4. 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.

4.1 Engine Test Mode

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

4.1.1 To enter the Engine Test Mode

To enter the Engine Test mode

Press " Menu -> Copies -> ◀ -> ▶ Menu -> ◀ " in sequence, and the LCD briefly displays

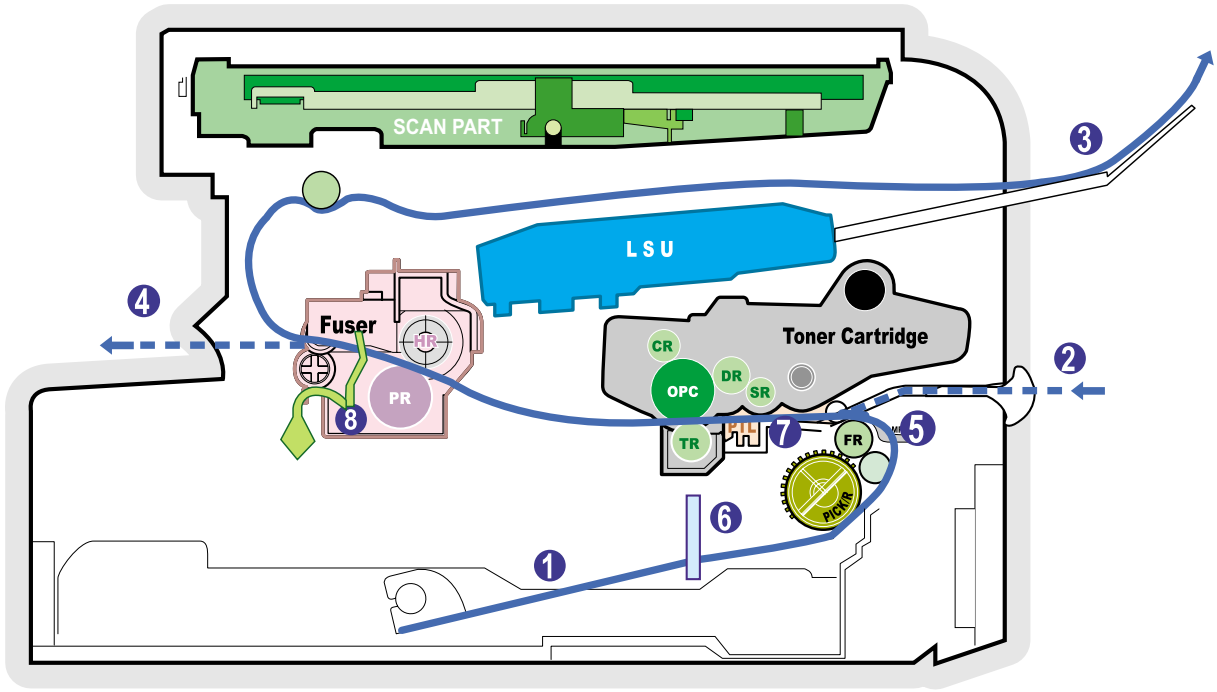
'Engine Test [Diagnostic]', the machine has entered Engine Test Mode.

- To enter a lower menu (Sub menu) Press the Start/Enter key.
- To exit into an upper menu Press the Menu/Exit key.
- To return to the user menu Press the Menu/Exit key.

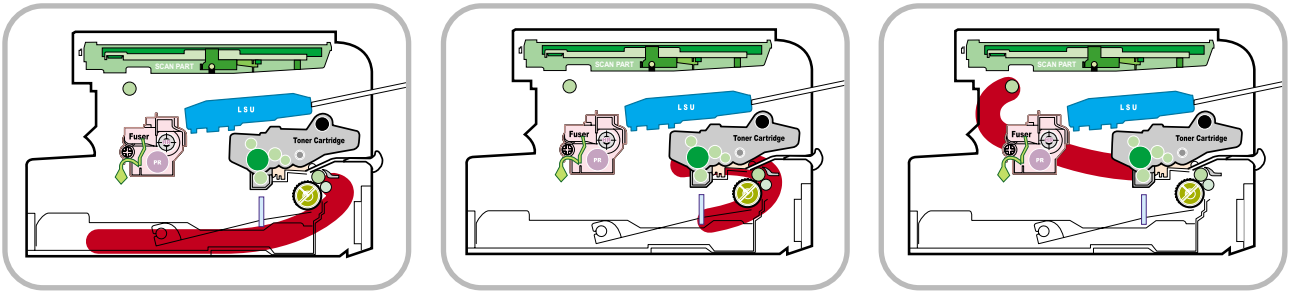
4.1.2 Diagnostic

Main Menu	Engine test	Remark
ENGINE TEST MTR FAN SOL ETC	Motor Test	1 : On, 2 : Off
	PickUp Test	1 : On, 2 : Off
	Fan Test	1 : On, 2 : Off
	Manual Clt Test	1 : On, 2 : Off
	PTL Test	1 : On, 2 : Off
ENGINE TEST LSU TEST	LSU Motor Test	1 : On, 2 : Off
	LSU Hsync Test	1 : On, 2 : Off
	LD Test	1 : On, 2 : Off
ENGINE TEST SENSOR TEST	Feed Sen Test	Check : Check Start
		Next : Next Sensor Check
	Exit Sen Test	Check : Check Start
		Next : Next Sensor Check
	Cover Sen Test	Check : Check Start
		Next : Next Sensor Check
	Empty Sen Test	Check : Check Start
		Next : Next Sensor Check
	Manual Sen Text	Check : Check Start
		Next : Next Sensor Check
ENGINE TEST HEAT TEST	Therm ADC 220~85	1 : On, 2 : Off (maintain the fusing temp. 65C~230C)
ENGINE TEST HVPS TEST	MHV Test	1 : On, 2 : Off (-1550V ± 50V)
	Dev Bias Test	1 : On, 2 : Off (-430V ± 20V)
	THV EN/NEG Test	1 : On, 2 : Off (-1000V +300V/-150V)
	THV ON (1300V)	1 : On, 2 : Off (+1300V ± 20V)
	THV ADC 1300V	1 : On, 2 : Off
	THV ADC 600V~3550V	1 : On, 2 : Off (Compare each ADC Value)

4.2 Paper Path



1 Paper Input (Cassette)
2 Paper Input (Manual Feeder)
3 Paper Out (Face Down)
4 Paper Out (Face Up)
5 Paper Empty Sensor (Manual)
6 Paper Empty Sensor (Cassette)
7 Paper Feeding Sensor
8 Paper Exit Sensor



<Jam0> <Jam1> <Jam2>

1) After receiving a print command, the printer feeds paper from the main cassette or manual feeder as required.

2) The paper being fed passes the paper feed sensor. (Jam 0 occurs if the sensor is not operated within a certain time)

3) Having passed the paper feed sensor the paper moves to the paper exit sensor via printing process. (Jam 1 occurs if the sensor is not operated within a certain time)

4) The paper then passes through the paper exit sensor and out of the set. (Jam 2 occurs if the trailing edge of the paper does not pass the exit sensor within a certain time of the paper leading edge activating the exit sensor)

4.3 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.

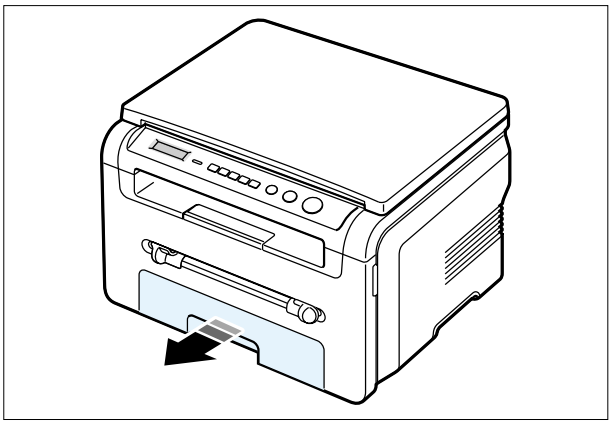
Message	Location of Jam
PAPER JAM 0 OPEN/CLOSE DOOR	In the paper tray
PAPER JAM 1 OPEN/CLOSE DOOR	In the paper exit area
PAPER JAM 2 CHECK INSIDE	In the fuser area or around the toner cartridge
BYPASS JAM	In the manual feeder

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

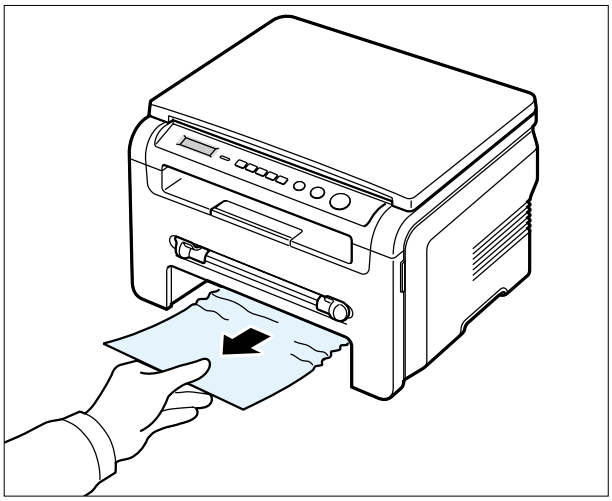
4.3.1 In the Paper Tray

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 6-5

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

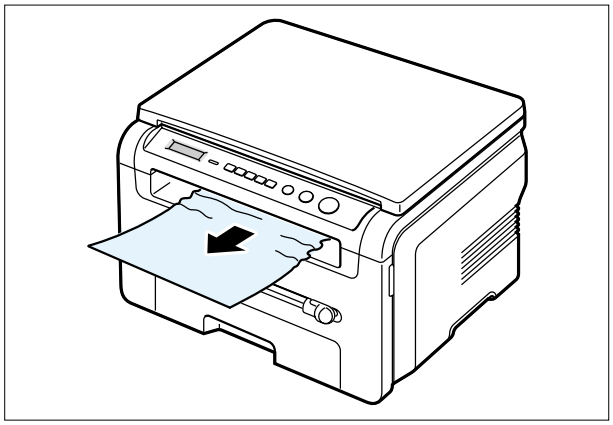
5 Open and close the front cover to resume printing.

4.3.2 In the Paper Exit Area

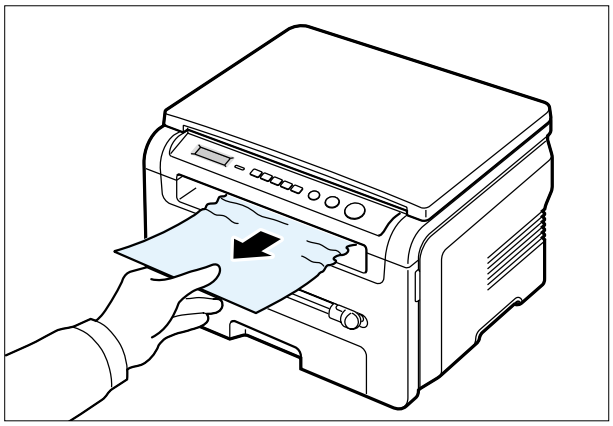
1 Open and close the front cover. The jammed paper is automatically ejected from the machine. If the paper is not ejected continue to step 2.

2 Gently pull the paper out of the front output tray. Skip to step 9.
If you cannot see the jammed paper in the front output tray, continue to step 3.

3 Open the jam cover by lifting the front edge of the scanner unit. The support lever will automatically pop up.



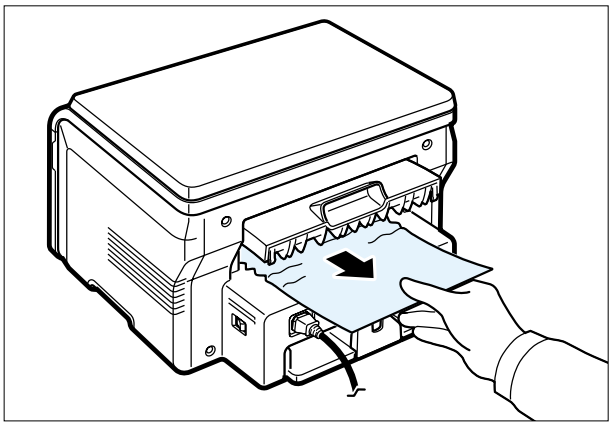
4 Pull the paper out gently.



5 Close the jam cover by pushing the support tab to the left and hold it down whilst lowering the cover carefully until the cover fully down, this will hold down the tab.
If there is any resistance and the paper does not move when you pull or if you cannot see the paper in the jam cover, continue to step 6.

6 Open the rear cover.

7 Remove the jammed paper by gently pulling it straight out.



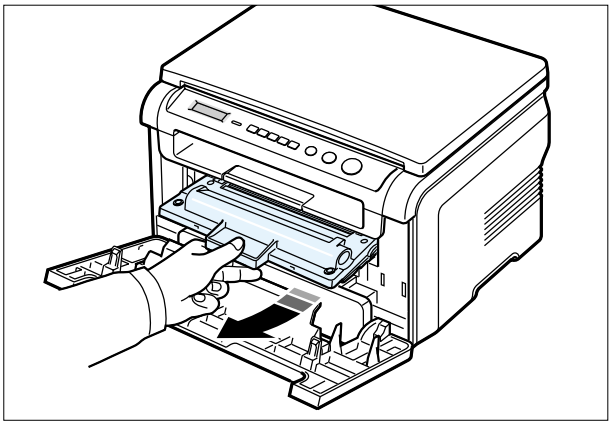
8 Close the rear cover.

9 Open and close the front cover to resume printing.

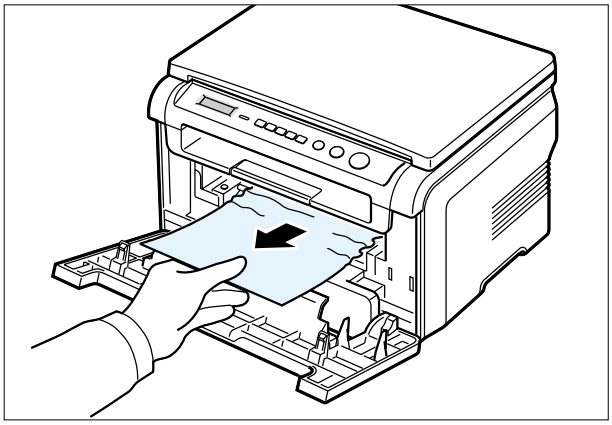
4.3.3 In the Fuser Area or Around the Toner Cartridge

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.

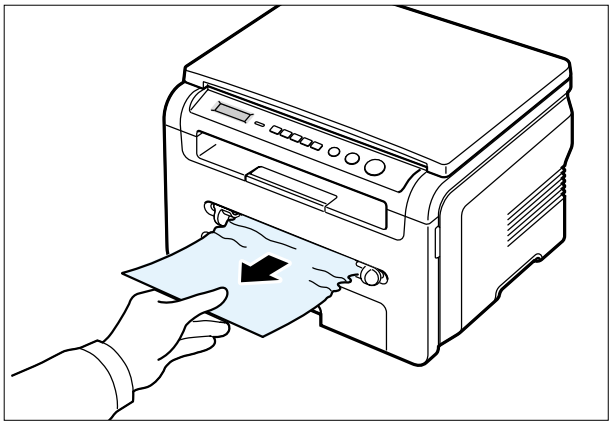


3 Replace the toner cartridge and close the front cover.
Printing automatically resumes.

4.3.4 In the Manual Feeder

"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 that case, pull the paper out of the machine.



4.4 Printing the System Data List

Your machine can print the system data report which shows the status of the user-selectable options. You may print this list to confirm your changes after changing any settings.

To print the system data list:

1 Press **Menu** until "Report" appears on the top line of the display.
"System Data" appears on the bottom line.

2 Press **Start**
The system data list prints out.

4.5 Clearing the Memory

You can selectively clear information stored in your machine's memory.

1 Press **Menu** on the control panel until "Maintenance" appears on the top line of the display.

2 Press the scroll button (< or >) until you see "Clear Settings" on the bottom line and press **Start**
The first available menu item, "Paper Setting" displays on the bottom line.

3 Press the scroll button (< or >) until you see the item you want to clear.
- Paper Setting: Restores all of the Paper Setting options to the factory default.
- Copy Setup: Restores all of the Copy Setup options to the factory default.
- All Settings: Resets all of your settings to the factory default.
- Machine Setup: Resets all of the system settings, such as the display language and save modes, to the factory default.

4 Press Start/Enter. The selected memory is cleared and the display asks you to continue clearing the next item.

5 To clear another item, press Start/Enter and repeat steps 3 and 4. Or, to return to Standby mode, press Stop/Clear.

4.6 Clearing the Drum

If there are streaks or spots on your print, the OPC drum of the cartridge may require cleaning.

1 Before carrying out the cleaning procedure, make sure that paper is loaded in the machine.

2 Press **Menu** on the control panel until "Maintenance" appears on the top line of the display.
The first available menu item, "Clean Drum", displays on the bottom line.

3 Press **Start**

4 When the display asks you to confirm your selection, press **Start**
The machine prints a cleaning page. Toner particles on the drum surface are affixed to the paper.

5 If the problem remains, repeat steps 1 through 4.

4.7 Consumables and Replacement Parts

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	
Pick-up Roller	50,000 Pages	
Paepr Feeding Roller(Friction Pad)	50,000 Pages	
Transfer Roller	50,000 Pages	
Fuser	50,000 Pages	
Toner Cartridge	Original 1,000 Pages	Replacement 3,000 Pages

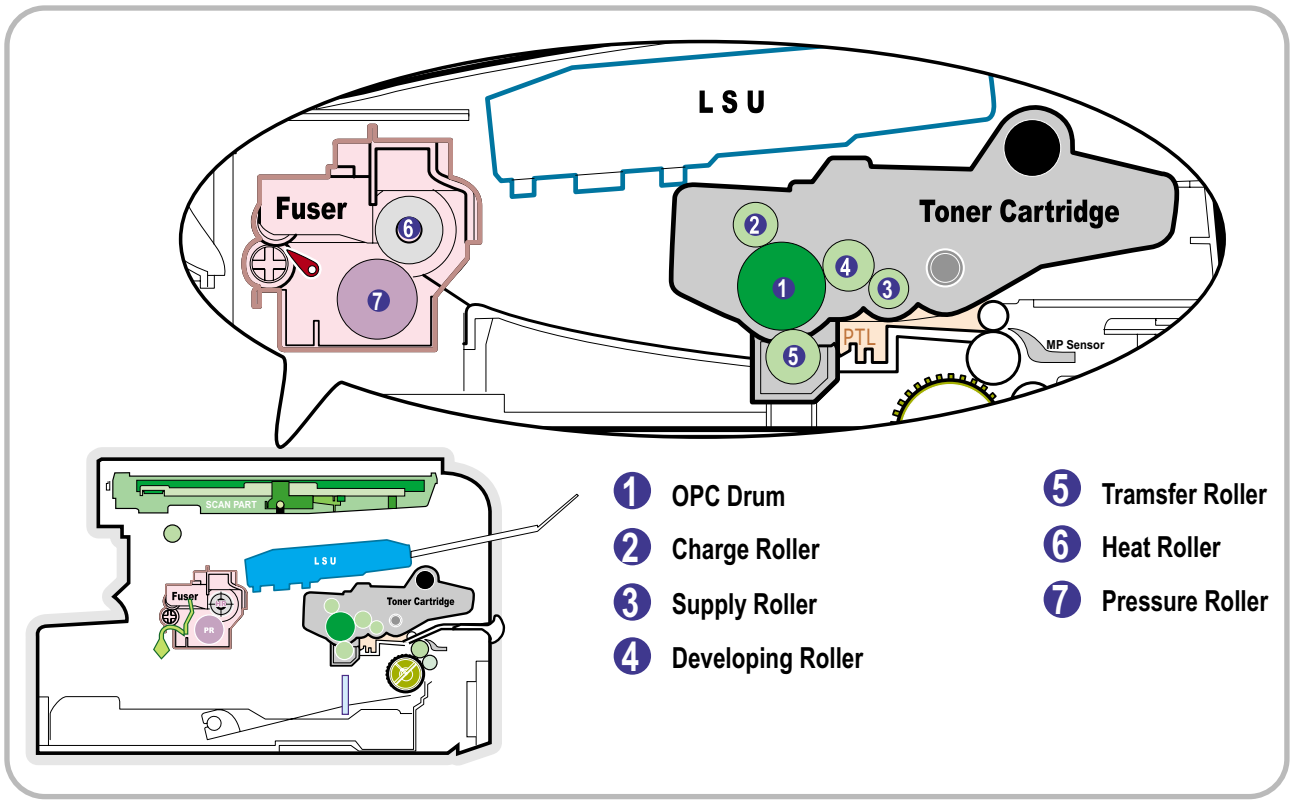
4.8 The LCD Status Display by Each Error

LCD	Meaning	Solutions
Door Open	The front or rear cover is not securely latched.	Close the cover until it locks into place.
[JAM 1] or [No Cartridge]	The toner cartrige is not installed.	Install the toner cartridge.
Low Heat Error Open Heat Error [Over Heat]	There is a problem in the fuser unit.	Unplug the power cord and plug it back in. (Tech Mode Reference)
[LSU Error]	A problem has occurred in the LSU (Laser Scanning Unit).	Unplug the power cord and plug it back in. (Tech Mode Reference)
No Paper [Add Paper]	The paper tray has run out of paper.	Load paper in the paper tray.
Paper Jam 0 Open/Close Door	Paper has jammed in the feeding area of the paper tray.	Clear the jam.
Paper Jam 1 Open/Close Door	• Paper has jammed in the fuser area. • A paper jam has occurred in the manual feeder or the machine detects non-feeding from the manual feeder.	• Clear the jam. • Clear the jam.
Paper Jam 2 Check Inside	Paper has jammed in the paper exit area.	Clear the jam.

4.9 Periodic Defective Image

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.

No	Roller	Defective image	Typical defect
1	OPC Drum	75.5mm	white spot on black image or black spot
2	Charge Roller	37.8mm	black spot
3	Supply Roller	44.9mm	light or dark horizontal image band
4	Developing Roller	35.2mm	horizontal image band
5	Transfer Roller	45.3mm	image ghost
6	Heat Roller	64.0mm	Black spot and image ghost
7	Pressure Roller	75.3mm	black spot on the backside



<Rollers Layout>

4.10 Error Message

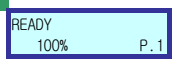
Display	Meaning	Suggested solutions
Door Open	The front cover is not securely latched.	Close the cover until it locks into place.
Hsync Error	A problem has occurred in the LSU (Laser Scanning Unit).	Unplug the power cord and plug it back in. If the problem persists, please call for service.
[Invalid Cartridge]	There is invalid foner install.	Installed authorized toner cartridge.
Low Heat Error	There is a problem in the fuser unit.	Unplug the power cord and plug it back in. If the problem persists, please call for service.
[LSU Error]	A problem has occurred in the LSU (Laser Scanning Unit).	Unplug the power cord and plug it back in. If the problem persists, please call for service.
[No Paper] Add Paperr	The paper in the paper input tray has run out.	Load paper in the paper input tray.
Open Heat Error	There is a problem in the fuser unit.	Unplug the power cord and plug it back in. If the problem persists, please call for service.
[Over Heat]	There is a problem in the fuser unit.	Unplug the power cord and plug it back in. If the problem persists, please call for service.
[Paper Jam 0] Open/Close Door	Paper has jammed in the feeding area of the paper input tray.	Clear the jam.
[Paper Jam 1] Open/Close Door	Paper has jammed in the fuser area or in the manual feeder.	Clear the jam.
[Paper Jam 2] Check Inside	Paper has jammed in the paper exit area.	Clear the jam.
Power Failure	Power has turned off then on and the machine's memory has not been back up.	The job which you were trying to do before the power failure must be completely re-done.
Scanner Error	There is a problem in the scanner unit.	Unplug the power cord and plug it back in. If the problem persists, please call for service.

	1st level		2nd level	3rd level	4th level	Default Value	Descriptions
	Upper Level	--		Upper Level			
	Left/Right && Enter	--▶	16 Character	Left/Right Enter			
Menu	1.Reduce/Enlarge	1	Original(100%)			100%	
			A4→LTR(94%)				
			EXE→LTR(104%)				
			50%				
			150%				
			200%				
			Custom:50-200%				
	2.Darkness	1	Normal				
		2	Dark				
		3	Light				
	3.Original Type	1	Text			* Default	
		2	Text/Photo				
		3	Photo				
	4.Special Copy	1	Off			* Default	
		2	Clone				
		3	Auto Fit				
		4	2 Sides in 1 pg				ID Copy
		5	2 UP				
		6	Poster				
	5.Toner Save	1	On			* Default	
		2	Off				
	6.Paper Setting	1	Paper Size	Tray Paper	LTR,LGL, A4, EXE, Folio, A5, B5, A6	LTR(US) A4(EU/AP)	
				Manual Feed	LTR,LGL, A4, EXE, Folio, A5, B5, A6	LTR(US) A4(EU/AP)	
		2	Paper Type	Plain Paper, Bond, Transparency, Card Stock, Labels, Preprinted, Colored, Envelope,Thick, Thin			
	7.Copy Setup	1	Default-Change	Darkness	Light/Normal/Dark	Normal	
				Original Type	Text, Text/Photo,Photo	Text	
				Reduce/Enlarge	[Original(100%)]	100%	
					[A4→LTR(94%)]		
					[EXE→LTR(104%)]		
					50%		
					150%		
					200%		
					[Custom:50-200%]		
				Copies	[1-99]	1	
		2	Timeout	15,30,60,180 sec, Off		30 sec	
	8.Report	1	System Data				
	9.Machine Setup	1	Language	[English/French/Spanish/Portuguese/German/Italian/Dutch/Russian/Swedish]- 9 countries		English	Portuguese (European)
		2	Power Save	On Off	5, 10, 15, 30, 45	5 min	
		3	USB Mode	Fast, Slow		Fast	
	0.Maintenance	1	Clean Drum				
		2	Clear Settings	Paper Setting			
				Copy Setup			
				All Settings			
				Machine Setup			
	Tech Mode	1	Data Setup	Clear All Mem.			
				Clear Count	Total Page CNT		
					FLT Scan CNT		
				Flash Upgrade	Local		
					Remote		
		2	Machine Test	Switch Test			
				Dram Test			
				Rom Test			
				Pattern Test			
				Shading Test			
		3	Report	System Data			

DIRECT KEY

Copies	1-99 * Default : 1
Menu	This is to be used to enter the Menu.
Start	This key is used to activate the job.
Stop	This key is used to stop the job being done or to exit from the Menu. And clear value of 5 copy keys..
OK	This key is used to select the right item what customer wants from several items.
◀/▶	Left/Right Arrow Key

Machine IDLE dsiplay



DIRECT KEY

1.COPY DIRECT KEY

notice

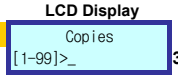
In each LCD display
If user press Start/Enter key
,Machine starts copy
In each LCD display
If user press Stop/Clear
,Machine stops copy



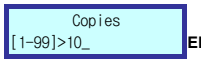


LCD Display

Copies

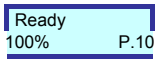


3*4KEY



ENTER

Idle Display →



2.COMMON DIRECT KEY

STOP



STOP/CLEAR

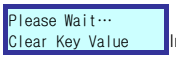


Image / Contrast / No.Of Copies / (Reduce/Enlarge) / Special
Return default value of all 5 copy keys

notice

Menu	This is to be used to enter the Menu.
Start	This key is used to activate the job.
Stop	This key is used to stop the job being done or to exit from the Menu. And clear value of 5 copy keys..
OK	This key is used to select the right item what customer wants from several items.
◀/▶	Left/Right Arrow Key

3.Status LED

LED Color	LED Status	Discription
Off	Off	Power Off / Sleep Mode
Green	On	Ready
	Blink	When the job is in progress.
		Blink Slowly :: Printer Data Comm. Blink Fast :: Printing Blink Normally :: Copy,Scan …
Red	On	ex)Toner Empty, Paper Jam, Paper Empty, Cover open
	Blink	In case of recoverable Error ex) Paper Mismatching In case of Warming up state. ex)Replace Toner