

Chapter Six T R O U B L E S H O O T I N G

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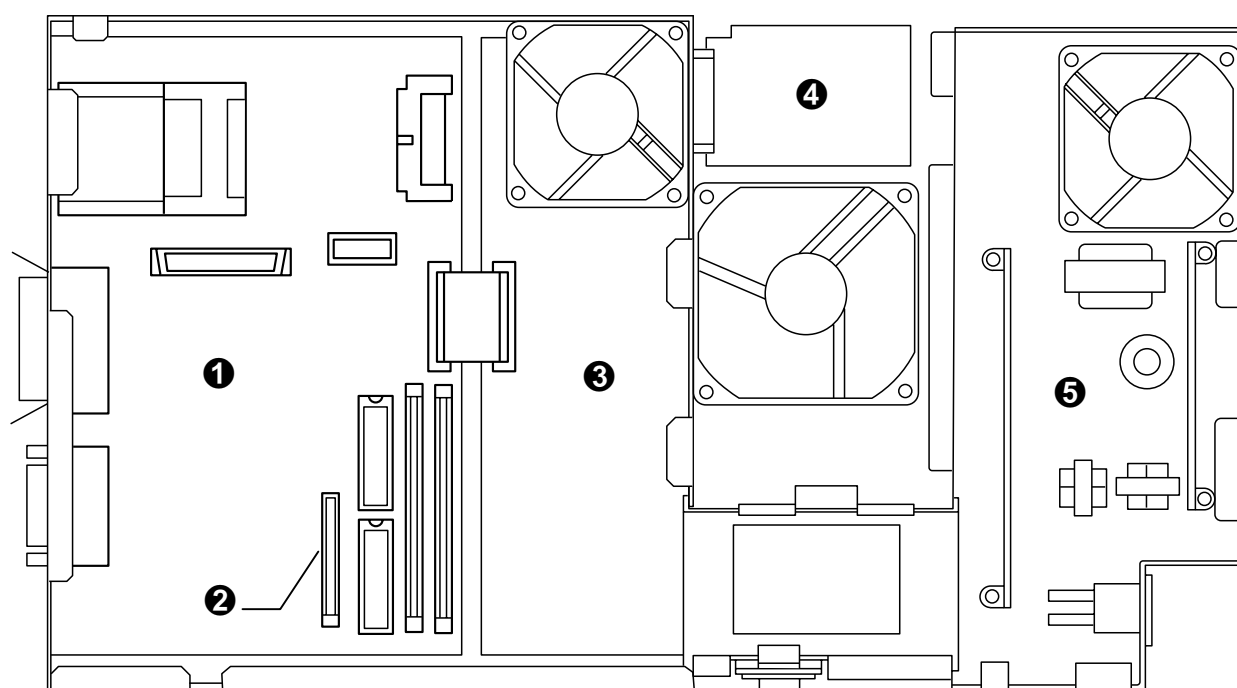
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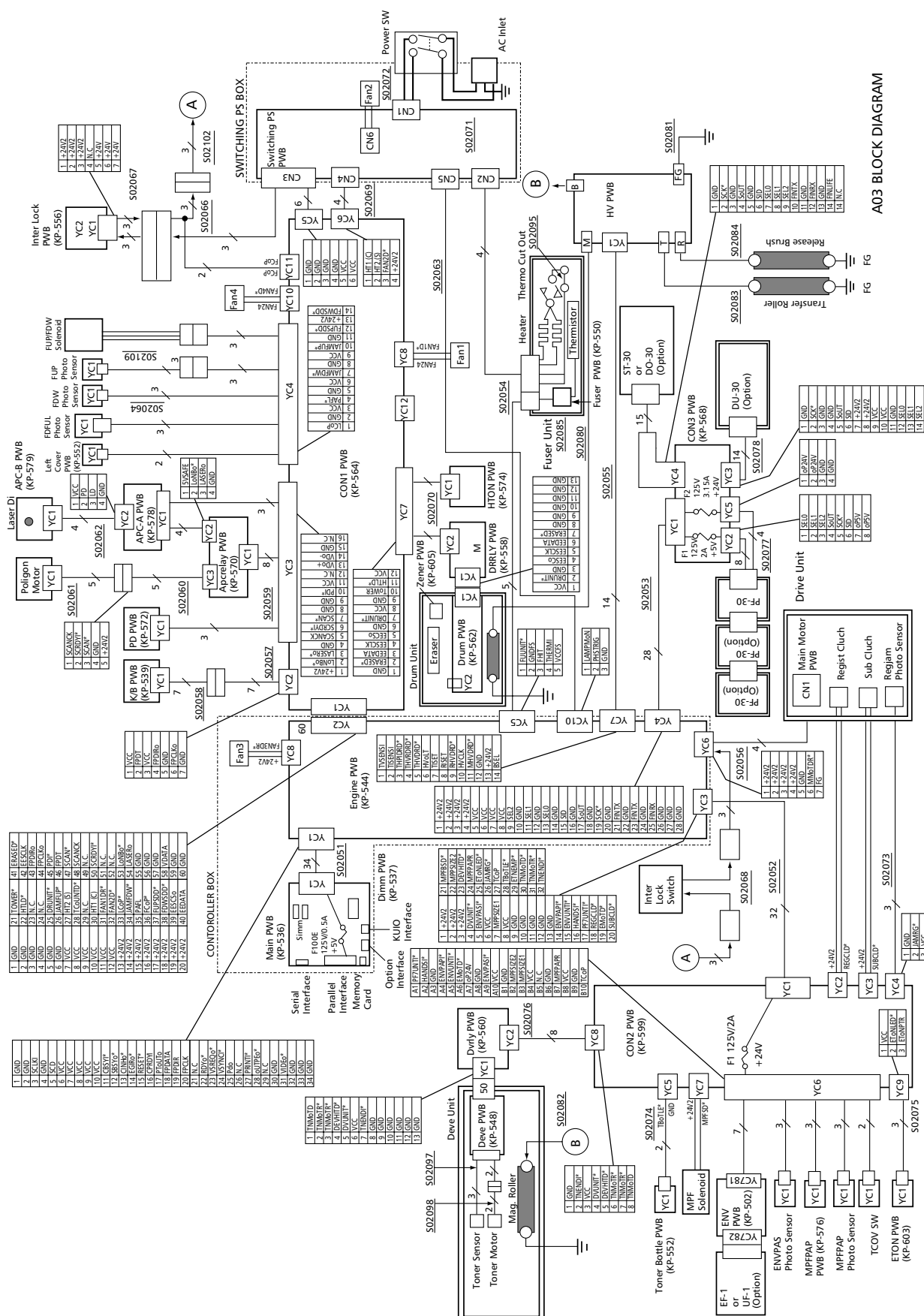
Board layouts

Overall boards layout (Rear view)



Symbol (above)	Board No.	Description
❶	KP-536	Main logic board
❷	KP-537	System ROM (Flash DIMM)
❸	KP-544	Engine board
❹	KP-564	Wiring liaison board (CON1)
❺	—	Power supply

General wiring diagram



Diagnostic

The printer automatically executes its self-diagnostic test when it is powered up. The sequence and the items to be diagnosed are explained below.

When the printer locates the error with a specific item, it calls for operator's attention by showing the appropriate *Call service person* message on the operator panel display. The *Call service person* message is followed by one of the following codes:

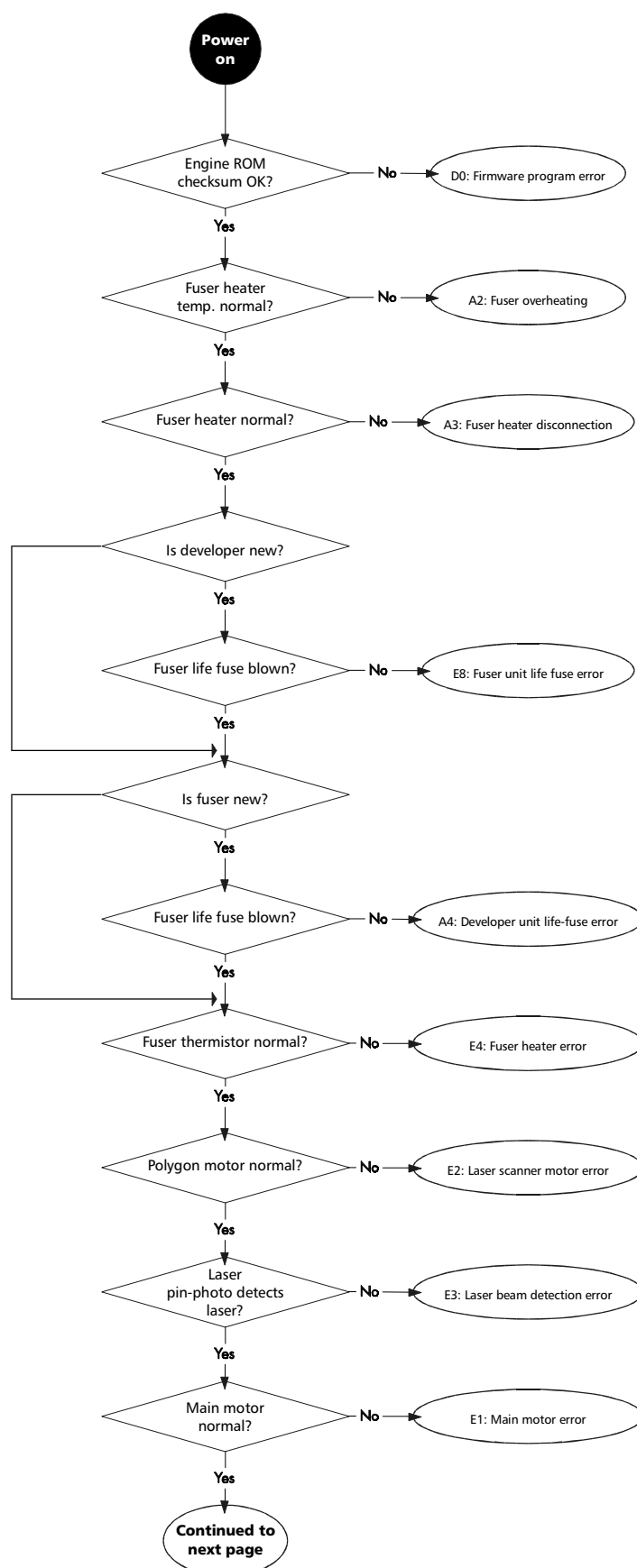
- A, Development component
- B, Paper cassettes
- C, Duplexer DU-30, stacker ST-30, finisher DF-30
- D, Firmware downloading
- E, Engine controller
- F, Main controller

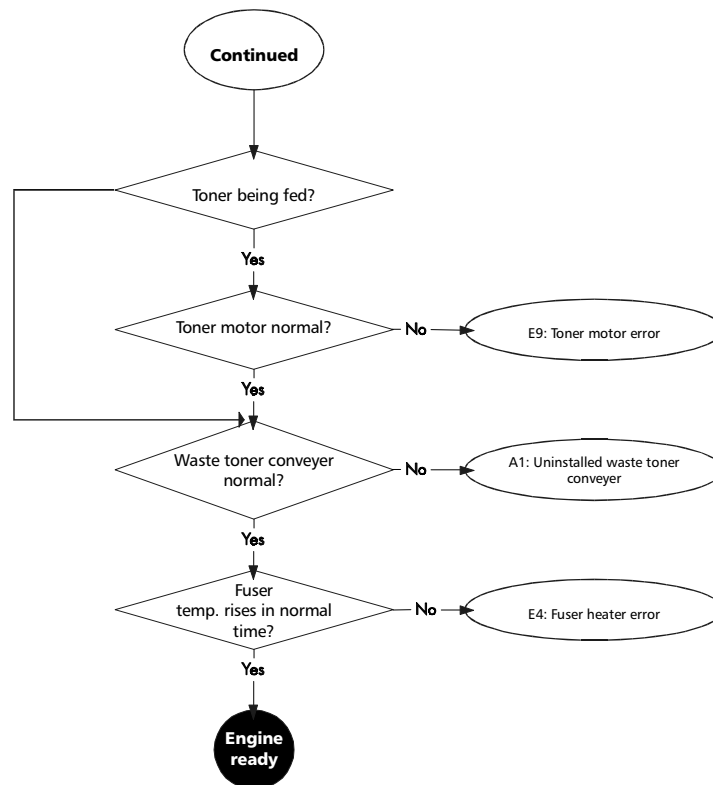
Flowcharts on the following pages show the order and the items diagnosed in each system.



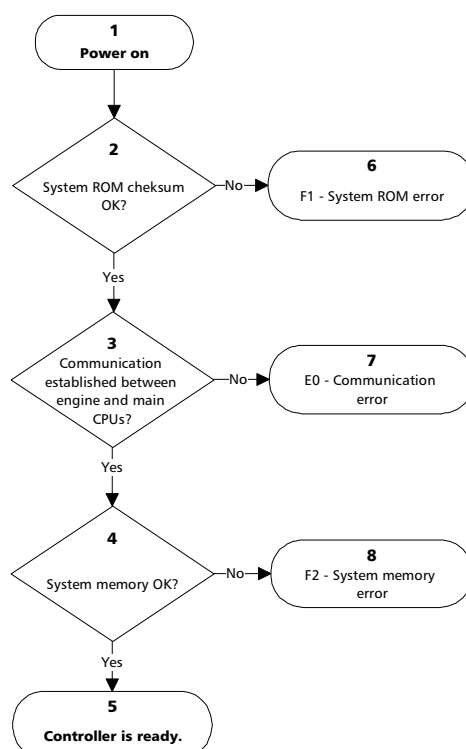
Note—Diagnostic test is canceled if one of the user-accessible covers is opened during the test.

Engine diagnostics flow





Logic controller diagnostics flow


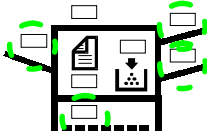




General error handling

This section provides how to handle general errors as indicated on the message display. Refer to the section starting on page for errors calling for service person assistance.

Panel indicator

The symbol mark on the front panel provides following user-handling errors. Proceed with *Corrective actions* indicated below.

Indicator	Indication	Corrective action
 Low toner	Flashing	The printer has run low on toner. The toner should be replaced as soon as possible. Clean the printer after replacement.
	Lit	Toner is low or has run out. Replace with a new toner container.
 Paper feeding	Fast flashing	Paper is jammed in the location flashing.
	Slow flashing	The paper has run out in the paper cassette or multi-purpose tray. Add paper to the paper feed source.
	Lit	This indicates either the current paper feeder or the paper output point.
 Duplexer	Flashing	A paper jam has occurred in the optional duplexer (DU-30). Remove the paper jam in the duplexer.
	Lit	An optional duplexer (DU-30) has been attached, and the printer is printing in duplex printing mode.
 ATTENTION	Flashing	The printer is warming up (Please wait) or the printer has insufficient memory available. Confirm the message indicated on the message display.
	Lit	A message will be displayed in the message display. Take corrective action according to the message displayed. The table on the following pages lists the corrective action to take in response to each message.

Error messages

The printer indicates on its front control panel various messages ranging from user-recoverable errors to call-service person errors. The instructions below indicate how to respond to all those problems indicated by the error messages. For call-service person errors, further reference to the descriptions including flowcharts may be required as instructed in *Corrective action* below.

Message	Corrective action
Top cover Open	The top cover is open. Close it tightly.
Front cover Open	The front cover is open. Close it tightly.
Side cover Open	The printer's side cover is open. Close it tightly.
Paper feeder 1 side cover Open	The paper feeder's side cover is open. Close it tightly. If an optional paper feeder (PF-30) is installed, the paper feeder having the problem will be indicated number in the message. If the maximum of three feeders are installed, the upper feeder is 1, the middle feeder is 2, and the bottom feeder is 3.
Face-down tray paper full	The face-down tray has become full. You must remove all printed pages from the face-down tray. The face-down tray can hold approximately 500 sheets.
Add paper	The paper source is out of paper. Add paper to the paper cassette or multi-purpose tray.
Set paper Press CONTINUE	Add a sheet of paper to the multi-purpose, and press the CONTINUE key. Printing will start. This message appears when the multi-purpose tray is in manual mode.
Load paper (paper size)	<p>The paper size does not match. The size of the paper in the cassette is different to the size specified by the application software or by PRESCRIBE II command. Put paper of the specified size into the cassette.</p> <p>If the CONTINUE key is pressed, printing will be resumed. However, if more than one sheet is to be printed, the same message will again be displayed from the second sheet onward.</p> <p>You can abandon printing by pressing the CANCEL key.</p>
Cassette not loaded	The cassette is not closed securely, Close it tightly.
Paper jam Open front cover	Paper has become jammed. Open the front cover. The location of the paper jam is displayed in the message display.
Paper jam #####	<p>This message appears when the front cover is open during a paper jam.</p> <p>Letters A through I and numbers 1 through 6 will appear in place</p>

Message	Corrective action
	of the #'s. For details on the meaning of the text displayed, see page 6-49. A label displaying these number indications is also attached to the back of the front panel. The indicator on the front panel also flashes the location of the paper jam.
Warning Low memory	The printer's internal memory is running low. Remove any unnecessary download fonts and/or macros. You can check the amount of user memory currently available by printing a status page.
Toner low TK-30	There is not enough toner inside the toner container. Be sure to promptly replace with a new toner as the printer will stop printing before long. Clean the printer after replacement.
Replace Toner Clean printer	There is no more toner in the toner container. The printer has stopped because there is no more toner. Replace with a new toner kit. After replacing, be sure to clean the printer.
Clean printer Press CONTINUE	Please clean the inside of the printer. After cleaning the inside of the printer, press the CONTINUE key and the printer will be ready for printing. This message will be displayed when replacing the toner container after the message Replace Toner Clean printer has been displayed.
Missing Toner kit TK-30	No toner container is installed. Install the toner container. The printer does not operate when this message is displayed.
Install MK	The maintenance kit (MK-30) needs to be replaced. Replace the maintenance kit since the total number of printed pages has reached 350,000. Contact the licensed dealer of Kyocera from which you purchased the printer or service outlet. The maintenance kit includes a drum unit, developer unit and so on.
Call service person##:#####	A failure requiring the attention of service personnel has occurred. A failure requiring the attention of service personnel has occurred and the printer has stopped. The corresponding error code and total printed pages are displayed in the message display (part indicated by #'s).
Memory overflow Press CONTINUE	Current print processing cannot continue due to insufficient memory. Check available user memory by printing a status page, and either remove unnecessary download fonts and/or macros or expand the printer's memory. Press the CONTINUE key to print data as far as it was stored. You can abandon printing by the CANCEL key.
Print overrun Press CONTINUE	Current print processing cannot continue due to insufficient memory. The data transferred to the printer was too complex to print on a page. Check available user memory by printing a status page, and either remove unnecessary download fonts and/or macros or expand the printer's memory. Note: After this message has been displayed, Page protect mode will be on. To maintain optimum use of memory during printing, display >Page protect from the mode select menu, and re-select Auto. Press the CONTINUE key to print data as far as it was stored. You can

Message	Corrective action
	abandon printing by the CANCEL key.
MEMORY CARD err Insert again	The memory card is missing. This message appears when the memory card has been removed from the memory card slot during memory card operations. Re-insert the same memory card in the same slot. the printer will continue with memory card processing.
Insert the same MEMORY CARD	Insert the same memory card. This message appears when the memory card has been removed from the memory card slot during memory card operations and replaced with a different memory card. Re-insert the same memory card in the same slot. the printer will continue with memory card processing.
Warning battery MEMORY CARD	The memory card's battery is low. This message appears when the printer is in the ready state and the battery of the memory card installed in the printer is low. You can still enter the memory card mode, but the battery should be changed as soon as possible.
Battery error MEMORY CARD	Insert a new battery in the memory card. This message appears when the printer is in the ready state and the battery in the memory card is missing or completely dead. Memory card operations are not possible. Insert a new battery in the memory card.
Format error MEMORY CARD	The memory card requires formatting. This message appears when the printer is in the ready state and the memory card is not formatted. Be sure to format the memory card. (See the <i>User's Manual</i> .)
MEMORYCARD err ## Press CONTINUE	This message appears when an error occurs during access to the memory card using the PRESCRIBE ICCD command or from the printer's control panel. Look at the error code given in place of ## and refer to the corresponding description given below. Note that only error codes 09 and 11 are displayed due to memory card operations made from the control panel. For details, see <i>Memory card errors</i> which follows on page 6-13.
I/F occupied	The interface selected is currently being used. This message only appears if an optional interface is installed. The interface is secured while the interface name displayed in the message display is flashing even if the printer is in the ready state. How long this takes depends on the interface release timeout (FRPO J2) setting. This message appears, and then the ATTENTION indicator lights, when an attempt is made to select a secured interface from the control panel or when an attempt is made to perform memory card operations while the interface indicator is flashing. Repeat operations after releasing the interface.
Processing PAR FIT A4	Compressed data is printed due to insufficient memory. Compressed data is printed due to insufficient memory when FIT flashes in the resolution indicator. The quality of printed data is reduced when this occurs. FIT will continue flashing even after printing is finished. The resolution indicator will automatically return to reading 600 dpi when any key is pressed, when a timeout occurs, or when subsequent data is

Message	Corrective action
<p>Processing PAR 600 A4</p> <p>↓</p> <p>Processing PAR 300 A4</p>	<p>received. Expand printer memory to avoid this error.</p> <p>600 dpi processing cannot be performed due to insufficient memory. When 300 flashes in the resolution indicator even though the printer was set to 600 dpi, the printer automatically set resolution to 300 dpi due to insufficient memory and continued printing. The resolution indicator will automatically return to reading 600 dpi when any key is pressed, when a timeout occurs, or when subsequent data is received.</p> <p>Expand printer memory to avoid this error.</p>

Memory card errors

Error code	Applicable card type	Meaning
01	SRAM	Card size error (An attempt was made to write data of greater than 32 MB in size.). Reduce the size of the data to be written from the host computer to 16 MB or less; or, a file name could not be found in the memory card.
02	SRAM	No memory card inserted. Insert a proper memory card.
03	SRAM/flush	Non PCMCIA card. Replace the card with a PCMCIA card.
04	SRAM	Not RAM card. Use a SRAM-type card if you want to write data to an memory card.
05	SRAM	Memory card battery error. Replace the memory card's internal battery with a new one.
06	SRAM	Memory card protect error. Release the write protection on the memory card when you write data to the memory card.
07	SRAM	Non-Kyocera format. Reformat the memory card using MODE SELECT (See the printer's user's manual).
08	SRAM	Partition name error. Follow instructions given attempt in Chapter 2 to properly name the destination.
09	SRAM	Memory card data full error (An attempt was made to write data exceeding the capacity of the memory card). Abandon the writing operation on the host computer first. Press CONTINUE key; when the message turns to Waiting, press FORM FEED key (Ready).
10	-	<i>Reserved</i>
11	SRAM	Data name full (An attempt was made to write more than 127 destination data names). Press CONTINUE key (Ready).
12	-	<i>Reserved</i>
13	Flush	Erase logic error with flash memory card. Try replacing the memory card.
14	-	<i>Reserved</i>
15	Flash	Non PCMCIA flush card. Replace the card with a PCMCIA flush card.

Error code	Applicable card type	Meaning
16	-	<i>Reserved</i>
17	Flush	Unable to write to the flash memory card due to insufficient printer memory. Either delete unnecessary macros or fonts stored in the printer, or extend the printer's available memory.
18	Flush	Writing error. Try replacing the memory card.
19	-	<i>Reserved</i>

For details on memory card availability, see section *Printer specifications* in chapter 1.

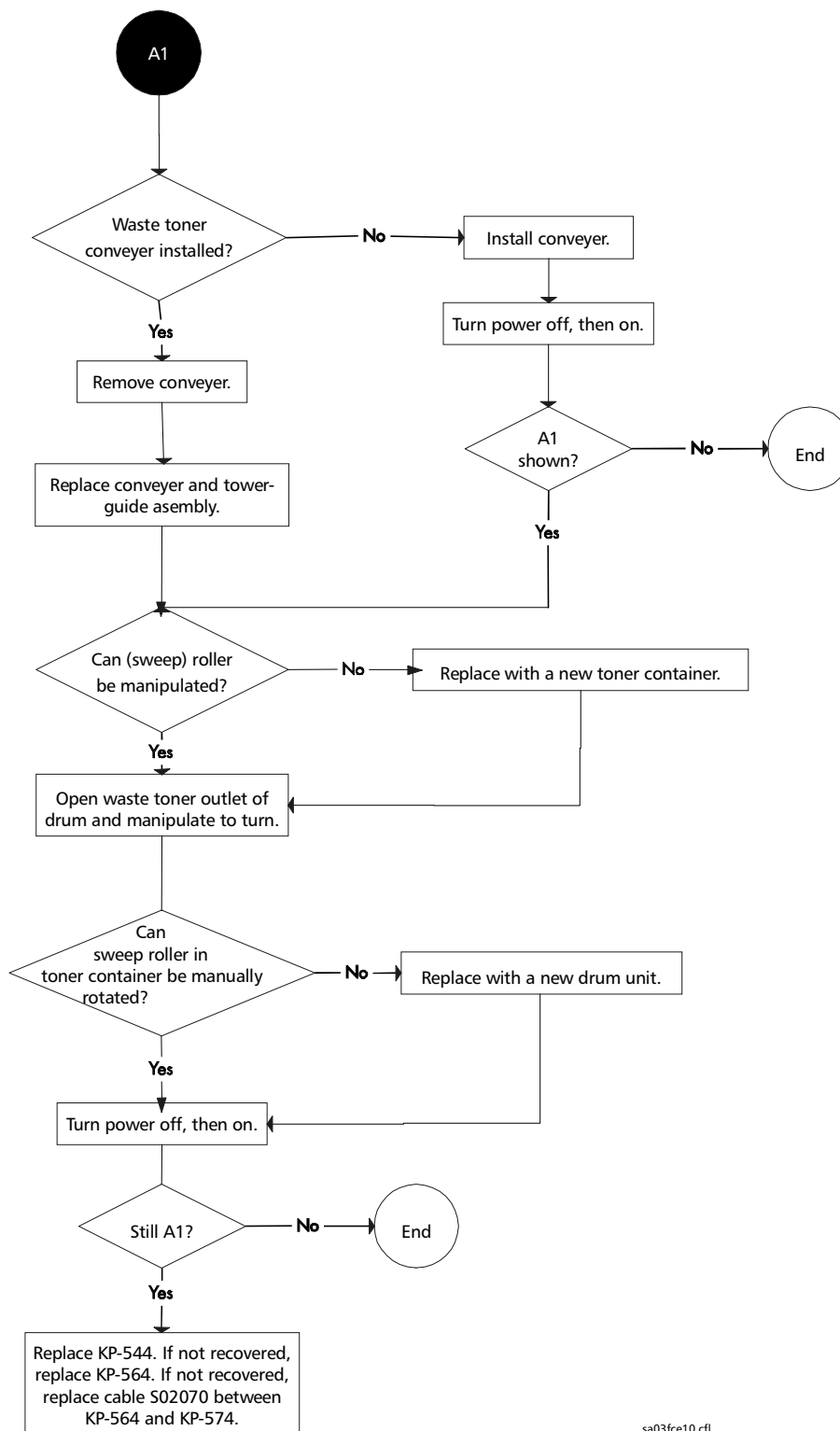
Call-Service person errors

The printer does not operate when a message beginning with Call service person (A, B, C, D, E, F) is displayed. The message is categorized by an alphanumeric code. Proceed with this section for taking a corrective action depending on the code.

The **Corrective action** may be useful for on-site service. Follow the flowchart if one is provided in that item for further analysis of the problem.

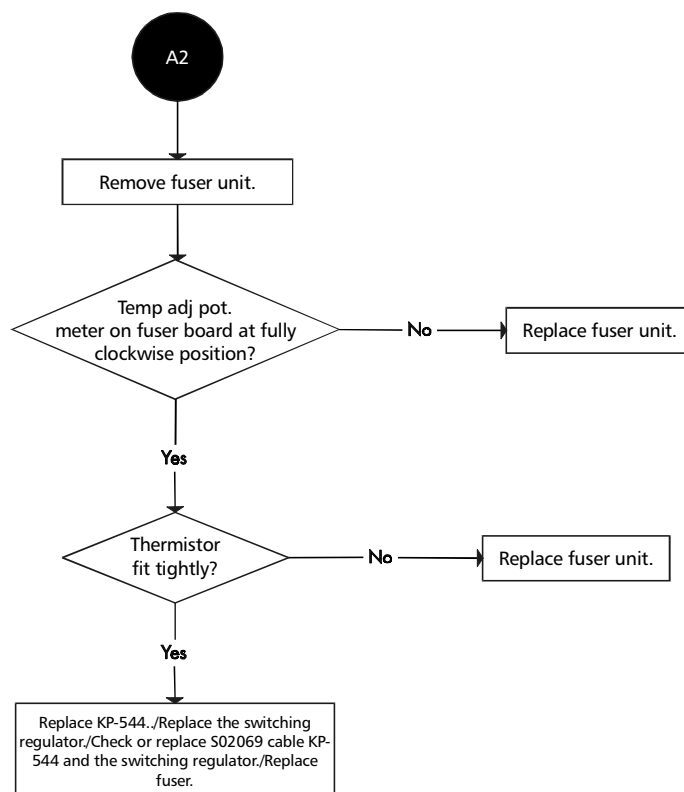
A1—Uninstalled waste toner conveyer

Meaning	Suggested causes	Corrective action
The waste toner conveyer is not installed, or the conveyer is clogged inside with waste toner.	<ul style="list-style-type: none"> Waste toner conveyer is not installed. The belt is not rotating in the conveyer unit. Connection failure between the CON1 board and the conveyer board Engine gate arrays (U2/U6) failure Defective LED driving circuit on the engine board. Defective LED on the conveyer board. Connection failure between the waste toner conveyer board and the photo transistor. Defective photo transistor. Contaminated waste toner conveyer housing or photo receptor. The waste toner driving system in the toner container is not working properly. 	Install a waste toner conveyer or replace the conveyer and belt. Replace KP-544 or KP-546. Check cable S02070 for possible disconnection. [If not corrected, replace the cable.]



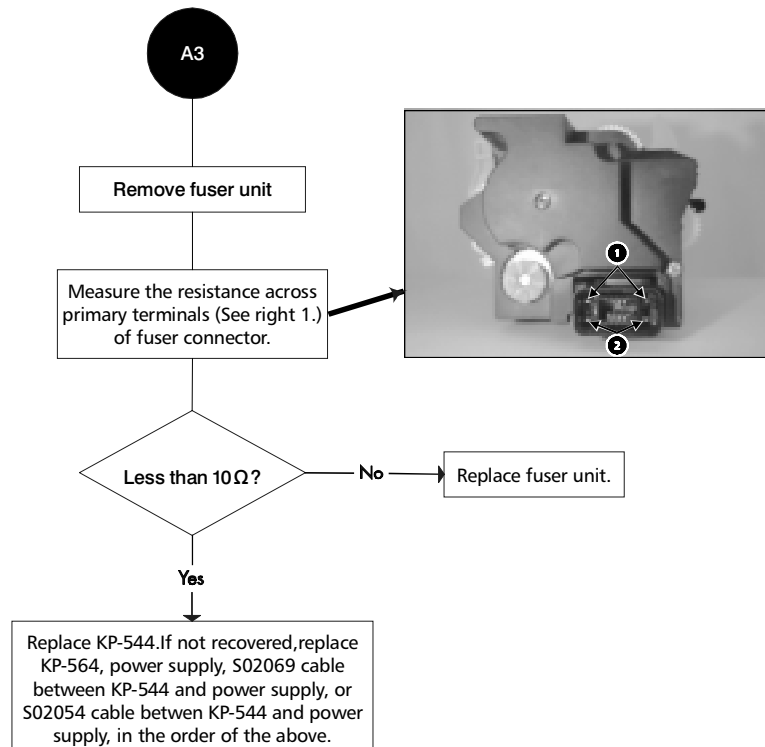
A2—Fuser overheating

Meaning	Suggested causes	Corrective action
The fuser unit is overheating.	<ul style="list-style-type: none"> Defective photo-coupler (low voltage) for heaters Defective engine gate array U2 Defective heater control circuit (engine board) or heater temperature detector 	Replace KP-544../Replace the switching regulator./Replace the switching regulator./Check or replace S02069 cable KP-544 and the switching regulator./Replace fuser.



A3—Fuser heater disconnection

Meaning	Suggested causes	Corrective action
Either or both heater lamp(s) is blown out.	<ul style="list-style-type: none"> Blown-out heater lamp(s) Defective connection between the engine board and the low voltage supply. Malfunctioning engine CPU Defective heater disconnection sensor circuit in the low voltage supply Defective thermo-cut (Replace the fuser unit.) 	Replace KP-544. Replace KP-564. Check/replace S02054 cable. Replace fuser unit.

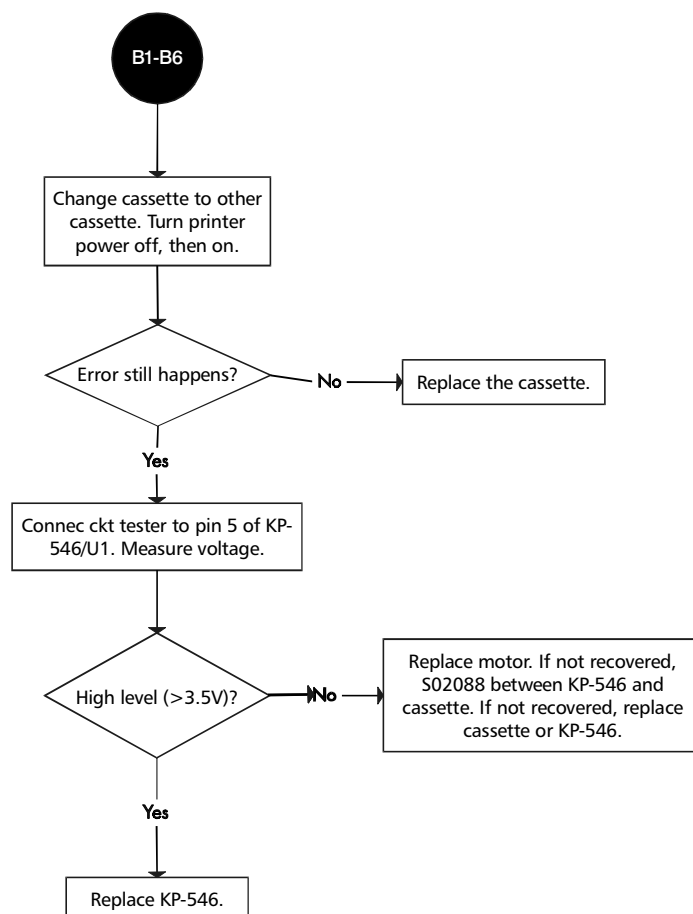


A4—Developer unit life-fuse error

Meaning	Suggested causes	Corrective action
The life fuse won't cut in the developer unit.	<ul style="list-style-type: none">• Defective engine gate array• Defective fuse cut circuit on the engine board	Try turning the printer off and on several times. Replace developer unit. Replace KP-544.

B1-B6—Feed cassette bottom plate motor error

Meaning	Suggested causes	Corrective action
The feed cassette bottom plate motor won't revolve.	<ul style="list-style-type: none"> Excessive torque on the motor (activating the current protection circuit) Stuck motor Defective feed board PU (U1) Defective motor driver circuit (transistors) or over-current detector circuit 	Replace the motor. Check/replace S02088/S02089 cables. Try replacing with other cassette to see if that cassette is faulty. Replace KP-546.



C1—Duplex communication error

Meaning	Suggested causes	Corrective action
Communication error between the duplexer and the printer.	<ul style="list-style-type: none"> Defective engine gate array (U6) Defective engine CPU (U1) Duplexer CPU (U1) malfunction Defective U2, U5, U6 on duplexer board Defective connection between KP-544 (YC4) and KP-568 (YC1), KP-568 (YC3) and liaison connector, liaison connector and KP-587 (YC1), or defective liaison connector 	Try reinstalling duplexer. Check/replace cable between printer and duplexer. Replace KP-587. Replace KP-544. Replace duplexer. Replace KP-568.

C2—Duplex printing registration error

Meaning	Suggested causes	Corrective action
The duplexer's registration boards are not in the home position.	<ul style="list-style-type: none"> Defective registration motor Defective home position sensor Malfunctioning motor driving circuit (U2/U6/U7) on duplexer board Defective duplexer CPU (U1) Connection error between the registration motor and KP-587 (YC5), or home position sensor and KP-587 (YC7) 	Check foreign objects or fractions of paper in duplexer. Try manipulating adjusters to check for smooth move. Check photo sensor for normal connection. Check/replace S02100 cable. Replace home position sensor. Replace KP-587. Replace duplexer.

C3—Void

C4—DF-30 IPC communication error

Meaning	Suggested causes	Corrective action
Communication error with the document finisher DF-30	<ul style="list-style-type: none"> Defective IPC (intelligent protocol controller) LSI (communication chip) Defective interface connector/cable 	Check interface cable between DF-30 and printer. Replace KP-544 (engine) or KP-568 (CON3) in the printer. Replace S02053 cable.

C5—DF-30 backup RAM error

Meaning	Suggested causes	Corrective action
Backup RAM error in the document finisher DF-30	<ul style="list-style-type: none"> Defective backup RAM 	Replace DF-30.

C6—DF-30 sensor error

This error means any of the following sensors in the DF-30 is defective:

- Input sensor
- Exit path sensor
- Inversion sensor
- Printer connection sensor
- Stack height limit sensor
- Stack home position sensor
- Offset sensor
- Cover sensor
- Stacker full sensor

C7—Void

C8—DF-30 staple unit movement motor error

Meaning	Suggested causes	Corrective action
The staple unit movement motor does not rotate.	<ul style="list-style-type: none"> The driver circuit for the motor is defective. The staple unit is defective. The motor is defective. 	Check connector J8 for the driver board. If not corrected, replace DF-30.

C9—DF-30 staple motor error

Perform the same procedure as C8 for the DF-30's staple motor.

CA—DF-30 alignment motor error

Perform the same procedure as C8 for the DF-30's alignment motor except making check on connector J11.

CB—DF-30 tray motor error

Perform the same procedure as C8 for the DF-30's tray motor except making check on connector J7.

CC—DF-30 paper feed motor error

Perform the same procedure as C8 for the DF-30's feed motor except making check on connector J11.

CD—DF-30 paper exit motor error/Sorter error

Perform the same procedure as C8 for the DF-30's exit motor except making check on connector J10.

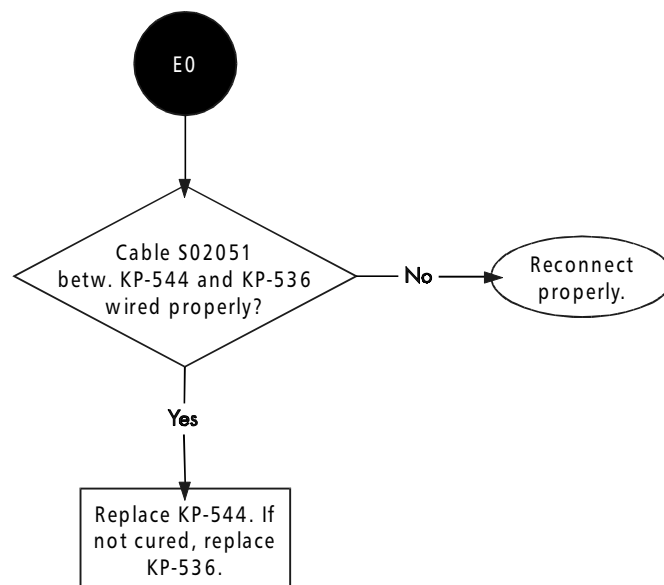
The CD error also suggests that the sorter ST-30 is defective.

D0-D4—Firmware program errors

These errors are explained in chapter 2, *Downloading firmware programs*.

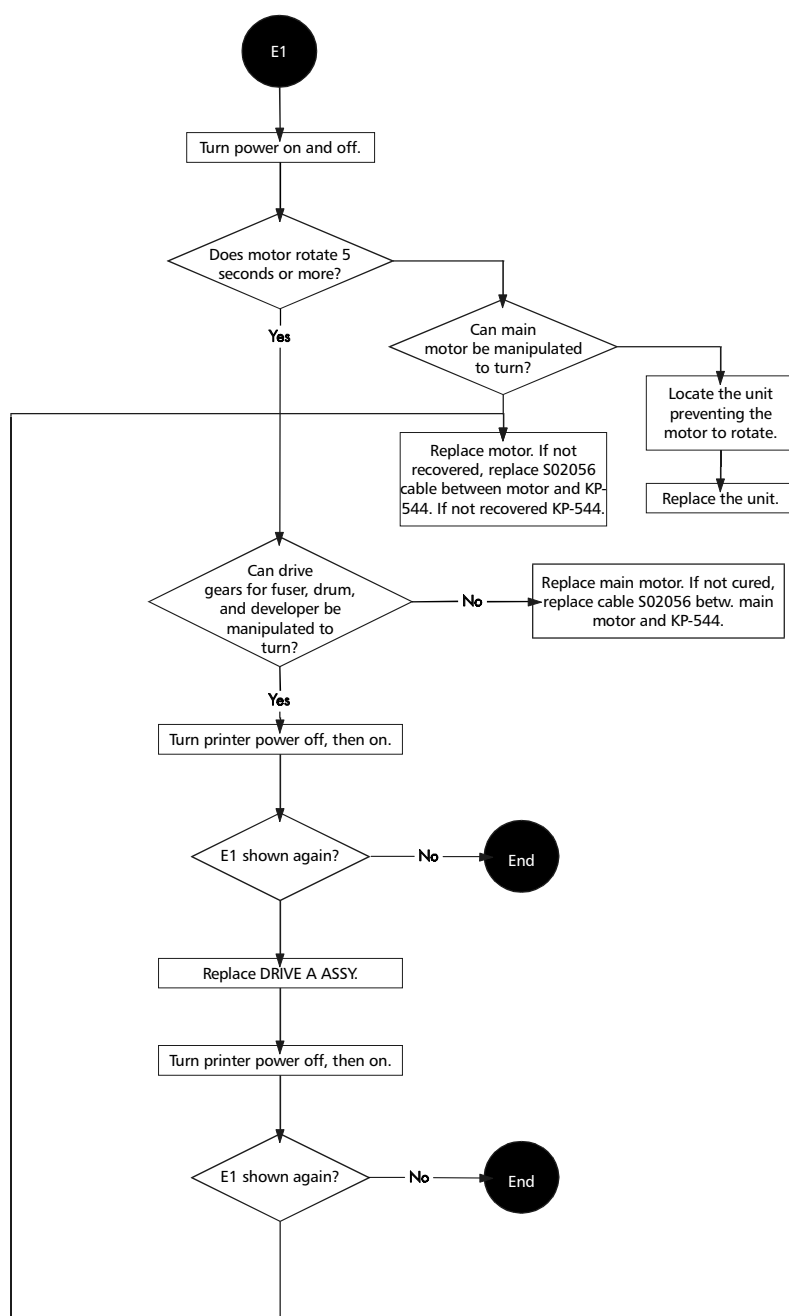
E0—Communication failure

Meaning	Suggested causes	Corrective action
The engine controller does not respond to the main controller.	<ul style="list-style-type: none"> Error with CPU and gate arrays of either the engine or main controller Connection error between the engine board and the main controller board Program overrun in the engine or main controller 	Check/replace S02051 cable. Replace KP-544. Replace KP-536.



E1—Main motor error

Meaning	Suggested causes	Corrective action
The main motor won't revolve, or will revolve too slow.	<ul style="list-style-type: none"> • Error with CPU and gate arrays of either the engine or main controller • The motor brake circuit is activated because of an abnormal torque of the motor. • Overheating protection circuit is activated because of the overheating main motor IC • Defective engine gate array (U2) • Defective main motor driving circuit (transistor arrays, etc.) on the engine board • Defective buffer IC for FG signal detection on the engine board 	Replace KP-544. Replace main motor. Check/replace S02056 cable. Replace drive unit.

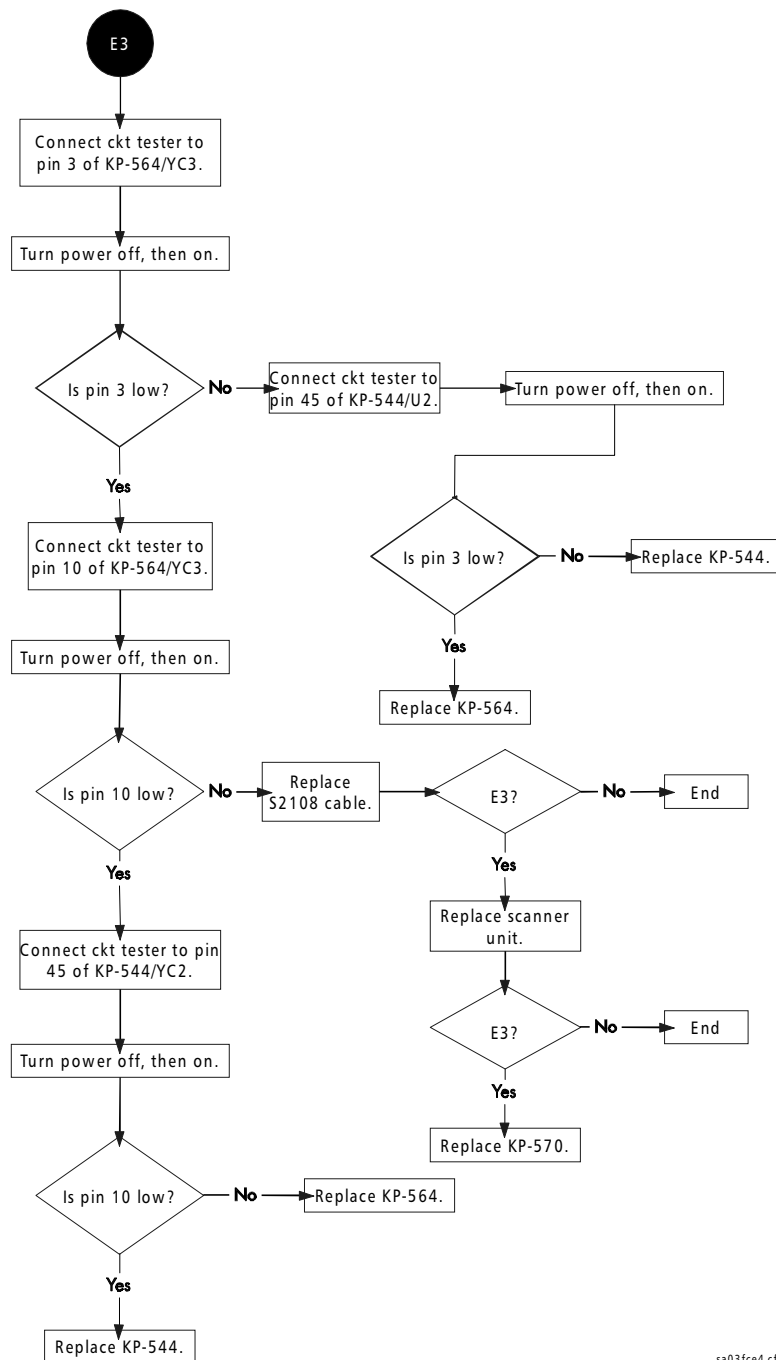


E2—Laser scanner motor error

Meaning	Suggested causes	Corrective action
The revolution of the polygon motor does not reach the predetermined revolution.	<ul style="list-style-type: none"> Defective scanner motor (e.g., at its axle holder) Connection error between polygon motor and liaison connector, or liaison connector and KP-570 (YC3) Defective engine gate array (U2/U6) Defective scanner motor driver transistor 	Check/replace cables. Replace KP-544. Replace KP-564. Replace KP-570. Replace scanner unit.

E3—Laser beam detection error

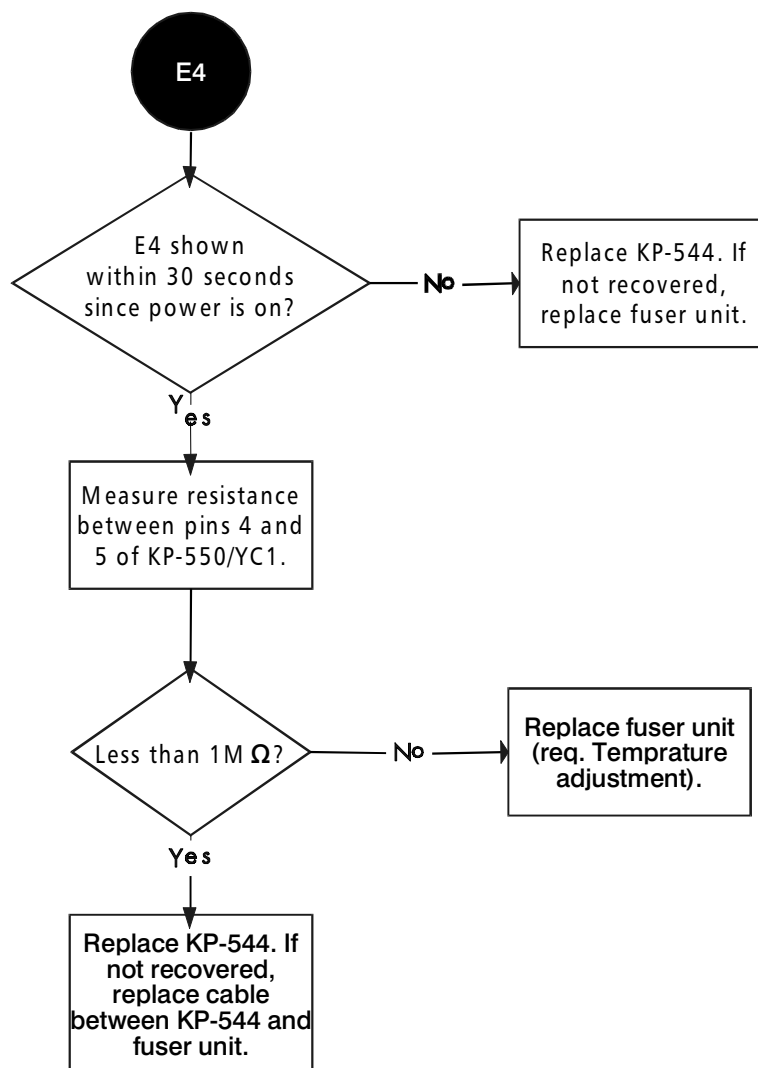
Meaning	Suggested causes	Corrective action
Beam detection is failed. The photo detector failed to detect laser beam.	<ul style="list-style-type: none"> Laser diode does not emit. Connection error between KP-578 (YC2) and KP-579 (YC101 [within scanner]), KP-578 (YC1) and KP-570 (YC2), KP-578 (YC1) and KP-564 (YC3), KP-570 (YC1) and KP-564 (YC3), or KP-572 (YC1) and KP-564 (YC3) Defective or contaminated pin-photo IC Malfunctioning interlock detection circuit on the ending board Defective engine gate array U2 	Check/replace cables. Replace KP-544. Replace KP-564. Replace KP-570. Replace scanner unit.



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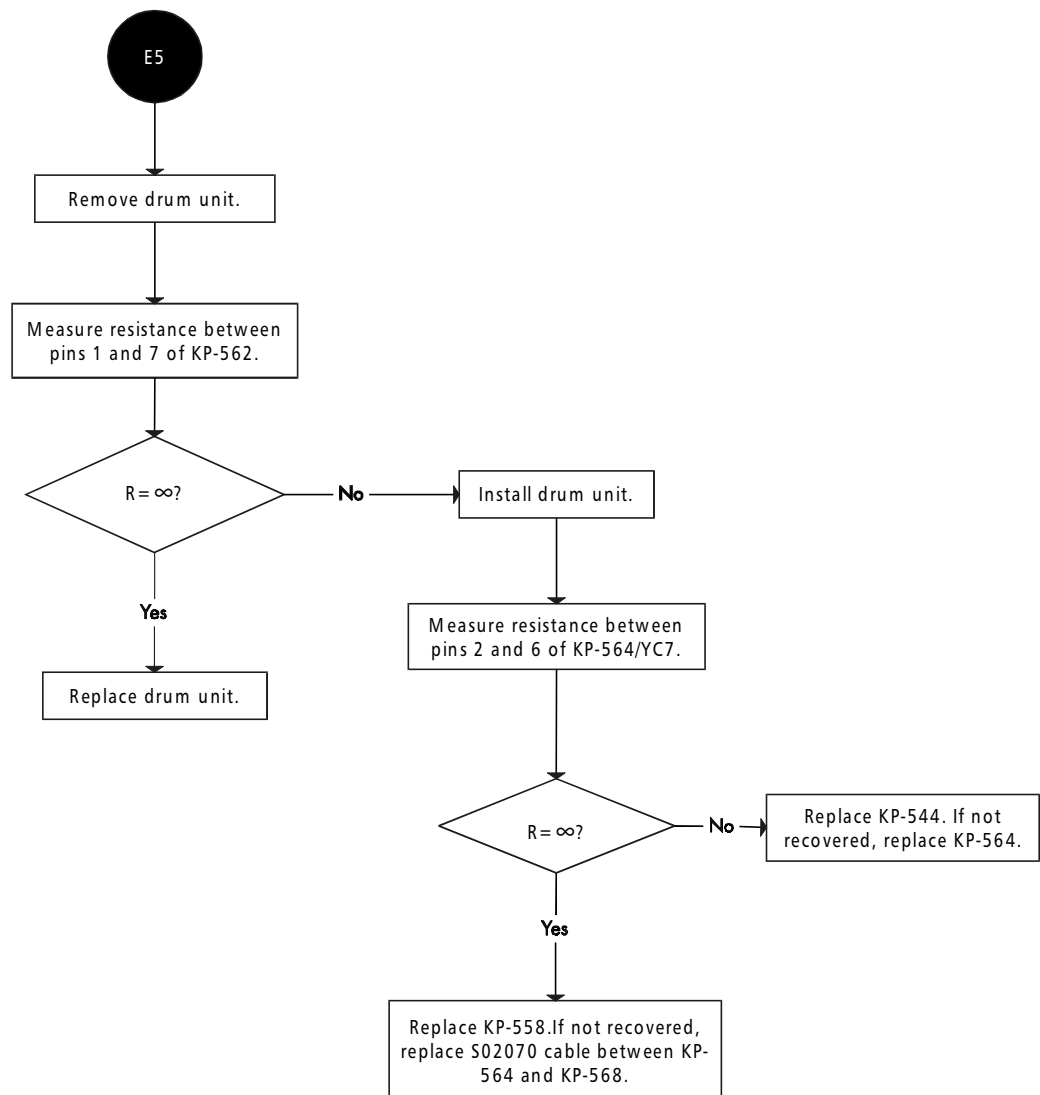
E4—Fuser heater error

Meaning	Suggested causes	Corrective action
The fuser heater does not turn on. [E4 is indicated immediately after power is on.]	<ul style="list-style-type: none"> • Connection error between the engine board and the fuser unit • Defective engine gate array U2 • Defective comparators on the engine board • Defective thermistor (cut) • Connection error between the fuser board and the thermistor 	Replace KP-544. Replace fuser (temp. adjustment is required.) Check/replace S02054 cable.
The fuser heater does not turn on. [E4 is indicated several minutes after power is on.]	<ul style="list-style-type: none"> • Connection error between the engine board and the low-voltage power supply • Defective engine gate array U2 • Defective transistors, logic gate ICs, comparators, etc. on the engine board • Defective thermistor (showing high resistance even at heating) 	



E5—Eraser error

Meaning	Suggested causes	Corrective action
The eraser does not turn on.	<ul style="list-style-type: none"> Connector error between CON1 board and the drum liaison board Defective connector between the drum liaison board and the drum board Defective transistors and logic gate ICs in the eraser controller circuit on the engine board Connection error between drum unit board and eraser lamp Broken eraser lamp 	Replace KP-544. Replace KP-564. Replace drum unit. Check/replace S02070 cable.



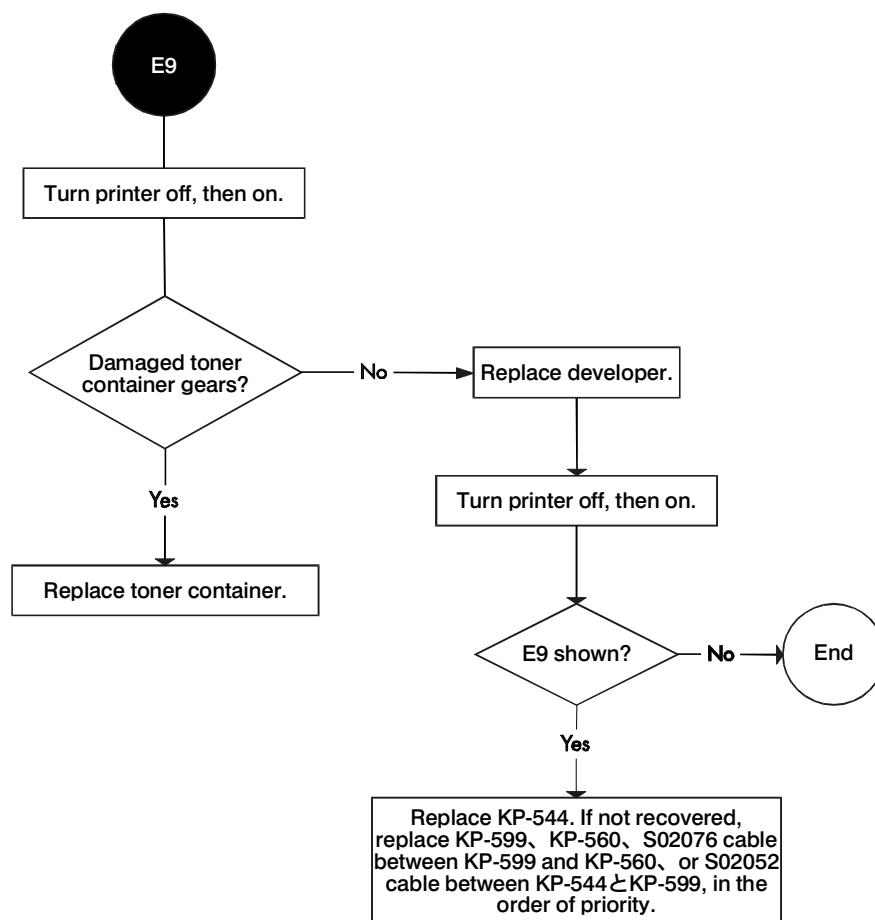
E8—Fuser unit life fuse error

Meaning	Suggested causes	Corrective action
The fuser unit life fuse won't blow out.	<ul style="list-style-type: none"> Defective gate array U6 Defective fuse cut circuit on the engine board 	Turn printer power off and off several times. Replace fuser unit. Replace KP-544.

E9—Toner motor error

Meaning	Suggested causes	Corrective action
The toner motor does not revolve, or the current protection circuit is activated.	<ul style="list-style-type: none"> Overcurrent in the toner motor circuitry due to an excessive torque Toner motor locked Defective gate array U2 Defective toner motor driver transistor or overcurrent detector 	Replace toner container. ¹ Replace developer unit. Replace KP-544. Replace KP-599. Check/replace S02052 and S02076.

¹ Also, try rotating the TK-30 gear (feed gear). Compare the torque with a new TK-30. Replace the TK-30 if the torque is abnormal. Replace developer unit if the TK-30 is normal.



F0—Controller system lock error

Meaning	Suggested causes	Corrective action
Main controller can not communicate with control panel [shown approx. 30 seconds since OS fails to continue operating.]	Connection error between main controller board and engine controller board, engine board and CON1 board, or CON1 board and front panel board.	Replace KP-536 (main cont.). Check/replace S02051. Replace KP-544 (engine). Replace KP-564 (CON1).

F1—Main controller ROM checksum error

Meaning	Suggested causes	Corrective action
Checksum is failed with the system ROM	—	Replace KP-537 (cont. ROM).

F2—RAM read/write error

Meaning	Suggested causes	Corrective action
Checksum is failed with the RAM on the main controller board.	—	Replace option SIMM's. Replace KP-536.

F3—Controller system error

Meaning	Suggested causes	Corrective action
Error other than F0, F1, and F2. [privilege violation, bus error, etc.]	—	Turn printer power off, then on again. If not solved, replace the main controller board.

Other errors relating to the controller board

Symptom	Suggested causes	Corrective action
Display freezes while indicating <i>Processing</i> .	A situation in which OS is not able to run is occurred.	Turn power on and off. Or, replace the main controller board.
Printed characters garbled.	Wrong printer driver is used. Wrong emulation is used. Parameters are incorrect on the parallel interface. The surge protection devices on the main controller is defective.	If the parallel interface is being used, investigate for the adequate length of the parallel cable. Also, check that the cable is properly shielded. Or, replace the main controller board.
Harddisk error occurred.	—	See <i>Option harddisk errors</i> on page 6-38.
No display on the message display.	Defective wiring around the front panel. Defective front panel board.	Check wiring between the main board and engine board; between the engine board and CON1 board; and CON1 board and front panel board. Replace the front panel board and/or main board.

Option harddisk errors

The printer indicates *Harddisk error* messages on the message display when it detects errors with the option harddisk HD-1 (if installed). This message is followed by a two-digit code which provides the following meaning and corrective action to the specific error.

To clear the error message and continue operating the printer, press the **CONTINUE** key.

Harddisk error code	Meaning	Corrective action
01	Format error or the harddisk is damaged.	Turn printer power off then on again. If not recovered, consider reformatting the harddisk. ² [Warning—Formatting erases all data existing in the harddisk.]
02	No harddisk installed.	Ensure that the harddisk is installed properly in the printer. For instructions, refer to the manual accompanying the harddisk kit.
03	Harddisk is write-protected.	Unlock the write-protection state by KPDL or PJL. Consult the system administrator if required.
04	Insufficient capacity on harddisk, or the number of files stored has exceeded 10,000.	Free harddisk space by removing unnecessary file in the harddisk.
05	The specified file does not exist.	Ensure whether a file with the specified name exists on the harddisk. If the file exists, ensure that correctly matching file name is called, i.e. case. Print out a partition list from the printer to obtain a list of the included partition names in the harddisk. (See the printer's manual.)
06	The memory available for use by the file system is insufficient.	Install more memory in the printer. (See the printer's manual.)

² For instruction on how to format the harddisk, refer to the user's manual for the printer or the harddisk.

Print quality problems

Print quality problems range from uneven tone to completely blank output. The troubleshooting procedure for each type of problem is given below.

Completely blank printout

Check the developer unit.

- Check that the developer unit is inserted correctly
- Check that the developer 's connector is connected properly.
- Check that toner is adhered around the developing roller. If no toner appears to be on the roller, try feeding toner into the developer using the manner described in chapter 3 (See page 3-13).

Check main charging potential.

- Check the main charging output on the HV board. This requires removal of the left side cover and the test equipment: For information, contact Kyocera. Replace the HV board if high voltage potential is not available on the board.

Check the laser scanner.

- The scanner components within the scanner may be disordered. Note that the laser scanner is concealed to protect the components which are susceptible to dust. It should not be disassembled except within a dust-free chamber. Replace the scanner unit if necessary.

All-black printout

Check the main charger unit installation.

- Open the printer side cover and check that the main charger unit is correctly seated. To do this, take out the main charger unit from the printer; then reinstall it carefully.

Check the grid plate (the mesh metal bottom part of the

- The grid plate must be flat and fit horizontally in place. Replace the main

charger unit).

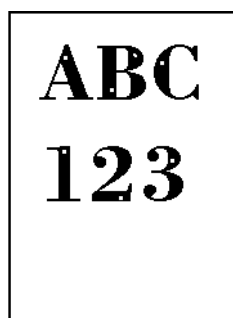
Check the drum bias.

Check high voltage potential at the HV board.

charger unit if necessary.

- Make sure the bias from the HV board is correctly arrived at the drum unit.
- Check the high-voltage output on the HV board. This requires removal of the left side cover and the test equipment: For information, contact Kyocera. Replace the HV board if high voltage potential is not available on the board.

Dropouts



Note the spacing of the defects. Use the *Repetitive defect gauge* on page 6-43.

Try changing the transfer bias potential (*Normal* or *Thick*).

Check paper for property.

Check the paper chute installation.

- If the defects occur at regular intervals of 63 mm, the problem may be a dirty transfer roller. Clean or replace the transfer roller.
- If the defects occur at regular intervals of 94 mm, the problem may be a damaged drum unit or fuser roller. Replace the drum unit or fuser unit accordingly.
- Use the **MODE SELECT** key on the printer's control panel. For details, refer to the user manual accompanying the printer.
- Paper with rugged surface or dump tends to cause this type of failure.
- The paper chute (the metallic fixture provided between the transfer roller and the fuser unit for antistatic purpose) must not be fit loose. Press the paper chute down firmly if

Check the transfer roller installation.

Check the transfer bias potential.

necessary.

- The transfer roller must be supported by the axle holder at the both ends. Clean the axle holder to remove oil and debris. Replace the transfer roller if necessary.
- Check the transfer bias output on the HV board. This requires removal of the left side cover and the test equipment: For information, contact Kyocera. Replace the HV board if high voltage potential is not available on the board.

Black dots

Note the spacing of the defects. Use the *Repetitive defect gauge* on page 6-43.

- If the defects occur at regular intervals of 94 mm, the problem may be a damaged drum unit or fuser roller. Replace the drum unit or fuser unit accordingly.
- If the defects occur at random intervals, the toner may be leaking from the drum unit. Replace the drum unit.
- If the defects occur at regular intervals of 38 mm, the problem may be a toner lump on the developing roller. Remove the lump using a soft brush. Note that the developing roller surface is fragile: Contact Kyocera for type of the brush to use.

Horizontal streaks

Check drum ground.

Check main charger contacts.

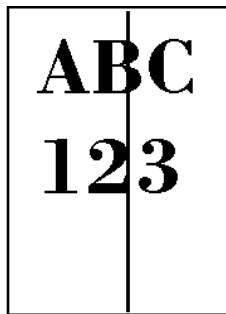
- The drum axle and its counter part—drum grounding tab in the printer must be in a good contact. If necessary, apply a small amount of electro-conductive grease onto the tab. See Kyocera for which type of grease to use.
- Take out the main charger unit; check the

The drum unit may be defective.

electric terminals to see if they are clean.

- Replace the drum unit.

Black vertical streaks



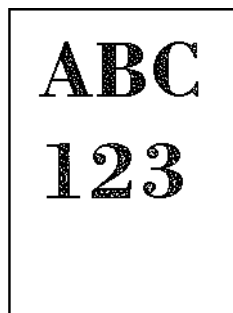
Contaminated main charger wire.

Check the drum surface for a streak of toner laying lengthwise.

Defective developer unit.

- Clean the main charger wire by pulling the green colored cleaning knob in and out several times.
- A streak of toner remaining on drum after printing means that the cleaning blade in the drum unit is not working properly. Replace the cleaning blade; or replace the drum unit.
- Replace the developer unit.

Unsharp printing



Check contamination on the main charger wire and the grid.

Check paper for property.

Check the paper chute installation.

Try changing the transfer bias potential (Normal or *Thick*).

Check the transfer roller installation.

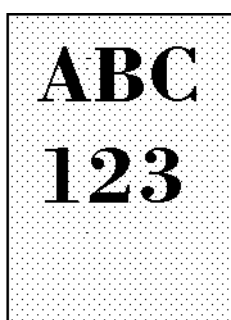
Check the transfer bias potential.

Check *EcoPrint* setting.

Refresh drum.

- Clean the main charger wire by pulling the green color main charger wire cleaner know in and out several times.
- Paper with rugged surface or dump tends to cause this type of failure.
- The paper chute (the metallic fixture provided between the transfer roller and the fuser unit for antistatic purpose) must not be fit loose. Press the paper chute down firmly if necessary.
- Use the **MODE SELECT** key on the printer's control panel. For details, refer to the user manual accompanying the printer.
- The transfer roller must be supported by the axle holder at the both ends. Clean the axle holder to remove oil and debris. Replace the transfer roller if necessary.
- Check contamination on the main charger wire and the grid.
- The EcoPrint mode can provides faint, unsharp printing because it acts to conserve toner for draft printing purpose. For normal printing, turn the EcoPrint mode off by using the **MODE SELECT** key on the printer's control panel.
- Try cleaning the drum surface using the printer's built-in cleaning system specifically provided for this purpose. For details, refer to page6-45.

Gray background



Check contamination on the main charger wire and the grid.

Check the grid plate (the mesh metal bottom part of the charger unit).

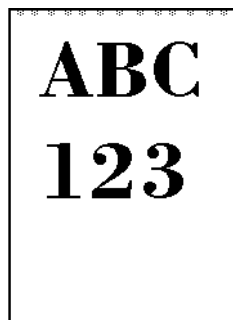
Check the print density setting.

Check the surface potential of the drum.

The developer unit may be defective.

- Clean the main charger wire by pulling the green color main charger wire cleaner know in and out several times.
- The grid plate must be flat and fit horizontally in place. Replace the main charger unit if necessary.
- The print density may be set too high. Try adjusting the print density using the **MODE SELECT** key. For details refer to the printer's user manual.
- The drum potential should be approximately 260V for FS-1700 and 240V for FS-3700. These values may vary depending on production lots and the measurement is possible only by using the jig and tool specifically designed for this purpose: See Kyocera for details. The drum unit will have to be replaced if it will bear the values far out of the allowable range.
- If a developer unit which is known to work normally is available for check, replace the developer currently used in the printer with it. If the symptom disappears, replace the developer unit with a new one.

Dirt on the top edge or back of the paper



Check toner contamination in various parts.

Check the transfer roller.

- Dirty edges and back of the paper can be caused by toner accumulated on such parts as the paper chute, paper transportation paths, the bottom of the developer unit, and the fuser inlet. Clean these areas and parts to remove toner.
- If the transfer roller is contaminated with toner, clean the transfer roller using a vacuum cleaner; or by continuously printing a low-density page until the symptom has faded away.

Repetitive defects gauge

Use the following measurements for checking repetitive occurrences on the printed page. See the above section for details.

	FIRST OCCURRENCE OF DEFECT
	32 mm—DEVELOPING ROLLER
	37.5 mm—UPPER REGISTRATION ROLLER
	50 mm—LOWER REGISTRATION ROLLER
	66 mm—TRANSFER ROLLER/DEVELOPING PULLEY
	94.3 mm—FUSER PRESSURE ROLLER
	116.3 mm—FUSER HEAT ROLLER
	128.3 mm—DRUM UNIT

Drum cleaning

This mode is meant to provide a *manual* means of drum cleaning in addition to the regular cleaning procedure made automatically in a photographic cycle. In this mode, the drum turns for the period of approximately three minutes with no main charging dispersed over the drum. Since the cleaning blade in the drum continuously attempt to scrape soils and paper dust on its surface, the drum can be brought in a clean state.

To clean the drum using this feature, perform the following, top to bottom:

press	MODE	then,
press	+ repeatedly until:	Others>
press	▶	then,
press	+ repeatedly until:	>Service>
press	▶ , the display should show:	>>Developer
press	+ , the display should show:	>>Drum
press	ENTER , the display should show:	?
press	ENTER	

The drum then starts turning and stops after approx. 3 minutes. The printer reverts to Ready.

Correcting a paper jam

This section describes how to remove paper when it jams in the printer. The printer will stop whenever paper jams in the printer or paper is not fed from a cassette. The printer will go offline and the message **Paper jam Open front cover** will appear in the message display.

Paper jam Open front cover

Opening the printer's front cover will cause the message display to change. It will now indicate the coded location (A through I and 1 through 6) of the paper jam.

Example—

Paper jam C, H, 1

In this example, paper is jammed in the paper feeder (C), paper feed unit (H), and in the upper cassette (1). The corrective action to take in cases like this is explained using actual examples beginning from page 5-20.

The meanings of symbols appearing on the message display and the corresponding locations of paper jams are given in the table on the next page. Be sure to correct paper jams according to the procedure given on the following pages.

Locating and correcting paper jams

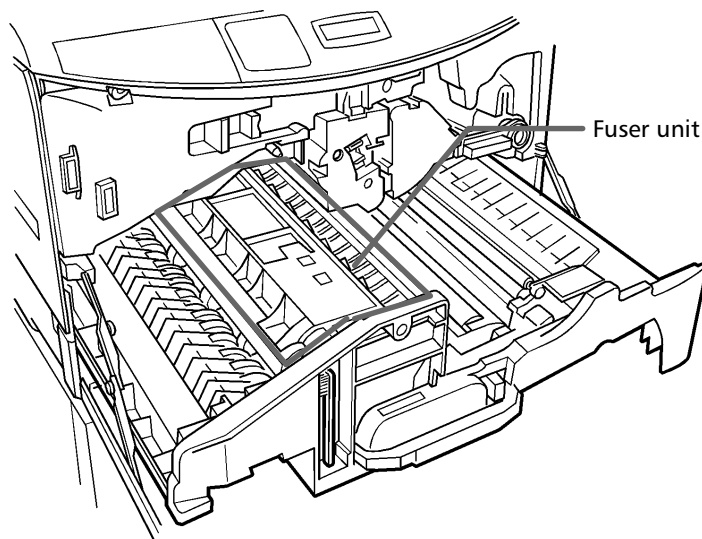
MESSAGE DISPLAY INDICATOR AND PAPER JAM LOCATION

Ind.	Meaning of Indicator	Corresponding Printer Location
A	Optional paper feeder (EF-1 or UF-1)	
B	Multi-purpose tray	
C	Paper feeder included with printer	
D	Optional paper feeder (PF-30)	
E	Optional paper feeder (PF-30)	
F	Optional paper stacker (DF-30 or ST-30)	
G	Face-up output tray	
H	Paper feed unit	
I	Optional duplex printing unit (DU-30)	
1	Cassette 1	
2	Cassette 2	
3	Cassette 3	
4	Cassette 4	
5	Cassette 5	
6	Cassette 6	

Correcting paper jams



Warning—Pull out the paper feed unit (See below.) and wait a while to allow the fuser unit to cool. Do not touch the fuser unit as this may result in a burn injury.



Warning—Take care not to leave any small pieces of paper in the printer when removing paper jams as this may result in fire.

Note—Data remaining in the printer will be lost if power is turned off while correcting a paper jam.

After checking the location of the paper jam using the table on the previous page, take corrective action according to the table on the next page. After removing all jammed paper, the printer will automatically resume printing.

Ind.	Meaning of indicator	Corresponding printer location
A	Check the optional paper feeder (EF-1 or UF-1).	When a paper jam occurs in the optional feeder, pull it out carefully. (For details, read the instruction manual for each separate option.)
B	Check the multi-purpose tray.	When a paper jam occurs in the multi-purpose tray, first completely remove all jammed paper and then open and close the front cover.
C, D, E	Check the optional paper feeder PF-30. (D and E are only displayed when an optional PF-30 is installed.)	Open the side cover of the paper feeder indicated and remove the jammed paper. See page 6-53.
F	Check the optional paper stacker DF-30 or ST-30.	Remove the paper jammed in the paper stacker. (For details, read the paper stacker instruction manual.)
G	Check the face-up output tray.	If printing stops before a page is completely output, carefully remove that sheet of paper. See 6-53.
H	Check the face-down output tray.	If printing stops before a page is completely output, carefully remove that sheet of paper.
	Check the paper feed unit.	Open the front cover and carefully pull out the paper feed unit as far as it will go. If paper is jammed in the registration rollers, remove it by the easiest means possible. See page 6-55. Pull jammed paper out of the fuser unit in the same manner. See page 6-55. After all paper has been completely removed, return the paper feed unit.
	Check the fuser unit.	Open the front cover and carefully pull out the paper feed unit as far as it will go. Open the fuser unit cover (grasp the tab [green]) and check inside the fuser unit. Jammed paper may sometimes be left inside the fuser unit. See page 6-56.
	Check the optional duplex printing unit (DU-30). (Only when installed)	Open the front cover, pull out the duplex printing unit and remove the jammed paper. (For details, read the duplex printing unit instruction manual.)
I	Check the cassette indicated.	Pull out the cassette indicated and remove the jammed paper. After all paper has been completely removed, open and close the front cover.
1 — 6		

Example—Understanding the paper jam indication

In the example below, paper is jammed in the paper feeder (C), the upper cassette (I), and the paper feed unit (H).

Paper jam C, H, I

- 1 When paper jams in multiple locations such as in this example, begin taking corrective action from the location displayed at left. After the paper jam in the paper feeder (C) is corrected, the display will change as follows.

Paper jam H, I

- 2 Next, pull out the paper feed unit and remove the jammed paper. After removing the paper the display will change as follows.

Front cover Open

- 3 Close the front cover. This completes removal of this paper jam.

The page on which the paper jam occurred may not be re-printed depending on the location of the paper jam.

Frequent occurrence of paper jams may indicate you are using a paper specification which does not suit the printer. If this appears to be the case, try switching to a different type of paper.

Paper jam removal diagrams

These diagrams are for assistance in following instructions on page 6-49.

DIAGRAM 1—PAPER FEEDER

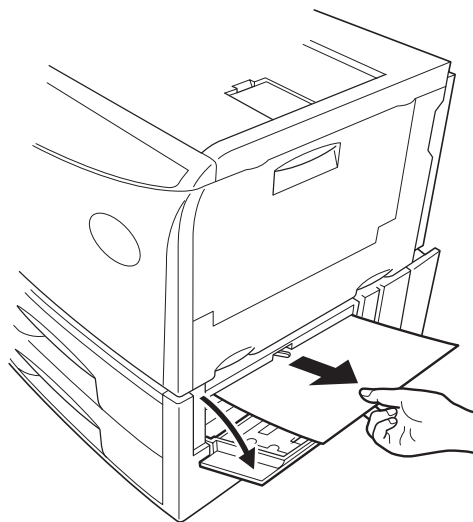
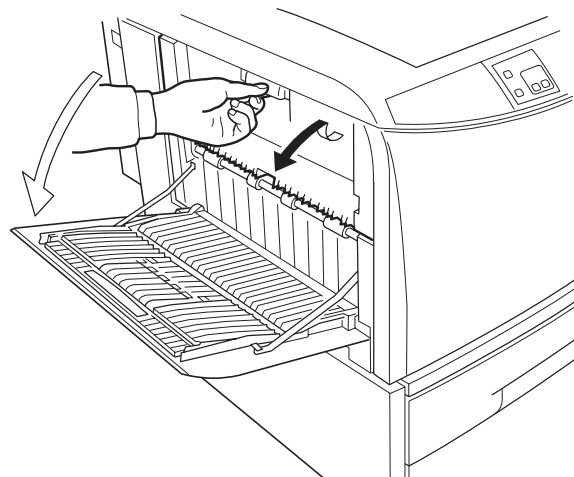
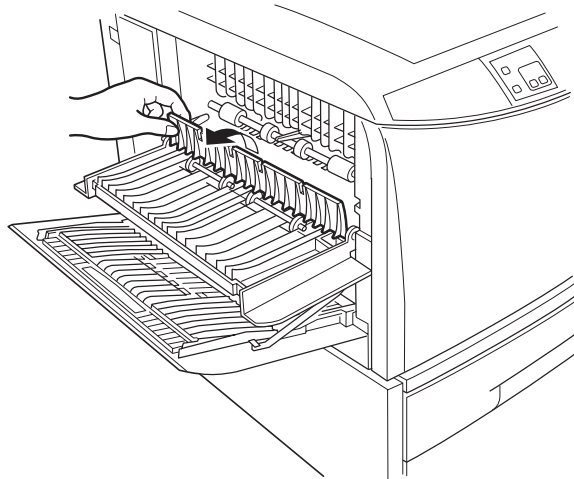


DIAGRAM 2—FACE-UP STACK

Step 1



Step 2



Step 3

