

## 4. Maintenance & Troubleshooting

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This chapter covers product maintenance, problem diagnosis and troubleshooting. It includes instructions for diagnosing and resolving print quality problems.

This service manual covers both the SCX5315F and SCX5115 models. SCX5115 has printer, copier and scanner functions. The SCX5315F has all of the features of the SCX5115 and in addition has Fax capabilities. The manual contents are primarily written for the SCX5315F, where there are differences between the two models this is highlighted.

### 4-1 Preventative Maintenance

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The cycle period outlined below is a general guideline for maintenance.

The example list is for an average usage of 50 transmitted and received documents per day.

Environmental conditions and actual use will vary these factors.

The cycle period given below is for reference only.

COMPONENT	REPLACEMENT CYCLE
ADF Rubber	20,000 Pages
ADF Roller	50,000 Pages
Pick-up Roller	75,000 Pages
Transfer Roller	75,000 Pages
Fuser	75,000 Pages
Toner Cartridge	6,000 Pages
Drum Cartridge	15,000 Pages

## 4-2 Error Messages

Error Message	Description	Solution
RETRY REDIAL?	The machine is waiting for the programmed interval to automatically redial.	You can press START to immediately redial, or STOP to cancel the redial operation.
COMM. ERROR	A problem with FAX communications has occurred.	Try again.
DOCUMENT JAM	Loaded document has Jammed in the scanner document feeder	Clear the document Jam.
DOOR OPEN	The side cover is not securely latched	The side door and front door must be closed in the correct order. Open both doors. Close the front door first then close the side door.
GROUP NOT AVAILABLE	You have tried to select a group location where only a single location number can be used, such as when adding locations for a multi-dial operation.	Try again, check location for group.
LINE ERROR	Your unit cannot connect with the remote machine, or has lost contact because of a problem on the phone line.	Usually caused by a telephone line problem. Try again. If failure persists, wait an hour or so for the line to clear then try again
LOAD DOCUMENT	You have attempted to set up a sending operation with no document loaded.	Load a document and try again.
MEMORY FULL	The memory has become full.	Either delete unnecessary documents, or retransmit after more memory becomes available, or split the transmission into more than one operation.
NO ANSWER	The remote machine was not answered after all the redial attempts.	Try again. Make sure the remote machine is OK.
NO. NOT ASSIGNED	The speed dial location you tried to use has no number assigned to it.	Dial the number manually with the keypad, or assign the number.
NO PAPER [ADD PAPER]	There is no paper in the paper cassette. Printing stops until paper is loaded.	Re-load the paper cassette.
OVERHEAT	The printer part has overheated.	Your unit will automatically return to the standby mode when it cools down to normal operating temperature. If failure persists, call service.
PAPER JAM 0 OPEN/CLOSE DOOR	Recording paper has jammed in paper feeding area. Recording paper is jammed in pick-up unit	Press STOP and clear the jam.
PAPER JAM 1/2 OPEN/CLOSE DOOR	Recording paper has jammed inside the unit. Recording paper has jammed in paper exit unit.	Clear the jam.
TONER LOW	Toner cartridge is almost empty, or toner particles in the cartridge are unevenly distributed in the cartridge	Remove the toner cartridge and gently rock it from side to side. Try again. If problem persists replace the cartridge.
TONER EMPTY	Toner cartridge is now empty	Replace the Toner Cartridge.

Error Message	Description	Solution
DRUM WARNING	A warning that the OPC drum has almost reached the end of its life (14,000 Sides)	You have 1000 pages of print life left in the OPC Drum. Continue to use, order a new OPC drum.
REPLACE DRUM	OPC drum is now life-expired (15,000 sides)	Replace the OPC Drum Cartridge.
NO CARTRIDGE	When the machine detects that the toner cartridge has not been installed.	Install the Cartridge.
BYPASS JAM	Paper feed problem from the BYPASS (Manual feed) Tray.	Open the side Cover and clear the jam.
DUPLEX JAM	Paper feed problem in the duplex return path	Release Output Feed lever and check output area clear. Also open side door and check duplex unit is clear.
LINE BUSY	The remote FAX didn't answer	Try again.
OPEN HEAT EROR	No power to the Fuser lamp	Check thermostat, thermistor, fuser lamp and fuser connector and associated wiring. Also check the 'Fuser On' signal from main PWA to Power Supply. Check cable from Main PWA to Power Supply
Heating Error	During operation, Temperature does not go up	Check thermister contact point & Heating Lamp.
Scanner Locked	Scanner head does not move.	Check transit lock, check scanner cables are connected, check scanner home sensor, scanner motor or drive belt.

## 4-3 User Mode

The table below shows the settings and functions available in the User Mode. These are described in the user Guide. The table is given here to indicate possible settings that the user may have changed.

### 4-3-1 SCX-5315F

Function	Item	Content
SYSTEM DATA	CASSETTE PAPER	LETTER / A4 / LEGAL
	BYPASS PAPER	LETTER / A4 / LEGAL
	MESSAGE CONF.	ON / OFF / ERROR
	AUTO JOURNAL	ON / OFF
	RECEIVE CODE	0-9
	POWER SAVE	ON / OFF
	ECM MODE	ON / OFF
	RX REDUCTION	ON / OFF
	DISCARD SIZE	0-30mm
	REDIAL INTERVAL	1-15
	REDIALS	1-13
	ANSWER ON RING	1-7
	SEND FROM MEMORY	ON / OFF
	LOCAL ID	ON / OFF
	CLOCK MODE	12 / 24 HOUR
SYSTEM ID	FAX / ID	
DATE & TIME		
SYSTEM SETUP	PREFIX DIAL NO.	
	SECURE RECEIVE	
	RINGER VOLUME	LOW / HIGH (10 STEPS)
	ALARM SOUND	ON / OFF
	KEY SOUND	ON / OFF
	SPEAKER CONTROL	COM / ON / OFF
	SELECT LANGUAGE	ENG/GER/FRE/ITA/SPA/POR/DUT
	USB MODE	FAST / SLOW
	FAX DUPLEX	OFF / LONG EDGE / SHORT EDGE
	IMAGE QUALITY	NORMAL / TEXT / IMAGE
	SCAN SLEEP MODE HOME SET	
MEMORY CLEAR	SYSTEM ID	
	SYSTEM DATA	
	PHONE BOOK / MEMORY	
	TX-RX JOURNAL	
DELAY TX		
MEMORY TX		
PRIORITY TX		
POLLING		
ADD/CANCEL	ADD / CANCEL	
GROUP DIAL		

Function	Item	Content
MAINTENANCE	CLEAN DRUM	
	NEW DRUM	
	NOTIFY TONER LOW	ON / OFF
TX CONFIRM		
SCHEDULE JOB		
PHONE BOOK		
SYSTEM LIST		
TX JOURNAL		
RX JOURNAL		
HELP LIST		HELP LIST

### 4-3-2 SCX-5115

Function	Item	Content
SYSTEM DATA	CASSETTE PAPER	LETTER / A4 / LEGAL
	BYPASS PAPER	LETTER / A4 / LEGAL
	POWER SAVE	ON / OFF
	SELECT LANGUAGE	ENG/GER/FRE/ITA/SPA/POR/DUT
	USB MODE	FAST / SLOW
HELP LIST	HELP LIST	PRINTOUT
MAINTENANCE	CLEAN DRUM	
	NEW DRUM	
REPORTS	SYSTEM DATA	
	HELP LIST	HELP LIST

## 4-4 Tech Mode

### 4-4-1 How to Enter Service Mode

In service mode (tech) mode, the technician can check the machine and perform various tests to isolate the cause of a malfunction.

To enter the Tech mode, press **MENU, #, 1, 9, 3, 4** in sequence, and the LCD briefly displays 'T' or 'TECH', the machine has entered service (tech) mode.

While in Tech mode, the machine still performs all normal operations.

To return to normal user mode, press **MENU, #, 1, 9, 3, 4** in sequence again, or turn the power off, then on by unplugging and plugging the power cord.

Options changed while in service mode remain in effect until they are changed again or until you clear the machine's memory.

## 4-4-2 Setting-up System in Tech Mode

### 4-4-2-1 SCX-5315F(SETUP : #, 1, 9, 3, 4)

Function	Item	Content
SYSTEM DATA	DIAL MODE	TONE / PULSE
	MODEM SPEED	
	ERROR RATE	5% /10%
	SET TX LEVEL	09-15
	SILENCE TIME	12 / NU / OFF
SYSTEM ID	The same as User Mode	
DATE & TIME	The same as User Mode	
SYSTEM SETUP	The same as User Mode	
MEMORY CLEAR	CLEAR ALL MEMORY	
DELAY TX	The same as User Mode	
MEMORY TX	The same as User Mode	
PRIORITY TX	The same as User Mode	
POLLING	The same as User Mode	
ADD/CANCEL	The same as User Mode	
GROUP DIAL	The same as User Mode	
MAINTENANCE	CLEAN DRUM	
	NEW DRUM	
	NOTIFY TONER LOW	ON / OFF
	SWITCH TEST	
	MODEM TEST	
	SRAM TEST	
	DRAM TEST	
	ROM TEST	FLASH / ENGINE
	PATTERN TEST	PATTERN1-7, QAPATTERN1-4, ALL"1-7 , ALL"
	CLEAR COUNT	PASSWORD <b>(1934)</b>
		CRU PRINTS COUNT
		FLT SCAN COUNT
		ADF SCAN COUNT
		USED DRUM COUNT
		USED TONER COUNT
		TOTAL PAGE COUNT
	ANSWER ON CNG	1-4
	ADJUST SHADING	
	FLASH UPGRADE	LOCAL
		REMOTE : USER PROGRAM ,
		EMULATION ,BOOT PROGRAM
	PROGRAM DIAL	
TX CONFIRM	The same as User Mode	
SCHEDULE JOB	The same as User Mode	
PHONE BOOK	The same as User Mode	
SYSTEM LIST	USER MODE	
TX JOURNAL	The same as User Mode	
RX JOURNAL	The same as User Mode	

Function	Item	Content
REPORTS	MSG. CONFIRM	
	SCHEDULE JOB	
	PHONE BOOK	
	SYSTEM DATA	
	TRANSMISSION	
	RECEPTION	
	HELP LIST	
	PROTOCOL	
	ERROR CODE	

#### 4-4-2-2 SCX-5115(SETUP : #, 1, 9, 3, 4)

Function	Item	Content
SYSTEM DATA	CASSETTE PAPER	LETTER / A4 / LEGAL
	BYPASS PAPER	LETTER / A4 / LEGAL
	POWER SAVE	ON / OFF
	SELECT LANGUAGE	ENG/GER/FRE/ITA/SPA/POR/DUT
	USB MODE	FAST / SLOW
MAINTENANCE	CLEAN DRUM	
	MODEM TEST	
	NEW DRUM	
	SWITCH TEST	
	SRAM TEST	
	DRAM TEST	
	ROM TEST	FLASH / ENGINE
	PATTERN TEST	PATTERN1-7, QAPATTERN1-4 , ALL
	CLEAR COUNT	PASSWORD
		CRU PRINTS COUNT
		FLT SCAN COUNT
		ADF SCAN COUNT
		USED DRUM COUNT
		USED TONER COUNT
		TOTAL PAGE COUNT
	ADJUST SHADING	
	FLASH UPGRADE	
REPORTS	SYSTEM DATA	
	HELP LIST	HELP LIST
	ERROR CODE	

## 4-4-3 SYSTEM DATA

### DIALING MODE

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Select the dialing mode according to the user's line status.

TONE: Electrical type of dial

PULSE: Mechanical type of dial

### SILENCE TIME

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In ANS/FAX mode, after a call is picked up by the answering machine, the machine monitors the line. If a period of silence is detected on the line at any time, the call will be treated as a fax message and the machine begins receiving.

Silence detection time is selectable between limited (about 12 seconds) and unlimited time.

When '12 sec' is selected, the machine switches to receiving mode as soon as it detects a period of silence.

When 'unlimited' is selected, the machine waits until the answering operation is concluded even though a period of silence is detected. After the answering operation is concluded, the machine switches to receiving mode.

### SEND FAX LEVEL

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You can set the level of the transmission signal. Typically, the Tx level should be under -12 dBm.

Caution: The Send Fax Level is set at the best condition in the shipment from factory. Never change settings arbitrarily.

### ERROR RATE

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You can set the Error Rate between 5% and 10%. During operation the set monitors the error rate.

When the error rate approaches the preset value the machine automatically steps down the baud rate to 2400bps to ensure that the selected error rate is not exceeded.

### MODEM SPEED

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You can set the maximum modem speed. It is better left set 33.6Kbps (the default setting).

During call setup the baud rate is automatically adjusted to suit the slowest device. Only adjust this where the local line conditions are extremely poor.

## 4-4-4 MEMORY CLEAR

### CLEAR ALL MEMORY

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This function resets the system to its original factory settings. All settings entered in User Mode and Tech Mode are reset. This includes any User Phone Book entries, jobs stored in memory or received documents that have not been printed. If possible use the Control Panel software to download customer settings and phone book settings before carrying out a full reset.

When diagnosing or testing a faulty unit this function is often useful. Be aware that all error reports are also cleared.

#### < Method >

1. Select the [MEMORY CLEAR] in TECH MODE.
2. Push the ENTER button.
3. Select your country.
4. Push the ENTER button and all memory will be cleared.

NOTICE : Always perform a memory clear after replacing the main board or updating the firmware. Otherwise, the system may not operate properly.



## 4-4-5 MAINTENANCE

### CLEAN DRUM

Use this feature to remove toner particles remaining in the OPC drum unit.

Use this feature when print quality falls or when marks or specks appear on the printout.

You should perform this feature several times until a clean printout appears.

The machine automatically pulls in a sheet of paper and prints out. Excess toner particles on the OPC drum surface are fixed to the paper.

### FLASH UPGRADE

This function is used to update the system Firmware. There are 2 methods Local and Remote.

More information can be found in the firmware upgrade section.

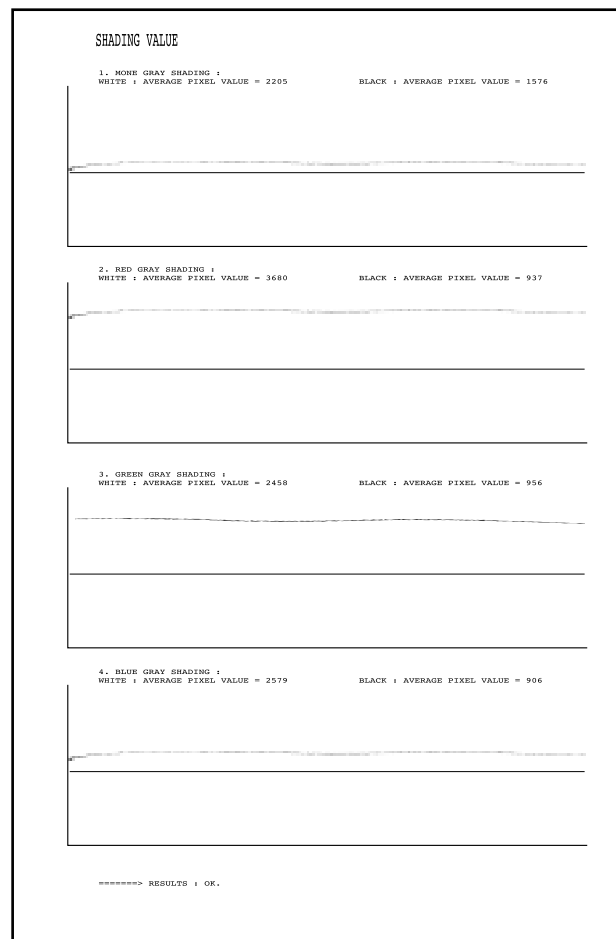
### ADJUST SHADING

This option is used to test and check the functionality of the CCD (Charge Coupled Device). Use this when poor quality scanning or copying is reported.

#### < Method >

1. Select the [ADJUST SHADING] in TECH MODE.
2. Push the SET UP button. The unit scans a "white image" using the 'white bar'
3. After the scan, CCD SHADING PROFILE similar to that shown will be printed out.
4. If the printed image is different to the image, if the lines are significantly lower or higher, or if there are high or low spots in the chart then the CCD is defective.

NOTICE : When you test the CCD, make sure that the cover is closed."



### ANSWER ON CNG

The function is to control the CNG TONE recognition times for entering receiving mode from the AUTO MODE or ANS/FAX MODE.

## CLEAR COUNT

This function erases the counters stored in system memory. These are shown in the highlighted area in the Sytem data List shown below (printed in TECH MODE)

Note the Current Drum Page Count cannot be erased. This is cleared using the NEW DRUM function (USER MODE ⇒ MAINTENANCE ⇒ NEW DRUM)”

FIRMWARE VERSION	:	1.00
ENGINE VERSION	:	1.00
EMULATION VERSION	:	PCL6 2.32 07-11-2001
	:	1.48 07-19-2001
TOTAL PAGE COUNTS	:	123
CRU PRINTS	:	123
REPLACED TONER COUNTS	:	1
REPLACED DRUM COUNTS	:	1
CURRENT DRUM COUNTS	:	112
PLATEN SCAN PAGE COUNTS	:	23
ADF SCAN PAGE COUNTS	:	10

< SYSTEM DATA LIST >

## PATTERN TEST

Using this pattern printout, you can check if the printer mechanism is functioning properly. It is used in the production process and is not intended for Service use.”

## ROM TEST

Use this feature to test the machine'S ROM. The result and the software version appear in the LCD display.

- FLASH VER : 1.00 V
- ENGINE VER :1.00V

## DRAM TEST

Use this feature to test the machine's DRAM. The result appears in the LCD display. If all memory is working normally, the LCD shows << O K >>

## SRAM TEST

Use this feature to test the machine's SRAM. The result appears in the LCD display. If all memory is working normally, the LCD shows << O K >>

## MODEM TEST

Use this feature to hear various transmission signals to the telephone line from the modem and to check the modem. If no transmission signal sound is heard the modem may be faulty.”

## SWITCH TEST

Use this feature to test all keys on the operation control panel. The result is displayed on the LCD window each time you press a key.



## RECEPTION

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This journal shows information relating to document reception, the time and dates of up to 40 of the most recent documents received are stored.

## TRANSMISSION

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This journal shows information relating to document transmission, the time and dates of up to 40 of the most recent documents transmitted are stored.

## SYSTEM DATA

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This list provides a list of the user system data settings and tech mode settings.

## PHONEBOOK

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It lists all telephone numbers that have been stored in the machine.

## SCHEDULE JOB

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This list shows information relating to the documents currently stored for delayed transmission. It provides the operation number, starting time, type of operation, etc.

## ERROR CODE

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This list shows a list of errors that have occurred since the last memory clear.

## 4-4-7 Firmware Upgrade

This function is used to update the machines Firmwar, there are two Upgrade methods - local and remote.

### 4-4-7-1 Local Machine

#### RCP(Remote Control Panel) mode

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This method is used with the machine connected using either a Parallel Port or USB Port to a PC and uses the RCP (Remote Control Panel) software to upgrade the Firmware.

#### < Method >

How to Update Firmware using RCP

1. Connect PC and Printer with Parallel Cable or USB Cable.
2. Execute RCP and select Firmware Update. Current Firmware version and Emulation Version are displayed on Current version window.
3. The Firmware file must be stored on the PC, in a path close to the root of C:, ie C:\TEMP. Search for the firmware file to use to update the machine by using the Browse Icon.
4. Click the Update icon, the firmware file is transmitted to the Printer automatically and the printer is initialized when the update is finished.
5. Click the Refresh icon and check that the version number displayed matches the new firmware just loaded."

## DOS Command mode

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This method is just for Parallel Port. Connect to PC with Parallel cable and enter DOS Command to upgrade the Firmware.

### < Method >

- a). You will need the following files:- **down.bat**, **down\_com.bin**, **fppt.exe**, and "**Rom File**": this is the firmware file to be loaded into the printer. Save the files in the same folder, close to the root of C:, e.g. C:\TEMP
- b). At a DOS prompt, input one of the commands shown below and press the enter key. The file will then be sent automatically to the printer.
- c). There are two commands use the correct one depending on the printer status.
  - \* when the printer is in the user mode and is in the normal ready condition: **down "rom file"**
  - \* When the product is been placed in the upgrade mode (TECH MODE → MAINTENANCE → FLASH UPGRADE → LOCAL) **fppt "rom file"**
- d). Do not turn off the power while the upgrade is in process."

## 4-4-7-2 Remote FAX

This function uses one fax machine already loaded with the latest firmware to upgrade one or more other remote machines of the same type using the telephone network.

### < Method >

1. Operate a fax with the latest firmware to prepare it to send the upgrade. (TECH MODE MAINTENANCE FLASH UPGRADE REMOTE)
2. Input the telephone number of the fax machine to be upgraded. (Several faxes can be upgrade at the same time. In this case, enter the telephone number for each machine.)
3. Then press the enter button, this will send the firmware file by calling to the each of the selected fax machines in turn. (Around 10~15 minutes is needed to send the file to each machine.)

### < Caution >

1. The sending and receiving fax machines must be the same model.
2. A sending fax must be set up as ECM mode, and the receiving machine memory must be set up as 100%. If not the upgrade will fail."

## 4-4-8 Identify Sale Date(Only SCX-5315F)

This function confirms the date that the consumer first uses the product. The date stored is the date of the first scan or first print whichever operation the user carries out first.

This information is retained even after a memory delete (Clear All Memory).

### < Method >

Press MENU, #, 1, 9, 3, # in sequence. The Firmware version is displayed on the LCD.

Press 1( in the number keypad) : The LCD display shows "Updated date"

Press 2( in the number keypad) : The LCD display shows "Product first use date"

## 4-5 ENGINE TEST MODE

The Engine Tests Mode provides useful test functions for checking the status of the print engine. It can test many of the separate sections of the print engine and displays the result of the test on the LCD. These tests are classified in 6 groups (0~5), and the functions of these tests are shown below.

### 4-5-1 To enter the Engine Test Mode

Press **MENU, #, 1, 9, 3, 1** in sequence, and the LCD briefly displays 'Engine Test Mode', the machine has entered service (tech) mode.

### 4-5-2 Diagnostic

No.	Sub No.	Engine test	Remark
0	1	Motor Test	1: On, 2: Off
	2	PTL Test	1: On, 2: Off
	3	Fan Test	1: On, 2: Off
	4	Fuser Test	1: On, 2: Off If its temperature is lower than the Standby (160°C), the fuser is on, but if it is higher than the Standby, the fuser is off.
1	1	LSU Motor Test	1: On, 2: Off
	2	LSU Hsync Test	1: On, 2: Off
	3	LD On Test	1: On, 2: Off
	4	LSU Operation	1: On, 2: Off
2	1	Feed Sensor Test	Sensor On : FEED SENSOR ON Display
			Sensor Off : FEED SENSOR OFF Display
	2	Exit Sensor Test	Sensor On : EXIT SENSOR ON Display
			Sensor Off : EXIT SENSOR OFF Display
	3	Cover Sensor Test	Sensor On : COVER SENSOR ON Display
			Sensor Off : COVER SENSOR OFF Display
	4	1'st Empty Test	Sensor On : 1'st PAPER Empty Display
			Sensor Off : 1'st PAPER No Empty Display
	5	MP Empty Sensor Test	Sensor On : MP PAPER Empty Display
			Sensor Off : MP PAPER No Empty Display
	6	BIN FULL Sensor Test	Sensor On : BIN FULL SEN ON Display
			Sensor Off : BIN FULL SEN OFF Display
3	1	1'st CAST Solenoid Test	1: On, 2: Off
	2	MP Solenoid Test	1: On, 2: Off
	3	Duplex Solenoid Test	1: On, 2: Off
4	1	MHV Test	1: On, 2: Off (-1450v)
	2	DevBias Test	1: On, 2: Off (-450v)
	3	THV EN/NEG Test	1: On, 2: Off
	4	THV Test	1: On, 2: Off (1300v)
	5	THV Trigger Test	1: On, 2: Off
5	1	CRU Error Check	1: Check, 2: Next
	2	New OPC Check	1: Check, 2: Next
6	1	All Function Test	For SMD Test, Push up key : Next function All Function : No.0~4

### 4-5-3 ENGINE PRINT

When the function is enabled a group of parameters are printed at the bottom of each page which define the print engine condition. It is a manufacturing test feature not intended for service use.

This setting remains enabled even when you exit from Engine Mode. Remember to turn it off.

## 4-6 Troubleshooting

### 4-6-1 Scanner

#### 4-6-1-1 COPY

PROBLEM	ITEMS TO BE CHECKED.	HOW TO SOLVE
White copy	• Ensure the Scanner cover is closed.	• Room lighting can penetrate thin paper causing quality problems
	• Check shading profile	• Carry out the “Adjust Shading” procedure in Tech mode
Black copy	• Check the CCD problem in Main PBA.	• Check the CCD harness contact.
	• Check shading profile.	• Remake shading profile in the tech mode.
Defective image quality	• Check shading profile.	• Carry out the “Adjust Shading” procedure in Tech mode
	• Check the original is laying flat on the scanner glass.	• A gap above 0.5mm can cause a blurred image.
	• Check printing quality.	• See “Print” troubleshooting.
Abnormal noise	• Check the Scanner drive mechanism.	• Check scanner carriage, motor, gearbox, belt and belt tension spring
	• Check the Motor Driver chip on the driver PBA.	• If any driver is defective, replace it. - U2-4, 11, 18, 25 signals swing between OV and 24V when operating.

## 4-6-1-2 PC-Scan

PROBLEM	ITEMS TO BE CHECKED.	HOW TO SOLVE
Scanning Error	• Check the printer cable is correctly installed.	• Use standard IEEE1284 cable.
	• Check that the TWAIN driver is installed.	• Remove any other scanner driver. • Reboot after reinstallation of the TWAIN driver.
	• Check the printer port (Parallel) BIOS settings.	• Check the parallel-port-related items in the CMOS Setup. As a printer port, ensure ECP is selected.
	• Check harness contact.	• Check CN12 contact in Main PBA
	• Check the IEEE1284 signal levels.	• If any signal level is defective, replace driver PBA. - U33-26, 27, 28, 43, 44, 45, 46, 47 on Main PBA are 0.8V to 2.4V TTL signal. • Otherwise, replace Main PBA.
	• Check the USB signal level.	• If USB signal level is defective, replace Main PBA.
Defective image Quality	• Check shading profile.	• Remake shading profile in the tech mode.
	• Check the gap between original and scanner glass.	• The gap above 0.5mm can cause a blurred image.
Abnormal noise	• Check the Scanner Motor and any mechanical disturbance.	• Check the right position of the Scanner Motor, and check the any mechanical disturbance in the CCD carrying part.
	• Check the motor driver in Driver PBA.	• If any driver is defective, replace it. - U2-4, 11, 18, 25 = 0V to 24V swing signal when operating.

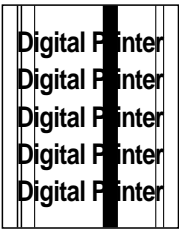
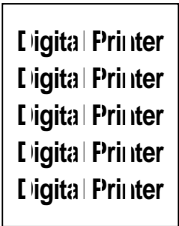
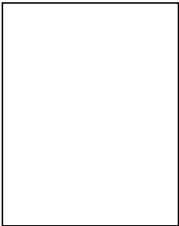






## 4-6-2 FAX(only SCX-5315F)



### 4-6-2-1 FAX/TELEPHONE Precautions

PROBLEM	ITEMS TO BE CHECKED.	HOW TO SOLVE
TEL LINE CANNOT BE ENGAGED (NO DIAL TONE)	<ul style="list-style-type: none"> <li>• When you press "OHD" key:               <ol style="list-style-type: none"> <li>a) Check line cord connection.</li> <li>b) Check MAIN LIU harness, and CN1 (LIU PBA).</li> <li>c) Check relay operation of LIU PBA : Is the control signal of CN18(main) low?</li> </ol> </li> </ul>	<ol style="list-style-type: none"> <li>a) insert it correctly into the connection jack called "line".</li> <li>b) Replace defective parts.</li> <li>c) Replace main PBA IF the control signal of CN18(main) is high. Replace LIU PBA if high but phone line cannot be connected.</li> </ol>
Cannot MF dial	<ul style="list-style-type: none"> <li>• Check CN18 (main PBA), MAIN-LIU harness, and CN1 (LIU PBA)</li> </ul>	<ul style="list-style-type: none"> <li>• Replace defective parts.</li> </ul>
MF dial is possible but not DP dial.	<ul style="list-style-type: none"> <li>• Check DP control signal of CN18-11 of MAIN PBA and the circuit around R15. U6 and Q2 of Liu PBA.</li> </ul>	<ul style="list-style-type: none"> <li>• Replace LIU PBA.</li> </ul>
Defective fax transmission	<ul style="list-style-type: none"> <li>• Check CN18 (main PBA), MAIN LIU harness, and CN1(LIU PBA).</li> <li>• Is the external phone hooked off?</li> <li>• Check 'hook off' : Refer to 'TEL LINE CANNOT BE ENGAGED' above.</li> <li>• Check transmission path : Check output of CN20-3.4 and T2-4(LIU PBA).</li> <li>• Check reception path : Check output CN1-1 (LIU PBA) and input of CN18-1 (main PBA).</li> </ul>	<ul style="list-style-type: none"> <li>• Replace defective parts.</li> <li>• Replace LIU PBA if low.</li> <li>• Refer to 'TEL LINE CANNOT BE ENGAGED' above.</li> <li>• Replace main PBA, if abnormal.</li> <li>• Replace LIU PBA if CN1-1(LIU PBA) is not confirmed. Replace main PBA if CN20-1(MAIN PBA) is not confirmed.</li> </ul>
Defective automatic fax reception	<ul style="list-style-type: none"> <li>• Is the ring checked? Check ring pattern at CN1-9 (LIU PBA).</li> <li>• Refer to 'Defective Transmission.'</li> </ul>	<ul style="list-style-type: none"> <li>• Replace LIU PBA if it cannot be checked.</li> <li>• Refer to 'Defective Transmission'.</li> </ul>

### 4-6-3 Print Quality

Error Status	Check	Solution
<b>Vertical black line and band</b> 	<ol style="list-style-type: none"> <li>1. Faulty Toner cartridge</li> <li>2. LSU</li> <li>3. Bad cleaning blade of drum cartridge.</li> </ol>	<ol style="list-style-type: none"> <li>1. Change Toner cartridge</li> <li>2. Replace LSU</li> <li>3. Chang Drum cartridge.</li> </ol>
<b>Vertical white line</b> 	<ol style="list-style-type: none"> <li>1. LSU window contamination</li> <li>2. Toner cartridge</li> </ol>	<ol style="list-style-type: none"> <li>1. Clean LSU window</li> <li>2. If not LSU, change Toner cartridge.</li> </ol>
<b>No image</b> 	<ol style="list-style-type: none"> <li>1. OPC is properly grounded?</li> <li>2. LSU running well?</li> <li>3. Bias voltage is correct?</li> <li>4. Toner low?</li> <li>5. Is there video data from Main PBA</li> </ol>	<ol style="list-style-type: none"> <li>1. Measure the resistance between frame ground and the OPC ground spring attached to the frame. Confirm good ground. If faulty check ground path through the frame . Also check OPC Ground Screw – see page 3-18</li> <li>2. Adjust LSU or replace it</li> <li>3. Normal Dev bias = -440V</li> <li>4. Shake toner cartridge and print. If an image appears toner is empty</li> <li>5. Print engine test pattern , replace Main PBA</li> </ol>
<b>Light image</b> 	<ol style="list-style-type: none"> <li>1. LSU light power normal?</li> <li>2. Enough toner?</li> <li>3. High charger voltage?</li> <li>4. Lower bias voltage</li> <li>5. Contamination of high voltage contact.</li> <li>6. Transfer voltage and roller.</li> </ol>	<ol style="list-style-type: none"> <li>1. Checking LSU light power is difficult. Compare with new one and check.</li> <li>2. Check toner and developer counter</li> <li>3~4. Change the HVPS Board.</li> <li>5. Stray toner can increase contact resistance and cause a bad contact. Clean contaminated area.</li> </ol>
<b>Dark image</b> 	<ol style="list-style-type: none"> <li>1. LSU light power normal?</li> <li>2. Bias voltage output is high?</li> <li>3. Video data is always supplied?</li> <li>4. Bad C/R voltage contact.</li> </ol>	<ol style="list-style-type: none"> <li>1. Checking LSU light power is difficult. Compare with new one and check.</li> <li>2. Normal Dev bias = -350V</li> <li>3. Check Video Data signal(CN2). Replace main PBA board.</li> <li>4. Replace Drum Cartridge or check where is bad point of machine.</li> </ol>

Error Status	Check	Solution
<b>Background</b> 	1. High voltage output is normal? 2. C/R of Toner cartridge is contaminated?	1. Change the HVPS Board. 2. Print a number of "Cleaning" sheets – if problem persists change the cartridge..
<b>Ghost</b> 	1. High voltage output. 2. Pre-Transfer Lamp. 3. Bad high voltage contact.	1. Change the HVPS Board. 2. Check PTL lamp comes on –replace if necessary 3. Clean the inside machine or replace toner cartridge.
<b>Stains on back of paper</b>	1. Contamination of transfer roller. 2. Toner debris in paper path 3. Pressure roller contamination	1. Clean the transfer roller with vacuum cleaner. 2. Clean the paper path with a cloth or air duster. 3. Remove fuser and replace it.
<b>Poor Fusing</b>	1. Paper quality and finish? 2. Check fusing temperature. 3. The machine was kept at a low temperature for a long time?	1. Should use recommended paper. 2. Check engine controller board. If you do not have a thermometer, measure the thermistor voltage to CPU, If $2.3V \pm 5\%$ when printing is correct otherwise disassemble fthe user and check the thermistor contacts and thermistor. 3. Re-check after allowing the machine to come up to room temperature.
<b>Partial blank image (not periodic)</b>	1. Toner is low? 2. The toner cartridge is out of position?	1. Replace Toner cartridge. 2. Check and adjust.
<b>Partial blank image (periodic)</b>	1. repetative white or black marks at regular intervals.	Measure the spacing of the marks and compare the spacing to those given in the table below.  <ul style="list-style-type: none"> <li>• Spacing 1 and 2 – Replace the OPC</li> <li>• Spacing 3 and 4 – replace the toner cartridge</li> <li>• Spacing 5 – replace the transfer roller</li> <li>• Spacing 6 and 7 – replace the Fuser.</li> </ul>

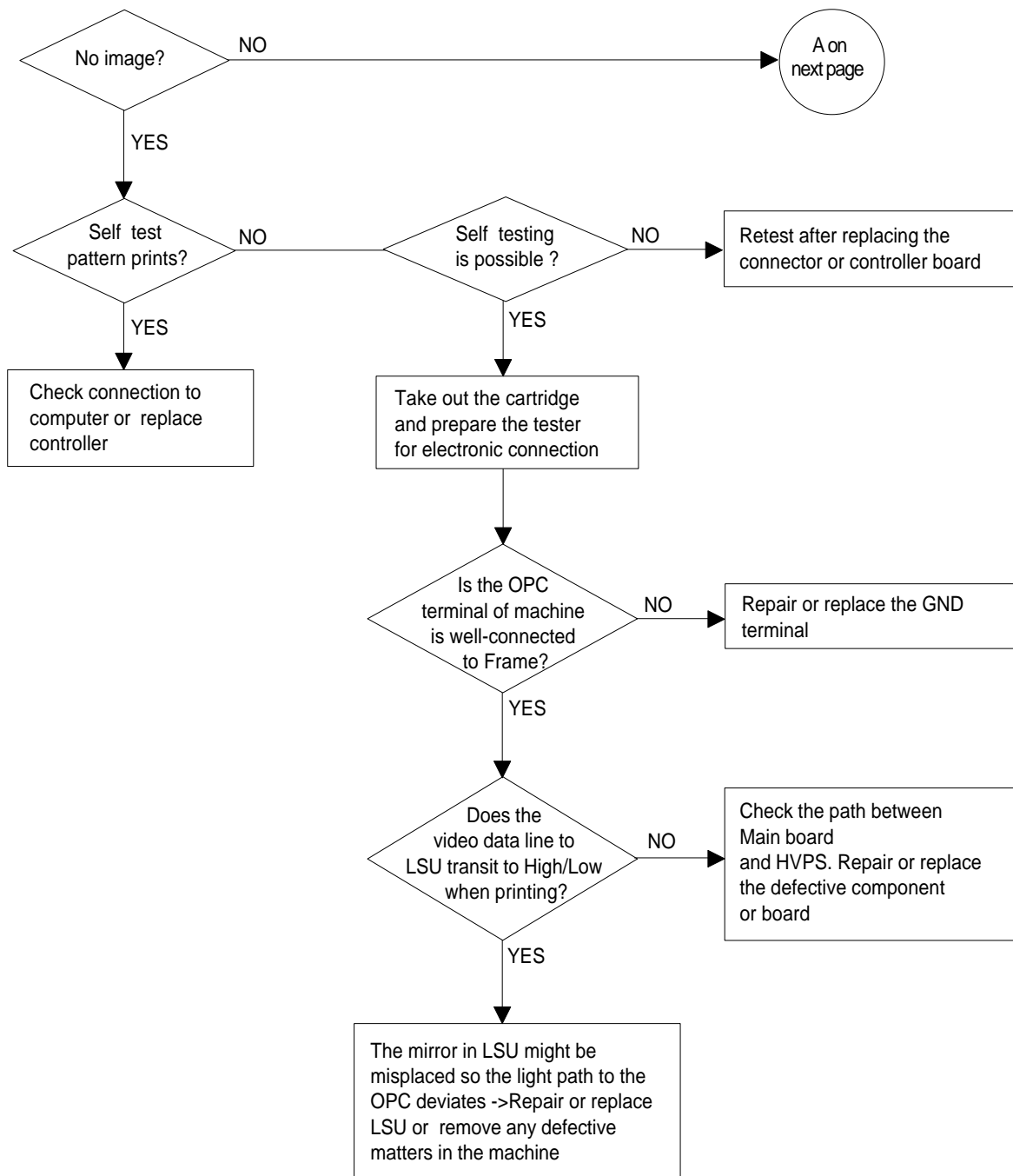
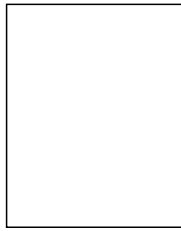
Error Status	Check	Solution
<b>Different image density (left and right)</b>  	<ol style="list-style-type: none"> <li>1. Uneven pressure between Charge roller and OPC Drum</li> <li>2. Uneven pressure between Dev roller and OPC drum</li> <li>3. Transfer roller's pressure force uneven at each side</li> </ol>	<ol style="list-style-type: none"> <li>1. Change OPC cartridge</li> <li>2. Change toner and / or OPC Drum</li> <li>3. Check left and right transfer roller springs</li> </ol>
<b>Horizontal lines or bands</b>  	<ol style="list-style-type: none"> <li>1. Bad contact on high voltage terminal</li> <li>2. Contamination of charge roller</li> <li>3. Contamination of heat roller</li> <li>4. Malfunction of LSU</li> </ol>	<ol style="list-style-type: none"> <li>1. Clean each contact and check continuity</li> <li>2. Print several "cleaning sheets" – replace OPC drum if problem persists.</li> <li>3. Replace fuser unit</li> <li>4. Check Main PBA., LSU harness and LSU</li> </ol>

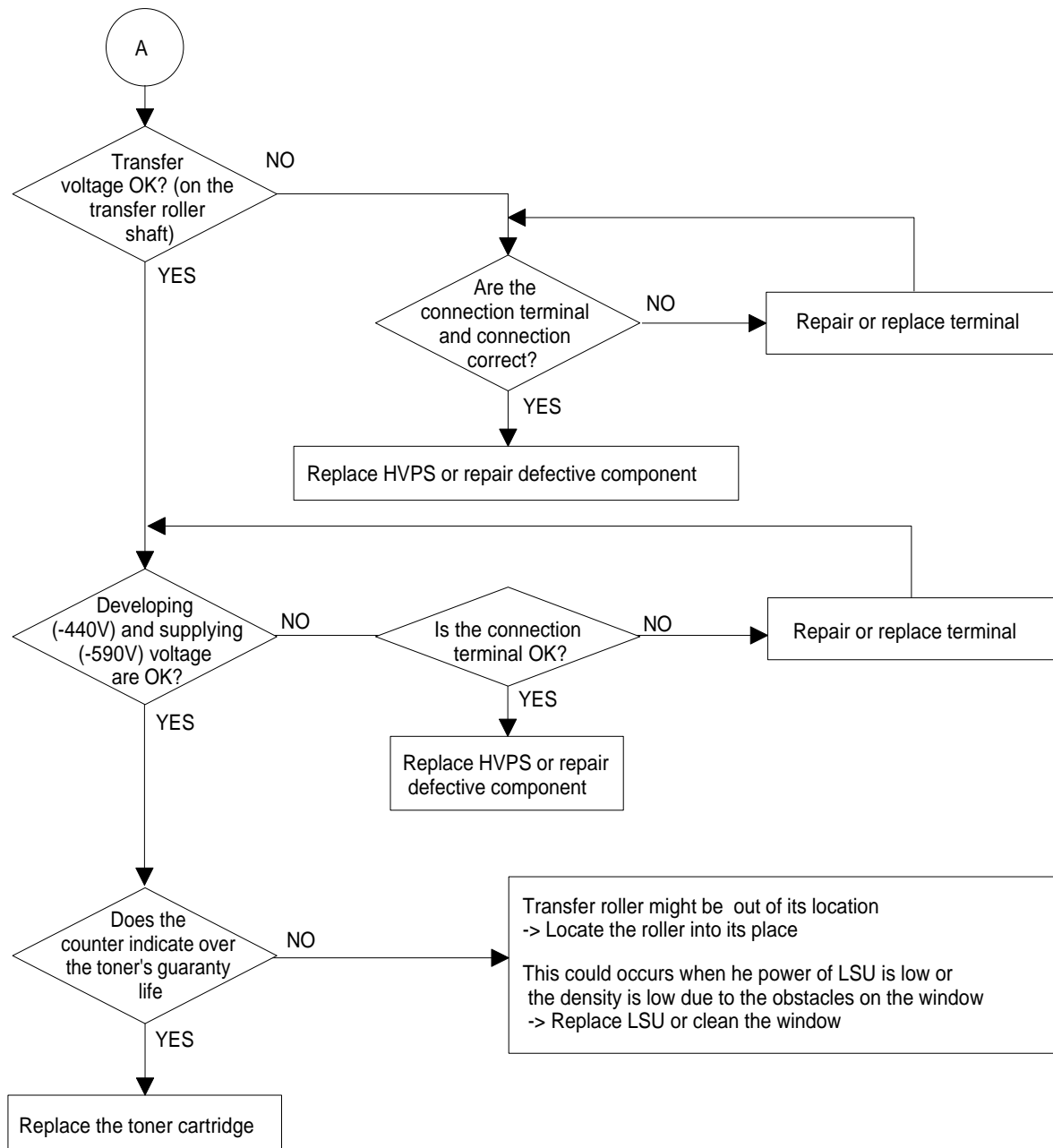
## Abnormal Image Printing and Defective Roller

If abnormal image prints periodically, check the parts shown below.

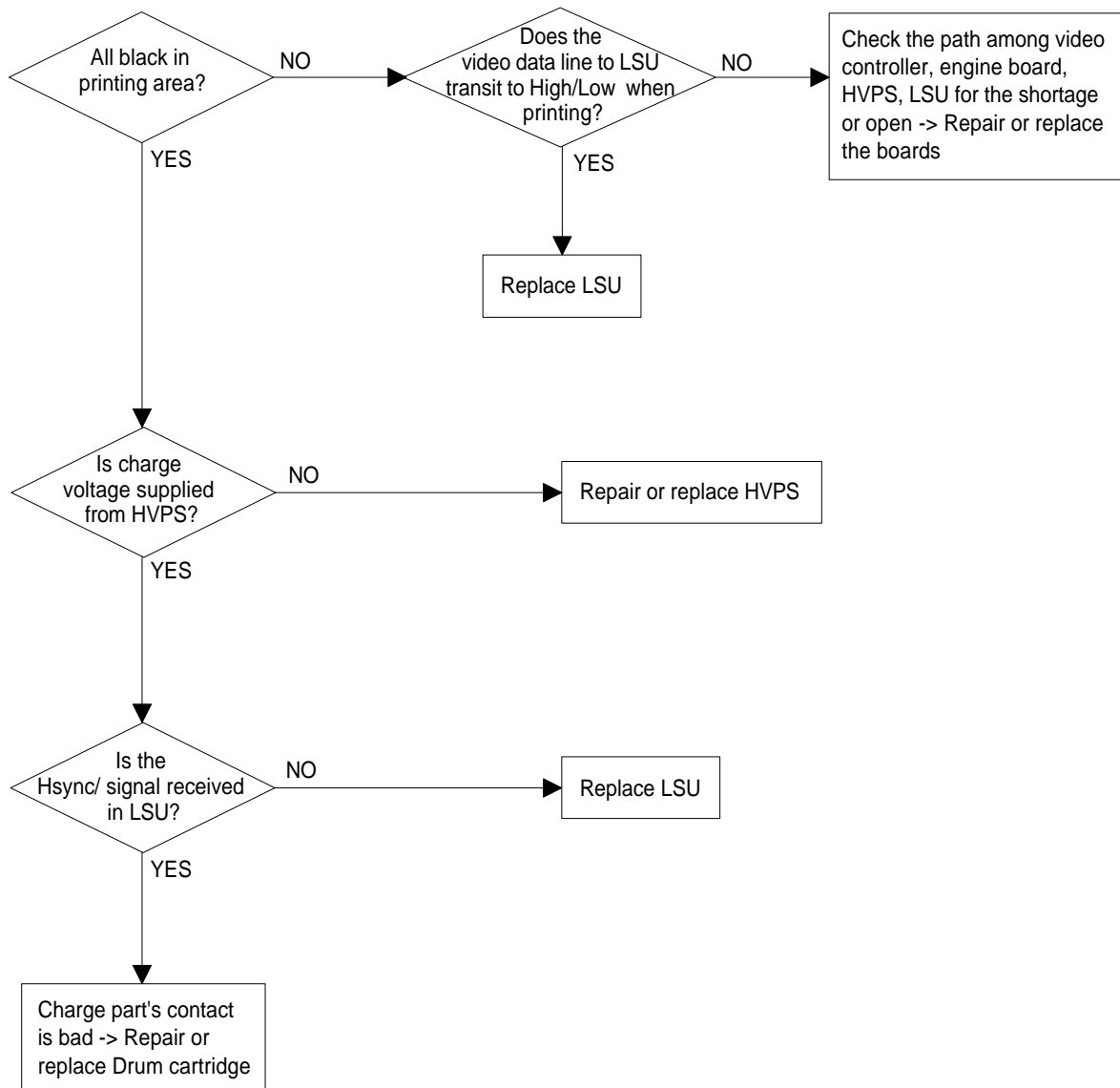
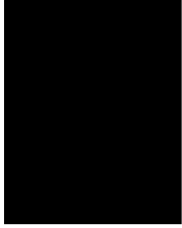
NO	Roller	Abnormal image period	Kind of abnormal image
1	OPC Drum	94.3 mm	White spot. Black spot
2	Charge Roller	37.7 mm	White spot. Black spot
3	Supply Roller	35.8 mm	Horizontal dark band
4	Develope Roller	44.8 mm	Horizontal dark band
5	Transfer Roller	56.6 mm	Contamination on reverse side of paper / transfer fault
6	Heat Roller	82.5 mm	Black spot, White spot
7	Pressure Roller	78.5 mm	Contamination on reverse side of paper

# No Image



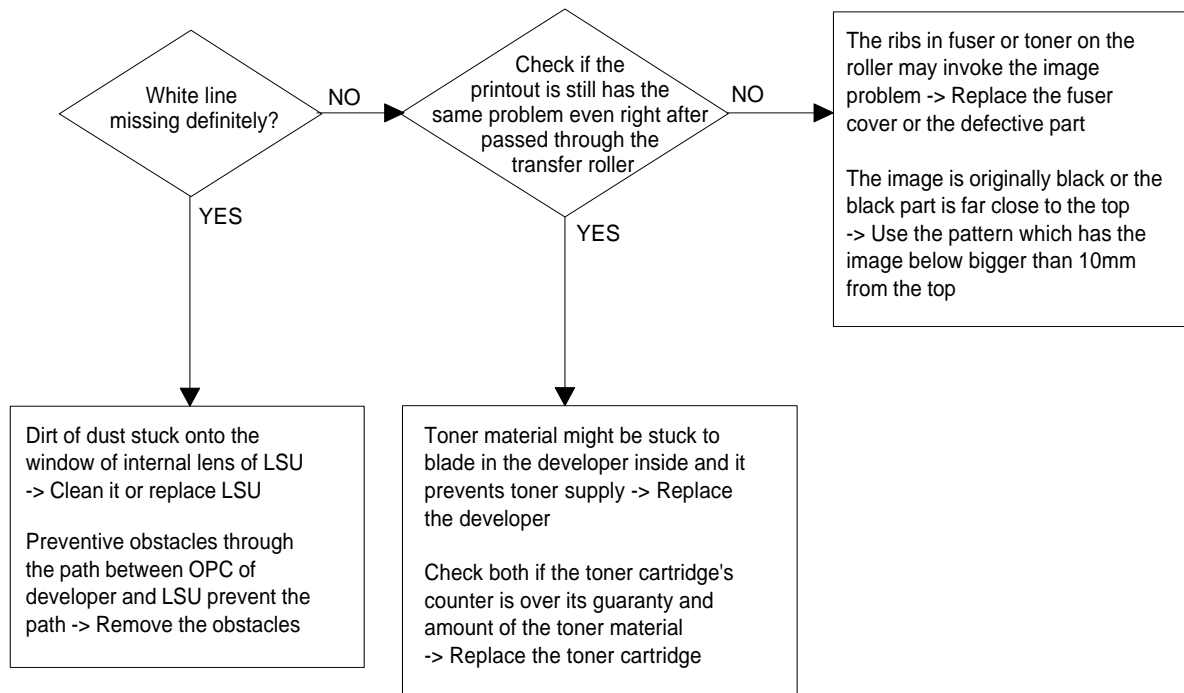


# All Black



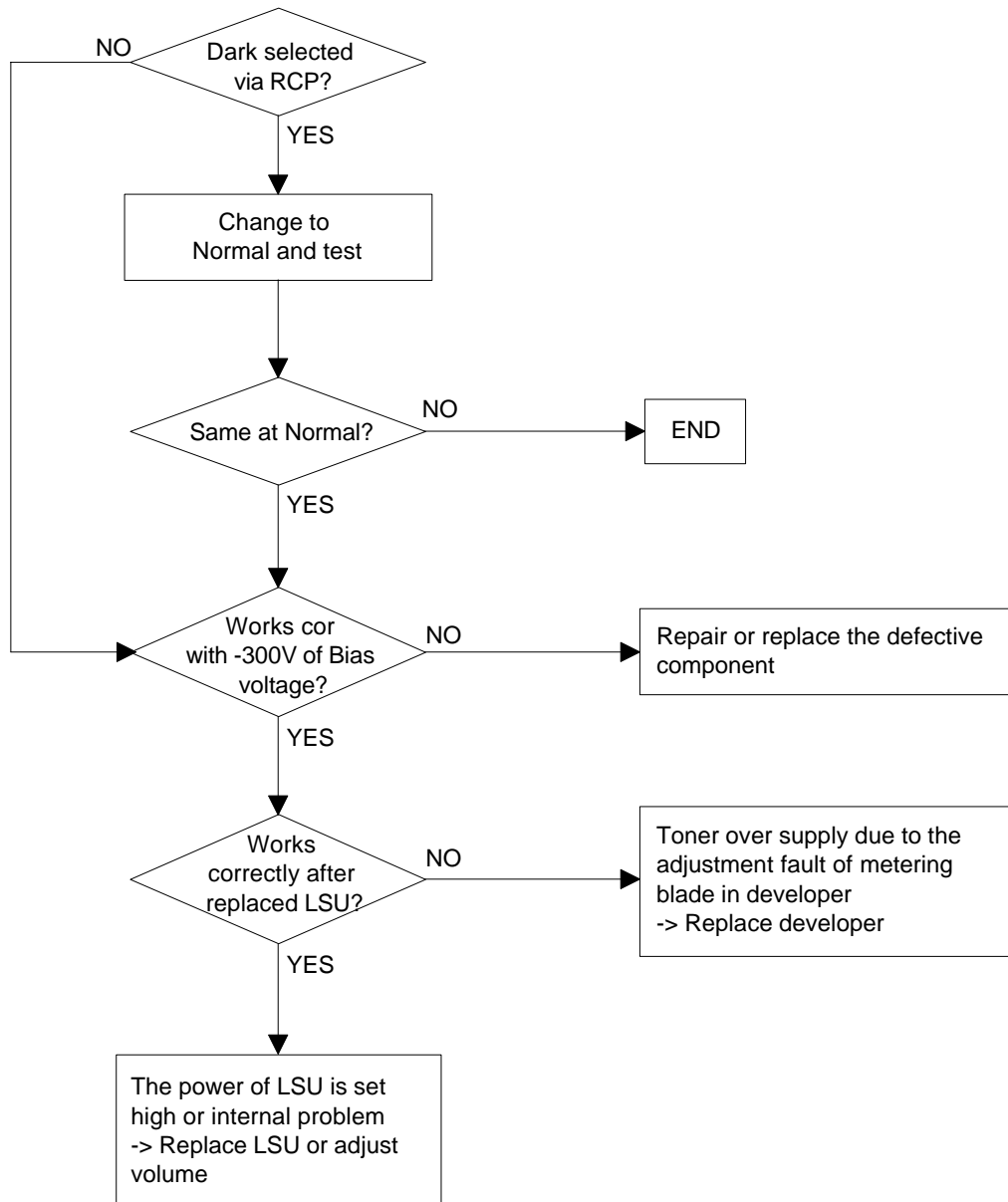
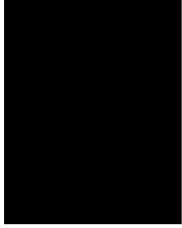
## Vertical White Line (Band)

[ igital | Printer  
 [ igital | Printer  
 [ igital | Printer  
 [ igital | Printer  
 [ igital | Printer



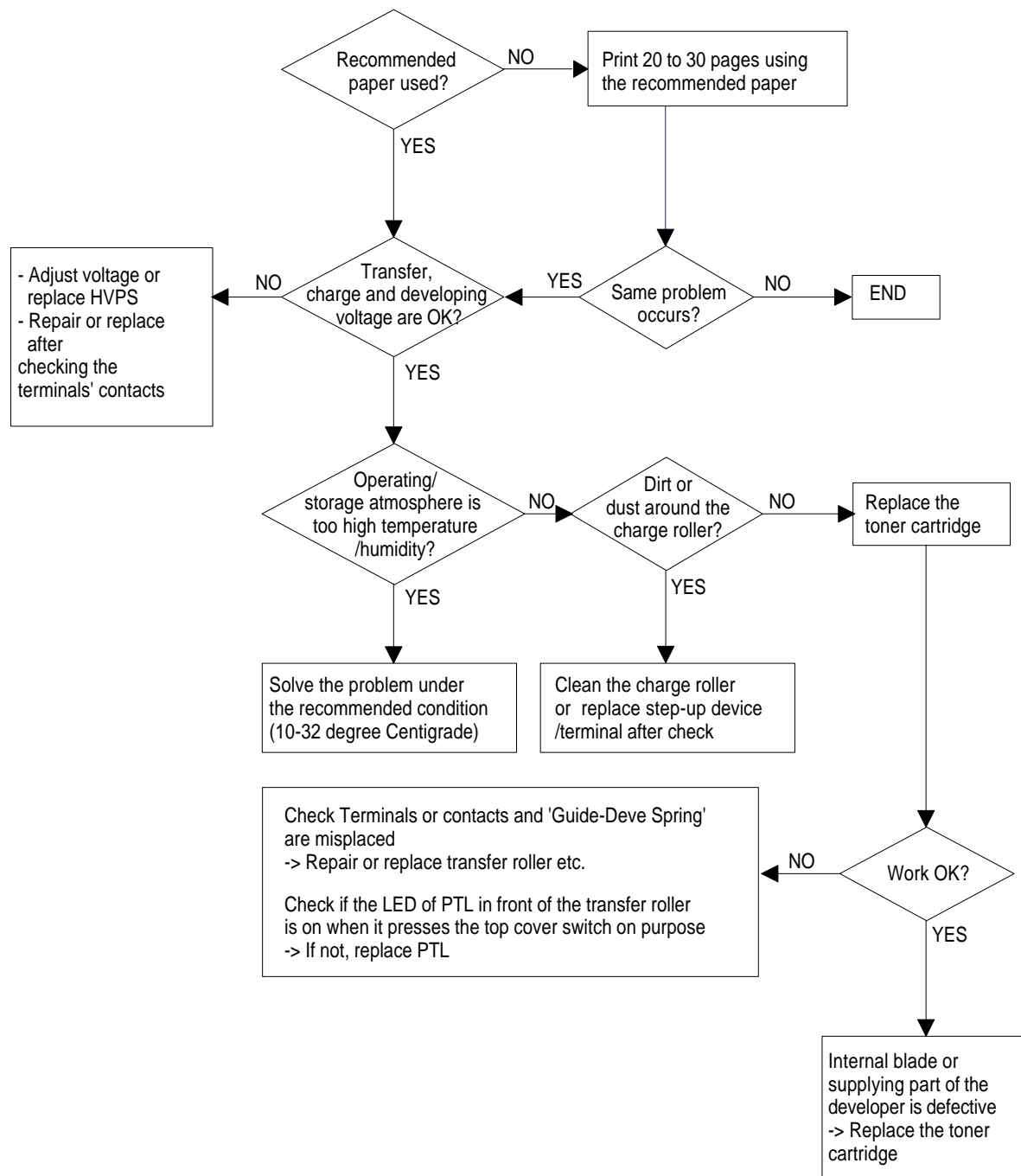


## Dark Image



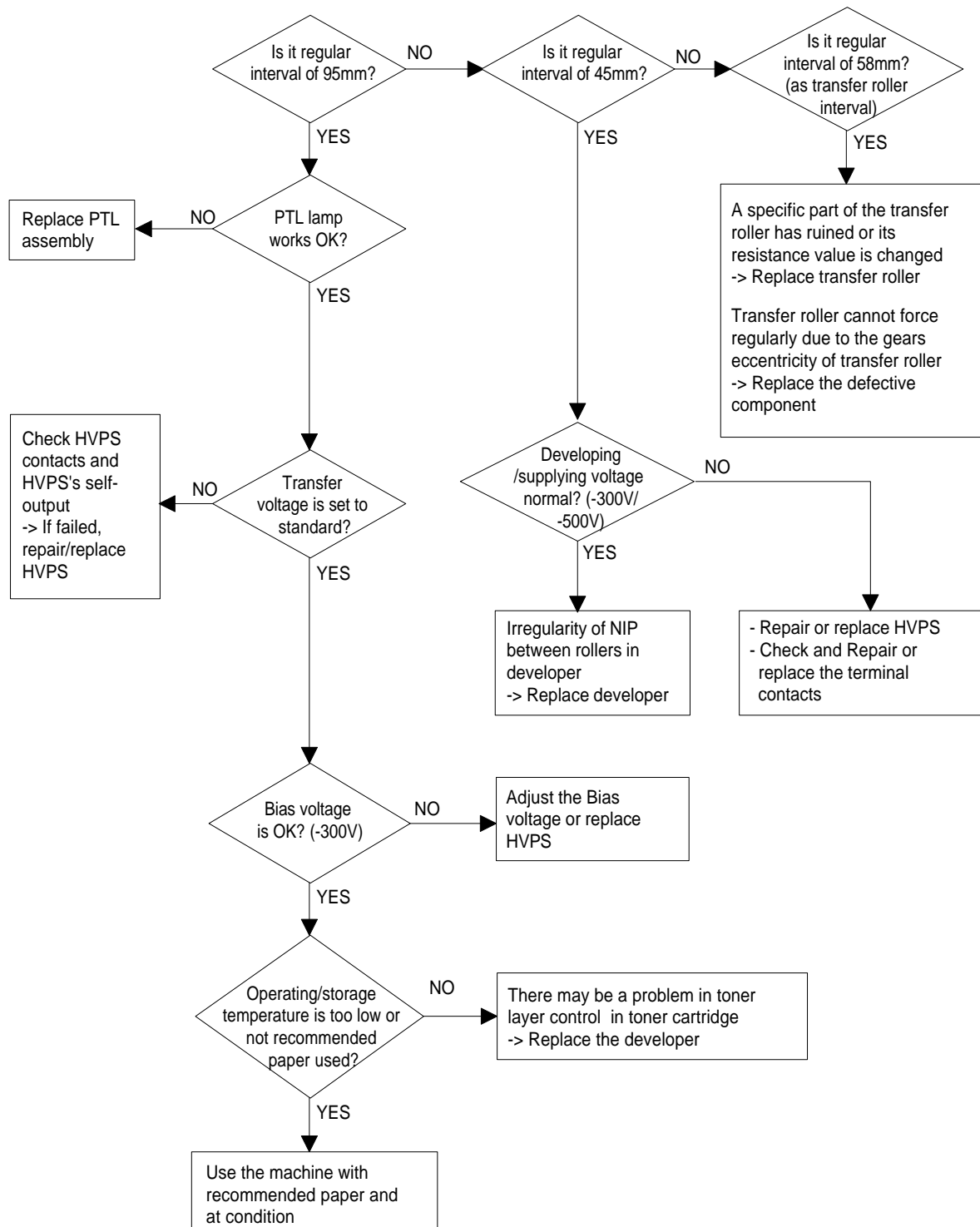
## Background

Digital Printer  
Digital Printer  
Digital Printer  
Digital Printer  
Digital Printer

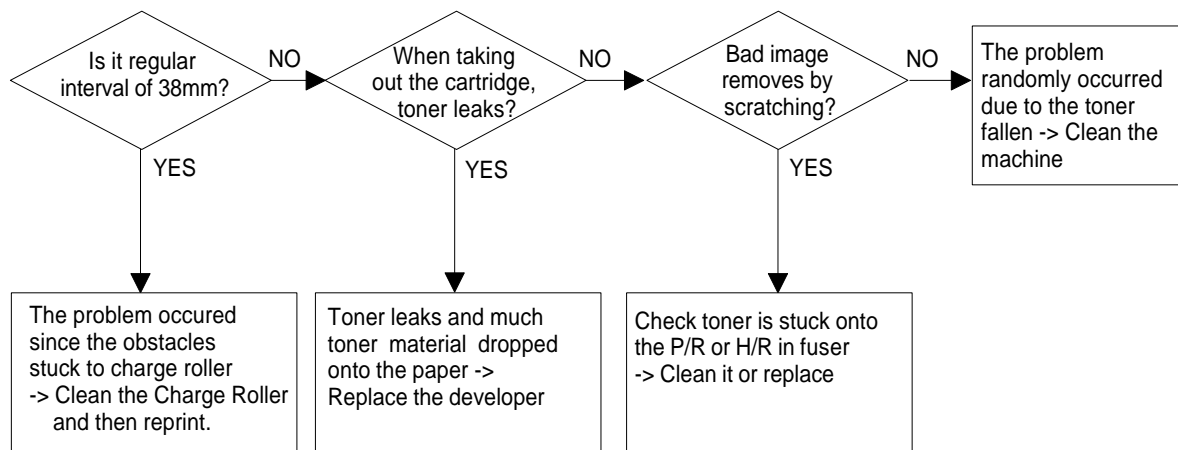


# Ghost

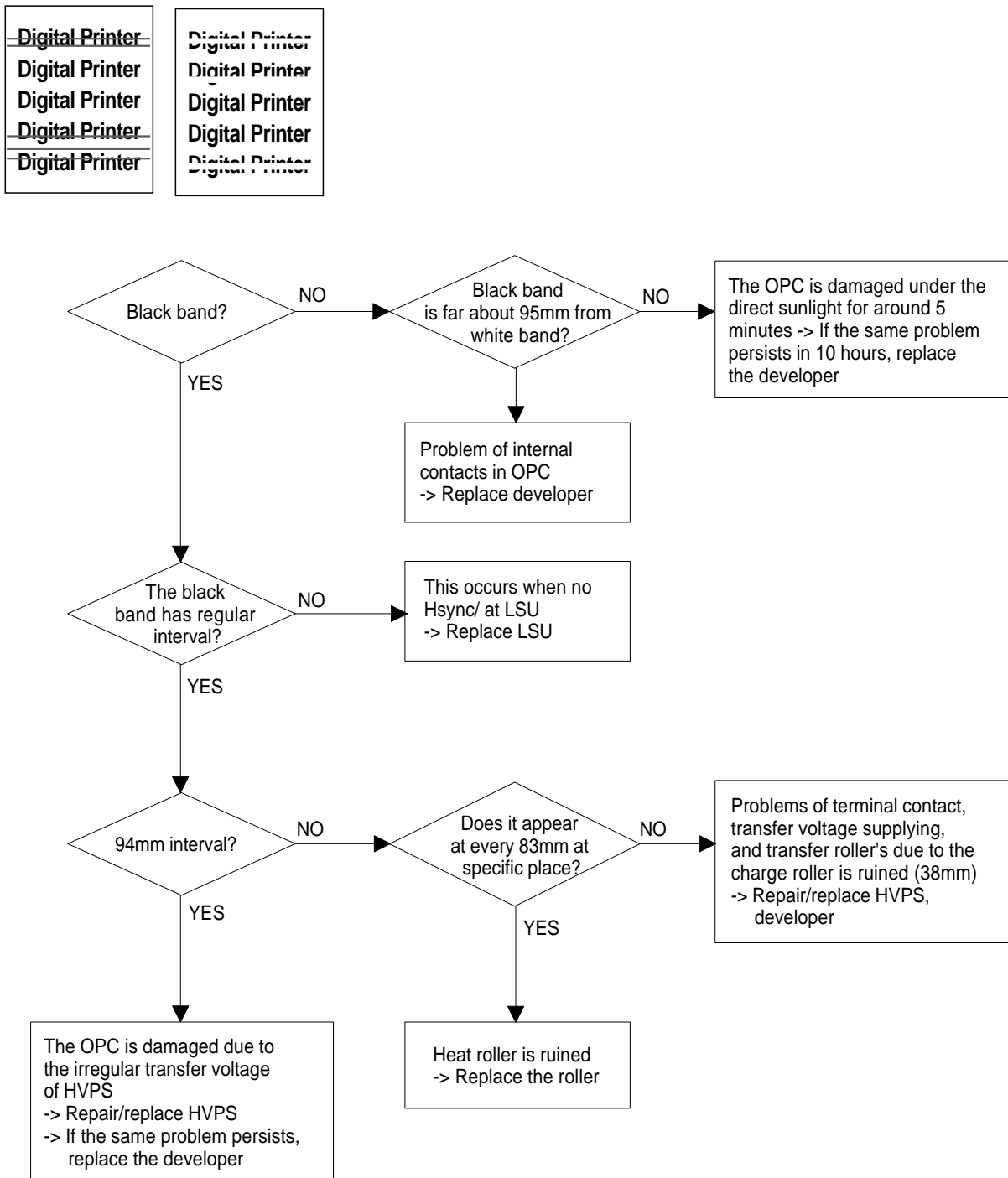
Digital Printer  
Digital Printer  
Digital Printer  
Digital Printer



## Black Spot

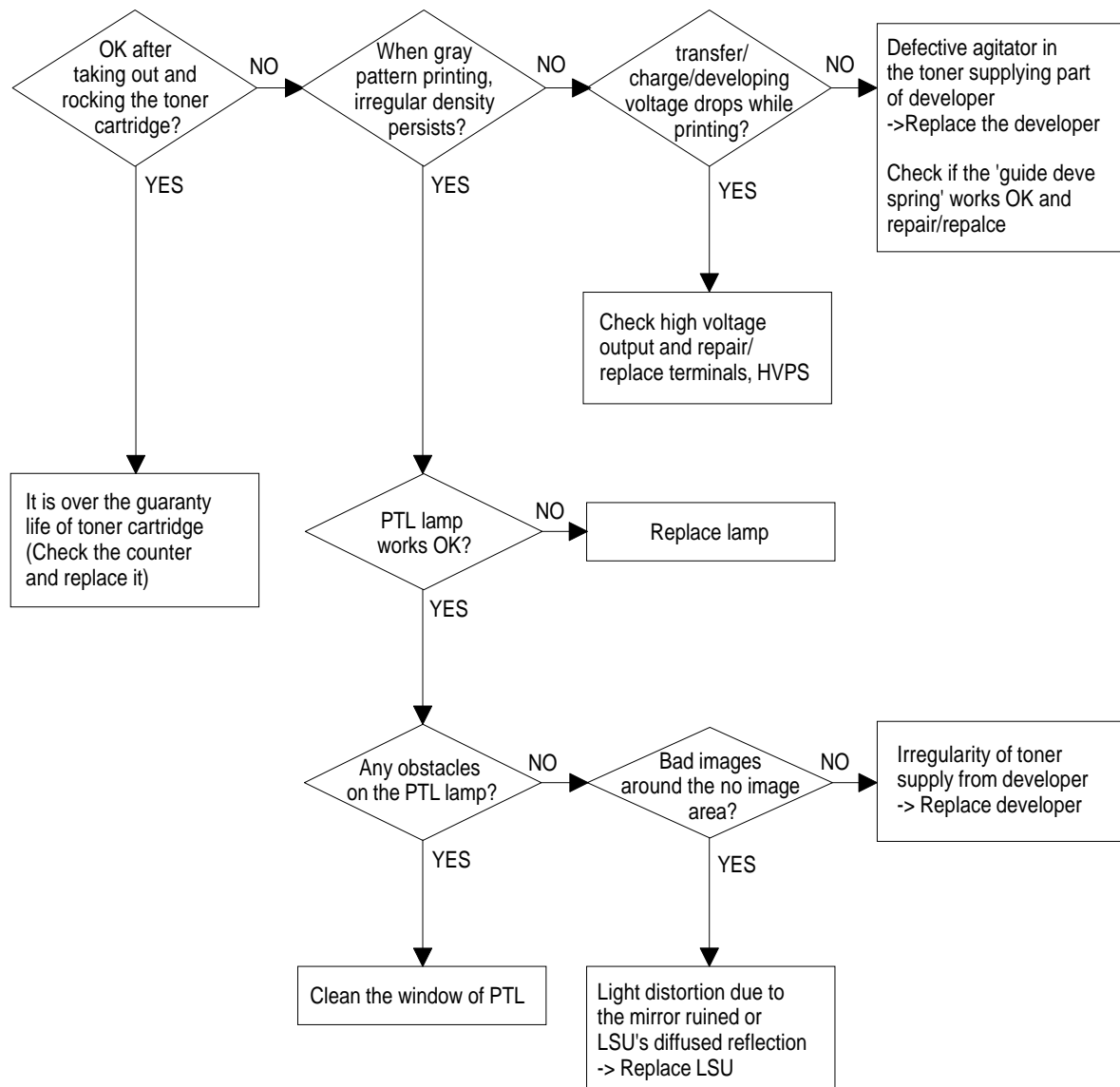


## Horizontal Band



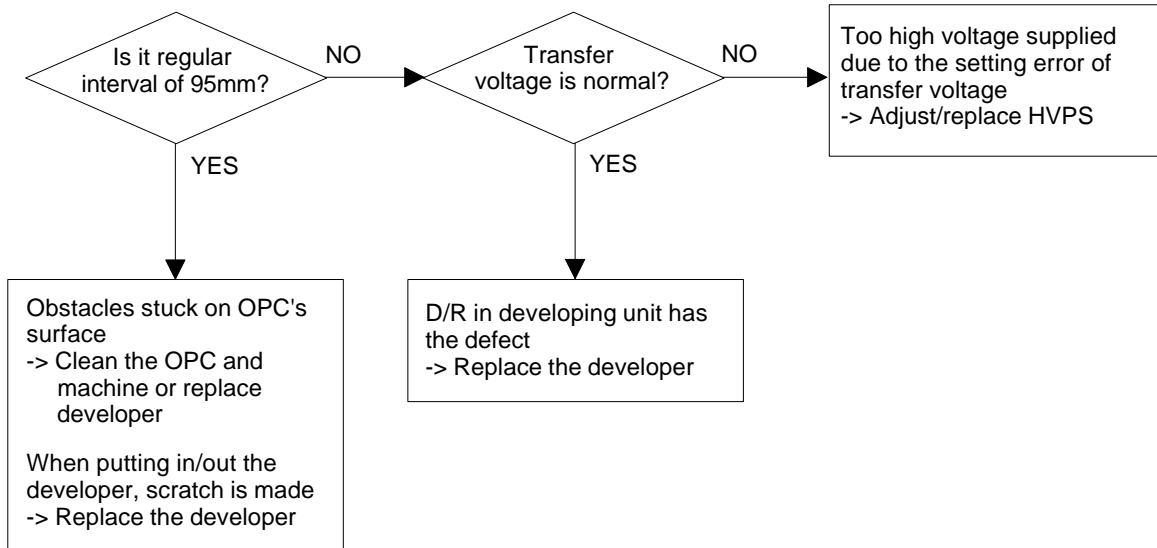
## Irregular Density

Digital Printer  
Digital Printer  
Digital Printer  
Digital Printer  
Digital Printer

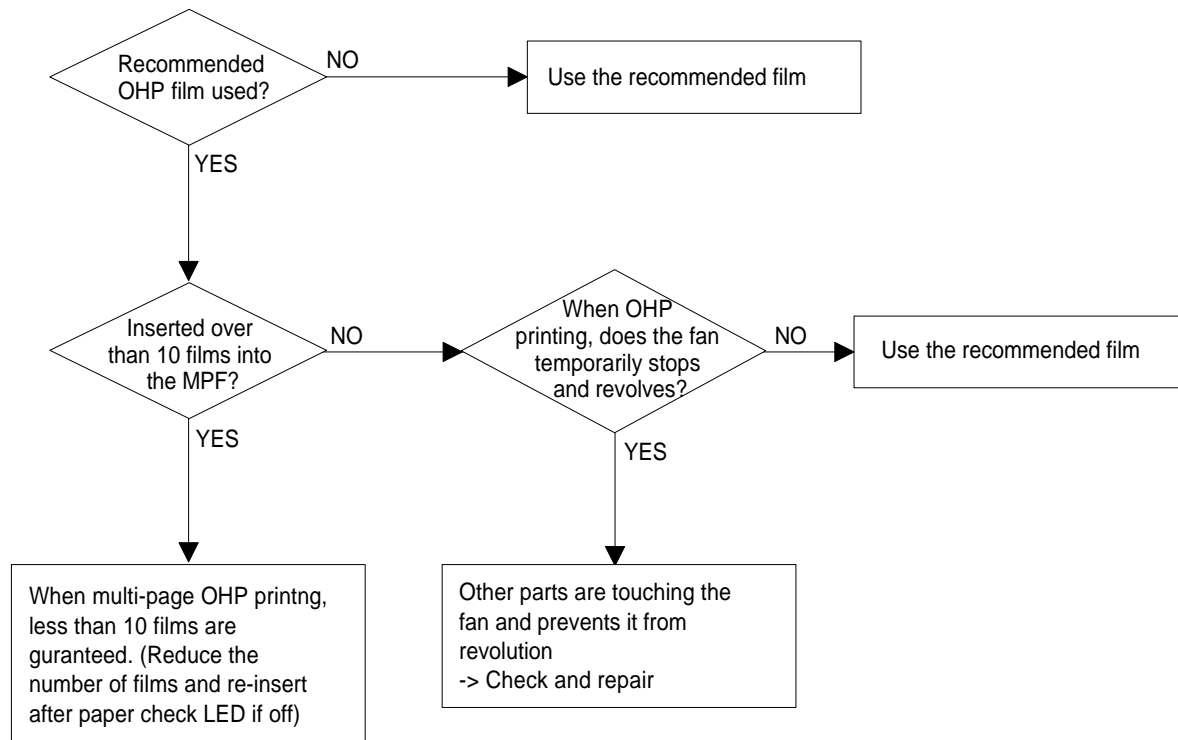


# White Spot

Digital Printer  
Digital Printer  
Digita. Printer  
D.gi.a. Printer  
Digital Printer

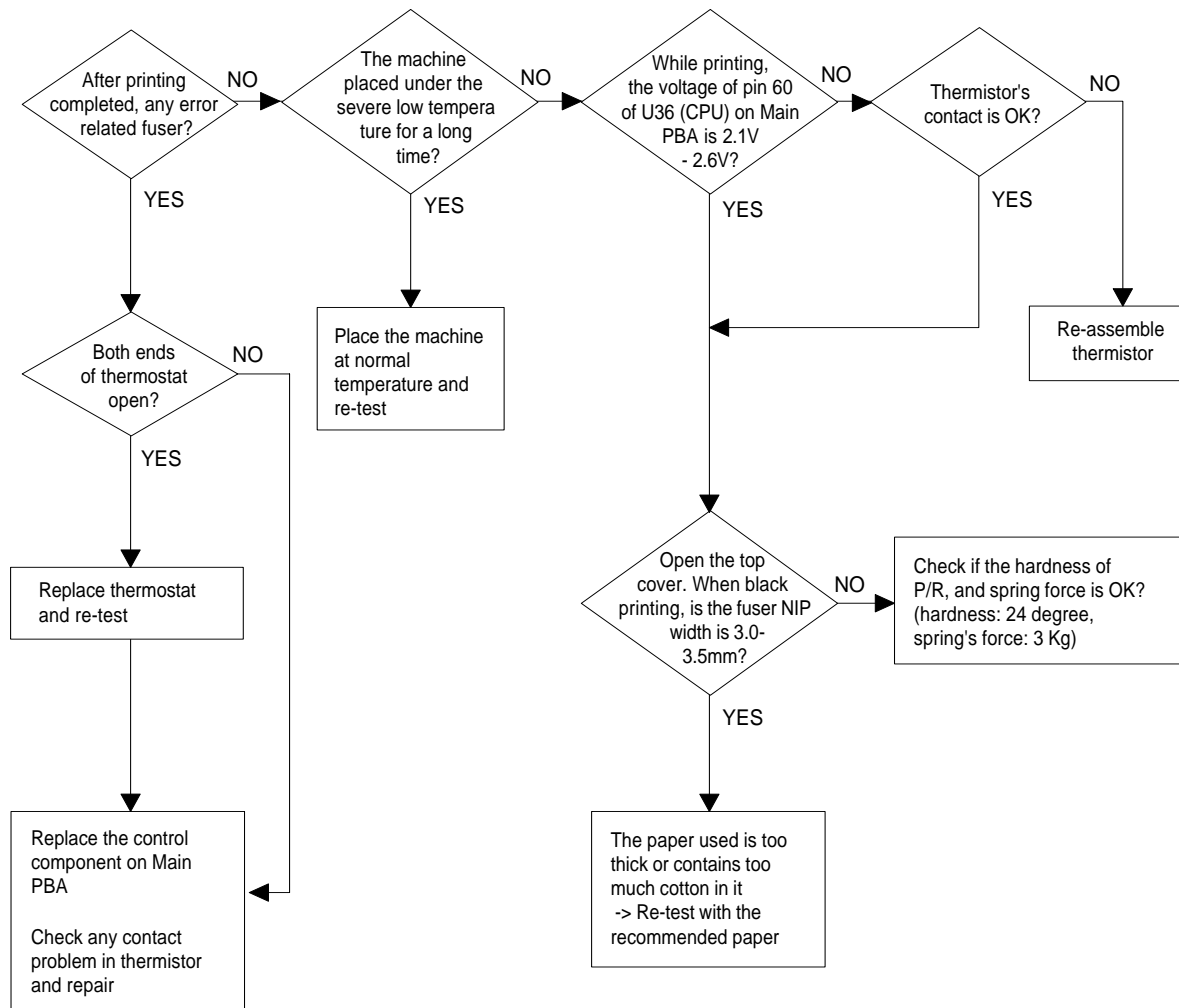


## Trembling at the End When OHP Printing





# Poor Fusing Grade

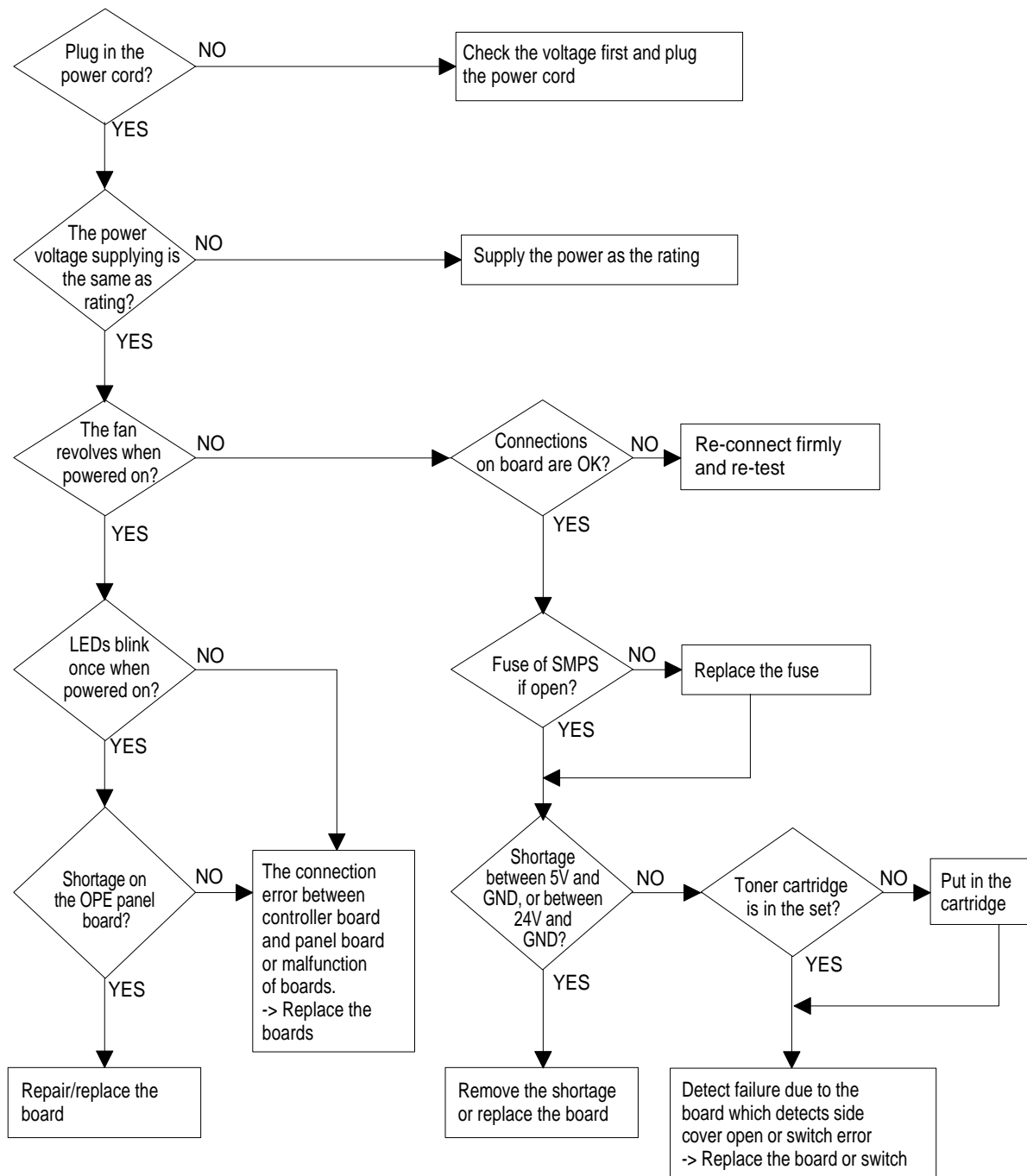


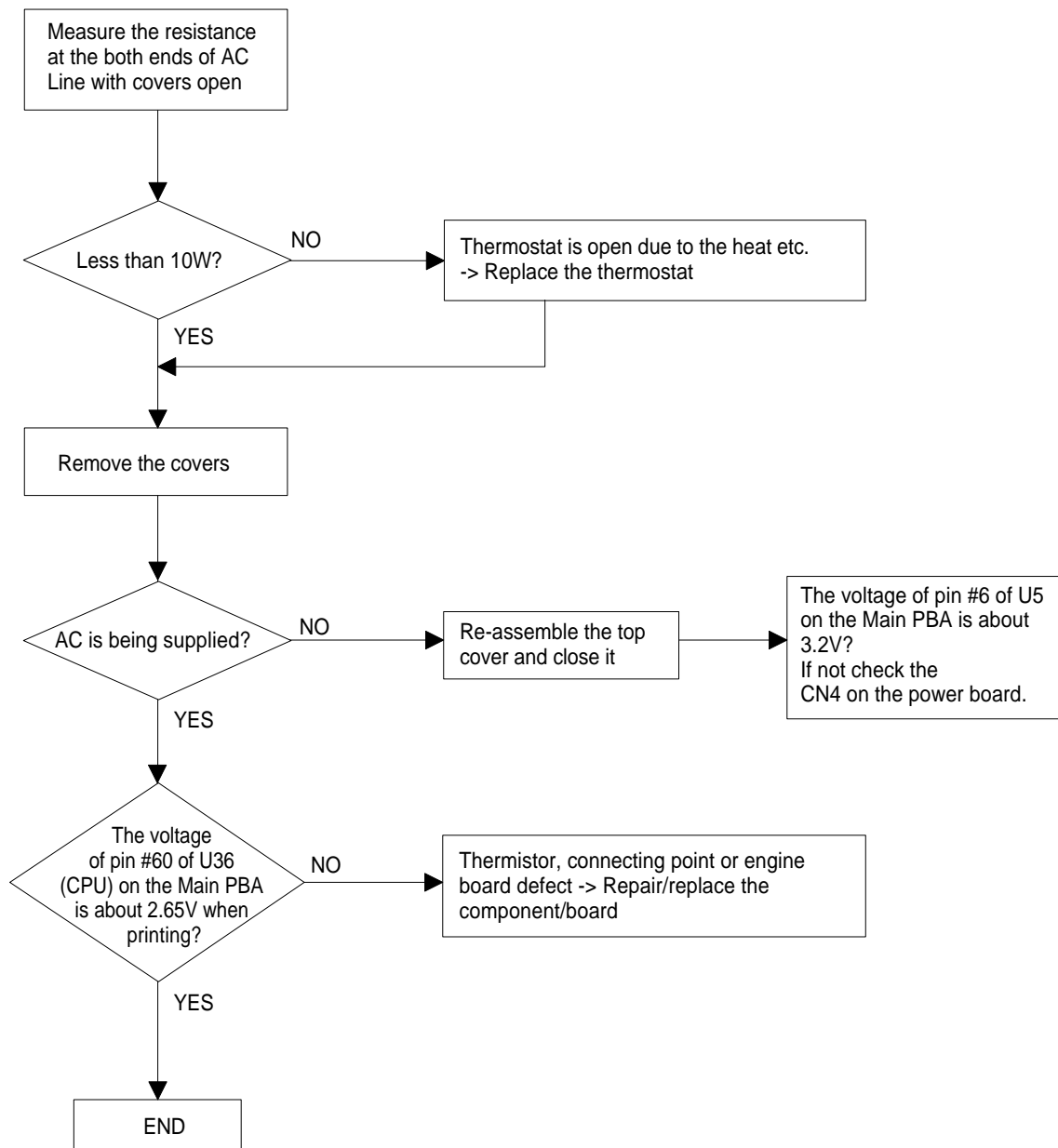
## 4-6-4 Malfunction

Error Status	Check	Solution
No power	<ol style="list-style-type: none"> <li>1. Check power is supplying</li> <li>2. Check fuse F1 open</li> </ol>	<ol style="list-style-type: none"> <li>1. If supplying power differs from machine's power rating, replace the machine.</li> <li>2. Replace it.</li> </ol>
Fuser Error	<ol style="list-style-type: none"> <li>1. Thermostat open</li> <li>2. AC wire open</li> <li>3. Thermistor wire open</li> <li>4. Main PBA</li> </ol>	<ol style="list-style-type: none"> <li>1. Detach AC connector and measure the resistance between pin 1 and 2. If it is megohm, thermostat is open, Replace it.</li> <li>2. Check bad connector contact or wire is cut.</li> <li>3. Check thermistor wire and its connection.</li> <li>4. Replace Main PBA</li> </ol>
Cover open	<ol style="list-style-type: none"> <li>1. When close Side cover, check the lever is pressed</li> <li>2. Micro switch's contact</li> <li>3. CPU and related circuit</li> </ol>	<ol style="list-style-type: none"> <li>1. Open Side cover and press the lever with pen. If Controller detects cover close, there is some mechanical trouble in Side cover and lever's assembly. If not so there is electrical problem.</li> </ol>
Jam 0	<p>Check where Jam 0 happens</p> <ol style="list-style-type: none"> <li>1. Paper is not picked up</li> <li>2. Paper is located in feed sensor</li> <li>3. Happened when inserting specific papers such as envelope into the MPF (Multipurpose Paper Feeder)?</li> <li>4. Happened when inserting specific papers such as envelope into the Manual Feeder?</li> <li>5. Is the Stacker Extender is folded out?</li> <li>6. Does not the Guide Adjust distort the papers</li> </ol>	<ol style="list-style-type: none"> <li>1. Check whether solenoid is working or not by using Engine test mode</li> <li>2. Check feed sensor malfunction.</li> <li>3. Re-try inserting a few papers. <ul style="list-style-type: none"> <li>•fan the papers and align</li> <li>•take out the loaded papers and insert them reverse direction</li> </ul> </li> <li>4. Take out the loaded papers and insert them reverse direction <ul style="list-style-type: none"> <li>•inserted papers as recommended for Manual Feeding? <ul style="list-style-type: none"> <li>•When loading, tap the papers until paper detect sensor senses loading</li> </ul> </li> </ul> </li> <li>5. When using long papers, use the Stacker Extender</li> <li>6. Adjust Guide to fit the paper width</li> </ol>
Jam 1	<p>Paper is stopped in just after of fuser unit.</p>	<ol style="list-style-type: none"> <li>1. It is mostly resulted from double feeding. Check paper is well stocked in feeder.</li> <li>2. Check feed actuator position and actuator's operating. There may be stiff moving or double reflection. If not so, check the operation of feed sensor by Engine test mode.</li> <li>3. Check exit lever operation. Remove jam and check actuator moving by hand. If actuator is too stiff, paper is wrapped around the heat roller. Remove obstacles or replace.</li> </ol>
Jam 2	<p>Check where Jam 2 happens</p> <ol style="list-style-type: none"> <li>1. Paper is curled and cannot exit.</li> <li>2. Paper is curled in the exit cover?.</li> </ol>	<ol style="list-style-type: none"> <li>1. Remove paper using pinset or some tool and watch if separate claws have any trouble. Clean around fuser.</li> <li>2. Check locking works well. Watch whether the ribs of exit cover have any burr or resistive edge. If they do, remove obstacles or replace.</li> </ol>

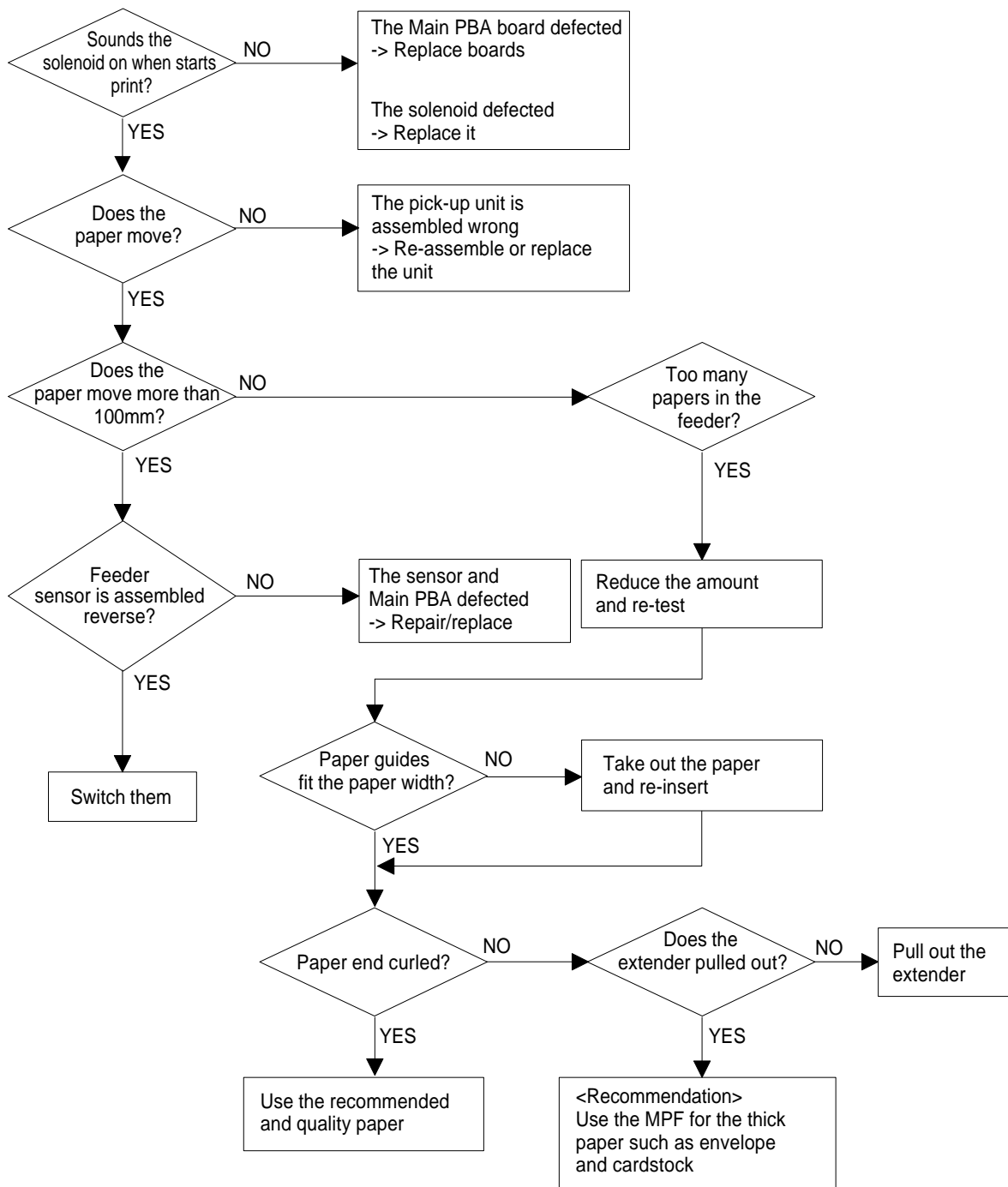
Error Status	Check	Solution
Jam 2 at face-down tray	<ol style="list-style-type: none"> <li>1. Then paper is not drawn in because of the stack of papers in the Out tray.</li> <li>2. Does it curl while coming out?</li> </ol>	<ol style="list-style-type: none"> <li>1. Load recommended quantity of papers</li> <li>2. Open the Cover Front and check whether roller or spring, which are related to paper out, is not out of position. If so, re-locate or replace.</li> </ol>
Clutch error	<ol style="list-style-type: none"> <li>1. Check the spring of solenoid</li> <li>2. Check the armature assembly/cushion</li> <li>3. Electrical check</li> </ol>	<ol style="list-style-type: none"> <li>1. Check whether the spring is expanded or not.</li> <li>2. Check armature is well installed. It may be unstable assemble.</li> <li>3. Remove the Main PBA.</li> </ol>
High voltage error	<ol style="list-style-type: none"> <li>1. Check the terminal output voltage</li> <li>2. Check HVPS</li> </ol>	<ol style="list-style-type: none"> <li>1. Remove the Toner cartridge and open the cover and press cover open switch lever and measure the voltage with high voltage probe and sending printing data. If the voltage is normal, change the toner cartridge.</li> <li>2. Disassemble the left side cover, and check HV of the solder side of HVPS and change it.</li> </ol>
Feeding obstacles	Does the Plate-knockup prevent the paper loading?	<p>MPF :</p> <p>Turn the power off and on. Open and close the Side cover to return to the original state.</p> <p>Cassette :</p> <p>Adjust Guide to fit the paper width.</p>
Skew	Is the Guide adjust set to the paper width?	Fit the paper width using the Guide adjust.
Stacking	<ol style="list-style-type: none"> <li>1. Took out the Stacker extender to support long papers?</li> <li>2. Stacked too many papers more than Stacker can hold?</li> </ol>	<ol style="list-style-type: none"> <li>1. Use extender as per the paper length.</li> <li>2. The Face-up stacker normally can hold 100 pages when using 75g/m2, however, stacking capacity can be lowered depending on the type of papers.</li> </ol>
Engine Error	Check CBF Harness_CN7. (Main PBA to LSU)	Refer to troubleshooting "ENGINE ERROR".
Document Jam	Document is not picked up(in ADF).	<ol style="list-style-type: none"> <li>1. Check document is well stocked in ADF.</li> <li>2. Check whether document was been fastened together by staple or clip.</li> <li>3. Load recommended quantity of papers.</li> </ol>
	Document is stopped after it has fed into the ADF.	<ol style="list-style-type: none"> <li>1. Check whether the Reg. sensor is working or not.</li> <li>2. Check whether the Feed Roller is working or not.</li> </ol>
	Does it curl while coming out?	<ol style="list-style-type: none"> <li>1. Check the Open Cover whether there are bosses.</li> <li>2. Check the ADF ass'y is well assemble.</li> </ol>

## No Power (LCD NO display LED Off)

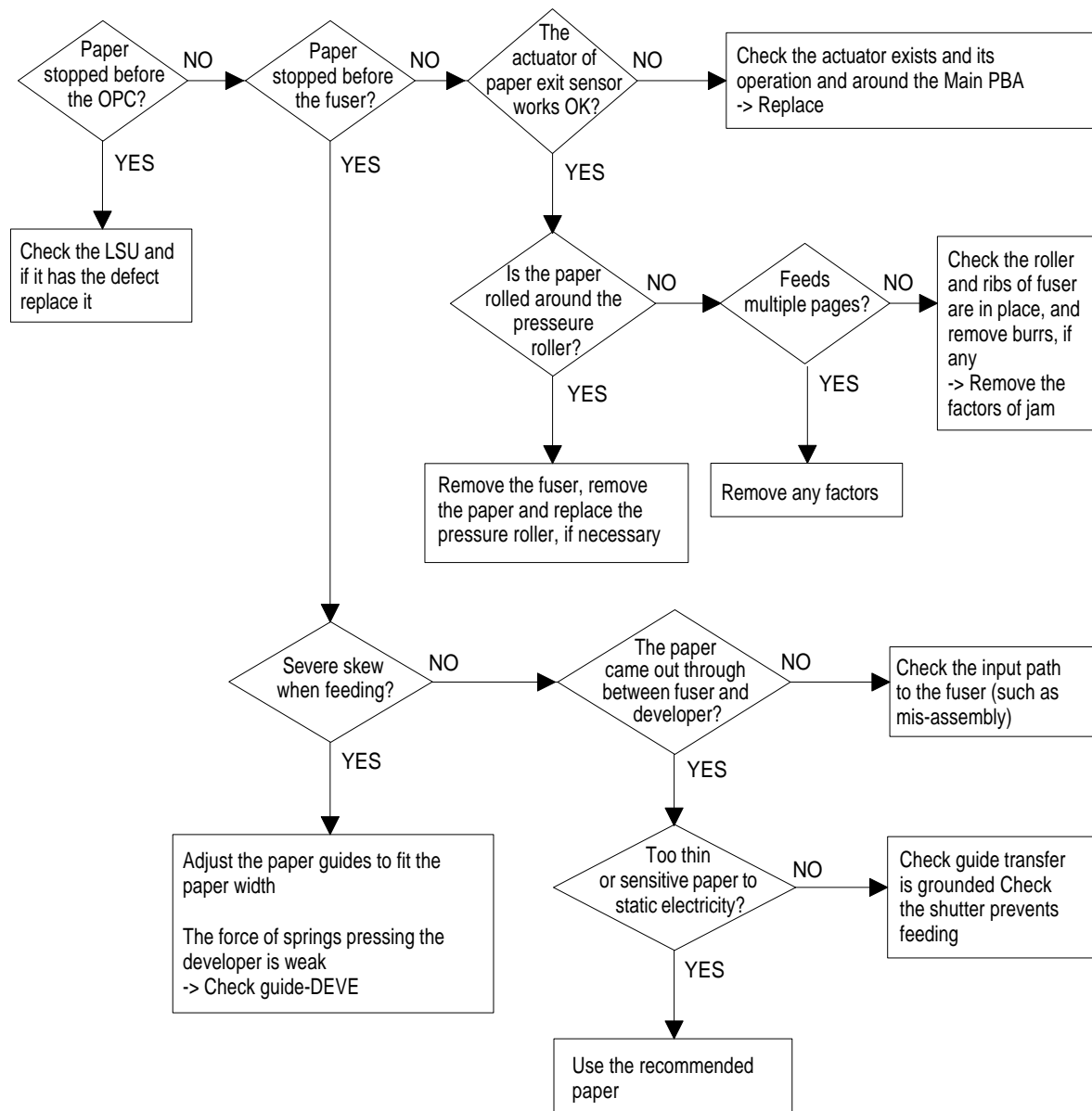


**Fuser Error**

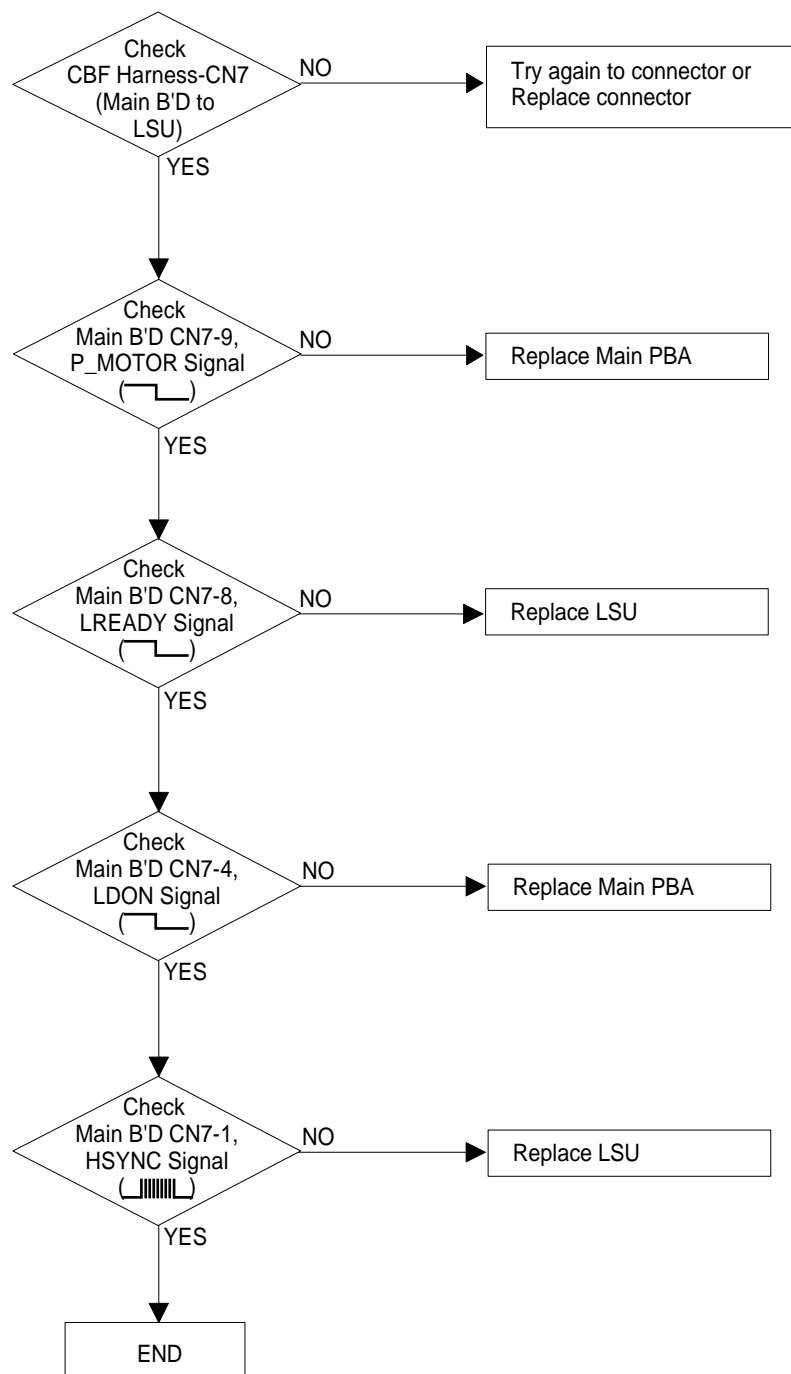
## Paper Jam (Mis-Feeding)



# Paper Jam(Jam 1)



## Engine Error





## **4-6-5 Toner Cartridge and Drum Cartridge Service**

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

### **Precautions on Safe-keeping of the Drum Cartridge**

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

### **Service for the Life of Toner Cartridge**

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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.


### **Service for Judgement of Inferior Expendables and the Standard of Guarantee**

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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.

#### 4-6-5-1 Signs and Measures at Poor toner cartridge

Fault	Signs	Cause & Check	Solution
<p>Light image and partially blank image (The life is ended.)</p> <div> <p>Digital Printer</p> <p>Digital Printer</p> <p>Digital Printer</p> <p>Digital Printer</p> <p>Digital Printer</p> </div>	<ul style="list-style-type: none"> <li>The printed image is light or unclean and untidy.</li> <li>Some part of the image is not printed.</li> <li>Periodically a noise as "tick tick" occurs.</li> </ul>	<ol style="list-style-type: none"> <li>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.</li> <li>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.</li> <li>Periodically a noise as "tick tick" occurs - Measure the cycle and the weight of the developer.</li> <li>White vertical stripes on the whole screen or partly : Check the weight of the developer.</li> </ol>	<ol style="list-style-type: none"> <li>All of 1, 2, 3 above- If it become better by shaking, replace with a new developer after 50-100 sheets in the closing state of the life span.</li> <li>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.)</li> <li>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)</li> <li>In case of 3- This is a phenomenon caused by lack of toner, so replace with a new developer.</li> </ol>
Toner Contamination	<ul style="list-style-type: none"> <li>Toner is fallen on the papers periodically.</li> <li>Contaminated with toner on prints partly or over the whole surface.</li> </ul>	<ol style="list-style-type: none"> <li>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.</li> <li>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.</li> </ol>	<ol style="list-style-type: none"> <li>If both ends of the OPC drum are contaminated with toner: Check the life of the developer.</li> <li>Check whether it could be recycled.</li> </ol>

Fault	Signs	Cause & Check	Solution
<p>White Black spot</p> 	<ul style="list-style-type: none"> <li>• Light or dark black dots on the image occur periodically.</li> <li>• White spots occur in the image periodically.</li> </ul>	<ol style="list-style-type: none"> <li>1. If light or dark periodical black dots occur, this is because the developer rollers are contaminated with foreign substance or paper particles. (1) 37.7mm interval : Charged roller (2) 94.3mm interval : OPC cycle</li> <li>2. If white spots occur in a black image at intervals of 94.3 mm, or black spots occur elsewhere, the OPC drum is damaged or foreign substance is stuck to the surface.</li> <li>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.</li> </ol>	<ol style="list-style-type: none"> <li>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.  Caution : Never use usual alcohol.</li> <li>2. In case of 2 If they are not disappeared by running OPC Cleaning Mode Print 4-5 times. : at intervals of 94.3mm - Replace the OPC Drum. : at intervals of 37.7mm - Remove foreign substance, Clean the Charged Roller : Broken image - Replace the developer according to carelessness.</li> <li>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.)</li> </ol>
<p>Recycled product</p>	<ul style="list-style-type: none"> <li>• Poor appearance of the developer.</li> <li>• Unclean and rough printouts.</li> <li>• Bad background in the image.</li> </ul>	<ol style="list-style-type: none"> <li>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.</li> <li>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.</li> </ol>	<ol style="list-style-type: none"> <li>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.</li> <li>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.</li> </ol>

Fault	Signs	Cause & Check	Solution
Ghost & Image Contamination	<ul style="list-style-type: none"> <li>• The printed image is too light or dark, or partially contaminated black.</li> <li>• Totally contaminated black. (Black image printed out)</li> </ul>	<p>1. The printed image is too light or dark, or partially contaminated black.</p> <p>(1) Check whether foreign substance or toner are stuck to the terminal (point of contact) of the developer.</p> <p>(2) Check whether the terminal assembly is normal.</p> <p>2. Totally contaminated black. (Black image printed out)</p> <p>(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.)</p>	<p>1. All of 1, 2, 3 above</p> <p>(1) Remove toner and foreign substances adhered to the contact point of the developer.</p> <p>(2) The contact point of the unit facing that of the developer also must be cleaned.</p> <p>(3) If the terminal assembly is unsafe:</p> <ul style="list-style-type: none"> <li>• Fully stick the terminal to or reassemble it after disassembling.</li> <li>• Disassemble the side plate and push the terminal to be stuck, then reassemble it.</li> </ul> <p>2. In case of 2</p> <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>

## 4-6-6 The cause and solutions of bad environment of the software

### 4-6-6-1 The printer is not working (1)

- **Description** : While Power turned on, the printer is not working in the printing mode.

Check and Cause	Solution
1. Check if the PC and the printer is properly connected and the toner cartridge installed.  2. Printing is nor working in the Windows.  3. Check if the printer cable is directly connected to peripheral devices	1. Replace the printer cable. If the problems not solved even after the cable replaced, check the amount of the remaining tone.  2. Check if the connection between PC and printer port is proper. If you use windows, check if the printer driver in the controller is set up. If the printer driver is properly set up, check in which program the printing is not working. The best way to find out is to open the memo pad to check the function of printing. If it is not working in a certain program, adjust the setup the program requires. Sometimes, the printout is normal within the Windows basic programs, but it's not working in a particular program. In such case, install the new driver again. If not working in the Windows basic program, Check the setup of the port of CMOS is on ECP. And check the address of IRQ 7 and 378  3. If the scanner needs to be connected to the printer, first the remove the scanner from the PC to see if the printer is properly working alone.

### 4-6-6-2 The printer is not working (2)

- **Description** : After receiving the printing order, no response at all or the low speed of printing occurs due to wrong setup of the environment rather than malfunction of the printer itself.

Check and Cause	Solution
1. Secure more space of the hard disk.  2. Printing error occurs even if there is enough space in the hard disk.  3. Check the parallel-port-related items in the CMOS Setup.  4. Reboot the system to print.	1. Not working with the message 'insufficient printer memory' means hard disk space problem rather than the RAM problem. In this case, provide more space for the hard disk. Secure more space using the disk utilities program.  2. The connection of the cable and printer port is not proper. Check if the connection is properly done and if the parallel port in CMOS is rightly set up.  3. As a printer port, Select ECP or SPP among SPP(Normal), ECP, and EPP modes(increase printing speed) SPP normal mode support 8-bit data transfer, while ECP Mode transfer the 12-bit data.  4. If the regular font is not printing, the cable or the printer driver may be defective. Turn the PC and printer off, and reboot the system to print again. If not solved, double-click the printer in my computer. If the regular fonts are not printed this time again. the cable must be defective so replace the cable with new one.

### 4-6-6-3 Abnormal Printing

- **Description :** The printing is not working properly even when the cable has no problem. (even after the cable is replaced) If the printer won't work at all or the strange fonts are repeated, the printer driver may be defective or wrong setup in the CMOS Setup.

Check and Cause	Solution
1. Set up the parallel port in the CMOS SETUP.	1. Select SPP(Normal) or ECP LPT Port the among ECP, EPP or SPP in the CMOS Setup.
2. Printer Driver Error.	2. Check the printer in My Computer.(to see if the printer driver is compatible to the present driver or delete the old driver, if defective and reinstall the new driver)
3. Error message from insufficient memory. (The printing job sometimes stops or due to insufficient virtual memory, but it actually comes from the insufficient space of the hard disk.)	3. Delete the unnecessary files to secure enough space of the hard disk and start printing job again.

### 4-6-6-4 SPOOL Error

- **Description :** To spool which stands for "simultaneous peripheral operations online" a computer document or task list (or "job") is to read it in and store it, usually on a hard disk or larger storage medium so that it can be printed or otherwise processed at a more convenient time (for example, when a printer is finished printing its current document).

Check and Cause	Solution
1. Insufficient space of the hard disk in the directory assigned for the basic spool.	1. Delete the unnecessary files to provide more space to start printing job.
2. If the previous printing error not solved.	2. If there are some files with the extension name of ****.jnl, Delete them and Reboot the Windows to restart printing job.
3. When expected to collide with other program.	3. Shut down all other programs except the current one, if possible.
4. When an application program or the printer driver is damaged.	4. Delete the printer driver completely and reinstall it.
5. When some files related to OS are damaged or virus infected.	5 After rebooting the computer, check for viruses, restore the damaged files and reinstall the program to do the printing job.
6. Memory is less than suggested one.	6. Add up enough memory to the PC.

#### How to delete the data in the spool manager.

In the spool manager, the installed drivers and the list of the documents waiting to be printed are shown. Select the document to be deleted and check the delete menu.

If you intend to delete the current document being printed, the data being transferred to the printer will be put out and then the document is removed. Before choosing the document, the menu is still inactive.

Or put the document out of the list and repeat the routine as in the above or finish the spool manager.