

J REWRITING OF FIRMWARE

1. OUTLINE

1.1 Precautions on rewriting the firmware

(1) Check items

When rewriting the firmware, be sure to check the type (G00, G80, G81) of current firmware and execute ISW with the same type of firmware. Since the type of firmware differs depending on the board, an error code or malfunction code is displayed by executing ISW with wrong firmware.

Note

- Depending on the board, there are 3 types of firmware; G00-xxxx, G80-xxxx, G81-xxxx.
- When the rewrite is executed with the type that does not match the current firmware type, the rewrite does not complete normally and an error code or malfunction code occurs.
- Contact the service manager of the authorized distributor for the method to identify the board.

(2) Target board

Control board that has different types

- Main body: Printer control board (PRCB)
- FS-521: FNS control board (FNSCB)

(3) ISW execution procedures

When executing the ISW over the entire system, be sure to execute it in the order given below. (To minimize the occurrence of malfunction resulting from the mismatch of the firmware version)

Step	Type of programs
1	FD(H), FS-521(N1), FS-531(N2), FS-612(N2), SD(B), LS 1st tandem (S1), LS 2nd tandem (S2), RU-509(R1), RU-506(R2), PB(J), DF(F), GP (G)
2	Printer control (C)
3	Overall control (I)

Note

- After replacing the OACB, be sure to conduct the ISW of the image control (Collective (I0)) first. The main body turns ON abnormally if the overall control firmware is not in the OACB.
- Rewriting firmware of IC should be conducted by [I.6.4 Firmware version of IC](#)

(4) DIPSW and toggle SW setting on the boards

Note

- When the FNSCB (FS-521), the FDCB, the SDCB, the LSCB or the PBCB is replaced, be sure to conduct the machine setting of the main body by the DIPSW (FD, FS, SD or PB) control board on the [L.2.12.1 FD control board \(FDCB\)](#), [L.2.6.1 FNS control board \(FNSCB\)](#), [L.2.13.1 SD control board \(SDCB\)](#), [L.2.14.1 PB control board \(PBCB\)](#) or by the LS toggle SW (refer to [G.12.2.4 Caution when setting models using toggle SW](#)). After that, conduct the ISW.

(5) Connecting short connector when rewriting firmware

Be sure to connect the jumper connector to the post-processing option by following the table below.

Machine type	GP-501	RU-506	RU-509	LS-505	FD-503	SD-506	PB-503	FS-521	FS-531 / FS-612
Short connector connection	Not required	When using GP-501 + RU-506, remove the connector B (CN6) and connect the blue connector to the board.	Not required	Not required	Not required	Not required	Not required	Not required	Not required*1 Required*2

*1 Not required when RU-509 is connected.

*2 Required when FS-531, FS-612 is directly connected to the main body.

(6) Checksum check

The firmware data is supplied in sets with the execution program and the sum check file.

When rewriting the firmware, the error detection can be performed by calculating the file checksum using the dedicated tool ISWTrans_G.

When conducting the ISW regarding the image process (Collective(I0)), be sure to perform the checksum check in advance.

1.2 Combination of firmware and board

1.2.1 Table of combination (Main body: Printer control board)

		Types of board		
		Regular board A1DUH030	Substitute board 1 A1DUH830	Substitute board 2 A1DUH831
Types of FW	G00-xxxx	OK	NG-A	NG-A

			ISW did not complete normally and "Now rewriting program" is displayed.	ISW did not complete normally and "Now rewriting program" is displayed.
	G80-xxxx	NG-A ISW did not complete normally and "Now rewriting program" is displayed.	OK	NG-B ISW did not complete normally and ISW error is displayed. "Download error occurred <246>"
	G81-xxxx	NG-B ISW did not complete normally and ISW error is displayed. "Download error occurred <246>"	NG-B ISW did not complete normally and ISW error is displayed. "Download error occurred <246>"	OK

(1) NG-A screen display

"Now rewriting program"

(2) Recovery procedure

1. ISW did not complete normally while "USB Memory ISW Mode Now rewriting program" is displayed.
2. Turn OFF the sub power switch (SW2).
3. Turn OFF the main power switch (SW1).
4. Enter the service mode and execute ISW with a proper firmware.

Note

- Execute the procedure mentioned above when the message "USB Memory ISW Mode Now rewriting program" is displayed for more than 5 minutes.
- The sub power switch (SW2) cannot be turned OFF when the message "USB Memory ISW Mode Now rewriting program" is displayed. Therefore, be sure to turn OFF the main power switch (SW1) before entering the service mode.
- When ISW is executed with a wrong firmware, it is started with a firmware before the rewrite by turning OFF/ON the main power switch (SW1).

(3) NG-B screen display

"Download error occurred <246>"

(4) Recovery procedure

- ISW did not complete normally and ISW error is displayed. "Download error occurred <246>"
- Turn OFF the sub power switch (SW2).
- While pressing the "Utility/Counter" button, turn ON the SW2 to enter the service mode.
- Enter the service mode and execute ISW with a proper firmware.

Note

- The connection of USB memory cannot be recognized if the USB memory was connected when entering the service mode after the error <246> occurred.
- Be sure to remove and insert the USB memory after the error <246> occurs.
- When ISW is executed with a wrong firmware, it is started with a firmware before the rewrite by turning OFF/ON the main power switch (SW1).

1.2.2 Table of combination (FS-521: FNS control board)

		Types of board	
		Regular board A0GYH010	Substitute board A0GYH810
Types of FW	G00-xxxx	OK	NG-A ISW did not complete normally and ISW error is displayed. "Download error occurred <246>"
	G80-xxxx	NG-B After ISW completed normally, a malfunction code (C-C109) occurs at the reboot	OK

(1) NG-A screen display

"Download error occurred <246>"

(2) Recovery procedure

1. ISW did not complete normally and ISW error is displayed. "Download error occurred <246>"
2. Turn OFF the sub power switch (SW2).
3. While pressing the "Utility/Counter" button, turn ON the SW2 to enter the service mode.
4. Execute ISW with a proper firmware.

Note

- Be sure to turn OFF the sub power switch (SW2) once, and then turn ON the SW2 again while pressing the "Utility/Counter" button to enter the service mode.

(3) NG-B screen display

After ISW completed normally, a malfunction code (C-C109) occurs at the reboot

(4) Recovery procedure

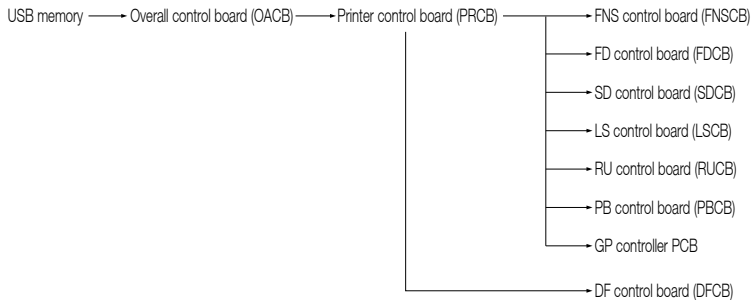
1. After ISW completed normally, a malfunction code (C-C109) occurs at the reboot
2. Turn OFF the sub power switch (SW2).
3. While pressing the "Utility/Counter" button, turn ON the SW2 to enter the service mode.
4. Execute ISW with a proper firmware.

Note

- Be sure to turn OFF the sub power switch (SW2) once, and then turn ON the SW2 again while pressing the "Utility/Counter" button to enter the service mode.

1.3 Firmware data flow

The following shows the flow of the ISW data.



1.4 Main body setting for ISW

There are the following 2 ways for settings on the main body side.

(1) Type of setting

- Power ON mode
This mode is used when the firmware is not installed to the overall control board (OACB) or when it is damaged. In this condition, ISW of the OACB is possible when sub power switch (SW2) is turned ON.
- Service Mode
This mode is used when the firmware of the OACB is installed properly.

(2) When in the version up of the program

Target board	Display when the power is turned ON	Mode
Overall control board	Normal	Service mode
Other boards	Normal	Service mode

(3) When writing new firmware (When replacing board and rewriting firmware failed)

Target board	Display when the power is turned ON	Mode
Overall control board	Power save LED blinks in orange	Power ON mode
	No display on touch panel	
Other boards	Error code display	Service Mode

(1) For the overall control board (OACB), when something is wrong with the firmware or no firmware is written, the normal start-up cannot be made. In this condition, the power save LED blinks in orange when power switch is turned ON and placed in the ISW stand-by mode.

Note

- **Firmware can only be written in Boot USB memory ISW.**
- (2) For other boards, when the firmware of the overall controller is normal and something is wrong with other firmware, a malfunction code is shown on the touch panel when the power is turned ON. In that case, enter the service mode and perform ISW normally.

1.5 Type

(1) USB MEMORY ISW

Directly connect the USB memory to the service port of the main body, and use the program stored in the USB memory to rewrite the firmware. For the USB memory ISW, the following methods are available depending on the start up method.

- USB memory ISW from service mode
Rewrite the firmware using the operation panel.
- Boot USB memory ISW when turning ON the power
Conduct when replacing the overall control board (OACB) or failed in rewriting a firmware.

(2) Internet ISW

Use the main body NIC to connect the main body to network environment, and use the FTP or the HTTP protocol to rewrite firmware via the program server on the Internet. For the internet ISW, the following methods are available.

- Internet ISW using the Web Utilities
Rewrite the firmware by accessing the Web Utilities of the main body from the Web browser of the PC.
However, a network connected PC with the main body is required.
- Internet ISW using the operation panel
Rewrite the firmware using the operation panel.
- Internet ISW using the CS Remote Care