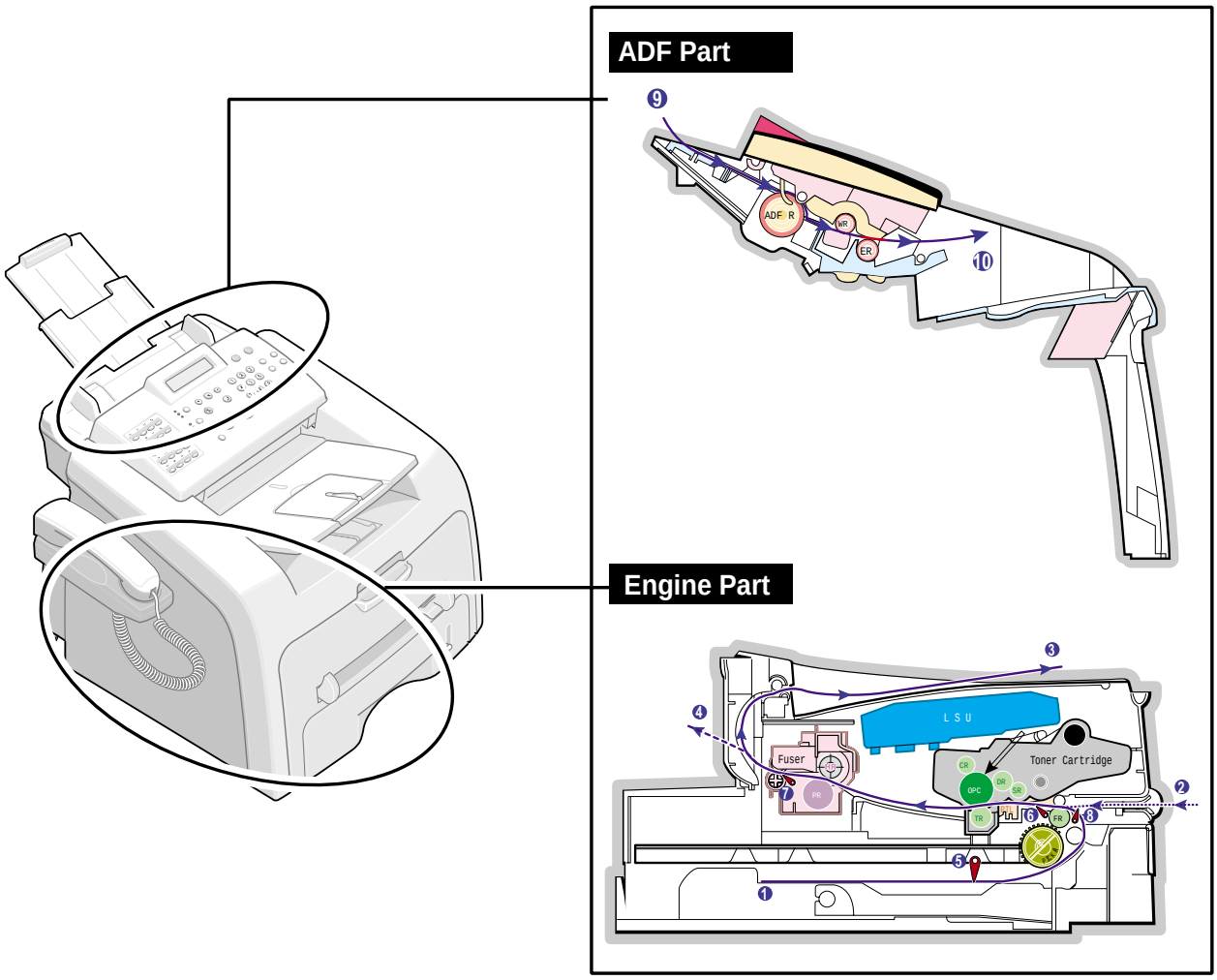
6. Alignment and Adjustments

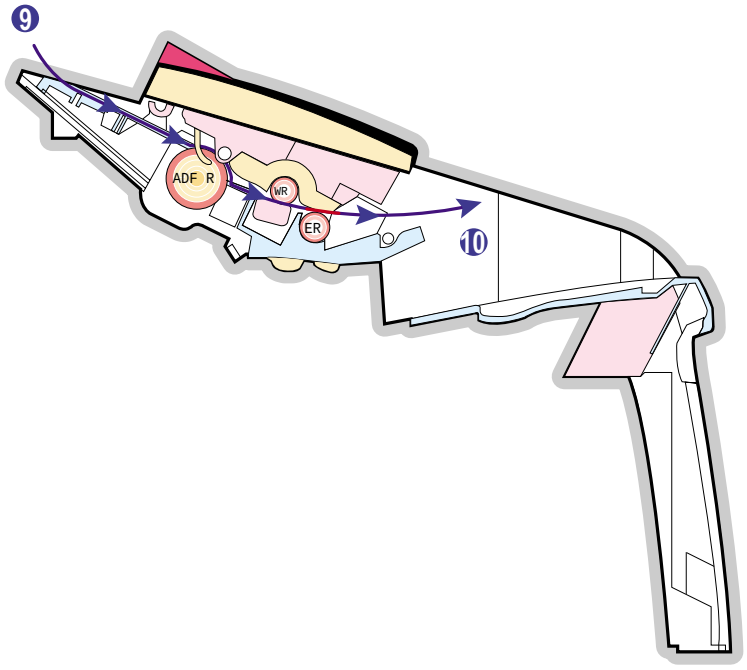
This chapter describes some of the main service procedures including:
Using the EDC mode; Clearing paper jam and test patterns.
Much of this chapter is also included in the user's guide.

6.1 Paper path



6.1.1 Copy & Scan Document Path

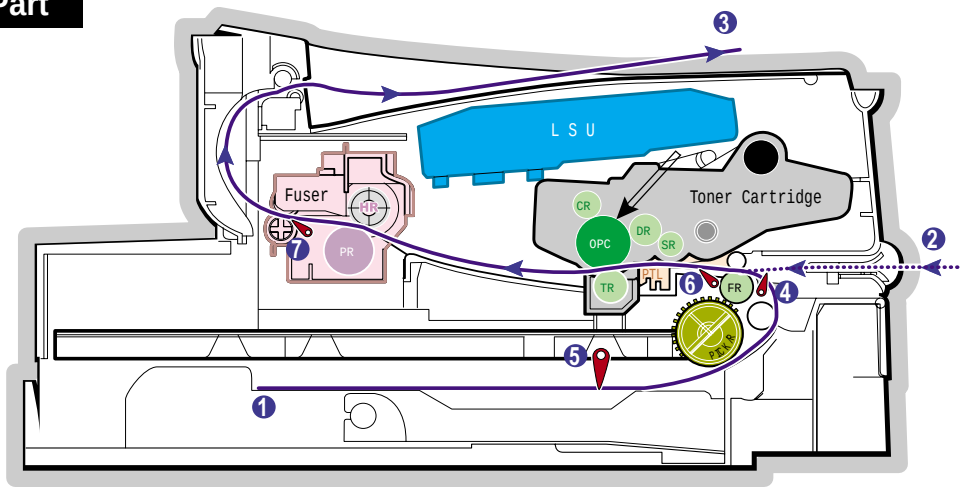
ADF Part



6.1.2 Printer Paper Path

1) After receiving print job the printer feeds printing paper from the cassette or manual feeder.
2) The fed paper passes the paper feeding sensor. (Jam 0 occurs if the sensor is not operated within a certain time)
3) After passing the feed sensor the paper passes through the print process to the paper exit sensor. (Jam 1 occurs if the sensor is not operated by the paper's leading edge within a certain time)
4) After passing the exit sensor paper exits from the set. (Jam 2 occurs if the trailing edge of the paper does not pass the exit sensor within a certain time)

Engine Part



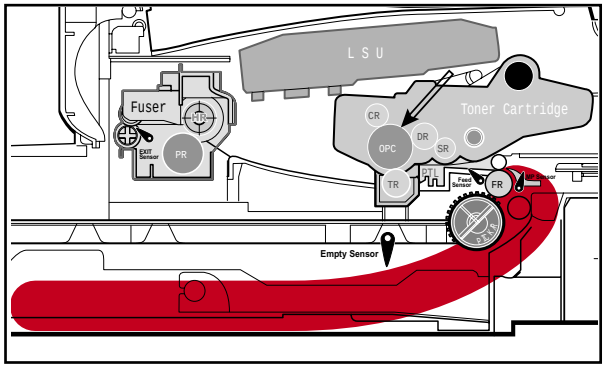
1. Paper Input (Cassette)
2. Paper Input (Manual Feed)
3. Paper Out (Face Down)
4. Paper Empty Sensor (Manual)
5. Paper Empty Sensor (Cassette)
6. Paper Feed Sensor
7. Paper Exit Sensor

6.2 Clearing Paper Jams

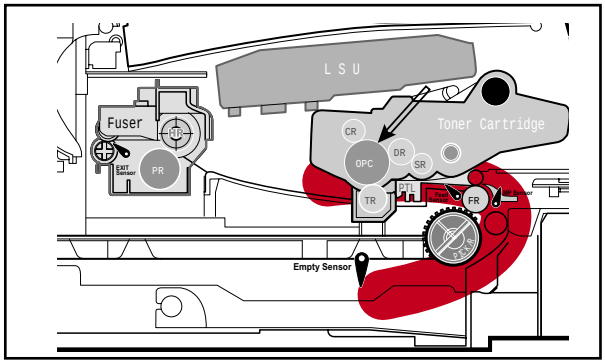
Occasionally paper can become jammed during a print job. Some of the causes include:

- The tray is loaded improperly or overfilled.
- The tray has been pulled out during a print job.
- The front cover has been opened during a print job.
- Paper was used that does not meet paper specifications.
- Paper that is outside of the supported size range was used.

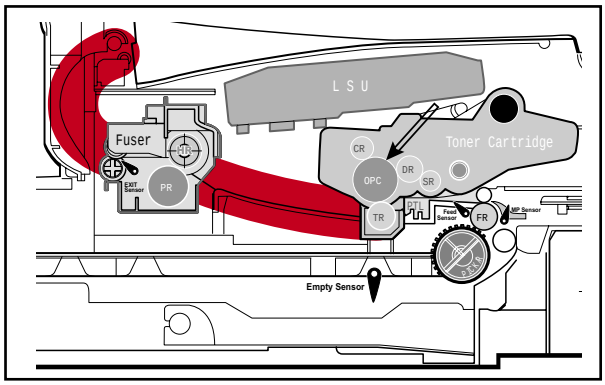
If a paper jam occurs the On Line/Error LED on the control panel lights red. Find and remove the jammed paper. If you don't see the paper, open the covers.
Do not use a tweezers, pincers or other metal tools when removing a jam.
This could damage the internal mechanism causing print quality problems or possibly electrical shock..



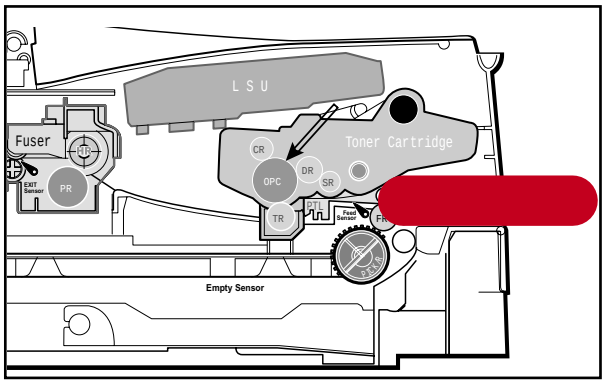
Paper Jam0



Paper Jam1



Paper Jam2



Bypass Jam

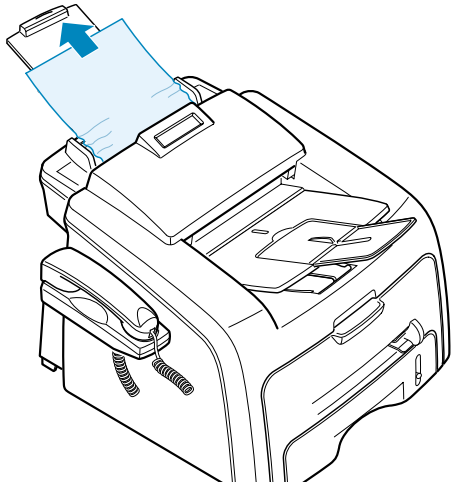
6.2.1 Clearing Document Jams

When a document jams while passing through the ADF (Automatic Document Feeder) "Document Jam" appears on the display.

6.2.1.1 Input Misfeed

1) Remove the remaining documents from the ADF.

2) Pull the jammed document gently out of the ADF.



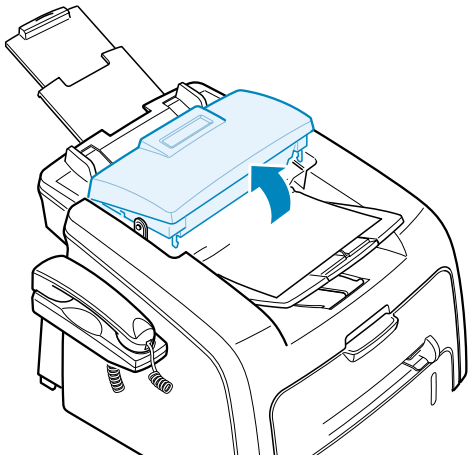
3) Load the documents back into the ADF.

NOTE :To prevent document jams do not use thick, thin or mixed documents.

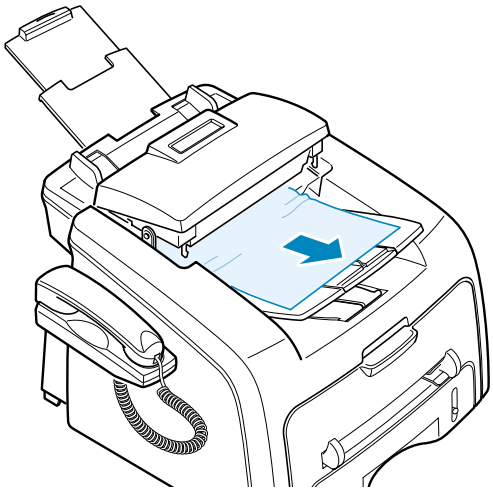
6.2.1.2 Exit Misfeed

1) Remove the remaining documents from the ADF.

2) Open the control panel by gripping its lower front edge and lifting gently.



3) Pull the document gently out of the ADF.



4) Close the control panel, then load the documents back into the ADF.

6.2.2 Clearing Paper Jams

When a paper jam occurs, "Paper Jam" appears on the display. Refer to the table below to locate and clear the paper jam.

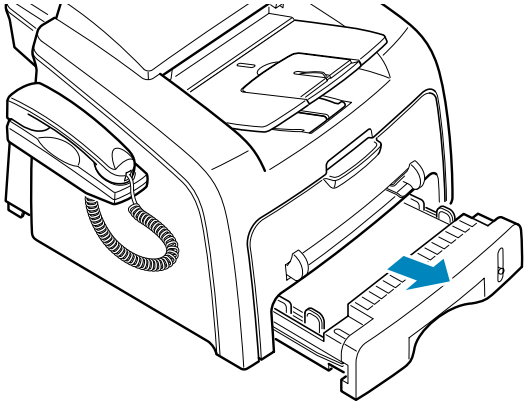
Message	Location of Jam	Go to
Paper Jam 0	In the paper tray.	page 6-3
Paper Jam 1	In the fuser area or around the toner cartridge.	page 6-3
Paper Jam 2	In the paper exit area	page 6-3
Bypass Jam	In the manual feeder	page 6-3

To avoid tearing the paper pull the jammed paper out gently and slowly. Follow the steps on the next pages to clear the jam.

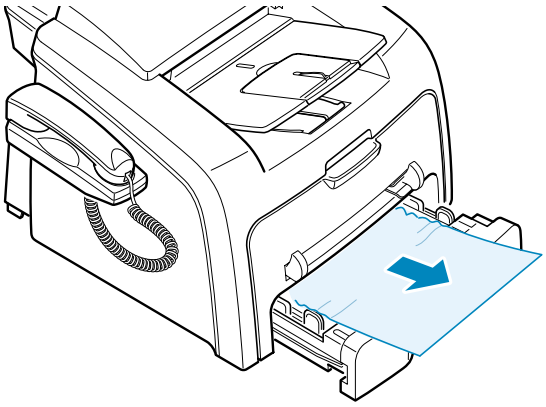
6.2.2.1 In the Paper Tray

1) Open and close the front cover. The jammed paper is automatically ejected from the machine. If the paper is not ejected continue to step 2.

2) Pull the paper tray open.



3) Remove the jammed paper by gently pulling it straight out.



If there is any resistance and the paper does not move when you pull or if you cannot see the paper in this area, skip to the fuser area around the toner cartridge. See page 6-10

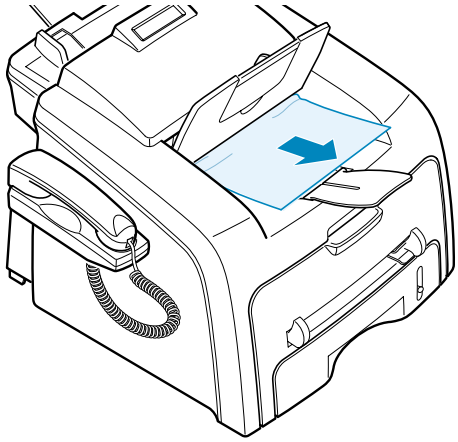
4) Insert the paper tray into the machine until it snaps into place.

5) Open and close the front cover to resume printing.

6.2.3 In the Paper Exit Area

1) Open and close the front cover. The jammed paper is automatically ejected from the machine. If the paper is not ejected continue to step 2.

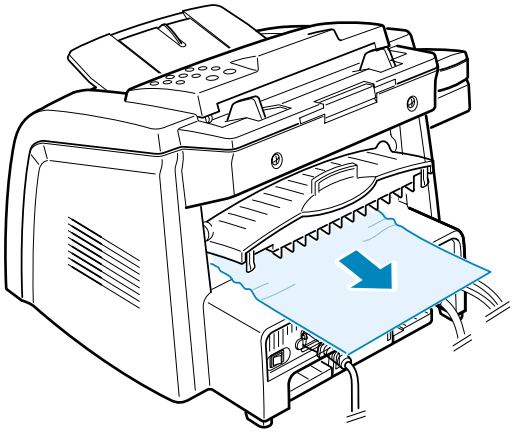
2) Gently pull the paper out of the front output tray. Skip to step 6.



If there is any resistance and the paper does not move when you pull or if you cannot see the paper in the front output tray continue to step 3.

3) Open the rear cover.

4) Remove the jammed paper by gently pulling it straight out.



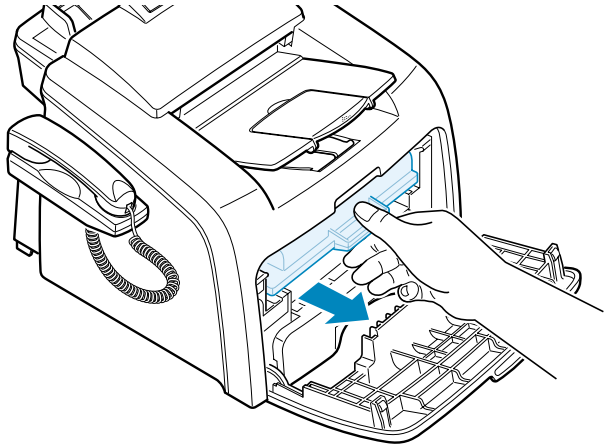
5) Close the rear cover.

6) Open and close the front cover to resume printing.

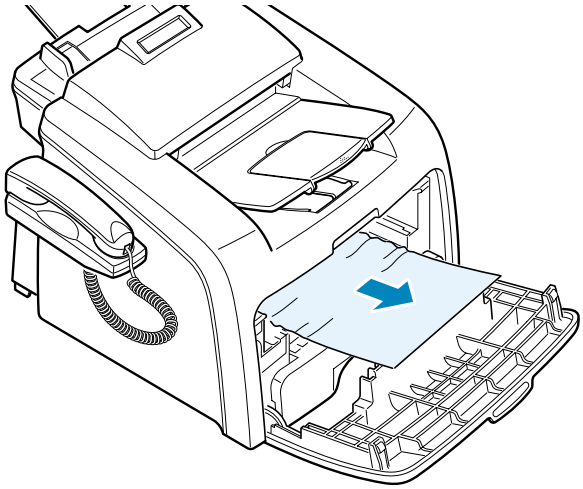
6.2.4 In the Fuser Area or Around the Toner Cartridge

NOTE :The fuser area is hot. Take care when removing paper from the machine.

1) Open the front cover and lightly push down on the cartridge then pull to take it out.



2) Remove the jammed paper by gently pulling it straight out.

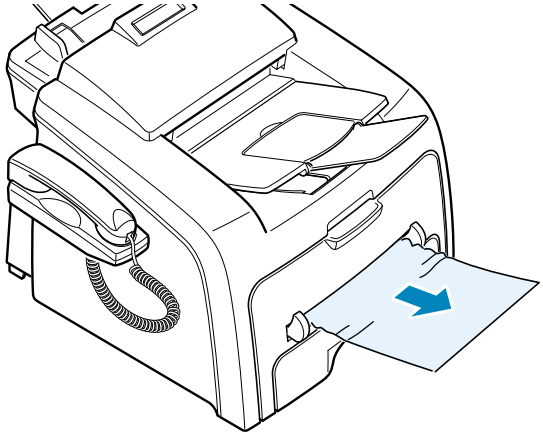


3) Replace the toner cartridge and close the front cover.
Printing automatically resumes.

6.2.5 In the Bypass Tray

"Bypass Jam" appears on the display when you try to print using the manual feeder and the machine does not detect paper due to no paper or improper paper loading.

The error message may also occur when the paper is not properly fed into the machine through the manual feeder. In this case pull the paper out of the machine.



6.2.6 Tips for Avoiding Paper Jams

By selecting the correct paper types most paper jams can be avoided. When a paper jam occurs follow the steps outlined in page 6-10

• Follow the procedures on page 6-10 when you load paper. Ensure that the adjustable guides are positioned correctly.

• Do not overload the paper tray. Ensure that the paper is below the paper capacity mark on the inside wall of the paper tray.

• Do not remove the paper from the tray while your machine is printing.

• Flex, fan and straighten the paper before loading.

• Do not use creased, damp or highly curled paper.

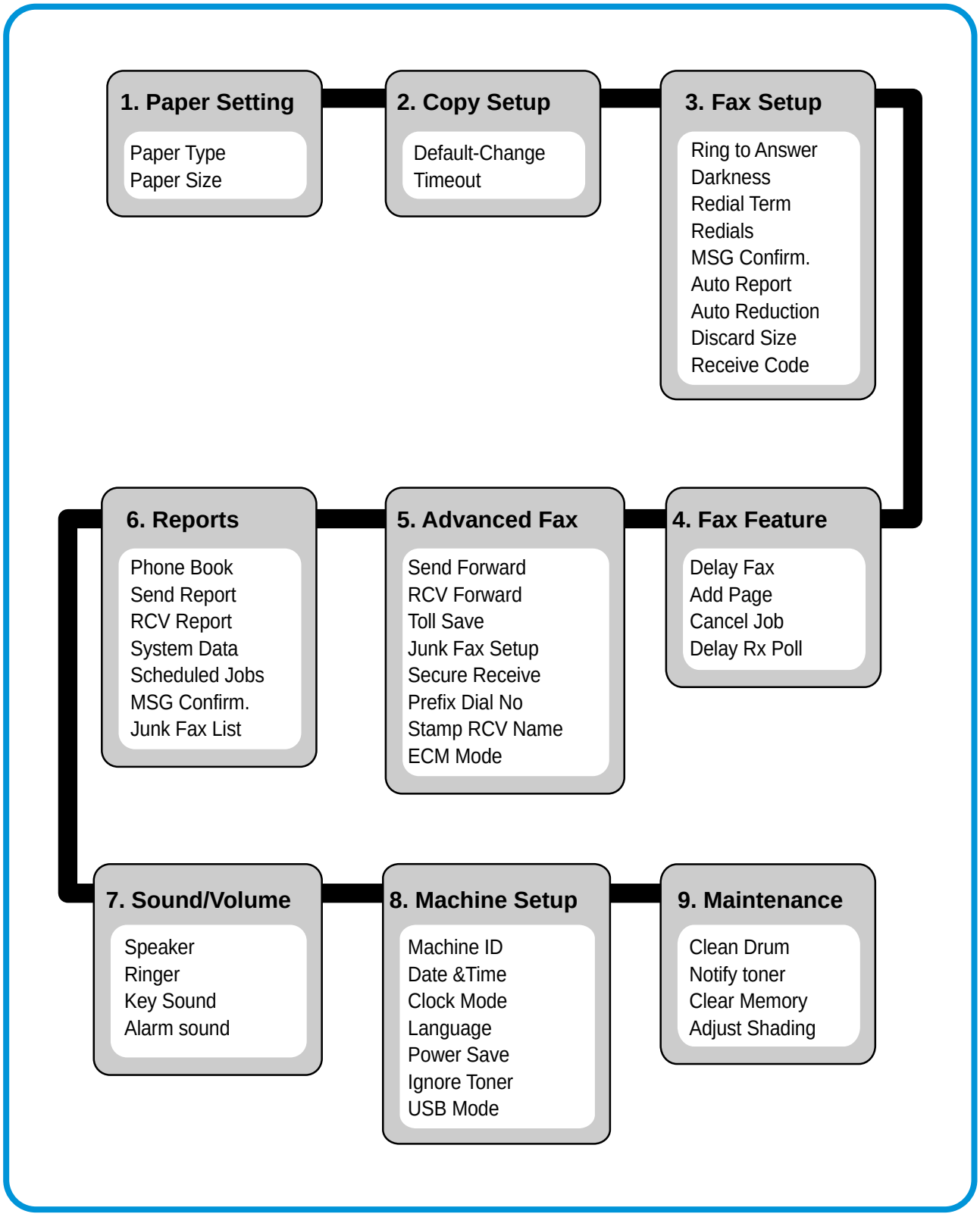
• Do not mix paper types in the paper tray.

• Use only recommended print materials. See "Paper Specifications" in the user manual.

• Ensure that the print side of print materials is facing down in the paper tray and facing up in the Bypass tray.

6.3 User Mode(SF-565P)

The table below shows the map of User settings available in User Mode. These are fully described in the User Guide and are not included here.



6.4 Tech Mode

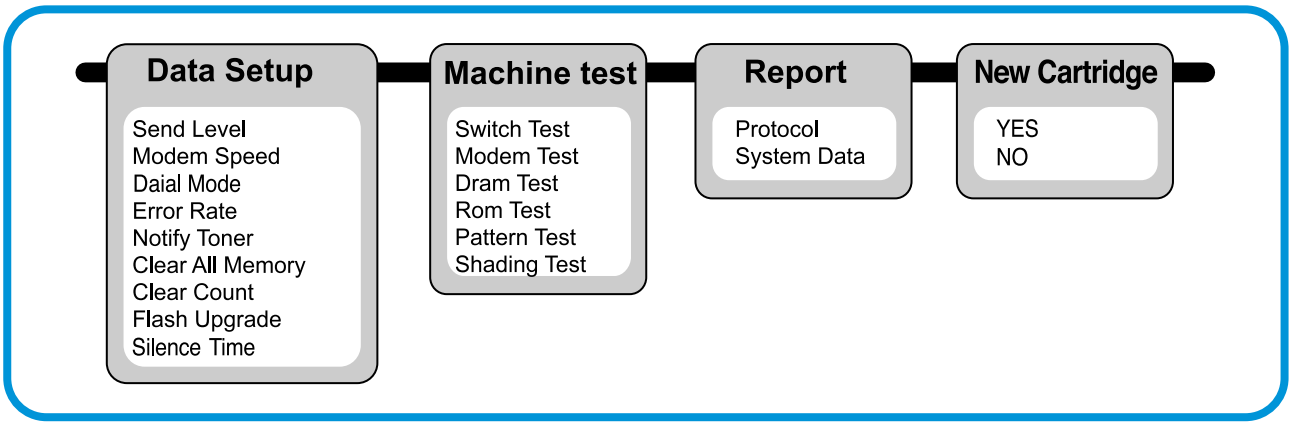
6.4.1 How to Enter Tech Mode

In service (tech) mode the technician can check the machine and perform various tests to help with failure diagnosis.
When in Tech mode the machine still performs all normal operations.

To enter the Tech mode

To enter the Tech mode press in sequence Menu → # → 1 → 9 → 3 → 4 and the LCD briefly displays 'TECH', the machine has entered service (tech) mode.

6.4.2 Tech Mode settings map



6.4.3 Data Setup

SEND LEVEL

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 to the best condition during manufacture. Never change settings arbitrarily.*

DIAL MODE

This function can choose the dialing method.
*Default : Dial (Dial/Pulse)

MODEM SPEED

You can set the maximum modem speed.
When the fax establishes communication with a remote set the value of the maximum modem speed is checked for both transmitter and receiver. The lowest value is used. It is best set at 33.6Kbps, the default setting.

ERROR RATE

When the error rate is about exceed the set value, the Baud rate automatically adjusts to 2400 bps.
This ensures that the error rate remains below the set value.
You can select the rate between 5% and 10%.

CLEAR ALL MEMORY

The function resets the system to factory default settings.
This function is used to reset the system to the initial value when the product is functioning abnormally. All the values are returned to the default values, and all the information which was set by the user will be erased.

< Method >

1. Select the [MEMORY CLEAR] in TECH MODE.
2. Push the ENTER button.
3. Select your country. (There are four country groups. Refer to the table below.)
4. Push the ENTER button then it will clear all memory.

NOTICE : *Always perform a memory clear after replacing the main board, otherwise the system may not operate properly.*

Country Group	USA/Canada	UK	Russia	South Africa
Country	USA/Canada Mexico Brazil	UK Germany France Italy Spain Austria Netherlands Belgium Portugal Sweden Norway Denmark Finland Switzerland Greece Ireland Turkey	Russia India Oman Poland Bangladesh Kuwait Morocco Algeria Pakistan UAE Bahrain Sri Lanka Saudi Arabia Chile Peru Argentina Hungary Romania Bulgaria Czech	South Africa

FLASH UPGRADE

There are 2 methods to update the Flash Rom, Local and Remote.

(1) Local Machine

• RCP (Remote Control Panel) mode

This method is for Parallel Port or USB Port. Connect the PC and activate the RCP (Remote Control Panel) to upgrade the Firmware.

< Method >

How to Update Firmware using RCP

1. Connect PC and Printer with a Parallel Cable or a USB Cable.
2. Run the RCP utility and select Firmware Update.
3. Search for the Firmware file to be used to update the set 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 download completes.
5. Click the Refresh icon and check that the updated version numbers are displayed.

• DOS Command mode

This method is ONLY for Parallel Port. Connect the PC to the set using a Parallel Cable and enter the DOS Command to upgrade the firmware.

< Method >

1. First of all you need the following files : down.bat, down_com.bin, fprt.exe, and Rom File: (file name for upgrade). Ensure you save ALL of these files in the same folder.
2. At the DOS prompt enter the correct command (as shown below) and push the enter key. Then the upgrade will automatically take place..
3. There are two commands use the correct one depending on the condition of the set..
   * When the product is in the idle condition
     down "rom file"
   * When the product is in Ready condition
     (TECH MODE --> DATA SETUP --> FLASH UPGRADE --> LOCAL)
     fprt "rom file"
4. Do not turn off the power during the upgrade process.

(2) Remote FAX

It is possible to use a set that already has the latest firmware to upgrade a remote set remotely using the telephone system.

< Method >

1. On the set that has the latest firmware set it toi transmit the upgrade:-
   (TECH MODE •DATA SETUP•••• FLASH UPGRADE•••• REMOTE)
2. Enter the telephone number of the set that needs to be upgraded.
   (Several faxes can be upgrade at the same time. In this case, enter each fax number.)
3. When the enter button is pressed the set sends the firmware file by calling designated fax number.
   (Around 10~15 minutes are needed to send the file.)

< Caution >

1. The Sending and Receiving fax machines MUST be the same model.
2. The sending fax must be set up in ECM mode and the Receiving fax memory must be 100%.
   If not the function will not work.

6.4.4 Machine Test

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.

MODEM TEST

Use this feature to hear various transmission signals to the telephone line from the modem and to check the modem, amplifier and speaker. If no transmission signal sound is heard, it means the modem part of the main board, amplifier, speaker or speaker harness is faulty.

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 >>

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

PATTERN TEST

Using this pattern printout you can check that the printer mechanism is functioning properly.
This function is for factory manufacturing use only.

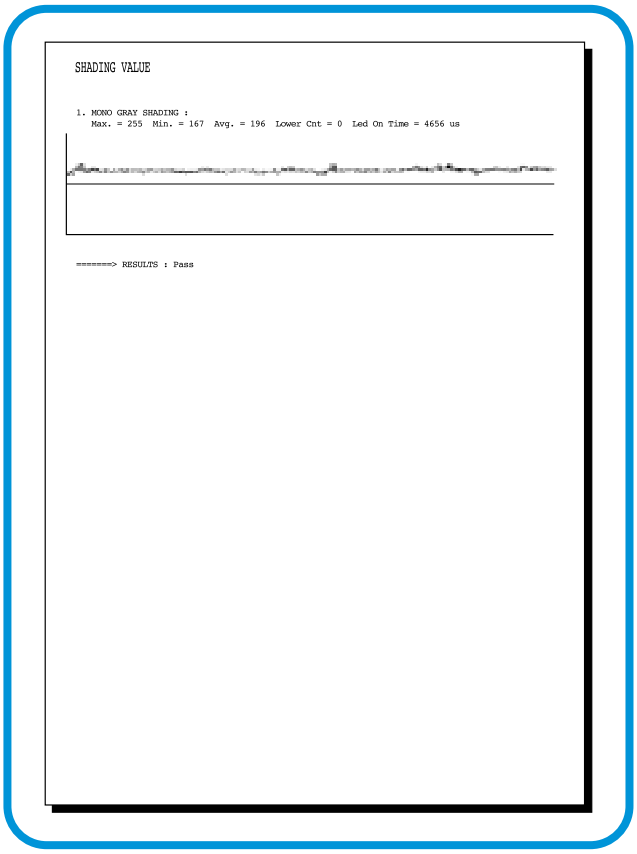
SHADING TEST

The function is used to set the optimum scan quality determined by the specific characteristics of the CIS (Contack Image Sensor). If copy image quality is poor perform this function to check the condition of the CIS unit.

< Method >

1. Select the [Shading Test] in TECH MODE(Manu, #, 1934).
2. Push the ENTER button and an image will be scanned.
3. After scanning the CIS SHADING PROFILE will be print out.
4. If the printed image is different to the sample image shown the CIS is defective.

NOTICE : *When you test the CIS, make sure that the cover is closed.*



6.4.5 Report

PROTOCOL LIST

This list shows the sequence of the CCITT group 3 T.30 protocol during the most recent sending or receiving operation. Use this list to check for send and receive errors. If a communication error occurs while the machine is in TECH mode, the protocol list will print automatically.

SYSTEM DATA

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

6.5 Engine Test Mode

The Engine Test Mode supplies useful functions to check the condition of the print engine. It tests the condition of each device and displays the result of the test on the LCD. It is divided into 5 functions (0~4), and these are shown below.

6.5.1 To enter the Engine Test Mode

To enter the Engine Test mode

Press Menu → # → 1 → 9 → 3 → 1 in sequence, and the LCD briefly displays

'Engine Test', the machine has entered Engine Test Mode.
Press "0", "1", "2", "3" or "4" to select the Test No. (see list below – left hand column)

6.5.2 Diagnostic

NO.	Sub No.	Engine test	Remark
0	1	Motor Test	1 : On, 2 : Off – next test selected
	2	Pick Up Test	1 : On, 2 : Off – next test selected
	3	Fan Test	1 : On, 2 : Off – next test selected
	4	Manual Clt Test	1 : On, 2 : Off – next test selected
	5	PTL Test	1 : On, 2 : Off – next test selected
1	1	LSU Motor Test	1 : On, 2 : Off – next test selected
	2	LSU Hsync Test	1 : On, 2 : Off – next test selected
	3	LD Test	1 : On, 2 : Off – next test selected
2	1	Feed Sensor Test	1. Check : read the sensor
			2. Next : Next Sensor test
	2	Exit Sensor Test	1. Check : read the sensor
			2. Next : Next Sensor test
	3	Cover Sensor Test	1. Check : read the sensor
			2. Next : Next Sensor test
	4	Empty Sensor Test	1. Check : read the sensor
			2. Next : Next Sensor test
	5	Manual Sensor Text	1. Check : read the sensor
			2. Next : Next Sensor test
3	1	Therm ADC 180	1 : On, 2 : Off (maintain the fusing temp. 80C)
	2	Therm ADC 140	1 : On, 2 : Off (maintain the fusing temp. 135C)
	3	Therm ADC 120	1 : On, 2 : Off (maintain the fusing temp. 160C)
	4	Therm ADC 100	1 : On, 2 : Off (maintain the fusing temp. 191C)
4	1	MHV Test	1 : On, 2 : Off (-1550V ± 50V)
	2	Dev Bias Test	1 : On, 2 : Off (-430V ± 20V)
	3	THV EN/NEG Test	1 : On, 2 : Off (-1000V +300V/-150V)
	4	THV ON (1300V)	1 : On, 2 : Off (+1300V ± 20V)
	5	THV ADC 1300V	1 : On, 2 : Off (ADC Value : 101 ± 5)
	6	THV ADC 600V~3500V	1 : On, 2 : Off (Compare each ADC Value)

6.6 Identify Sale Date

This function confirms the date that consumer used the product for the first time.
When the consumer first operate the machine, it will start the scan and page counters.
The time the machine was first used is remembered.

These settings are remembered after memory reset (Clear All Memory).

< Method >

Press MENU, #, 1, 9, 3, # in sequence. Firmware version is displayed on 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"

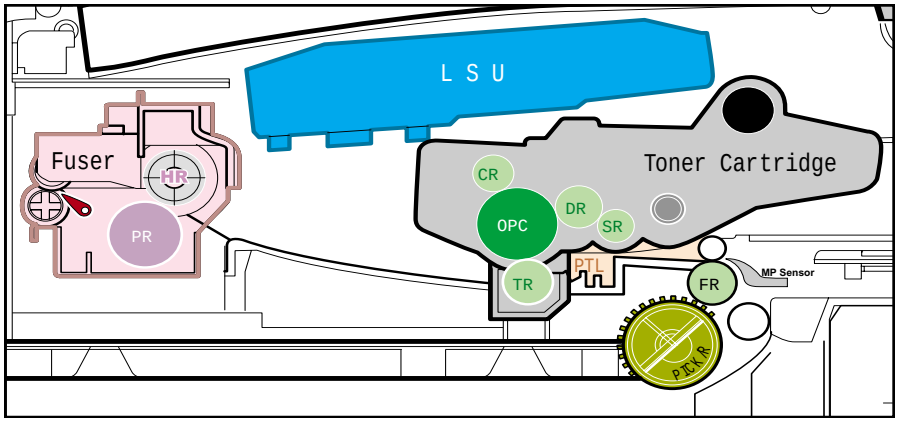
6.7 Consumables and Replacement Parts

The life cycle outlined below is a general guideline for maintenance purposes and is for reference only. Environmental conditions (temperature, humidity, dust etc.) and actual use can cause these figures to vary.

COMPONENT	REPLACEMENT CYCLE
ADF Rubber	20,000 Pages
ADF Roller	60,000 Pages
Pick-up Roller	60,000 Pages
Friction Pad	60,000 Pages
Transfer Roller	60,000 Pages
Fuser	60,000 Pages
Toner Cartridge	3,000 Pages (A4 IDC 5% Pattern)

6.8 Abnormal Image Printing and Defective Roller

If a mark or other printing defect occurs at regular intervals down the page it may be caused by a damaged or contaminated roller. Measure the repetition interval and refer to the table below to identify the roller concerned.



1. OPC Drum
2. Charge Roller
3. Supply Roller
4. Developing Roller
5. Transfer Roller
6. Heat Roller
7. Pressure Roller

No	Roller	Abnormal image period	Kind of abnormal image
1	OPC Drum	75.5mm	White spot, Block spot
2	Charge Roller	37.7mm	Black spot
3	Supply Roller	37.0mm	Horizontal density band
4	Develop Roller	35.2mm	Horizontal density band
5	Transfer Roller	45.3mm	Black side contamination/transfer fault
6	Heat Roller	66.3mm	Black spot and fuser ghost
7	Pressure Roller	75.5mm	Black side contamination

6.9 Error Messages

The front panel displays the printer's status or error messages. Refer to the list below for an explanation of these messages and how to clear problems. The messages and their meanings are listed in alphabetical order, with numbered messages following.

[Bypass Jam]
Meaning: The machine has detected a paper feed problem from the BYPASS Tray.
Solution: Open the side Cover and clear the jam.

Cancel ?
1:Yes 2:No
Meaning: While storing the document in memory the memory has become full.
Solution: To cancel the fax job, press the '1' button to accept "Yes." If you want to send the pages that were stored press the '2' button to accept "No." This will send ONLY the pages stored. The remaining pages should be sent later when more memory becomes available.

[Comm. Error]
Meaning: A problem with the fax communications has occurred.
Solution: Try again.

CRU Fuse Error
Meaning: The machine has a problem with recognizing the new toner cartridge.
Solution: Check the toner cartridge probrem.

Document Jam
Meaning: Loaded document has jammed in the ADF.
Solution: Clear the document Jam.

[Door Open]
Meaning: The front cover is not securely latched.
Solution: Close the cover until it clicks in place.

Group Not Available
Meaning: 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.
Solution: Just use a one-touch or speed dial number or dial a number manually using the number keypad.

[Incompatible]
Meaning: The remote machine does not have the requested feature, such as a delayed transmission.
Solution: Reconfirm the remote machine's features.

[Jam 1] or [No Cartridge]
Meaning: Paper has jammed inside the unit, or the toner cartridge is not installed.
Solution: Clear the jam. Install the toner cartridge.

Line Busy
Meaning: The remote person did not answer or the line is already engaged.
Solution: Try again after a few minutes.

[Line Error]
Meaning: Your machine cannot connect with the remote machine or has lost contact because of a problem with the phone line.
Solution: Try again. If the problem persists, wait an hour or so for the line to clear and try again.Or, turn the ECM on.

Load Document
Meaning: You have attempted to set up a copy or fax operation with no document loaded.
Solution: Load a document and try again.

[Low Heat Error]
Meaning: There is a problem in the fuser unit.
Solution: Check thermostat, thermister contact point & Heating Lamp.

Open Heat Error
Meaning: Thermister is not connected to the main board or contact point is poor at power on.
Solution: Check thermostat, thermister contact point & Heating Lamp.

[Over Heat]
Meaning: The printer has overheated.
Solution: Your unit will automatically return to the standby mode when it cools down to normal operating temperature. If failure persists, check the ELA HOU-FUSER.

[LSU Error]
Meaning: A problem has occurred in the LSU (Laser Scanning Unit).
Solution: Use TECH mode to test LSU. Replace the LSU

Memory Full
Meaning: The memory has become full.
Solution: Either delete unnecessary documents, or retransmit after more memory becomes available, or split the transmission into more than one operation.

[No Answer]
Meaning: The remote machine did not answer after all the redial attempts.
Solution: Try again. Make sure the remote machine is OK.

NO. Not Assigned
Meaning: The speed dial location you tried to use has no number assigned to it.
Solution: Dial the number manually with the keypad, or assign the number.

[No Paper]Add Paper
Meaning: The paper cassette is empty. The printer system stops.
Solution: Load new paper in the paper tray.

Operation NotAssigned
Meaning: You are doing in the Add/ Cancel operation, but there is no jobs waiting.
Solution: Check the display to see if there is any scheduled job. The display should indicate them in Standby mode, for example, Delay Fax.

[Paper Jam 0]Open/Close Door
Meaning: Paper has jammed in paper feeding area. Paper is jammed in pick-up unit
Solution: Press STOP and clear the jam.

[Paper Jam 1]Open/Close Door
Meaning: Paper has jammed inside the unit. Paper has jammed in paper exit unit.
Solution: Clear the jam.

[Paper Jam 2]Check Inside
Meaning: Paper has jammed inside the unit. Paper has jammed in fuser area.
Solution: Clear the jam.

Power Failure
Meaning: Power has turned off then on and the machine's memory has not been saved.
Solution: You need to start again the job which you were trying to do before the power failure.

Retry Redial?
Meaning: The machine is waiting for the programmed interval to automatically redial.
Solution: You can press START to immediately redial, or STOP to cancel the redial operation.

[Stop Pressed]
Meaning: The Stop/Clear button is pressed during a copy or fax operation.
Solution: Try again.

[Toner Empty]
Meaning: The toner cartridge has run out. The machine stops printing.
Solution: Replace with a new toner cartridge.

[Toner Low]
Meaning: The toner cartridge is almost empty.
Solution: Take out the toner cartridge and gently shake it. By doing this, you can temporarily reestablish printing operations."