V1-3/10

3-5-1 Self-diagnosis

(1) Self-diagnostic function

This unit is equipped with a self-diagnostic function. When a problem is detected, copying is disabled and the problem displayed as a code consisting of "C" followed by a number between 010 and 924, indicating the nature of the problem.
A message is also displayed requesting the user to call for service.
After removing the problem, the self-diagnostic function can be reset by turning safety switches 1, 2 or 3 off and back on.



Figure 3-5-1 Service call code display

Self diagnostic codes

Code	Contents	Remarks	
		Causes	Check procedures/ corrective measures
C010	**RAM/ROM problem** Read and write data does not match.	Defective main PCB.	Replace the main PCB and check for correct operation.
C011	**Backup memory data problem** Data in the specified area of the backup memory does not match the specified values.	Problem with the backup memory data.	Turn safety switch 1 off and back on and run maintenance item U020 to set the contents of the backup memory data again.
		Defective backup RAM.	If the C011 is displayed after re-setting the backup memory contents, replace the backup RAM IC27.
C021	**Operation unit main PCB communication problem** There is no reply after 20 retries at communication.	Poor contact of the connector terminals.	Check the connection of connectors CN9 on the main PCB and CN8 on the operation unit main PCB, and the continuity across the connector terminals. Remedy or replace if necessary.
		Defective main PCB or operation unit main PCB.	Replace the main PCB or operation unit main PCB and check for correct operation.
C022	**Communication problem between the engine PCB and main PCB** There is no reply after 20 retries at communication.	Defective engine ROM IC.	Replace the engine ROM IC37 on the main PCB and check for correct operation.
		Defective main PCB.	Replace the main PCB and check for correct operation.
C023	**Scanner control PCB communication problem** There is no reply after 5 retries at communication.	Poor contact of the connector terminals.	Check the connection of connectors CN5 on the main PCB and CN9 on the scanner control PCB, and the continuity across the connector terminals. Remedy or replace if necessary.
		Defective main PCB or scanner control PCB.	Replace the main PCB or scanner control PCB and check for correct operation.

Code	Contents	Remarks	
		Causes	Check procedures/ corrective measures
C032*	**Large paper deck communication problem** Communication errors from the communication microcomputer IC41 on the main PCB: No communication: there is no reply after 3 retries. Abnormal communication: a communication error (parity or checksum error) is detected five times in succession.	Poor contact of the connector terminals.	Check the connection of connectors CN11 on the main PCB and CN1 on the deck main PCB, and the continuity across the connector terminals. Remedy or replace if necessary.
		Defective main PCB.	Replace the main PCB and check for correct operation.
		Defective deck main PCB.	Replace the deck main PCB and check for correct operation.
C032*	**Large paper deck sequence problem**	Operation start request is sent from the copier to the large paper deck while paper feed is disabled.	Turn the power off and back on (reset request is sent from the copier to the large paper deck to cancel operation start request).
		Paper feed request is sent to the large paper deck before operation start request.	Turn the power off and back on (reset request is sent from the copier to the large paper deck to cancel operation start request).

* If the optional device is attached.

Code	Contents	Remarks	
		Causes	Check procedures/ corrective measures
C032*	**Paper feed desk communication problem** An error code from the paper feed desk is detected eight times in succession. No communication: there is no reply after 3 retries. Abnormal communication: a communication error (parity or checksum error) is detected five times in succession.	Poor contact of the connector terminals.	Check the connection of connectors CN11 on the main PCB and CN5 on the desk main PCB, and the continuity across the connector terminals. Remedy or replace if necessary.
		Defective main PCB.	Replace the main PCB and check for correct operation.
		Defective desk main PCB.	Replace the desk main PCB and check for correct operation.
C034*	**Finisher communication problem** Communication errors from the communication microcomputer IC41 on the main PCB: No communication: there is no reply after 3 retries. Abnormal communication: a communication error (parity or checksum error) is detected five times in succession.	Poor contact of the connector terminals.	Check the connection of connectors CN10 on the copier main PCB and CN2 on the finisher main PCB, and the continuity across the connector terminals. Remedy or replace if necessary.
		Defective copier main PCB.	Replace the copier main PCB and check for correct operation.
		Defective finisher main PCB.	Replace the finisher main PCB and check for correct operation.

* If the optional device is attached.

Code	Contents	Remarks	
		Causes	Check procedures/ corrective measures
C035*	**Mailbox communication problem** Communication errors from the communication microcomputer IC41 on the main PCB: No communication: there is no reply after 3 retries. Abnormal communication: a communication error (parity or checksum error) is detected five times in succession. The presence of the mailbox has been detected although the communication microcomputer IC41 on the main PCB did not detect the connection of the mailbox during initial communication.	Poor contact of the connector terminals.	Check the connection of the connector CN10 on the copier main PCB, connector CN1 on the mailbox main PCB and the connector on the signal cable connecting the mailbox and the copier, and the continuity across the connector terminals. Remedy or replace if necessary.
		Defective copier main PCB.	Replace the copier main PCB and check for correct operation.
		Defective mailbox main PCB.	Run a simulation of the mailbox (communication test mode). If there is any problem with the communication, replace the mailbox main PCB.
C037	**Communication microcomputer problem** A problem is detected with the communication microcomputer IC41 on the main PCB.	Defective main PCB.	Replace the main PCB and check for correct operation.
C040	**SIMM problem** SIMM inserted incorrectly. There is a problem with the data or address bus.	SIMM inserted incorrectly.	Check the insertion of the SIMM into connectors CN6 and CN7 on the main PCB. If the SIMM is incorrectly or insufficiently inserted, reinsert correctly (be sure to insert the first SIMM into CN6).
		Defective main PCB.	Replace the main PCB and check for correct operation.
C041	**Bitmap problem** There is a problem with the data or address bus of the bitmap DRAM.	Defective main PCB.	Replace the main PCB and check for correct operation.

* If the optional device is attached.

Code	Contents	Remarks	
		Causes	Check procedures/ corrective measures
C042	**Memory input interface problem** Reading-in of an image does not complete within 10 s of the start of image transmission.	Defective main PCB.	Replace the main PCB and check for correct operation.
C043	**DMA problem** DMA transmission of compressed, decompressed, rotated, relocated or blanked-out image data does not complete within the specified period of time.	Defective main PCB.	Replace the main PCB and check for correct operation.
C104	**Optical system problem** After AGC, correct input is not obtained at CCD.	Insufficient exposure lamp luminosity.	Replace the exposure lamp or inverter PCB.
		Defective scanner control PCB.	Replace the scanner control PCB.
		Incorrect shading position.	Adjust the position of the contact glass (shading plate). If the problem still occurs, replace the scanner home position switch.
		CCD PCB output problem.	Replace the ISU.
C200	**Drive motor problem** DM LOCK signal remains high for 1 s or longer, 1 s after the drive motor has turned on.	Poor contact of the drive motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
		Defective drive motor rotation control circuit.	Replace the drive motor.
		Defective drive transmission system.	Check if the rollers and gears rotate smoothly. If not, grease the bushings and gears. Check for broken gears and replace if any.

Code	Contents	Remarks	
		Causes	Check procedures/ corrective measures
C231*	**Desk drive motor problem** DDM LOCK signal remains high for 2 s or longer, 1 s after the desk drive motor has turned on.	Poor contact of the desk drive motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
		Defective desk drive motor rotation control circuit.	Replace the desk drive motor.
		Defective drive transmission system.	Check if the rollers and gears rotate smoothly. If not, grease the bushings and gears. Check for broken gears and replace if any.
C241	**Upper lift motor problem** When the drawer is inserted, the upper lift limit switch does not turn on within 4.6 s of the upper lift motor turning on. During copying, the upper lift limit switch does not turn on within 200 ms of the upper lift motor turning on.	Broken gears or couplings of the upper lift motor.	Replace the upper lift motor.
		Defective upper lift motor.	Check for continuity across the coil. If none, replace the upper lift motor.
		Poor contact of the upper lift motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
		Defective upper lift limit switch.	Check if CN12-8 on the engine PCB goes low when the upper lift limit switch is turned off. If not, replace the upper lift limit switch.
		Poor contact of the upper lift limit switch connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.

* If the optional device is attached.

Code	Contents	Remarks	
		Causes	Check procedures/ corrective measures
C242	**Lower lift motor problem** When the drawer is inserted, the lower lift limit switch does not turn on within 4.6 s of the lower lift motor turning on. During copying, the lower lift limit switch does not turn on within 200 ms of the lower lift motor turning on.	Broken gears or couplings of the lower lift motor.	Replace the lower lift motor.
		Defective lower lift motor.	Check for continuity across the coil. If none, replace the lower lift motor.
		Poor contact of the lower lift motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
		Defective lower lift limit switch.	Check if CN12-2 on the engine PCB goes low when the lower lift limit switch is turned off. If not, replace the lower lift limit switch.
		Poor contact of the lower lift limit switch connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.

Code	Contents	Remarks	
		Causes	Check procedures/ corrective measures
C243*	**Desk upper lift motor problem** When the drawer is inserted, the desk upper lift limit switch does not turn on within 4.6 s of the desk upper lift motor turning on. During copying, the desk upper lift limit switch does not turn on within 200 ms of the desk upper lift motor turning on.	Broken gears or couplings of the desk upper lift motor.	Replace the desk upper lift motor.
		Defective desk upper lift motor.	Check for continuity across the coil. If none, replace the desk upper lift motor.
		Poor contact of the desk upper lift motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
		Defective desk upper lift limit switch.	Check if CN1-5 on the desk main PCB goes low when the desk upper lift limit switch is turned off. If not, replace the desk upper lift limit switch.
		Poor contact of the desk upper lift limit switch connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.

* If the optional device is attached.

Code	Contents	Remarks	
		Causes	Check procedures/ corrective measures
C244*	**Desk lower lift motor problem** When the drawer is inserted, the desk lower lift limit switch does not turn on within 4.6 s of the desk lower lift motor turning on. During copying, the desk lower lift limit switch does not turn on within 200 ms of the desk lower lift motor turning on.	Broken gears of couplings of the desk lower lift motor.	Replace the desk lower lift motor.
		Defective desk lower lift motor.	Check for continuity across the coil. If none, replace the desk lower lift motor.
		Poor contact of the desk lower lift motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
		Defective desk lower lift limit switch.	Check if CN1-7 on the desk main PCB goes low when the desk lower lift limit switch is turned off. If not, replace the desk lower lift limit switch.
		Poor contact of the desk lower lift limit switch connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
C310	**Scanner carriage problem** The home position is not correct when the power is turned on or at the start of copying using the bypass table.	Poor contact of the connector terminals.	Check the connection of connector CN4 on the scanner motor PCB and the continuity across the connector terminals. Remedy or replace if necessary.
		Defective scanner home position switch.	Replace the scanner home position switch.
		Defective main PCB, scanner control PCB or scanner motor PCB.	Replace the main PCB, scanner control PCB or scanner motor PCB and check for correct operation.
		Defective scanner motor.	Replace the scanner motor.

* If the optional device is attached.

Code	Contents	Remarks	
		Causes	Check procedures/ corrective measures
C332	**Scanner watchdog problem** The main routine does not run within 8.192 ms of the main switch being turned on.	Defective scanner control PCB.	Replace the scanner control PCB and check for correct operation.
C340	**Original detection position problem** The CPU IC5 in the scanner control PCB cannot store initial data from the original size sensor correctly.	Poor contact of the connector terminals.	Check the connection of connector CN8 on the scanner control PCB and the continuity across the connector terminals. Remedy or replace if necessary.
		Defective original size sensor.	Replace the original size sensor.
		Defective main PCB or scanner control PCB.	Replace the main PCB or scanner control PCB and check for correct operation.
C400	**Polygon motor synchronization problem** The polygon motor does not reach the stable speed within 20 s of the polygon motor remote signal turning on.	Poor contact of the polygon motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
		Defective polygon motor.	Replace the LSU.
		Defective power source PCB.	Check if 24 V DC is present at CN6-1 on the power source PCB. If not, replace the power source PCB.
C401	**Polygon motor steady-state problem** The polygon motor rotation is not stable for 600 ms after the polygon motor rotation has been stabilized.	Poor contact of the polygon motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
		Defective polygon motor.	Replace the LSU.
		Defective power source PCB.	Check if 24 V DC is present at CN6-1 on the power source PCB. If not, replace the power source PCB.

Code	Contents	Remarks	
		Causes	Check procedures/ corrective measures
C420	**BD steady-state problem** The VTC detects a BD error for 1000 ms during copying.	Defective laser diode.	Replace the LSU.
		Defective polygon motor.	Replace the LSU.
		Defective main PCB.	Replace the main PCB.
C510	**Main charger problem** MC ALM signal is detected continuously for 400 ms when MC REM signal is turned on.	Defective high-voltage transformer PCB.	Replace the high-voltage transformer PCB.
		Leakage during main charging.	Check and clean the main charger assembly.
C610	**Broken fixing heater wire** Warm-up does not end within 90 s. The secondary stabilization fixing temperature drops to 100°C/212°F or below.	Fixing heater M or S installed incorrectly.	Check and reinstall if necessary.
		Broken fixing heater M or S wire.	Check for continuity. If none, replace fixing heater M or S.
		Poor contact of the fixing unit thermistor connector terminals.	Check the connection of connector CN13-2 on the engine PCB and the continuity across the connector terminals. Remedy or replace if necessary.
		Broken fixing unit thermistor wire.	Measure the resistance. If it is ∞ Ω, replace the fixing unit thermistor.
		Fixing unit thermistor installed incorrectly.	Check and reinstall if necessary.
		Fixing unit thermostat triggered.	Check for continuity. If none, replace the fixing unit thermostat.

Code	Contents	Remarks	
		Causes	Check procedures/ corrective measures
C620	**Abnormally low fixing temperature** The fixing temperature drops to 100°C/212°F or below during copying. While the fixing heaters are turned on, the temperature does not change for 7 s or longer from 40°C/104°F or below.	Fixing heater M or S installed incorrectly.	Check and reinstall if necessary.
		Broken fixing heater M or S wire.	Check for continuity. If none, replace the fixing heater M or S.
		Poor contact of the fixing unit thermistor connector terminals.	Check the connection of connector CN13-2 on the engine PCB and the continuity across the connector terminals. Remedy or replace if necessary.
		Broken fixing unit thermistor wire.	Measure the resistance. If it is ∞ Ω, replace the fixing unit thermistor.
		Fixing unit thermistor installed incorrectly.	Check and reinstall if necessary.
		Fixing unit thermostat triggered.	Check for continuity. If none, replace the fixing unit thermostat.
C630	**Abnormally high fixing temperature** The fixing temperature exceeds 240°C/464°F.	Shorted fixing unit thermistor.	Measure the resistance. If it is ∞ Ω, replace the fixing unit thermistor.
		Broken fixing heater control circuit on the power source PCB.	Replace the power source PCB.
C710	**Toner sensor problem** The toner sensor output voltage is outside the range of 0.5 to 4.5 V during toner control. The toner sensor control voltage cannot be set within the setting range when maintenance item U130 is run.	Defective toner sensor.	Replace the toner sensor.
		Poor contact of the toner sensor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
		Developer problem.	Replace the developer.

Code	Contents	Remarks	
		Causes	Check procedures/ corrective measures
C730	**Broken external temperature thermistor wire** The input voltage is above 4.5 V (230 bits).	Poor contact of the humidity sensor PCB connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
		Defective external temperature thermistor.	Replace the humidity sensor PCB.
C731	**Short-circuited external temperature thermistor** The input voltage is below 0.5 V (25 bits).	Poor contact of the humidity sensor PCB connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
		Defective external temperature thermistor.	Replace the humidity sensor PCB.
C740	**Image formation unit connector insertion problem** Absence of the image formation unit is detected continuously for 1500 ms while there is no error on the copier.	Image formation unit connector installed incorrectly.	Reinstall the image formation unit connector if necessary.
		Defective image formation unit.	Replace the image formation unit.
C801*	**Finisher paper conveying motor problem** PCM LOCK signal is detected for 0.5 s or longer.	The paper conveying motor connector makes poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
		The paper conveying motor malfunctions.	Replace the paper conveying motor and check for correct operation.
		Defective finisher main PCB.	Replace the finisher main PCB and check for correct operation.

* If the optional device is attached.

Code	Contents	Remarks	
		Causes	Check procedures/ corrective measures
C803*	**Finisher paper conveying belt problem** An on-to-off or off-to-on state change of the paper conveying belt home position sensor is not detected within 2 s of the paper conveying belt clutch turning on.	The paper conveying belt is out of phase.	Adjust the paper conveying belt so that it is in phase and check for correct operation.
		The paper conveying belt clutch malfunctions.	Replace the paper conveying belt clutch and check for correct operation.
		The paper conveying belt home position sensor malfunctions.	Replace the paper conveying belt home position sensor and check for correct operation.
		The paper conveying belt home position sensor connector makes poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
		The internal tray is incorrectly inserted.	Check whether the internal tray unit or front cover catches are damaged.
C814*	**Finisher tray elevation motor problem** The sort tray is not detected in the home position within 30 s of the start of the tray elevation motor rotation.	The tray elevation motor connector makes poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
		The tray elevation motor malfunctions.	Replace the tray elevation motor and check for correct operation.
		Defective finisher main PCB.	Replace the finisher main PCB and check for correct operation.

* If the optional device is attached.

Code	Contents	Remarks	
		Causes	Check procedures/ corrective measures
C817*	**Finisher front jogger motor problem** While the front jogger is not detected in the home position, the front jogger home position sensor does not detect the jogger within 1.5 s of the start of front jogger motor clockwise rotation. After the front jogger is detected in the home position, the front jogger home position sensor still detects the jogger within 0.5 s of the start of front jogger motor counterclockwise rotation.	The front jogger motor connector makes poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
		The front jogger motor malfunctions.	Replace the front jogger motor and check for correct operation.
		The front jogger home position sensor connector makes poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
		The front jogger home position sensor malfunctions.	Replace the front jogger home position sensor and check for correct operation.
		Defective finisher main PCB.	Replace the finisher main PCB and check for correct operation.

* If the optional device is attached.

Code	Contents	Remarks	
		Causes	Check procedures/ corrective measures
C818*	**Finisher rear jogger motor problem** While the rear jogger is not detected in the home position, the rear jogger home position sensor does not detect the jogger within 1.5 s of the start of rear jogger motor clockwise rotation. After the rear jogger is detected in the home position, the rear jogger home position sensor still detects the jogger within 0.5 s of the start of rear jogger motor counterclockwise rotation.	The rear jogger motor connector makes poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
		The rear jogger motor malfunctions.	Replace the rear jogger motor and check for correct operation.
		The rear jogger home position sensor connector makes poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
		The rear jogger home position sensor malfunctions.	Replace the rear jogger home position sensor and check for correct operation.
		Defective finisher main PCB.	Replace the finisher main PCB and check for correct operation.
C822*	**Finisher stapler problem** The stapler home position sensor does not change state from non-detection to detection within 0.2 s of the start of stapler motor counterclockwise (forward) rotation. During initialization, the stapler home position sensor does not change state from non-detection to detection within 0.6 s of the start of stapler motor clockwise (reverse) rotation.	The stapler connector makes poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
		The stapler malfunctions. a) The stapler is blocked with a staple. b) The stapler is broken.	a) Remove the stapler cartridge, and check the cartridge and the stapling section of the stapler. b) Replace the stapler and check for correct operation.
		Defective finisher main PCB.	Replace the finisher main PCB and check for correct operation.

* If the optional device is attached.

Code	Contents	Remarks	
		Causes	Check procedures/ corrective measures
C850*	**Mailbox drive motor problem** While the mailbox drive motor is driving, synchronization signals do not synchronize continually for 464 ms (motor lockup).	Defective mailbox drive motor or mailbox main PCB.	Run a simulation of the mailbox (communication test mode). If there is any problem with the communication, replace the mailbox drive motor or the mailbox main PCB and check for correct operation.
C920*	**Deck paper conveying motor problem** No pulse is input within 500 ms of the start-up. No pulse is input within 100 ms of the previous pulse input.	The deck paper conveying motor connector makes poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
		Defective deck paper conveying motor PCB.	Replace the deck paper conveying motor PCB and check for correct operation.
		The deck paper conveying motor does not rotate correctly (the motor is overloaded).	Check the gears and remedy if necessary.
C921*	**Paper deck motor 1 problem** A motor over-current signal is detected continuously for 1 s or longer.	Paper deck motor 1 connector makes poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
		Paper deck motor 1 does not rotate correctly (the motor is overloaded).	Check the gears and remedy if necessary.

* If the optional device is attached.

Code	Contents	Remarks	
		Causes	Check procedures/ corrective measures
C922*	**Paper deck motor 2 problem** A motor over-current signal is detected continuously for 1 s or longer.	Paper deck motor 2 connector makes poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
		Paper deck motor 2 does not rotate correctly (the motor is overloaded).	Check the gears and remedy if necessary.
C923*	**Right lift position problem** Deck level switch 2 does not turn on within 20 s of paper deck motor 2 turning on.	Deck level switch 2 connector makes poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
C924*	**Left lift position problem** Deck level switch 1 does not turn on within 20 s of paper deck motor 1 turning on.	Deck level switch 1 connector makes poor contact.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.

* If the optional device is attached.