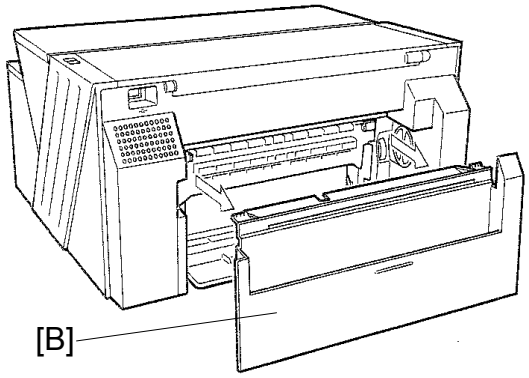
4. Remove the pocket cover [B from the back of the printer.



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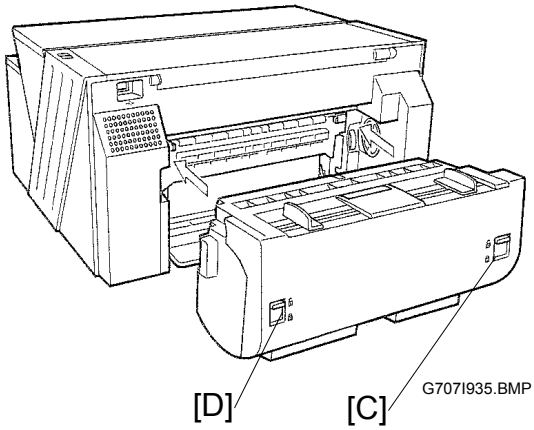
5. Attach the Duplex Unit to the back of the printer.
6. Lower the right lever [C] and left lever [D] of the Duplex Unit.



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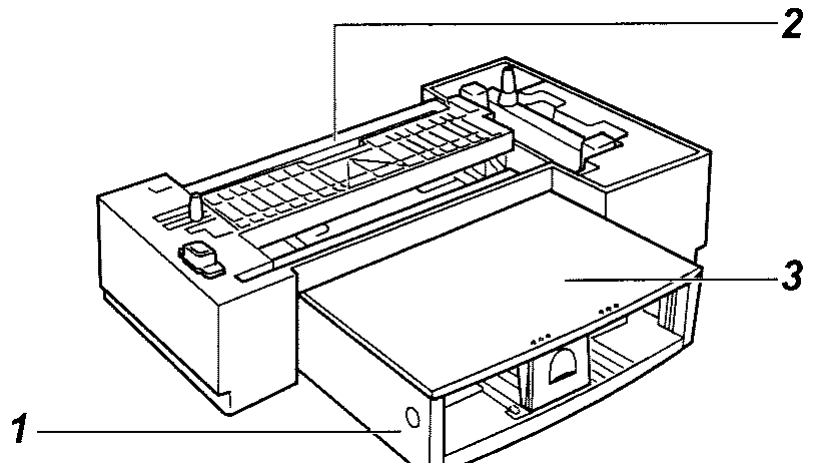
Important

- Lift both sides of the printer with the handles provided when you move the printer.
- Never the grip the Duplex Unit when you lift the printer. This can damage the printer and Duplex Unit.

1.3.2 TRAY 2 (500-SHEET PAPER TRAY – OPTION J003)

The 500-Sheet Paper Tray (Tray 2) is an option for the J003 only. You cannot install this option on the J001.



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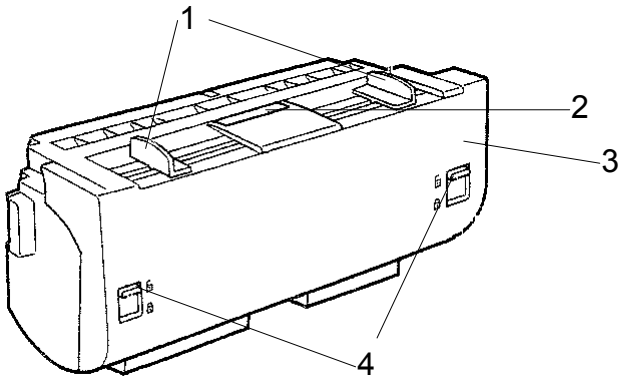
1 Tray 2 (500-Sheet Paper Tray)
Hold 500 sheets of standard PPC.

2 Tray 2 Rear Cover
Open to remove paper jams.

3 Tray 2 Cover
Remove to load paper in the paper tray.

1.3.3 DUPLEX UNIT (OPTION)

The Duplex Unit is provided with the J003. The Duplex Unit is optional for the J001.



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1 Bypass Tray Guides

The top of the Duplex Unit is also the bypass tray. Adjust these guides to the width of the paper at the time you for feed paper from the bypass tray.

2 Duplex Unit Cover Button

Releases the cover so it can be opened.

3 Duplex Unit Cover

Release with the Duplex Unit cover button. Then open the cover to remove paper jammed in the Duplex Unit.

4 Duplex Unit Lock

Locks the Duplex Unit onto the printer. These buttons must stay completely down. Raise both buttons to detach the Duplex Unit from the printer.

1.4 BEFORE MOVING THE PRINTER…

1.4.1 CHECKLIST BEFORE TRANSPORTING THE PRINTER

Make sure the operators know these procedures about moving the printer:

- The printer is light and weighs 11 kg (24.3 lb.). To lift the printer, grip it at the center of each side by the hand recesses provided.
- Never grip the Duplex Unit on the back of the printer.
- Make sure the covers and trays are closed. Secure them with tape. Attach the tape at the same area you removed at the time of installation. (☛1.1.5)
- Disconnect the power cord. Tape the power cord to the back of the printer.
- Remove all paper in the feed trays.
- Do a test print to confirm that the printer operates correctly after you move it to another location. Do the cleaning procedures with the printer driver, if necessary.
- The ink cartridges should remain in the printer. It is not necessary to remove the before transporting the printer. However, ink must be purged from the print head tanks before the printer is transported. (See procedure below.)

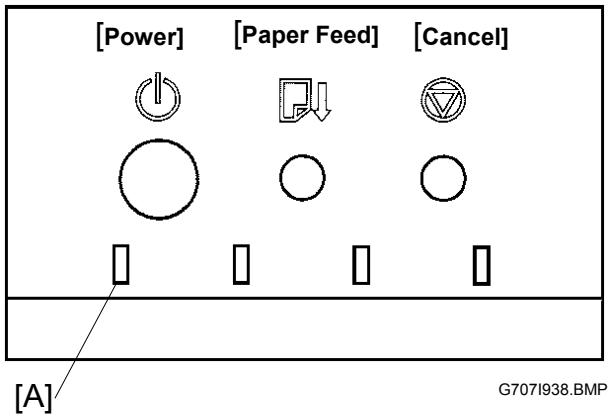
Important

- **TO AVOID INK SPILLAGE, ALWAYS HOLD THE PRINTER LEVEL WHEN YOU MOVE IT. WORK CAREFULLY TO AVOID DROPPING IT OR COLLIDING WITH OTHER OBJECTS IN THE WORK AREA.**

1.4.2 PURGING THE PRINT HEAD TANKS

Important! Do this procedure before transporting the printer over a long distance. Before moving the printer to another location in the same room or building, for example, no preparation is necessary. Just switch the printer off and unplug the power cord.

1. If the printer is on, press the [Power] key to switch the printer off.
2. Press and hold down the [Paper Feed] and [Cancel] keys together, then press the [Power] key.
3. When the four ink LEDs [A] light, release the [Power] key and [Paper Feed] key, then press the [Cancel] key **8** times.



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The printer starts purging ink from the print head sub tanks. When the ink purge is finished, the [Power] key will go off automatically.

2. PREVENTIVE MAINTENANCE

There are no maintenance procedures that need normal care or replacement. However, the customer engineer should do the procedures shown in this section at the time a service call is requested.

2.1 SERVICE CALL PROCEDURES

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. (☛2.4)
Friction Pad	Damp cloth. This is the cork friction pad on the front edge of the standard paper cassette (Tray 1).
Transport Belt	Damp cloth. Then dry cloth. (☛2.5) **Important:** To protect the surface of the transport belt, never use alcohol or any other type of organic solvent.
Printer Operation, Print Quality	Print a Nozzle Check Pattern. Then check the results. Clean the print heads if necessary. For more, see "Image Adjustment" in section "3. Replacement and Adjustment".
Waste Ink Tank	Replace when SC992 shows. The waste ink tank is full, or when the display prompts that the printer needs maintenance. Open the printer driver to confirm either condition. For more, see section "3. Replacement and Adjustment".
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. (☛2.3.1)
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. (☛2.3.2)
Print Heads	Dry cloth. Gently wipe clean the print head nozzles and nozzle loop plates on the front side when you replace the waste ink tank. (☛2.3.3)

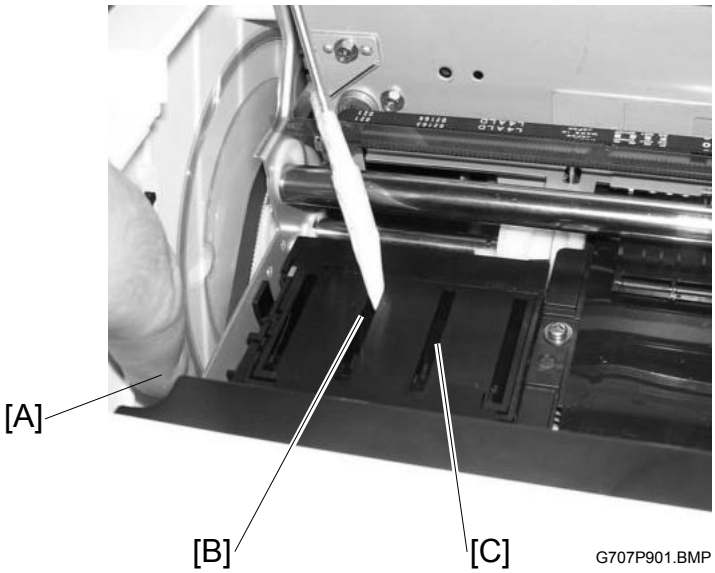
2.2 SERVICE TECHNICIAN RESPONSIBILITY

The responsibility of the service technician is limited for this reason:

- This machine is adjusted for optimum performance at the factory before it gets shipped.
- Do these if a serious problem occurs:
  - Return the printer to the repair center
  - Replace the printer
- Examine Section “3. Replacement and Adjustment” for replacement procedures.

2.3 CLEANING PROCEDURES

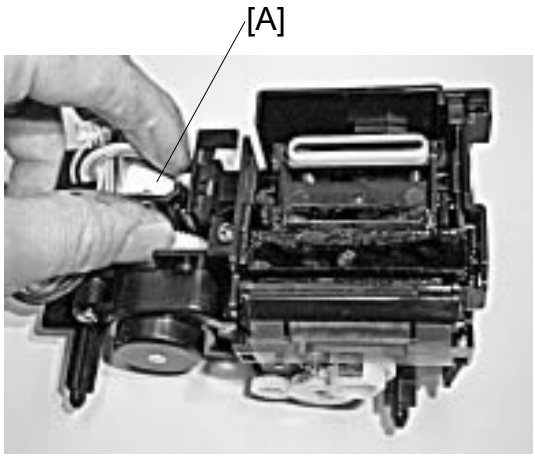
2.3.1 FLUSHING GATE



1. Open the top cover.
2. Push the operation lever [A] to the left.
3. Use the tip of a screwdriver or other tool wrapped in soft cloth to remove the ink that has hardened inside the slits [B] of the flushing gate.
4. Use a slightly damp cloth to wipe clean the ink splatter around the flushing gates [C].

   Important: Dry ink that has collected around the flushing gate can let streaks show in printouts.

2.3.2 MAINTENANCE UNIT



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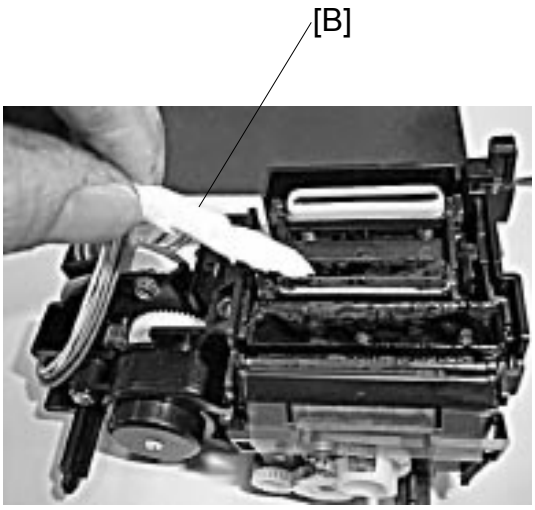

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Suction Cap

1. Remove the maintenance unit. (☛3.4)
2. Turn the drive gear [A] of the maintenance motor to the right to raise the suction cap.
3. Wrap the tip of screwdriver or similar tool [B] with a damp cloth.
4. Use the wrapped tip of the screwdriver to clean these:
   - Inside the cap
   - Around the cap to remove the hardened ink

   Important: Always wrap the tip of the tool with a with a damp cloth. This will not let the suction cup get scratched. A scratched suction cap could cause poor print jobs.

Right Air Vent

G707P904.BMP

1. Use a screwdriver or similar tool to remove hardened ink from inside the right air vent [A].
2. Use a dry cloth to remove ink splatter from inside the right air vent.

Wiper Blade

G707P905.BMP

1. Rotate the maintenance motor gear to the right to raise the suction caps [A] and hold it open. (☛2.3.2)
2. Rotate the motor gear again until the wiper blade [B] is open.
3. Use a dry cloth to remove ink splatter from the wiper blade and the area around it.

2.3.3 PRINT HEADS

Nozzle Cover, Nozzle Plate

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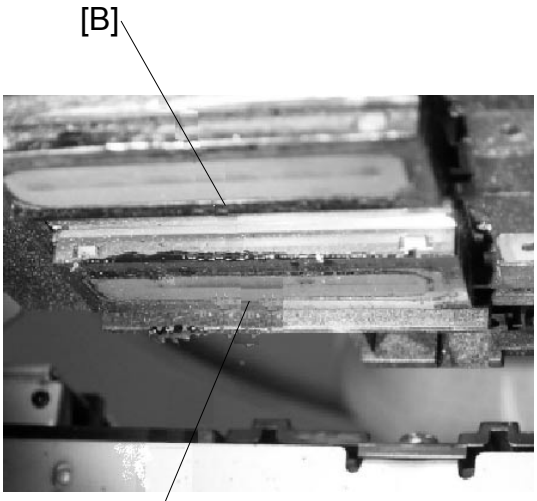

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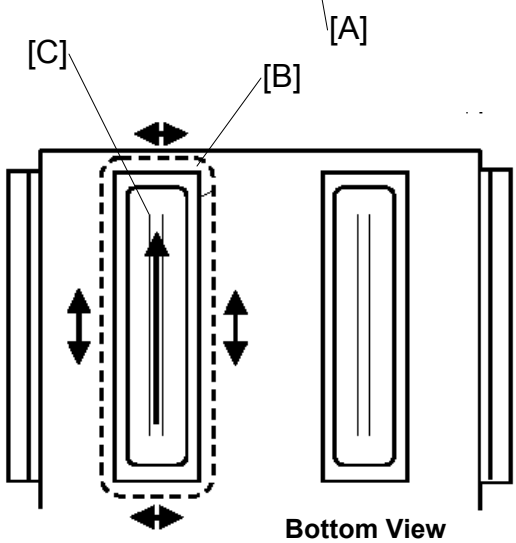

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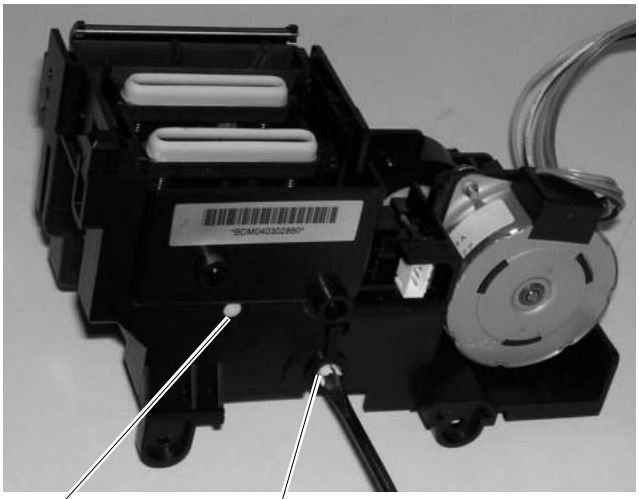
1. Remove the maintenance unit. (☛3.3)
2. Push the carriage to the home position (completely to the right).
3. Insert your hand into the opening [A] on the right side of the printer.
4. Use a damp cloth to clean the nozzle cover [B] of the print heads.
5. Use part of the cloth that is clean to wipe clean the print head nozzle plate on the face of the print head [C].

   Important: Gently wipe the plate once or twice in the same direction (left or right). This will not let the plate get damaged. Never clean the plate with strong right-and-left motion. A damaged plate could cause poor print jobs.

After Cleaning the Maintenance unit

1. Do these before you reinstall the maintenance unit:
   - Turn the drive gear of the maintenance motor to the right.
   - Lower the suction cap and the wiper blade. Make sure they are secure in the down position.
   - Make sure the triangle marks on the sides of the maintenance unit match. Do this if the tips of the white and black triangle marks [A] are not aligned:
     - Insert the tip of a flat head screwdriver [B.] Then slowly rotate it clockwise until the marks are aligned.



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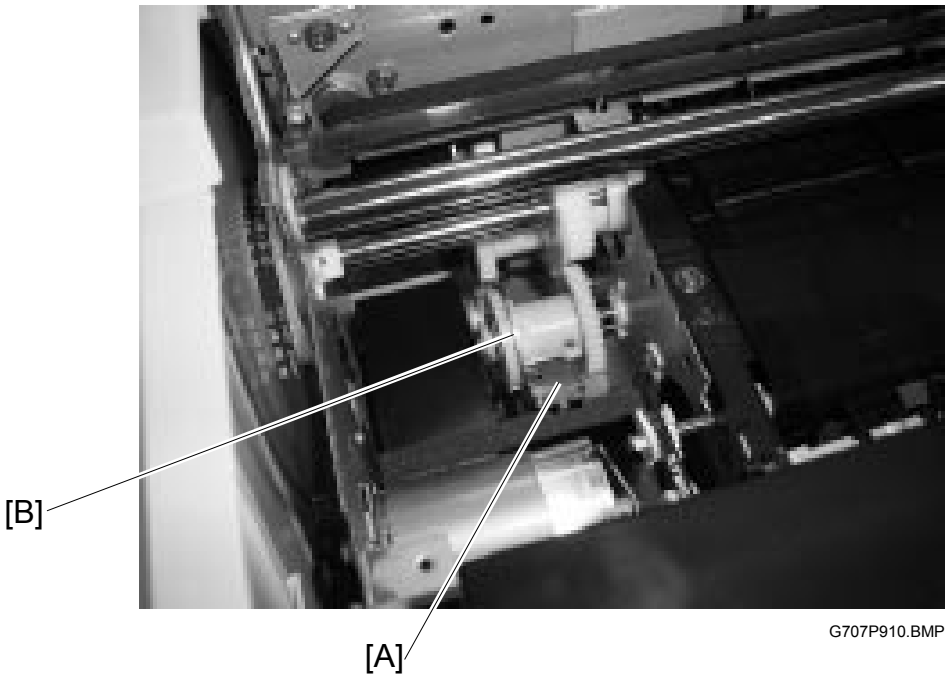
After you reassemble the printer:

1. Clean all the print heads.
   - Make sure the printer is on.
   - Press and hold the [Cancel] key for 3 sec.
2. Print a Nozzle Check Pattern to confirm that the printer is operates correctly.
   - Switch the machine off.
   - Press and hold down the [Power] key and [Cancel] keys together for about 3 seconds. Then release them when the ink level LEDs show red.
   - Check the test pattern. Do the procedure again if you see any bare patches in the pattern. Do this until the pattern is perfect. For more, see section "4. Troubleshooting".

2.4 FEED ROLLER



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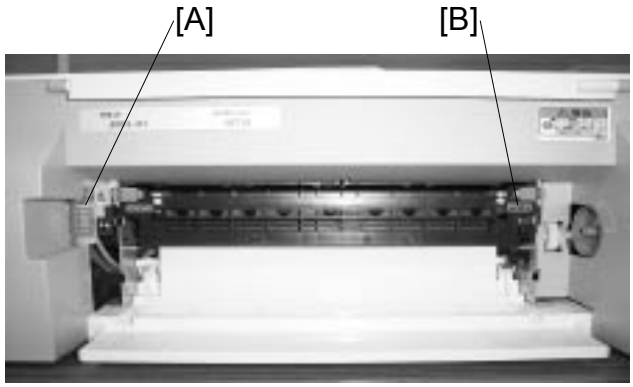
1. Open the top cover.
2. Remove the paper cassette.
3. Remove the flushing unit. (☛3.3)
4. Release the lock of the feed roller so the roller [B] rotates freely at the time you press down on the metal plate [A] with a screwdriver.
5. Rotate the roller at clean the roller with a dry cloth.

2.5 TRANSPORT BELT



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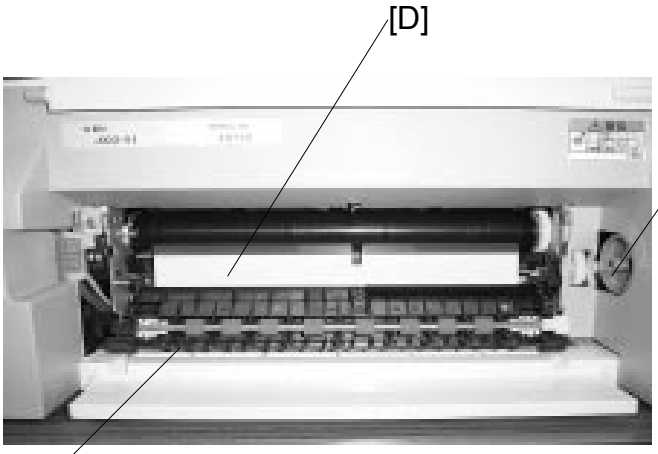

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1. Do this if the duplex unit is installed:
   - Raise the levers on both ends of the unit. Then remove it from the back of the printer.
2. Remove the rear cover (🖉 x 2).
3. Release the left lock [A] and right lock [B] of the reverse guide plate.
4. Open and lower the reverse guide plate [C].
5. Use a damp cloth to wipe clean the surface of the transport belt [D]. Then clean the belt with a dry cloth.
6. Use the feed guide [E] to rotate the transport belt as you clean. This procedure lets you clean the entire surface of the belt.
7. Make sure the surface of the belt is completely dry.

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

3. REPLACEMENT AND ADJUSTMENT

3.1 SUMMARY OF PROCEDURES

Parts up to Level 3 can be replaced in the field. Parts in Level 4 or 5, however, need special tools, so repair at the repair center is necessary.

Level 1: Very easy to identify cause of the problem and replace.		
	External Doors	Removal
	Paper Cassette	Removal
	Output tray	Removal
	Extension Tray	Removal
	Print Head Cleaning (Normal)	Installation, Replacement
	Print Head Cleaning (Full)	Installation, Replacement
Level 2: Easy to identify cause of the problem and replace.		
	Operation Panel	Replacement
	Waste Ink Suction Unit (Maintenance Side)	Replacement
	Maintenance Unit	Replacement
	Reverse Guide	Replacement
	Ink Ejection Unit	Replacement
	Trailing Edge Sensor	Replacement
	Waste Tank Full Sensor	Replacement
	Bypass Set Sensor	Replacement
	Print cartridge Set SW	Replacement
	Duplex Unit Set	Replacement
	Duplex Unit	Replacement
	Extension Tray Replacement	Replacement
	Feed Roller	Cleaning, Replacement
	Transport Belt	Cleaning, Replacement
	Firmware Update	
Level 3: Difficult to identify the cause of the problem, but easy to replace.		
	PSU	Replacement
	High Voltage Power Pack	Replacement
	Horizontal Motor	Replacement
	Horizontal Encoder	Cleaning, Replacement
	Ink Supply Pump	Replacement
	Air Release Solenoid	Replacement
	Vertical Encoder Sensor	Replacement
	COM Board	Replacement
	Vertical Encoder	Cleaning, Replacement
	Vertical Encoder Sensor	Replacement
Level 4: Difficult to identify problem, easy to replace but requires repair center adjustment.		
	Vertical Encoder	Replacement
	Vertical Motor	Replacement
	Waste Ink Suction Unit	
	Feed Clutch	
	Relay Board	
Level 5: Difficult to identify problem, difficult to replace, and requires repair center adjustments.		
	Carriage Unit	Replacement
	Transport Belt	Replacement
	Charge Roller	Replacement
	Paper Cassette Release Lever	Replacement
	Feed Roller	Replacement
	Leading Edge Sensor	Replacement
	Control Board	Replacement
	DRV Board	Replacement

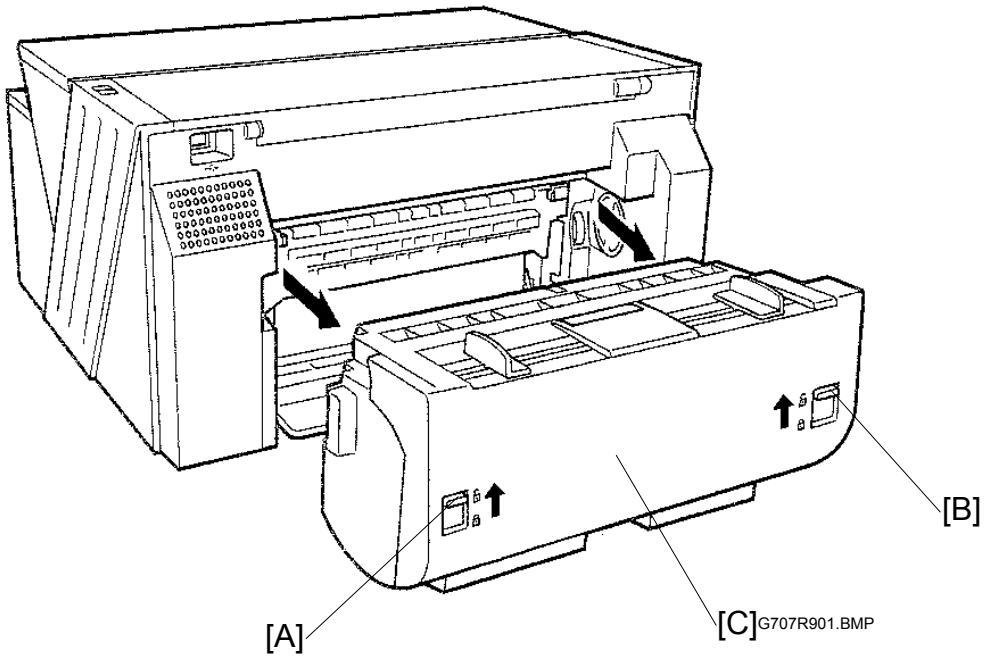
3.2 BASIC REMOVAL PROCEDURES

3.2.1 DUPLEX UNIT

⚠CAUTION
Switch the printer off and disconnect it from the power supply before you do the procedures in this section.

Important!

TO AVOID INK SPILLS, NEVER TURN THE PRINTER UPSIDE DOWN OR SET IT ON EITHER ITS LEFT OR RIGHT SIDE. THE PRINTER MUST REMAIN UPRIGHT ON A FLAT SURFACE DURING SERVICING.

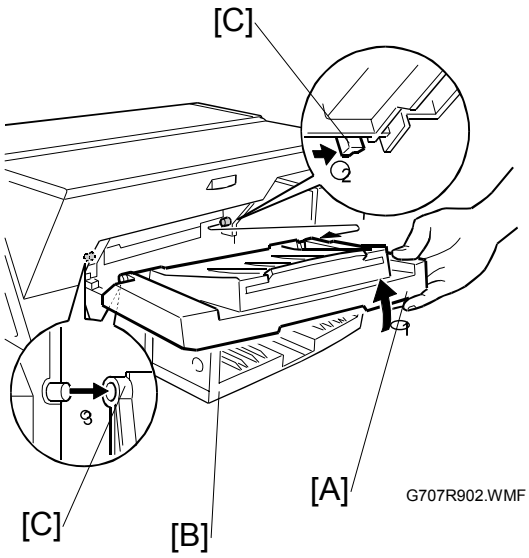


1. Raise the left release tab [A] and right release tab [B] to the unlock positions.
2. Lift and pull the Duplex Unit [C] out from the back of the printer.

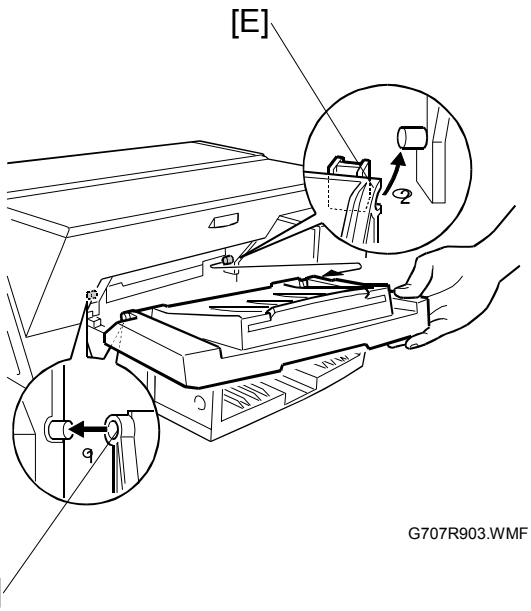
Reinstallation

- Make sure to press down and lock the left and right release tabs after you set the Duplex Unit in the machine.

3.2.2 DETACHING AND REATTACHING OUTPUT TRAY



G707R902.WMF



G707R903.WMF

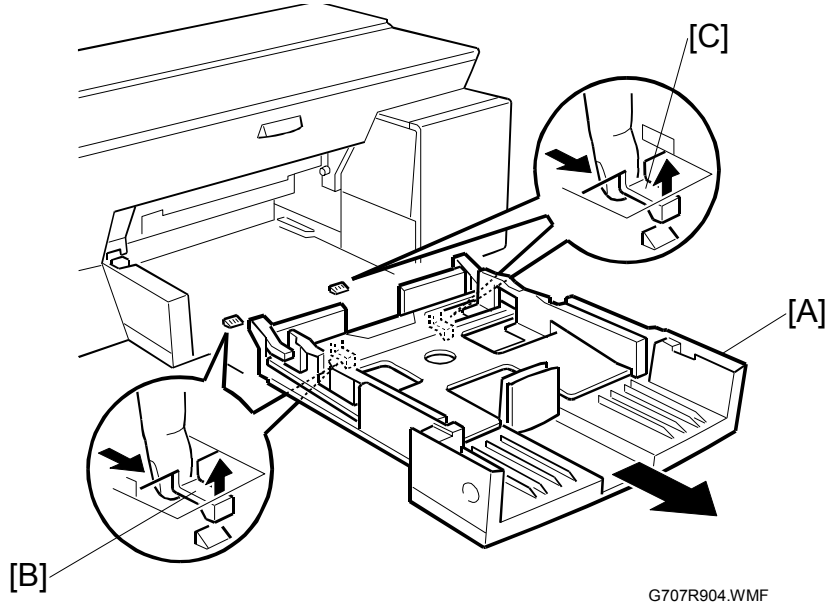
To detach the output tray:

1. Raise the output tray [A].
2. Pull out the paper cassette [B] until it stops.
3. At the right corner of the output tray, pull the release lever [C] to the left to release it. Then pull the right corner slightly toward you to disconnect it.
4. With the right corner free, detach the left corner [D].

To reattach the output tray:

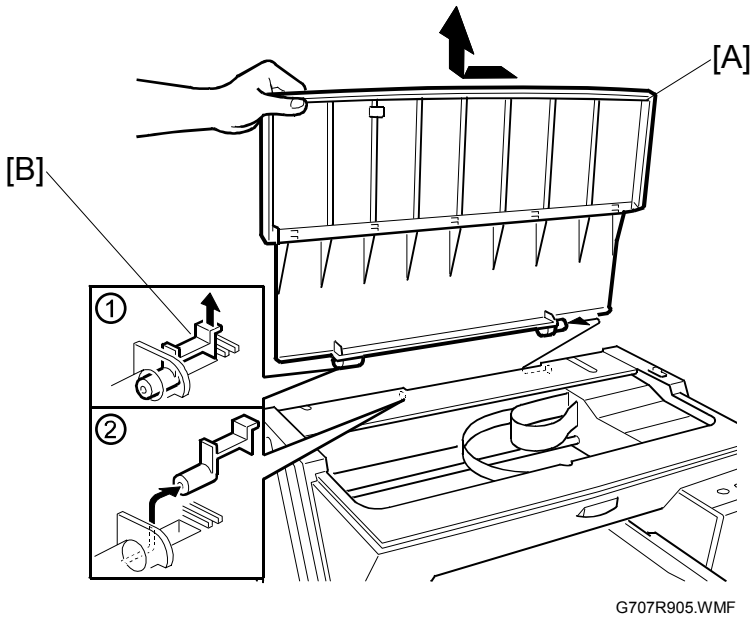
- Set the left corner [D] of the output tray first. Then set the right corner [E].

3.2.3 PAPER FEED CASSETTE



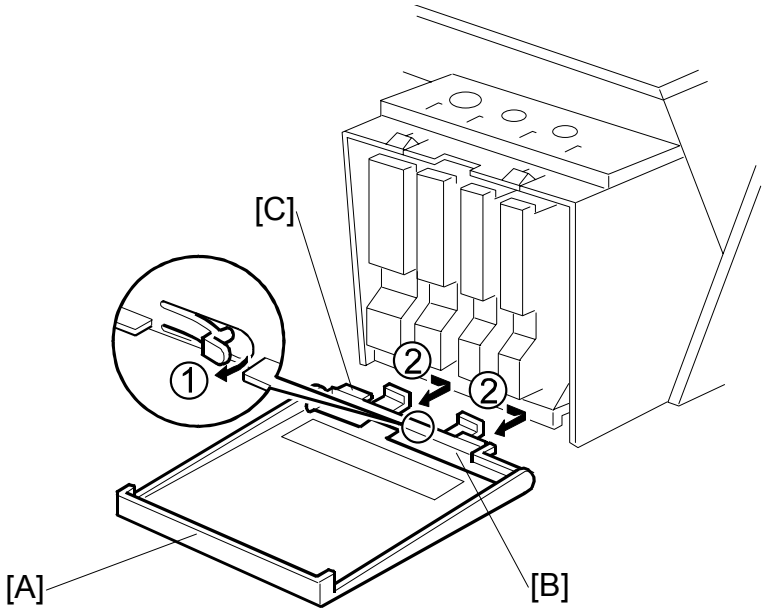
1. Remove the output tray (☛3.2.2).
2. Pull out the paper cassette [A] until it stops.
3. Press the two pawls [B] and [C] up to release them.
4. Slowly remove the paper cassette from the printer.

3.2.4 TOP COVER



1. Raise the top cover [A] and hold it open.
2. Gently raise the top of the lock pin [B] and slide it to the right.
3. Detach the top cover from the printer.

3.2.5 RIGHT FRONT DOOR



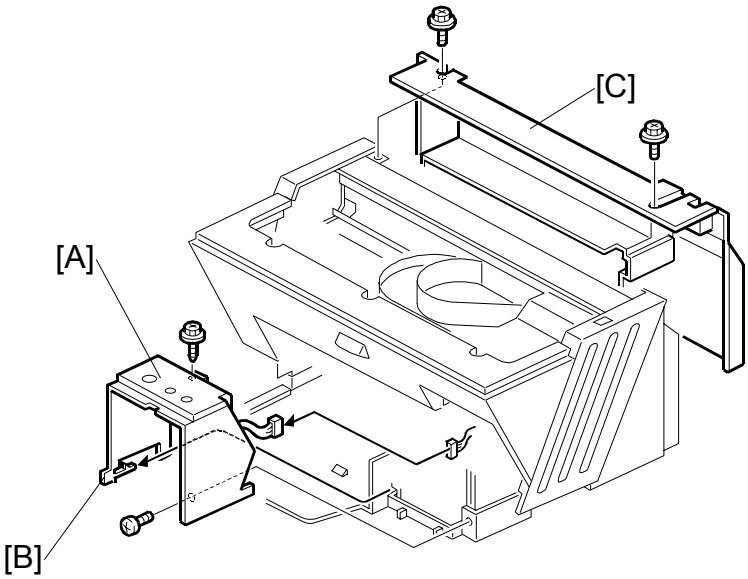
G707R906.WMF

1. Lower the right front door [A].
2. Move the cover to the right ② and detach it while gently pulling the tab ① toward you.

Reinstallation

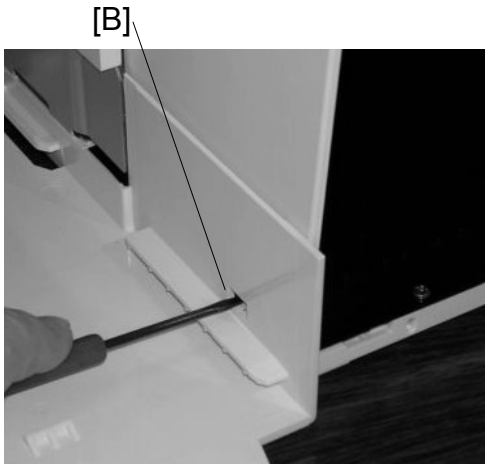
- Insert the left tab [C] into its hole. Then move the door to the left.
- Press down tab ①.
- Make sure that tab ① is down and locked.

3.2.6 PRINT CARTRIDGE COVER, REAR COVER



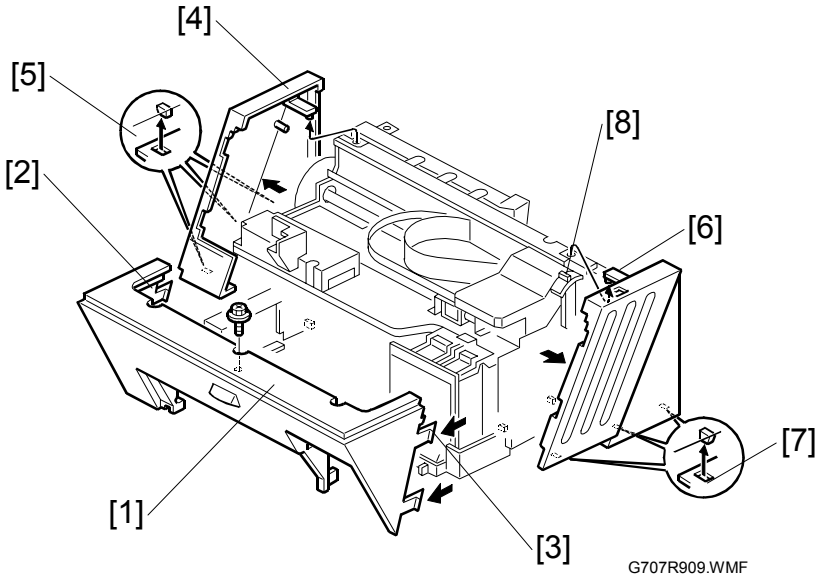
G707R907.WMF

1. Remove:
   - Output tray (☛3.2.2)
   - Paper cassette (☛3.2.3)
   - Top cover (☛3.2.4)
   - Right front door (☛3.2.5)
2. Pull out the Print cartridges (K, C, M, Y)
3. Remove the screws of the Print cartridge cover [A] (🔩 x 2).
4. Use a small screwdriver to press down pawl [B] to release it. Then remove the Print cartridge cover (✋ x 1).
5. Remove the screws of the rear cover [C] (✋ x 2).
6. Pull from the top and slowly rotate the cover away from the back of the printer.
   NOTE: Jog the cover left and right at the time you lower it if the rear cover is difficult to remove.



G707R908.BMP

3.2.7 FRONT COVER, LEFT COVER, RIGHT COVER



Preparation

Remove:

- Duplex Unit (☛3.2.1)
- Output tray (☛3.2.2)
- Paper cassette (☛3.2.3)
- Top cover (☛3.2.4)

Front Cover

1. Remove the screws of the front cover [1] (☞ x 1).
2. Disconnect front cover pawls [2].
3. Disconnect front cover pawls [3]
   NOTE: You cannot see the pawls on the right side of the front cover. The carriage inside the printer hides them. Pull out the right end slightly. Then use the tip of a small screwdriver to disconnect them.

Left Cover

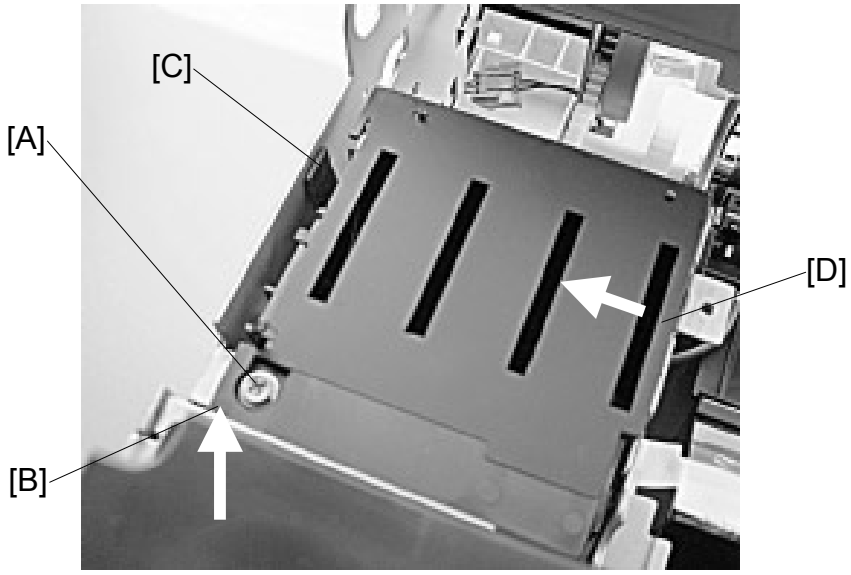
1. Disconnect the tab of the left cover [4].
2. Disconnect the bottom pawls [5] and remove the left cover at the time you lower the left cover. Do this procedure slowly.

Right Cover

1. Disconnect the tab of the right cover [6].
2. Disconnect the bottom pawls [7] and remove the right cover at the time you lower the right cover. Do this procedure slowly.

   Important: Use high caution at the time you work to not break the envelope selector [8].

3.3 FLUSHING UNIT

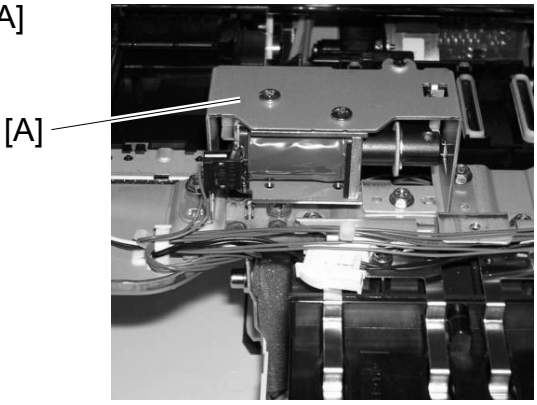


G707R910.BMP

1. Open the top cover.
2. Remove screw [A] (🔩 x 1).
3. Press up slightly on the lower left corner [B].
4. Use the tip of a small screwdriver to disengage tab [C].
5. With the left side very slightly raised, use a the tip of a small screw driver to press the right side of the Flushing Unit [D] to the left to disengage the two pegs (not visible) on the right side.
6. Raise the Flushing Unit out of the printer.

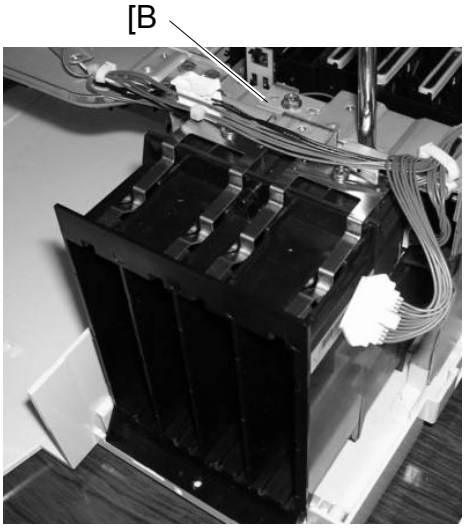
3.4 MAINTENANCE UNIT

1. Remove
   - Output tray (☛3.2.2)
   - Paper cassette (☛3.2.3)
   - Top cover (☛3.2.4)
   - Front cover, Right cover (☛3.2.7)
   - Right front door (☛3.2.6)
   - Print cartridges x 4 (Y, M, C, K) (☛3.2.6)
   - Rear cover (☛3.2.6)
2. Disconnect the solenoid support bracket [A] (🔩 x 2).



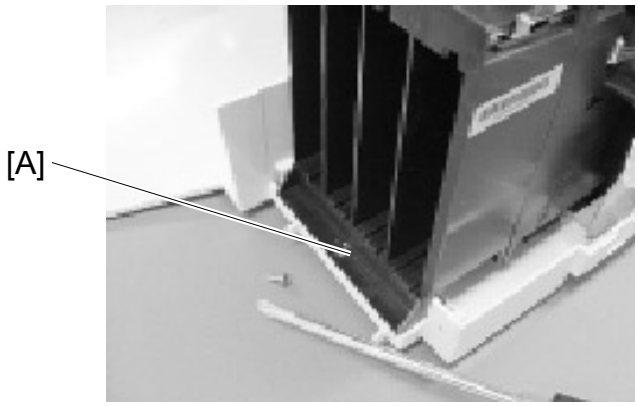
G707R911.BMP

3. Remove the ink supply unit anchor bracket [B] (🔩 x 2).



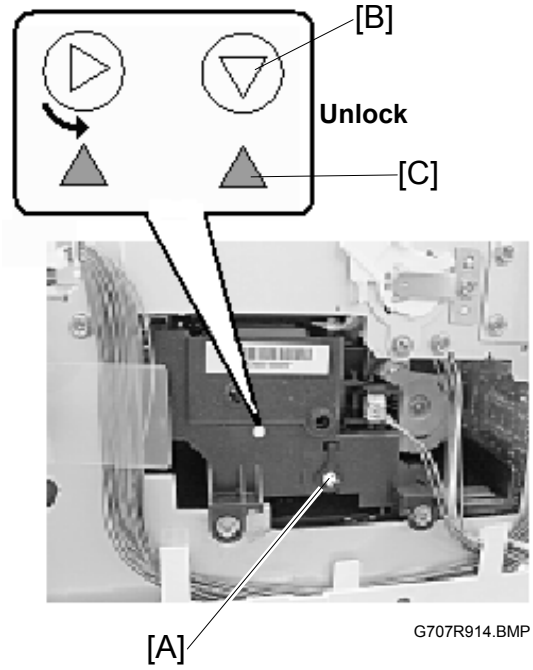
G707R912.BMP

4. Remove the ink supply unit [A] (x 1, x 1).



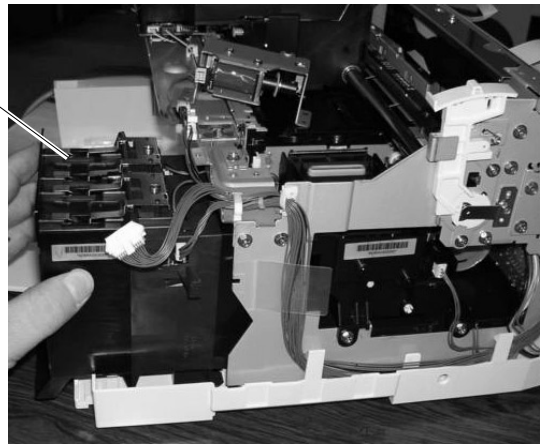
G707R913.BMP

5. Use a plus (+) screwdriver to turn the screw at [A] counter-clockwise until the tip of the upper triangle [B] gets aligned with the tip of the lower triangle [C].
   This unlocks the carriage.
6. Push the unlocked carriage to the middle of the platen above the transport belt.



G707R914.BMP

7. Slowly pull the ink supply unit [A] to the left.



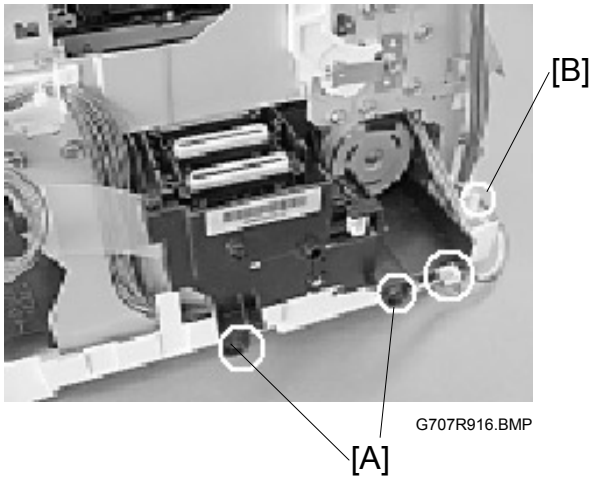
G707R915.BMP

Important! Do not pull the ink supply unit completely out of the machine. This will not let the ink supply tubes get disconnected. The tubes should stay connected at all times.

8. Disconnect the maintenance [A] unit
(x 2, x 2).

NOTE: Disconnect the maintenance motor connector [B] from the PCB on the back of the printer.

9. Slowly remove the maintenance unit from the printer.

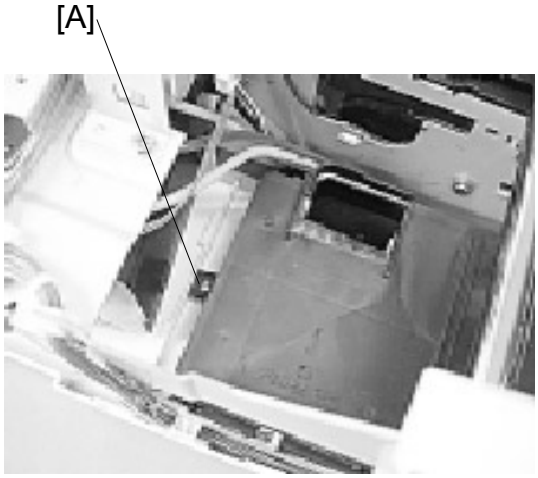


G707R916.BMP

Important! A small hose protrudes from the bottom of the maintenance unit. Do not hit avoid this hose at the time you remove the maintenance unit from the printer. This stops ink spillage.

3.5 WASTE INK UNIT

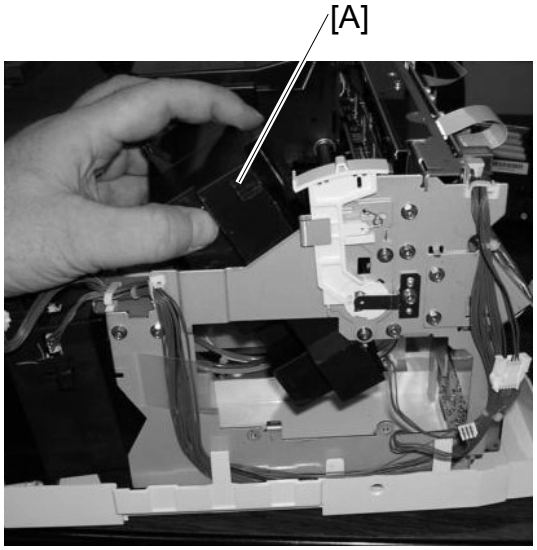
1. Remove the maintenance unit (☛3.4)
2. Disconnect the front tab (🖉 x 1)



G707R917.BMP

3. At the time you pull the waste ink unit [A] forward, raise it to about a 45 angle. Then remove it from the printer.

   NOTE: Do not remove the waste ink unit through the side of the printer frame.

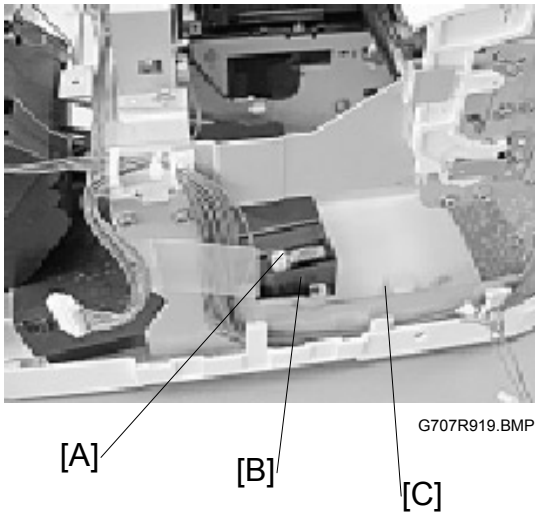


G707R918.BMP

Reinstallation

- Insert the waste ink unit from the top.
- Keep the ink supply tubes pressed against the printer frame at the time you insert the waste ink unit. Make sure the tubes are not tangled or disconnected.
- Make sure the rear tab on the back of the waste ink unit fits into the slot of the printer frame. The hole of the front tab will not get aligned with the hole below if the rear tab is not inserted correctly.

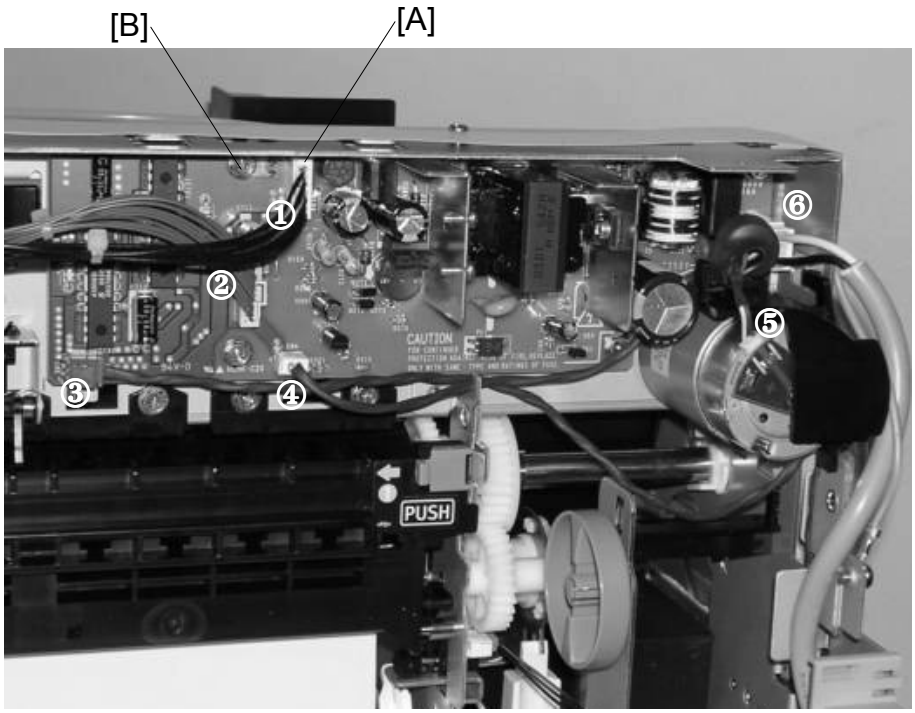
4. Disconnect the full sensor [A] of the waste ink tank.
5. Raise the waste ink suction unit [B] above the boss [C] on the frame. Then pull it out of the printer.



G707R919.BMP

3.6 PCBS

3.6.1 PSU BOARD



G707R920.BMP

Remove these:

- Duplex unit (☛3.2.1)
- Top cover (☛3.2.4)
- Front cover, left cover, right cover (☛3.2.7)

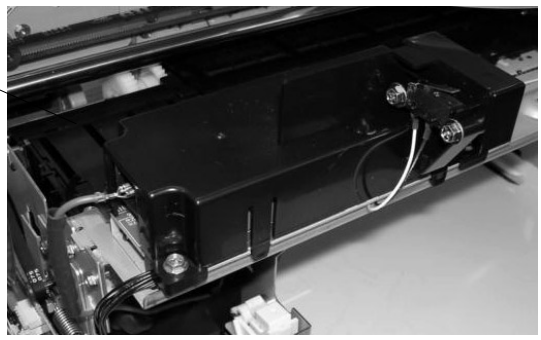
[A]: Connectors (✋ x 5 at ① to ⑥)
[B]: PSU PCB (🔩 x 4)

3.6.2 HIGH VOLTAGE POWER SUPPLY BOARD

Remove these:

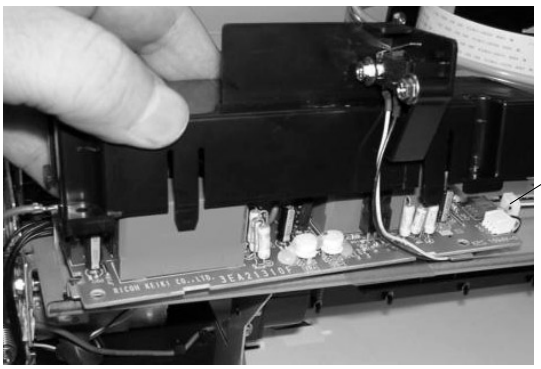
- Duplex unit (☛3.2.1)
- Top cover (☛3.2.4)
- Front cover, left cover, right cover (☛3.2.7)

[A]: Cover (🔩 x 4, tabs x 4)



G707R921.BMP

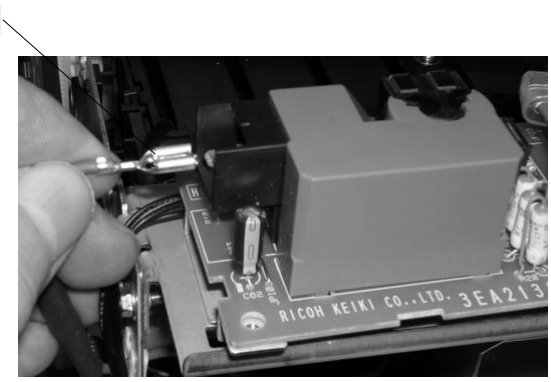
[B]: Right connectors (✋ x 3)



G707R922.BMP

[C]: Left bayonet connector (✋ x 1)

NOTE: Press up gently as you pull if the bayonet is difficult to disconnect.



G707R923.BMP

3.7 IMAGE ADJUSTMENT

You can see the image adjustment features on the “Maintenance” sheet of the printer driver. These four buttons are used for the adjustments:

- Adjust Paper Feed
- Nozzle Blockage Check
- Adjust Print Head Position
- Registration (Print Start Position)

3.7.1 PREPARING FOR TEST PRINTING

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

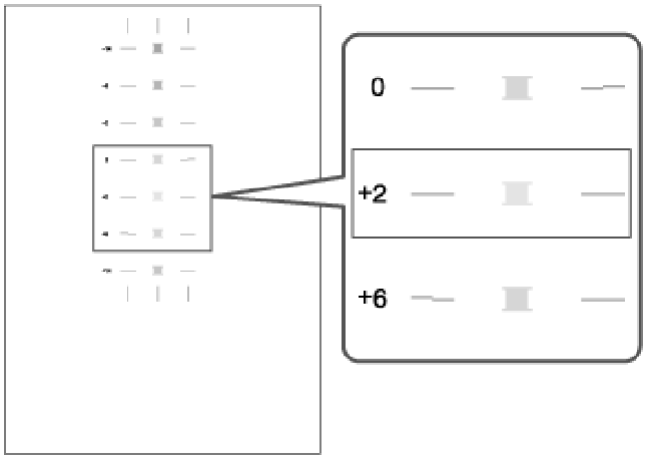
3.7.2 OPENING THE PRINTER DRIVER

1. On the desktop, click the [Start] button.
2. Select “Settings”> “Printers”>. Then right-click the “Ricoh IPSiO GP707" (or Ricoh IPSiO GP505) printer icon.
3. Select “Properties” from the pop-up menu to open the printer driver Properties Window.

3.7.3 ADJUST PAPER FEED

Print the ‘Adjust Paper Feed Test Pattern’ and do this adjustment if you see broken horizontal lines or uneven colors in the printouts:

1. Open the printer driver. (☛3.7)
2. In the Printer Properties window click “Maintenance”>”Adjust Paper Feed”
3. Do the instructions to print the test pattern.



G707R924.BMP

4. Examine the test print. Then enter the number of the pattern that shows the best appearance (the horizontal lines should be perfectly flat).
5. Do the instructions on screen to complete the adjustment.

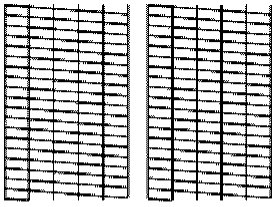
3.7.4 NOZZLE BLOCKAGE CHECK

One or more of the nozzles is blocked if you see these:

- Broken lines
- Uneven patches of white in the printouts.

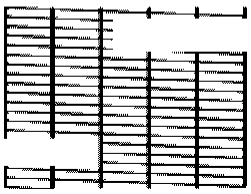
At this time, do this procedure:

1. Open the printer driver. (☛3.7)
2. In the Printer Properties window click “Maintenance”>”Nozzle Blockage Check”.
3. Do the instructions on the screen to print the test pattern. The sample below shows a normal and abnormal pattern.



Normal Pattern

Lines are crisp and unbroken.



Abnormal Pattern

Lines are broken, patches of white spoil the appearance of the pattern.

G707R925.BMP

4. Examine the pattern. Then check which color does not show. This information lets you know which nozzle is blocked.
5. Do the instructions on the screen to select the color you want to correct. Then clean the print heads.

Important:

- Do “Clean Print Heads (Normal)” up to 3 times to correct the problem. Do “Clean Print Heads (Full)” once if the problem stays.
- The “Full” cleaning uses a lot of ink. Do not do the “Full” cleaning until you have done the “Normal” cleaning at least 3 times.
- For more, please refer to Section “4. Troubleshooting”.

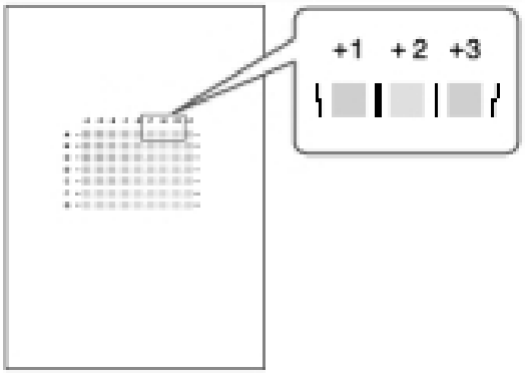
3.7.5 ADJUST PRINT HEAD POSITION

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

- Broken vertical lines
- Smeared or streaked colors

At this time, do this procedure:

1. Open the printer driver. (☛3.7)
2. In the Printer Properties window click “Maintenance”>”Adjust Print Head Position”
3. Do the instructions on the screen to print the test pattern.

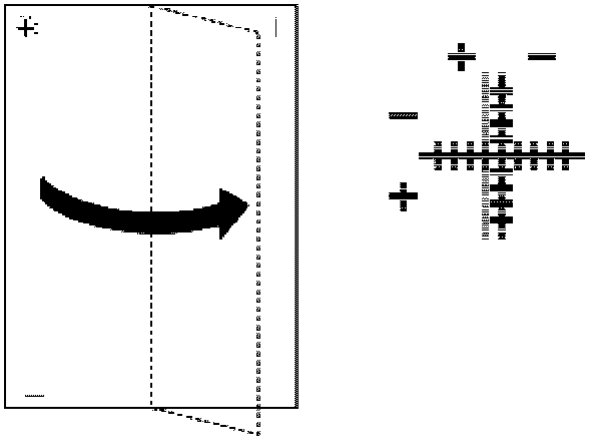


G707R926.BMP

6. Examine the test print. Then enter the numbers of the patterns that show the best appearance.
7. Do the instructions on screen to complete the adjustment.

3.7.6 REGISTRATION

1. Open the printer driver. (☛3.7)
2. In the Printer Properties window click “Maintenance”>”Registration”
3. Do the instructions to print the test pattern.



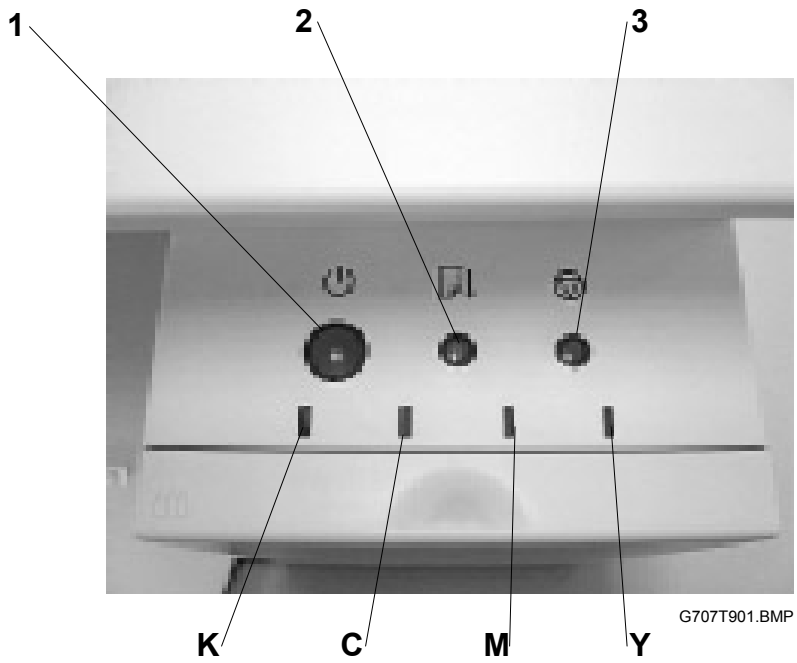
G707R927.BMP

8. Examine the test print. Then enter the numbers of the patterns that show the best appearance for these:
   - Print direction
   - Paper feed direction.
9. Do the instructions on screen to complete the adjustment.

4. TROUBLESHOOTING

4.1 PRINTER DISPLAY SUMMARY

4.1.1 OPERATION PANEL DISPLAY



Operation Panel Keys/Indicators

Indicator/Key	Function	
Power Key/LED	Press to turn the printer on. LED lights to show power on.	
Paper Feed Key/LED	Flashes when there is a paper jam.	
Cancel Key (No LED)	Press to cancel a print job.	
Y Yellow Ink (LED)	Flashes	Yellow ink near end.
	Lights	Yellow ink exhausted.
M Magenta Ink LED	Flashes	Magenta ink near end.
	Lights	Magenta ink exhausted.
C Cyan Ink LED	Flashes	Cyan ink near end.
	Lights	Cyan ink exhausted.
K Black Ink LED	Flashes	Black ink near end.
	Lights	Black ink exhausted.

Examine the table on the next page for more about how these LEDs work together.

LED Operation Summary

Item	LED					
	Power	Paper	K	C	M	Y
	Green	Red	Red	Red	Red	Red
Online (Ready for Normal Operation)	❍					
Job Received/Job Processing	❍					
Receiving Print Job	●					
No Paper in Tray No Paper Feed Jam in Tray No Paper Feed Jam in Duplex Unit (Cannot Print Second Side of Duplex Page)	❍	❍				
Paper Stop Jam (Cannot Reprint)	❍	●				
Black Ink Near End	❍		●			
Cyan Ink Near End	❍			●		
Magenta Ink Near End	❍				●	
Yellow Ink Near End	❍					●
Black Ink End	❍		❍			
Cyan Ink End	❍			❍		
Magenta Ink End	❍				❍	
Yellow Ink End	❍					❍
Print Cartridge Not Set	❍		❍	❍	❍	❍
Printer Cover Open	❍	●				
Printer Warming Up	●					
Print Head Cleaning (by Operator)	●					
Call For Service (Engine Service Call)	●	●	●	●	●	●
Shutting Down	▲					
Overheated (Printer Can Recover)	●					
Overheated (Printer Cannot Recover) *1	●	●				

*1 The machine should be returned to the service center for repair or replacement.

Remarks:

KCMY	Blac**K**, **C**yan, **M**agenta, **Y**ellow ink
●	Fast flashing on (0.5 s) and off (1.0 s) continuously.
▲	Slow lashing on (0.5 s) and off (1.5 s) continuously.
❍	Lights and remains on.

4.1.2 STATUS MONITOR MESSAGES

NOTE: At the time of writing the exact wording of the messages (that show on the computer screen) in the table below is temporary. This may change without prior notice.

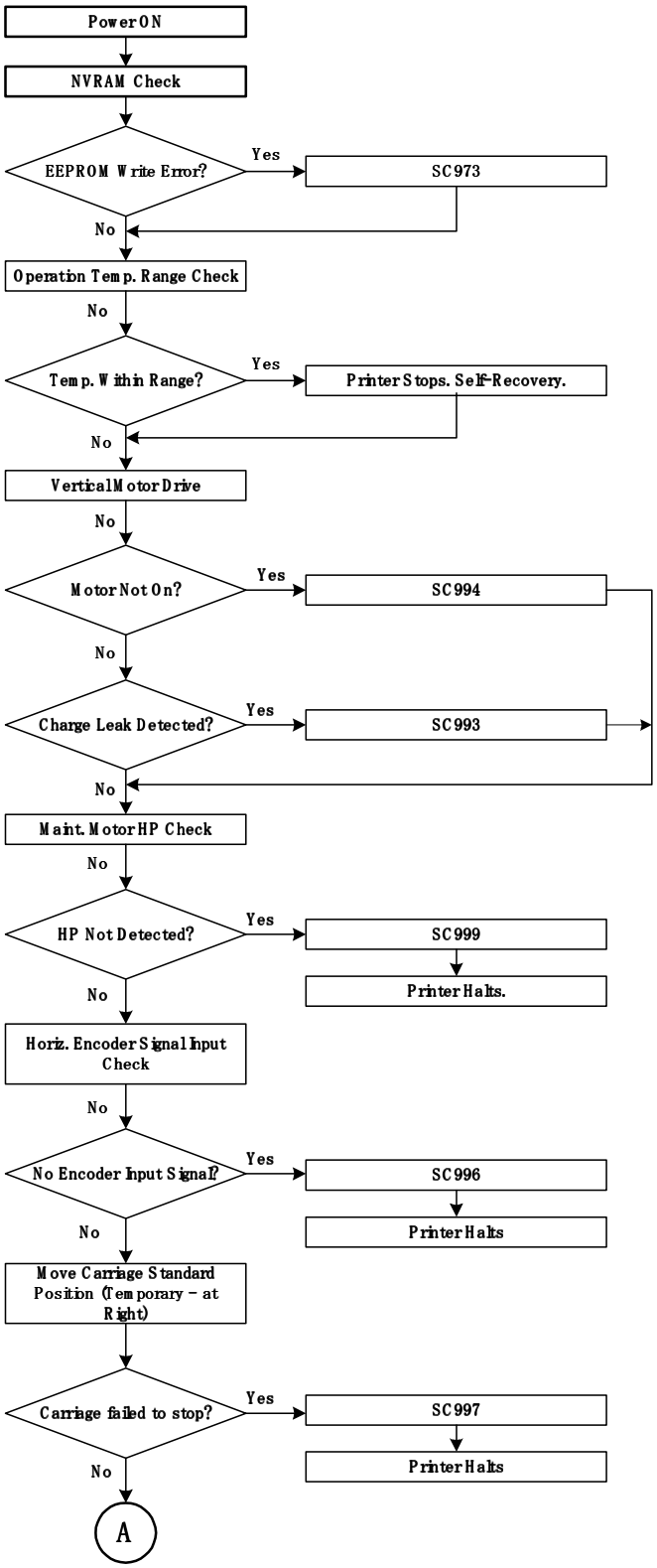
Status	Status Display Message Display
Normal	Ready. You can print.
Printing	Ready. Printing ...
Drying	Ready. Please wait. Time has been set to allow OHP transparency to dry.
Preparing (Warming Up)	Preparing and Adjusting... Please wait. Temperature is above the range allowed for printing. Set up and use the printer in a location that meets specifications for the allowed temperature and humidity.
Overheated at Power On (Recoverable)	Preparing and Adjusting... Please wait. Temperature is above the range allowed for printing. Set up and use the printer in a location that meets specifications for the allowed temperature and humidity.
Supplying Ink	Supplying ink ... Please wait.
Servicing Print Heads	Cleaning or refreshing print heads ... Please wait.
Resetting Job	Ready. Print job is resetting ...
Power Off	Cannot send print job data. Printer does not answer. Make sure the printer is turned on. Check the power cable connection.
Ink Supply Low (K)	Ready. Black Print cartridge is empty. Open the cover and replace the black Print cartridge. Right, front cover: Black If you intend to replace more than one cartridge, remove the empty cartridges and replace them with new ones.

Status	Status Display Message Display
Ink Supply Low (C)	Ready
	Cyan Print cartridge is empty. Open the cover and replace the Cyan Print cartridge. Right, front cover: Cyan If you intend to replace more than one cartridge, remove the empty cartridges and replace them with new ones.
Ink Supply Low (M)	Ready
	Magenta Print cartridge is empty. Open the cover and replace the Magenta Print cartridge. Right, front cover: Magenta If you intend to replace more than one cartridge, remove the empty cartridges and replace them with new ones.
Ink Supply Low (Y)	Ready
	Yellow Print cartridge is empty. Open the cover and replace the Yellow Print cartridge. Right, front cover: Yellow If you intend to replace more than one cartridge, remove the empty cartridges and replace them with new ones.
Paper Out in Specified Tray – Bypass Tray	Paper is out or not loaded correctly.
	The bypass tray is out of paper. Or, paper in the bypass tray is not loaded correctly. Load paper in the bypass tray, and then press the [Paper Feed] on the printer.
Paper Out in Specified Tray – Tray 1 (Standard)	Paper is out or not loaded correctly.
	Tray 1 is out of paper. Or, paper in Tray 1 is not loaded correctly. Check Tray 1.
Paper Out in Specified Tray – Tray 2	Paper is out or not loaded correctly.
	Tray 2 is out of paper. Or, paper in Tray 2 is not loaded correctly. Check Tray 2.
Paper in Specified Tray Doe Not Match Paper Size Selected for Job – Bypass Tray	Paper Size Error.
	The size of the paper specified for the print job does not match the size of the paper loaded in the bypass tray. Check the bypass tray.
Paper in Specified Tray Doe Not Match Paper Size Selected for Job – Tray 1	Paper Size Error.
	The size of the paper specified for the print job does not match the size of the paper loaded in Tray 1. Check Tray 1.
Paper in Specified Tray Doe Not Match Paper Size Selected for Job – Tray 2	Paper Size Error.
	The size of the paper specified for the print job does not match the size of the paper loaded in Tray 2. Check Tray 1.
Ink End (K)	Ink Out.
	Ink supply in the Black Print cartridge is exhausted and printing cannot continue. Right, front cover: Black If you intend to replace more than one cartridge, remove the empty cartridges and replace them with new ones.

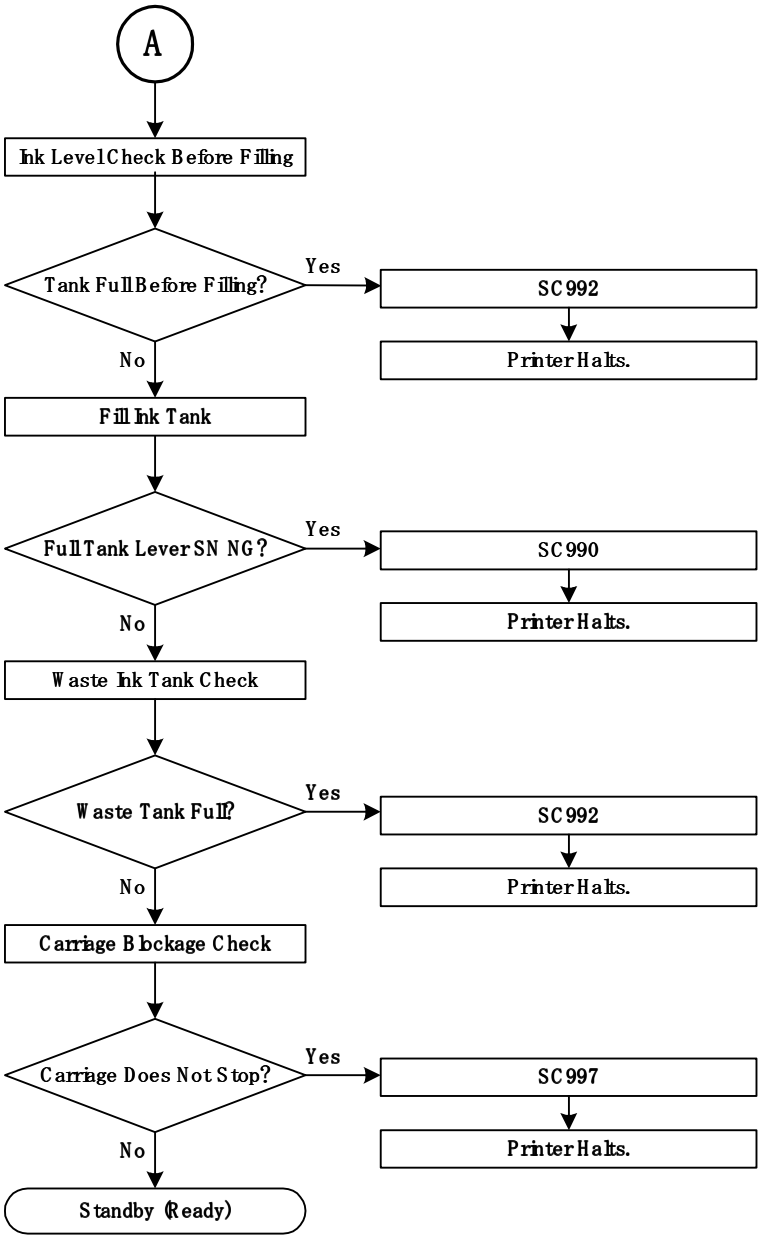
Status	Status Display Message Display
Ink End (C)	Ink Out.
	Ink supply in the Cyan Print cartridge is exhausted and printing cannot continue. Right, front cover: Cyan If you intend to replace more than one cartridge, remove the empty cartridges and replace them with new ones.
Ink End (M)	Ink Out.
	Ink supply in the Magenta Print cartridge is exhausted and printing cannot continue. Right, front cover: Magenta If you intend to replace more than one cartridge, remove the empty cartridges and replace them with new ones.
Ink End (Y)	Ink Out.
	Ink supply in the Yellow Print cartridge is exhausted and printing cannot continue. Right, front cover: Yellow If you intend to replace more than one cartridge, remove the empty cartridges and replace them with new ones.
Print cartridge Not Set	Cartridge Set Incorrectly.
	A Print cartridge is not installed. Or, it is not installed correctly. Open the right, front cover and check the Print cartridges.
Cover Open (Upper or Rear Cover)	Cover Open.
	The top cover or rear cover is open. Or, the Duplex Unit is not installed correctly. Check the upper and rear covers of the printer. Check the Duplex Unit.
Cover Open (Duplex Unit)	Cover Open.
	The Duplex Unit cover is open. Check the Duplex Unit cover.
Poor Duplex Unit Connection	Duplex Unit Not Connected.
	The Duplex Unit is not installed. Or it is not installed correctly. Check the Duplex Unit.
Paper Jam (Tray 1)	Paper Misfeed.
	Paper jam in Tray 1. Check Tray 1 and remove the jammed sheet.
Paper Jam (Tray 2)	Paper Misfeed.
	Paper jam in Tray 2. Check Tray 2 and the rear cover of Tray 2. Remove the jammed sheet.
Paper Jam (Bypass Tray)	Paper Misfeed
	Paper jam in the Bypass Tray. Check the Bypass Tray and remove the jammed sheet.
Paper Jam (Reverse Guide Plate for Duplex)	Paper Misfeed
	Paper jam at the reverse guide plate. To access the reverse guide plate, remove the Duplex Unit from the back of the printer.
Paper Jam (Top cover)	Paper Misfeed.
	Paper jam under the top cover. Open the top cover and remove the jammed sheet.

Status	Status Display
	Message Display
Paper Jam (Duplex Unit)	Paper Misfeed.
	Paper jam in the Duplex Unit.
Paper Jam (Paper Exit)	Paper Misfeed.
	Paper jam at the paper exit. Check the paper exit and remove the jammed sheet.
Paper in Bypass Tray at Start of Job	Paper remains in Bypass Tray.
	Paper remains in the Bypass Tray at the start of the print job. Remove the paper from the Bypass Tray, and then press the [Paper Feed] key on the printer.
Temperature Out of Range – Too Low	Print head temperature not within range.
	The temperature of the print head not within the operational temperature range to allow printing. Turn the printer off, and then turn it on again. If the printer has been moved to a warm location from a cold location, allow the printer time to warm up naturally to the room temperature before you use it.
Engine Service Call	Printer Engine Error.
	Turn the printer off. Then turn it on again. If this does not solve the problem, note the error (ERR***-*) displayed on the PC monitor. (☛4.3.3)

4.2 SELF-DIAGNOSTIC TEST FLOW



G707T900.WMF



G707T901.WMF

4.3 SERVICE CALL ERRORS

4.3.1 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. The operator cannot solve the problem and must call for service.	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. • Print cartridge out. • Print cartridge missing. • Print 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. • Waste tank near full.

4.3.2 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: The printer firmware shows an error to tell the operator that the temperature of the print heads is not within the operational range if the operational temperature is out of range (either too high or too low). The printer cannot operate in this condition. The print quality would not be consistent if the printer let a print occur before the print heads get to operational temperature.

Do these if this error occurs frequently:

- Make sure that the room temperature is within the accepted standard 10°C to 32°C (50°F to 89.6°F) with Rh 15% to 80%. For more, see Section “1. Installation” of this Service Manual.
- Let 1 hour pass for the printer to adjust to room temperature before you use the printer if the printer move the printer to a new location. This is important if you move printer from a cold location into a warm room.

4.3.3 SC ERROR CODE TABLE

The SC codes for this printer show by the printer driver on the PC screen in the format “ERR***”. Where “***” is one of the three-digit codes shown in the tables below.

Print the Test Print if you want to see the 5 most recent SC codes given by the printer.

950	**A**	**USB Chip Read Error**	
		A USB chip read error occurred at power on.	• Control board defective. • Send the printer to the repair center.

951	**A**	**No Definition Assigned to USB Chip**	
		The USB chip definition is missing.	• Control board defective. • Send the printer to the repair center.

973	**A**	**EEPROM Write Error**	
		An EEPROM write error was detected at power on, or during a print job.	• EEPROM on the control board defective. • Send the printer to the repair center.

990	**A**	**Waste Tank Full Sensor Defective**	
		The waste ink tank full sensor (a photosensor) on the corner of the waste tank is not operating.	• Waste ink tank sensor on the corner of the ink waste tank is defective. • Replace the waste ink tank.

992	**A**	**Waste Tank Full Error**	
		At power on, the printer detected that the waste tank was full.	• Check the waste tank full sensor connection. • Replace the ink full waste tank.

993	**A**	**Charge 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.	• Clean the transport belt. • Replace the high voltage power supply unit.

994	**B**	**Vertical Motor Error**	
		The vertical encoder input signal was judged to be abnormal when the vertical motor was operating.	• Send the printer to the repair center.

996	A	**No Input Signal from the Horizontal Encoder**	
		No input signal from the horizontal encoder was detected during operation of the horizontal motor.	• Horizontal encoder defective • Horizontal encoder sensor defective. • Send the printer to the repair center.

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.	• Horizontal encoder defective • Horizontal encoder sensor defective. • Send the printer to the repair center.

999	A	**Maintenance Motor Out of HP**	
		The maintenance motor HP sensor failed to detect the motor at the home position.	• Maintenance motor on the maintenance unit defective • Maintenance motor HP sensor defective • Replace the maintenance unit

4.4 GENERAL TROUBLESHOOTING

4.4.1 POOR QUALITY IMAGE

Colors not what you expect

Cause 1:	The correct paper was not used for the print job, or the paper was not loaded correctly.
Solution 1:	Check the selection for the type of paper in the printer driver (transparency, ink jet, plain paper, etc.). Confirm that the same type of paper is loaded correctly in the printer.
Cause 2:	The print mode selection was not correct.
Solution 2:	Make sure that the print mode selection in the printer software application and the printer driver is correct (Paper Type, Print Quality, Level Color, etc.)
Cause 3:	Job settings in the software application are not correct.
Solution 3:	Check the settings for the print job in the software application. The settings in the software application have priority over the printer driver settings.
Cause 4:	One or more print heads are blocked.
Solution 4:	Do cleaning Cycle 1 and then Cleaning Cycle 2. (☛4.5)

Colors faint

Cause 1:	The correct paper was not used for the print job.
Solution 1:	Check the selection for the type of paper in the printer driver (transparency, ink jet, plain paper, etc.). Confirm that the same type of paper is loaded in the printer.
Cause 2:	The print mode selection was not correct.
Solution 2:	Make sure that the print mode selection in the printer software application and the printer driver is correct (Paper Type, Print Quality, Level Color, etc.) Make sure that the “Color/Black and White” selection is correct.
Cause: 3	One or more print heads are blocked.
Solution 3:	Do cleaning Cycle 1 and then Cleaning Cycle 2. (☛4.5)

Color print job prints in monochrome

Cause 1:	“Black and White” was selected for the print job.
Solution 1:	On the “Setup” sheet of the printer driver, make sure “Color” is selected under “Color/Black and White”.
Cause 2:	Correct data not selected for the print job.
Solution 2:	Confirm that the software application printed the correct data.

White patches, or horizontal white lines

Cause 1:	Original image abnormal.
Solution 1:	In the software application, check the original image for streaking (especially at borders between different colors). Correct the original image.
Cause 2:	One or more print heads are blocked.
Solution 2:	Do cleaning Cycle 1 and then Cleaning Cycle 2. (☛4.5)

Vertical white lines

Cause:	Solid or intermittent white lines from the top to the bottom of the sheet caused by a blocked ink nozzle.
Solution:	Do cleaning Cycle 1 once. (☛4.5)

Image chaffed in horizontal direction

Cause:	Solid or intermittent white lines from edge to edge of the sheet caused by a blocked ink nozzle.
Solution:	Do cleaning Cycle 1 once. (☛4.5)

Only 1 line printed at leading edge

Cause 1:	Paper with punched holes, or thin or slick paper with too much “play” was used that allowed slippage during feed.
Solution 1:	Check the paper used for the print job and make sure that it meets standards for use with this printer. For more see the Operating Instructions or the last section “Specifications” of the Service Manual.
Cause 2:	Paper is jammed or slipping on the transport belt due to the accumulation of paper dust, etc. on the belt.
Solution 2:	Clean accumulated paper dust, etc. from the transport belt. The service technician must clean the transport belt. (☛2.5)

Unwanted dots

Cause:	Flakes of paper dust or dry ink have fallen onto the printed sheet.
Solution:	Do cleaning Cycle 1 once. (☛4.5) Operator should call for service if cleaning does not solve the problem.

Skewed image

Cause 1:	Paper skewed immediately after loading, before paper out (last sheet), or after removing a paper jam.
Solution 1:	Remove the paper from the paper tray. Fan it to remove static cling. Tap the edge of the stack on a flat surface to align the edges, and load it again. Before loading the paper again: Make sure the paper is approved for use with this printer. For more, see the Operating Instructions or the last section of the Service Manual "Specifications". Make sure the paper is free of curl, creasing, etc. or any other deformity. Make sure the side and end fences of the paper cassette are set at the correct positions. Make sure that the top of the stack does not exceed the load limit mark on the side of the cassette.
Cause 2:	The reverse guide was not set correctly (half locked) after cleaning by the CE.
Solution 2:	CE should make sure that the reverse guide is set correctly. (☛2.5)

Text dirty

Cause 1:	Print job was not set up correctly for special print media.
Solution 1:	Special procedures are necessary to set up print jobs for special print media such as postcards, envelopes, and transparencies. Review and carefully follow the instructions in the Operating Instructions. Pay special attention to these settings "Paper Type", "Job Type", and "Print Quality".
Cause 2:	The sheets are not flat or are deformed in some way.
Solution 2:	Make sure the sheets are perfectly flat (especially envelopes, postcards). Make sure the sheets neither curled nor deformed in any way. If using thick or any type of coated paper, make sure that the paper is approved for use with this printer.
Cause 3:	One or more print heads are blocked.
Solution 3:	Do cleaning Cycle 1 and then Cleaning Cycle 2. (☛4.5)

Backs of sheets stained with ink

Cause:	Paper has jammed in the printer or the transport belt is dirty.
Solution:	Run a print job with several sheets of paper to use clean up the ink. Use a damp cloth to clean the surface of the transport belt, and then use a clean, dry cloth to clean the surface of the belt. (☛2.5)

Transparency sheets scratched

Cause:	More than 1 sheet of transparency was set.
Solution:	Set transparencies one by one for printing one sheet at time. For more, please refer to the Operating Instructions.

Miscellaneous

Cause 1:	The paper in use is not the correct paper for the print job.
Solution 1:	Check the paper loaded for feeding. Make sure that it matches the type of paper specified for the print job (transparency, ink jet, plain paper, etc.). Make sure that the paper is approved for use with this printer. For more, see the Operating Instructions or the “Specifications” in the last section of the Service Manual.
Cause 2:	The print mode selection was not correct.
Solution 2:	Make sure that the print mode selection in the printer software application and the printer driver is correct (Paper Type, Print Quality, Level Color, etc.) Make sure that the “Color/Black and White” selection is correct.
Cause 3:	Job settings in the software application are not correct.
Solution 3:	Check the settings for the print job in the software application. The settings in the software application have priority over the printer driver settings.
Cause 4:	Correct data not selected for the print job.
Solution 4:	Confirm that the software application printed the correct data.
Cause 5:	One or more of the nozzles is blocked.
Solution 5:	Do cleaning Cycle 1 once. (☛4.5)

4.4.2 PAPER MISFEED

Paper skew

Cause 1:	Paper skewed immediately after loading, before paper out (last sheet), or after removing a paper jam.
Solution 1:	Remove the paper from the paper tray. Fan it to remove static cling. Tap the edge of the stack on a flat surface to align the edges, and load it again. Before loading the paper again: Make sure the paper is approved for use with this printer. For more, see the Operating Instructions or the last section of the Service Manual "Specifications". Make sure the paper is free of curl, creasing, etc. or any other deformity. Make sure the side and end fences of the paper cassette are set at the correct positions. Make sure that the top of the stack does not exceed the load limit mark on the side of the cassette.
Cause: 2	The reverse guide was not set correctly (half locked) after cleaning by the CE.
Solution 2:	Paper skew occurred immediately after loading, before paper out (last sheet), or after removing a paper jam.
Cause 3:	The correct paper was not used for the print job, or the paper was not loaded correctly.
Solution 3:	Check the selection for the type of paper in the printer driver (transparency, ink jet, plain paper, etc.). Confirm that the same type of paper is loaded correctly in the printer.

Double-feeding.

Cause 1:	Paper skewed immediately after loading or at paper out (last sheet).
Solution 1:	Remove the paper from the paper tray. Fan it to remove static cling. Tap the edge of the stack on a flat surface to align the edges, and load it again. Before loading the paper again: Make sure the paper is approved for use with this printer. For more, see the Operating Instructions or the last section of the Service Manual "Specifications". Make sure the paper is free of curl, creasing, etc. or any other deformity. Make sure the side and end fences of the paper cassette are set at the correct positions. Make sure that the top of the stack does not exceed the load limit mark on the side of the cassette.
Cause 2:	The correct paper was not used for the print job, or the paper was not loaded correctly.
Solution 2:	Check the selection for the type of paper in the printer driver (transparency, ink jet, plain paper, etc.). Confirm that the same type of paper is loaded correctly in the printer.

Failure to feed.

Cause 1:	Paper skewed immediately after loading, before paper out (last sheet), or after removing a paper jam.
Solution 1:	Remove the paper from the paper tray. Fan it to remove static cling. Tap the edge of the stack on a flat surface to align the edges, and load it again. Before loading the paper again: Make sure the paper is approved for use with this printer. For more, see the Operating Instructions or the last section of the Service Manual "Specifications". Make sure the paper is free of curl, creasing, etc. or any other deformity. Make sure the side and end fences of the paper cassette are set at the correct positions. Make sure that the top of the stack does not exceed the load limit mark on the side of the cassette.
Cause: 2	The paper cassette is making a strange noise because it is not installed completely.
Solution 2:	Pull the paper cassette out. Make sure the paper is loaded correctly. Confirm that there is no paper inside the printer. Insert the paper cassette completely.
Cause 3:	The correct paper was not used for the print job, or the paper was not loaded correctly.
Solution 3:	Check the selection for the type of paper in the printer driver (transparency, ink jet, plain paper, etc.). Confirm that the same type of paper is loaded correctly in the printer.

Paper jam – Type 1

Cause 1:	Paper skewed immediately after loading, before paper out (last sheet), or after removing a paper jam.
Solution 1:	Remove the paper from the paper tray. Fan it to remove static cling. Tap the edge of the stack on a flat surface to align the edges, and load it again. Before loading the paper again: Make sure the paper is approved for use with this printer. For more, see the Operating Instructions or the last section of the Service Manual "Specifications". Make sure the paper is free of curl, creasing, etc. or any other deformity. Make sure the side and end fences of the paper cassette are set at the correct positions. Make sure that the top of the stack does not exceed the load limit mark on the side of the cassette.
Cause 2:	The reverse guide was not set correctly (half locked) after cleaning by the CE.
Solution 2:	CE should make sure that the reverse guide is set correctly. (☛2.5)
Cause 3:	The Duplex Unit is not installed correctly.
Solution 3:	Remove the Duplex Unit and reinstall it correctly. For more, see the Setup Guide or Section "1. Installation" of this Service Manual.
Cause 4:	The paper in use is not the correct paper for the print job.
Solution 4:	Check the paper loaded for feeding. Make sure that it matches the type of paper specified for the print job (transparency, ink jet, plain paper, etc.). Make sure that the paper is approved for use with this printer. For more, see the Operating Instructions or the "Specifications" in the last section of the Service Manual.
Cause 5:	The sheets are not flat or are deformed in some way.
Solution 5:	Make sure the sheets are perfectly flat (especially envelopes, postcards). Make sure the sheets neither curled nor deformed in any way. If using thick or any type of coated paper, make sure that the paper is approved for use with this printer.

Paper jam – Type 2

Cause 1:	Jam warning (Paper LED lights red) at power on.
Solution:	Remove the paper cassette. Check inside the printer to make sure that no paper remains in the printer. If the paper has torn, make sure no scraps remain. Remove the paper from the tray. Fan it to remove static cling. Tap the edge of the stack on a flat surface to align the edges, and load it again.
Cause 2:	Carriage has stopped on the left side.
Solution 2:	Make sure no paper remains in the paper path. Theservice technicianmust clean the transport belt. (☛2.5)

Poor output stacking, sheets fall from output tray.

Cause:	The correct paper was not used for the print job, or the paper was not loaded correctly.
Solution:	Check the selection for the type of paper in the printer driver (transparency, ink jet, plain paper, etc.). Confirm that the same type of paper is loaded correctly in the printer.

4.4.3 ERROR DISPLAYS

Paper Jam

LED Display	LED	Color	Action
	Power	GREEN	On
	Paper	RED	On
Cause:	Printer control panel displays a jam, and jam LED will not go off.		
Solution:	Remove the paper cassette and open the top cover. Remove the jammed paper. Switch the printer off and on then resume normal operation.		

Cover Open

LED Display	LED	Color	Action
	Power	GREEN	On
	Paper	RED	Flashes every 1 s.
Cause:	One or more covers open.		
Solution:	Check the top cover, rear cover, and Duplex Unit cover.		

Duplex Unit Malfunction

LED Display	LED	Color	Action
	Power	GREEN	On
	Paper	RED	On
Cause 1:	J003: The Duplex Unit is standard (attached). Duplex Unit is not operating correctly.		
Solution 1:	Service call.		
Cause 2:	J001: The Duplex Unit is an option. The Duplex Unit may not be installed correctly.		
Solution 2:	Refer to the Setup Guide and make sure that the Duplex Unit has been installed correctly. Call for service.		

Ink Out

LED Display	**LED**	**Color**	**Action**
	Power	GREEN	On.
	YMCK	RED	On.
Cause:	One or more of the Print cartridges is out of ink.		
Solution:	Be sure to confirm on the printer operation panel Print cartridge(s) have run out. Replace the empty Print cartridge.		

Cartridge Not Set

LED Display	**LED**	**Color**	**Action**
	Power	GREEN	On
	YMCK	RED	On
Cause:	A cartridge is missing or has not been installed correctly.		
Solution:	On the operation panel, confirm which LED is on. Open the Print cartridge compartment and install the missing cartridge. If the cartridge is not missing, remove it and install it again. Switch the printer off then on to restore normal operation.		

Temperature Out of Range

LED Display	**Recoverable**		
	LED	**Color**	**Action**
	Power	GREEN	Flashes every 1 s.
	Not Recoverable		
	LED	**Color**	**Action**
	Power	GREEN	Flashes every 1 s.
	Paper	RED	Flashes every 1 s.
Cause 1:	Recoverable. The print heads have overheated and the printer can no longer operate.		
Solution 1:	Allow the printer to cool. Once the print heads have cooled, printing will resume.		
Cause 2:	Recoverable. The print heads are below the operating temperature. This may occur if the printer has been moved from a cold location to a warm location.		
Solution 2:	Allow the printer to warm up at least one hour before you try to use the printer.		
Cause 3:	Not Recoverable. The print heads have malfunctioned.		
Solution 3:	Call for service.		

Near Maintenance Time

LED Display	LED	Color	Action
	Power	GREEN	Flashes every 1 s.
Cause:	The printer requires maintenance.		
Solution:	Read the message on the screen. Call for service and describe the problem.		

All LEDs Flash (no error display)

Cause:	The USB cable may be disconnected or the connection may be loose.
Solution:	Cancel the print job. Check and secure the USB cable connection at the printer and the computer. Switch the printer off. Shut down the computer. Switch the printer on, and then restart the computer.

4.4.4 POOR PRINTER PERFORMANCE (MISCELLANEOUS)

Cannot set paper cassette.

Cause:	The cassette is damaged or there is a jammed sheet of paper inside the printer.
Solution:	Remove the paper cassette. Remove the jammed sheet from inside the printer. Inspect the paper cassette for damage. If the cassette is damaged, replace the paper cassette.

Cannot remove paper cassette.

Cause:	The paper cassette is blocked.
Solution:	Raise the paper output tray and reset it. Attempt to remove the paper cassette again. Replace the paper cassette.

Printer does not turn on.

Cause:	The power cord is not connected to the power source.
Solution:	Follow the instructions on the screen if an error message appears in the Status Monitor, or do the following: Make sure the power cord is securely connected to the printer and to the power source. Make sure the operator knows how to switch on the printer correctly. For more, refer to the Setup Guide and the Operating Instructions. Switch the printer off. Remove the power cord from the power source. Wait 2 minutes then connect the power cord and switch the printer on.

Printer fails to enter "Ready" mode

Cause:	An error has occurred at the printer.
Solution:	Check the operation panel and determine which LEDs are on or flashing (temperature out of range, ink out, cover open, etc.) (☛4.1.1) Then refer to the checklist in the previous section.

Printing stops before print job finishes.

Cause:	The print heads have overheated.
Solution:	The printer has stopped to allow the print heads to cool. After the print heads have cooled down to the standard operating temperature, the print job will resume.
Cause:	A fatal error has occurred on the computer side.
Solution:	Check the screen for messages. Shut down the computer. Switch off the printer. Check the USB connection at the printer and the computer. Switch the printer on. Restart the computer.

Printer loses power.

Cause:	Power loss at the source.
Solution:	Power to the printer has been interrupted, due to a power failure or some other external cause. Unplug the printer from the power source. Wait 2 minutes. Reconnect the power plug and switch the printer on.
Cause:	The printer has blown a fuse.
Solution:	The printer must be returned to the service center for replacement of the F300 board.

Firmware update failed.

Cause:	Incorrect procedure.
Solution:	Update the firmware. (☛5.3)

4.4.5 UNUSUAL NOISES

Printer emits strange noises at power on

Cause:	Paper scraps remain inside the printer.
Solution:	Open the top cover, rear cover (or Duplex Unit) cover and inspect inside the printer and Duplex Unit for paper scraps left behind after clearing a paper jam.
Cause:	Special print media may make a noise on feeding the last sheet.
Solution:	Load one blank sheet of plain paper at the bottom of a stack of special media (coated paper, etc.) This problem may occur with a new paper cassette.

4.5 CLEANING THE PRINT HEADS

Preparing for Test Printing

1. Make sure A4 size or LTR size paper is loaded in the printer.
2. Make sure the printer is ready to print (the [Power] key is on).

Opening the Printer Driver

1. On the desktop, click the [Start] button.
2. Select “Settings”> “Printers”>. Then right-click the “Ricoh IPSiO GP505" (or "Ricoh IPSiO GP707") printer icon.
3. Select “Properties” from the pop-up menu to open the printer driver Properties Window.

Cleaning Cycle 1

1. On the “Maintenance” sheet of the Printer Properties window, click “Clean Print Heads (Normal)”.
2. Click the checkbox for the color of the print head that think needs cleaning. Click each checkbox to clean all the print heads.
3. Click the “Next” button.
4. Do the instruction in the dialog. Make sure that the “Envelope Selector” is at the front position. Then click the [Next] button.
5. Click and select “Print nozzle blockage check test pattern when the next dialog box shows.”
6. Click the “Finish” button to print the test pattern.

   Important: Wait for cleaning to finish. Never do any other operation at the time of cleaning.

1. Check the results of the test pattern. Examine which nozzles need cleaning.
2. Do Steps 1 to 7 again. You can do this up to three times.
3. Do Cleaning Cycle 2 after the third printing of the test problem if the pattern is still not correct.

Cleaning Cycle 2

Important: Cleaning Cycle 2 uses a lot of ink. Do Cleaning Cycle 1 at least 3 times before you do Cleaning Cycle 2.

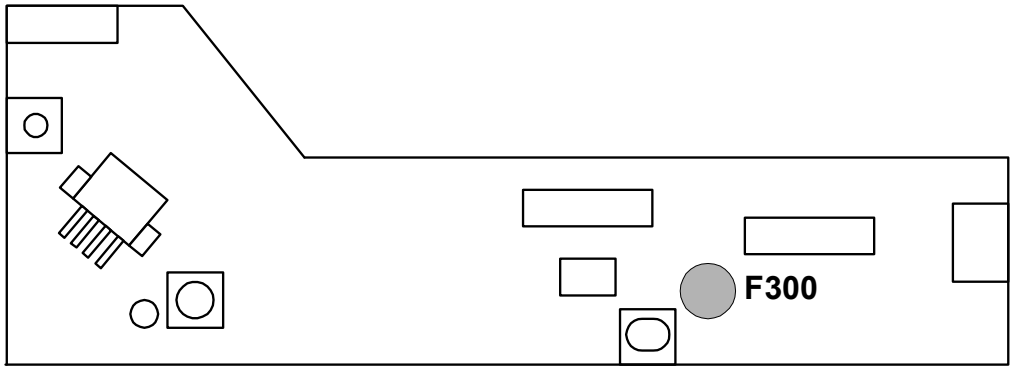
1. On the “Maintenance” sheet of the Printer Properties window, click “Clean Print Heads (Full)”.
2. Click the checkbox for the color of the print head that think needs cleaning. Click each checkbox to clean all the print heads.
3. Click the “Next” button.
4. Make sure that the “Envelope Selector” is at the front position
5. Click and select “Clean print heads (full)”. Then click the [Next] button.

   Important: Wait for cleaning to finish. Never do any other operation at the time of cleaning.
6. Click and select “Print nozzle blockage” check test pattern when the next dialog box shows that full cleaning has finished.
7. Click the “Finish” button to print the test pattern.

If Cleaning Cycle 2 Does Not Solve the Problem...

1. Let the printer stay unused overnight.
2. In the morning, open the printer driver Properties Window
3. Click the “Maintenance” tab. Then click “Nozzle Blockage Check”.
4. Do the instructions at the prompt. Make sure that A4 or LTR size paper is loaded in the printer. Then click the [Next] button.
5. Read the prompt when the next dialog shows. Then click the [Next] button.
6. Click the [Finish] button. Then check the results of the test pattern.
7. Call for service if the test pattern is still not correct.

4.6 FUSES



G707T902.WMF

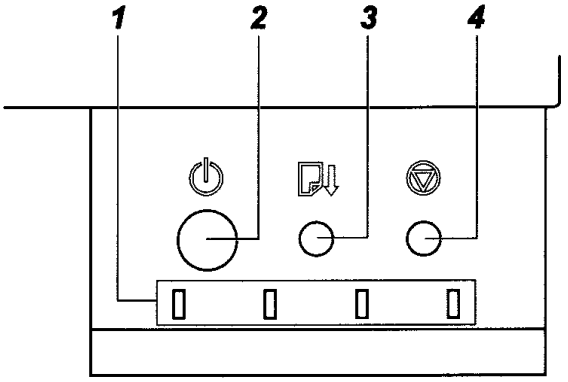
Name	Rating	Manufacturer	Part No.
F300	TIA, 250 Vac	Wickmann-Werke Gmbh	382 (UL) TR5 T 382 (VDE)

⚠CAUTION

Do not attempt to replace the fuse in the field. Return the printer to the service center for replacement of the relay board.

5. SERVICE INFORMATION

5.1 OPERATION PANEL FUNCTIONS



G707S901.BMP

1 Ink Level LEDs (KCMY)

2 [Power] Key

3 [Paper Feed] Key

4 [Cancel] Key

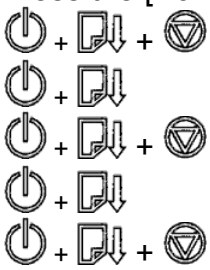
5.1.1 MAIN FUNCTIONS

Function	Printer Status	Keys	Comment
Power On/Off	---		To power on, press and hold down the [Power] key for at least 1 sec.
Test Print (Sample)	Off *1	+ +	Press and hold down [Cancel] and [Paper Feed], and then press [Power] and hold for at least 3 sec. until the low ink indicators light red then release.
Cancel/Restart Job	On		After removing the cause of the error, press [Paper Feed] to restart the print job.
Manual Feed	On		When the software application prompts you to manual feed, load 1 sheet in the bypass tray and press [Paper Feed].
Feed 1 Cleaning	Off	+	To feed 1 blank sheet through the paper feed path for cleaning, press and hold at least 3 sec. until the ink level LEDs light red then release.
Clean Print Heads (All)	On		To execute Normal cleaning of all four print heads, press and hold for 3 sec. and release when the [Power] key starts flashing.
Nozzle Check Pattern	Off	+	Press and hold for at least 3 sec. until the ink level LEDs light red then release.

*1 After pressing the [Power] key to turn the printer off, always wait for the [Power] key to stop flashing.

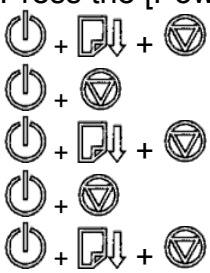
5.1.2 TO SELECT USB 1.1

You cannot use USB 2.0 in this mode.

1. Press the [Power] key to switch the printer off, then press these keys*
   

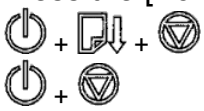
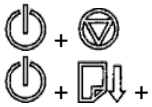
5.1.3 TO SELECT USB AUTO SELECT MODE

You can use either USB 1.1 or USB 2.0 in this mode.

1. Press the [Power] key to switch the printer off, then press these keys:
   

5.1.4 TO FEED 3 CLEAN SHEETS

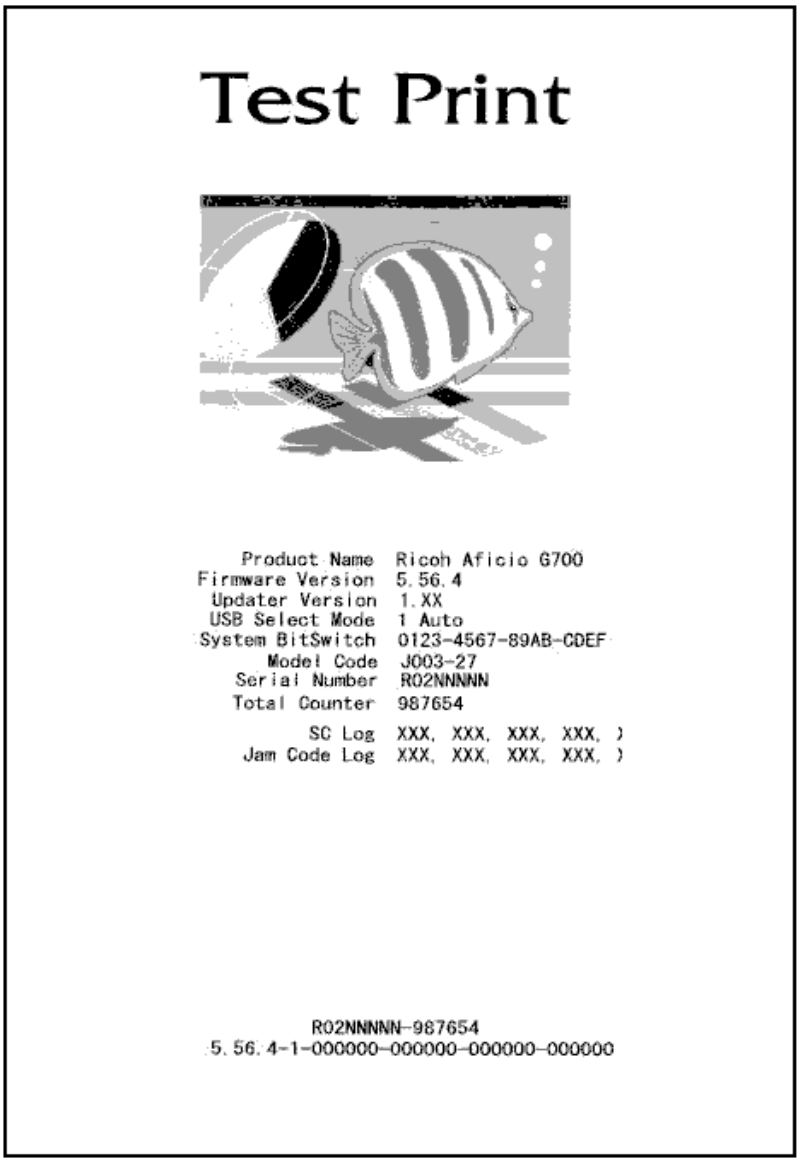
This removes condensation from the transport belt.

1. Press the [Power] key to switch the printer off, then press these keys:
   
2. Press this key sequence <u>5 times</u>:
   

5.1.5 TO PREPARE THE PRINTER FOR TRANSPORT

1.  . Then release when the ink LEDs light.
2. Press  **<u>8</u>** times. Then wait for the [Power] key to go off.

5.2 TEST PRINT SAMPLE DESCRIPTION



G707S902.BMP

The Test Print prints a color sample and gives important information about the printer. For more, see the next page.

Product Name

Shows the name of the product. Make sure the name of the product is correct before you request service information.

Firmware Version (3 MB of data)

This is the number of the original version of the firmware. This is the number of the firmware displayed in the printer driver after the operator clicks the "Maintenance" and clicks the "About" button. The firmware version number in the Test Print always changes after updating the firmware.

Update Version (1 MB of data)

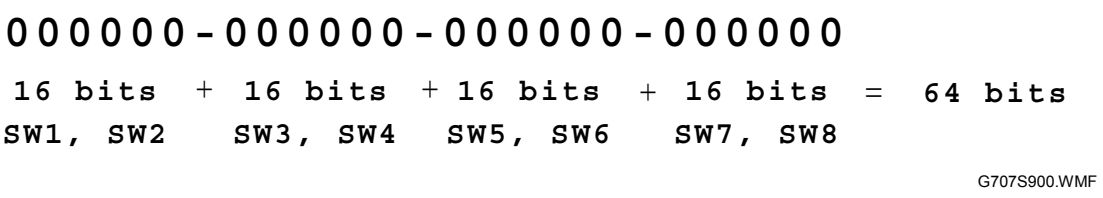
This number may or may not change, depending on the market and other requirements. This data is primarily for design use.

USB Select Mode

Shows the current selection for communication between the printer and the computer. Two selections (set with the printer operation panel) are available.

System Bit Switch

The bit switches are set at the factory before shipping. No bit switch setting adjustments are required in the field.



G707S900.WMF

Model Code

Shows the model code for these:

- J001
- J003

Serial Number

Shows the serial number of the printer.

Total Counter

Shows the total page count.

SC Log

Shows the 5 most recent SC codes given by the printer. For more, see Section "4. Troubleshooting".

Jam Code Log

Shows the jam codes of the 5 most recent jam errors. For more, see the "Jam Table" on the next page.

Jam Table

Section "4 Troubleshooting" and the operating instructions have detailed descriptions about how to handle these:

- Paper jams
- Misfeeds
- Double-feeds

Short notations are used in the table below:

- "Late error": The paper does not get to the sensor at the prescribed time.
- "Lag error": The paper does not exit the sensor at the prescribed time.

No.	Description	Probable Cause
001	**Paper Out or Failure to Feed: Tray 1** Trailing edge sensor: Late error	• Paper out • No feed due to slippage • Tray 1 set incorrectly
002	**Paper Out or Failure to Feed: Tray 2** Trailing edge sensor: Late error	• Paper out • No feed due to slippage • Tray 2 set incorrectly • Tray 2 cover not installed
003	**Duplex Jam** Trailing edge sensor: Late error	• Paper curled, wrinkled due to wet ink
004	**Transport Jam: Duplex** Trailing edge sensor: Lag error	• During paper reversing to print on 2nd side, paper snags on tray • Paper snags on print heads when separating from belt
005	**Transport Jam: Tray 1** Trailing edge sensor: Lag error	• Paper double feeding • Paper snags on print heads when separating from belt
006	**Bypass Jam** Registration Sensor: Late error	• Failed to pick up paper during bypass feed
007	**Transport Jam: Tray 2** Trailing edge sensor: Lag error	• Failed to pick up paper during bypass feed
008	**Exit Jam: Bypass** Bypass sensor: Lag error	• Paper double feeding • Paper snags on print heads when separating from belt • Paper is longer than the length of the paper selected in the printer driver
009	**Jam Between Trailing Edge Sensor, Registration Sensor: Tray 1** Registration Sensor: Late error	• Feed roller slipping • Paper bending, snagging in the feed path due to obstruction
00A	**Jam Between Trailing Edge Sensor, Registration Sensor: Tray 2** Registration Sensor: Late error	• Paper bending, snagging in the feed path due to obstruction
00B	**Jam Between Trailing Edge Sensor, Registration Sensor: Bypass** Registration Sensor: Late error	• Paper bending, snagging in the feed path due to obstruction
00C	**Initial Jam (at Power On)** Trailing Edge Sensor: ON at Power On	• Paper remains in the paper feed path
00D	**Paper in Bypass Tray Jam**	• Paper remains in the bypass tray
00E	**Carriage Jam**	• Obstruction inside the printer • Paper remains in the machine

5.3 UPDATING THE FIRMWARE

Important

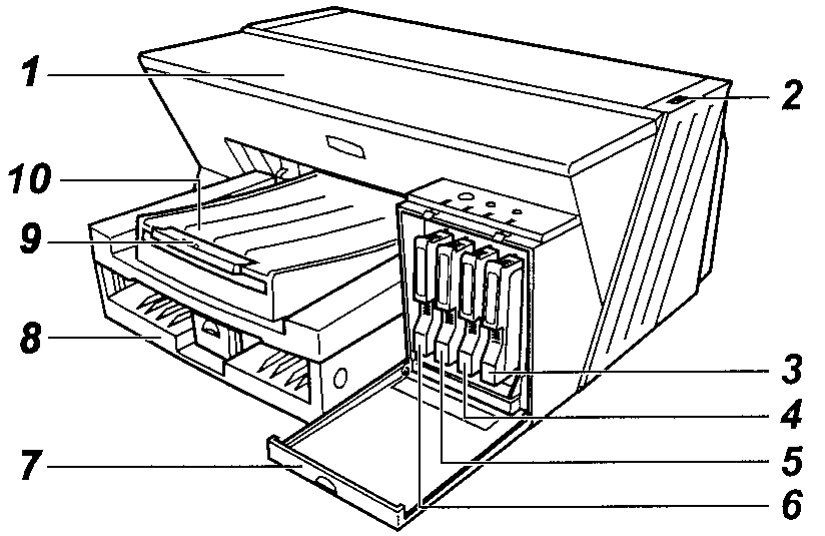
- The printer must be connected directly to a PC by a USB cable; therefore, the firmware cannot be updated with Windows 95.
- The printer must be set up and ready for normal operation.

1. Download the version update file (an executable file). Then keep the file in any folder on the computer.
2. Make sure that the target printer is set up and ready for normal operation.
3. Open Windows Explorer. Then navigate to the folder where the downloaded update is stored.
4. Double-click the version update file.
5. Do the instructions shown on the screen to complete the update procedure. The procedure takes about 3 min.

6. DETAILS

6.1 IMPORTANT PARTS

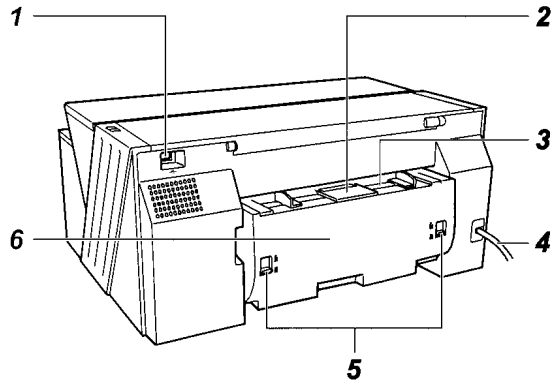
6.1.1 FRONT VIEW



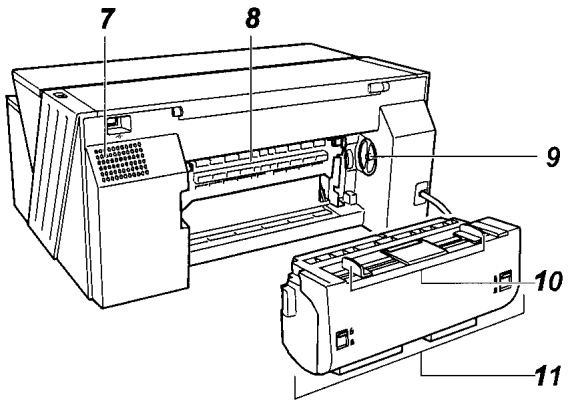
G707D901.BMP

1. **Top cover**. Open to remove paper jams. This cover must always stay closed when the machine prints.
2. **Envelope selector**. Set to ✉ (back) to print on envelopes. Set to 🗋 (forward) to print on all other types of paper.
3. **Print Cartridge (Yellow)**.
4. **Print Cartridge (Magenta)**.
5. **Print Cartridge (Cyan)**.
6. **Print Cartridge (Black)**.
7. **Right front door**. Open to install or replace Print cartridges.
8. **Tray 1 (Standard)**. Holds paper to feed to the printer.
9. **Output tray extension**. Lengths the output tray. Pull out this extension when you print on paper longer than A4 or LTR size paper.
10. **Output tray**. Holds paper that has exited the printer after a print job. Pull out the output tray extension when you print on paper longer than A4 or LTR.

6.1.2 REAR VIEW



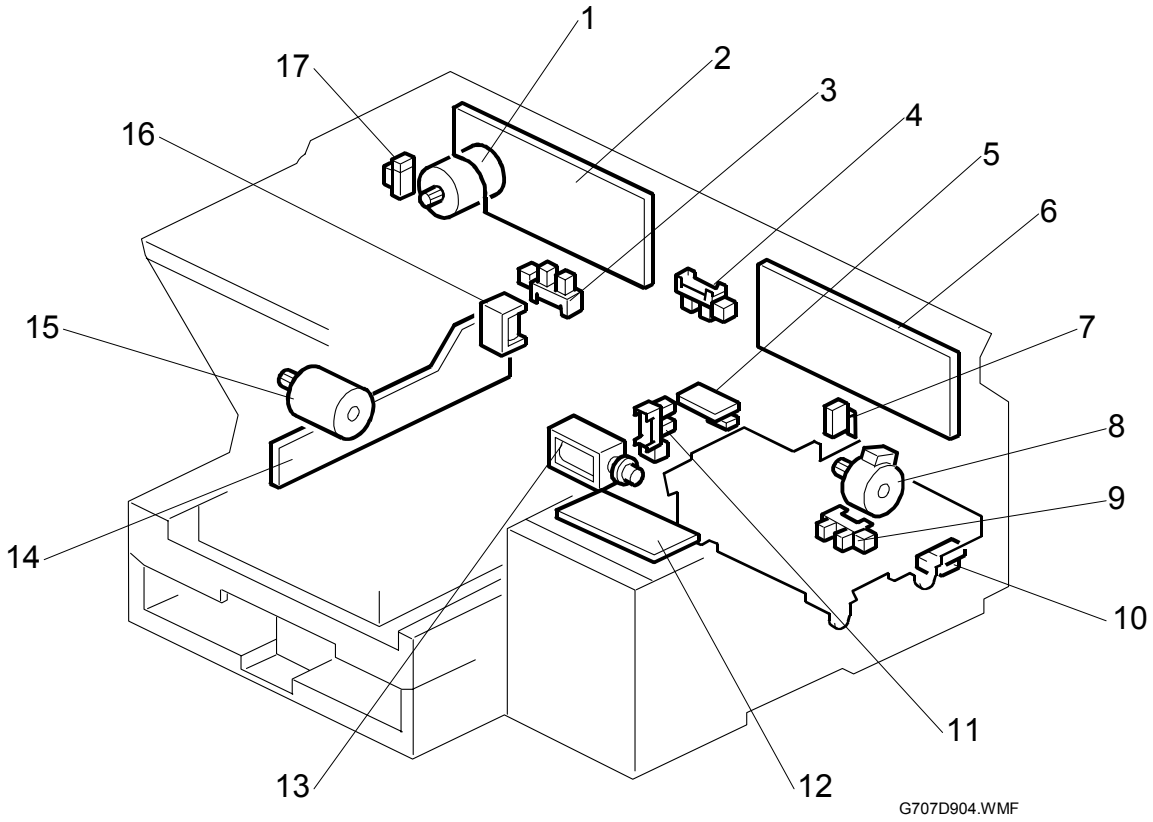
G707D902.BMP



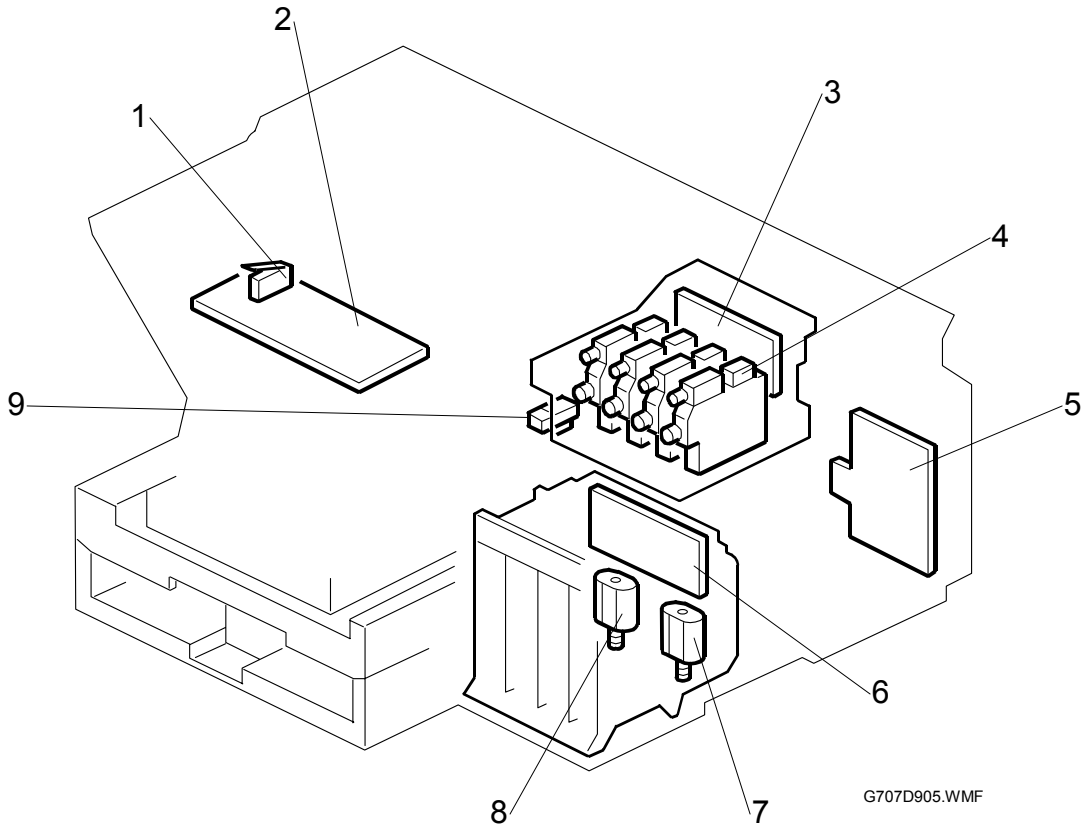
G707D903.BMP

1. **USB cable slot**. Connect the USB cable to the printer at this area. Connect the other end to the PC.
2. **Duplex Unit cover button**. Press to unlock and open the Duplex Unit cover.
3. **Bypass tray**. Use to load thick paper, labels, and tractor feed paper.
4. **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.
5. **Duplex Unit Locks**. Raise release the Duplex Unit from the back of the printer. Press down to lock.
6. **Duplex Unit Cover**. Open to remove paper jams. Keep this cover closed at all other times.
7. **Vent**. Lets heat escape at the time the printer does print jobs. Never let this vent get blocked. Too much heat inside the printer could damage its electrical components.
8. **Guide Plate**. Open to remove jammed paper.
9. **Manual Feed Dial**. Rotate this dial by hand to feed the paper out of the printer when a jam occurs at the guide plate.
10. **Bypass tray Guides**. Adjust these guides to the size of the paper you feed into the bypass tray. The bypass tray can hold only one sheet at a time. Load the sheet at the time the software application prompts you to do so.
11. **Duplex Unit**. Takes paper just printed on the front side. Then it reverses the paper. Then it feeds it into the printer again. Then the paper gets printed on the backside.

6.2 ELECTRICAL COMPONENTS



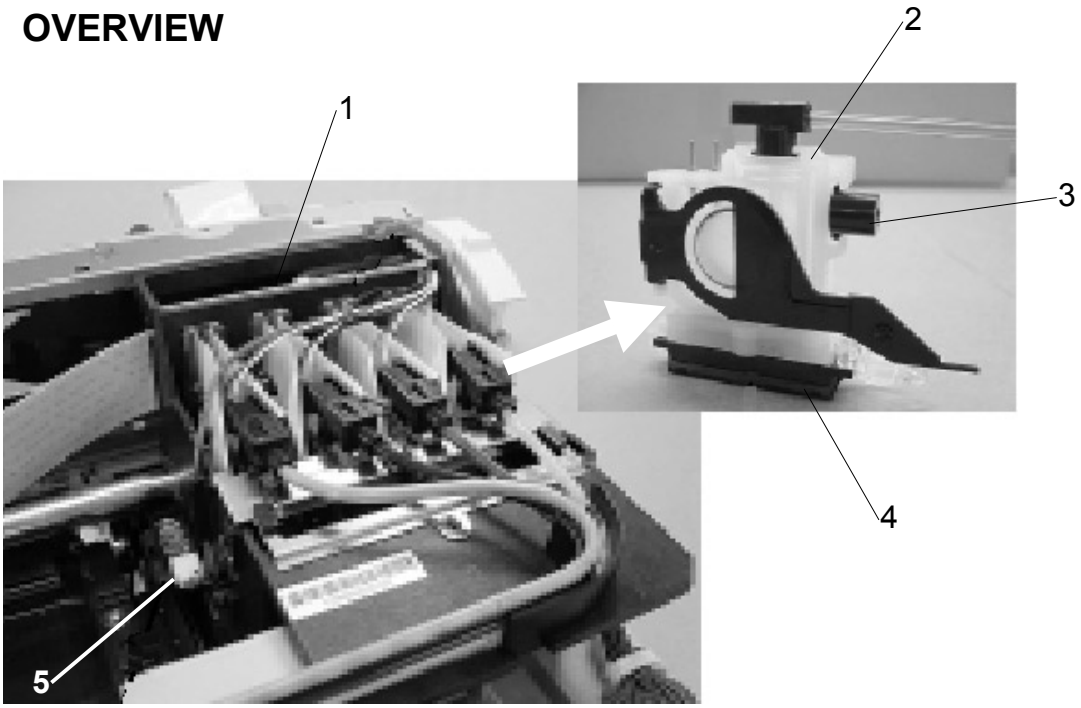
1. Horizontal Motor
2. PSU
3. Trailing Edge Sensor
4. Bypass Set Sensor
5. Temperature/Humidity Sensor
6. Control Board
7. Duplex Set SW
8. Maintenance Motor
9. Maintenance Unit HP Sensor
10. Waste Ink Full Sensor
11. Tank Full Sensor
12. Operation Panel
13. Air Release SOL
14. DC Relay Board
15. Vertical Motor
16. Feed Clutch
17. Horizontal Encoder



1. Top Cover Open SW
2. High Voltage Power Pack
3. Drive Board
4. Air Sensor
5. Communication Board
6. Cartridge Set SW
7. Ink Supply Motor 1
8. Ink Supply Motor 2
9. Leading Edge Sensor

6.3 CARRIAGE UNIT

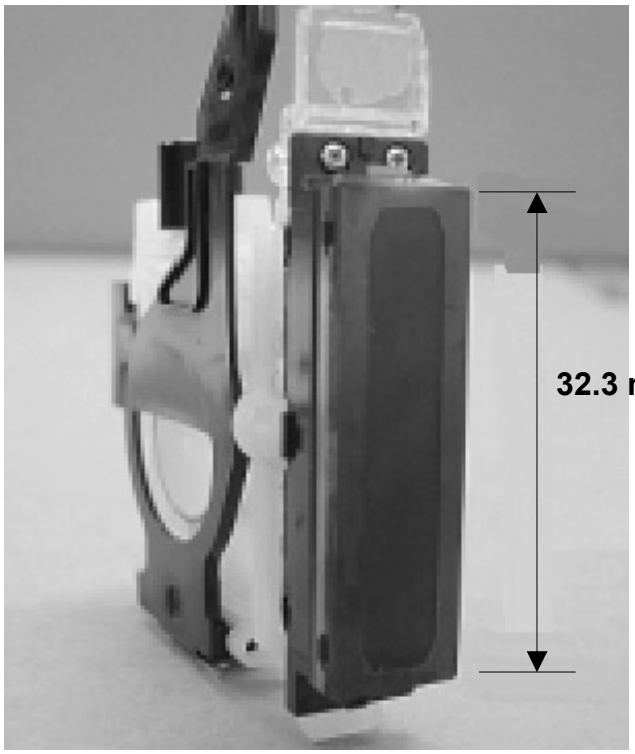
6.3.1 OVERVIEW



G707D905.BMP

1. Carriage Unit
2. Print Head Tank
3. Air Release Valve
4. Print Head
5. Registration Sensor

6.3.2 PRINT HEAD



G707D906.BMP

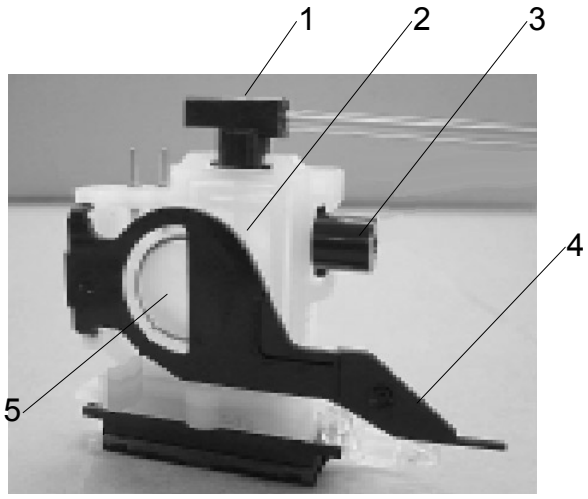
The Wide Print Head is larger than those of previous models.

The wider print head increases the width of the band printed with one pass. This lets the machine print faster.

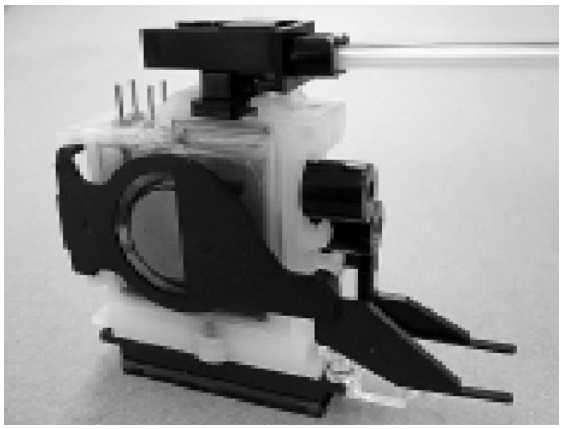
Print Head Specifications

Item	J001	J003
Number of Print Heads	2 (Y/M, C/K)	4 (Y, M, C, K)
Number of Nozzles	192 x 4 colors 192 nozzles x 2 lines/head	384 x 4 colors 192 nozzles x 2 lines/head
Array	Cross-Hatch (150 dpi x 2 lines)	
Voltage Element	Piezo Electric	

6.3.3 PRINT HEAD TANK



J003 Print Head Tank G707D907.BMP



J001 Print Head Tank G707D908.BMP

1. Ink Supply Port
2. Ink Reservoir
3. Air Release Valve
4. Tank Full Lever
5. Plastic Bellows

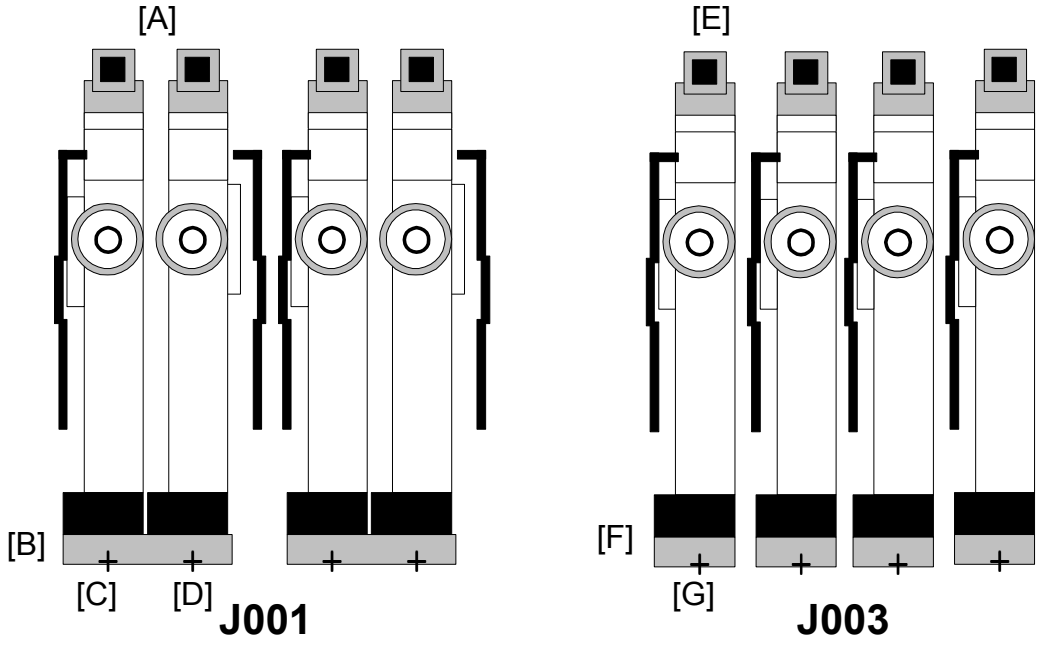
This printer employs a dual-tank system. Each print cartridge (YMCK) is connected to a print head tank with a plastic tube. The first "tank" of the dual-tank system is the cartridge that supplies the ink through a tube to the print head tank unit, and the second "tank" is the ink reservoir inside the print head tank unit.

Both the high volume Print 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.
- **Tank Full Lever.** When the ink tank is mounted in the printer, this lever pushes the bellows down to increase pressure in the ink reservoir.
- **Air release valve.** Vents periodically to keep the ink inside the ink tank unit under the prescribed pressure.

The basic operation of the print head tank is identical in the J001 and J003. However, the design of the mechanism is different for these printers.



G707D909.WMF

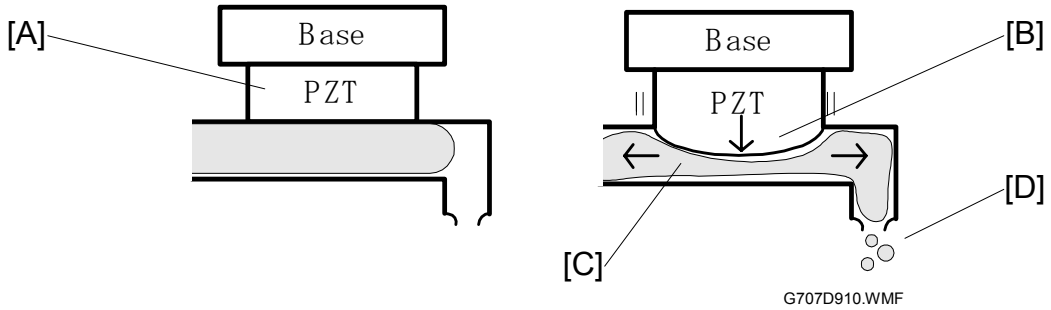
On the J001 there are two combined units.

- Two print head tanks [A] are mounted on one print head [B].
- Each print head tank unit feeds to its own nozzle array [C] and [D] (one for each color.
- Each print head tank holds 4.3 ml of ink.

On the J003 there are four independent units.

- Each print head tank [E] has an independent print head [F] with a nozzle array [G].
- Each print head tank holds 4.6 ml of ink.

6.3.4 INK EJECTION DEVICE

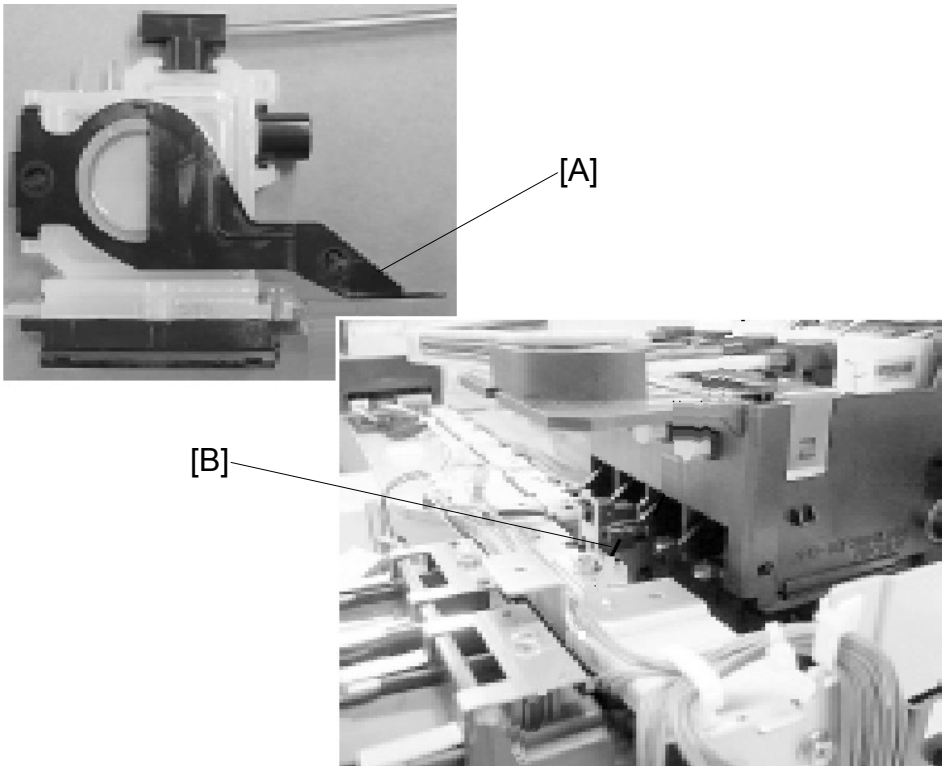


Each print head uses a piezo-electric element (PZT) [A]. This forces ink from the ink reservoirs out of the ink nozzles and onto the paper.

This is done with pressure. At the prescribed time, an electric charge is given to the PZT. This makes the PZT expand. The expansion of the PZT [B] puts pressure on the ink [C] below. This makes the ink move in both directions. The ink on the right is forced out the ejection port [D].

This device is unique. You cannot see this device on other printers on the market that use small heaters to form bubbles to eject ink from the ports.

6.3.5 INK NEAR END



G707D911.BMP

Each print head has a tank full lever [A]. 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..

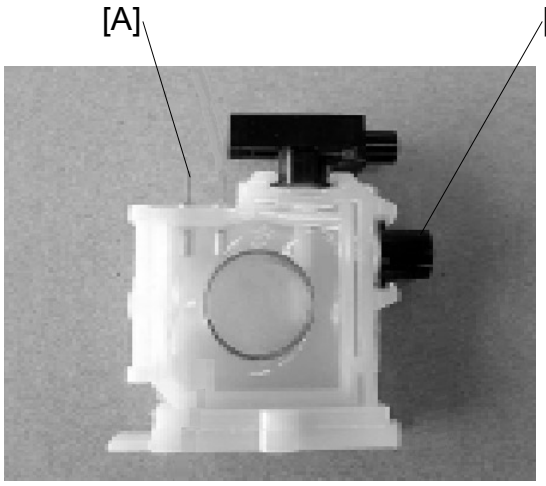
The tank full sensor [B], mounted above the front guide rail, checks the left and right positioning of the tank full lever every time the carriage passes below.

When the tank full sensor detects the lever against the side of the tank, the printer sends a prescribed amount of ink to the tank from the Print cartridge.

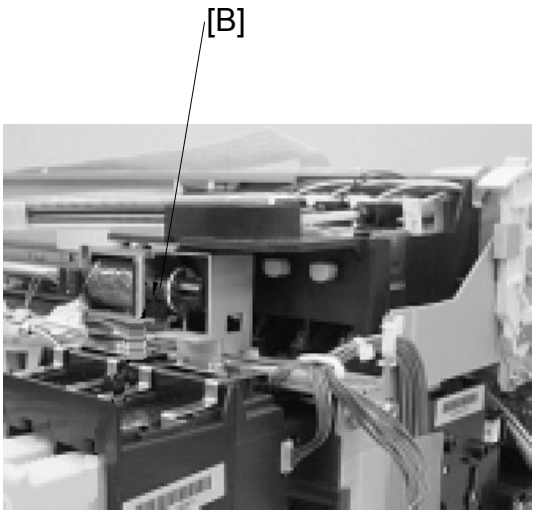
The sensor signals the ‘ink near-end’ if the tank full lever does not return to the full position (away from the side of the tank) within the prescribed time after the printer requests another fill from the Print cartridge.

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. (☛6.3.6)

6.3.6 INK OUT



G707D912.BMP



G707D913.BMP

Two sensor pins [A.] monitor air in the print head tank. These pins detect changes in the voltage differential on the surface of the ink inside the print head tank.

When these terminals detect air in the tank:

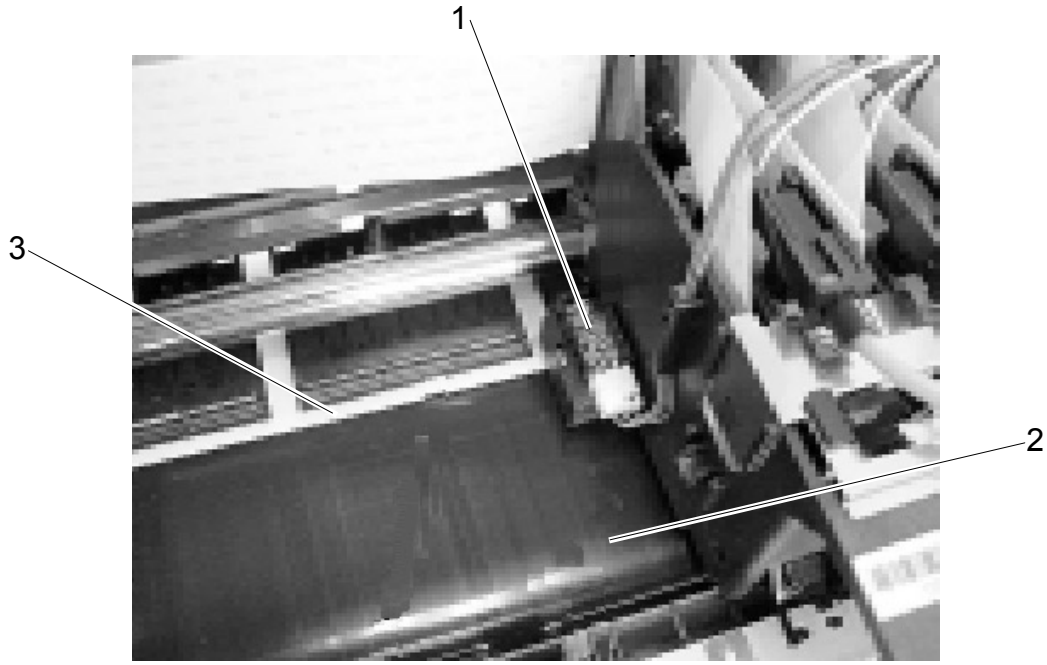
- The air release solenoid [B] energizes and opens the air release valve [C] so air can escape from the ink reservoir.
- This allows more ink to enter the tank.

This is a continuous operation. The sensor pin readings signal the ink-out condition when:

- The ink near-end alert has been issued.
- The amount of air detected in the tank indicates that no ink remains in the tank.

Also, as a backup measure, the firmware counts up for the amount of ink consumed after every near end occurrence. When this count reaches the value prescribed for the toner cartridge, this will also signal an ink-out condition.

6.3.7 REGISTRATION SENSOR



G707D914.BMP

1. Registration Sensor
2. Transport Belt
3. Paper (Leading Edge)

The registration sensor is attached to the left side of the carriage. The carriage moves from side to side during printing.

The 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.

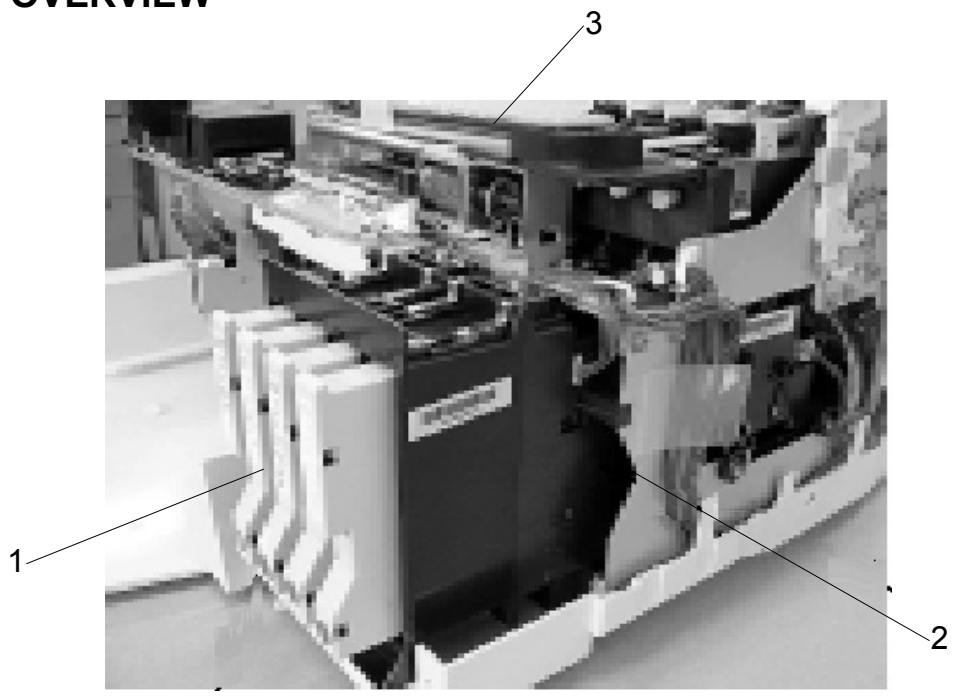
Important

- 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.

For more, see "6.7.3 Leading Edge and Paper Size Detection".

6.4 INK SUPPLY UNIT

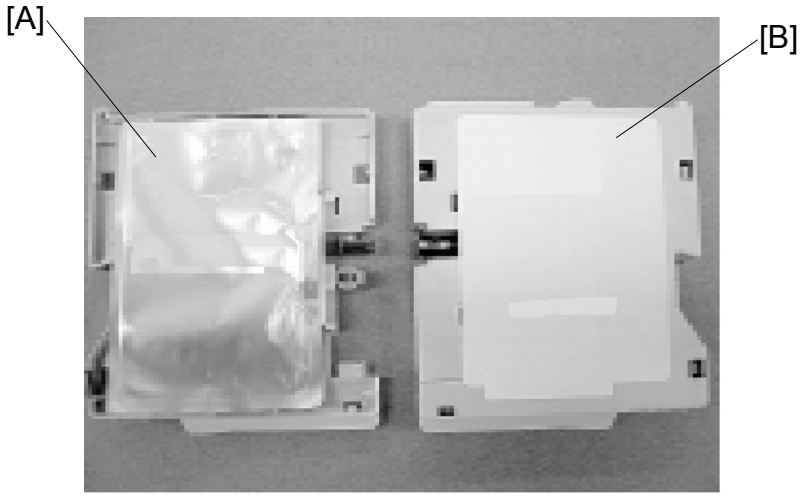
6.4.1 OVERVIEW



G707D915.BMP

1. Print cartridges x 4 (with Viscous Ink: Y, M, C, K)
2. Supply Pump Unit
3. Supply Tube

6.4.2 PRINT CARTRIDGES



G707D916.BMP

There is a separate Print cartridge for each color (Y, M, C, K). Each Print cartridge is vacuum packed [A]. Print cartridges [B] are available in different sizes.

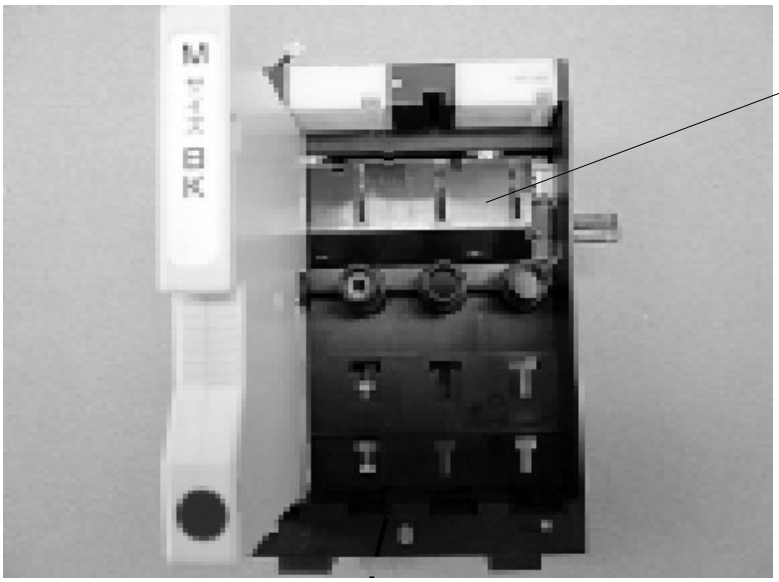
Type	Color	Amount
Small *1	K	25 ml
	C, M, Y	19 ml
Medium	K	33 ml
	C, M, Y	25 ml
Large	K	62 ml
	C, M, Y	48 ml

*1 The "Starter" cartridges provided with the printer for installation.

All the colors (Y, M, C, K) of Viscous ink are pigment inks.

- Require only standard PPC to get quality printouts (special print media are not required).
- Do not let smears occur because they dry more quickly (there is less chance of smearing wet ink).
- Do not let fades occur in bright light. This makes their colors highly durable.

6.4.3 PRINT CARTRIDGE SET SENSOR



G707D917.BMP

Four micro switches detect the Print cartridges. These are connected in series above the cartridge set detection plate [A].

Each tank has a microswitch. The machine cannot specifically detect if a Print cartridge is not set correctly. The open switch signals these:

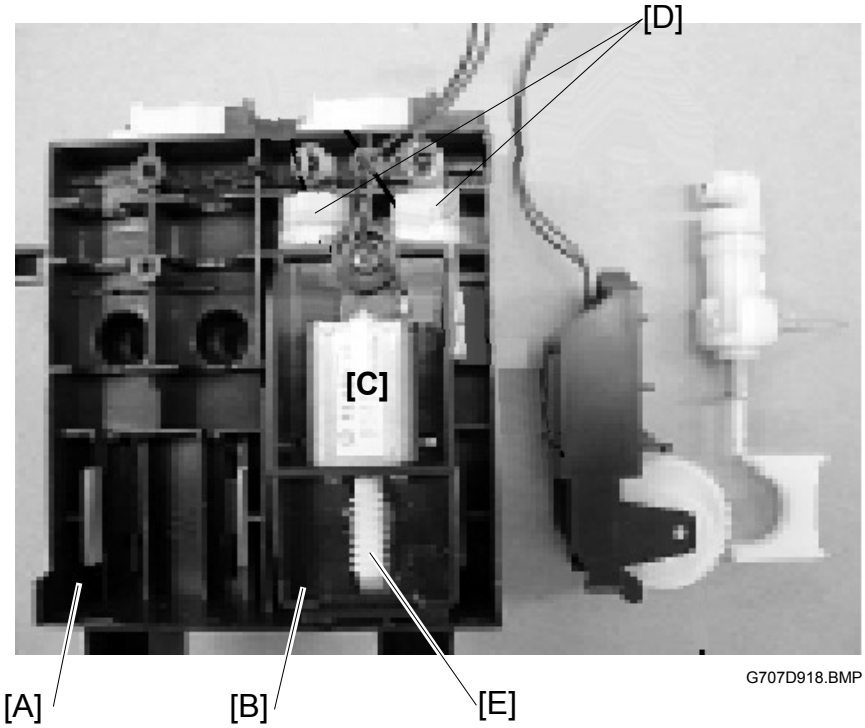
- A cartridge is not in the machine
- A cartridge is not installed correctly

To solve this problem, you must open the Print cartridge cover. At this time you can check these:

- A cartridge is not in the machine
- A cartridge is not installed correctly

6.4.4 INK SUPPLY PUMP

Ink Supply Pump Unit: Rear View



The ink supply pump is divided into two compartments:

[A]: M/Y compartment (for Magenta, Yellow Print cartridges)
[B]: K/C compartment (For Black, Cyan Print cartridges)

Each compartment contains:

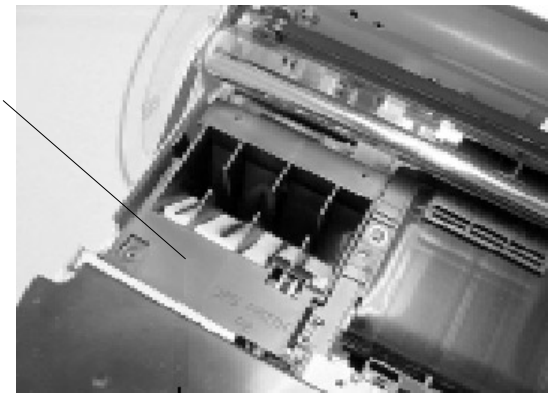
- 1 supply motor [C]
- 2 pumps [D] (one pump for each Print cartridge)
- 2 cams [E]
- 1 One-way clutch (not shown)

When a print head tank needs ink:

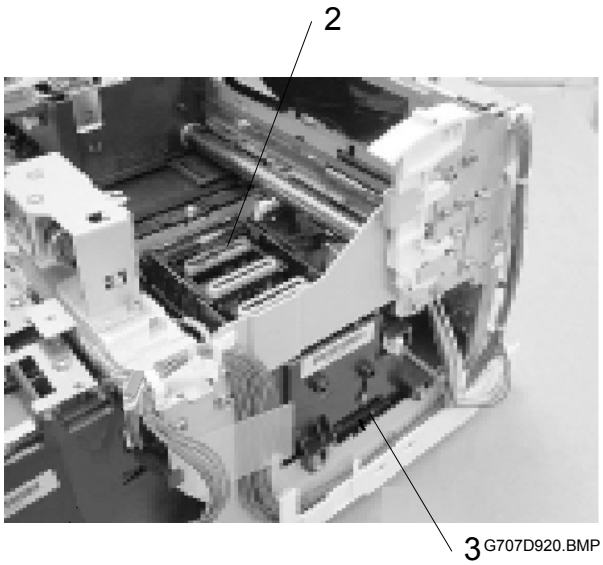
- The printer switches on the supply motor. The motor and its worm gear get rotated forward or backward (depending on which type of ink is required). (Only one pump can operate at a time.)
- A one-way clutch engages and drives the shaft to operate the cam that repeatedly strikes a pump arm to siphon ink from the cartridge.
- The supply motor operates long enough to pump the prescribed amount of ink to the tank. Then it switches off.

6.5 MAINTENANCE UNIT

6.5.1 OVERVIEW



G707D919.BMP

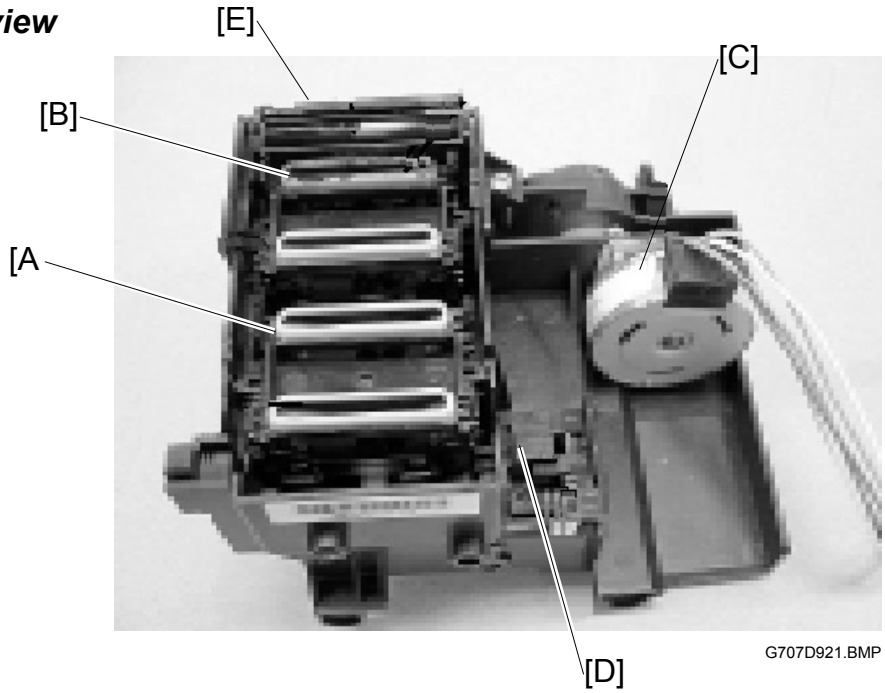


G707D920.BMP

1. Flushing Gate
2. Maintenance Unit
3. Ink Waste Tank

6.5.2 MAINTENANCE UNIT

Overview



The maintenance unit does these two important functions:

- Keeps the surface of the print heads moist at the time they are not in use.
- Cleans the print heads with suction at the time you do cleaning with the printer driver. (The print heads are also cleaned automatically at prescribed intervals.

The caps [A] cover the print heads above. This occurs when the carriage stays at the home position on the right side of the printer.

The first cap [B] 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.

You must do these to the maintenance unit in order to position the print head to do the siphon procedure:

- Lower the maintenance unit
- Move the carriage to the left. This sets the print head for cleaning (for more, see next page).

The maintenance motor [C] rotates forward. Then it lowers two cams to let them press against the bottom to lower the unit. Then it reverses at the prescribed time.

When the motor reverses, it disengages a one-way clutch attached to the main shaft. Then it drives the second shaft to rotate the cam of the tube-pump mechanism.

At the prescribed time, the motor runs forward again until a feeler on the main shaft gets to the gap of the maintenance HP sensor [D]. Then it switches the motor off.

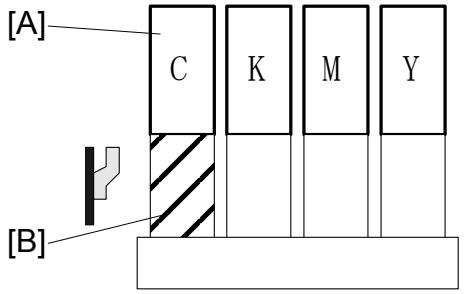
Another cam attached to the main shaft raises and lowers the wiper [E]. The wiper cleans the surface of the print head above as the carriage moves left and then right.

Maintenance Unit Cleaning Cycle

These let you start the cleaning operation:

- The printer driver
- Operation panel.
- You can set the print head for cleaning (or clean them all) if you start the clean job with the printer driver.
- All the print heads get cleaned if you start the clean job from the operation panel.

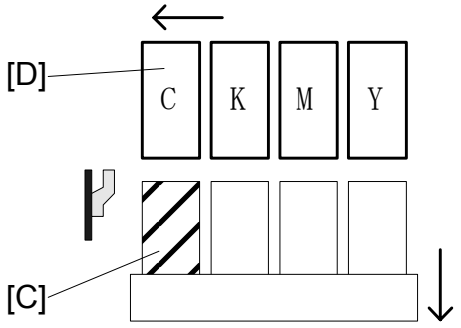
Cleaning starts with the carrier and print heads [A] capped and resting on top of the maintenance unit [B].



G707D922.WMF

When the cleaning cycle starts, the maintenance unit [C] is lowered by the rotation of the main shaft. Then the cams rotate away from the bottom of the unit.

At the same time, the carriage [D] moves to the left.



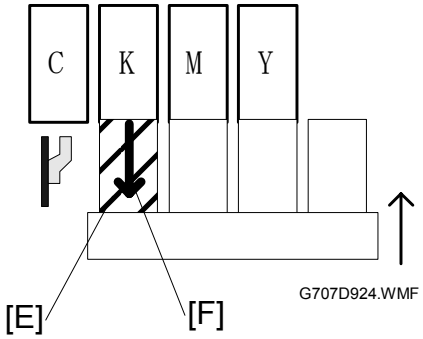
G707D923.WMF

The carriage moves the first print head (in this example, "K" the black print head) above the first vent [E] of the maintenance unit.

NOTE: Only the first vent can siphon ink.

Another cam on the main shaft presses the maintenance unit up so the print head (K) covers the first vent.

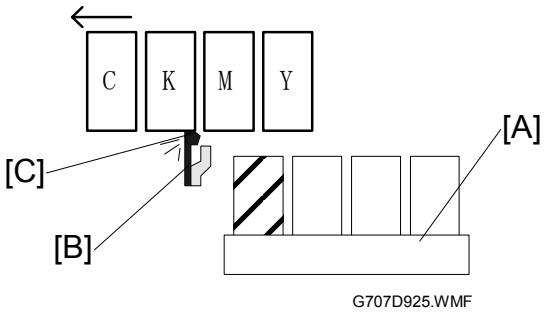
At this time the maintenance motor reverses. The one-way clutch disengages the main shaft and engages the second shaft. This operates the tube-pump. The suction from the pump below sucks ink [F] from the surface of the print head.



G707D924.WMF

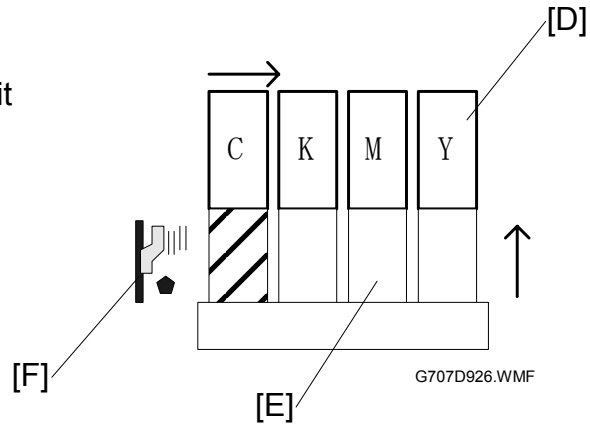
The maintenance [A] unit lowers.

Another cam raises the wiper [B]. At the same time the carriage moves the print heads left far enough so the vacuumed print head can make contact with the wiper. The wiper cleans the ink [C] from the print head.



Then the carriage [D] moves right to the home position. Then the maintenance unit caps the print heads [E].

A cam on the main shaft below vibrates the small scraper [F]. This removes the ink bolus from the wall of the trap. Then it goes to the waste ink tank.



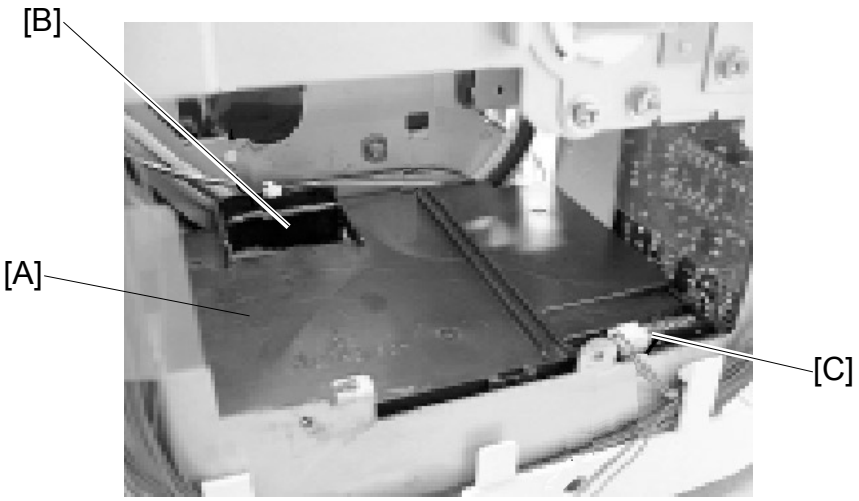
Important

- This cycle repeats for each print head when you start a clean job from the operation panel.
- You can set these for cleaning if cleaning is done from the printer driver:
  - One print head
  - More than one print head
  - All print heads
- For more, see Section "5. 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.

Idle Time				Total Time Required for Cleaning	
				J001	J003
>	10 Hours	<	3 Days	20 s	24 s
>	3 Days	<	7 Days	20 to 80 s	24 to 160 s
>	7 Days	<	1 Month	80 s	160 s
>	1 Month	<	3 Months	180 s	360 s
>	3 Months	<		180 s	360 s

- The J001 has 2 print heads. The J003 has 4 print heads.
- If you divide the number in the “J001” column by 2, this tells you the number of seconds per print head. (Example: 80 s/2 = 40 s per print head.
- If you divide the number in the “J003” column by 4, this tells you the number of seconds per print head. (Example: 360 s/4 = 90 s per print head.

6.5.3 WASTE INK COLLECTION UNIT

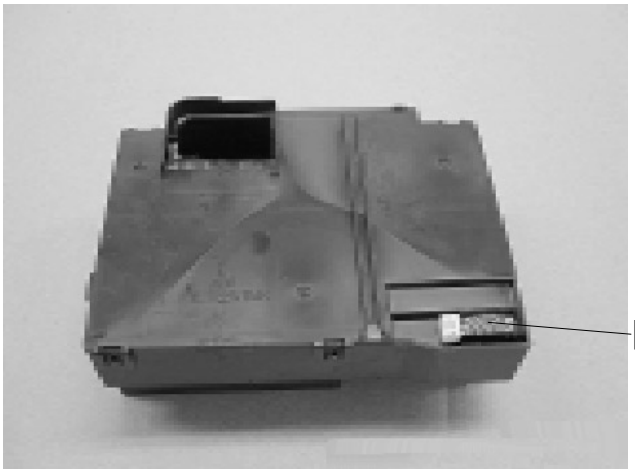


G707D927.BMP

The waste ink collection unit [A] collects the waste ink from the maintenance unit above and the flushing gate. The waste ink gets collected at the waste ink collection port [B].

The capacity of the waste ink collection unit is 480 ml in the J003 and 248 ml in the J001. The printer should be able to use the waste ink collection unit for about 5 years of normal use. The unit has a waste ink tank full sensor [C]. The sensor detects when the collection unit gets full.

6.5.4 WASTE INK TANK FULL SENSOR



G707D928.BMP

The waste ink full sensor [A] is a “smart” reflective photosensor. The photosensor measures the changes in the density of the ink materials in the tank. This lets you know when the tank is full.

A prompt shows the printer needs maintenance when this sensor detects the near-full condition. You can use the printer to print these amounts of print jobs at the time the maintenance alert shows:

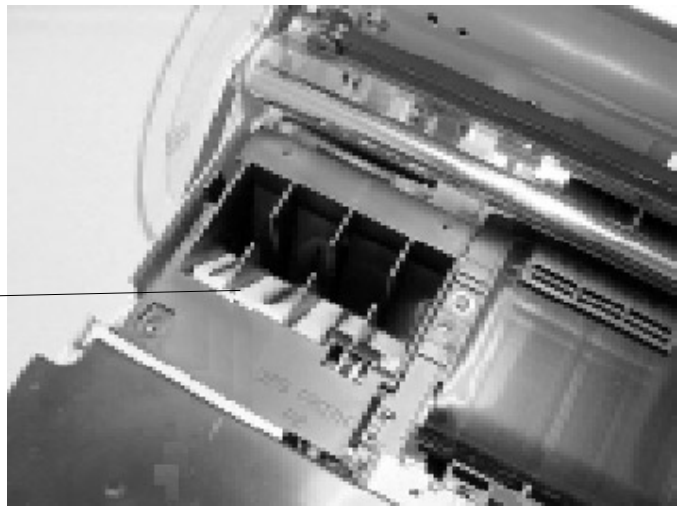
- J003: 200 prints
- J001: 100 prints

These are only rough estimates. Fewer pages get printed if many normal and full print head cleanings are done after the maintenance alert.

SC 992 (Waste Tank Full Error) shows if no maintenance procedures get done:

You cannot use the printer when SC 992 shows. At this time you must replace the waste ink tank.

6.5.5 FLUSHING UNIT



G707D929.BMP

During a long print job, the machine flushes all the nozzles with a very small amount of ink at 15 second intervals. This keeps the nozzles clear and in good working condition.

The flushing gate [A] and the flushing collection unit (below the gate) are located on the left side of the printer.

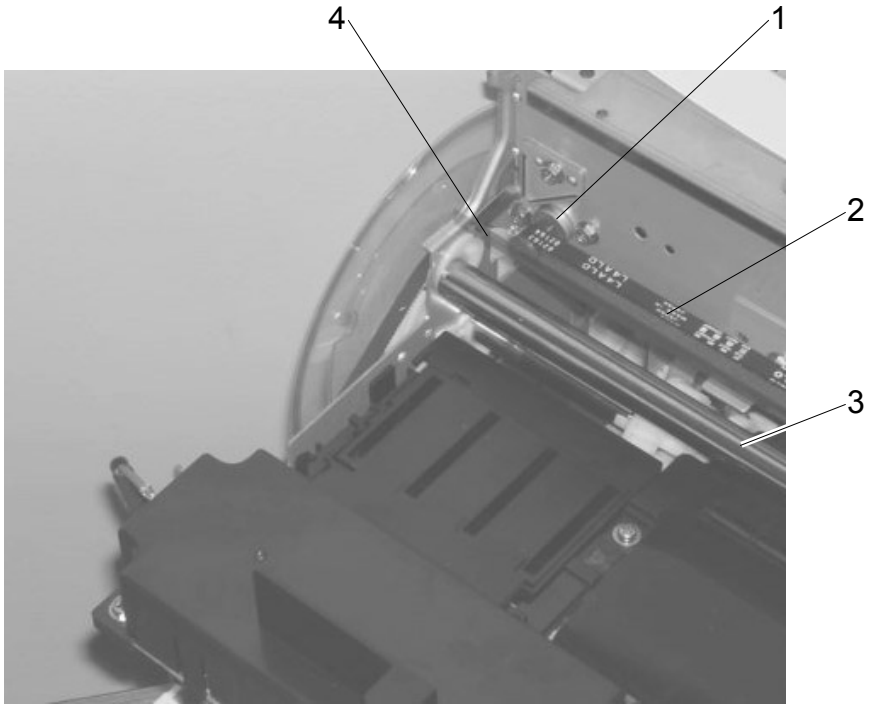
During continuous printing, the print heads are positioned over the flushing gate every 15 seconds. Then the nozzles get flushed with ink. The ink flushed from the nozzles goes through the flushing gate into a sump below.

A small amount of ink gets used to flush the print heads.

NOTE: The sump of the collection unit should never fill to capacity for the service life of the printer. You do not have to clean or replace the sump.

6.6 CARRIAGE DRIVE

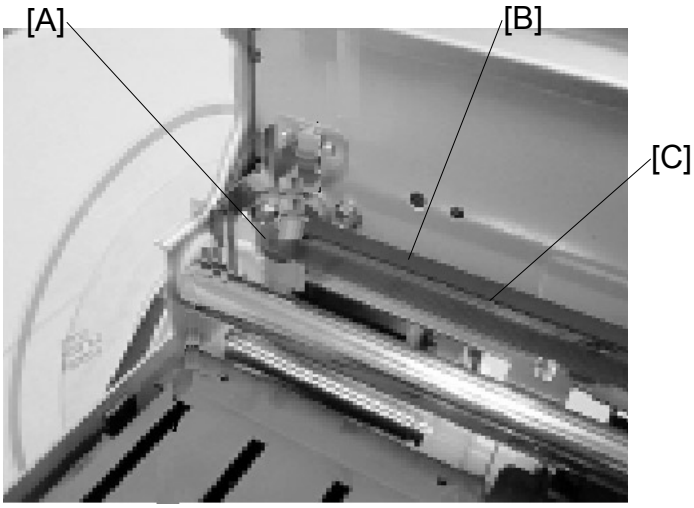
6.6.1 OVERVIEW



G707D930.BMP

1. Horizontal Motor
2. Timing Belt
3. Guide Rod
4. Horizontal Encoder (Translucent Film)

6.6.2 CARRIAGE DRIVE



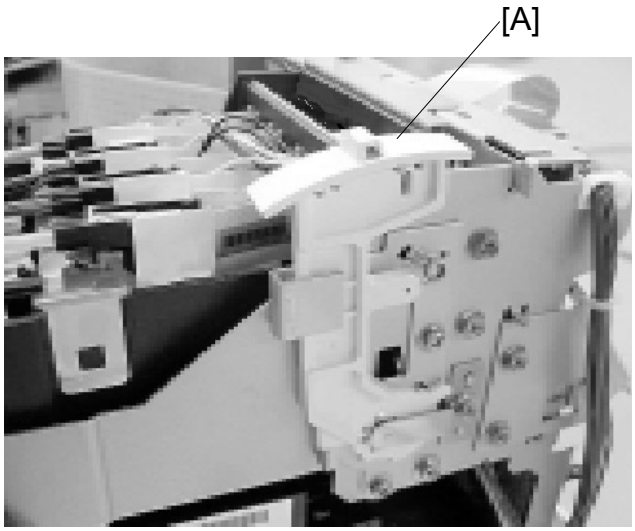
G707D931.BMP

A horizontal motor [A] drives the carriage unit via a timing belt [B] connected to the carriage.

The horizontal encoder strip [C], 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 home position of the carriage unit is on the right side of the printer. You can see the home position when the carriage unit is stopped and touching the right plate.

6.6.3 ENVELOPE SELECTOR



G707D932.BMP

Move the envelope selector [A] to adjust:

- The gap between the print heads
- The surface of the paper on the transport belt.

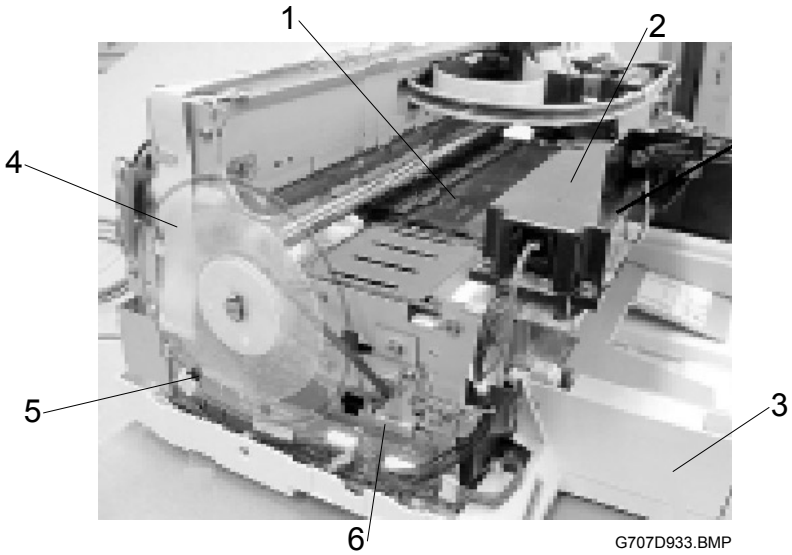
Pushing the lever to the back moves the print heads slightly away from the surfaces of thick paper and envelopes. This stops chaffing on the printing surface and smearing the ink.

A cam operates when the envelope selector is set for printing on thick paper or envelopes. This moves the guide rod to create a gap about 0.8 mm wider than the gap for normal printing.

This lever should be forward and set for printing on normal paper.

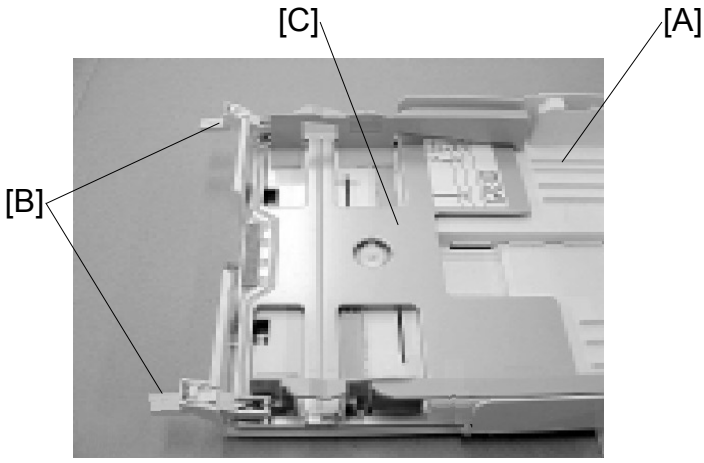
6.7 PAPER FEED, TRANSPORT, OUTPUT

6.7.1 OVERVIEW

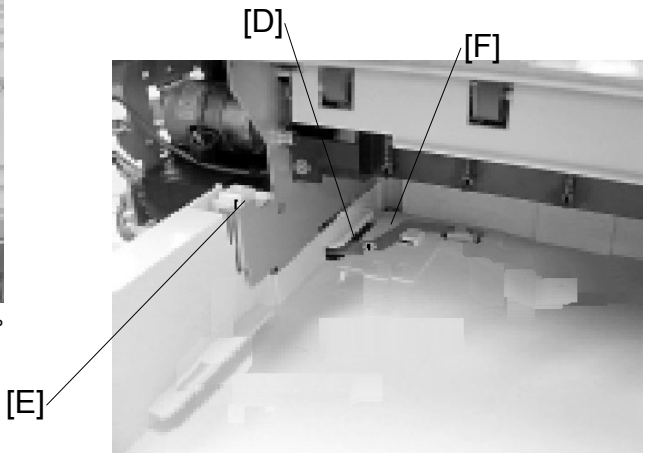


1. Transport Belt Unit
2. High Voltage Power Supply
3. Paper Cassette (J001)
4. Vertical Encoder
5. Vertical Encoder Sensor
6. Vertical Motor

6.7.2 CASSETTE LOCK/RELEASE



G707D934.BMP



G707D935.BMP

Cassette arms [B] on both sides of the cassette are guided into rails when the paper cassette [A] is pushed into the printer. Then the bottom plate gets raised [C]. This raises the paper in the cassette to the correct height for paper feed.

A pawl on bottom plate of the paper cassette slides into a locking hole [D] below the cassette. This locks the cassette in place.

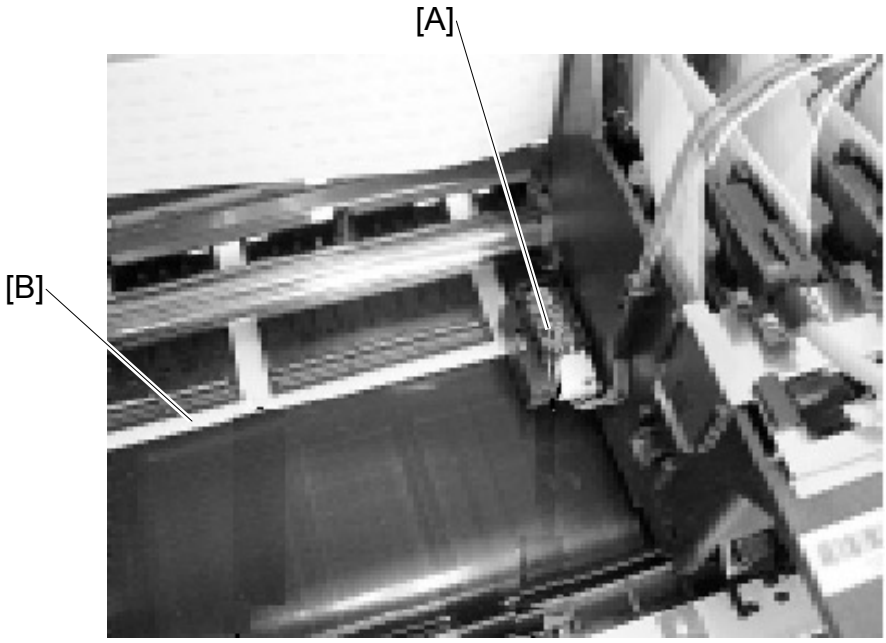
When the output tray is raised with the paper cassette locked in position, this presses the output tray arm down onto a release lever [E]. The release lever, linked to a release arm [F], raises the pawl of the paper cassette out of its locking hole.

A spring at the front edge of the cassette nudges the paper cassette. Then it ejects slightly from the printer. This opens the paper cassette for loading paper.

Important

- The paper cassette is loaded with the cassette pulled out but still attached to the printer.
- Never attempt to remove the paper cassette from the machine to load paper.

6.7.3 LEADING EDGE AND PAPER SIZE DETECTION



G707D936.BMP

There is no paper size sensor in the standard paper cassette or the optional 500-Sheet Paper Tray for the J003. The paper size must be selected with the software application or the printer driver.

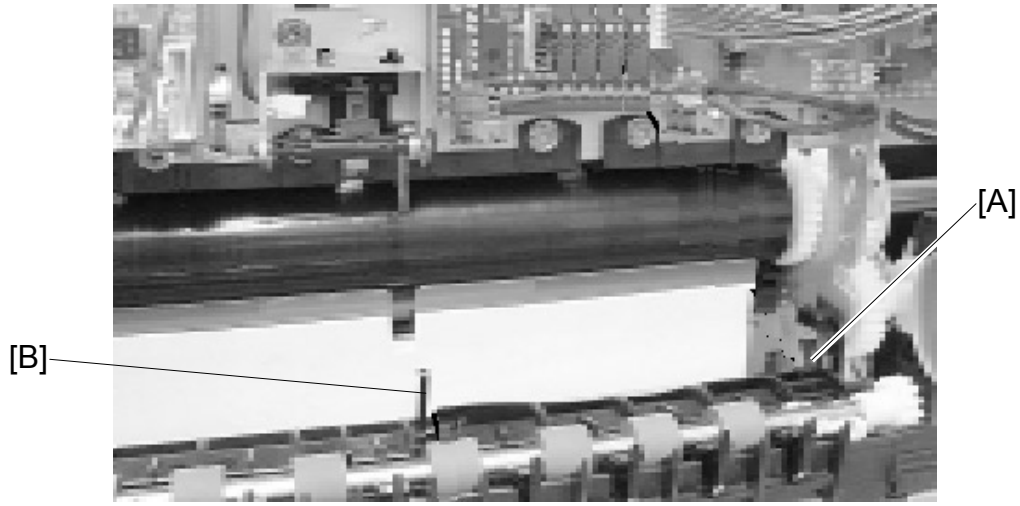
Important: The paper size (and other settings) in the software application always has priority over the printer driver settings.

The registration sensor [A], mounted on the carriage unit, moves from side to side with the carriage during printing.

The registration sensor detects the leading edge of the sheet [B] for feed timing.

The 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.

6.7.4 PAPER END, TRAILING EDGE DETECTION



G707D937.BMP

There is no mechanism to detect paper end in the paper cassette or the paper feed unit.

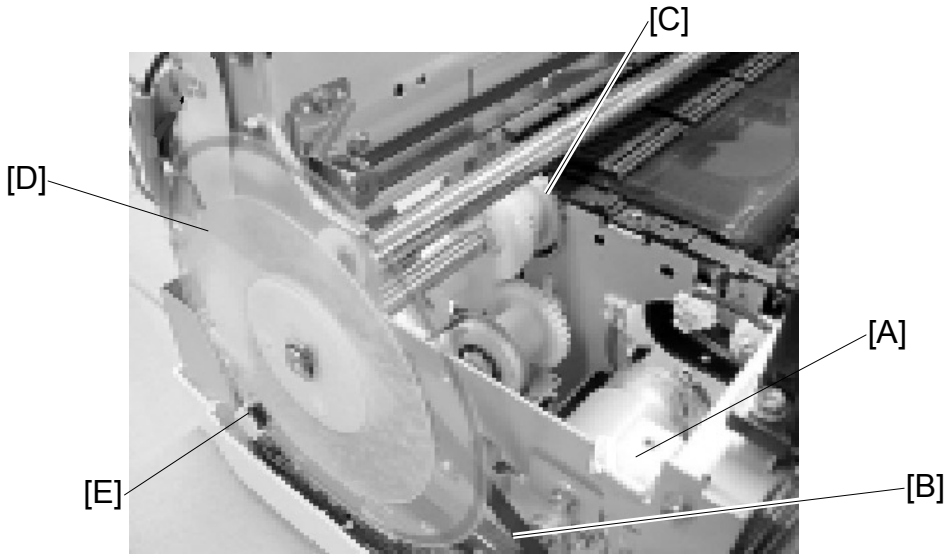
A feeler [A] rises when a sheet of paper gets fed. This turns the trailing edge sensor [B] on. The feeler drops and the trailing edge sensor goes off after the sheet passes.

A paper end error shows at these times:

- The paper feed roller rotates forward twice (once to feed the sheet, and again to try feeding the sheet again).
- The trailing edge sensor does not go on after 2 rotations of the paper feed roller.

The length of time the trailing edge sensor stays on is also used to detect the length of the paper for printing control.

6.7.5 PAPER TRANSPORT DRIVE



G707D938.BMP

The vertical motor [A] drives the timing belt [B] that rotates the transport roller [C].

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 [D], attached to the shaft of the transport roller, passes through the gap of the vertical encoder sensor [E] 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

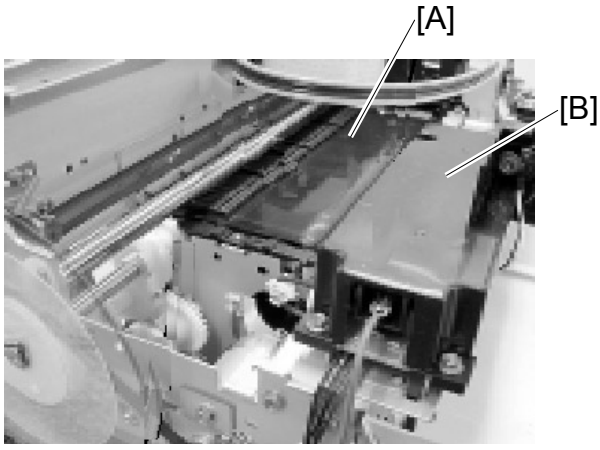
- Never attempt to remove the vertical encoder.
- When servicing the machine, work carefully to prevent scratching, breaking, or bending the vertical encoder.

6.7.6 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, and 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 does not let the paper get double-fed.
3. The charge roller charges the transport belt. The charge on the transport belt lets the paper stay on the transport belt.
4. The sheet feeds onto the transport belt. Then the feeler of the trailing edge sensor rises and switches the trailing edge sensor on.
5. At the same time the trailing edge sensor goes on, the carriage moves to the right of center. This lets the leading edge sensor detect the leading edge of the paper.
6. The leading edge sensor detects the right edge of the sheet when the carriage and leading edge sensor move toward the HP sensor on the right.
7. The detection of the right edge by the leading edge sensor is used to determine the width of the paper in the paper path.
   NOTE: The leading edge sensor reads the right edge of the sheet only once. This occurs at the time the first page gets fed for the print job. The leading edge sensor does not detect the right edge for any sheet after the first sheet.
8. An area equal to the width of each print head gets printed when the carriage goes across the sheet from right to left.
9. This occurs when the last line gets printed. The transport roller rotates only long enough to feed the length of paper that stays. Then the paper exits the printer.
10. The print job count goes up by 1 after the paper exits.

6.7.7 TRANSPORT BELT



G707D939.BMP

This printer uses the BT system to transport paper through the paper path.

A high voltage power pack [A] charges the charge roller below the transport belt [B].

The charge roller applies a bias charge to the transport belt. This static charge makes the paper adhere to the transport belt so the paper does not shift during transport and printing.

A temperature/humidity sensor, mounted near the charge roller, monitors the temperature and humidity near the charge roller. The readings of this sensor are matched with values in a lookup table (see next page) that is cross-indexed with temperature and humidity readings. The values read from the table 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.

Charge Pitch Temperature Table (J003 Standard (Quality Priority, Speed Priority)

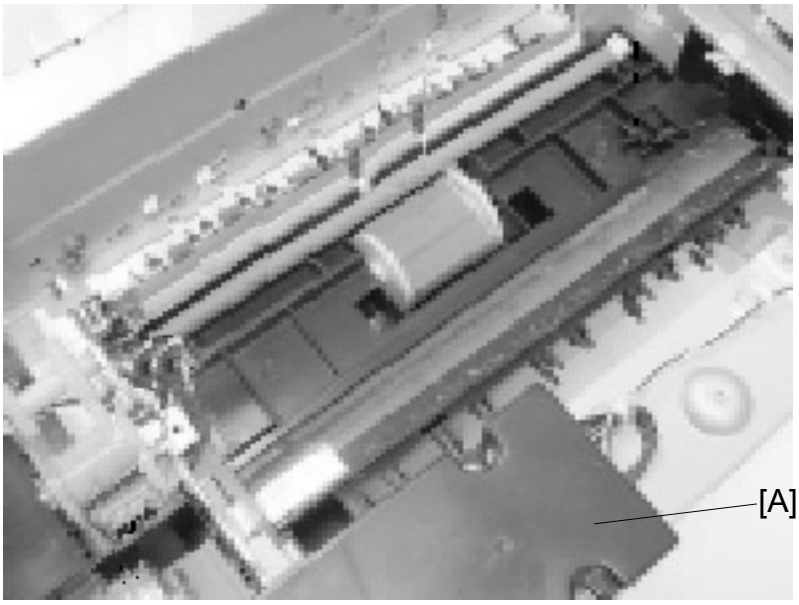
	TEMPERATURE															
	>2.5°C	>2.5°C <5.0°C	>5.0°C <7.5°C	>7.5°C <10.0°C	>10.0°C <12.5°C	>12.5°C <15.0°C	>15.0°C <17.5°C	>17.5°C <20.0°C	>20.0°C <22.5°C	>22.5°C <25.0°C	>25.0°C <27.5°C	>27.5°C <30.0°C	>30.0°C <32.5°C	>32.5°C <35.0°C	>35.0°C
>75%	3	3	3	3	3	3	2	2	2	2	1	1	1	1	1
>65%, <75%	3	3	3	3	3	3	2	2	2	2	1	1	1	1	1
>55%, <65%	3	3	3	3	3	3	3	2	2	2	2	2	2	2	2
>45%, <55%	3	3	3	3	3	3	3	3	2	2	2	2	2	2	2
>35%, < 45%	4	4	4	4	3	3	3	3	3	2	2	2	2	2	2
>25%, <35%	4	4	4	4	4	4	3	3	3	3	3	3	2	2	2
>10%, <25%	4	4	4	4	4	4	4	4	3	3	3	3	3	3	3
>10%	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4

PPM with Chart J6 (Full Color) by Area

Area	Provence PPM (J6)	
	High Speed Simplex	High Quality Simplex
1	8.5	8.5
2	8.5	8.5
3	7.6	5.7
4	5.8	4.5

G707D900.WMF

6.7.8 CHARGE LEAK DETECTION



G707D940.BMP

The printer checks for and detects charge leaks at these times:

- 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.

These happen when a charge leak gets detected:

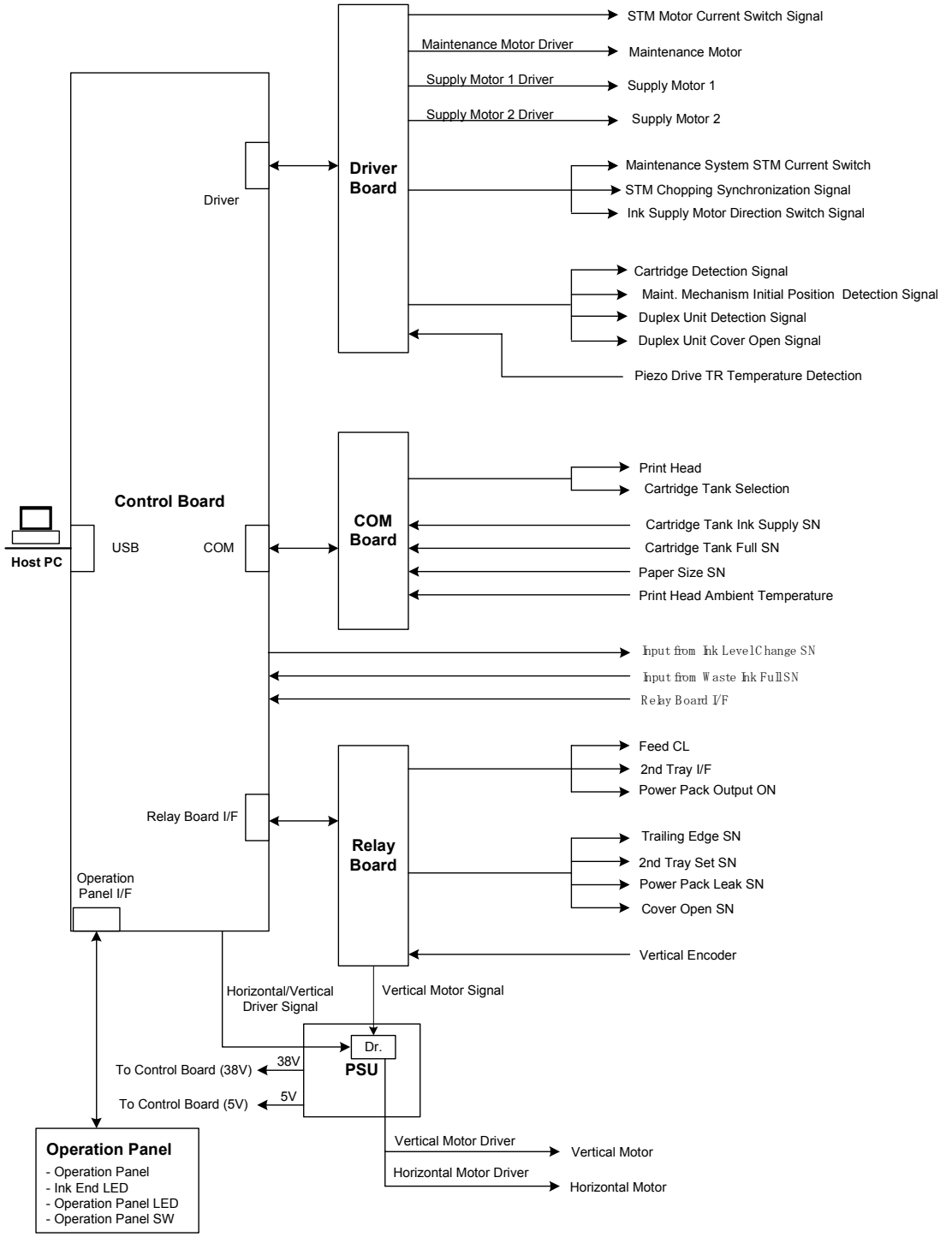
- The voltage supply from the power pack [A] gets interrupted immediately
- The printer stops the current print job in progress.
- The carriage goes back to its home position.
- The print heads gets capped. The printer cannot operate.

Do these to let the printer go back to normal operation:

- You must remove the cause of the leak.
- Turning the printer off and on.

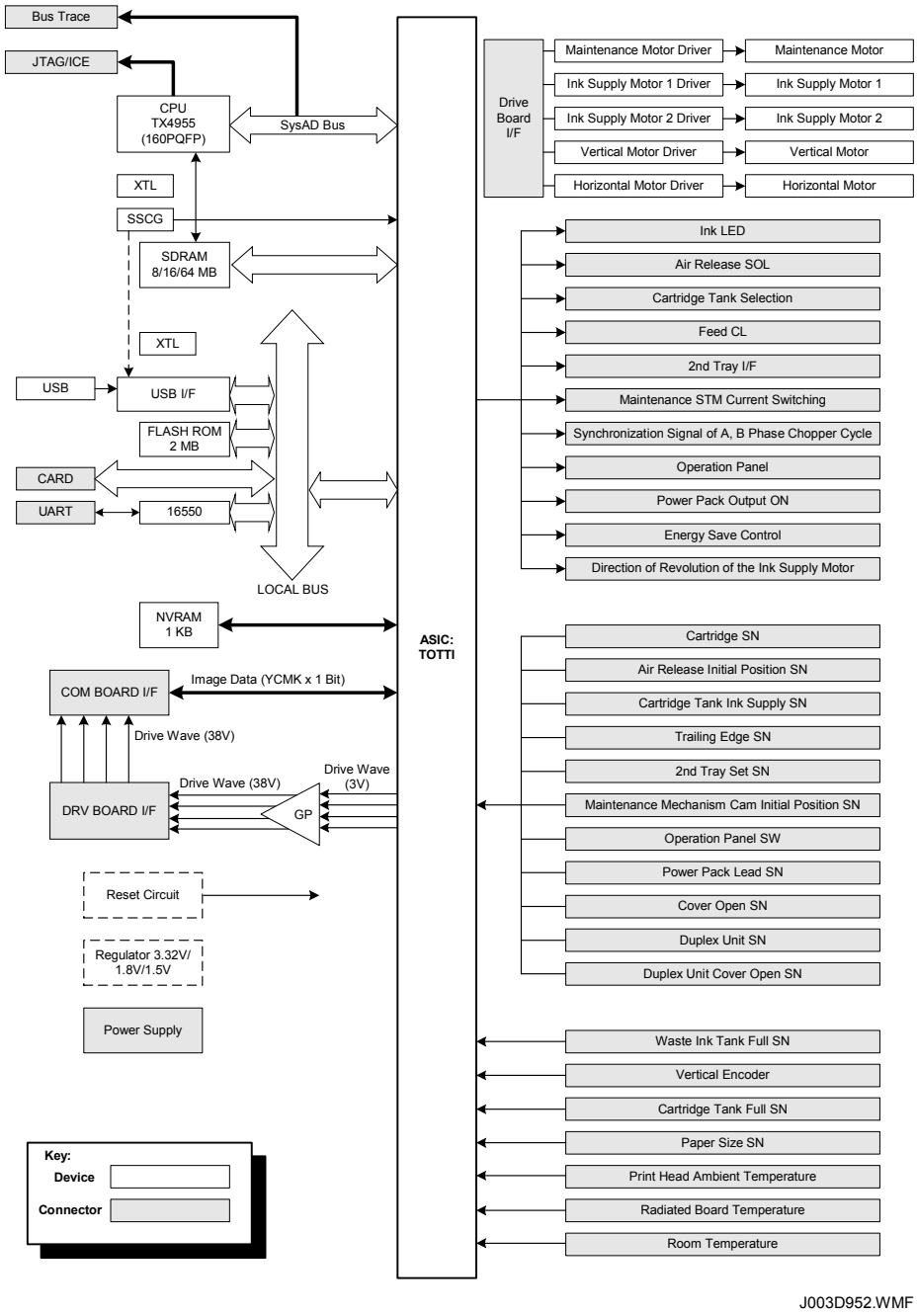
6.8 ELECTRICAL COMPONENTS

6.8.1 MAIN BOARDS



J003D951.WMF

6.8.2 CONTROL BOARD

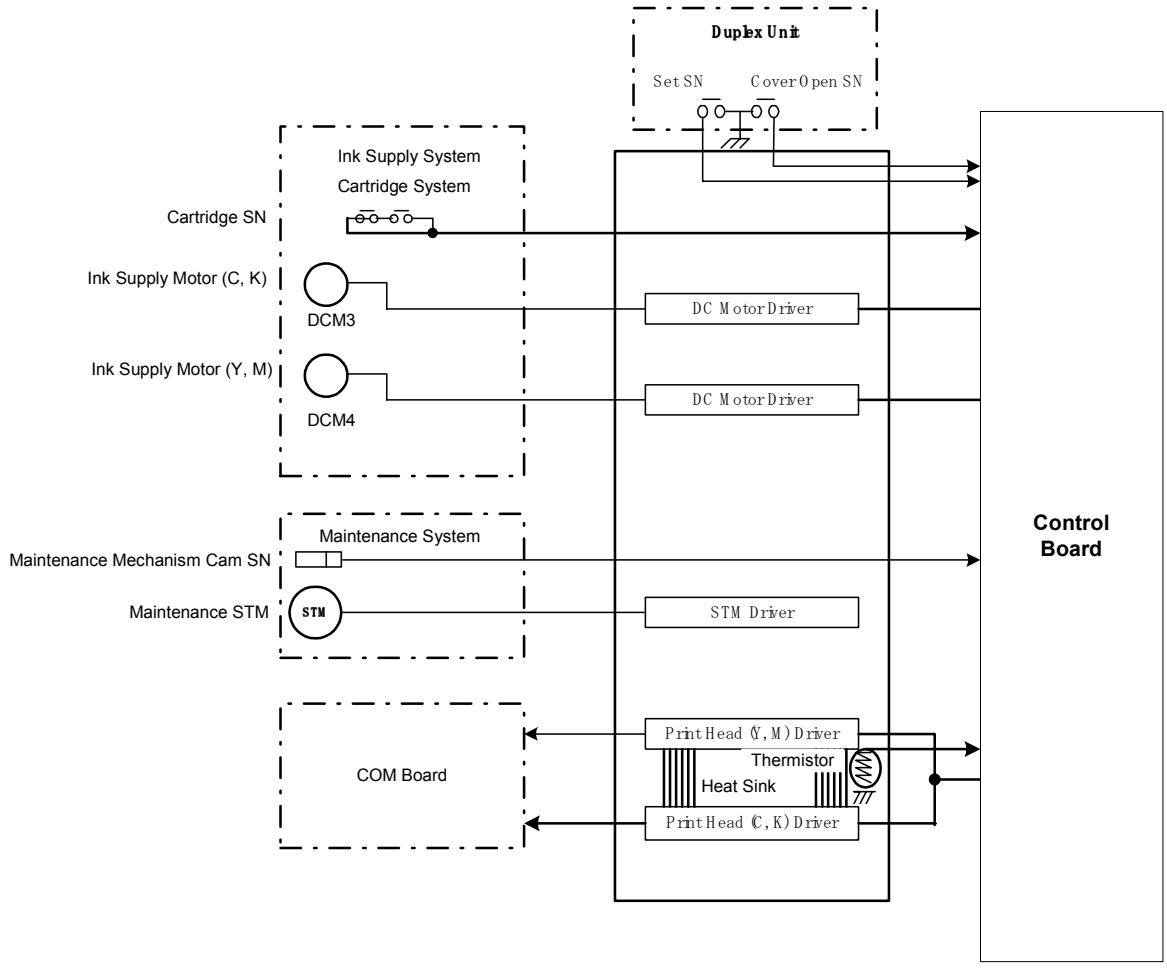


J003D952.WMF

The control board does these functions:

- Overall control
- Image data processing
- Interface management: USB, the operation panel, the communication (COM) board, DC relay board, Drive (DRV) board, and PSU.
- Controls all sensors, and motors for all I/O devices.

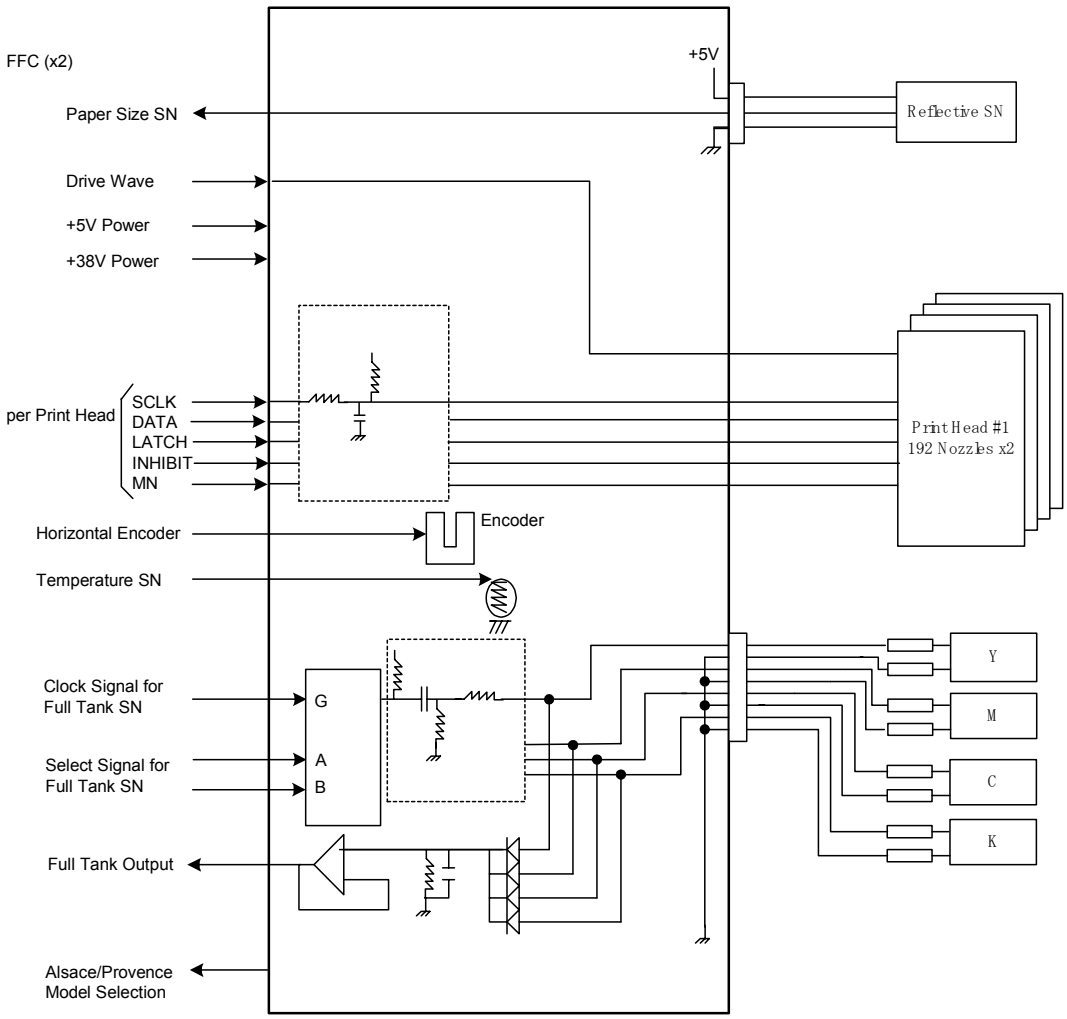
6.8.3 DRV BOARD



The DRV Board contains these important components and functions:

- Phase control for the print head drive
- Ink supply motor driver
- Maintenance stepper motor driver
- Sensor signal detection.

6.8.4 COM BOARD

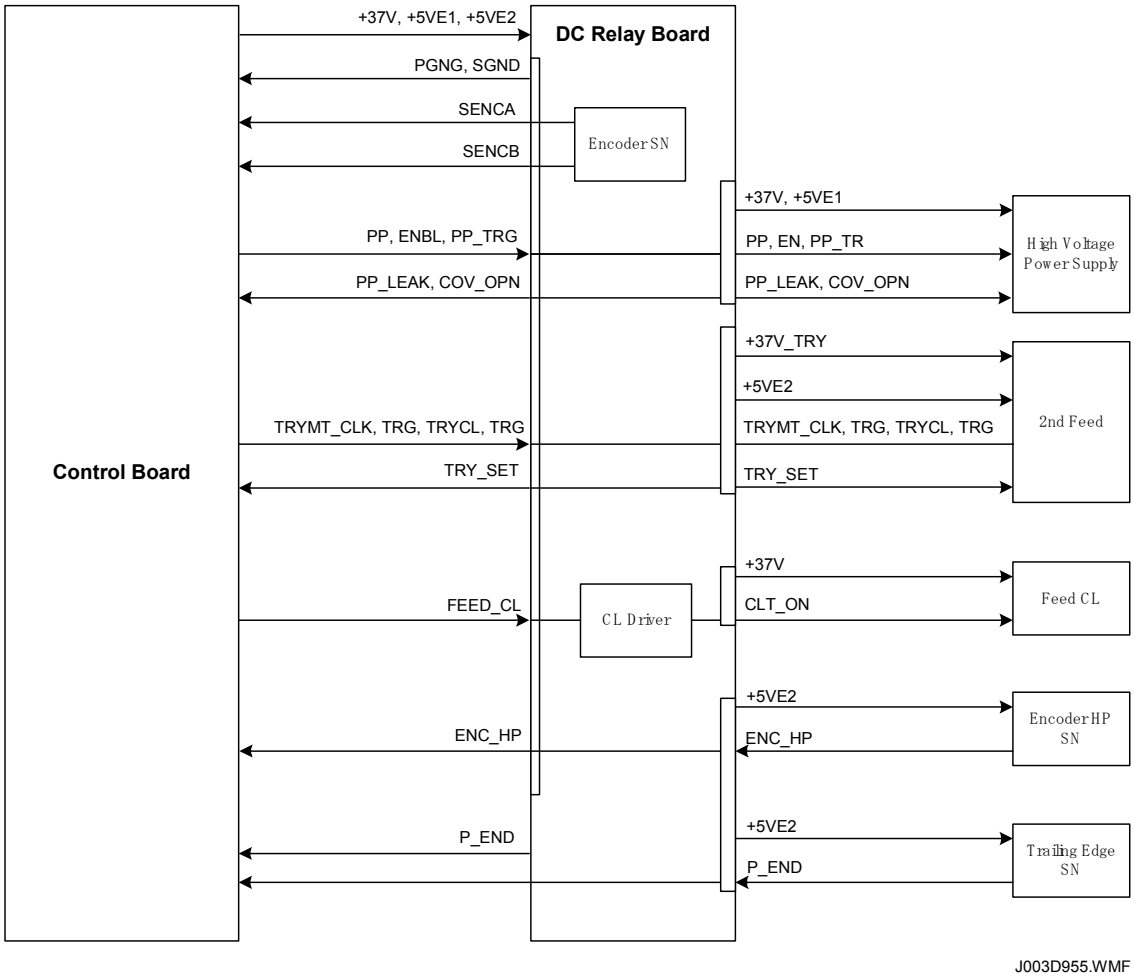


J003D954.WMF

The COM Board contains these important components and functions:

- Carriage horizontal position detection
- Paper leading edge, horizontal width detection
- Temperature detection of the area near the print heads
- Waste ink tank full detection
- Recognizes the printer type (J001/J003)
- Print head control

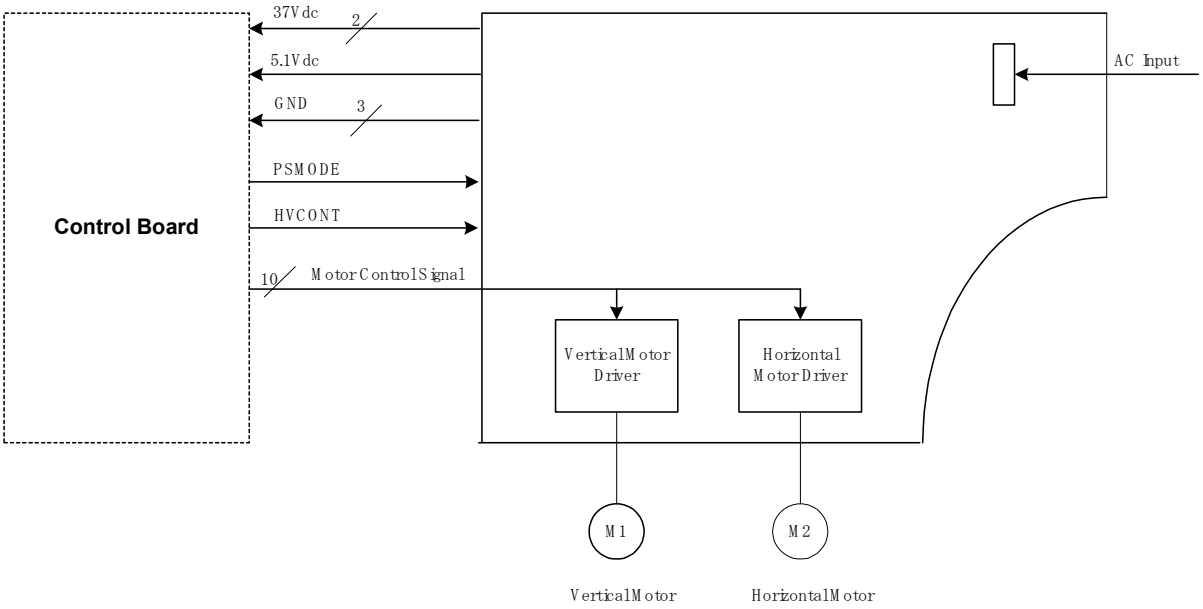
6.8.5 DC RELAY BOARD



The DC Relay board contains these important components and functions:

- Detection of vertical position of the paper during feeding
- High voltage power pack interface (Control Board ↔ Power Pack)
- Tray 2 interface (Control Board ↔ Tray 2)
- Paper feed clutch driver
- Sensor interface

6.8.6 PSU



J003D956.WMF

The PSU contains these following important components and functions:

- Horizontal motor control
- Vertical motor control
- Power supply control
- Supplies both 37 V and 5.1 V power to the printer

Detailed Descriptions

6.8.7 CONNECTOR LIST

Control Board

Connector No.	Connects To:
CN100	Air Release SOL
	Air SN
	Waste Ink Tank Full SN
CN101	DRV Board I/F
CN102	Relay Board I/F
CN103	PSU I/F
CN104	Operation Panel I/F
CN105	USB I/F
CN106	--- Not Used ---
CN107	COM Board I/F

DRV Board

Connector No.	Connects To:
CN200	Control Board I/F
CN201	Maintenance Motor
CN202	Ink Supply Motor
	Cartridge Reset
	Maintenance Motor DP
CN203	--- Note Used ---
CN204	Print Head Drive

COM Board

Connector No.	Connects To:
CN1	Print Head 1 (Odd) I/F
CN2	Print Head 1 (Even) I/F
CN3	Print Head 2 (Odd) I/F
CN4	Print Head 2 (Even) I/F
CN5	Print Head 3 (Odd) I/F
CN6	Print Head 3 (Even) I/F
CN7	Print Head 4 (Odd) I/F
CN8	Print Head 4 (Even) I/F
CN9	Waste Ink Tank Full Sensor
CN10	Registration Sensor
CN11	Control Board I/F
CN12	Control Board I/F

DC Relay Board

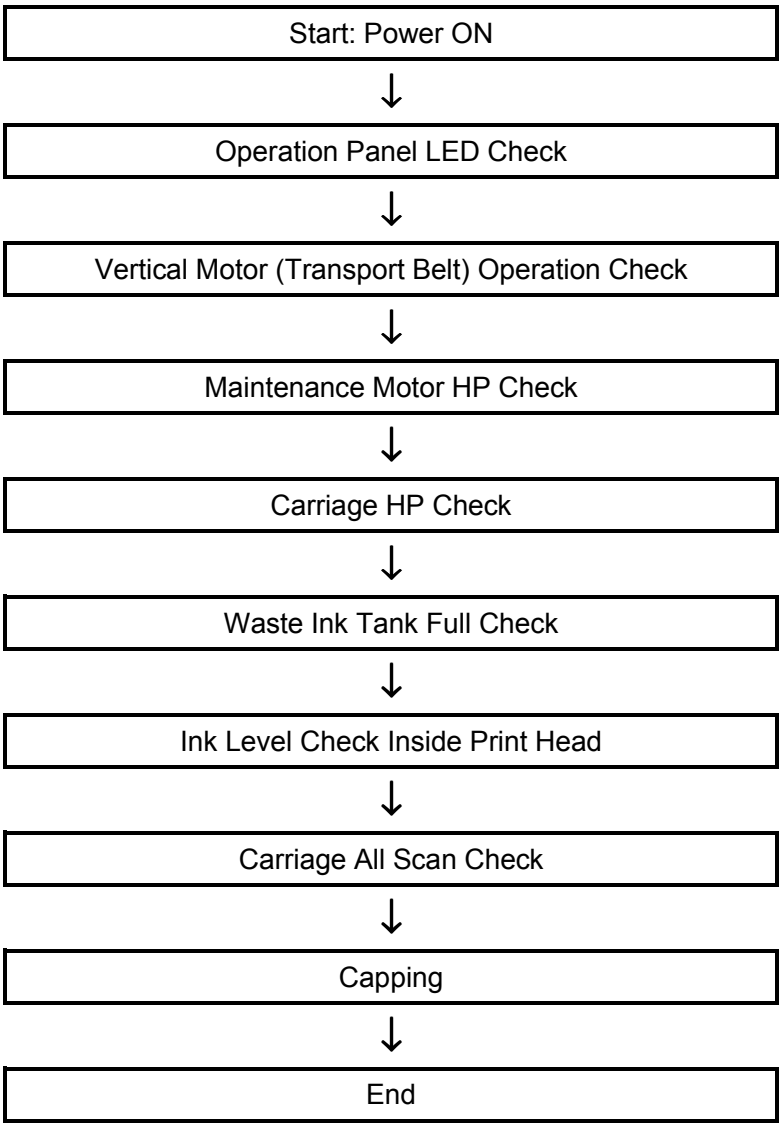
Connector No.	Connects To:
CN300	Control Board I/F
CN301	High Voltage Power Supply
	Cover OPEN
CN302	Vertical Encoder
	Trailing Edge Sensor
CN303	500-Sheet Paper Tray (Tray 2)
CN304	Feed CL

PSU

Connector No.	Connects To:
CN1	AC Input
CN2	37V, 51.V Power Supply
CN3	Control Board I/F
CN4	Horizontal Motor
CN5	Vertical Motor

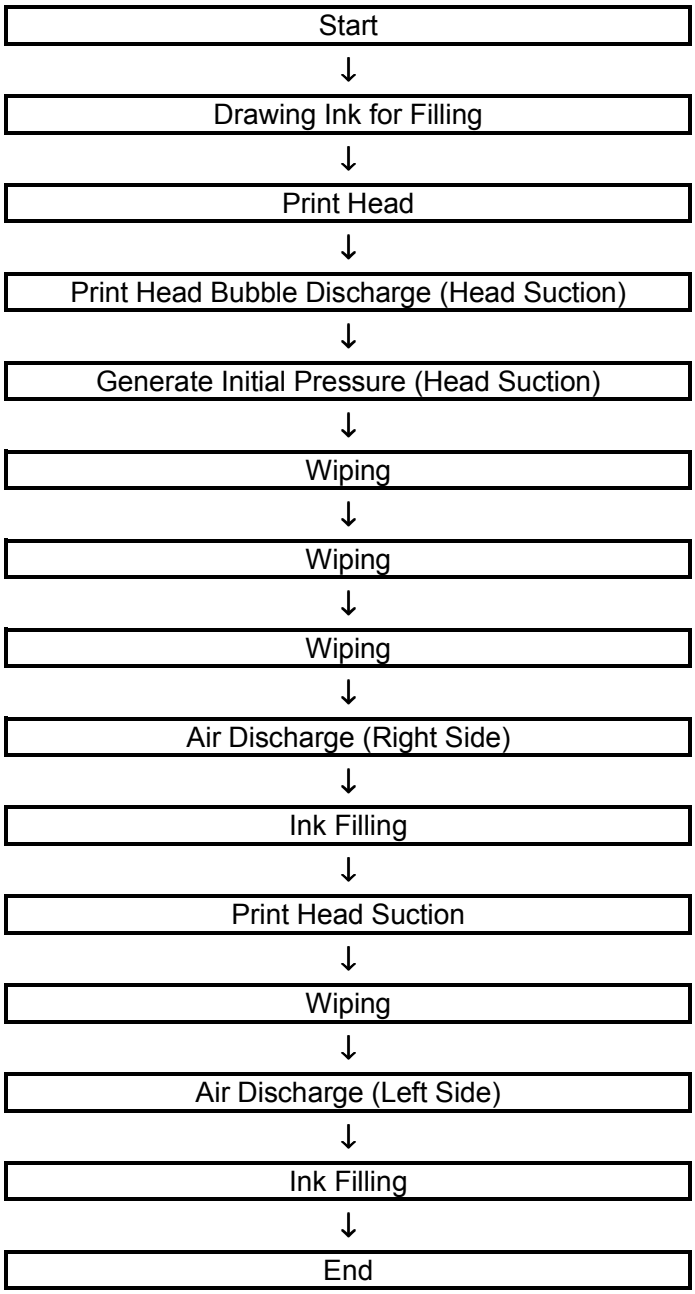
6.9 BASIC OPERATION

6.9.1 INITIALIZATION SEQUENCE AT POWER ON



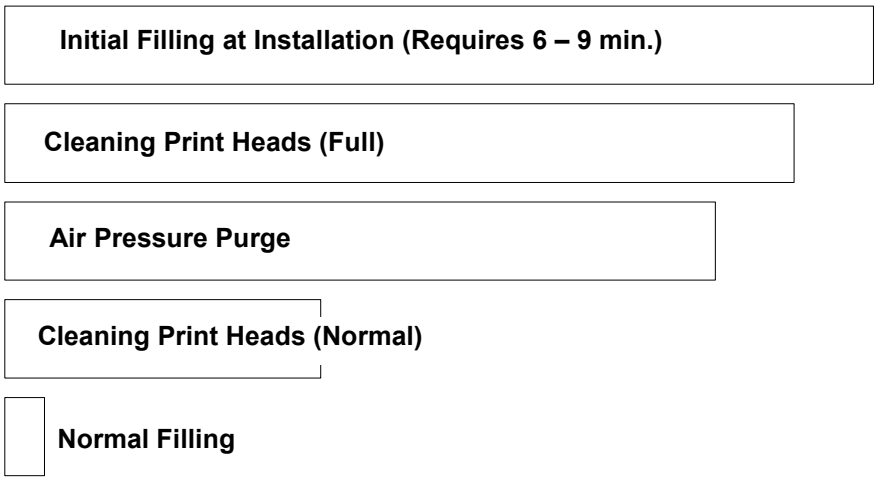
6.9.2 PRINT HEAD MAINTENANCE RECOVERY OPERATION

Filling Sequence



Ink Consumption by Mode

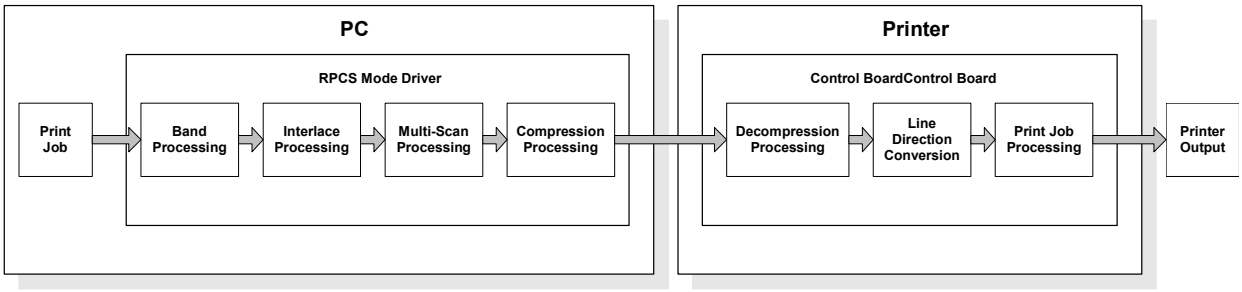
Mode	Model	Consumption
Cleaning	J001	0.2 ml / print head
	J003	02. ml/print head
Refreshing	J001	2.6 ml/print head
	J003	2.6 ml/print head
Initial Filling	J001	7.6 ml/print head
	J003	4.5 ml/print head



J003D961.WMF

Visual Comparison (Approximate)

6.10 IMAGE PROCESSING



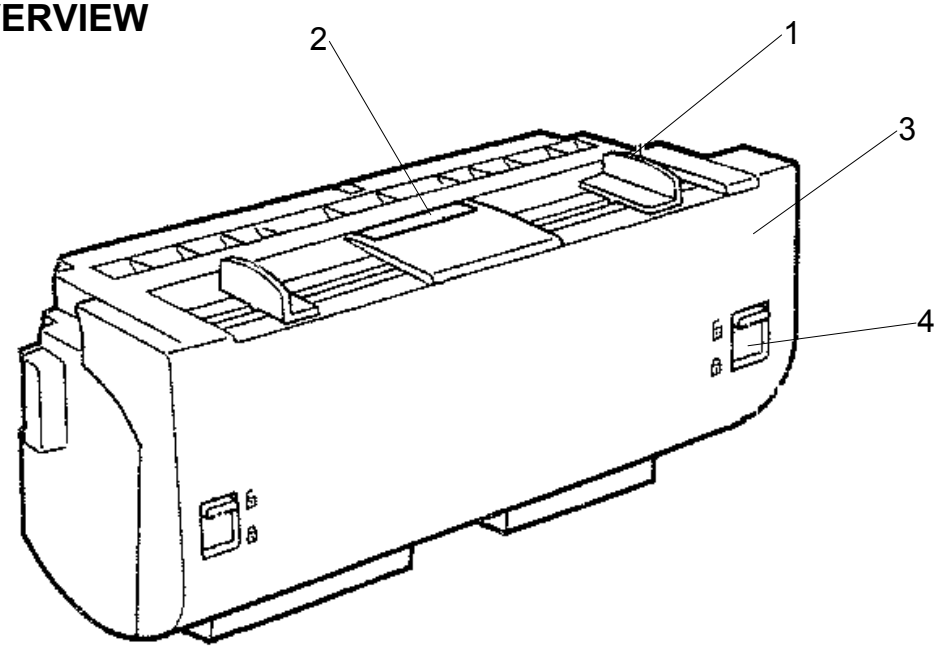
J003D962.WMF

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.

6.11 DUPLEX UNIT (OPTION)

6.11.1 OVERVIEW

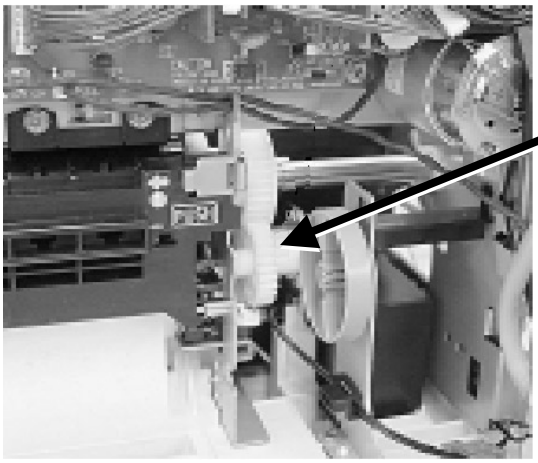


G707D942.BMP

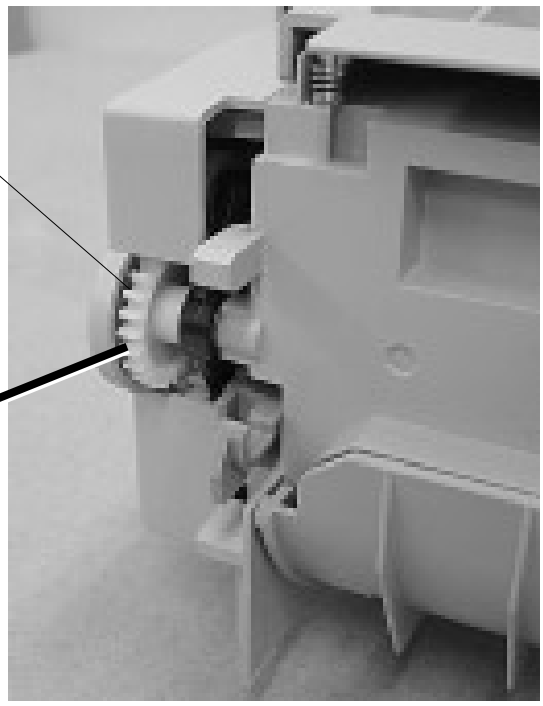
1. Bypass tray guides
2. Duplex Unit Cover Button
3. Duplex Unit Cover
4. Duplex unit locks (x 2)

NOTE: Use the top of the Duplex Unit as the bypass tray.

6.11.2 DUPLEX DRIVE



G707D944.BMP



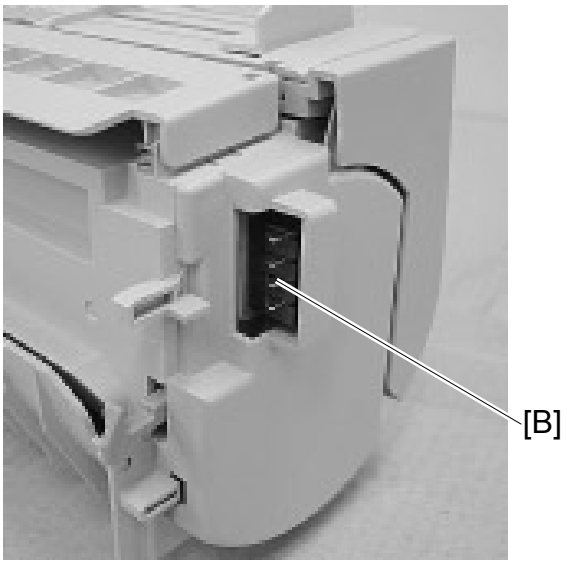
G707D943.BMP

The vertical motor of the printer drives the main drive gear [A] of the Duplex Unit. The Duplex Unit uses this procedure:

- The trailing edge sensor goes off after the front side of the paper prints.
- Vertical motor stops. The paper transport stops. Then it reverses its rotation.
- Printed sheet feeds back into the Duplex Unit. Then it gets reversed.
- The reversed sheet gets fed to the printer.
- The reversed (2nd) side of the sheet gets printed.

6.11.3 DUPLEX UNIT COVER OPEN SWITCH

G707D945.BMP



G707D946.BMP

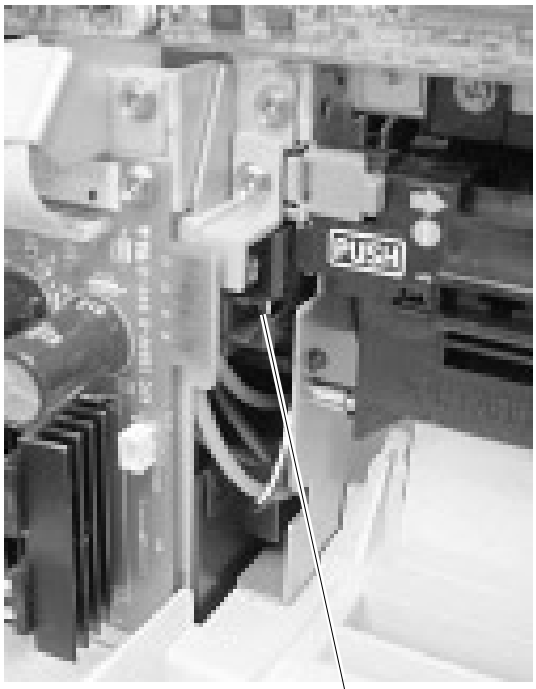
The Duplex Unit cover open switch [A] is a microswitch.

The cover open 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 [B] of the DRV board that connect to the printer. The printer controls the Duplex Unit through the DRV board.

The switch breaks the connection between the printer and Duplex Unit when the cover is open.

6.11.4 DUPLEX UNIT SET SWITCH



G707D947.BMP

[A]

G707D948.BMP

[B]

The Duplex Unit set switch [A], a micro-switch in the printer, detects the presence of the Duplex Unit.

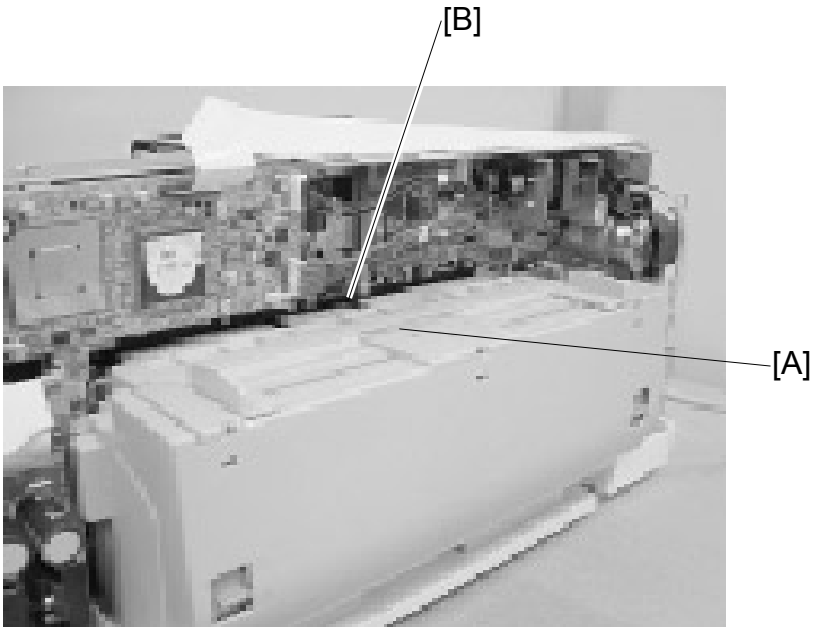
This occurs when the Duplex Unit is installed correctly on the back of the printer:

- The unit the set lever [B] 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

6.11.5 BYPASS



G707D949.BMP

When the Duplex Unit is installed on the back of the printer (J001), the top of the Duplex Unit [A] is used as the bypass tray.

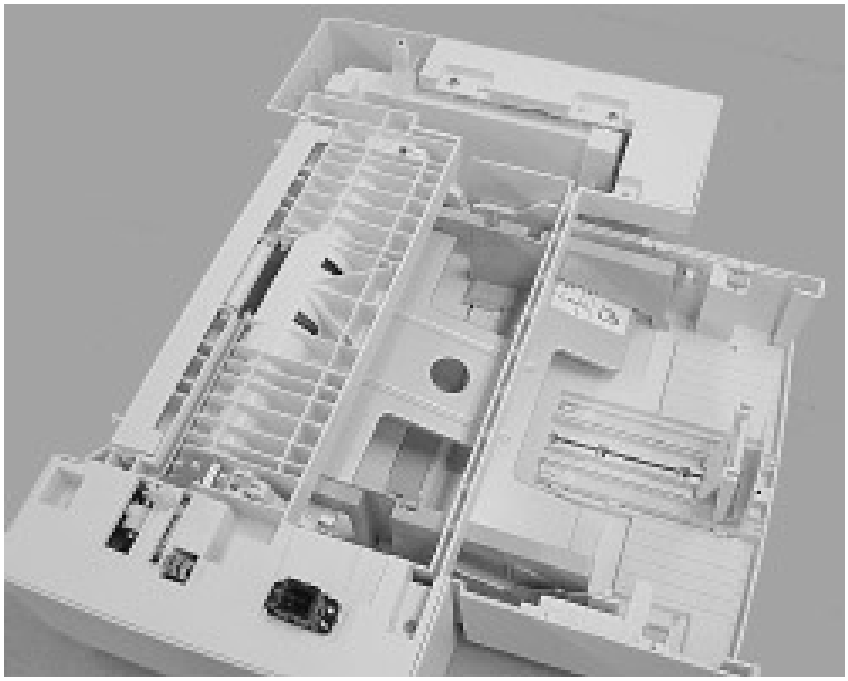
The bypass tray cannot hold stacks of paper. Paper can only be fed one sheet at a time.

You must wait for instructions from the printer drive to load paper when a print job is set up to run from the bypass tray.

The bypass set sensor [B] detects the sheet and signals the printer to start paper feed from the bypass tray at the time paper is set in the bypass tray.

6.12 TRAY 2 (500-SHEET TRAY – J003 OPTION)

6.12.1 OVERVIEW

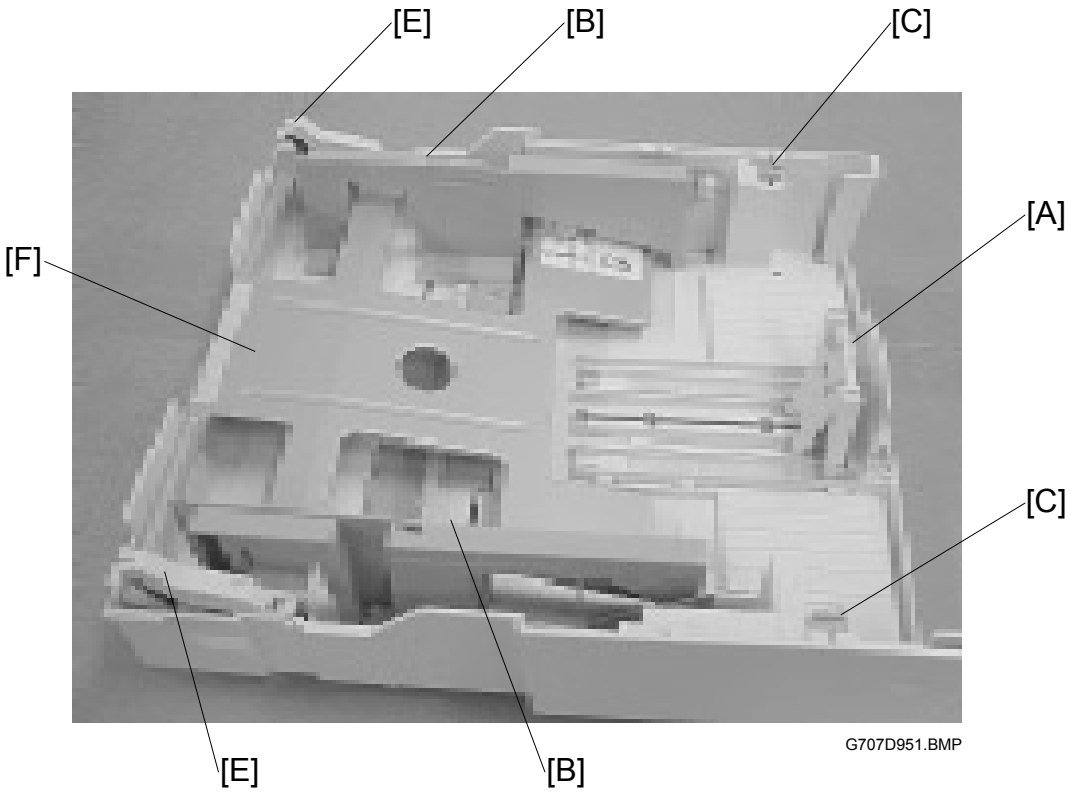


G707D950.BMP

1. Tray 2 (500-Sheet Paper Cassette)
2. Drive Unit
3. Control Board

NOTE: You can only install the 500-Sheet Paper Tray with the J003 Printer.

6.12.2 TRAY 2 (500-SHEET PAPER TRAY)



The paper cassette can hold up to 500 sheets of A4 or LTR size standard PPC.

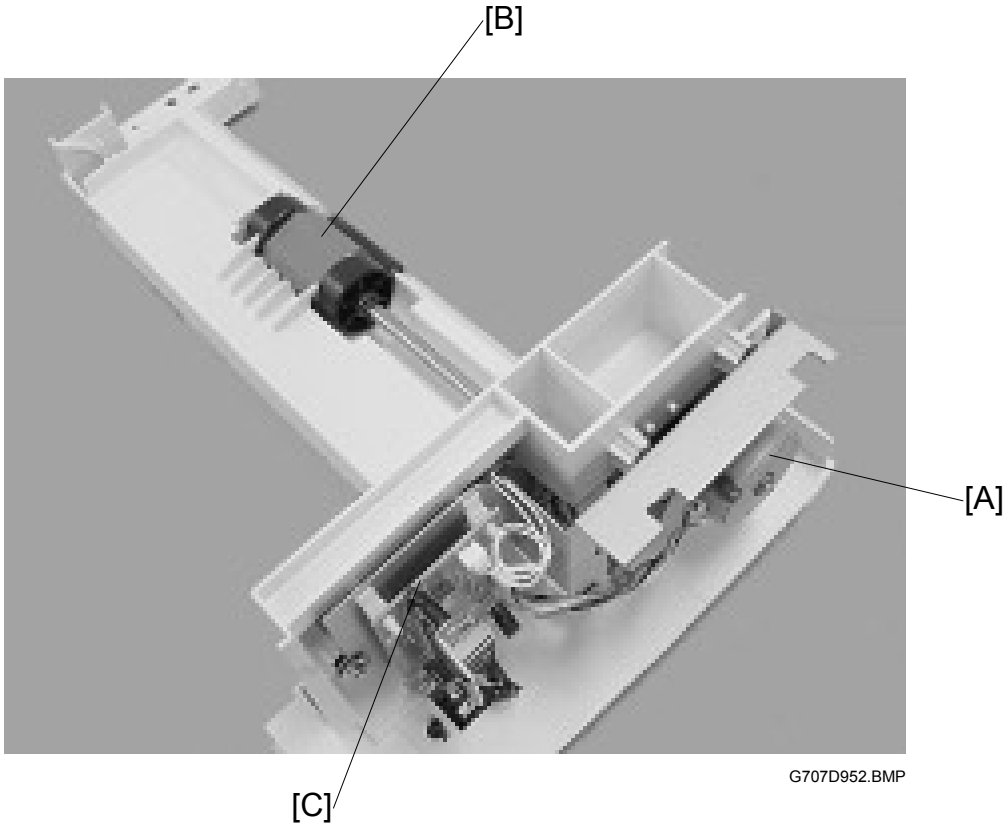
You can adjust the end fence [A] and two side fences [B] to A4 or LTR size.

You must lock the tray locks [C] to keep the fences in place.

These occur when the paper cassette is inserted into the tray unit:

- Two guides force down the cassette arms [E] on both sides of the paper cassette.
- The bottom plate [F] rises against the bottom of the paper stack when you depress these arms.
- 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.

6.12.3 PAPER FEED



The paper feed motor [A] in the tray drives the feed roller [B].

The control board [C] 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 of paper get double-fed.

The transport guide moves the paper out of the cassette and onto the transport belt. The trailing edge sensor goes on at the time the trailing edge of the sheet passes. Then the printer turn transport belt on.

SPECIFICATIONS

1. PRINTER ENGINE BASE SPECIFICATIONS

Configuration Desktop

Printing Method On-Demand Ink Printing Technology

Paper Transport Belt System

Delivery Face-up

Ink Supply Method Zero Waste Dual Tank Method

Ink (Y, M, C, K) Viscous Ink (High Viscosity, Fast Drying, Pigment Ink)

Print Heads

	J001	J003
Number of Heads	2 Heads (4-Color)	4 Heads (4-Color)
Lines/Head	2 Lines/Head	2 Lines/Head
Number of Nozzles	192 Nozzles/Line	192 Nozzles/Line
Nozzle Pitch	0.169 mm (150 dpi)	0.169 mm (150 dpi)

Resolution Range: 150 to 1200 dpi

	Paper	Mode (Driver)	Resolution	Bi-Directional (Yes/No)
Defaults	Normal	High Speed (Draft)	300 x 300	Yes/1 Pass
		Std. (Speed Priority)	300 x 300	See "Note"
		Std. (Quality Priority)	600 x 600	Yes/1 Pass
		High Quality	600 x 600	No/2 Passes
	Special	Std. (Quality Priority)	600 x 600	No/2 Passes
		High Quality	600 x 600	No/4 Passes
	Semi-gloss	High Quality	1200 x 1200	No/4 Passes
	OHP	High Quality	600 x 600	No/4 Passes
User Settings	Normal	High Speed (Draft)	150 x 150	Yes/1 Pass
	Special	High Speed (Draft)	600 x 600	Yes/1 Pass
	Semi-gloss	High Speed (Draft)	600 x 600	Yes/1 Pass
		Std. (Quality Priority)	600 x 600	No/4 Passes
	OHP	High Speed (Draft)	600 x 600	Yes/1 Pass
		Std. (Quality Priority)	600 x 600	No/2 Passes

Note: J001 Yes/1 Pass
J003 1st Color: Yes/1 Pass, Other Colors: No/1 Pass

Warm-up Time Less than 30 sec. after power on

First Print Time J001: Less than 10 sec.
J003: Less than 9 sec.

Spec.

Printing Speed

	Mono/Color	Normal Paper	Normal Paper
		J001	J003
High Speed	Monochrome	9.0 ppm	14.0 ppm
	Color	7.3 ppm	11.4 ppm
Std. (Speed Priority)	Monochrome	8.8 ppm	13.5 ppm
	Color	7.0 ppm	8.2 ppm
Std. (Quality Priority)	Monochrome	3.7 ppm	7.5 ppm
	Color	3.0 ppm	5.5 ppm
High Quality	Monochrome	1.4 ppm	2.7 ppm
	Color	1.0 ppm	1.8 ppm

Note 2: Monochrome: Measured with Test Chart J1 at 23C (66.4F) 50% Rh
Color: Measured with Test Chart J6 at 23C (66.4F) 50% Rh.

Paper Size

Range: Width: 90-216 mm (3.5 x 8.5 in.)
Length: 139.8-1295.4 mm (5.5-51 in.)

Standard Tray
Bypass Tray *1: A4-A6; LTR; LGL; ; Custom Sizes (W x L) 90-216 mm x 148-356 mm (3.5"-8.5" x 5.8"-14") (☛2)

Paper Tray (Option):
J001 ---Not supported ---
J002 A4. B5. LTR, LGL

Paper Type *2

Standard Tray (Tray 1): Standard PPC, Thick Paper, Color Paper, Tractor Drive, OHP

Bypass Tray *1: Same as Standard Tray 1 + Envelopes

Paper Tray (Tray 2: Option):
J001 --- Not Supported ---
J002 Standard PPC, Thick Paper, Color Paper

Paper Weight

Standard Tray: Plain 60-105 g/m^2 (52-90 kg) (16-28 lb.)

Bypass Tray *1: Plain 60-163 g/m^2 (52-135 kg) (16-42 lb.)

Paper Tray (Option):
J001 --- Not Supported ---
J003 Plain 60-105 g/m^2 (52-90)

Paper Capacity

Standard (Tray 1): Plain Recycled: 70 g/m^2 (60 kg) 250 sheets
OHP: 1

Bypass Tray *1: 1 sheet

Tray 2 (Option):
J001 --- Not Supported ---
J003 Plain Recycled: 150 sheets *3

Custom Sizes: ☛2

Output Tray Capacity: Plain Recycled: 150 sheets *3

Printing Area

Paper	Maximum	Top, Bottom, Left, Right: 3 mm Margins
	Recommended	Top, Bottom, Left, Right: 4.2 mm (1/6 in.) Margins
Envelopes	Maximum	Top: 8 mm Bottom: 38 mm Left, Right: 3 mm
	Recommended	Top: 8 mm Bottom: 38 mm Left, Right: 4.2 mm (1/6 in.)

Duplex Printing

J001 Duplex Unit - Optional

J003 Standard

Power Supply

NA 100V (±10%), 50/60 Hz (±3Hz)

EU 220-240 V (±10%), 50/60 Hz (±3Hz)

	J001	J003
Power Consumption		
Normal Operation	Less than 30W	Less than 35W
Standby	Approx. 8W	Approx. 8W
Power Switch Off	NA: Less than 0.2W EU: Less than 0.3W	NA: Less than 0.2W EU: Less than 0.3W
Energy Save Mode	Less than 6 W	Less than 6 W
Shift to Energy Save	15 min.	15 min.
Noise Emission		
Printing*[4]	Less than 45 dB	Less than 48 dB
Standby	Less than 20 dB	Less than 20 dB
Spurious Noise		
Printing*[4]	Less than 62 dB (A)	Less than 63 dB (A)
Standby	Less than 40 dB (A)	
Dimensions		
W x D x H mm	403 x 440 x 218 mm 403 x 469 x 218 mm with Duplexer	490 x 469 x 218 mm 490 x 469 x 328 mm with Paper Tray 2
W x D x H in.	15.9 x 17.3 x 8.9 in. 15.9 x 18.5 x 8.9 in. with Duplexer	19.3 x 18.5 x 8.9 mm 19.3 x 18.5 x 328 mm with Paper Tray 2
Weight		
kg	Printer: 9.8 kg With Duplexer: 10.6 kg	Printer: 11 kg With Paper Tray 2: 14.5 kg
lb.	Printer: 21.6 lb. With Duplexer: 23.3 lb.	Printer: 24.2 lb. With Paper Tray 2: 31.5 lb.

Page Description Language	RPCS Raster Printer Driver
Interface	
Standard	USB 1.1/2.0 Hi-Speed *5
Options	100 Base-TX/10 Base-T, IEEE 802.11b
Operating Systems	Windows 95 *6, Windows 98, Windows Me, Windows NT 4.0 Windows 2000, Windows XP, Windows Server 2003
Service Life	**J001** 5 Years or 75,000 sheets
	J003 5 Years or 150,000 sheets
Environment	
Operating	Temperature: 10°C-30°C (50°F-86°F)° Relative Humidity 15%-80% (no condensation) *7
Storage	Temperature: 0°C-40°C (32°F-104°F) Relative Humidity 5%-80% (no condensation) *7
Generated Paper Dust	Less than 0.075 mg/m^3

Notes:

***1** You must install the optional Duplex Unit to use bypass feed with the J001. The top of the duplex unit functions as the bypass tray.

***2** Use only recommended paper. Use of any other type of paper could cause problems when you print.

***3** The number of sheets that the output can hold may depend on the type of images printed.

***4** Basic Ricoh standards are based on high-quality printing on plain paper.

***5** All operations are not guaranteed on compatible machines.

***6** When the printer is connected to a Windows 95, Windows NT 4.0 network.

***7** Print quality may be poor until the printer adjusts to the room temperature and humidity at the time you bring the printer into a room with temperature and humidity not the same as its previous location.

These specifications are based on the measured performance of the printer connected to a system with the following configuration:

PC	Pentium 4 1.6 GHz, 256 MB of memory
OS	Windows XP Professional Edition
Paper	Plain Paper

2. PAPER SPECIFICATIONS

2.1 NORTH AMERICA

Type	Name	Feed	Size	Feed Sources				Face-up
				Bypass	Tray 1	Tray 2	Duplex	
Plain Paper	A3 W	SEF	12" x 18"	**N**	**N**	**N**	**N**	**N**
	A3	SEF	297 x 420 mm	**N**	**N**	**N**	**N**	**N**
	B4	SEF	257 x 364 mm	**N**	**N**	**N**	**N**	**N**
	A4	SEF	210 x 297 mm	**Y**	**Y**	**Y**	**Y**	**Y**
	A4	LEF	297 x 210 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**
	A5	SEF	148 x 210 mm	**N**	**N**	**N**	**N**	**N**
	A5	LEF	210 x 148 mm	**Y**	**Y**	**N**	**Y**	**Y**
	B6	SEF	125 x 176 mm	**N**	**N**	**N**	**N**	**N**
	B6	LEF	176 x 125 mm	**N**	**N**	**N**	**N**	**N**
	A6	SEF	105 x 148 mm	**Y**	**Y**	**N**	**Y**	**Y**
	DLT	SEF	11" x 17"	**N**	**N**	**N**	**N**	**N**
	LG	SEF	8 1/2" x 14"	**Y**	**Y**	**Y**	**N**	**Y**
	LT	SEF	8 1/2" x 11"	**Y**	**Y**	**Y**	**Y**	**Y**
	LT	LEF	11" x 8 1/2"	**N**	**N**	**N**	**N**	**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**	**N**	**Y**	**Y**
	Executive	SEF	7 1/4 " x 10 1/2"	**Y**	**Y**	**Y**	**Y**	**Y**
	Executive	LEF	10 1/2" x 7 1/4"	**N**	**N**	**N**	**N**	**N**
	F	SEF	8" x 13"	**Y**	**Y**	**Y**	**Y**	**N**
	Foolscap	SEF	8 1/2" x 13"	**Y**	**Y**	**Y**	**Y**	**N**
	Folio	SEF	8 1/4 " x 13"	**Y**	**Y**	**Y**	**Y**	**N**
	Folio	LEF	13" x 8 1/4"	**N**	**N**	**N**	**N**	**N**
	8 Kai	SEF	267 x 390 mm	**N**	**N**	**N**	**N**	**N**
	16 Kai	SEF	267 x 195 mm	**N**	**N**	**N**	**N**	**N**
	16 Kai	LEF	195 x 267 mm	**N**	**N**	**N**	**N**	**N**
Envelopes	Com10	LEF	4 1/8" x 7 1/2"	**Y**	**Y**	**N**	**Y**	**Y**
	Monarch	LEF	3 7/8" x 7 1/2"	**Y**	**Y**	**N**	**Y**	**Y**
	C6	LEF	114 x 162 mm	**Y**	**Y**	**N**	**Y**	**Y**
	C5	LEF	162 x 229 mm	**Y**	**Y**	**N**	**Y**	**Y**
	DL Env	LEF	110 x 220 mm	**Y**	**Y**	**N**	**Y**	**Y**
Custom		Width	148 to 297 mm	TBA	TBA	TBA	TBA	TBA
		Length	210 to 457 mm	TBA	TBA	TBA	TBA	TBA
		Width	100 to 305 mm	TBA	TBA	TBA	TBA	TBA
		Length	210 to 457 mm	TBA	TBA	TBA	TBA	TBA

Remarks:

Y	Supported
N	Not supported.
TBA	To Be Announced (Pending)

2.2 EUROPE

Type	Name	Feed	Size	Feed Sources				Face-up
				Bypass	Tray 1	Tray 2	Duplex	
Plain Paper	A3 W	SEF	12" x 18"	**N**	**N**	**N**	**N**	**N**
	A3	SEF	297 x 420 mm	**N**	**N**	**N**	**N**	**N**
	B4	SEF	257 x 364 mm	**N**	**N**	**N**	**N**	**N**
	A4	SEF	210 x 297 mm	**Y**	**Y**	**Y**	**Y**	**Y**
	A4	LEF	297 x 210 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**
	A5	SEF	148 x 210 mm	**N**	**N**	**N**	**N**	**N**
	A5	LEF	210 x 148 mm	**Y**	**Y**	**N**	**Y**	**Y**
	B6	SEF	125 x 176 mm	**N**	**N**	**N**	**N**	**N**
	B6	LEF	176 x 125 mm	**N**	**N**	**N**	**N**	**N**
	A6	SEF	105 x 148 mm	**Y**	**Y**	**N**	**Y**	**Y**
	DLT	SEF	11" x 17"	**N**	**N**	**N**	**N**	**N**
	LG	SEF	8 1/2" x 14"	**Y**	**Y**	**Y**	**N**	**Y**
	LT	SEF	8 1/2" x 11"	**Y**	**Y**	**Y**	**Y**	**Y**
	LT	LEF	11" x 8 1/2 "	**N**	**N**	**N**	**N**	**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**	**N**	**Y**	**Y**
	Executive	SEF	7 1/4 " x 10 1/2"	**Y**	**Y**	**Y**	**Y**	**Y**
	Executive	LEF	10 1/2" x 7 1/4"	**N**	**N**	**N**	**N**	**N**
	F	SEF	8" x 13"	**Y**	**Y**	**Y**	**Y**	**N**
	Foolscap	SEF	8 1/2" x 13"	**Y**	**Y**	**Y**	**Y**	**N**
	Folio	SEF	8 1/4" x 13"	**Y**	**Y**	**Y**	**Y**	**N**
	Folio	LEF	13" x 81/4"	**N**	**N**	**N**	**N**	**N**
	8 Kai	SEF	267 x 390 mm	**N**	**N**	**N**	**N**	**N**
	16 Kai	SEF	267 x 195 mm	**N**	**N**	**N**	**N**	**N**
	16 Kai	LEF	195 x 267 mm	**N**	**N**	**N**	**N**	**N**
Envelopes	Com10	LEF	4 1/8" x 7 1/2"	**Y**	**Y**	**N**	**Y**	**Y**
	Monarch	LEF	3 7/8" x 7 1/2"	**Y**	**Y**	**N**	**Y**	**Y**
	C6	LEF	114 x 162 mm	**Y**	**Y**	**N**	**Y**	**Y**
	C5	LEF	162 x 229 mm	**Y**	**Y**	**N**	**Y**	**Y**
	DL Env	LEF	110 x 220 mm	**Y**	**Y**	**N**	**Y**	**Y**
Custom		Width	148 to 297 mm	TBA	TBA	TBA	TBA	TBA
		Length	210 to 457 mm	TBA	TBA	TBA	TBA	TBA
		Width	100 to 305 mm	TBA	TBA	TBA	TBA	TBA
		Length	210 to 457 mm	TBA	TBA	TBA	TBA	TBA

Remarks:

Y	Supported
N	Not supported.
TBA	To Be Announced (Pending)

3. MAIN UNIT AND OPTION DESCRIPTIONS

Main Unit

Name	Type Code	Short Code	Model Code	Comments
J001	509802	45M3	J001-00	Duplex Unit provided as option.
J003	509800	45M6	J003-00	Duplex Unit provided as standard.

External Options

Name	Type Code	Short Code	Model Code	Comments
Duplex Unit J001	509803	5L40	J500-00	For J001 Printer
500-Sheet Paper Tray J003 (Tray 2)	509805	5L22	J502-00	For J003 Printer

Network Options (Provided by SILEX)

Name	Type Code	Comments
PRICOM R9100U	509818	USB 1.1, LAN, 100Base TX, TCP, IPX
PRICOM-R9400W	509821	USB 1.1 Wireless LAN, 802.11b. TCP
PRICOM-9500U2	509822	USB 1.1/USB 2.0 (2 ports), LAN, 100Base TX, TCP

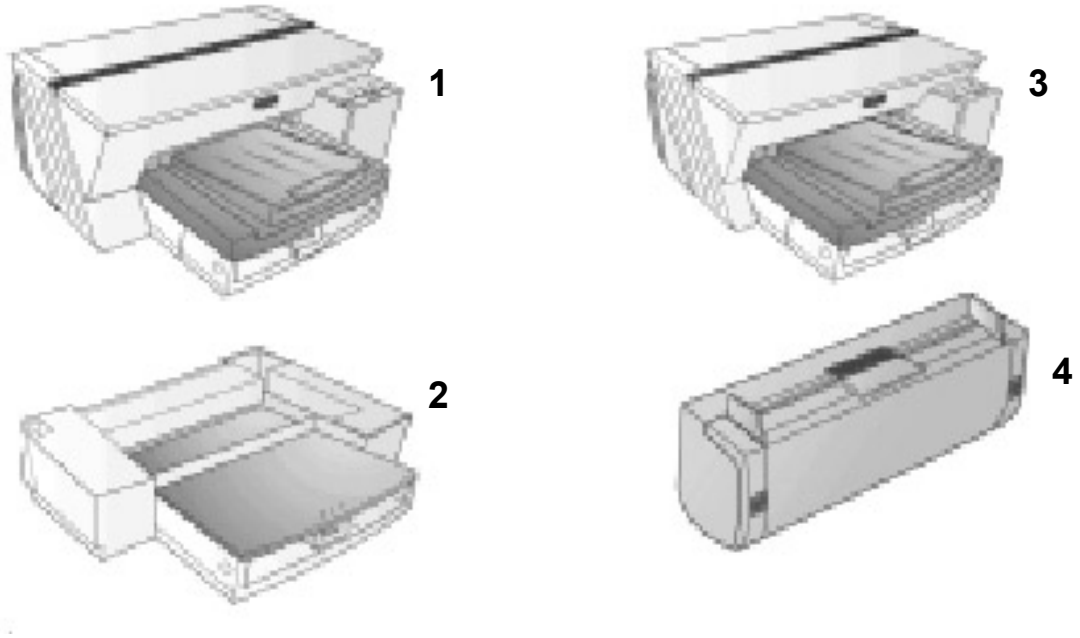
Special Options for Cold Locations

Name	RSS Code	Comments
Heater Kit Type 1	15410706	
Heater Kit Type 2	15410707	For the 500-Sheet Paper Tray J003 (Tray 2)

Option Compatibility

Item		Model		Comments
		J003	J001	
Paper Feed	500-Sheet Paper Tray J003 (Tray 2)	Yes	No	
Duplexing	Duplex Unit J001	---	Yes	Standard with J003
Networking	PRICOM R-9100U	Yes	Yes	USB Print Server (USB 1.1)
	PRICOM R-9400W	Yes	Yes	USB Wireless Print Server (USB 1.1)
	PRICOM R-9500U2	Yes	Yes	USB 2.0 (Hi-Speed)
Heaters	Heater Kit Type 1	Yes	Yes	
	Heater Kit Type 2	Yes	---	For 500-Sheet Paper Tray (Tray 2)

4. MAIN CONFIGURATION



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No.	Item	Machine Code
1	Provence J003	TBD
2	500-Sheet Paper Tray Unit J003 (Tray 2)	TBD
3	Alsace J001	TBD
4	Duplex Unit J001	TBD