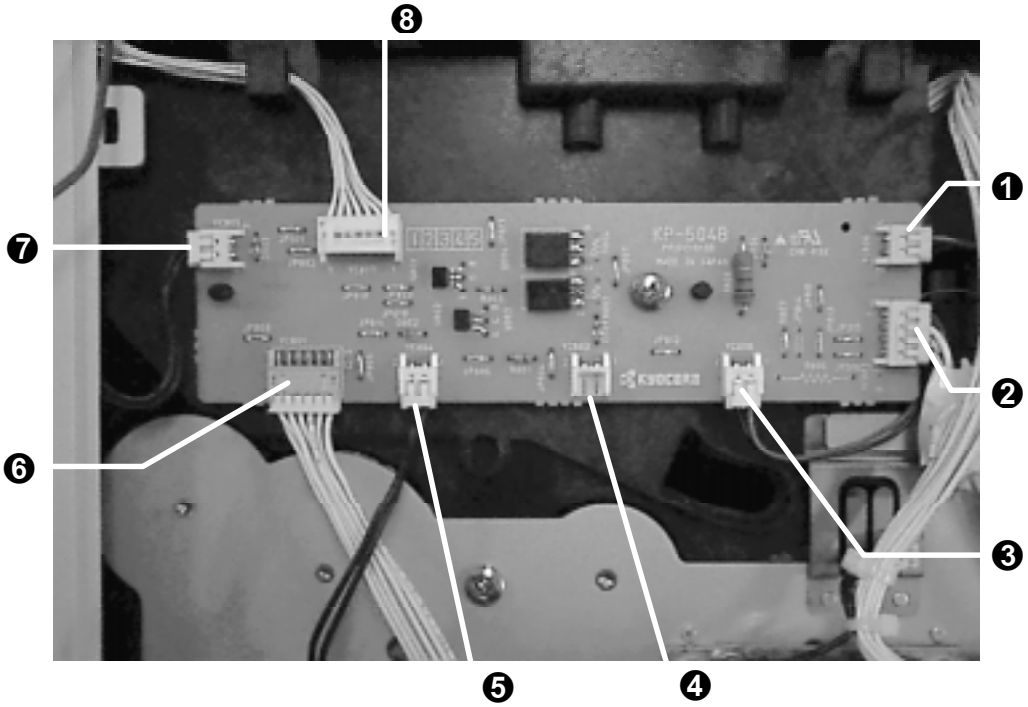
Chapter Six TROUBLESHOOTING

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

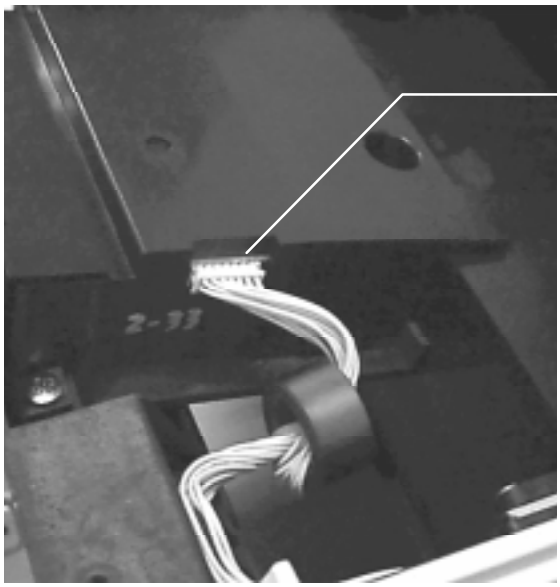
Board layouts

Liaison board/KP-504

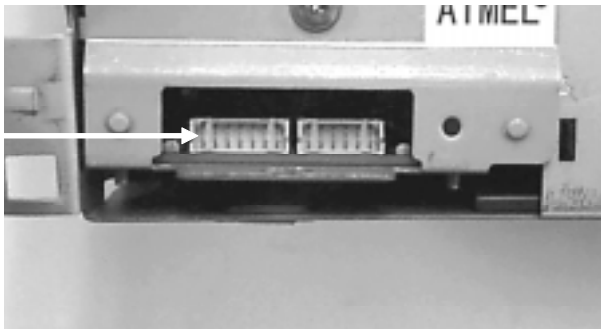


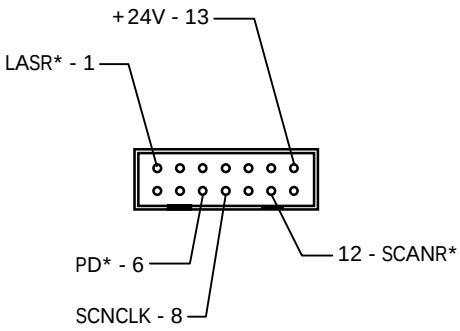
Symbol (above)	Connector	Connected to:	Check point
❶	YC806	Fan (large)	
❷	YC802	Main motor	E1, Pin 3 (MOTOR*)/Pin 1 (+24V)
❸	YC808	Fan (small)	
❹	YC803	Registration clutch	
❺	YC804	Paper feed clutch	
❻	YC801	Engine board	E1, Pin 12 (MOTOR*)
❼	YC805	Manual feed clutch	
❽	YC807	Front operator panel	

Scanner interface board/KP-488

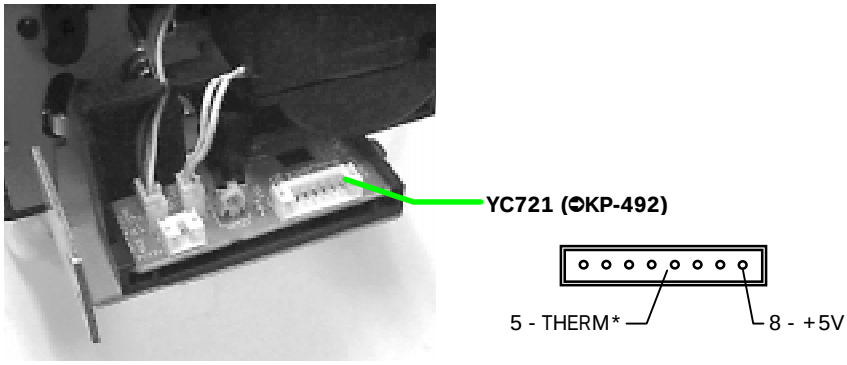


Engine board connectors/KP-535

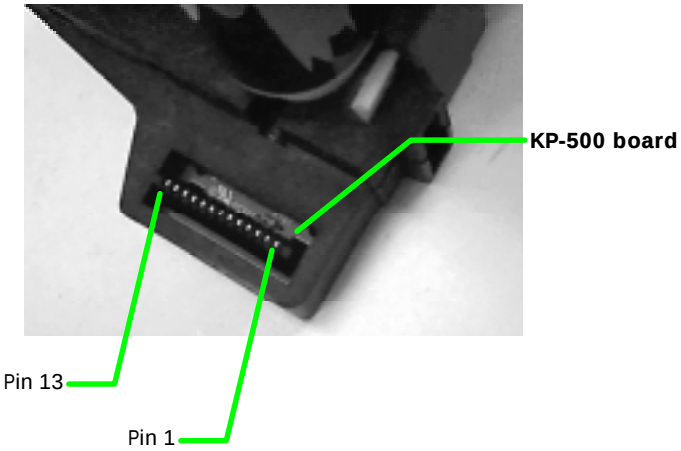




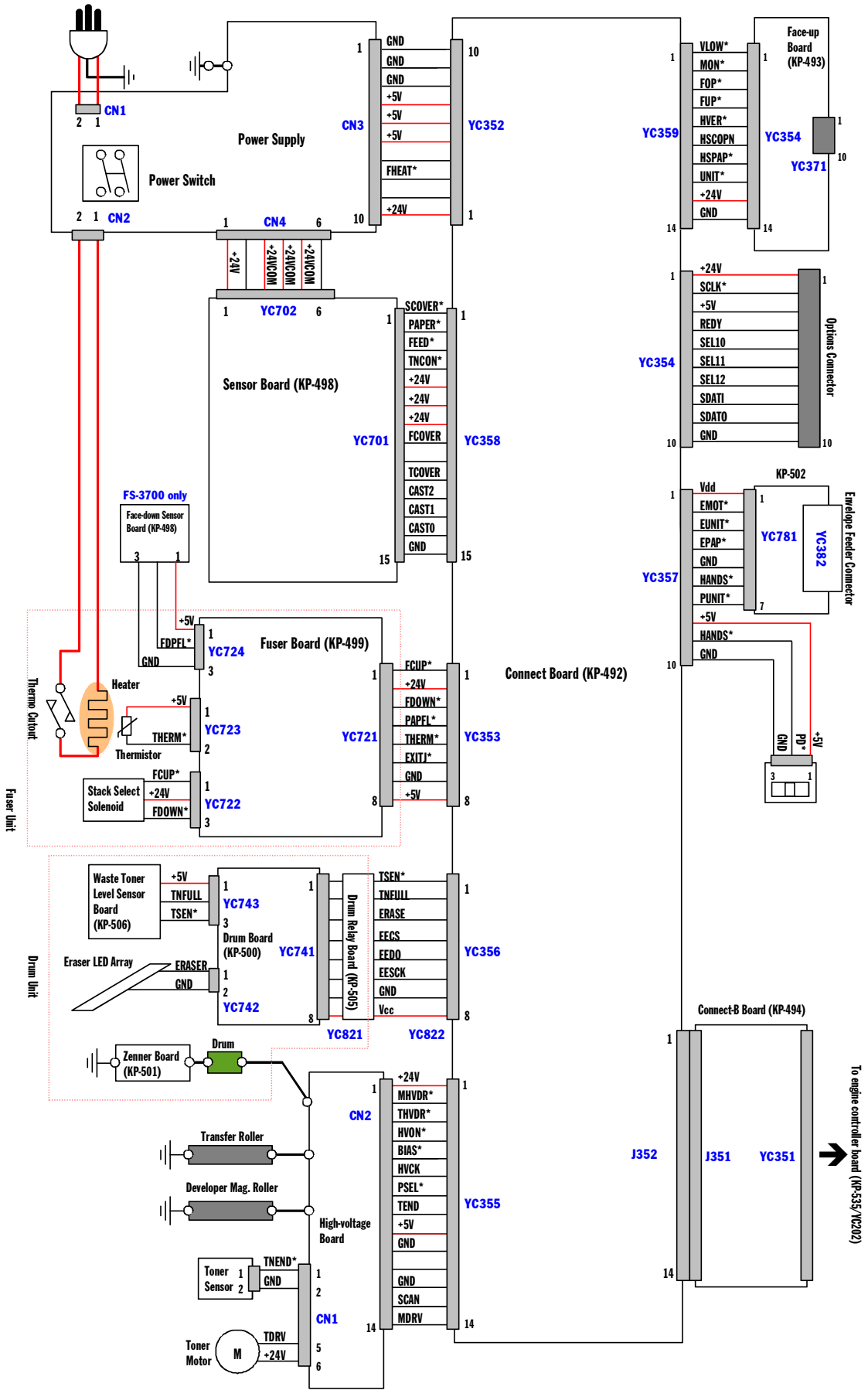
Fuser board/KP-499



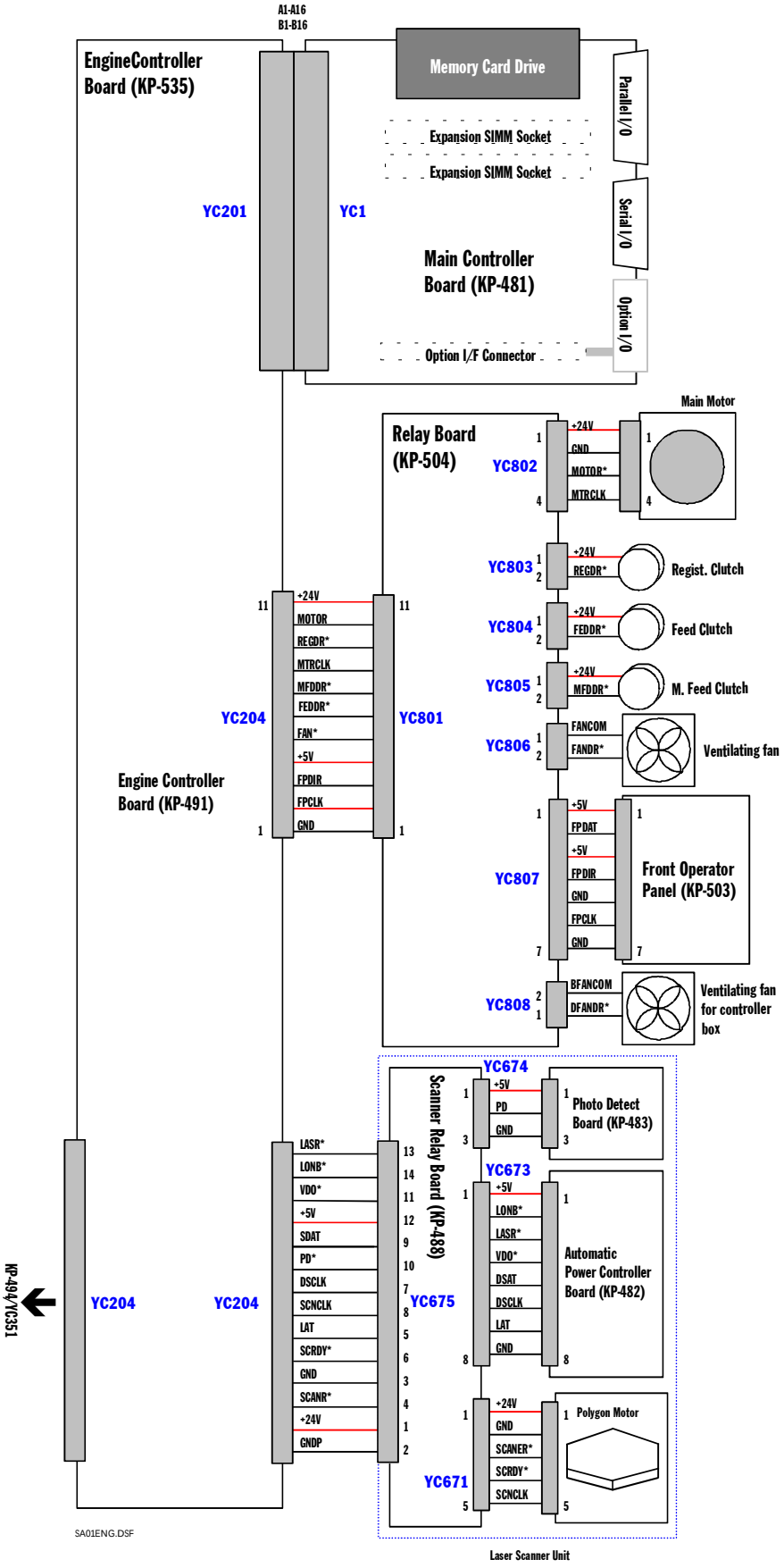
Drum connector/YC-741 (KP-500 board)



General wiring diagram ❶



General wiring diagram ❷



Diagnostic

The printer automatically executes its self-diagnostic test when it is powered up (displaying *Self-test*). The sequenc 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 message on the operator panel display.

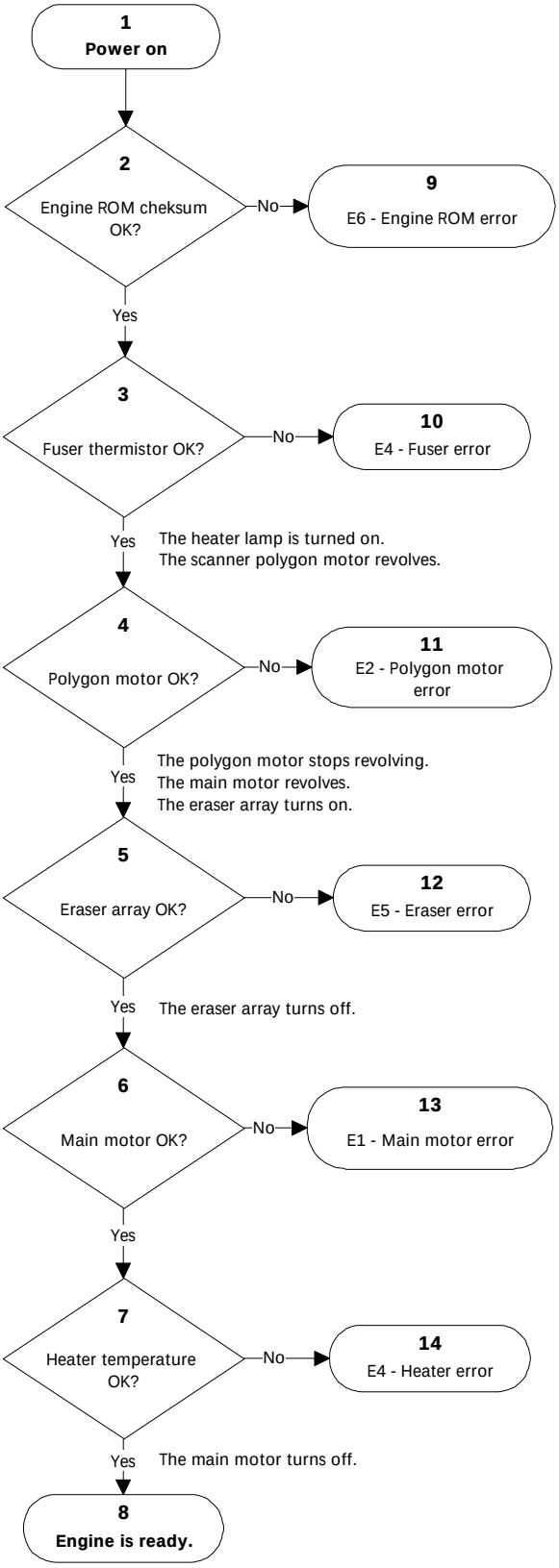
The diagnostic test is done on the following systems simultaneously:

- Engine system (E errors)
- Controller system (F errors)

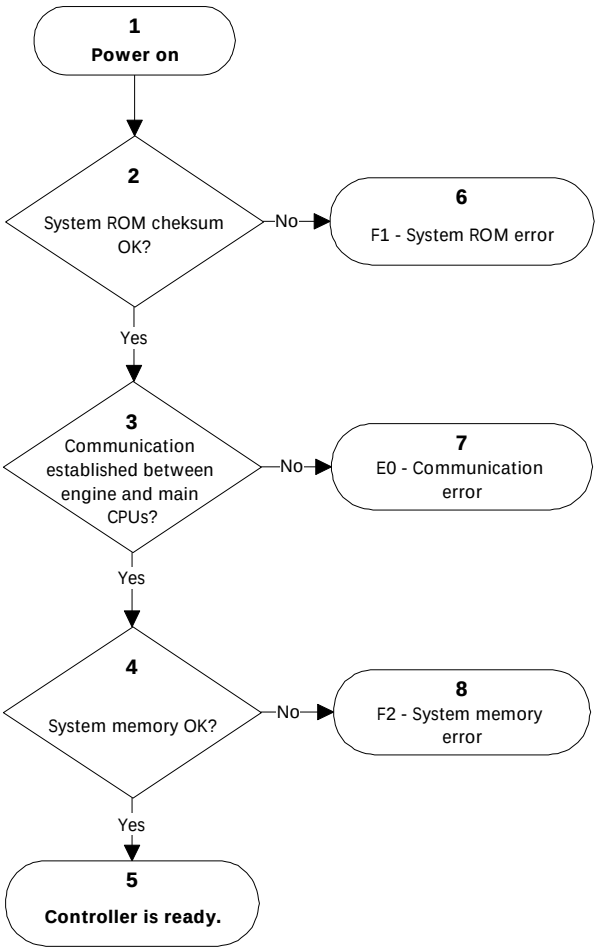
Flowcharts on the following pages show the order and the items diagnosed in each system.

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

Engine diagnostics flow



Logic controller diagnostics flow



For details on how to react to the results of diagnostics, refer to section **Service errors** on page 6-19.

General error handling

Priority

Each error message has a priority over the others. Thus, if two or more error messages are given simultaneously, the error message having the highest priority is shown. The priority is as follows (from the highest to the lowest):

❁=Short audio alarm/✺=Long audio alarm

Error message	Category	Remarks
Call service person …	Service error	See *Diagnostics* section.
Call service person F0	Service error	See *Diagnostics* section.
I/F occupied	-	
Top cover open	User-recoverable error	If not user-recoverable, see *False errors - "Top Cover Open"*, page 6-33.
Paper feed unit open	User-recoverable error	If not user-recoverable, see *False errors - "Paper Feed Unit Open"*, page 6-32.
Side cover open	User-recoverable error	If not user-recoverable, see *False errors - "Side cover Open"*, page 6-34.
Paper handler cover open	User-recoverable error	When a HS-20 is installed.
Option stacker cover open	User-recoverable error	When a HS-3E is installed.
Opt. Feeder 1 (2) rear cover open	User-recoverable error	When a PF-20 is installed.
Opt. Stacker unit rear cover open	User-recoverable error	When a SO-6/ST-20 is installed.
Duplex unit rear cover open	User-recoverable error	When a DU-20 is installed.
Replace Toner/Clean printer❁	User-recoverable error	
Missing Waste-toner bottle	User-recoverable error	If not user-recoverable, see *False errors - "Missing Waste-toner bottle"*, page 6-35.
Replace Waste-toner bottle❁	User-recoverable error	
Clean printer … Press CONT❁	User-recoverable error	
Paper jam❁	User-recoverable error	
Remove Opt. Stacker paper❁	User-recoverable error	
Option Stacker paper full❁	User-recoverable error	HS-3E

Error message	Category	Remarks
Face-down tray paper fill✵	User-recoverable error	FS-3700 only
Paper path error✵	User-recoverable error	
MEMORY CARD err Insert again	User-recoverable error	
Insert the same MEMORY CARD	User-recoverable error	
Print Cancel?	-	
Memory overflow … Press CONT✵	User-recoverable error	
Print overrun … Press CONT✵	User-recoverable error	
KPDL error … Press CONT✵	User-recoverable error	
MEMORYCARD err … Press CONT✵	User-recoverable error	
Opt. ROM error … Press CONT✵	User-recoverable error	
Set paper/Press CONT✵	User-recoverable error	
Load paper✵	User-recoverable error	
Add paper✺	User-recoverable error	
Self test	-	
Sleeping	-	
Please wait	-	
PJL OPMSG/STMSG	-	
Processing	-	
Waiting	-	
FormFeed TimeOut	-	
Option interface Error	User-recoverable error	
Toner low TK-20/Clean printer	User-recoverable error	
Warning/Low memory	-	
Battery error/MEMORY CARD	User-recoverable error	
Format error/MEMORY CARD	User-recoverable error	
Warning battery/MEMORY CARD	User-recoverable error	
Ready	-	

User-recoverable errors

User-recoverable errors do not normally require a service call unless the suggested remedy does not solve them. The instructions below indicate how to respond to problems indicated by the operator panel symbolic indicators and by the panel display.

Indicator		Corrective action
	*Flashing*	The printer has run low on toner. The toner should be replaced as soon as possible.
	Lit	Install a new toner kit. See chapter 1.
	*Fast flashing*	There is a paper jam. There is a possibility that paper may be jammed at the point indicated by flashing, open and remove any jammed paper. See Section
	Slow flashing	The paper has run out in the paper cassette or multi-purpose tray. Please insert paper. See Section
	Lit	This indicates either the current paper feeder or the paper output point.
ATTENTION	*Flashing*	The printer has insufficient memory available or the printer is warming up (Pleasewait). Confirm the message indicated on the message display. See Section
	Lit	Note the maintenance message on the message display and consult Table

Message	Corrective action
`Top cover Open`	Open the top cover, then close tightly.
Side cover Open	Open the side cover, then close tightly.
Paper feed unit Open	Open the paper feed unit, then close tightly.
Face-down tray paper full	The face-down tray has become full (approx. 250 pages). Remove all printed pages from the face-down tray. When the printer senses that the face-down tray is empty again, it will continues printing into the face-down tray. (Model FS-3700 only)

Message	Corrective action
Add paper	Add paper to the paper cassette or multi-purpose tray.
Set paper/Press CONT	Add a sheet of paper to the multi-purpose tray (*manual mode*), and press the CONT key.
Load paper *papersize*	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. Either put paper of the specified size into the cassette. See Section 1.4.If the CONT 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. It is also possible to abandon printing by pressing the CANCEL key.
Paper jam	Open the top cover or the paper feed unit and correct the paper jam (or paper mis-feeding in the cassette). See Section …
Warning low memory	The printer's internal memory is running low due to the number of fonts and macros downloaded. Print a status page to see how much user memory is left, and try deleting unnecessary fonts and macros. See the PRESCRIBE II DELF and DELM commands explanation in the programming manual (CD-ROM).
Toner low TK-20/Clean printer	Replace the toner container using a new toner kit. See Section …
Replace Toner/Clean printer	Replace the toner container using a new toner kit. The printer does not operate when this message is displayed. See section …
Clean printer..Press CONT	Please clean the inside of the printer. See Section ...This message will be displayed when replacing the toner container after the message ReplaceTonerCleanprinter has been displayed. After cleaning the inside of the printer, press the CONT key and the printer will be ready for printing.
ReplaceWaste- toner bottle	Replace the old waste toner bottle with the new one which is included in the TK-20/TK-20G toner kit. The message will also be shown if the waste toner bottle has become full. The waste toner bottle should be replaced when the message display eventually shows TonerlowTK-20Cleanprinter. See Section …
Missing Waste-toner bottle	Install the waste toner bottle. See Section ... The printer does not operate when this message is displayed.
Memory overflow..Press CONT	The total amount of data received by the printer exceeds the printer's internal memory. Try adding more memory (expansion RAM). Press the CONT key to resume printing. You can abandon printing by the CANCEL key.
Print overrun..Press CONT	The data transferred to the printer was too complex to print on a

Message	Corrective action
	page. Press the CONT key to resume printing. (The page may break in some pages.)You can abandon printing by the CANCEL key.Note: After this message has been displayed, Page protect mode will be On. To maintain optimum use of memory during printing, display >Pageprotect from the control panel, and re-select Auto.See the printer's user's manual.
MEMORY CARD err/Insertagain	The memory card is accidentally removed from the printer's memory card slot during reading. If you continue reading the memory card, insert the same memory card into the slot again. The printer again reads it from the beginning of the data.Note: We recommend that you follow the reading procedure from the beginning to ensure correct reading of the memory card.
Insert the same MEMORY CARD	You have inserted the wrong memory card when the Insertagain message was displayed. Remove the wrong memory card from the printer's memory card slot and insert the correct memory card. The printer again reads it from the beginning of the data.
Format error MEMORY CARD	This message appears when the printer is in the ready state and the memory card is not formatted, and therefore cannot be read or written. Follow the procedure on Section ... to format the card.
Warning battery MEMORY CARD	This message appears when the printer is in the ready state and the battery in the memory card is low. You can still enter the memory card mode, but the battery should be changed as soon as possible.
MEMORY CARD err/ ##..PressCONT	This message appears when an error occurs during access to the memory card using the PRESCRIBE II ICCD command or from the printer's control panel (codes 09 and 11 only). The error is indicated by one of the numbers ## listed under the Memory card errors which follows.
>Read fonts Failed	The amount of memory available for the fonts header parts of font is too small to load more fonts. Try deleting unnecessary fonts and macros.
I/F occupied	This message is displayed when you attempt to use the printer's control panel to change the environmental settings on the interface from which data are presently being received.
Processing PAR FIT A4	FIT (image FITting) flashes to indicate that a loss of raster data occurred when the data was compressed to be fitted within the currently available memory. Flashing FIT extinguishes automatically when the job times out; the printer receives the next data from the host computer; or if you press any key on the printer's control panel. Try adding more memory in the printer to

Message	Corrective action
	prevent this error.
Processing PAR 600 A4 ↓ Processing PAR 300 A4	Change of the resolution indicator from 600 to 300 (flashing) means that the job in 600-dpi resolution was not able to run within the currently available memory. The resolution reverts to 600 dpi automatically when the job times out; the printer receives the next data from the host computer; or if you press any key on the printer's control panel. Try adding more memory in the printer to prevent this error.

Memory card errors

Error code	Applicable card type	Meaning
01	SRAM	Card size error (An attempt was made to write data of greater than 16 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 CONT key; when the message turns to Waiting, press FORM FEED key (Ready).
10	-	*Reserved*
11	SRAM	Data name full (An attempt was made to write more than 127 destination data names). Press CONT key (Ready).

Error code	Applicable card type	Meaning
12	-	*Reserved*
13	Flush	Erase logic error with flash memory card. Try replacing the memory card.
14	-	*Reserved*
15	Flash	Non PCMCIA flush card. Replace the card with a PCMCIA flush card.
16	-	*Reserved*
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	-	*Reserved*

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

Service errors

The printer does not operate when a message beginning with E, F, or C is displayed. The total numer of pages printed is also indicated. The message is categorized as follows:

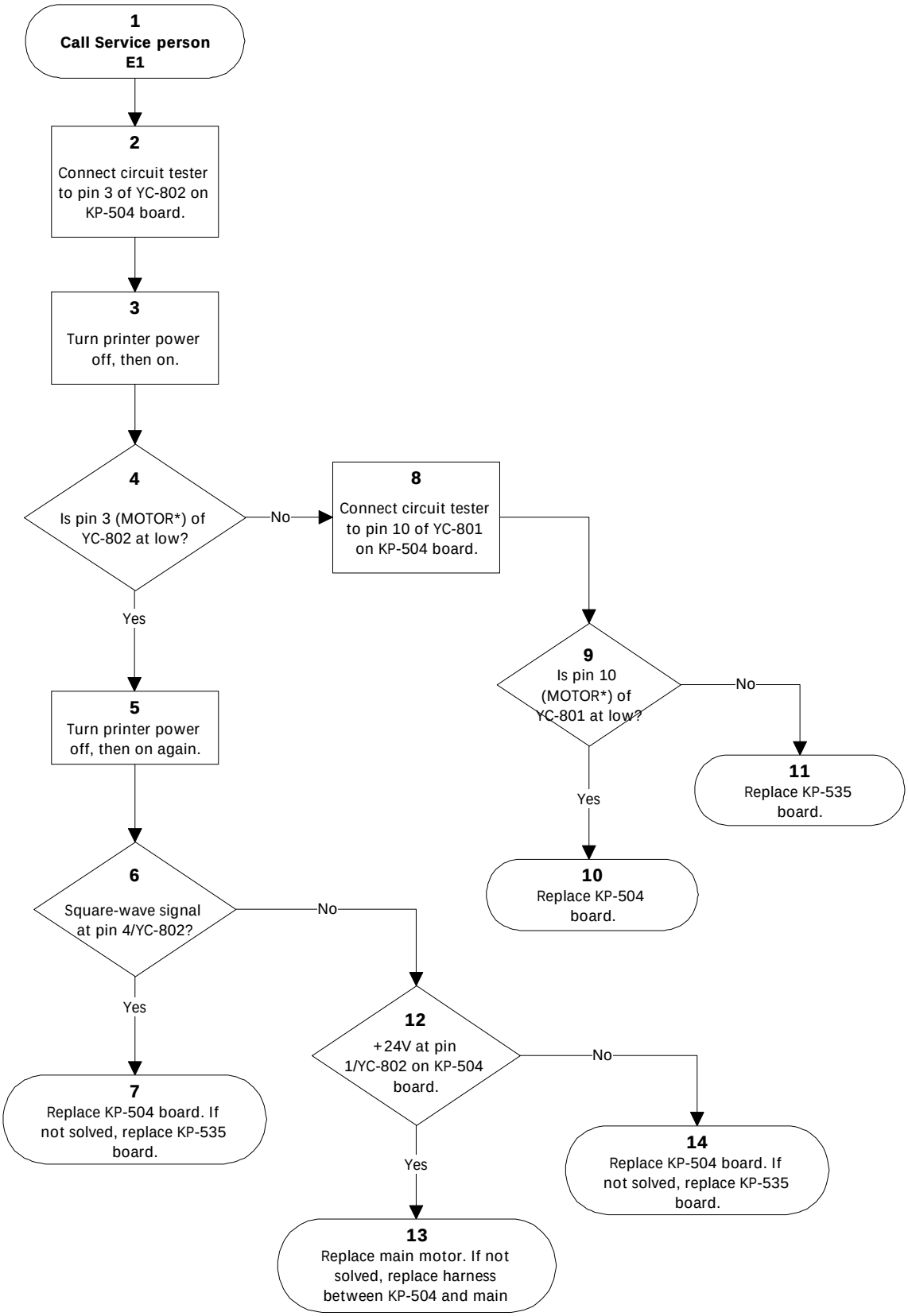
Message	Corrective action
Call service person E*n:123456*	Mechanical error (*n* = 0, 1, 2, ...). Follow the appropriate instructions provided in this section.
Call service person F*n:123456*	Controller error (*n* = 0, 1, 2, ...). Follow the appropriate instructions provided in this section.
Call service person C*n: 123456*	Option equipment error (*n* = 0, 1, 2, …). This message pertains to either the sorter or duplexer. *C1* through *C3* are relevant to the duplexer; *C4* through *C6* to the sorter. See the service manual appropriate to the option used with the printer.
Call service person D*n: 123456*	Engine firmware download error (*n* = 0, 1, 2, …). See section *Updating the engine firmware* in chapter 3.

E0 - Communication error

Meaning	Suggested causes	Corrective action
Communication between the engine controller and the main controller is failed.	• Controller gate array defect • Connector failure between the engine and the main controller • Overrun in the engine system, deactivating the progam flash ROM	Verify connector connections. Replace the engine board and/or the main controller board.

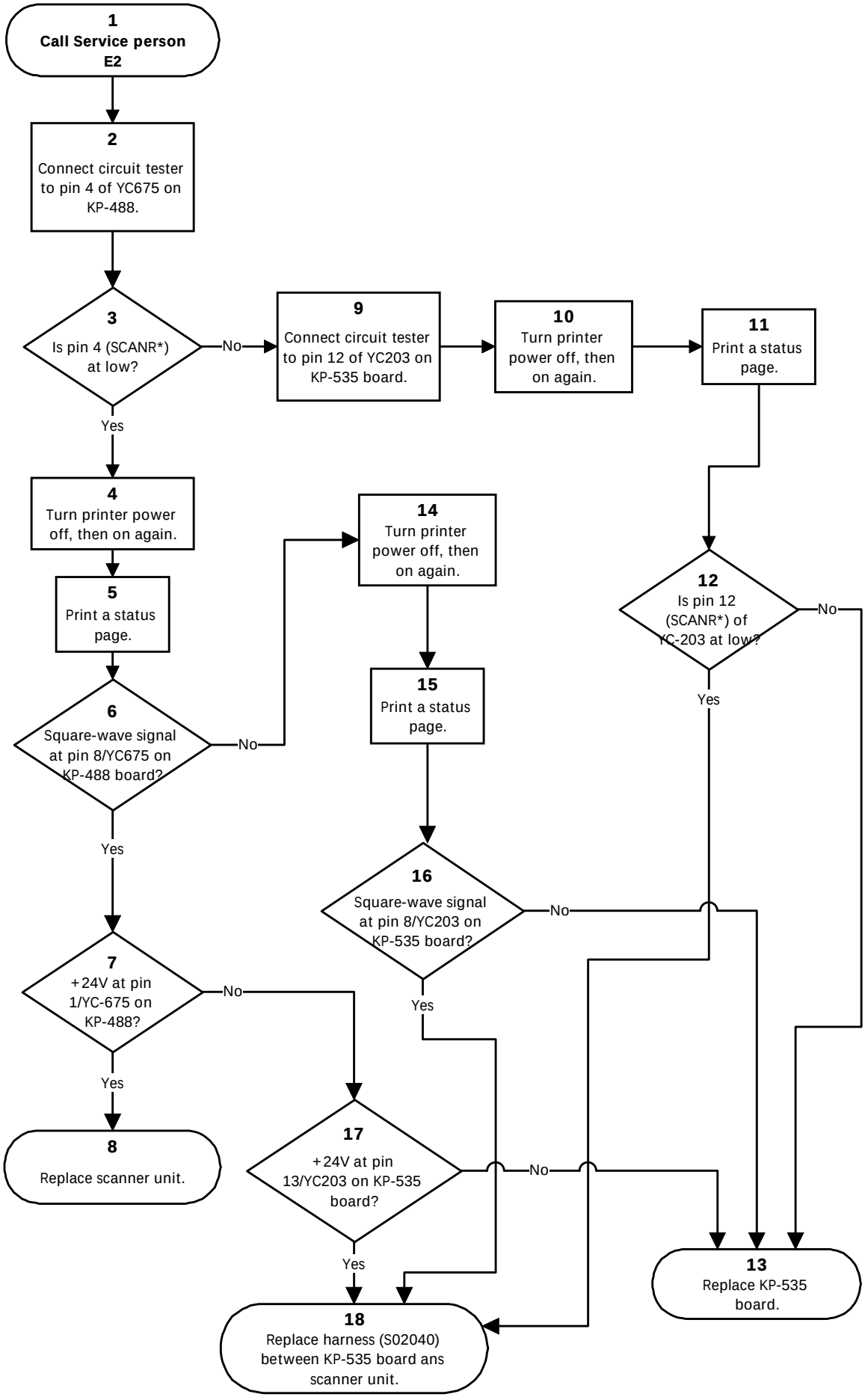
E1 - Main motor error

Meaning	Suggested causes	Corrective action
The main motor is overtorqued.	• Overcurrent in the main motor circuitry due to an axcessive torque • Loose connector • Defective gate array on the engine board • No response from the main motor due to the defective motor driver (transistor)	Follow the flow chart on the next page.


1
Call Service person
E1
2
Connect circuit tester to pin 3 of YC-802 on KP-504 board.
3
Turn printer power off, then on.
4
Is pin 3 (MOTOR*) of YC-802 at low?
No
Yes
8
Connect circuit tester to pin 10 of YC-801 on KP-504 board.
9
Is pin 10 (MOTOR*) of YC-801 at low?
No
Yes
11
Replace KP-535 board.
10
Replace KP-504 board.
5
Turn printer power off, then on again.
6
Square-wave signal at pin 4/YC-802?
No
Yes
7
Replace KP-504 board. If not solved, replace KP-535 board.
12
+24V at pin 1/YC-802 on KP-504 board.
No
Yes
14
Replace KP-504 board. If not solved, replace KP-535 board.
13
Replace main motor. If not solved, replace harness between KP-504 and main

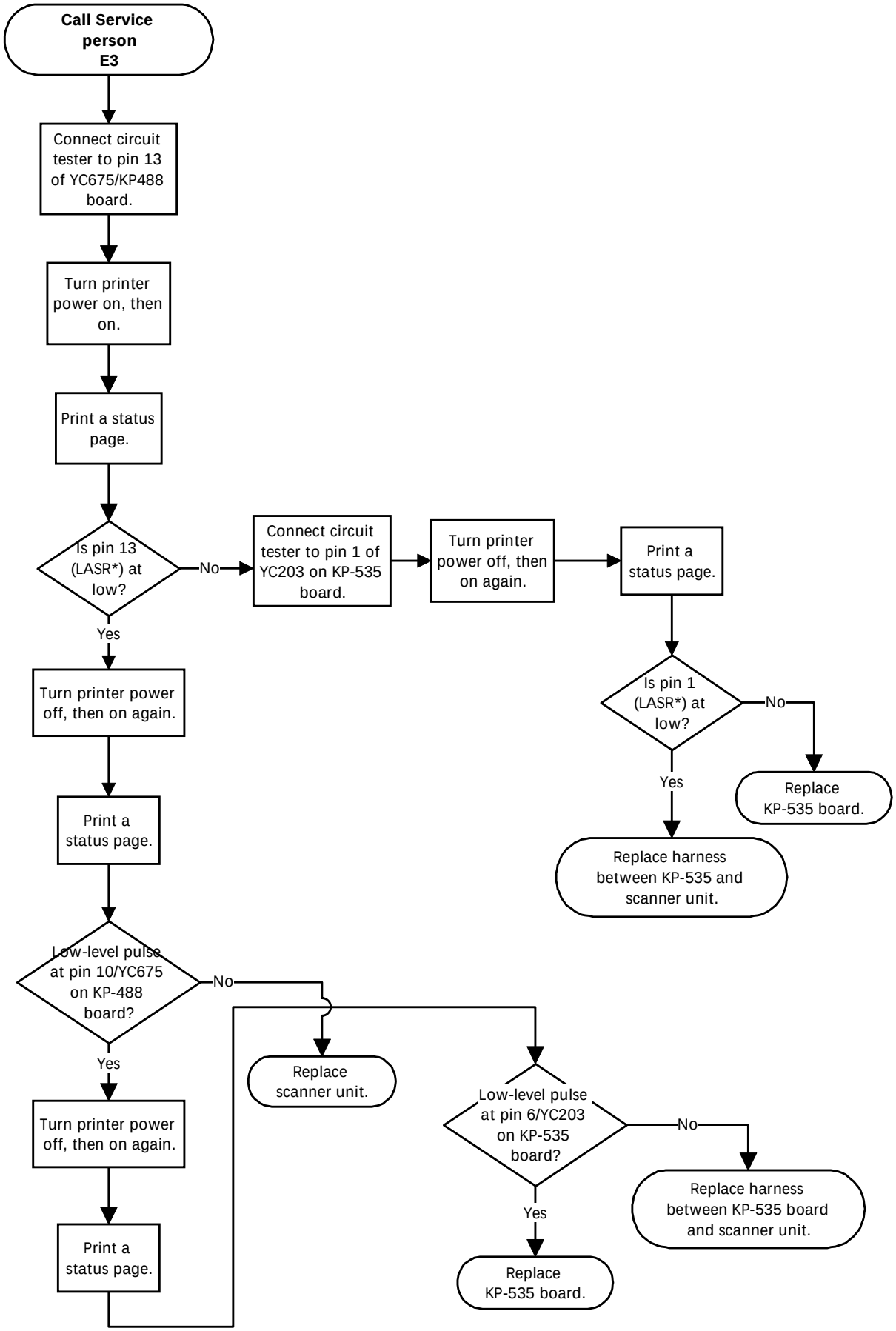
E2 - Laser scanner motor error

Meaning	Suggested causes	Corrective action
The polygon motor does not deliver a synchronous output (*L*) within the predetermined period of time.	• Timeout in the predetermined period of lead time which the scanner motor speed has to be reached at start up (SCRDY*) • Connector insertion error • Defective gate array on the engine board • Time out dur to the defective scanner motor driver (transistor)	Follow the flow chart on the next page.


1
Call Service person
E2
2
Connect circuit tester to pin 4 of YC675 on KP-488.
3
Is pin 4 (SCANR*) at low?
No
Yes
9
Connect circuit tester to pin 12 of YC203 on KP-535 board.
10
Turn printer power off, then on again.
11
Print a status page.
4
Turn printer power off, then on again.
5
Print a status page.
6
Square-wave signal at pin 8/YC675 on KP-488 board?
No
Yes
14
Turn printer power off, then on again.
15
Print a status page.
12
Is pin 12 (SCANR*) of YC-203 at low?
No
Yes
16
Square-wave signal at pin 8/YC203 on KP-535 board?
No
Yes
7
+24V at pin 1/YC-675 on KP-488?
No
Yes
8
Replace scanner unit.
17
+24V at pin 13/YC203 on KP-535 board?
No
Yes
13
Replace KP-535 board.
18
Replace harness (S02040) between KP-535 board ans scanner unit.

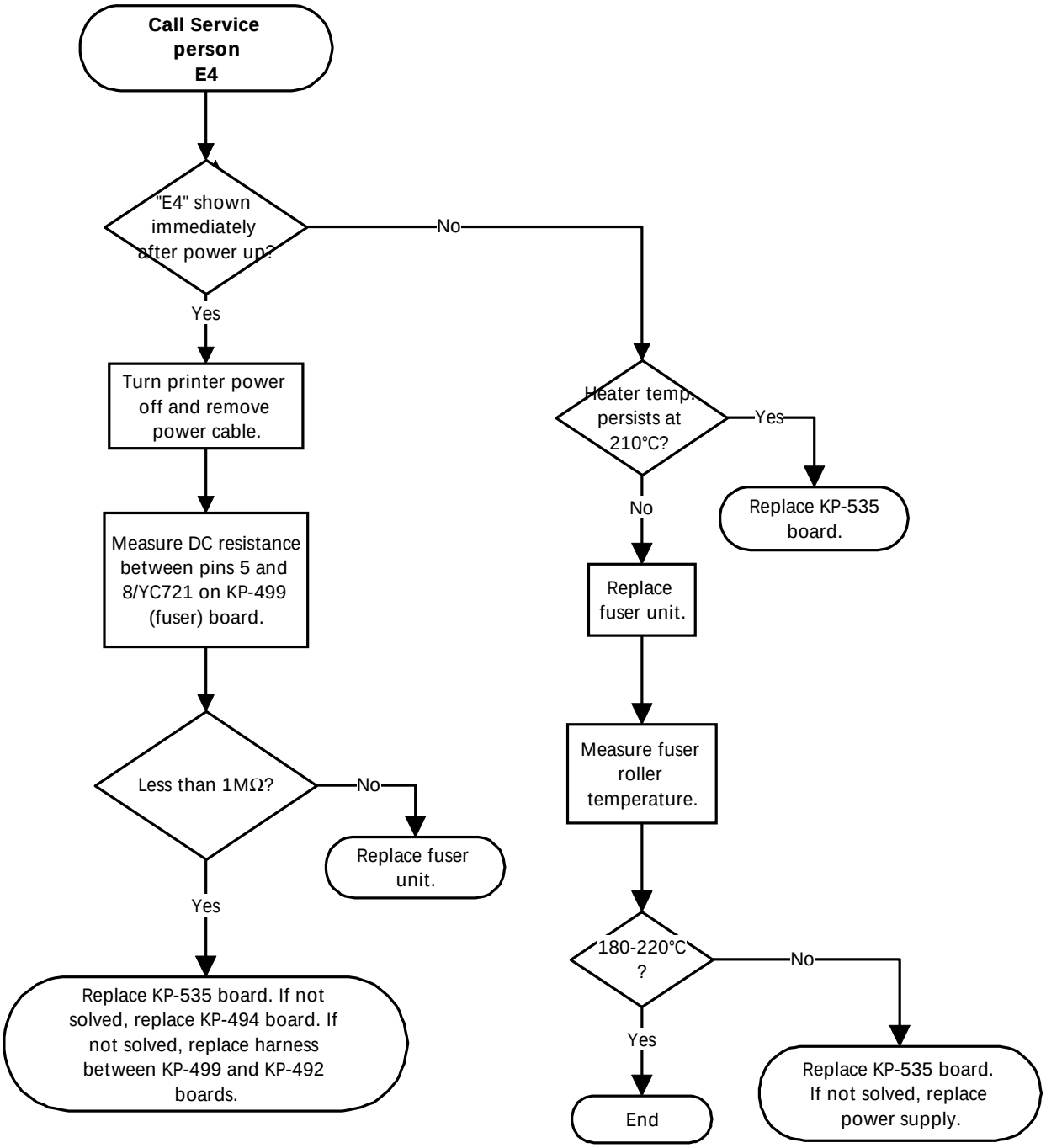
E3 - Laser beam detection error

Meaning	Suggested causes	Corrective action
Beam detection is failed. The photo detector board does not deliver a synchronous output (*L*).	• No beam hit due to the laser diode defect (PD*) • Improper connector insertion • Soiled/defective beam detector (pin-photo diode) sensor • Defective safety lock • Unoperative gate array input port	Follow the flow chart on the next page.


Call Service person E3
Connect circuit tester to pin 13 of YC675/KP488 board.
Turn printer power on, then on.
Print a status page.
Is pin 13 (LASR*) at low?
No
Connect circuit tester to pin 1 of YC203 on KP-535 board.
Turn printer power off, then on again.
Print a status page.
Is pin 1 (LASR*) at low?
No
Replace KP-535 board.
Yes
Replace harness between KP-535 and scanner unit.
Yes
Turn printer power off, then on again.
Print a status page.
Low-level pulse at pin 10/YC675 on KP-488 board?
No
Replace scanner unit.
Yes
Turn printer power off, then on again.
Print a status page.
Low-level pulse at pin 6/YC203 on KP-535 board?
No
Replace harness between KP-535 board and scanner unit.
Yes
Replace KP-535 board.

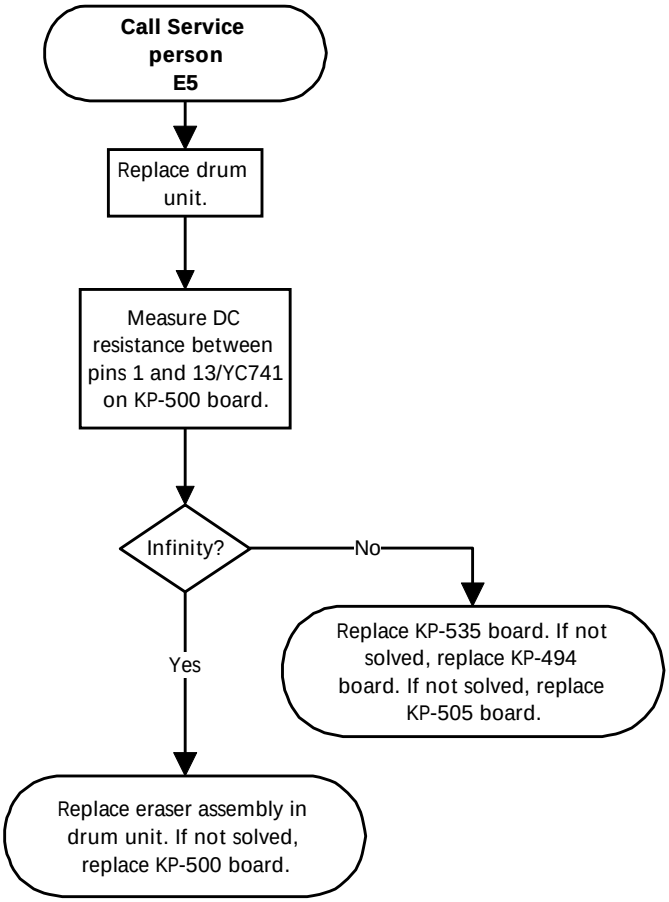
E4 - Fuser heater error

Meaning	Suggested causes	Corrective action
The fuser heater is not intact due to disconnection or the circuit failure.	• Blown-out thermistor • Improper connector insertion • Blown-out halogen heater • Blown-out thermostat • Comparator defect on the engine board • Defective engine CPU (input port) • Defective gate array (input/output port operation)	Follow the flow chart on the next page.


Call Service person E4
"E4" shown immediately after power up?
No
Yes
Turn printer power off and remove power cable.
Measure DC resistance between pins 5 and 8/YC721 on KP-499 (fuser) board.
Less than 1MΩ?
No
Replace fuser unit.
Yes
Replace KP-535 board. If not solved, replace KP-494 board. If not solved, replace harness between KP-499 and KP-492 boards.
Heater temp. persists at 210°C?
Yes
Replace KP-535 board.
No
Replace fuser unit.
Measure fuser roller temperature.
180-220°C ?
No
Yes
End
Replace KP-535 board. If not solved, replace power supply.

E5 - Eraser error

Meaning	Suggested causes	Corrective action
The eraser is blown out or the power supply does not reach to the eraser.	• Blown-out LED chip(s) • Connector insertion error • Defective gate array (input/output port)	Follow the flow chart on the next page.

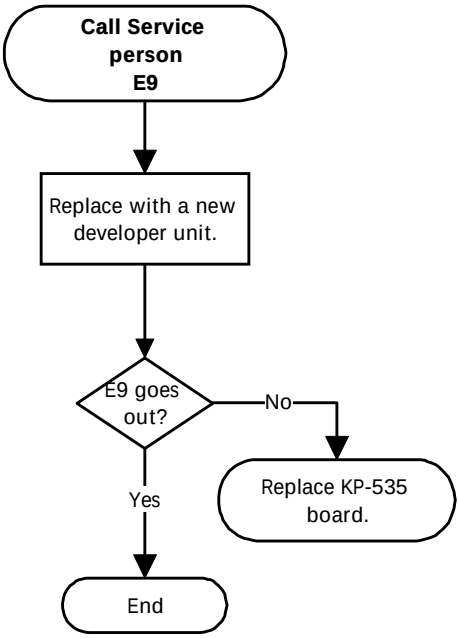

Call Service person E5
Replace drum unit.
Measure DC resistance between pins 1 and 13/YC741 on KP-500 board.
Infinity?
No
Yes
Replace KP-535 board. If not solved, replace KP-494 board. If not solved, replace KP-505 board.
Replace eraser assembly in drum unit. If not solved, replace KP-500 board.

E6 - Flash ROM error

Meaning	Suggested causes	Corrective action
Checksum is erroneous with the flash ROM.	• Data readout error on the flash ROM	Replace the engine board.

E9 - Toner motor error

Meaning	Suggested causes	Corrective action
The toner motor is overtorqued.	• Overcurrent in the toner motor circuitry due to an axcessive torque • Loose connector • Defective gate array on the engine board • Defective toner motor overcurrent detector	Follow the flow chart on the next page.


Call Service person E9
Replace with a new developer unit.
E9 goes out?
No
Replace KP-535 board.
Yes
End

F0 - Front control panel error

Meaning	Suggested causes	Corrective action
Communication is failed between the front panel and the main controller.	-	Replace the main controller board. To remove the main controller board, see page 2-9.

F1 - System ROM error

Meaning	Suggested causes	Corrective action
Checksum is failed with EPROMs on the main controller board.	-	Replace the main controller board. To remove the main controller board, see page 2-9.

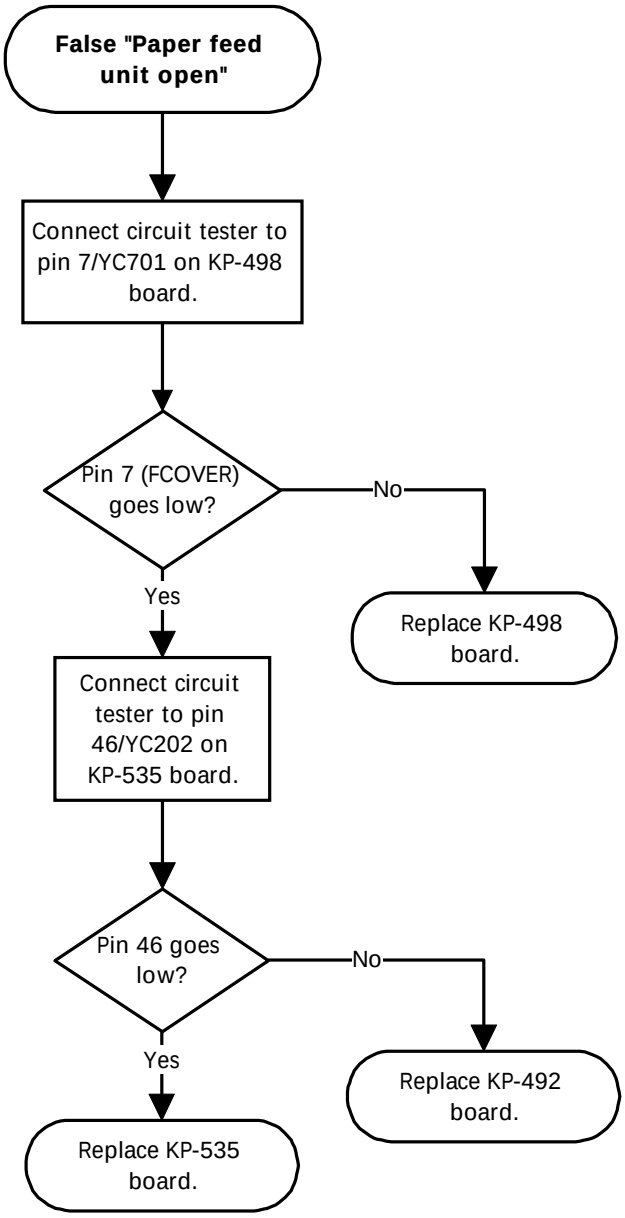
F2 - Main memory error

Meaning	Suggested causes	Corrective action
Checksum is failed with the RAM on the main controller board.	-	Replace the main controller board. To remove the main controller board, see page 2-9.

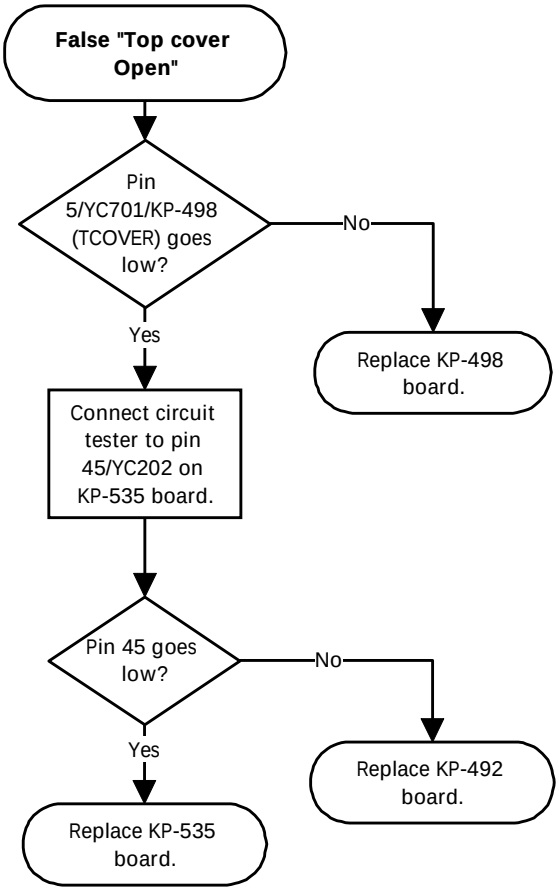
F3 - General failure

Meaning	Suggested causes	Corrective action
Miscellaneous failure with the main controller, other than F0, F1, and F3, above.	-	Turn printer power off, then on again. If not solved, replace the main controller board. To remove the main controller board, see page 2-9.

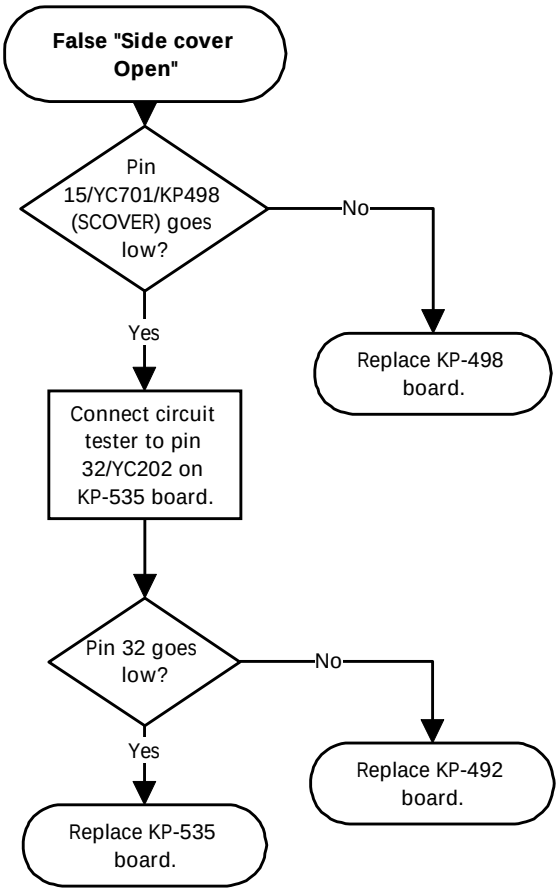
False errors - “Paper Feed Unit Open”



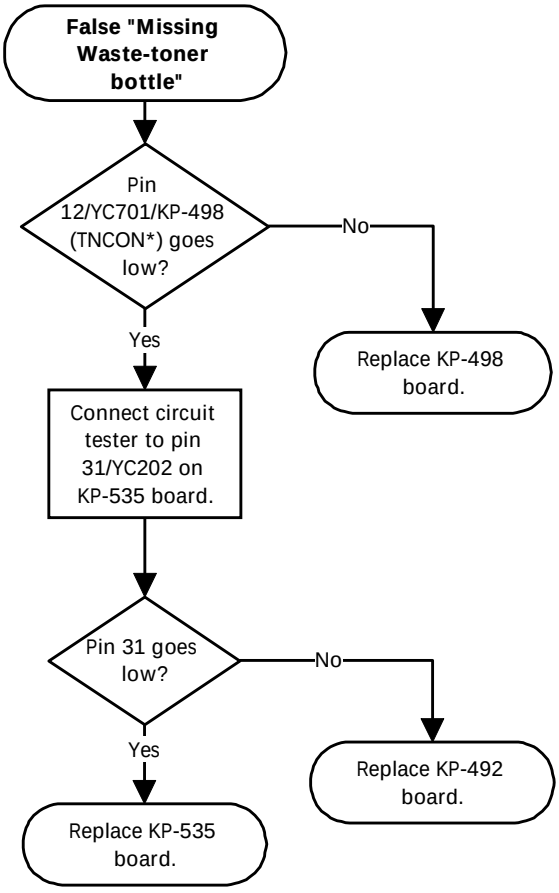
False errors - “Top Cover Open”



False errors - “Side cover Open”



False errors - “Missing Waste-toner bottle”



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

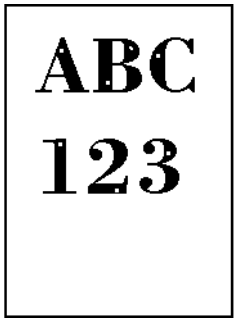
Check the developer unit.	• Check that the developer unit is inserted correctly • Check that the developer 's connector is connected properly. • Check that toner is adhered around the developing roller. If no toner appears to be on the roller, try feeding toner into the developer using the manner described 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 execept 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 if

charger unit).	necessary.
Check the drum bias.	• Make sure the bias from the HV board is correctly arrived at the drum unit.
Check high voltage potential at the HV board.	• Check the higi-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 page6-43.	• If the defects occur at regular intervals of 63 mm, the problem may be a dirty transfer roller. Clean or replace the tranfer 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.
Try changing the transfer bias potential (*Normal* or *Thick*).	• Use the **MODE SELECT** key on the printer's control panel. For details, refer to the user manual accompanying the printer.
Check paper for property.	• Paper with rugged surface or dump tends to cause this type of failure.
Check the paper chute installation.	• 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.
Check the transfer roller installation.	• 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 tranfer bias potential.	• 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

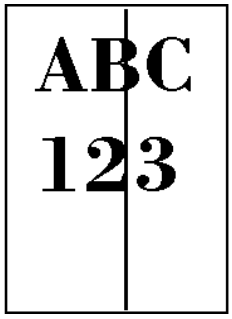
Note the spacing of the defects. Use the *Repetitive defect gauge* on page6-43.	• If the defects occur at regular intervals of 94 mm, the problem may be a damaged drum unit or fuser roller. Replace the drum unit or fuser unit accordingly. • If the defects occur at random intervals, the toner may be leaking 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.	• 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.
Check main charger contacts.	• Take out the main charger unit; check the electric terminals to see if they are clean.

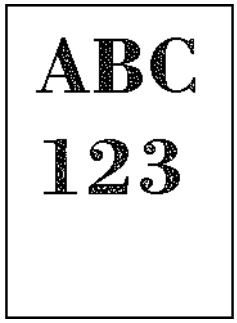
The drum unit may be defective.	• Replace the drum unit.

Black vertical streaks



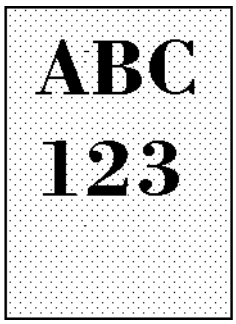
Contaminated main charger wire.	• Clean the main charger wire by pulling the green colored cleaning knob in and out several times.
Check the drum surface for a streak of toner laying lengthwise.	• A streak of toner remaining on drum after printing means that the cleaning blade in the drum unit is not working properly. Replace the cleaning blade; or replace the drum unit.
Defective developer unit.	• Replace the developer unit.

Unsharp printing



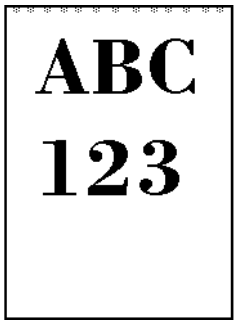
Check contamination on the main charger wire and the grid.	• Clean the main charger wire by pulling the green color main charger wire cleaner know in and out several times.
Check paper for property.	• Paper with rugged surface or dump tends to cause this type of failure.
Check the paper chute installation.	• 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.
Try changing the transfer bias potential (Normal or *Thick).*	• Use the **MODE SELECT** key on the printer's control panel. For details, refer to the user manual accompanying the printer.
Check the transfer roller installation.	• 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 tranfer bias potential.	• Check contamination on the main charger wire and the grid.
Check *EcoPrint* setting.	• 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.
Refresh drum.	• Try cleaning the drum surface using the printer's built-in cleaning system specifically provided for this purpose. For details, refer to page6-45.

Grey background



Check contamination on the main charger wire and the grid.	• Clean the main charger wire by pulling the green color main charger wire cleaner know in and out several times.
Check the grid plate (the mesh metal bottom part of the charger unit).	• The grid plate must be flat and fit horizontally in place. Replace the main charger unit if necessary.
Check the print density setting.	• 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.
Check the surface potential of the drum.	• 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.
The developer unit may be defective.	• 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.

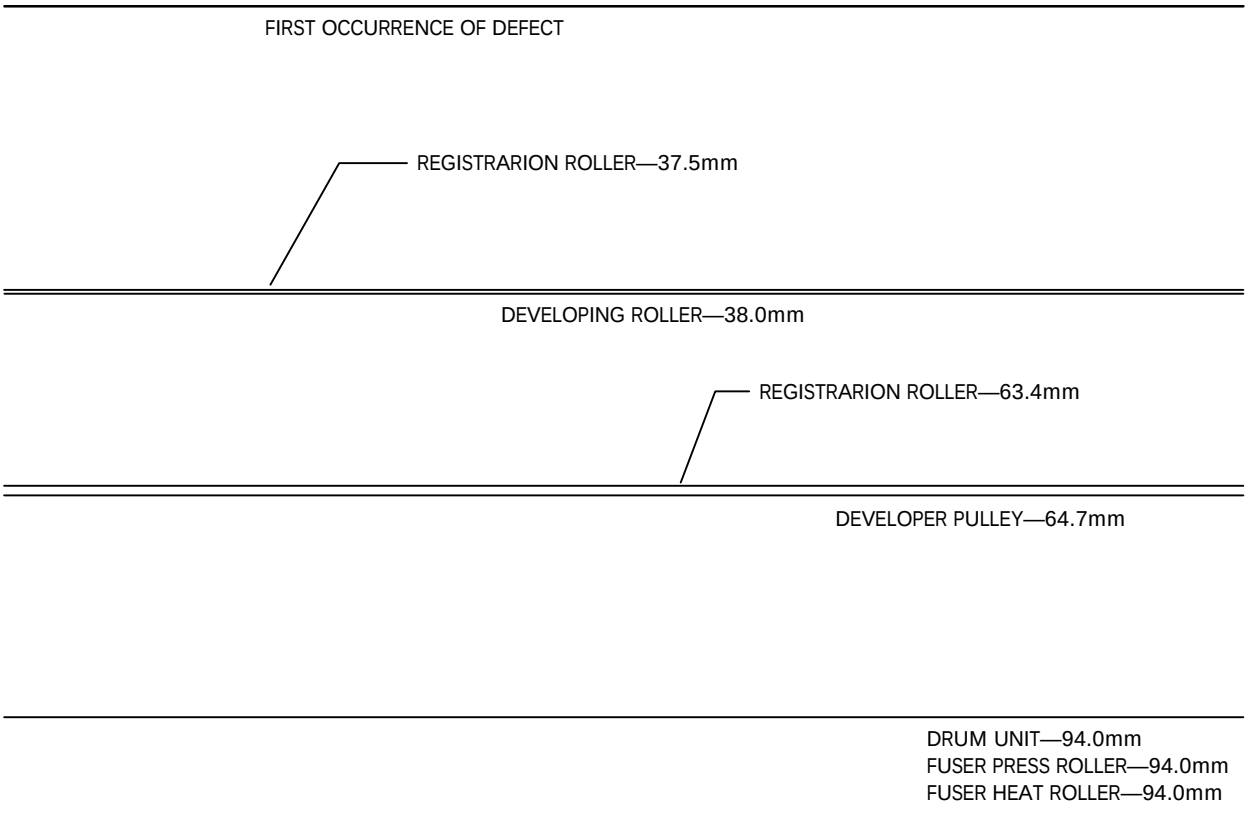
Dirt on the top edge or back of the paper



Check toner contamination in various parts.	• Dirty edges and back of the paper can be caused by toner accummulated 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.
Check the transfer roller.	• 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.

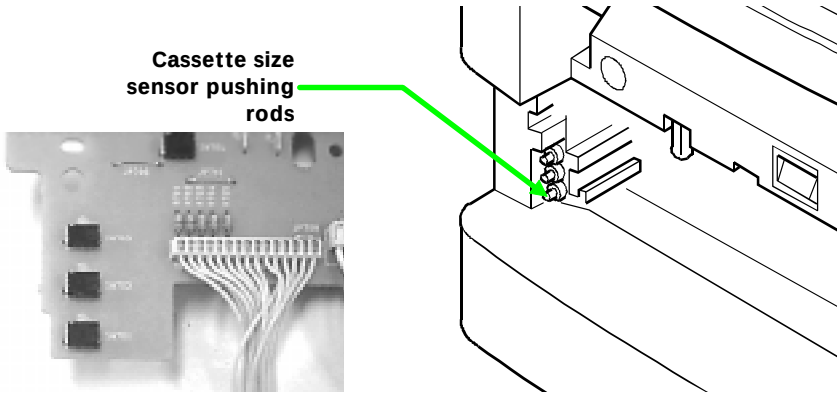
REPETITIVE DEFECTS GAUGE

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



CHECKING CASSETTE SIZE SENSORS

The printer tells the size of paper (cassette) to be fed by means of three sensors on the KP-498 board. These sensors (switches) are activated by the pushing pegs on paper cassettes in different paper sizes. If the sensors are not correctly activated in a correct matrix of activation, paper jam or printing defects like above may occur.



Paper size	SW701	SW702	SW703
B5	On	Off	Off
A5	Off	On	Off
A4	On	On	Off
Letter	Off	Off	On
Legal	On	Off	On
Cassette not present	On	On	On

Drum cleaning

This mode is meant to provide a *manual* means of drum cleaning in additioin to the regular cleaning procedure made automatically in a photographics 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, peform 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.