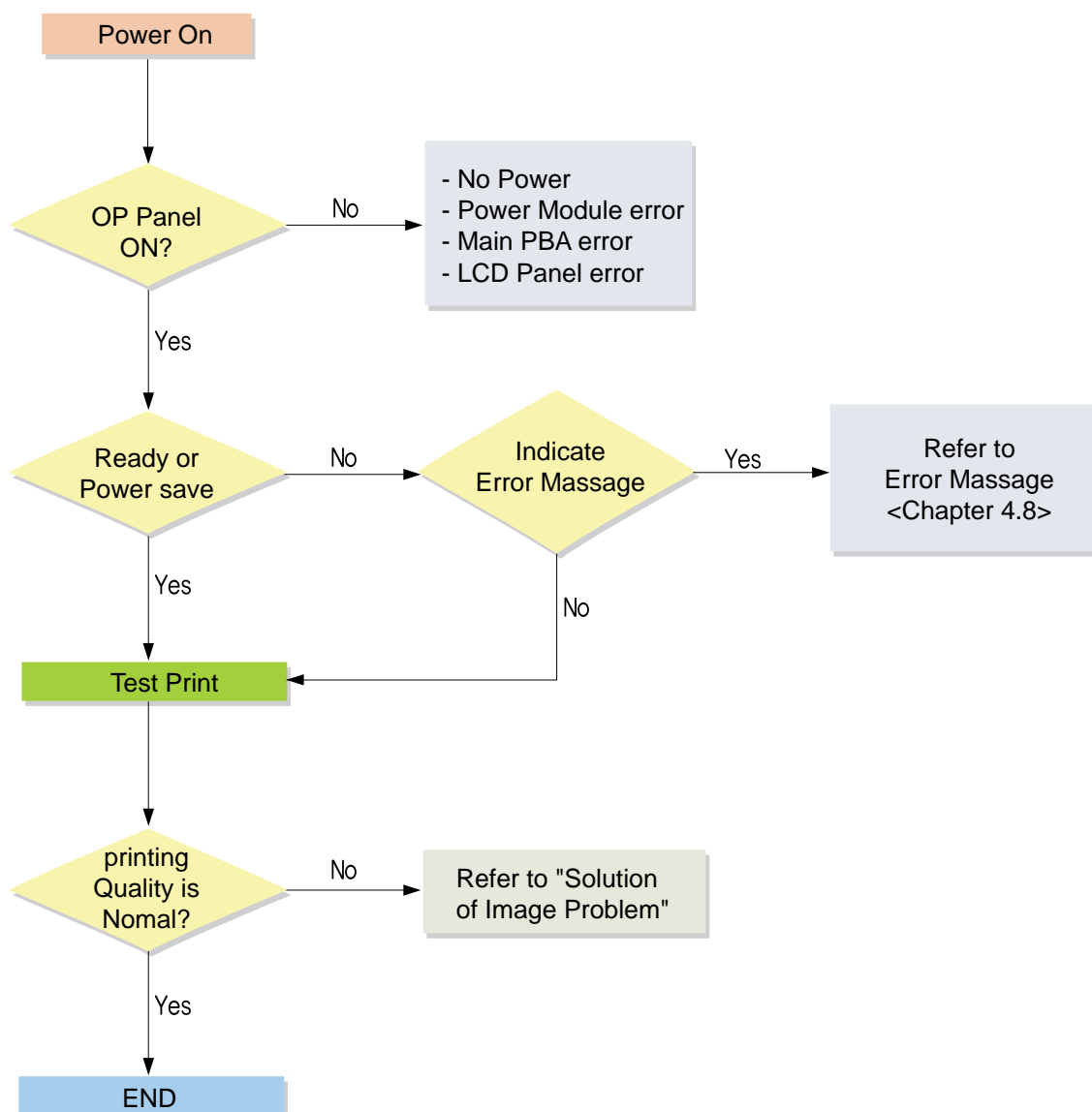


6. Troubleshooting

6.1 Procedure of Checking the Symptoms

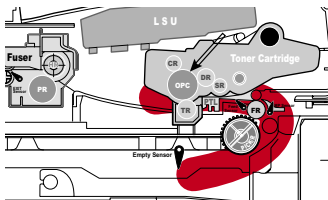
Before attempting to repair the printer first obtain a detailed description of the problem from the customer.



6.2.3 JAM 1

• Description

1. Recording paper is jammed in front of or inside the fuser.
2. Recording paper is stuck in the discharge roller and in the fuser just after passing through the Actuator-Feed.



Check and Cause

1. If the recording paper is jammed in front of or inside the fuser.
2. If the recording paper is stuck in the discharge roller and the fuser just after passing through the Actuator-Feed, Feed Actuator may be defective.

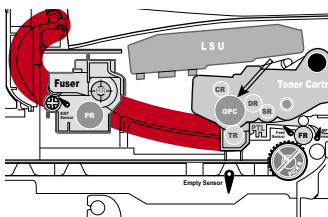
Solution

1. Replace the HVPS.
2. Reassemble the Actuator-Feed and Spring-Actuator if the return is bad.

6.2.4 JAM 2

• Description

1. Recording paper is jammed in front of or inside the fuser.
2. Recording paper is stuck in the discharge roller and in the fuser just after passing through the Actuator-Feed.



Check and Cause

1. If the paper is completely fed out of the printer, but Jam 2 occurs : Exit sensor is defective.
 - After the paper is completely discharged, actuator Exit should return to the original position to shut off the photo-sensor. Sometimes it takes longer than it should and does not return.
2. If the paper is rolled in the Fuser Roller:
 - This occurs when a Guide claw is broken away or transformed.
 - It occurs when the Guide claw spring is broken away or transformed.
 - It occurs when the Heat-Roller or Pressure-Roller is seriously contaminated with toner powder.
3. Paper is accordion jammed in fuser.

Solution

1. Check if the exit sensor actuator is defective.
 - Check if the actuator exit is deformed (Check if the lever part is deformed in shape).
 - Check whether burrs occur in the assembly part of the actuator exit or not and if the actuator is smoothly operated.
 - Check if foreign matters and wire get caught in the actuator exit's operation.
2. If the paper is stuck in the fuser : disassemble the fuser and remove the jammed paper, and clean the surface of the pressure roller with dry gauze.
3. Remove the jammed paper after disassembling the fuser : Clean the surface of the pressure roller with dry gauze.
 - Remove the toner particles stained on the rib.
 - Check the assemblage and performance of the exit.

6.2.5 Multi-Feeding

- **Description** Multiple sheets of paper are fed at once.

Check and Cause	Solution
1. Solenoid malfunction(the solenoid does not work properly): Perform Engine Test Mode.	1. Replace the solenoid if necessary.
2. Friction-Pad is contaminated with foreign matter.(oil..)	2. Clean the friction-pad with soft cloth dampened with IPA(Isopropyl Alcohol).
3. The face of paper is blended.	3. Use the smooth paper.

6.2.6 Paper rolled in the fuser

- **Description** Paper rolled in the fuser 100.5mm

Check and Cause	Solution
1. Contamination of the pressure roller or heat roller (Background, Hot off set).	1. After disassembling the fuser, clean contamination between the heat roller and the thermostor and remove the contamination of the pressure roller.
2. Check the claw of the fuser whether it is deformed.	2. If there is heavy background, repair it by the background troubleshooting method. 3. Clean the surface of the heat roller with IPA or water. 4. Check the warp or separation of the print claw and the holder plate claw, and then manage it.

6.2.7 Paper rolled in the OPC

- **Description** Paper is rolled up in the OPC.

Check and Cause	Solution
1. Paper is too thin. 2. The face of paper is curled.	1. Recommend to use normal paper thickness. 2. How to remove the rolled paper in the OPC. <ul style="list-style-type: none"> • Remove the paper while turning the OPC against the ongoing direction. • Clean fingerprints on the OPC softly with soft cloth dampened with IPA(Isopropyl Alcohol) or tissue.

6.2.8 Defective ADF

- **Description** ADF (Automatic document Feeder) is not properly operated.

Check and Cause	Solution
1. Check if ADF rubber and HOLDER rubber are damaged. 2. Check if the document sensors of ADF Ass'y (3 paper sensors) are normal.	1. Replace the contaminated or damaged part. 2. If you cannot confirm the damaged part with the naked eye, try to replace the ADF Ass'y.

6.3 Printing Problems (malfunction)

6.3.1 Defective Operation (LCD WINDOW ■■■) Display

- **Description** Strange characters are displayed on the OPE Panel and buttons are not operated.

Check and Cause	Solution
<ol style="list-style-type: none"> 1. Clear the memory. 2. Check if OPE HARNESS is connected to the Connection B'd correctly. 	<ol style="list-style-type: none"> 1. Try again after clearing the memory. 2. After confirming that OPE HARNESS is connected to the Connection B'd correctly, if it is so, then replace the OPE Ass'y and Main Board in sequence.

6.3.2 Defective LCD Operation

- **Description** Defective LCD Operation

Check and Cause	Solution
<ol style="list-style-type: none"> 1. Clear the memory. 2. Confirm to catch a click sound, while a key on the OPE panel is pressed on. 	<ol style="list-style-type: none"> 1. The key is wrong itself or wrongly assembled. 2. Even after the key has been replaced, it is still wrong, try to replace the OPE Ass'y and the Main B'd in sequence.

6.3.3 Not functioning of the fuser gear due to melting away

- **Description** The Motor breaks away from its place due to gear melting away.

Check and Cause	Solution
1. Check the Heat Lamp.	1. Replace the Fuser. 2. Replace the Main PBA. 3. Replace the SMPS.

6.3.4 Paper Empty

- **Description** The paper empty status on the operator panel is on even when paper is loaded in the cassette.

Check and Cause	Solution
1. Bending or deformation of the actuator of the paper sensor.	1. Replace the defective actuator.
2. The function of the Main PBA is defective Perform Engine Test Mode.	2. Replace the Main PBA.

6.3.5 Paper Empty without indication

- **Description** The paper empty status on the operator panel does not come on when the paper cassette is empty.

Check and Cause	Solution
1. Bending or deformation of the actuator of the paper sensor.	1. Replace the defective actuator.
2. The function of the Main PBA is defective Perform.	2. Replace the Main PBA.

6.3.6 Door Open

- **Description** Door open status is on even when the print Door is closed.

Check and Cause	Solution
1. The hook lever in the Front Cover may be defective.	1. Replace the hook lever, if defective.
2. Check the Connector(CN1) and Circuit of the Cover Switch department in the Main PBA.	2. Check the insertion of the Door Open S/W Connect. 3. Replace the Main PBA or Door Open S/W.

6.3.7 No Beep on when the Door is open

- **Description** Door open status does not come on even when the printer Door is open.

Check and Cause	Solution
Check the Connector(CN1) and Circuit of the Cover Switch department in the Main PBA.	1. Check the insertion of the Door S/W Connect. 2. Replace the Main PBA or Door Open S/W.

6.3.8 Defective Motor operation

- **Description** Main Motor is not driving when printing, and paper does not feed into the printer, resulting 'Jam 0'.

Check and Cause	Solution
1. Motor harness or sub PCB may be defective.	1. Check the Motor harness, replace it, if defective.
2. Perform Engine Test Mode and Check the Motor operation.	2. Replace the SMPS, if necessary.

6.3.9 No Power

- **Description** When system power is turned on, all lamps on the operator panel do not come on.

Check and Cause	Solution
1. Check if the power input and SMPS output are normal.	1. Replace the power supply cord or SMPS.
2. Check for defective of LCD-Panel on the front-cover if the LCD of Panel does not appear after normal warming-up.	2. Replace the control board.
	3. Replace the LCD-panel.

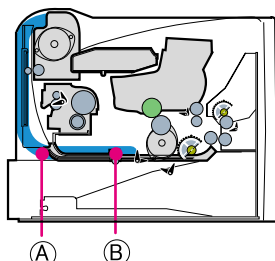
6.3.10 Vertical Line Getting Curved

- **Description** When printing, vertical line gets curved.

Check and Cause	Solution
1. If the supply of +24v is unstable in the Main Control board linking with LSU, check drive by Engine Test Mode.	1. Replace LSU. 2. Replace the Main Control board.

6.3.11 Duplex Jam 1

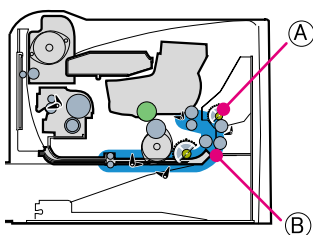
- **Description** A message 'Duplex Jam 1' is displayed in a LCD window.



Check and Cause	Solution
<ol style="list-style-type: none"> 1. It is a case when a paper cannot operate a duplex sensor. 2. It is a case when a paper cannot reach to a duplex sensor due to a paper jam on a duplex path. 3. When duplex unit relationship life time became all. 	<ol style="list-style-type: none"> 1. Replace a HVPS or main PBA 2. A case that a paper jam occurs on (A) after it is reversed: replace a 2nd exit roller after checking its operation. 3. A case that a paper jam occurs on (B) after it is reversed: replace a duplex roller after checking its operation 4. Replace a Duplex unit.

6.3.12 Duplex Jam 0

- **Description** A message 'Duplex Jam 0' is displayed in a LCD window.



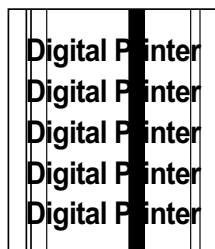
Check and Cause	Solution
<ol style="list-style-type: none"> 1. It is a case that a paper cannot pass a Duplex sensor. 2. It is a case that a paper cannot reach to a registration sensor after it is passed a duplex sensor. 3. When duplex unit relationship life time became all. 	<ol style="list-style-type: none"> 1. Replace a HVPS or main PBA. 2. A case that a leading edge of a paper is jammed on (A) check an operation of a guide front. If it is worn or defective, replace it. 3. Check an operation of a feed roller and a registration roller. If they are worn or defective replace them. 4. Replace a Duplex unit.

6.4 Printing Quality Problems

6.4.1 Vertical Black Line and Band

• **Description**

1. Straight thin black vertical line occurs in the printing.
2. Dark black vertical band occur in the printing.

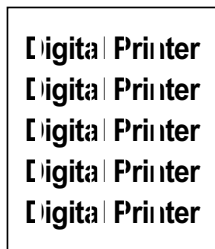


Check and Cause	Solution
<ol style="list-style-type: none"> 1. Damaged develop roller in the Developer. Deformed Doctor-blade. 2. Scratched surface of the charge roller in the developer. 3. Partial depression or deformation on the surface of the transfer roller. 	<ol style="list-style-type: none"> 1. If causes 1 and 2 occur in the developer cartridge, replace the developer and try to print out. 2. Replace the transfer roller if occurred as No. 3.

6.4.2 Vertical White Line

• **Description**

White vertical voids in the image.



Check and Cause	Solution
<ol style="list-style-type: none"> 1. Foreign matter stuck onto the window of internal lenses of LSU mirror. 2. Foreign matter or toner particles between the developer roller and blade. (In case the life of the developer has been expired, white lines or light image occur in front of the image.) 3. It may occur when a Burr and foreign substances are on the window of the developer frame. 4. If the fuser is defective, voids occur periodically at the top of a black image. 	<ol style="list-style-type: none"> 1. Foreign matter stuck onto the window : Clean the LSU window with recommended cleaner(IPA) Clean the window with a clean cotton swab. 2. Foreign matter in the LSU : Open the cover of LSU and clean with a cotton swab on the surface of the reflex mirror. 3. No 3. : Remove the foreign matter and burr of the exposure window. (Developer cartridge) 4. No. 4. : Open the front cover and check ribs that corresponds to the position of the voids. Remove if found. 5. If the problems are not solved, replace the developer cartridge.

6.4.3 Horizontal Black Band

• **Description**

1. Dark or blurry horizontal stripes occur in the printing periodically.
(They may not occur periodically.)

Digital Printer
Digital Printer
Digital Printer
Digital Printer
Digital Printer

Check and Cause	Solution
<ol style="list-style-type: none"> 1. Bad contacts of the voltage terminals to developer. 2. The rollers of developer may be stained. Charge roller = 37.7 mm Supply roller = 53 mm Develop roller = 39 mm Transfer roller = 45.3 mm 	<ol style="list-style-type: none"> 1. Clean each voltage terminal of the Charge, Supply, Develop and Transfer roller. (remove the toner particles and paper particles) 2. Clean the right Gear that has a relatively small gap of the teeth in the OPC. 3. If the malfunction persists, replace the developer.

6.4.4 Black/White Spot

• **Description**

1. Dark or blurry black spots occur periodically in the printing.
2. White spots occur periodically in the printing.

Digital Printer
Digital Printer
Digital Printer
Digital Printer
Digital Printer

Check and Cause	Solution
<ol style="list-style-type: none"> 1. If dark or blurry black spots occur periodically, the rollers in the Developer may be contaminated with foreign matter or paper particles. (Charge roller : 37.7 mm interval OPC drum : 75.5 mm interval) 2. If faded areas or voids occur in a black image at intervals of 75.5 mm, or black spots occur elsewhere, the OPC drum surface is damaged. 3. If a black image is partially broken, the transfer voltage is abnormal or the transfer roller's life has expired. 	<ol style="list-style-type: none"> 1. Run OPC cleaning Mode Print and run the Self-test 2 or 3 times. 2. In case of 75.5 mm interval unremovable in 1, cleanly remove foreign substances stuck on the OPC location equivalent to black spots and white spots with a dry duster. 3. The transfer roller guarantees 70,000 sheets printing. If the roller's life is expired, replace it. 4. In case of 37.7 mm interval unremovable in 1, take measures as to replace the developer cartridge and try to print out. 5. Clean the inside of the set against the paper particles and foreign matter in order not to cause the trouble.

6.4.5 Light Image

- **Description** The printed image is light, with no ghost.

Digital Printer
Digital Printer
Digital Printer
Digital Printer
Digital Printer

Check and Cause	Solution
1. Develop roller is stained when the toner of developer cartridge is almost consumed.	1. Check if the Toner Save Mode is off.
2. Ambient temperature is below than 10°C.	2. No 1 : Replace the developer cartridge and try to print out.
3. Bad contact caused by the toner stains between the high voltage terminal in the HVPS and the one in the set.	3. No 2 : Wait 30 minutes after printer is powered on before you start printing.
4. Abnormal output from the HVPS. (Run self-test and check 1~4)	4. No3 : Clean up the contaminated area by the toner.
	5. Replace the HVPS if the problems are not solved by the above four directions.

6.4.6 Dark Image or a Black

- **Description** The printed image is dark.



Check and Cause	Solution
1. No charge voltage in the Main PBA. (Perform Engine Test Mode : Diagnostic code 4 HVPS check.)	1. Clean the high voltage charge terminal.
2. Charge voltage is not turned on due to the bad contacts between power supply in the side of the Developer and charge terminal of HVPS.	2. Check the state of the connector which connects the engine board and HVPS.
	3. If steps 1 and 2 above did not correct the problem, replace the HVPS .

6.4.7 Uneven Density

- **Description** Print density is uneven between left and right.

Digital Printer
Digital Printer
Digital Printer
Digital Printer
Digital Printer

Check and Cause	Solution
1. The pressure force on the left and right springs of the transfer roller is not even, the springs are damaged, the transfer roller is improperly installed, or the transfer roller bushing or holder is damaged.	1. Replace both the left and right Spring Holder.
2. The life of the Developer has expired.	2. Problem with the toner cartridge, replace the toner cartridge and try to print out.
3. The toner level is not even on the developer roller due to the bad blade.	

6.4.8 Background

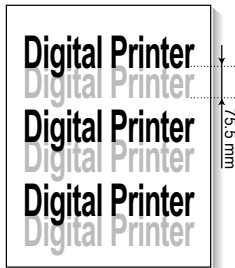
- **Description** Light dark background appears in whole area of the printing.

Digital Printer
Digital Printer
Digital Printer
Digital Printer
Digital Printer

Check and Cause	Solution
1. Recycled recording paper has been used.	1. Quality is not guaranteed when using recycled paper.
2. The life of the Developer has expired.	2. Replace the toner cartridge.
3. The up-to-down movement of the transfer roller is swift?	3. Clean the busing on the transfer roller.
4. The HVPS is normal? (Perform Engine Test Mode diagnostic code 4)	4. Replace the HVPS.

6.4.9 Ghost (1)

- **Description** Ghost occurs at 75.5 mm intervals of the OPC drum in the whole printing.



Check and Cause	Solution
1. Bad contacts caused by contamination from toner particles between high voltage terminal in the main body and the electrode of the Developer.	1. Clean the contaminated terminals.
2. Bad contacts caused by contamination from toner particles between high voltage terminal in the main body and the one in the HVPS board.	2. Problem in the toner cartridge, replace the toner cartridge and try to print out.
3. The life of developer is expired.	3. Replace the engine board if not solved by the above directions 1-2.
4. Transfer roller lifetime(70,000 sheets) has expired.	4. If not solved by the direction 3, check the transfer roller lifetime and replace it.
5. Abnormal low temperature(below 10°C).	5. Wait about 1 hour after power on before using printer.
6. Damaged cleaning blade in the developer.	6. Problem in the toner cartridge, replace the toner cartridge and try to print out.

6.4.10 Ghost (2)

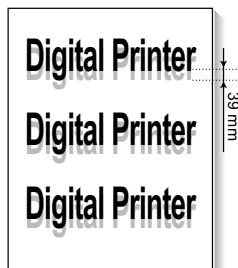
- **Description** Ghost occurs at 75.5 mm intervals of the OPC drum in the whole printing.
(When printing on card stock or transparencies using manual feeder)



Check and Cause	Solution
When printing on card stock thicker than normal paper or transparencies such as OHP, higher transfer voltage is required.	Select 'Thick Mode' on paper type menu from the software application and after use, we recommend returning to the original Mode.

6.4.11 Ghost (3)

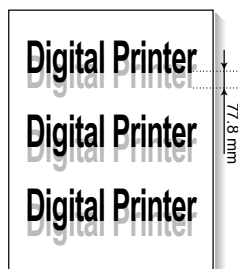
- **Description** White ghost occurs in the black image printing at 35.2 mm intervals.



Check and Cause	Solution
1. The life of the developer may be expired.	1. Problem in the toner cartridge, replace the toner cartridge and try to print out.
2. The abnormal voltage and bad contact of the terminal of the developing roller	2. Check the approved voltage of the supply roller and contact of the terminal and adjust if necessary.

6.4.12 Ghost (4)

- **Description** Ghost occurs at 88.9 mm intervals.



Check and Cause	Solution
The temperature of the fuser is maintained high.	1. Disassemble the fuser and remove the contaminated toner particles on the roller and clean the foreign matter between Thermistor and Heat roller. (▲ Caution: can be deformed)

6.4.13 Stains on the front of the page

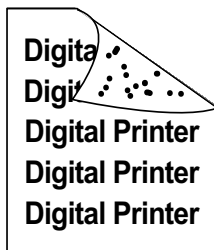
- **Description** The background on the face of the printed page is stained.



Check and Cause	Solution
1. Toner leakage due to improperly sealed developer.	1. Replace the toner cartridge.
2. If the transfer roller is contaminated, stains on the face of page will occur.	2. If the transfer roller is contaminated, run PC Cleaning Mode Print 2 or 3 times. And perform Self-Test 2 or 3 times to remove contamination.

6.4.14 Stains on back of the page

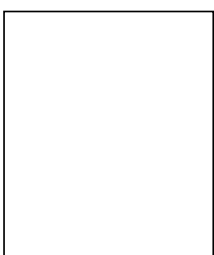
- **Description** The back of the page is stained at 47.1 mm intervals.



Check and Cause	Solution
1. Transfer roller is contaminated.	1. Perform the OPC Cleaning Mode Print 2 or 3 times. Run Self-Test to remove the contamination of the transfer roller.
2. Pressure roller is contaminated.	2. Replace the transfer roller if contaminated severely.
	3. Disassemble the fuser and clean the H/R(Heat Roller) and P/R(Pressure roller). And check the area between H/R and Thermistor. If contaminated, clean the area is should not be deformed.

6.4.15 Blank Page Print out (1)

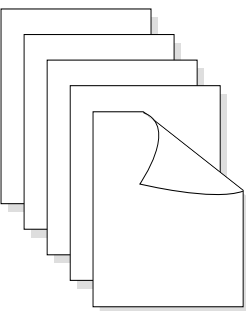
- **Description** Blank page is printed.



Check and Cause	Solution
Bad ground contacts in OPC and/or developer.	Remove contamination of the terminals of the toner cartridge and the printer.

6.4.16 Blank Page Print out (2)

- **Description**
 1. Blank page is printed.
 2. One or several blank pages are printed.
 3. When the printer turns on, several blank pages print.



Check and Cause	Solution
1. Bad ground contacts in OPC and/or developer.	1. Remove contamination of the terminals of the toner cartridge.
2. Abnormal solenoid.	2. Perform the engine self test using Engine Test Mode diagnostic Mode code 0 if the Solenoid is normal.
	3. If not solved by the above directions 1-2, Replace the engine board.
	4. Turn the power off, clear the print job on the computer, and try printing again.

6.5 Fax & Phone Problems

6.5.1 No Dial Tone

- **Description** While on-hook button is pressed, there is no dial tone.

Check and Cause	Solution
<ol style="list-style-type: none"> 1. Check if the telephone line cord is connected to TEL LINE correctly. 2. Check if it makes CLICK sound while OHD key is pressed. 3. Check the connection of HARNESS between the LIU and the Main B'd. 4. Check if the SPEAKER is connected correctly. 	<ol style="list-style-type: none"> 1. If the telephone cord is normal but there is no dial tone, then try to replace the LIU B'd. 2. If you cannot hear the OHD CLICK sound, the OPE Ass'y may be defective. Try to replace the OPE Ass'y. 3. Check the Speaker connection, and try to replace it. 4. Lastly, try to replace the Main B'd.

6.5.2 Defective MF DIAL

- **Description** The MF DIAL is not functioning.

Check and Cause	Solution
<ol style="list-style-type: none"> 1. Check if the telephone line is connected correctly. 2. While the BUTTON KEY is pressed, check to catch a CLICK sound. 3. Check the connection of HARNESS between the LIU and the Main PBA. 	<ol style="list-style-type: none"> 1. If you cannot catch the OHD CLICK sound, the OPE Ass'y may be defective. Try to replace the OPE Ass'y. 2. If you can catch a CLICK sound, after checking the connection of HARNESS between the LIU and the Main PBA, try to replace the HARNESS. 3. The problem still persists, then replace the LIU and the main B'd in sequence. <p>Notes: Product supports the MF DIAL type only.</p>

6.5.3 Defective FAX FORWARD/RECEIVE

- **Description** The FAX FORWARD/RECEIVE is not functioning.

Check and Cause	Solution
<ol style="list-style-type: none"> 1. Check if you can catch a dial tone by pressing OHD. 2. Check if you can catch a RECEIVE tone while MODEM testing in the TECH Mode. 	<ol style="list-style-type: none"> 1. If the MODEM testing is normal and there is no dial tone, then try to replace the LIU B'd. 2. If the MODEM testing is abnormal, try to replace the Main B'd.

6.5.4 Defective FAX FORWARD

- **Description** RECEIVE is functioning, but FORWARD is not functioning or the received data are broken.

Check and Cause	Solution
<ol style="list-style-type: none"> 1. Check if there is NOISE when pressing on-hook dial. 2. Check the RECEIVE condition by trying to forward a FAX to another fax machine from the forwarding side FAX. 3. Check if the telephone line connected to the Product is contaminated or gets stripped off or down. 	<ol style="list-style-type: none"> 1. If it makes NOISE while using on-hook dial, replace or repair the telephone line.

6.5.5 Defective FAX RECEIVE (1)

- **Description** FORWARD is functioning, but RECEIVE is not functioning or the received data are broken.

Check and Cause	Solution
1. Check if there is NOISE when pressing on-hook dial. 2. Check the RECEIVE condition by trying to receive a FAX at another fax machine.	1. If it makes NOISE while on-hooking, replace or repair the telephone line.

6.5.6 Defective FAX RECEIVE (2)

- **Description** The received data are lengthened or cut in the printing.

Check and Cause	Solution
1. Check if there is NOISE when pressing on-hook dial. 2. Ask to the forwarding side, check the image quality of another machine receiving a FAX additionally sent to.	1. If it makes NOISE, rearrange the telephone line. (Refer to 'Defective FAX RECEIVE'.) 2. Check if the FAX status of the forwarding side is also normal.

6.5.7 Defective FAX RECEIVE (3)

- **Description** The phone is ringing continuously, but it cannot receive.

Check and Cause	Solution
Check if the RECEIVE Mode is TEL MODE or FAX MODE.	Even when the RECEIVE Mode is changed to FAX MODE, it cannot receive, then replace the LIU and the Main B'd in sequence.

6.5.8 Defective FAX RECEIVE (4)

- **Description** The received data is reduced by more than 50% in the printing.

Check and Cause	Solution
Check the FAX status of the forwarding side.	After checking the data of the forwarding side, correct the FAX of the forwarding side.

6.5.9 Defective Automatic Receiving

- **Description** The automatic receiving function is not working.

Check and Cause	Solution
1. Check if the RECEIVE Mode is TEL MODE or FAX MODE.	1. If the RECEIVE Mode is set to the TEL MODE, reset it to the FAX MODE. 2. Even after the RECEIVE Mode is changed to the FAX Mode, it cannot receive, then try to replace the LIU and the Main B'd in sequence.

6.6 Copy Problems

6.6.1 White Copy

- **Description** Blank page is printed out when copy.

Check and Cause	Solution
<ol style="list-style-type: none"> 1. Check the Scan-Cover open. 2. Check shading profile. 3. Check white/black reference voltage in Main PBA. 	<ol style="list-style-type: none"> 1. Room light ca transit a thin original. 2. Remake shading profile in the tech mode. 3. Replace U60 if it is defective. <ul style="list-style-type: none"> • U60-154 = 0.5V • U60-155 = 3.3V

6.6.2 Black Copy

- **Description** Black page is printed out when Copy.

Check and Cause	Solution
<ol style="list-style-type: none"> 1. Check the CCD problem in Main PBA. 2. Check shading profile. 	<ol style="list-style-type: none"> 1. Check the CCD harness contact. 2. Remake shading profile in the tech mode.

6.6.3 Abnormal noise

- **Description** There is noise when copy.

Check and Cause	Solution
<ol style="list-style-type: none"> 1. Check the Scanner Motor and any mechanical disturbance. 2. Check the Motor Driver in Driver PBA. 	<ol style="list-style-type: none"> 1. Check the right position of the Scanner Motor, and check the any mechanical disturbance in the CCD carriage part. 2. If any driver is defective, replace it. <ul style="list-style-type: none"> • Connection PBA U4-1, 19 or U5-1, 19=0V to 24V swing signal when operating.

6.6.4 Defective Image Quality

- **Description** The copied image is light or bad.

Check and Cause	Solution
<ol style="list-style-type: none"> 1. Check shading profile. 2. Check the gap between original and scanner glass. 3. Check printing quality. 	<ol style="list-style-type: none"> 1. Remake shading profile in the tech mode. 2. The gap above 0.5 mm can cause a blurred image. 3. See "Print" troubleshooting.

6.7 Scanning Problems

6.7.1 Defective PC Scan

- **Description** The PC Scan is not functioning at all.

Check and Cause	Solution
<ol style="list-style-type: none"> 1. Check the Cable (USB or Parallel) 2. Check if the driver is installed properly. 3. Check if copy function operates normally. 	<ol style="list-style-type: none"> 1. If the PC and the cable are not connected properly, reconnect it. 2. After confirming that it is proper by performing a PC printing test related to driver setup, if it is not so, reinstall it. (Refer to User's Manual.) 3. If copy function works, replace the Main PBA. If copy function doesn't work, replace the CCD Ass'y and try again.

6.7.2 Defective Image Quality of PC Scan

- **Description** The image PC scanned is not clear or bad.

Check and Cause	Solution
<ol style="list-style-type: none"> 1. Check the waveform form by performing a CCD test in TECH Mode. 2. Check if the resolution is set too low in PC Scan options. (Refer to User's Manual.) 	<ol style="list-style-type: none"> 1. If the CCD waveform form is abnormal, try to replace the CCD Ass'y. 2. If the resolution is set to low, let the user be acquainted with the using method well.

6.8 Toner Cartridge Service

It is not guaranteed for the default caused by using other toner cartridge other than the cartridge supplied by the Samsung Electronic or caused by non-licensed refill production.

6.8.1 Precautions on Safe-keeping of Toner Cartridge

Excessive exposure to direct light more than a few minutes may cause damage to the cartridge.

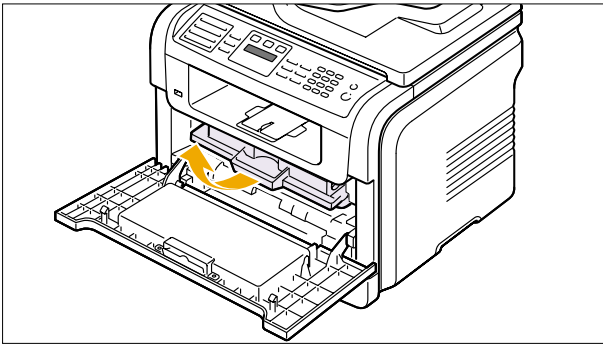
6.8.2 Service for the Life of Toner Cartridge

If the printed image is light due to the life of the toner, you can temporarily improve the print quality by redistributing the toner(Shake the toner cartridge), however, you should replace the toner cartridge to solve the problem thoroughly.

6.8.2. 1 Redistributing Toner

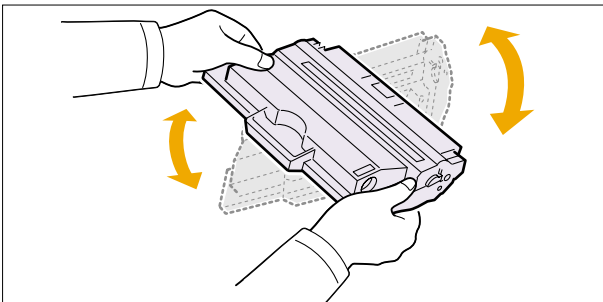
When the toner cartridge is near the end of its life, white streaks or light print occurs. The LCD displays the warning message, "Toner Low." You can temporarily reestablish the print quality by redistributing the remaining toner in the cartridge.

1. Open the Front Cover.
2. Lightly pushing the used cartridge down, pull it out.

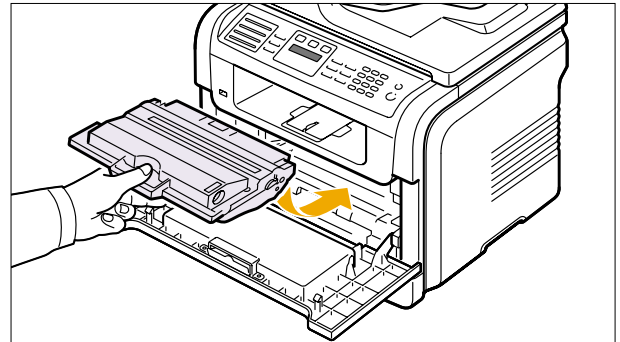


Note : Help the environment by recycling your used toner cartridge. Refer to the recycling brochure packed with the toner cartridge for details.

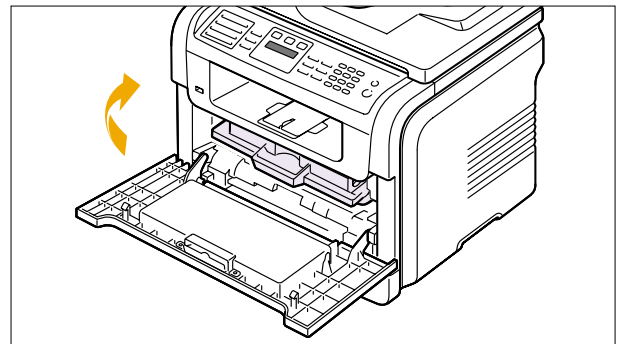
3. Unpack the new toner cartridge and gently shake it horizontally four or five times to distribute the toner evenly inside the cartridge.



4. Save the box and the cover for shipping. Slide the new toner cartridge in until it locks into place.



5. Close the front cover.



6.8.3 Service for Judgement of Inferior Expendables and the Standard of Guarantee

Please refer to User's Manual or Instructions on Fax/Printer Expendables SVC for the judgement of inferior expendables and the standard of guarantee besides this service manual.

6.8.4 Signs and Measures at Poor toner cartridge

Fault	Signs	Cause & Check	Solution
Light image and partially blank image (The life is ended.)	<ul style="list-style-type: none"> The printed image is light or unclean and untidy. Some part of the image is not printed. Periodically a noise as "tick tick" occurs. 	<ol style="list-style-type: none"> If the image is light or unclean and untidy printed image - Shake the developer and then recheck. (1)NG: Check the weight of the developer (2)OK: Lack of toner, so the life is nearly closed. Some part of image is not printed - Shake the developer and then recheck. (1)NG: Check the weight of the developer and clean the LSU window with a cotton swab, then recheck. (2)OK: Lack of toner, so the life is nearly closed. Periodically a noise as "tick tick" occurs - Measure the cycle and the weight of the developer. White vertical stripes on the whole screen or partly : Check the weight of the developer. 	<ol style="list-style-type: none"> All of 1, 2, 3 above- (1)The weight of the developer ended: $800g \pm 20g$ (2)If it become better by shaking, replace with a new developer after 50-100 sheets in the closing state of the life span. In case of 2- If it becomes better after cleaning the LSU window, then the developer is normal. (Because of foreign substance on the LSU window, the image has not been printed partly.) In case of 3- If the cycle of noise is about 2 seconds, the toner inside the developer has been nearly exhausted.(Purchase and replace with a new developer after using about 200 sheets at the point of occurrence) In case of 3- This is a phenomenon caused by lack of toner, so replace with a new developer.
Toner Contamination	<ul style="list-style-type: none"> Toner is fallen on the papers periodically. Contaminated with toner on prints partly or over the whole surface. 	<ol style="list-style-type: none"> Toner is fallen on the paper periodically. (1)Check the cycle of the falling of the toner. (2)Check the appearance of both ends of the developer OPC drum. The center of the printed matter is contaminated with toner. (1)Check whether foreign substances or toner are stuck to the terminal (contact point) of the developer. (2)Check whether the state of the terminal assembly is normal. 	<ol style="list-style-type: none"> If both ends of the OPC drum are contaminated with toner: Check the life of the developer. (In case of less than 1000g, the life may be expired.) or check the rate of remain toner if remain toner is below 10% the toner is almost empty. Check whether it could be recycled. If it cannot be recycled: Replace the developer.

Fault	Signs	Cause & Check	Solution
White Black spot	<ul style="list-style-type: none"> • Light or dark black dots on the image occur periodically. • White spots occur in the image periodically. 	<ol style="list-style-type: none"> 1. If light or dark periodical black dots occur, this is because the developer rollers are contaminated with foreign substance or paper particles. (1) 37.7 mm interval : Charged roller (2) 75.5 mm interval : OPC cycle 2. If white spots occur in a black image at intervals of 75mm, or black spots occur elsewhere, the OPC drum is damaged or foreign substance is stuck to the surface. 3. If a black and white or graphic image is partially broken at irregular intervals, the transfer roller's life has been expired or the transfer voltage is abnormal. 	<ol style="list-style-type: none"> 1. In case of 1 above - Run OPC Cleaning Mode Print 4-5 times repeatedly to remove. Especially check foreign substance on the OPC surface, then remove them with a clean gauze moistened with IPA(Isopropyl Alcohol) not to damage OPC if necessary. Never use usual alcohol. 2. In case of 2 If they are not disappeared by running OPC Cleaning Mode Print 4-5 times. : at intervals of 37.7 mm - Replace the developer. : at intervals of 75.5 mm - Remove foreign substance. : Broken image - Replace the developer according to carelessness. 3. In case of 3 - Exchange the transfer roller because the life of the transfer roller in use has been expired. (Check the transfer voltage and readjust if different.)
Recycled product	<ul style="list-style-type: none"> • Poor appearance of the developer. • Unclean and rough printouts. • Bad background in the image. 	<ol style="list-style-type: none"> 1. Poor appearance of the developer. (1) Check the damage to label and whether different materials are used. (2) Check the appearance of parts of the developer, such as frame, hopper. 2. Unclean and rough printouts. (1) Check whether foreign substance or toner are stuck to the terminal (contact point) of the developer. (2) Check whether the state of the terminal assembly is normal. 	<ol style="list-style-type: none"> 1. In case of 1 - (1) If there is an evidence of disassembling the developer. (2) If materials other than normal parts of the developer are added or substituted. 2. In case of 2 - If there are any abnormalities in connection with the situation of 1. (1) It occurs when the developer is recycled over 2 times. (2) If toner nearly being expired are collected to use, it is judged as the recycled developer.

Fault	Signs	Cause & Check	Solution
Ghost & Image Contamination	<ul style="list-style-type: none"> • The printed image is too light or dark, or partially contaminated black. • Totally contaminated black. (Black image printed out) • The density of print-outs is too dark and ghost occurs. 	<ol style="list-style-type: none"> 1. The printed image is too light or dark, or partially contaminated black. <ol style="list-style-type: none"> (1) Check whether foreign substance or toner are stuck to the terminal (point of contact) of the developer. (2) Check whether the terminal assembly is normal. 2. Totally contaminated black. (Black image printed out) <ol style="list-style-type: none"> (1) Check whether foreign substances are stuck to the terminal (point of contact) of the developer and the state of assembly. (Especially check the charged roller terminal.) 3. The printed image is dark and ghost occurs. <ol style="list-style-type: none"> (1) Check foreign substance attached to the terminal (point of contact) of the developer and the state of assembly. (Especially check the developing roller terminal.) 	<ol style="list-style-type: none"> 1. All of 1, 2, 3 above <ol style="list-style-type: none"> (1) Remove toner and foreign substances adhered to the contact point of the developer. (2) The contact point of the unit facing that of the developer also must be cleaned. (3) If the terminal assembly is unsafe: <ul style="list-style-type: none"> • Fully stick the terminal to or reassemble it after disassembling. • Disassemble the side plate and push the terminal to be stuck, then reassemble it. 2. In case of 2 <p>It is a phenomenon when the OPC drum of the developer is not electrically charged. Clean the terminals of the charged roller, then recheck it.</p> 3. In case of 3 <p>It is a phenomenon as the developing bias voltage of the developer. Clean the terminals of the developing roller, then recheck it.</p>

6.9 Network Problems Troubleshooting

6.9.1 General Problems

Problem	Solution
System does not function with some wrong values entered by mistake while configuring.	Possibly the parameters in PortThru are corrupted. Restart the system and set to factory defaults on the printer front panel or on your computer using SyncThru.
Not able to access from SNMP Manager. SyncThru is unable to automatically detect print servers.	Try pinging from the same system on which SNMP manager is running. If it does not succeed, there must be a problem with network connectivity between the manager and PortThru. If ping succeeds, verify that community names with sufficient permissions have been used.
SyncThru is unable to automatically detect print servers.	Check the environment as described in Auto Detection of Print Server. Check NetWare file server consoles for error messages regarding nodes with conflicting network numbers.
You cannot see any of DHCP server, BOOTP server or RARP server, when you want to set IP address to print server.	On Network Interface in SyncThru, you should set "Static" to "IP Address Assignment Method" in TCP/IP tab. You should set IP address, Subnet Mask and Default Gateway to print server.
Print server does not print using TCP/IP protocol.	1. Check whether TCP/IP protocol is installed in your PC. 2. Check whether your PC is on the same network with print server.
Unable to print in NetWare environment.	Use SyncThru to see if PortThru indicates that queue is serviceable. If not, the login permissions may have changed or the configuration information for queues, printers and print servers may have been changed. Verify using PCONSOLE and NWADMIN that the configuration is correct and check the job queue to see if the print job exists. Check that NetWare is enabled on PortThru. Check that the Check Job every is configured on PortThru.
The status of printer is displayed 'unknown' in SyncThru.	1. Check the protocol of your PC and install DLC/LLC or IPX/SPX protocol. 2. Assign IP Address to PortThru using the front panel.
The name of printer is displayed empty while adding a port and the printer doesn't function.	1. Check the protocol of your PC and install DLC/LLC or IPX/SPX protocol. 2. Assign IP Address to PortThru using the front panel.

6.9.2 Macintosh Problems

Problem	Solution
The printer name is not displayed in the Chooser.	<ol style="list-style-type: none"> 1. Make sure the printer is connected to network correctly. 2. Make sure the printer is configured in SyncThru using the new name. 3. After turning on the printer, wait 3 minutes, then check it again. 4. Make sure that your Macintosh is connected to the network through Ethernet. 5. When the Macintosh and network printer are in the same network, check above items again. Otherwise check whether the router can support AppleTalk protocol. If the router can not support the AppleTalk protocol, then ask the network manager to solve this problem.
The printer drops letters.	<ol style="list-style-type: none"> 1. Make sure the PS option is installed in your printer correctly. 2. Make sure the SIMM provided with PS option is installed correctly. Check that the total memory is 12MB by printing a self-test page.

6.9.3 Windows Problems

Problem	Solution
After installing PortThru, the print server name is not displayed under New Print Server in SyncThru.	<ol style="list-style-type: none"> 1. Verify that the printer power switch is turned on and the 'READY' message is displayed on the printer front panel. 2. Verify that the LAN cable is plugged into the PortThru card. 3. Verify that the second LED on the PortThru card blinks. <ul style="list-style-type: none"> • If the second LED blinks regularly, turn off the printer, then turn it back on. If the problem continues, contact your local dealer. • If the first LED on the PortThru card does not blink, check that the card is installed snugly. If the problem continues, contact your local dealer. 4. Confirm whether the print server and the PC which searches for the New Print Server is on the same LAN. If you want to search for a New Print Server, your PC and the print server should be on the same LAN.
The print server name is displayed, but the test page is not printed.	Select the Network menu from the front panel menus. Check that the test page is printed. If the Network menu is not displayed, or the test page is not printed, turn off the printer, then turn it back on.
Firmware upgrade process is completed. But upgrading is not executed.	<p>An IP address should be assigned to upgrade the Firmware.</p> <p>Make sure that IP address is entered in Print Server.</p> <p>If an IP address is not entered, reassign it and try again.</p>

Problem	Solution
SyncThru is unable to automatically detect printers.	<ol style="list-style-type: none"> 1. Check LAN cable is connected to the printers. <ul style="list-style-type: none"> • Check LAN cable is connected to the printers yourself. • Make sure that there are the connected printers shown in network neighborhood. If not, check the communication status of the printers. • If IP address is assigned to the computers, try ping command. 2. If the protocols of NPC are disabled, DLC/LLC should be installed in the computers. <ul style="list-style-type: none"> • If SyncThru is unable to detect printers with DLC/LLC installed in the computers, check whether NPC and PC are on the same LAN. • If LAN is connected by routers, SyncThru is unable to detect the printers. 3. If more than one of the protocols of NPC are enabled and DLC/LLC is installed in the computers, check NPC and PC are on the same LAN. <ul style="list-style-type: none"> • If LAN is connected by routers, SyncThru is unable to detect the printers. In this case, one of protocols which are enabled in NPC should be installed in the computers. 4. In case that the protocol which is enabled in NPC is installed in the computers: <ul style="list-style-type: none"> • If TCP/IP installed, check entry values of IP address, subnet mask and default gateway.
The printer does not print.	Try Add a Port.

6.9.4 SyncThru Installation Problems

Problem	Solution
"File Transfer Error" message appears when you execute Installation.	<ol style="list-style-type: none"> 1. Make sure the previously installed SyncThru is uninstalled. 2. If the SyncThru is uninstalled, restart your PC. 3. If the problem continues, In Windows 95/98, delete the "sammon.dll" file in the system directory of Windows in MS-DOS mode, restart Windows and reinstall it. In Windows NT, stop the spooler service with 'Services' in Control Panel, delete the "sammon.dll" file in the system32 directory of Windows NT, start spooler service and reinstall it.
'Unable to add the Port list of Samsung ports' message appears, when you add a port.	Verify that your PC restarts after installing SyncThru.