Model S-C1/F1

PRINTER UNIT
(Machine Code: B441)

SERVICE MANUAL

30 November, 2001
Subject to change.

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1. INSTALLATION

1.1 INSTALLATION REQUIREMENTS

Please refer to section 1 of the main unit service manual.

1.2 PRINTER INSTALLATION

1.2.1 ACCESSORY CHECK

Check the accessories in the box against the following list:

Model S-C1

No.	Description	Q'ty
1	CD ROM	1 set
2	Key Top – Printer	1
3	Key Top - Copy	1
4	Printer Key Cover	1
5	Harness - Controller/FCU	1
6	Screw - M3x6	6
7	Installation Procedure	This sheet
8	Operating Instruction	1 set
9	Software License Agreement	1

Model S-F1

No.	Description	Q'ty
1	CD ROM	1 set
2	Printer Decal	1
3	Harness - Controller/FCU	1
4	Screw - M3x6	6
5	Installation Procedure	This sheet
6	Operating Instructions	1 set
7	Software License Agreement	1

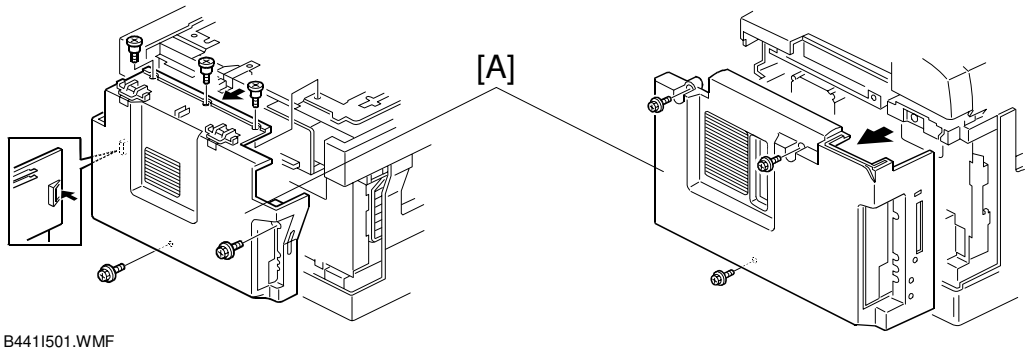
1.2.2 PRINTER CONTROLLER INSTALLATION

⚠CAUTION

- **Unplug the main machine power cord before starting the following procedure.**

If you install the fax option at the same time, the fax option must be installed first. Otherwise you cannot install the fax option.

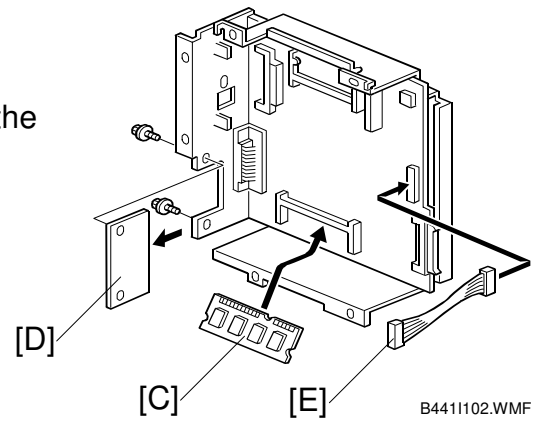
Model S-C1 **Model S-F1**



1. **Model S-C1:**
   Remove the rear cover [A] (5 screws).
   Model S-F1:
   Remove the rear cover [A] (3 screws).
2. Remove the small cover [B] from the rear cover (cut it by the nipper).
   - When you install the printer memory at the same time, please connect the memory [C] to CN502 as shown.

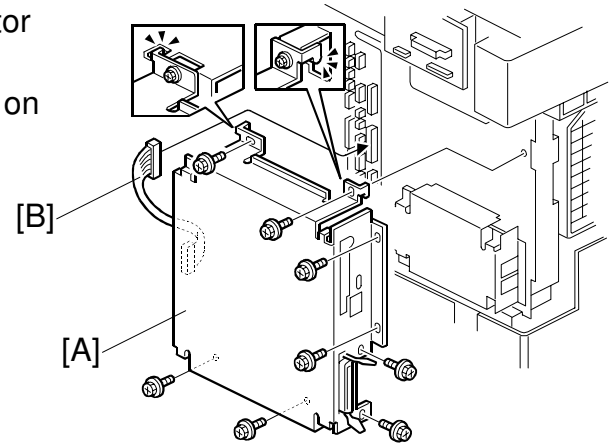
   Model S-C1:
   - When you install the fax option, please remove the small cover [D] as shown. Otherwise go to step 3.

   Model S-F1:
   Remove the small cover [D] as shown.



3. Connect the harness [E] on CN507 as shown.

4. Install the controller [A] (1 connector and 8 screws) as shown.
5. Connect the harness [B] into CN3 on the FCU board.



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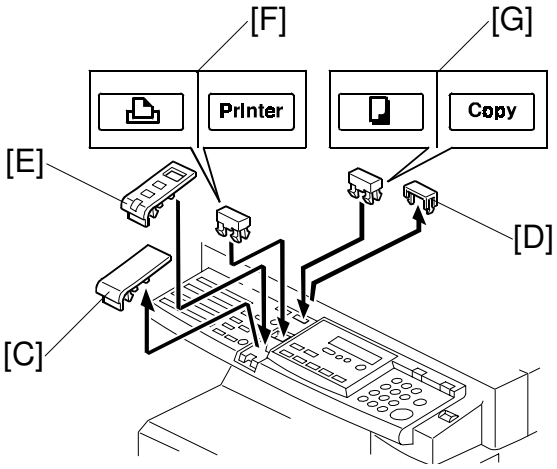
6. Replace the rear cover.

7. **Model S-C1 only**: Remove the covers [C] and [D] from the operation panel.
8. **Model S-C1:**
   Install the printer key cover [E], the printer key top [F] and the copy key top [G].

   Model S-F1:
   Attach the Printer Decal (“Pinter - On Line - Job Reset”) just above the F3, F4 and F5 keys.



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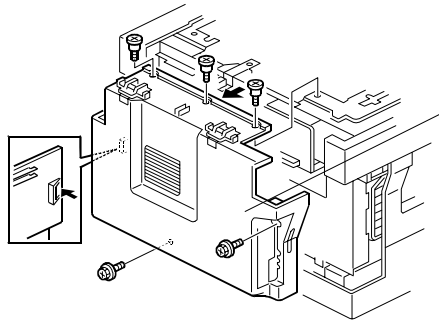
1.3 PS 2 EMULATION BOARD (B431)

⚠CAUTION

Unplug the main machine power cord before starting the following procedure.

NOTE: To install the Postscript option, the printer option (B441) must be installed also. Please refer to section 1.2 for the printer controller installation procedure.

Model S-C1



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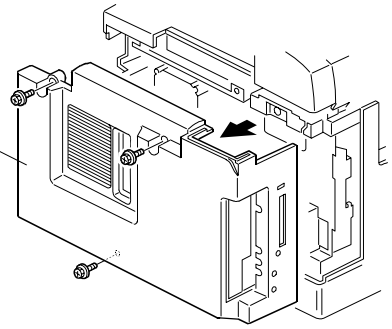
Model S-F1



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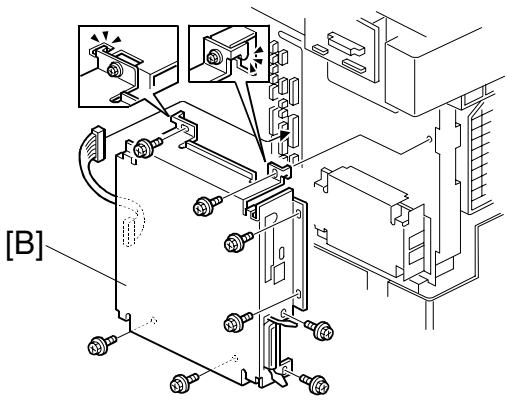

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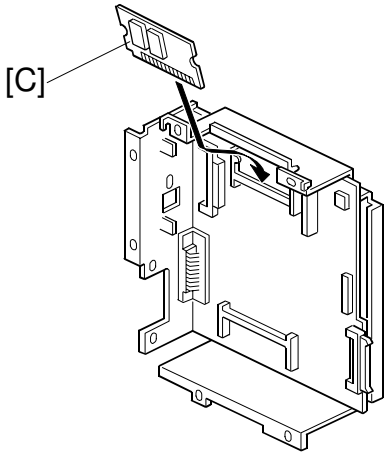


B441I505.WMF

1. **Model S-C1:** Remove the rear cover [A] (5 screws).
   Model S-F1: Remove the rear cover [A] (3 screws).
2. Remove the controller board [B] from the machine (1 harness and 8 screws or 6 screws if no fax option).
3. Connect the PS 2 emulation board [C] to CN505 on the controller board.
4. Replace the controller board assembly in the machine.
5. Replace the rear cover.

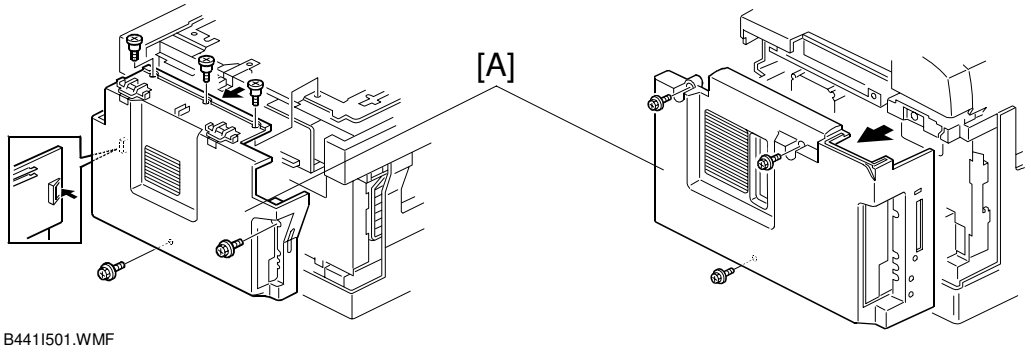
1.4 MEMORY BOARD (G578/G579/G580)

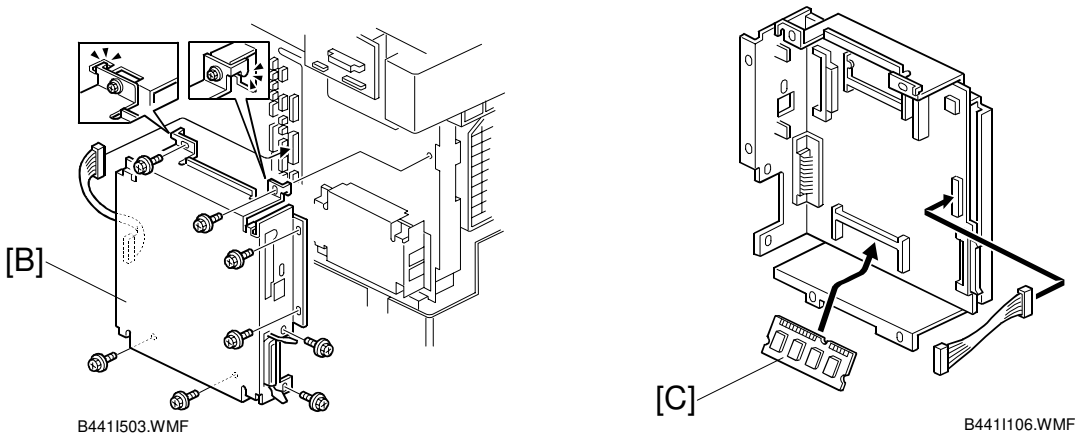
⚠CAUTION

Unplug the main machine power cord before starting the following procedure.

NOTE: To install the memory option, the printer option (B441) must be installed also. Please refer to section 1.2 for the printer controller installation procedure.

Model S-C1 **Model S-F1**





1. **Model S-C1:** Remove the rear cover [A] (5 screws).
   Model S-F1: Remove the rear cover [A] (3 screws).
2. Remove the controller board [B] from the machine (1 harness and 8 screws or 6 screws if no fax option).
3. Connect the memory board [C] to CN502 on the controller board.
4. Replace the controller board assembly in the machine.
5. Replace the rear cover.

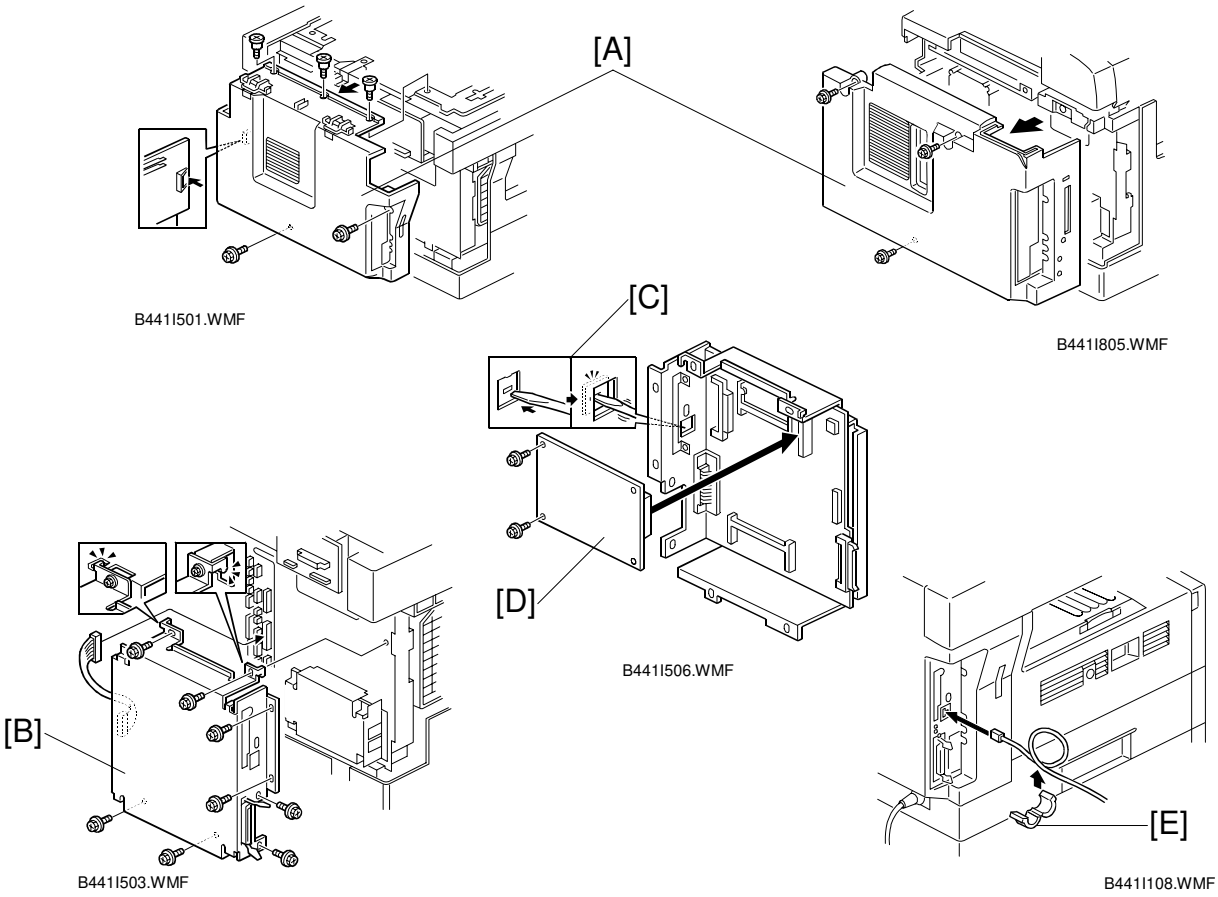
1.5 NIB (B430)

⚠CAUTION

Unplug the main machine power cord before starting the following procedure.

NOTE: To install the NIB option, the printer option (B441) must be installed also. Please refer to section 1.2 for the printer controller installation procedure. The display takes a few minutes to initialize after installing the NIB.

Model S-C1 **Model S-F1**



1. **Model S-C1:** Remove the rear cover [A] (5 screws).
   Model S-F1: Remove the rear cover [A] (3 screws).
2. Remove the controller board [B] from the machine (1 harness and 8 screws or 6 screws if no fax option).
3. Remove the small window [C] on the controller board bracket.
4. Connect the network interface board [D] to the controller board (2 screws) as shown.
5. Replace the controller board assembly in the machine.
6. Replace the rear cover.
7. Wrap the network cable around the core [E], close the core, then connect the cable to the machine.

2. TROUBLESHOOTING

2.1 ERROR CODES

The following table lists the controller error codes. If an error occurs, SC2001 and one of the following codes are displayed together at power-on, or after the power-on self-test.
Please refer to section 3.4 for details of the power-on self-test.

Code	Description	Required Action
00xx	Exceptional operation error	• Replace the controller if the error is frequent.
0101	Code ROM error	• Replace the controller if the error is frequent.
0201	Resident RAM error	• Replace the controller if the error is frequent.
0301	Optional RAM error	• Replace the optional DIMM if the error is frequent.
06xx	CPU error	• Replace the controller if the error is frequent.
0Fxx	Engine interface and video data error	• Check the connection between the engine board and the controller
11xx	Centronics parallel interface error	• Replace the controller if the error is frequent.
1401	NVRAM error	• Replace the NVRAM if the error is frequent.
1601	Font ROM error	• Replace the controller if the error is frequent.
1Bxx	NIB interface error	• Replace the controller if the error is frequent.
25xx	PS2 error	• Replace the PS DIMM if the error is frequent.

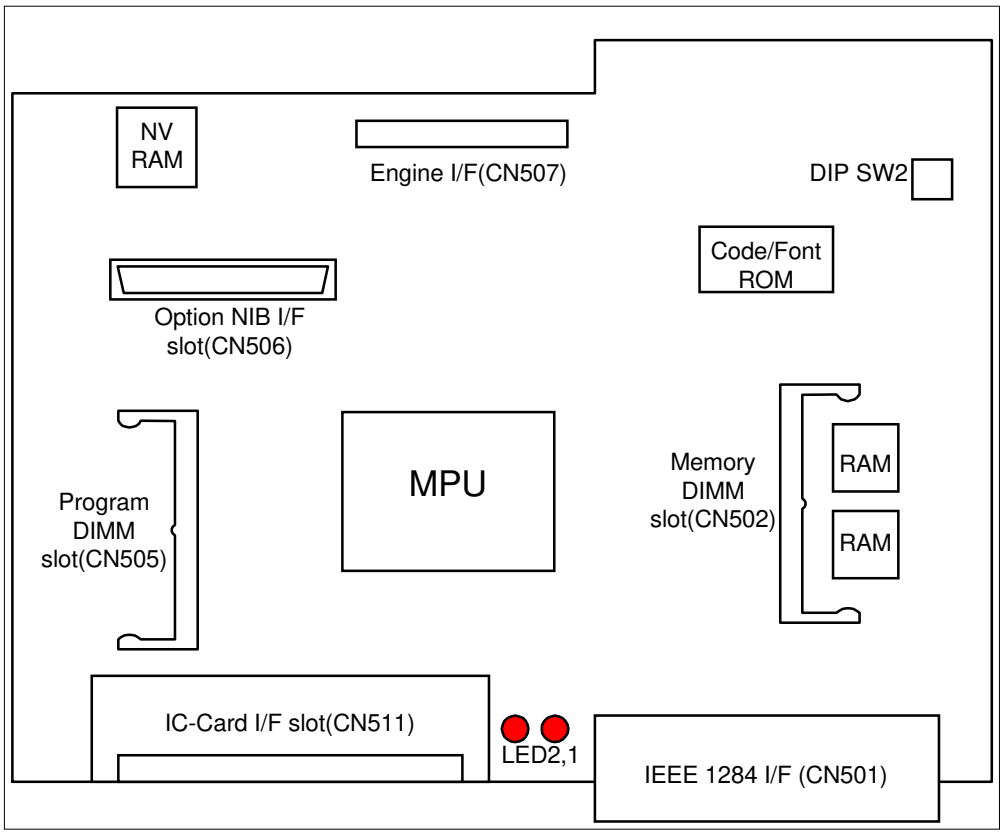
“ Code1Cxx was deleted. 2001/09/25

2.2 LED DISPLAY

2.2.1 LOCATION

The controller uses two LEDs to display error status even while the LED message is not active.

To see these LEDs, remove the machine's rear cover.



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When the machine is operating normally, LED 1 blinks (on/off) and LED 2 remains always off. LED 2 only comes on if there is an error; see the next section of the manual.

2.2.2 FATAL ERROR

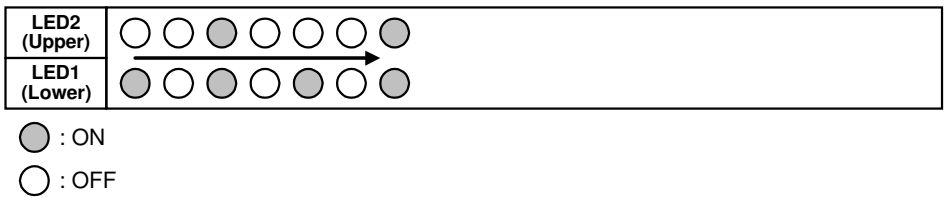
If the controller detected a fatal error during the power-on self-test, it uses 2 LEDs to notify the cause of the error.

If one of the following fatal errors happens, the LED status changes as shown (read from the left of the diagram to the right).

Code ROM Error

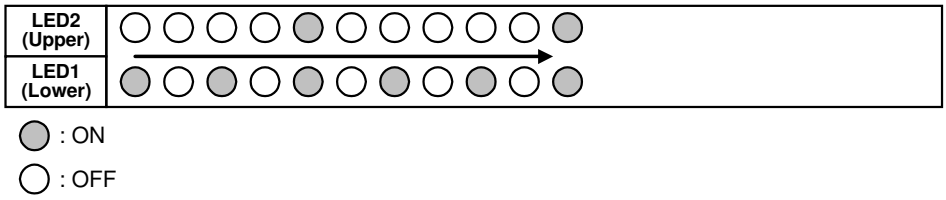
Turn off the machine and turn it back on. If the controller detects the same error, replace the controller.

Resident RAM Error



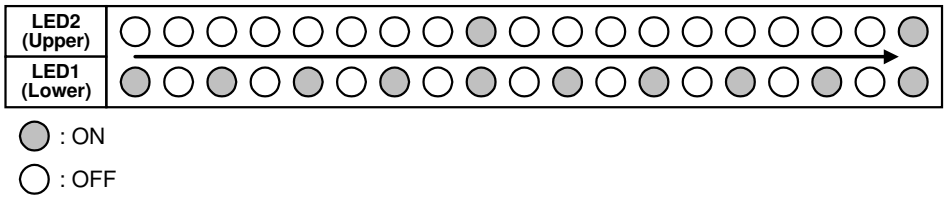
Turn off the machine and turn it back on. If the controller detects the same error, replace the controller.

CPU Error



Turn off the machine and turn it back on. If the controller detects the same error, replace the controller.

Abnormal Termination



B441T506.WMF

Turn off the machine, check the connection to the optional components, and turn on the machine. If the controller detects the same error, replace the controller or NIB.

3. SERVICE TABLES

3.1 SERVICE PROGRAM MODE OVERVIEW

⚠CAUTION

Before accessing the service menu, do the following:

Confirm that there is no print data in the printer buffer (the Data In LED must not be lit or blinking).
If there is some data in the buffer, wait until all data has been printed.

3.1.1 HOW TO ENTER THE SP MODE

Entering the Service Mode

[ ] → ① → ⓪ → ⑦ → [C/⊘] (Hold for more than 3 seconds until the SP mode menu is displayed.)

Select "3" to enter the printer SP mode.

Exiting the Service Mode

Select "2" to exit from the printer SP mode.

NOTE: To make the settings effective, turn the main switch off and on after exiting service mode.

3.1.2 SERVICE MENU TABLE

	Description	Function
A	BitSw#1 Set	Adjusts bit switch settings. **Note:** Currently the bit switches are not being used.
B	NVRAM Clear 1	Initializes the controller NV RAM except bit switches, NIB settings, and log data.
C	NVRAM Clear 2	Initializes the controller NV RAM except NIB settings.
D	NVRAM Clear 3	Initializes the NIB NV RAM (NIB settings).
E	Counter Clear	Initializes all counters to zero.
F	Diagnostic Error	Displays the most recent diagnostic error codes on the LCD.
G	Service Print	Prints the service summary sheet.

3.2 SERVICE MENU

3.2.1 BIT SWITCH SETTINGS

The bit switches are not used at the moment.

3.2.2 NV RAM CLEAR

⚠CAUTION

Print the service summary report, controller configuration page, and NIB configuration page before resetting the NV RAM(s).

1. Enter the printer SP mode, and select “1. Service Menu”.
2. Select the appropriate menu, and then press “OK”.
   B: NV RAM Clear 1
   C: NV RAM Clear 2
   D: NV RAM Clear 3
3. Ensure that you have printed the appropriate configuration sheet, then press “OK”.
   B: Service Summary Sheet
   C: Service Summary sheet and Controller Configuration Sheet
   D: NIB Configuration Sheet
4. Press “OK” to execute. Or press “Cancel” to exit.

3.2.3 COUNTER CLEAR

1. Enter the printer SP mode, and select “1. Service Menu”.
2. Select “E. Counter Clear”, then press “OK”.
3. Press “OK” to execute. Or press “Cancel” to exit.

3.2.4 DIAGNOSTIC ERROR

This displays the latest 8 error codes that were found during the power-on self-test. Refer to section 2.1 for details of the error codes.

1. Enter the printer SP mode, and select “1. Service Menu”.
2. Select “F. Diagnostic Error ”, then press “OK”.
3. Look through the error codes by using the right and left cursor keys.
4. Press “Cancel” to exit.

3.2.5 SERVICE PRINT

This prints the summary sheet, which contains the following items:

- Model Number/System Version/Unit Number
- Program List
- Bit Switch (These are not set at the moment.)
- Counters
- Exception Information
- System Logging 1/2
- Options

1. Enter the printer SP mode, and select “1. Service Menu”.
2. Select “G. Service Print”, then press “OK”.
3. Press “Cancel” to exit.

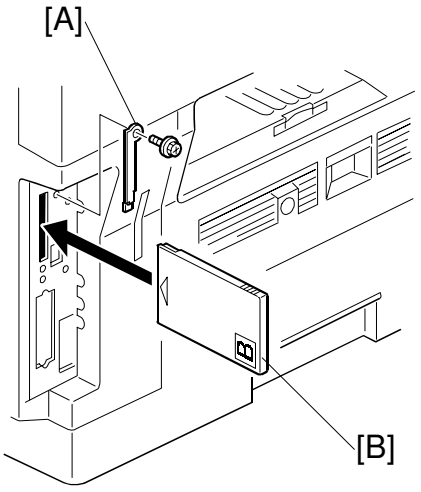
3.3 FIRMWARE UPDATE PROCEDURE

3.3.1 CONTROLLER/PS2 FIRMWARE UPDATE

This procedure is for upgrading the firmware for the controller and PS2 DIMM module.

⚠CAUTION
Do not turn off the machine while downloading the firmware.

1. Prepare an IC card that contains the required firmware.
2. Turn off the machine and remove the cover [A] (1 screw).
3. Insert the card [B] into the IC card slot.
   NOTE: The "B" side of the card must face towards the rear of the machine.
4. Turn on the machine. Press the "Printer" key.
5. Start downloading the new firmware by pressing the "OK" key.
6. After the firmware download has finished, turn off the machine, and remove the card. Then, replace the cover.
7. Turn on the machine, and print the printer configuration sheet to confirm that the new firmware version has been installed.



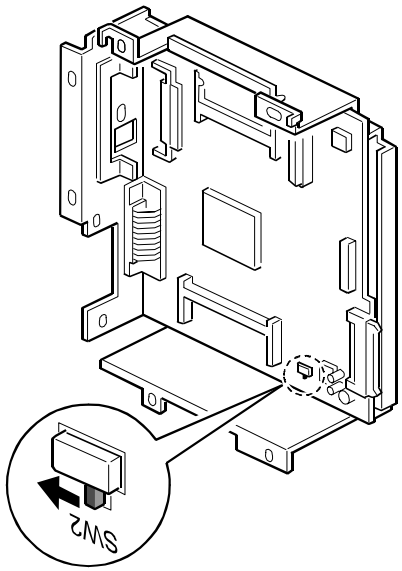
B441S500.WMF

Error Messages

Message	Description
Erasing failed ARD: xxxxxxxxx	Retry the download.
Writing Failed ARDS: xxxxxxxxx	
Melting Failed	The firmware file on the card may be damaged. Get a new firmware file and store it on the card. **NOTE:** 'Melting' means 'extraction of compressed data'.
DIMM installable program cannot find	Wrong type of firmware on the card.
CRC error. Please Retry install	The firmware file on the card may be damaged. Get a new firmware file and store it on the card.

3.3.2 ERROR RECOVERY

Controller



B441S112.WMF

If the controller does not start up after a failed firmware download, use the following procedure. This procedure will force the controller to boot from the IC card.

1. Prepare an IC card with the required controller firmware version on it.
2. Turn off the machine and remove the controller.
3. Slide DIP SW 2 to the right (as viewed from the rear of the machine), as shown above.
4. Put back the controller and install the card in the IC card slot on the controller.
   NOTE: When you see the machine from the back, the “B” side of the card must face the rear of the machine.
5. Turn on the machine.
6. Wait until the LEDs between the IC card slot and the parallel interface are both lit.
7. Turn off the machine, remove the card, and reset DIP SW2. Then, put back the controller.
8. Turn on the machine, and print the configuration sheet.

PS2 DIMM

If a download attempt failed, try downloading the new firmware again.

3.4 POWER-ON SELF TEST

The controller tests the following devices at power-on. If an error is detected, an error code is stored in the NV RAM. Refer to section 3.2.4 for how to check the error codes, and section 2.1 for the details about error codes.

- CPU
- Flash ROM
- Font ROM
- Code ROM
- Resident and optional SDRAM
- NIB (If this board is installed)
- Centronics Interface (if a loop-back connector is present)
- NVRAM

3.5 SELF DIAGNOSTIC TEST

In addition to the power-on self-test, you can set the machine in a more detailed diagnostic mode to test other components and conditions.
It requires a loop-back connector (P/N: G0219350).

1. Turn off the machine and attach the loop-back connector to the parallel interface.
2. Turn on the machine while pressing the “On Line” key and “OK” key together.
3. The machine prints the diagnostic report automatically.
   - Refer to section 3.2.4 for how to check the error codes.
   - Refer to section 2.1 for the details about the error codes.

“ Parallel interface was deleted from Power-ON Self Test Mode. 2001/09/25

3.6 USER PROGRAM MODE

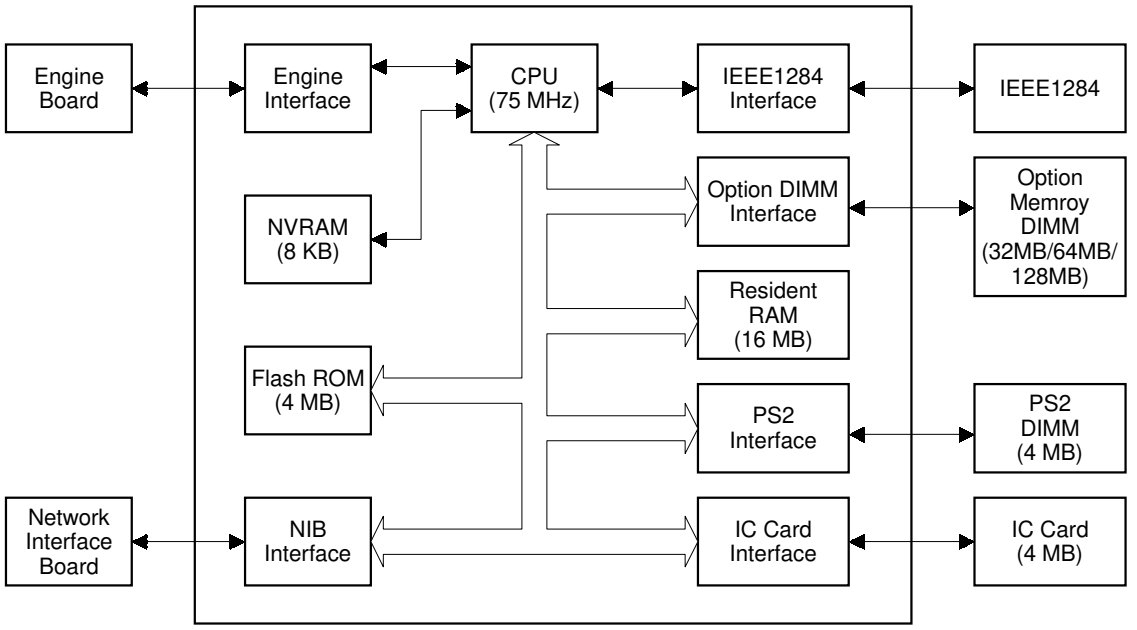
Press the “User Tools/Counter ◈/123 ”, then select “Printer Features” to change printer settings.

User Mode Table

Category	Function menu		
Job Control	Paper Input	Tray Priority/Default: Tray1	
		Tray Locking/Default: None	
		Bypass Paper Size	Standard Size
			Custom Size
	Print Quality	Edge Smoothing / Default: On	
		Resolution	PCL/Default: 600dpi
			PS/Default: 600dpi
		Toner Saving/Default: Off	
	System	I/O Time Out/Default: 30sec.	
		I/O Buffer/Default: 32KB	
		Prints PS Errors/Default: Off	
		Page Protect/Default: Auto	
		Auto Continue/Default: Off	
		Sub Paper Size/Default: Off	
	PCL menu	Orientation/Default: Portrait	
		Form Lines/Default: 64(Metric) 60(inch)	
		Font Source/Default: Internal	
		Font Number/Default: 0	
		Point Size/Default: 12.00	
		Font Pitch/Default: 10.00	
		Symbol Set/Default: Roman-8	
Network Setup	IP Address/Default: All zero		
	Subnet Mask/Default: 255.000.000.000		
	Gateway Address/Default: All zero		
Maintenance	Restart Printer		
	Menu Reset		
	Hex Dump/Default: Off		
List Print	Configuration Page		
	Menu List		
	PCL Pont List		
	PS Font List		

4. DETAILED SECTION DESCRIPTIONS

4.1 BLOCK DIAGRAM



B441D500.WMF

The CPU (Destiny D8401A, 75MHz) controls the resident RAM, engine interface, ROM interface, IEEE1284 parallel interface, NIB interface, and an IC card interface for upgrading firmware.

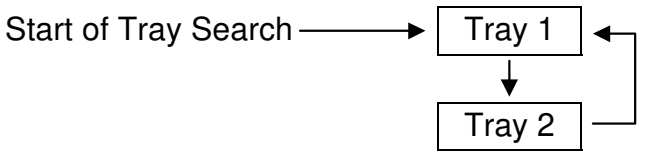
There is one optional memory socket that can have either a 32MB, 64MB, or a 128MB memory DIMM to increase RAM capacity and enable RAM collation. With the 128MB memory DIMM, the RAM capacity is increased to 144MB. There is another memory socket for the optional PS2 DIMM.

The NIB interface allows the user to install an Ethernet NIB. The IC card interface allows the interface for the controller and NIB to be updated.

4.2 CONTROLLER FUNCTIONS

4.2.1 PAPER SOURCE SELECTION

Tray Priority (Auto Tray Select)



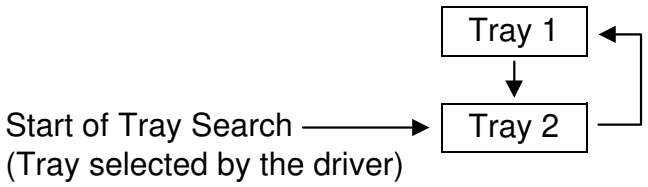
B441D510.WMF

The controller searches for the specified paper size, starting from Tray 1, and uses the first tray that has the specified paper size. If the selected tray is pulled out or runs out of paper during printing, the controller searches for another tray with the specific paper size and if found, automatically switches to it. If the controller cannot find another paper tray with the specified paper size, printing stops and the LCD displays the message “Load Paper”.

The Tray Priority setting can be specified with a user tool.
(User Tools/Printer features/Job Control/Paper Input/Tray Priority)

NOTE: The by-pass tray is not part of the tray search.

Manual Tray Select



B441D511.WMF

When the printer driver specifies a tray, the selected tray becomes the first tray checked at the start of the tray search. If the selected tray does not have the size of paper specified by the driver, the controller searches the other trays for the same paper size.

NOTE: Tray Priority in the Job Control menu does not specify the start of the tray search, but specifies the paper size in the selected tray as the default paper size.

Tray Lock

If Tray Lock is enabled for a tray, the controller does not use the “locked” tray in the tray search process. If a tray has, for example, coloured A4 size paper for fax prints, enable tray lock for that tray so that the controller does not select the tray for printing.

If the user selects a “locked” tray with the printer driver, the controller uses the tray for printing only when the specified paper size matches the actual paper size in the tray.

The Tray Lock setting can be specified with a user tool.
(User Tools/Printer features/Job Control/Paper Input/Tray Locking)

NOTE: The by-pass tray cannot be locked.

By-pass Tray

To print from the by-pass tray, select the by-pass tray with the driver. The paper sizes that can only be fed from the by-pass tray (such as custom sizes), can be fed from the by-pass tray using “Auto Tray Select”. But other paper sizes (LT, A4, etc), which can also be fed from the other paper trays, cannot be fed from the by-pass tray using “Auto Tray Select”.

4.2.2 COLLATION (SORTING)

This feature is available when the driver specifies it. Is not executed by the driver but by memory board on the controller.

4.2.3 AUTO CONTINUE

When this function is enabled, the machine continues printing automatically (after 10 seconds) even if one of the following errors occurs. However, the page where the error occurred may not be printed out correctly.

- Print Overrun
- Memory Overflow
- Memory Full

If Auto Continue is disabled and the one of the above errors occurs, the machine will stop printing and will display an error message on the operation panel.

NOTE: The default setting for Auto Continue is “Disabled.”

4.2.4 PAGE PROTECT

When a Print Overrun error occurs and this function is set to “Auto”, this error can be avoided by changing the setting to “On”. However, printing may slow down.

NOTE: The default setting for Page Protect is “Auto”.

SPECIFICATIONS

1. SPECIFICATIONS

1.1 GENERAL SPECIFICATIONS

Printing Speed:	B045/B049: Maximum 12 ppm (A4/LT SEF) B044/B046: Maximum 13 ppm (A4/LT SEF) H555: Maximum 15 ppm (A4/LT SEF)
Printer Languages:	PCL6/PCL5e PostScript Level 2 Emulation (option)
Resolution:	600 dpi (PCL6/PCL5e/PS2) 300 dpi (PCL5e/PS2)
Resident Fonts:	PCL: 35 Intellifonts 10 True Type fonts 1 PCL Bitmap PS2 (Optional): 80 PS fonts
Host Interfaces:	Bi-directional IEEE1284 parallel x 1 (standard) Ethernet (100 Base-TX/10 Base-T) (option)
Network Protocols:	TCP/IP, IPX/SPX, Apple Talk
Memory:	Standard 16 MB Options 48 MB (Standard 16 MB + 32 MB optional DIMM) 80 MB (Standard 16 MB + 64 MB optional DIMM) 144 MB (Standard 16 MB + 128 MB optional DIMM)

1.2 SUPPORTED PAPER SIZES

Paper	Size (W x L)	Paper Trays Main Unit/Option		By-pass Tray
		US	Eur/Asia	
A4 SEF	210 x 297 mm	Y#/Y	Y/Y	Y
A5 SEF	148 x 210 mm	N/N	N/N	Y#
A5 LEF	210 x 148 mm	Y#/N	Y#/N	Y#
Legal SEF	8.5" x 14"	N/Y#	N/Y#	Y#
Letter SEF	8.5" x 11"	Y/Y#	Y#/Y#	Y#
Half Letter SEF	5.5" x 8.5"	N/N	N/N	Y#
Half Letter LEF	8.5" x 5.5"	Y/N	Y#/N	Y#
F	8" x 13"	N/N	N/N	Y#
Foolscap	8.5" x 13"	N/Y#	N/Y#	Y#
Folio	8.25" x 13"	N/Y#	N/Y#	Y#
Custom	Width: 90 - 216 mm Length: 140 - 356 mm	N	N	YC

Remarks:

Y	Supported. The paper size sensor detects the paper size.
Y#	Supported. The user has to select the correct paper size for the tray.
YC	Supported. The user has to enter the width and length of the paper.
N	Not supported.

2. SOFTWARE ACCESSORIES

The printer drivers and utility software are provided on one CD-ROM. An auto-run installer allows you to select which components to install.

Printer Drivers

Printer Language	Windows 3.1x	Windows 95/98/Me	Windows 2000/NT4.0	Macintosh 8.x/9.x
PCL 6	No	Yes	Yes	No
PCL 5e	No	Yes	Yes	No
PS2	No	No	No	No
PS PPD	No	No	No	Yes

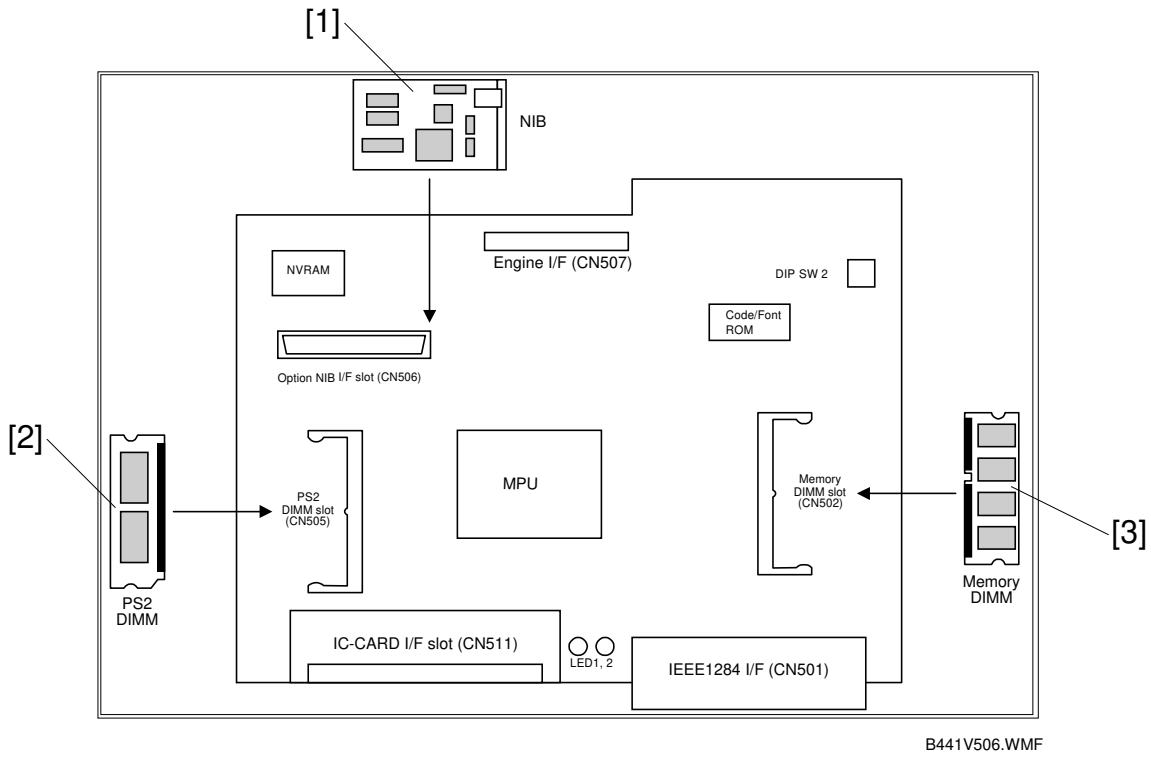
NOTE: 1) The printer drivers for Windows NT 4.0 are only for the Intel x86 platform. There is no Windows NT 4.0 printer driver for the PowerPC, Alpha, or MIPS platforms.
2) The PCL drivers for Windows 3.1x are not included on the CD.
3) There are mini-drivers on the web site also.
4) Macintosh OS 10 is not supported (classic mode only).

Utility Software

Software	Description
Agfa Font Manager (Win 95/98/Me, NT4, 2000)	A font management utility with screen fonts for the printer.
SmartNetMonitor for Admin (Win 95/98/Me, NT4, 2000)	A printer management utility for network administrators. NIB setup utilities are also available.
SmartNetMonitor for Client (Win 95/98/Me, NT4, 2000)	A printer management utility for client users. Peer-to-peer printing utility and parallel/recovery printing functions are included.
Printer Utility for Mac	This software provides several convenient functions for printing from Macintosh clients.

3. MACHINE CONFIGURATION

3.1 SYSTEM COMPONENTS



B441V506.WMF

Item	Machine Code	No.	Remarks
NIB	B430	1	
PostScript Level 2 Emulation	B431	2	
Memory 32 MB	G578	3	Used in common with the models K-P1, A-C2, J, etc.
Memory 64 MB	G579	3	Same as above
Memory 128 MB	G580	3	Same as above

Model S-F2

PRINTER UNIT
(Machine Code: B441)

SERVICE MANUAL

NOTE: The "♦" mark in this service manual indicates that the marked item is identical to the Printer Unit for Model S-F1 (H555).

20 December, 2002
Subject to change.

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1. INSTALLATION

1.1 INSTALLATION REQUIREMENTS

Please refer to section 1 of the main unit service manual.

1.2 PRINTER INSTALLATION

1.2.1 ACCESSORY CHECK

Check the accessories in the box against the following list:

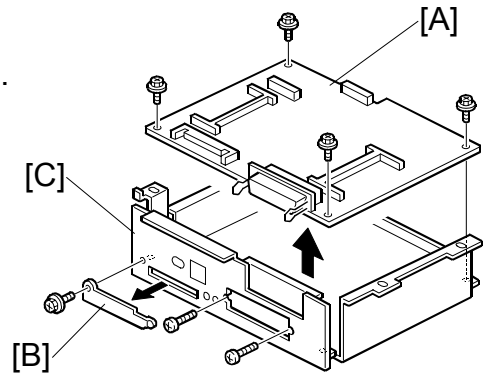
No.	Description	Q'ty
1	Printer Unit	1
2	Printer Bracket (for S-F2)	1
3	CD ROM	1 set
4	Printer Decal	1
5	Operating Instruction	1 set
6	Installation Procedure	1
7	Software License Agreement	1
8	Screw – M3 x 6	6

1.2.2 PRINTER CONTROLLER INSTALLATION

⚠CAUTION

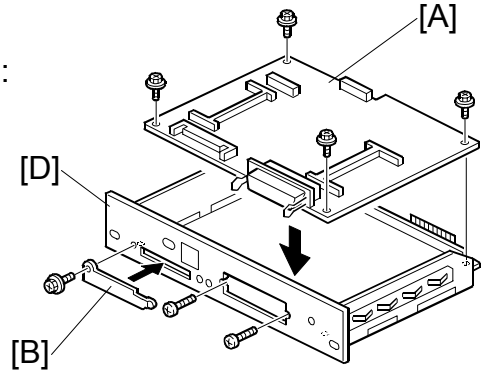
Before installing an optional unit, do the following:
1. Print out all messages stored in the memory.
2. Print out the lists of user-programmed items and the system parameter list.
3. Turn off the main switch, and disconnect the power plug.

1. Remove the Controller Board [A] (🖉 x 6) and IC card cover [B] (🖉 x 1) from the bracket [C].



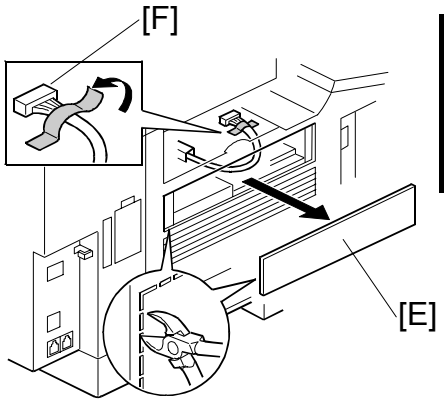
H556I502.WMF

2. Attach the Controller Board [A] (🖉 x 6: same screws in step1) and IC card cover [B] (🖉 x 1: same screw in step1) to the bracket [D] contained in the kit.



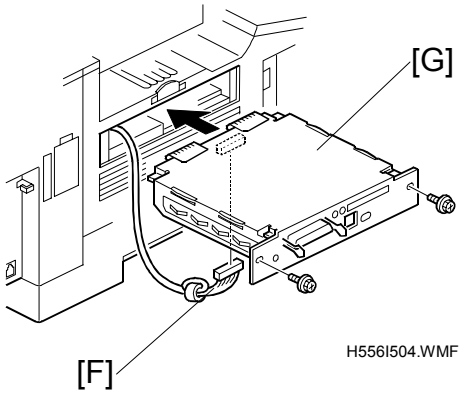
H556I503.WMF

3. Cut away the Printer Unit cover [E] from the left cover and peel off the tape attached to the harness [F].



H556I501.WMF

4. Connect the harness [F] to the CN507 on the Controller Board, and then insert the printer unit [G] assembled in step2 (🔩 x 2) into the machine.



H556I504.WMF

5. Attach the Printer Decal (“Printer - On Line - Job Reset”) just above the F6, F7 and F8 keys.
6. Plug in the machine and turn on the main power switch.
7. Print the System Parameter List from the Fax Service mode, then make sure that “PRINTER INTERFACE” is listed as an option. Then exit Service mode.

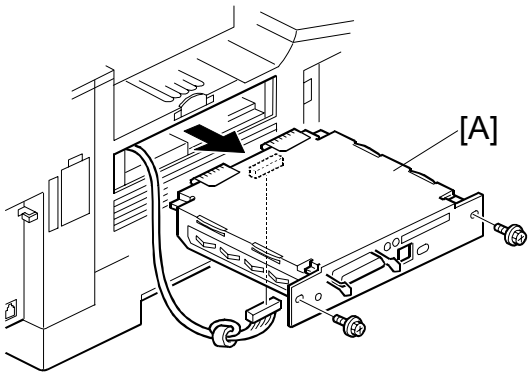
1.3 PS 2 EMULATION BOARD (B431)

NOTE: To install the Postscript option, the printer option (B441) must be installed also. Please refer to section 1.2 for the printer controller installation procedure.

⚠CAUTION

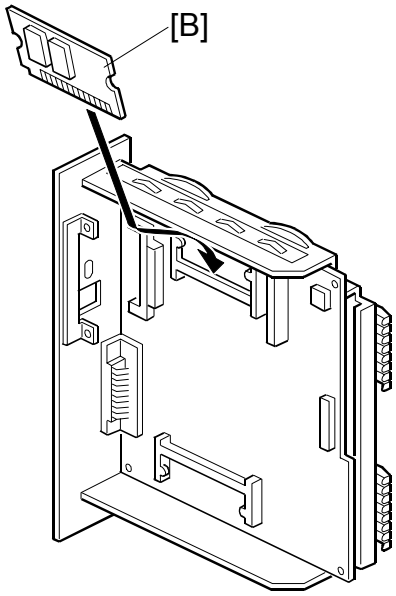
Before installing an optional unit, do the following:
1. Print out all messages stored in the memory.
2. Print out the lists of user-programmed items and the system parameter list.
3. Turn off the main switch, and disconnect the power plug.

1. Remove the printer controller unit [A] from the machine (🔩 x 2, ✋ x 1).



H556I507.WMF

2. Connect the PS 2 emulation board [B] to CN505 on the printer controller board.
3. Replace the printer controller unit in the machine.



H556I508.WMF

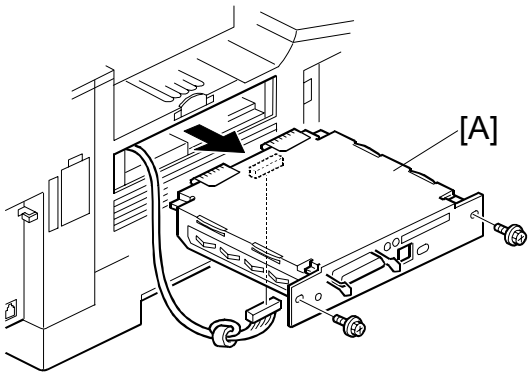
1.4 MEMORY BOARD (G578/G579/G580)

NOTE: To install the memory option, the printer option (B441) must be installed also. Please refer to section 1.2 for the printer controller installation procedure.

⚠CAUTION

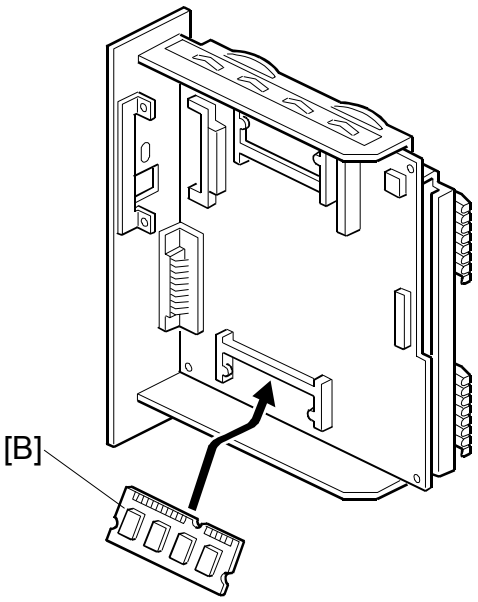
Before installing an optional unit, do the following:
1. Print out all messages stored in the memory.
2. Print out the lists of user-programmed items and the system parameter list.
3. Turn off the main switch, and disconnect the power plug.

1. Remove the printer controller unit [A] from the machine (x 2, x 1).



H556I507.WMF

2. Connect the memory board [B] to CN502 on the printer controller board.
3. Replace the printer controller unit in the machine.



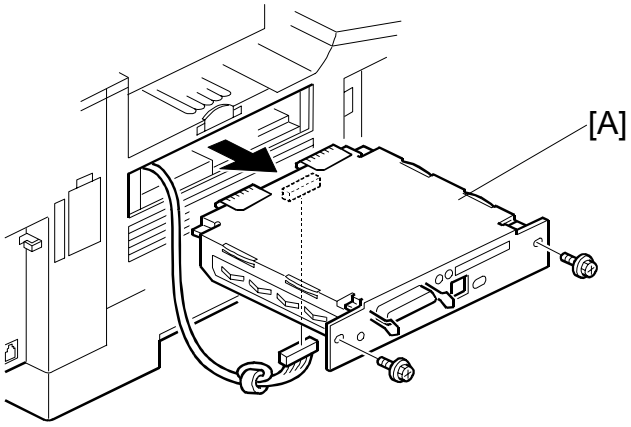
H556I509.WMF

1.5 NIB (B430)

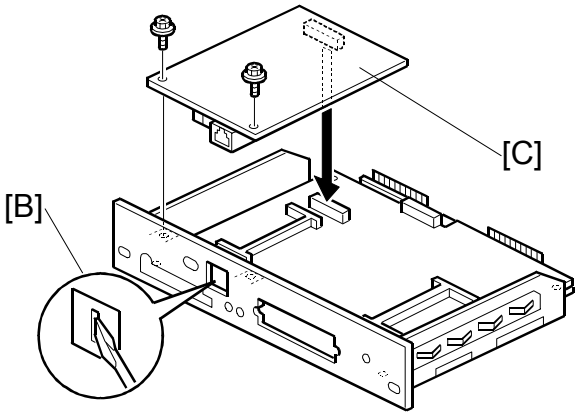
NOTE: To install the NIB option, the printer option (B441) must also be installed. Please refer to section 1.2 for the printer controller installation procedure. The display takes a few minutes to initialize after installing the NIB.

⚠CAUTION

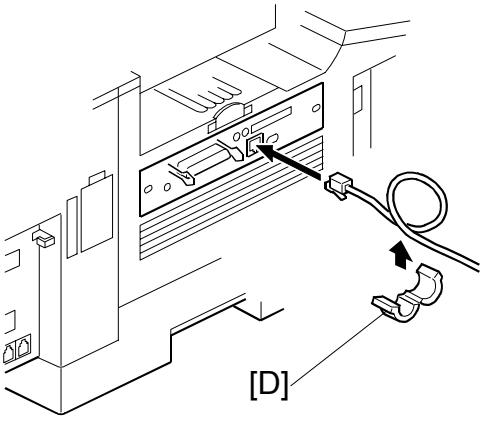
Before installing an optional unit, do the following:
1. Print out all messages stored in the memory.
2. Print out the lists of user-programmed items and the system parameter list.
3. Turn off the main switch, and disconnect the power plug.



H556I507.WMF



H556I505.WMF



H556I506.WMF

1. Remove the printer controller unit [A] from the machine (x 2, x 1).
2. Remove the small window [B] on the controller board bracket.
3. Connect the network interface board [C] to the controller board (x 2) as shown.
4. Replace the printer controller unit in the machine.
5. Wrap the network cable around the core [D], close the core, then connect the cable to the machine.

2. TROUBLESHOOTING

2.1 ERROR CODES ♦

These error codes are the same as those for Printer Unit for Model S-F1 (☛ Printer Unit for S-F1 service manual).

2.2 LED DISPLAY

2.2.1 LOCATION♦

This information is the same as that for Printer Unit for Model S-F1 (☛ Printer Unit for S-F1 service manual).

2.2.2 FATAL ERROR

The fatal errors are almost the same as those for Printer Unit for Model S-F1.
The differences between S-F1 and S-F2 are as follows:

S-F1

- LED 1: Lower
- LED 2: Upper

S-F2

- LED 1: Left
- LED 2: Right

3. SERVICE TABLES

3.1 SERVICE PROGRAM MODE OVERVIEW♦

The Service Program Mode is the same as that for Printer Unit for Model S-F1 (☛ Printer Unit for S-F1 service manual).

3.2 SERVICE MENU♦

The Service Menu is the same as that for Printer Unit for Model S-F1 (☛ Printer Unit for S-F1 service manual).

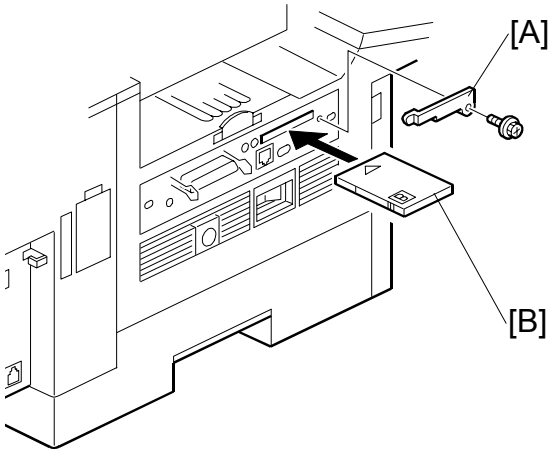
3.3 FIRMWARE UPDATE PROCEDURE

3.3.1 CONTROLLER/PS2 FIRMWARE UPDATE

Follow this procedure to upgrade the firmware for the controller and PS2 DIMM module.

⚠CAUTION
Never turn off the machine while downloading the firmware.

1. Prepare an IC card that contains the required firmware.
2. Turn off the machine and remove the cover [A] (x1).
3. Insert the IC card [B] into the IC card slot.
   NOTE: The “B” side of the IC card must face towards the top of the machine.
4. Turn on the machine, then press the “Printer” key.
5. Press the “OK” key to start downloading the new firmware.
6. After the firmware download has finished, turn off the machine, remove the IC card, then replace the cover.
7. Turn on the machine, and print the printer configuration sheet to confirm that the new firmware version has been installed.



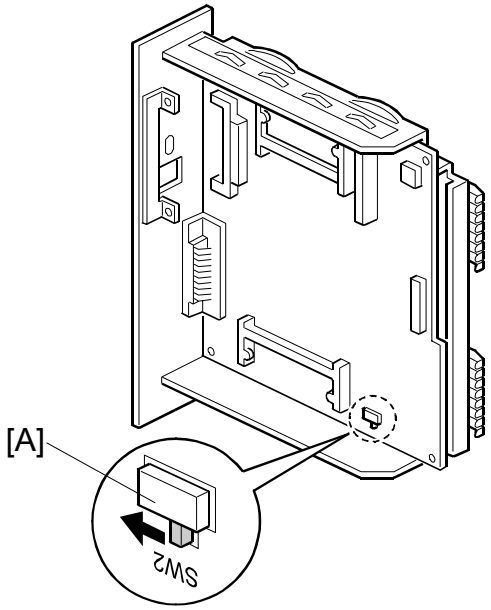
B441S900.WMF

Error Messages

Message	Description
Erasing failed ARD: xxxxxxxxx	Repeat the download procedure.
Writing Failed ARDS: xxxxxxxxx	
Melting Failed	The firmware file on the card may be corrupted. Obtain a new firmware file and store it on the card. **NOTE: ‘**Melting’ means ‘extraction of compressed data’.
DIMM installable program cannot find	Wrong type of firmware on the card.
CRC error. Please Retry install	The firmware file on the card may be corrupted. Obtain a new firmware file and store it on the card.

3.3.2 ERROR RECOVERY

Controller



B441S901.WMF

If the controller does not start up after a failed firmware download, follow this procedure to force the controller to boot from the IC card.

1. Prepare an IC card with the required controller firmware version.
2. Turn off the machine and remove the controller.
3. Slide DIP SW 2 [A] to the left.
4. Replace the controller and insert the IC card in the IC card slot on the controller.
   NOTE: When viewing the machine from the left side, the “B” side of the IC card must face the top of the machine.
5. Turn on the machine.
6. Wait until the LEDs between the IC card slot and the parallel interface both light.
7. Turn off the machine, and remove the IC card
8. Reset DIP SW2 [A] to the right, then re-install the controller.
9. Turn on the machine, and print the configuration sheet.

PS2 DIMM♦

If the download attempt failed, repeat the firmware download procedure.

3.4 POWER-ON SELF TEST ♦

This test is the same as that for the Printer Unit for Model S-F1 (☛ Printer Unit for S-F1 service manual).

3.5 SELF DIAGNOSTIC TEST♦

This test is the same as that for the Printer Unit for Model S-F1 (☛ Printer Unit for S-F1 service manual).

3.6 USER PROGRAM MODE

Press the “User Tools”, then select “Printer Features” to change printer settings.

User Mode Table

Category	Function menu		
Job Control	Paper Input	Tray Priority/Default: Tray 1	
		Tray Locking/Default: None	
		Bypass Paper Size	Standard Size
			Custom Size
	Duplex	Default: Off	
	Print Quality	Edge Smoothing / Default: On	
		Resolution	PCL/Default: 600dpi
			PS/Default: 600dpi
		Toner Saving/Default: Off	
	System	Prints PS Errors/Default: Off	
		I/O Time Out/Default: 30sec.	
		I/O Buffer/Default: 32KB	
		Page Protect/Default: Auto	
		Auto Continue/Default: Off	
		Sub Paper Size/Default: Off	
	PCL menu	Orientation/Default: Portrait	
		Form Lines/Default: 64 (Metric) 60 (inch)	
		Font Source/Default: Internal	
		Font Number/Default: 0	
		Point Size/Default: 12.00	
		Font Pitch/Default: 10.00	
		Symbol Set/Default: Roman-8	
Network Setup	IP Address/Default: All zero		
	Subnet Mask/Default: 255.000.000.000		
	Gateway Address/Default: All zero		
Maintenance	Restart Printer		
	Menu Reset		
	Hex Dump/Default: Off		
List Print	Configuration Page		
	Menu List		
	PCL Pont List		
	PS Font List		

4. DETAILED SECTION DESCRIPTIONS

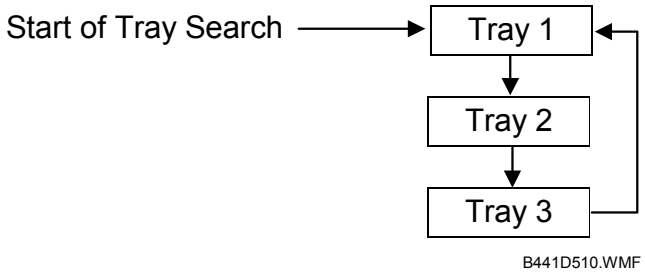
4.1 BLOCK DIAGRAM♦

Same as Printer Unit for Model S-F1 (☛ Printer Unit for S-F1 service manual).

4.2 CONTROLLER FUNCTIONS

4.2.1 PAPER SOURCE SELECTION

Tray Priority (Auto Tray Select)

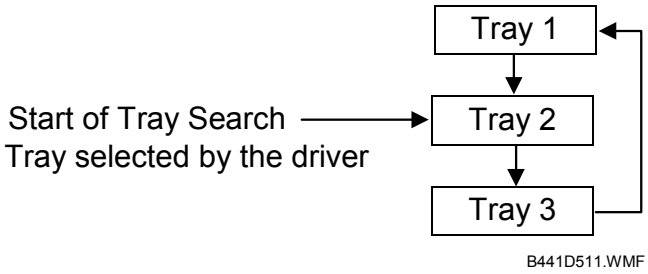


The controller searches for the specified paper size, starting from Tray 1, and uses the first tray that has the specified paper size. If the selected tray is pulled out or runs out of paper during printing, the controller searches for another tray with the specific paper size and if found, automatically switches to it. If the controller cannot find another paper tray with the specified paper size, printing stops and the LCD displays the message “Load Paper”.

The Tray Priority setting can be specified with a user tool.
(User Tools/Printer features/Job Control/Paper Input/Tray Priority)

NOTE: The by-pass tray is not part of the tray search.

Manual Tray Select



When the printer driver specifies a tray, the selected tray becomes the first tray checked at the start of the tray search. If the selected tray does not have the size of paper specified by the driver, the controller searches the other trays for the same paper size.

NOTE: Tray Priority in the Job Control menu does not specify the start of the tray search, but specifies the paper size in the selected tray as the default paper size.

Tray Lock♦

Same as Printer Unit for Model S-F1 (☛ Printer Unit for S-F1 service manual).

By-pass Tray♦

Same as Printer Unit for Model S-F1 (☛ Printer Unit for S-F1 service manual).

4.2.2 COLLATION (SORTING) ♦

Same as Printer Unit for Model S-F1 (☛ Printer Unit for S-F1 service manual).

4.2.3 AUTO CONTINUE♦

Same as Printer Unit for Model S-F1 (☛ Printer Unit for S-F1 service manual).

4.2.4 PAGE PROTECT♦

Same as Printer Unit for Model S-F1 (☛ Printer Unit for S-F1 service manual).

4.2.5 DUPLEX PRINTING

When this function is enabled, the machine performs duplex printing. With duplex printing enabled, in the Job Control menu you can specify the binding direction for “Long Edge Binding” or ”Short Edge Binding”.

NOTE: The printer driver setting takes priority over this setting.

SPECIFICATIONS

1. SPECIFICATIONS

1.1 GENERAL SPECIFICATIONS

Printing Speed:	H556/H557: Maximum 15 ppm (A4/LT SEF)
Printer Languages:	PCL6/PCL5e PostScript Level 2 Emulation (option)
Resolution:	600 dpi (PCL6/PCL5e/PS2) 300 dpi (PCL5e/PS2)
Resident Fonts:	PCL: 35 Intellifonts 10 True Type fonts 1 PCL Bitmap PS2 (Optional): 80 PS fonts
Host Interfaces:	Bi-directional IEEE1284 parallel x 1 (standard) Ethernet (100 Base-TX/10 Base-T) (option)
Network Protocols:	TCP/IP, IPX/SPX, Apple Talk
Memory:	Standard 16 MB Options 48 MB (Standard 16 MB + 32 MB optional DIMM) 80 MB (Standard 16 MB + 64 MB optional DIMM) 144 MB (Standard 16 MB + 128 MB optional DIMM)

1.2 SUPPORTED PAPER SIZES♦

Same as Printer Unit for Model S-F1 (☛ Printer Unit for S-F1 service manual).

2. SOFTWARE ACCESSORIES

The printer drivers and utility software are provided on one CD-ROM. An auto-run installer allows you to select which components to install.

Printer Drivers

Printer Language	Windows 3.1x	Windows 95/98/Me	Windows NT4.0	Windows 2000/XP
PCL 6	No	Yes	Yes	Yes
PCL 5e	No	Yes	Yes	Yes
PS2	No	Yes	Yes	Yes

Printer Language	Macintosh 8.x/9.x	Macintosh 10.x
PCL 6	No	No
PCL 5e	No	No
PS2	Yes	Yes

NOTE: 1) The printer drivers for Windows NT 4.0 are only for the Intel x86 platform. There is no Windows NT 4.0 printer driver for the PowerPC, Alpha, or MIPS platforms.
2) The PCL drivers for Windows 3.1x are not included on the CD.
3) There are mini-drivers on the web site also.

Utility Software

Software	Description
Agfa Font Manager (Win 95/98/Me, NT4, 2000, XP)	A font management utility with screen fonts for the printer.
SmartNetMonitor for Admin (Win 95/98/Me, NT4, 2000, XP)	A printer management utility for network administrators. NIB setup utilities are also available.
SmartNetMonitor for Client (Win 95/98/Me, NT4, 2000, XP)	A printer management utility for client users. Peer-to-peer printing utility and parallel/recovery printing functions are included.
Printer Utility for Mac	This software provides several convenient functions for printing from Macintosh clients.

3. MACHINE CONFIGURATION

3.1 SYSTEM COMPONENTS♦

Same as Printer Unit for Model S-F1 (☛ Printer Unit for S-F1 service manual).