Gestetner® RICOH SAVIN®

B358
SERVICE MANUAL

RICOH GROUP COMPANIES

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SERVICE MANUAL

B358

B358
SERVICE MANUAL

WARNING

The Service Manual contains information regarding service techniques, procedures, processes and spare parts of office equipment distributed by Ricoh Corporation. Users of this manual should be either service trained or certified by successfully completing a Ricoh Technical Training Program.

Untrained and uncertified users utilizing information contained in this service manual to repair or modify Ricoh equipment risk personal injury, damage to property or loss of warranty protection.

Ricoh Corporation

LEGEND

PRODUCT CODE	COMPANY		
	GESTETNER	RICOH	SAVIN
B358	Printer Controller Type 450e		

DOCUMENTATION HISTORY

REV. NO.	DATE	COMMENTS
*	3/2000	Original Printing

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OVERALL INFORMATION

1. OVERALL MACHINE INFORMATION

1.1 INTRODUCTION

The *A283/A284* base engine contains an interface for the *B358* multi-function controller. The *B358* multi-function controller adds fax and/or printer functions. Printer and fax functions can operate independently and simultaneously with other functions in the background, and their output will be interleaved with the copy mode output.

The printer supports the PCL6, and PostScript level 3. PostScript language support is an optional function.

Host printer data can be received via the standard parallel port or the optional Network Interface Board (NIB). The parallel port supports bi-directional Command and Status feed back communication with the host machines.

An optional IDE hard disk drive provides font download and other functions.

Additional DRAM SIMMs can be installed to boost the printer performance.

Images can be rasterized at 300, 400, or 600 dpi in the controller but printed at 400 or 600 dpi. For 300 dpi printing, the 300 dpi data from the controller is simulated in the base engine by printing the same pixel twice and the same line twice at 600 dpi.

The *A283* engine can print 35 pages per minute at both 400 and 600 dpi. On the other hand, the *A284* engine can print 45 pages per minute at both 400 and 600 dpi.

1.2 SPECIFICATIONS

Resolution: 600 x 600 dpi

      400 x 400 dpi (available when the PostScript option is installed)

      300 x 300 dpi (simulated by doubling pixel width and height at 600 dpi resolution)

Printing Speed: 35 ppm (*A283*)

      45 ppm (*A284*)

Printing Emulation: Main Controller Board: PCL5e and PCL6

      Optional PS Board: PostScript Level 3

Printer Font: 45 scaleable typefaces in 14 typeface families
(35 Intellifont and 10 TrueType format fonts)

      1 bitmapped typeface in the Line Printer typeface family

Printer Interface: Bi-directional Parallel x 1 (Standard)

      Network Interface x 1 (Option)

       Ethernet (100 base-TX/10 base-T for TCP/IP, IPX/SPX, EtherTalk)

DRAM Capacity: 8 MB (Standard)

      2 DRAM SIMM slots (up to 64 MB)

      Maximum Total: Up to 72 MB

1.3 SOFTWARE

1.3.1 PRINTER DRIVERS

The following printer drivers are enclosed in the drivers and utilities CD-ROM.
- PCL5e Printer Driver for Windows 95/98/*2000*/NT4.0
- PCL6 Printer Driver for Windows 95/98/*2000*/NT4.0
- PS3 Printer Driver for Windows 95/98/*2000*/NT4.0 and Macintosh

1.3.2 NETWORK UTILITIES

The network utilities are enclosed in the Network Interface Board option. Refer to the NIB manual for details.

1.4 MACHINE CONFIGURATION
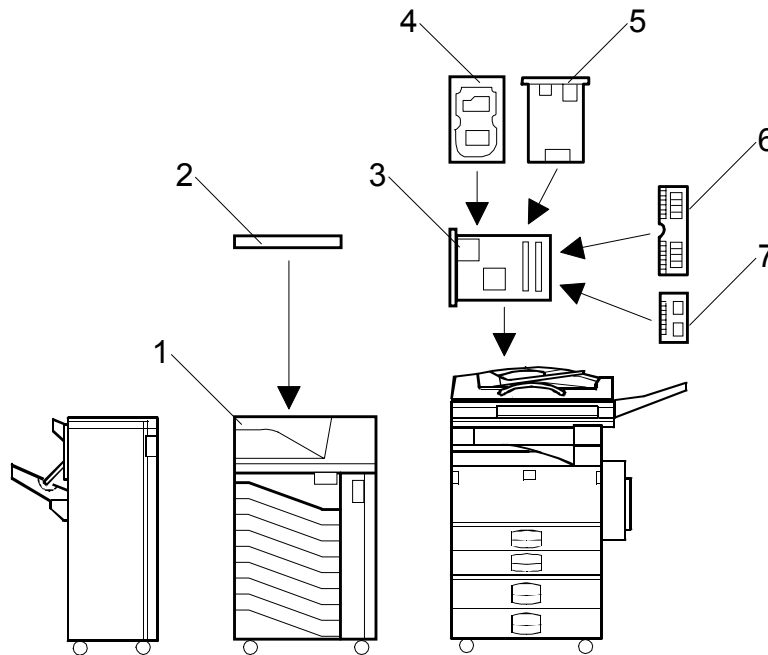
Item	Machine Code	No.
Printer Controller	*B358*	3
PostScript Kit	A854	7
Hard Disk	A853	4
Network Interface Board	A855	5
Mailbox	G909	1
Mailbox Bridge Unit	G912	2
RAM SIMM	---	6

Relationship between Main Machine, Mailbox, and Finisher

O: Available   X: Not available

Model	Mailbox	1,000 sheet Finisher	3,000 sheet Finisher
A283	Installed	X	X
	Not installed	O	X
A284	Installed	X	O
	Not installed	O	O

1.5 STRUCTURE

1.5.1 BLOCK DIAGRAM
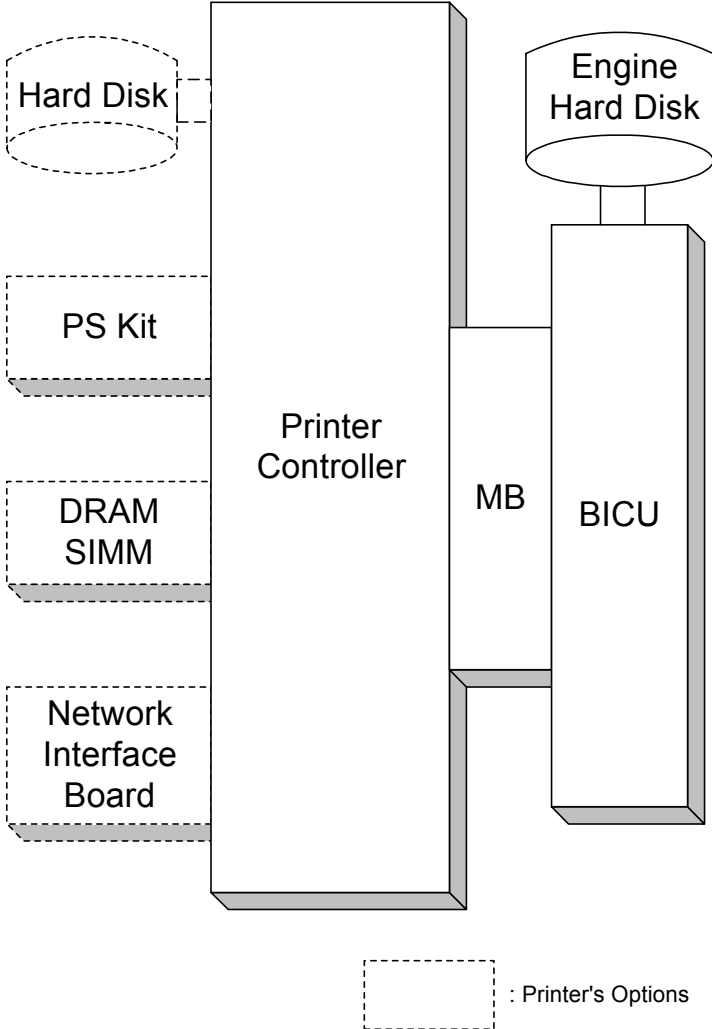
: Printer's Options

1.5.2 DESCRIPTIONS

1. Printer Controller
The printer controller handles the following functions:
- Printer host interface
- Printing functions
- Interface and control of additional controller options (HDD, PS kit, DRAM SIMM, and network interface board)

2. Hard Disk (option)
This HDD stores the additional soft fonts (both PCL and PS fonts).

3. PS Kit (option)
This is to add the PostScript level 3 feature.

4. Network Interface Board (option)
The network interface board is an additional printer interface to allow the printer to be used on a network.

5. DRAM SIMM (option)
There are two DRAM SIMM slots. This is used for an additional printer processing memory area. 8, 16, or 32 Mbyte standard SIMM modules can be installed. As a result, up to 72 Mbytes of RAM are installable (8 Mbytes on board plus 64 Mbytes of optional SIMM).

6. MB (Mother Board)
This connects the controller to the BICU board in the base machine.

DETAILED DESCRIPTIONS

2. DETAILED SECTION DESCRIPTIONS

2.1 HARDWARE OVERVIEW
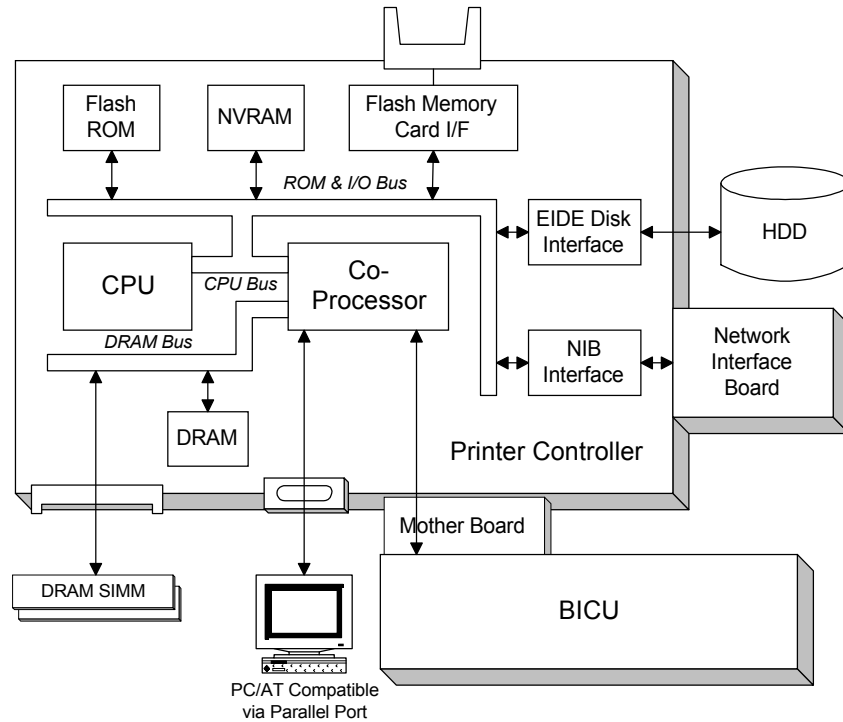
The above block diagram shows the major components of the printer controller.
The main features of the controller are as follows.

1. **CPU**
   An IBM PPC603 (100 MHz) processor is used. A 33 MHz oscillator is used as
   the base clock for both this CPU and the coprocessor.

2. **Co-processor**
   This performs the following functions.
   - ROM control
   - I/O control
   - DRAM control
   - Printer video interface
   - Printer communication interface
   - IEEE 1284 compliant bi-directional parallel port interface
   - Interrupt control

3. **ROM memory**
   1) Flash ROM (4 Mbytes)
   This flash ROM includes boot code, operation system code, PCL5e codes, PCL6 code, and font data for both PCL languages (resident fonts).
   2) ROM SIMM (4 Mbytes for the PostScript option)
   This ROM SIMM includes the PostScript code and PostScript font data.

4. **NVRAM (8 Kbytes)**
   This NVRAM contains the printer settings, job record data, and error record data.

5. **Network Interface Board Interface**
   This controls the optional network interface board, and printer MIB is provided to support the network operations.

6. **Hard Disk Drive Interface (Enhanced IDE)**
   This HDD interface is provided to support storage of fonts downloaded from a PC.

7. **Flash Memory Card Interface**
   The flash memory card for updating the controller and PostScript firmware is connected to this flash memory card slot.

8. **Power-on Self Diagnostic**
   When the controller is turned on, the controller performs a self diagnostic test.

2.2 IMAGE PRINTING

Parallel Interface, from PC

Printer Controller

CPU

Resident
RAM

Co-processor

NIB

DRAM SIMM

LD Unit

GAVD

FCI

IPU

BICU

MSU

HDD

Printer Controller ◄──┼──► Base Engine

Resident
RAM

BICU

MSU ◄─► HDD

NIB

Parallel

Buffer

Co-processor

Intelligent
Personality
Selection

PCL-5e

PCL-6

Post
script

Image Data
Generation

IPU

LD

DRAM
SIMM
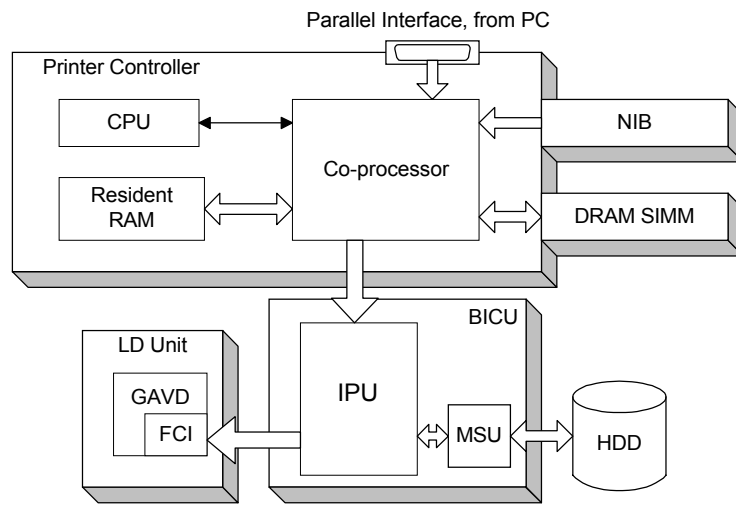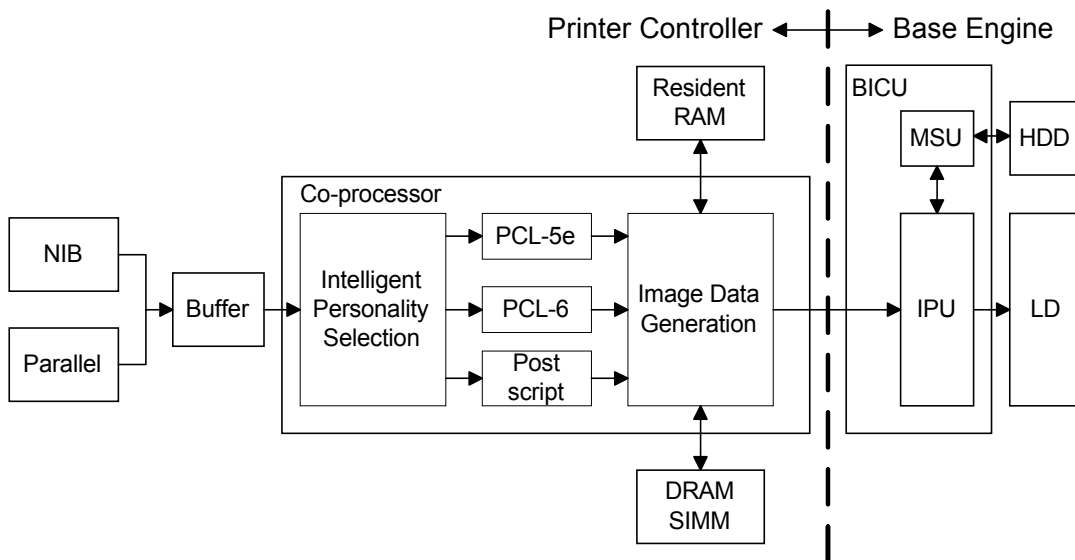
The printer controller receives the print data from the computer through the parallel or network interface port. The co-processor handles the image data but it only makes a raster image. All image processing, such as edge smoothing and toner saving, are done in the base engine.

The image data from a PC goes to the buffer in the resident RAM. Then, it goes to the co-processor. The co-processor selects the printer language automatically, then the co-processor generates the print data to match the selected printer language. After generating the print data, the co-processor sends it to the LD unit through the IPU on the BICU board. At that time, the data is also sent to the hard disk for multiple printing and sorting, as well as backup in case of paper jams.

2.3   IMAGE DATA PROCESSING

The FCI in the LD unit is responsible for edge smoothing and toner saving functions.

The edge smoothing and toner saving modes can be switched on or off using the printer user tool or the printer driver.

2.3.1 EDGE SMOOTHING

Fig. A   Fig. B

Fig. C

Sub Scan
Direction

Main Scan Direction

ON
Laser
OFF

Laser Scan
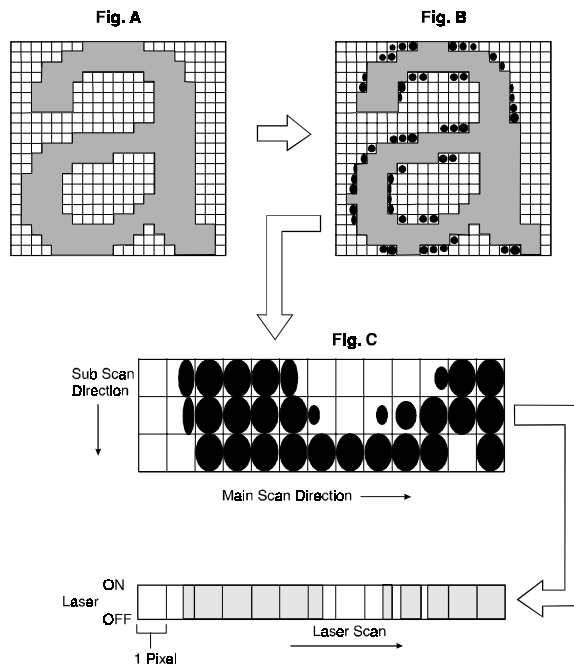
1 Pixel

Usually, binary picture processing generates jagged edge on characters as shown in the above left illustration. The FCI reduces the edges of characters using edge smoothing.

Whether or not the object pixel undergoes smoothing depends on the surrounding image data. Smoothing for the object pixel is done by changing the laser pulse position.

2.3.2 TONER SAVING MODE

Toner saving is done by reducing the number of black dots printed, not by varying the development bias. In toner saving mode, the image data is filtered through a matrix.

As a result of passing through the filter, less toner is used to create the latent image on the drum, and black areas print as gray.

2.4 FEATURES

2.4.1 SORTING

If "Collate" is turned on and a multicopy job is printed, the first copy of the job will be printed directly. At the same time, the image data for the copy job is stored in the hard disk of the main machine. When the main machine prints the next copy, the next copy will be printed from the hard disk.

If the finisher is not installed, the rotate sort feature can be used. The MSU block in the BICU board rotates the image, in the same way as image rotation for the copier.

2.4.2 DUPLEX PRINTING

Duplex printing is available with all output bin options but not all paper sizes (refer to the specifications section of the copier manual). If a job specifies duplex but the paper size to be used is not usable in the duplex unit, the job will be printed simplex.

Duplex printing is available in two binding methods: Short-edge binding and Long-edge binding.

In short-edge binding, when printing the second side of a page, the image may require rotation. The image is rotated by the co-processor in the printer controller.

The co-processor corrects the image printing order for duplexing as follows.

- Larger than A4 lengthwise/LT lengthwise (example 8 pages)
  2nd page – 1st page – 4th page – 3rd page – 6th page – 5th page – 8th page – 7th page

- Up to A4 lengthwise/LT lengthwise (example 8 pages)
  2nd page – 4th page – 1st page – 6th page – 3rd page – 8th page – 5th page – 7th page

Detailed Descriptions

2.4.3 STAPLING

Stapling is only available when the 3,000-sheet finisher or 1,000-sheet finisher is installed.

The finishers have the following stapling positions.

1) Upper left, diagonal
2) Upper right, diagonal
3) Left, two staples
4) Top, two staples
5) Right, two staples
6) Upper left, horizontal
7) Upper right, horizontal
8) Upper left, vertical
9) Upper right, vertical

NOTE: With the 1,000-sheet finisher, only stapling positions 1) and 2) are available.

Depending on the paper orientation, the image may have to be rotated. This image rotation is done by the co-processor in the printer controller.

There is a limit for the number of sheets which can be stapled by each finisher. If a job that specifies stapling has more than this number of sheets, it will not be stapled.

2.4.4 PUNCHING

Punching is only available when the punch unit is installed with the 3,000-sheet finisher. The number of holes depends on the type of punching unit. The punching unit has only one available position, so the relationship between the punching position and the printed image depends on the paper feeding orientation and imaging. The punching positions are defined as follows.

1) Left
2) Top
3) Right

2.4.5 JAM RECOVERY

If the jam recovery feature is on and a paper jam occurs, the controller will reprint all pages for which a feed-out indication has not been received from the main machine. In usual cases, all image data from the controller will be sent to the hard disk on the main machine, When a jam occurs, the recovery data will be sent from the hard disk on the main machine.

2.4.6 AUTO TRAY SELECT

When "Auto Select" is selected with the printer driver, the printer searches for a tray that contains the specified size of normal plain paper. The search starts from the LCT, and when a tray that contains the specified size of paper is found, the printer starts printing and feeds paper from that tray. The search sequence is as follows.

LCT – 1st tray – 2nd tray – 3rd tray – 4th tray – LCT

The default setting for the current tray is LCT. If the LCT is not installed, the default is the 1st tray.

2.4.7 POWER ON SELF DIAGNOSTICS

When the controller is turned on, it performs a self diagnostic sequence of tests automatically. If any errors were detected, an error message will be displayed on the operation panel.

Test Items

Devices always tested

- Co-processor
- Flash ROM
- Resident RAM
- NVRAM
- Engine I/F

Devices tested when they are installed

- DRAM SIMM
- PS DIMM I/F
- HDD I/F
- Network interface board I/F

Detailed
Descriptions

2.5 HARD DISK

Two hard disks are used for the printer functions. One is connected to the printer controller (Printer HDD). The other is in the main machine (Engine HDD).

2.5.1 PRINTER HDD

When the main power switch is turned on after the printer HDD is installed, the machine asks you to format the hard disk.

If you press the "Yes" button, the machine formats the hard disk. At this time, two partitions will be made on the hard disk. One is for PCL and the other is for PostScript (fonts and macros only).

If you press the "Ignore" button, the machine determines that there is no optional printer hard disk.

2.5.2 ENGINE HDD

The hard disk in the main machine is used for both copy and printer functions. Therefore, the hard disk has three partitions: for copier, printer, and archive files (one of the copier features)*. The sizes of the partitions depend on the setting of "User Tools – 1. System – No.23, Memory Priority", as shown below.*

Priority:

Copy (Default)	Printer

```
Priority:       Copy                 Printer
               (Default)
0 MB  ┌──────────────┐      ┌──────────────┐
      │              │      │   Copier     │
      │              │      │              │
      │   Copier     │      │   720MB      │
      │              │      ├──────────────┤
      │   1200MB     │      │              │
      │              │      │   Printer    │
      │              │      │              │
      │              │      │   612MB      │
      │              │      │              │
      ├──────────────┤      │              │
      │   Printer    │      │              │
      │   132MB      │      ├──────────────┤
      ├──────────────┤      │ Archive Files│
      │ Archive Files│      │   308MB      │
      │   308MB      │      │              │
1640 MB└──────────────┘      └──────────────┘
```
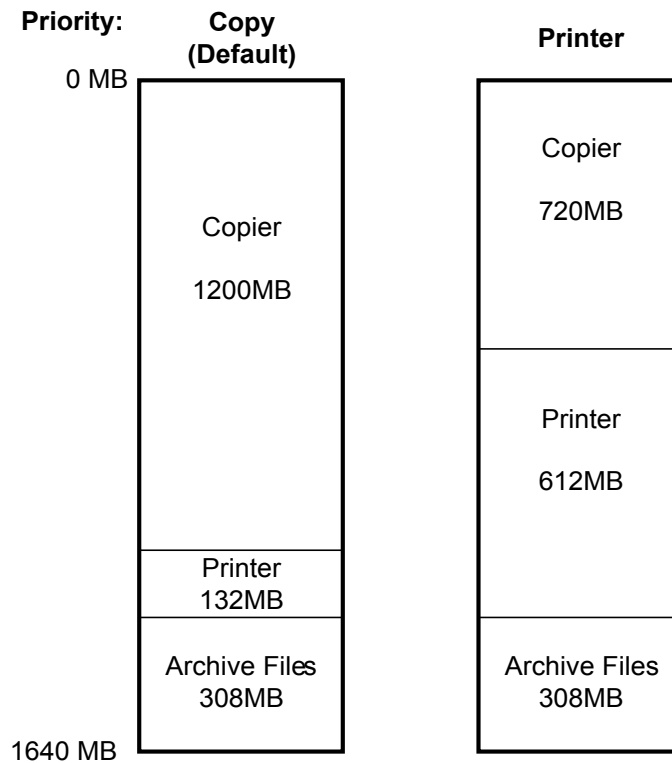
2.6 PAPER HEIGHT DETECTION

The amount of paper in the tray is detected by the combination of two paper height sensors [A] and [B].

When the amount of paper decreases, the bottom plate pressure lever [C] moves up and the actuator [D] which is mounted on the same drive shaft as the pressure lever rotates.

The following combination of sensor signals is sent to the printer controller.

Amount of Paper	Paper Height Sensor [A]	Paper Height Sensor [B]
Full	OFF	ON
Near Full	ON	ON
Near End 1	ON	OFF
Near End 2	OFF	OFF
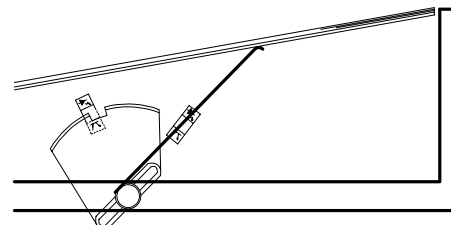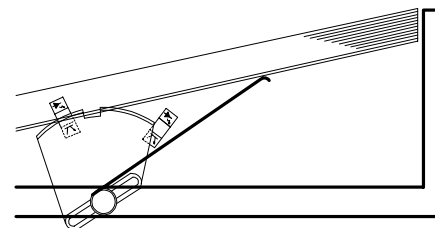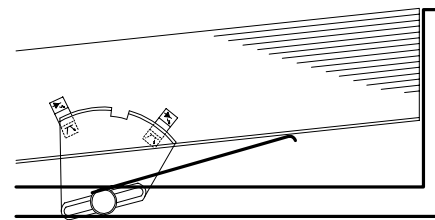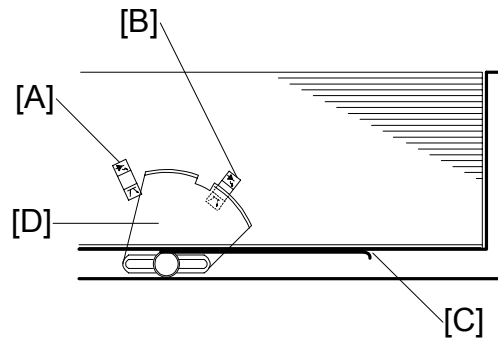
2.7 PAPER OVERFLOW DETECTION

2.7.1 STANDARD OUTPUT TRAY
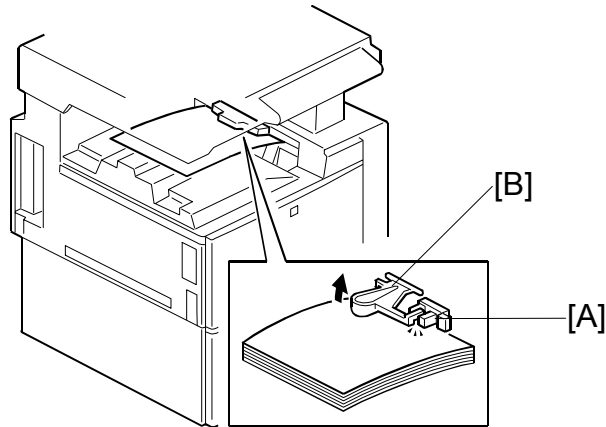
The standard output tray can stack about 500-sheets. There is a paper limit sensor [A] to prevent paper overflow.

When the tray is full, the paper stack pushes up the feeler [B] then the paper limit sensor is activated. When the sensor stays activated for a certain time, the machine determines that the standard tray is full. The machine stops the print job until the paper limit sensor is deactivated.

2.7.2 BRIDGE UNIT
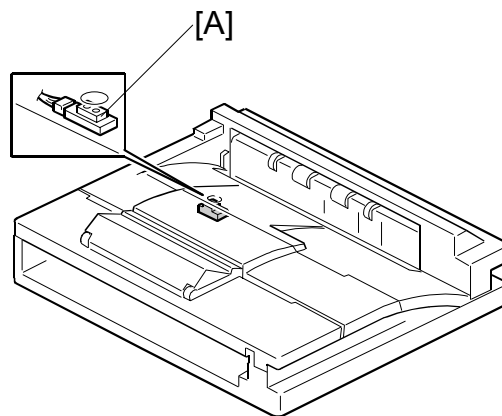
The bridge unit has a paper sensor [A] to detect paper on the bridge unit. This is monitored to ensure that the bridge unit does not contain more than 250-sheets. If a print job of more than 250-sheets is executed, the machine will print up to 250 pages, then the print job is stopped. Once the output stack is removed, the printing job automatically continues.

INSTALLATION

3. INSTALLATION PROCEDURE

3.1 PRINTER CONTROLLER

3.1.1 ACCESSORY CHECK

Check the accessories in the box against the following list.

No.	Description	Q'ty
1	Cable	1
2	Paper Height Sensor	4
3	Edge Clamp	2
4	Cable Clamp	4
5	Paper Height Sensor Feeler	2
6	Paper Sensor	1
7	Key Top - Copy/Printer	1
8	Paper Limit Sensor Unit	1
9	Tapping Screw - M3 x 8	2
10	Pan Head Screw – M3 x 8	1
11	Tapping Screw - M3 x 6	2
12	Installation Procedure	1

Installation

3.1.2 REQUIRED MAIN MACHINE OPTIONS

Please note that it is necessary to first install the Expansion Box Type 450e (A872).

3.1.3 INSTALLATION PROCEDURE
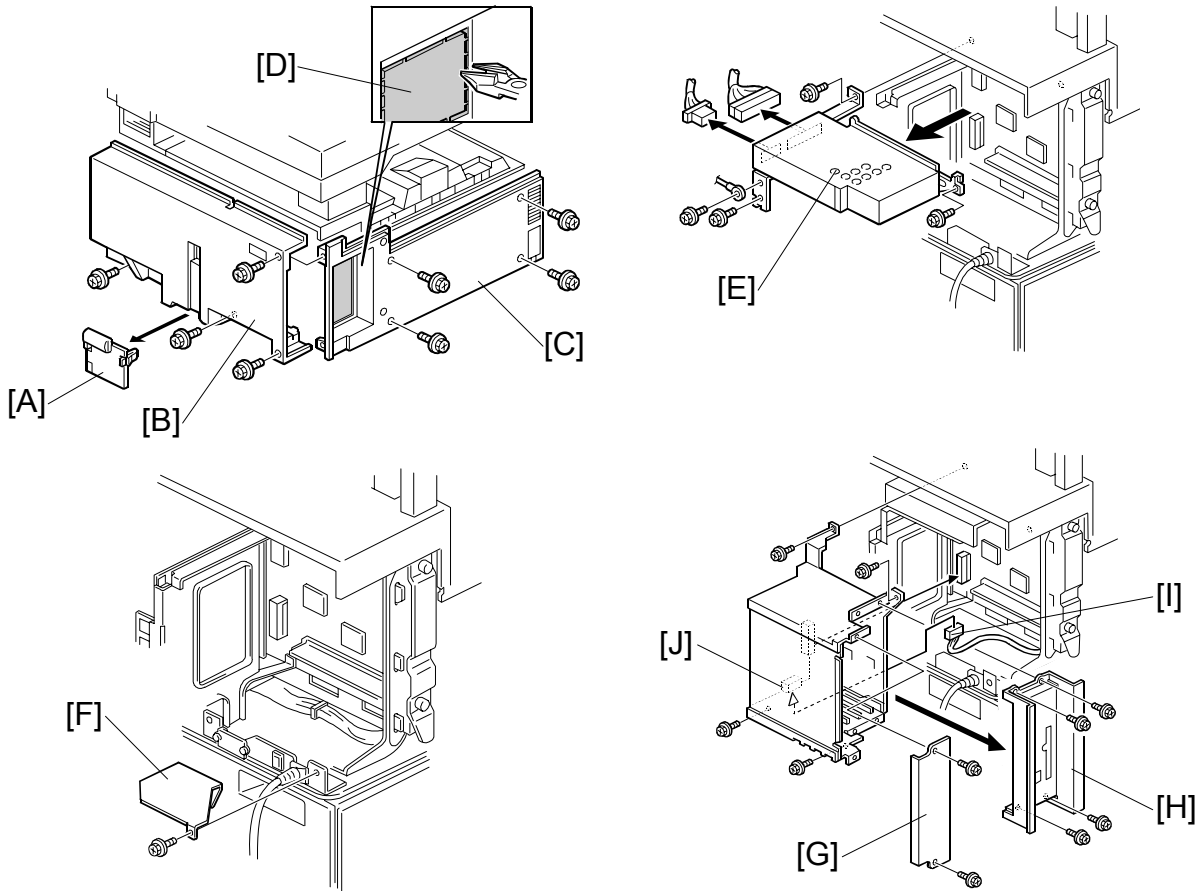
> ⚠️**CAUTION**
> **Unplug the main machine power cord before starting the following procedure.**

Expansion Box Installation

NOTE: If either the Scanner Option Type 450e or Fax Option Type 450e has been installed, skip steps 1 through 8.

1. Remove the connector cover [A], rear cover [B] (4 screws), and left cover [C] (4 screws).

2. Remove the cutout [D] in the left cover.

3. Remove the HDD [E] (4 screws, 2 connectors).

4. Remove the bracket [F] (1 screw).

5. Remove the two plates [G] (2 screws) and [H] (4 screws).

6. Connect the cable [I] to the expansion box [J] and install the expansion box (4 screws).

7. Reinstall the HDD.

8. Reinstall the left, rear, and connector covers.

Printer Controller Installation

NOTE: 1) The optional HDD (A853), PS Kit (A854) or Network Interface Board (A855) must be installed before installing the printer controller in the machine. Refer to each installation manual for more detail.
2) If either the Scanner Option Type 450e or Fax Option Type 450e has been installed, perform step 9. If neither have been installed, skip step 9.

9. Remove the two plates (2 screws) [A] and [B] (4 screws).

10. After installing the additional options on the printer controller, install the controller [C] in the left-most slot of the expansion box [D] (2 screws).

11. Reattach plate [B].
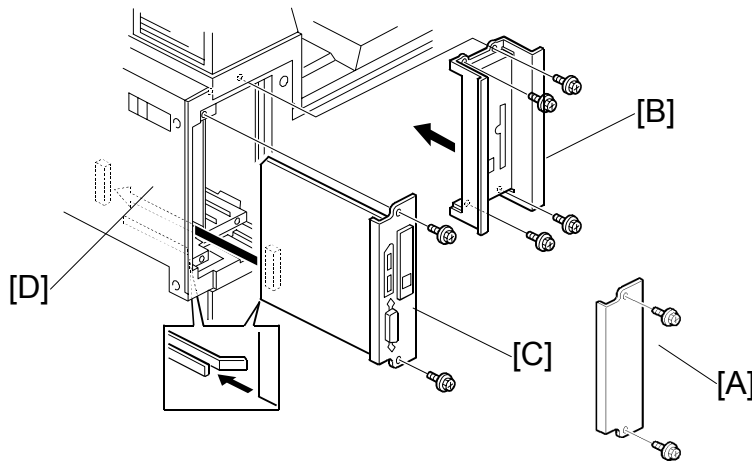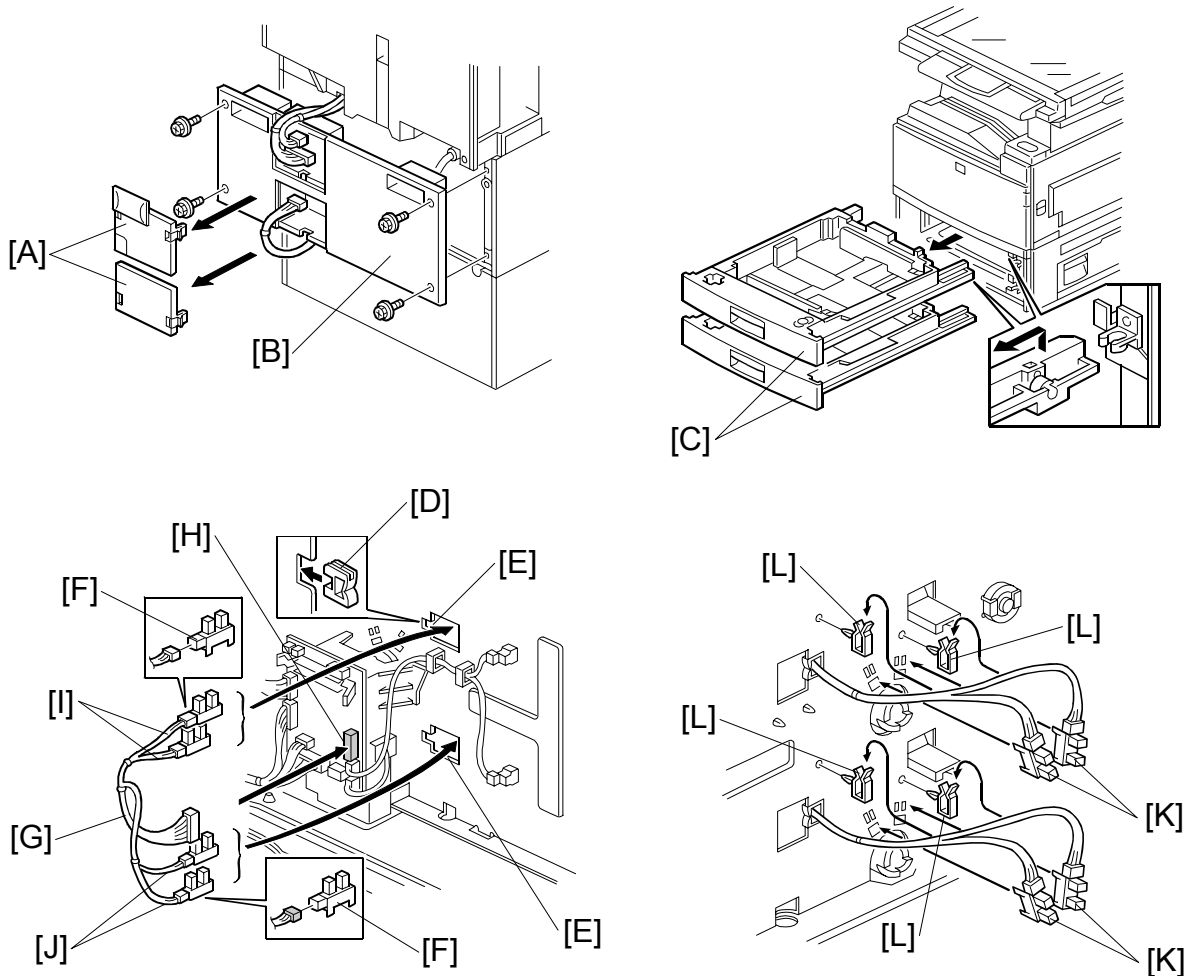
Installation

Paper Height Sensor Installation

12. Remove the connector covers [A] and lower rear cover [B] (4 screws, 3 connectors).

13. Pull out the two paper trays [C].

14. Install edge clamps [D] in both openings [E].

15. Connect the four paper height sensors [F] to the cable [G].

16. Connect the cable to CN234 of the PCB [H].

17. Pass the two sensors attached to the white connector [I] through the upper opening. Pass the other two sensors attached to the red connector [J] through the lower opening. Secure the cables in place with the edge clamps attached in step 14.

18. Install the four paper height sensors [K] from the front side of the machine, as shown.

19. Install the four cable clamps [L], then clamp the cables.
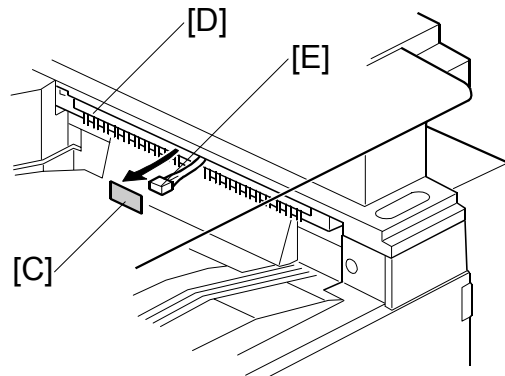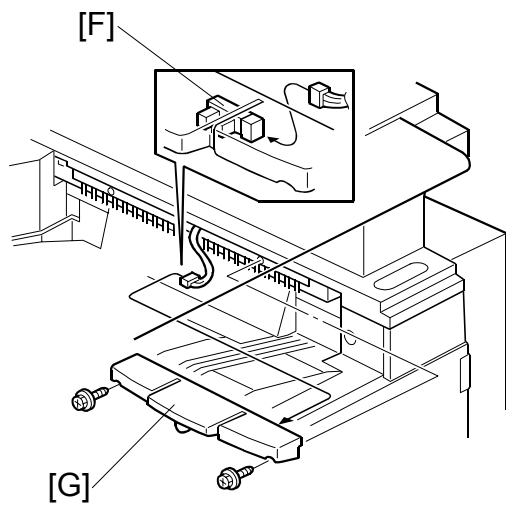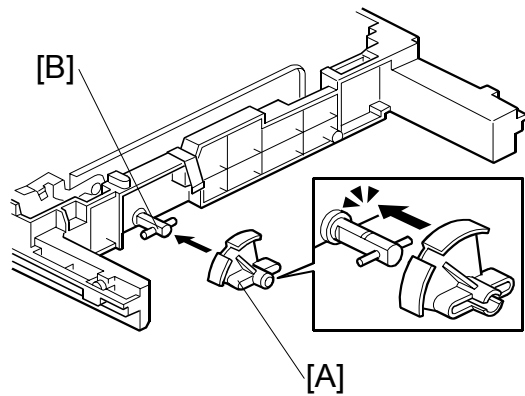
20. Install the paper height sensor actuator [A] on the bottom plate shaft [B] of each paper tray.

21. Reassemble the machine.

Paper Limit Sensor and Paper Sensor Installation

If the optional bridge unit has been installed, skip steps 22 and 23.

22. Peel off the black tape [C] from the anti-static brush [D], then pull out the cable [E].

23. Connect the cable to the sensor [F], then install the paper limit sensor unit [G] (2 screws).
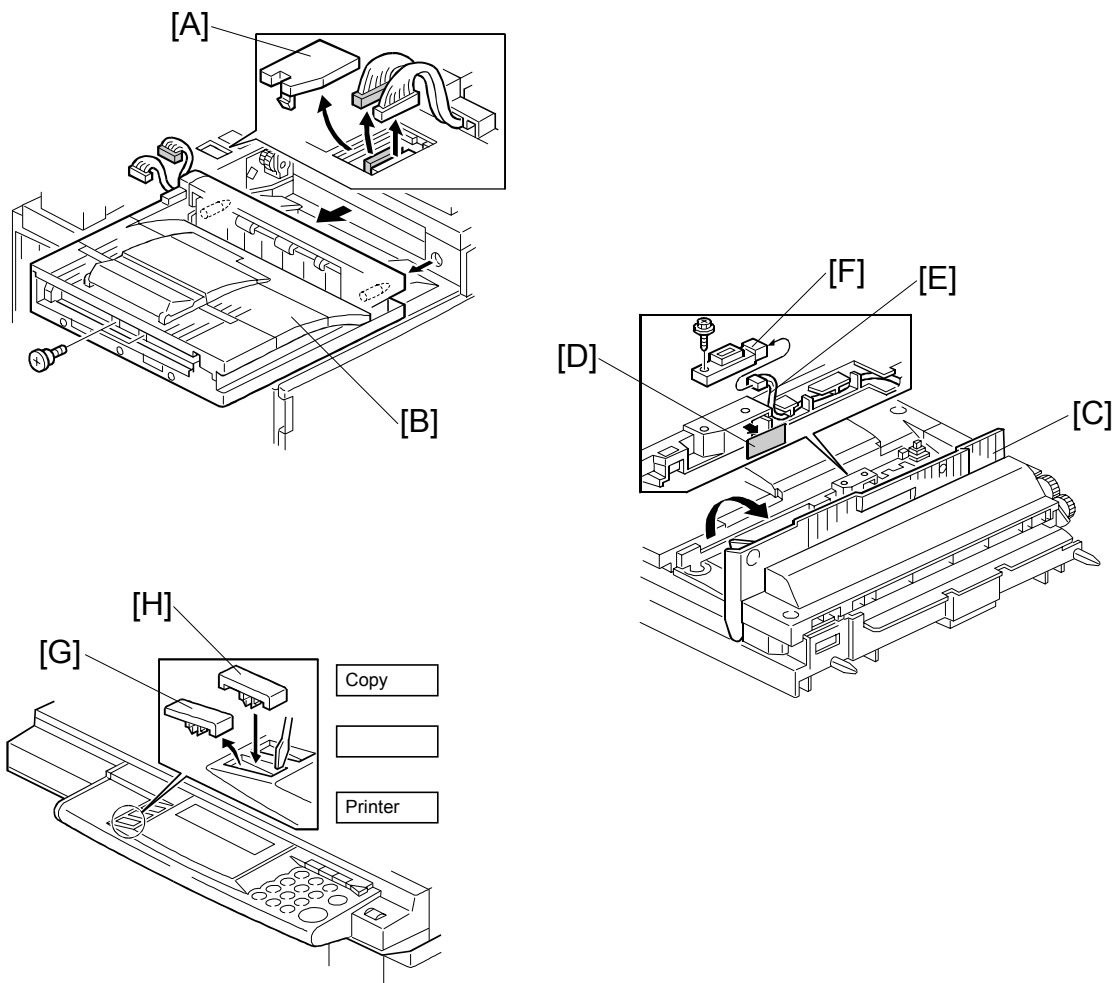
Perform steps 24 to 26 only if the optional bridge unit has been installed. If it has not been installed, go on to step 27.

24. Remove the connector cover [A] and bridge unit [B] (2 screws, 2 connectors).

25. Open the right cover [C] of the bridge unit and peel off the black tape [D], then pull out the connector [E].

26. Install the paper sensor [F] (1 screw, 1 connector) and reinstall the bridge unit.

27. Remove the bottom cap [G] of the operation panel.
    NOTE: If both the Scanner Option Type 450e and Fax Option Type 450e have not been installed, remove the top cap of the operation panel as well.

28. Install the **Printer** key [H] on the operation panel as shown.
    NOTE: If both the Scanner Option Type 450e and Fax Option Type 450e have not been installed, install the **Copy** key on the operation panel as well (see the illustration).

29. Make sure that the parallel cable is not connected to the controller. Turn the machine on and check the setting of the following copier SP mode:
   • SP5-907: Plug & Play Brand Name and Production Name Setting – select the correct one.

30. If the customer wishes to expand the hard disk space in the mainframe for use by the printer, change the setting of "Memory Priority" (User Tool – 1. System – No.23) to "Printer".

31. Print the Printer Configuration Page (User Tool – 4. Printer – 7. List Print – 5. Configuration Page) to check the printer controller connection.

32. If the parallel cable is going to be connected, first turn off the machine. After connecting the cable, turn the machine back on.

Installation

3.2 HARD DISK

3.2.1 INSTALLATION PROCEDURE
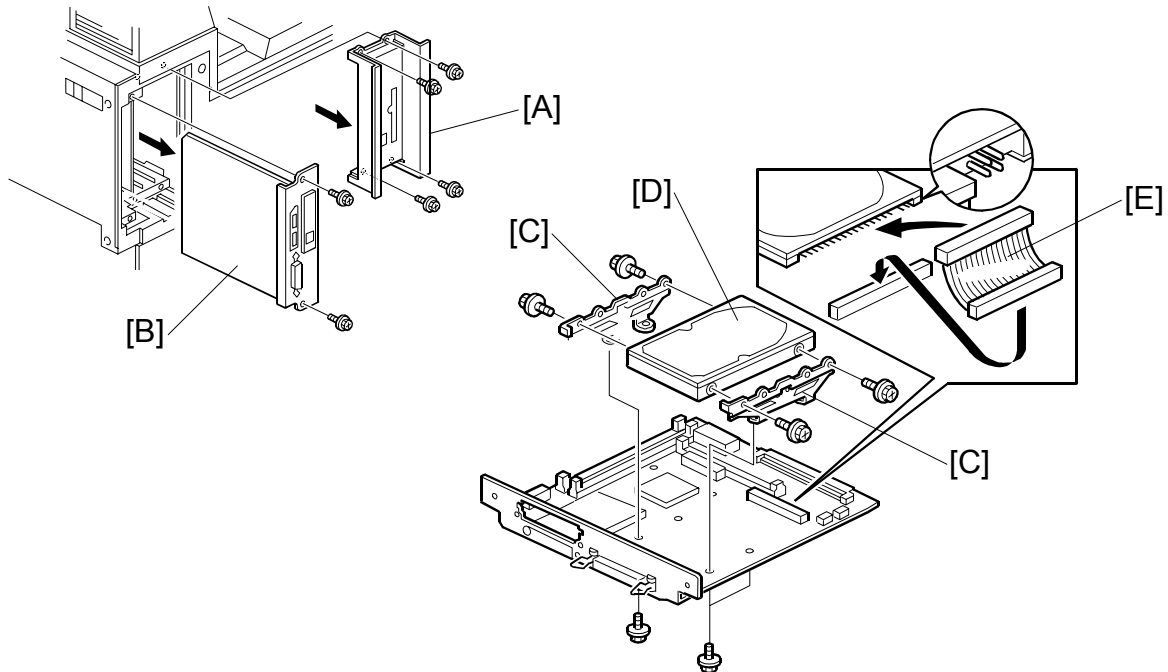
⚠CAUTION
Unplug the copier power cord before starting the following procedure.

NOTE: If installing this hard disk drive and the printer controller (B358) at the same time, skip steps 1 and 2.

1. Remove the plate [A] (4 screws).

2. Remove the printer controller [B] (2 screws).

3. Attach the HDD brackets [C] to the hard disk drive [D] as shown (2 screws each).

4. Connect the cable [E] to the hard disk drive.

5. Attach the hard disk drive to the printer controller (4 screws, 1 connector).

6. Install the printer controller into the mainframe (refer to the Printer Controller Installation Procedure).

7. Reattach the plate [A].

8. After turning on the main switch and pressing the printer key, you will be prompted to format the disk drive.
    Press the ① key twice to format the disk.

9. After formatting the hard disk, turn the main switch off and on.

3.3 POSTSCRIPT KIT

3.3.1 INSTALLATION PROCEDURE
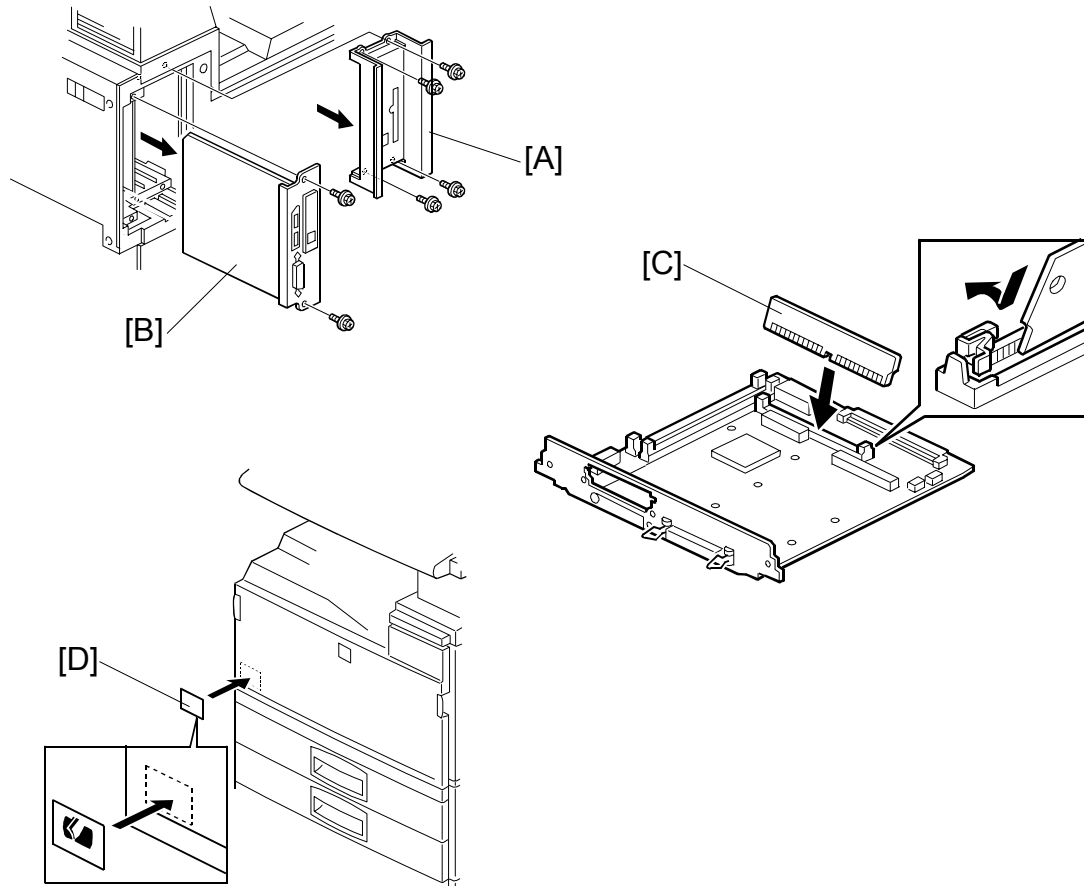
⚠**CAUTION**
Unplug the copier power cord before starting the following procedure.

NOTE: If installing this PostScript Kit and the printer controller (B358) at the same time, skip steps 1 and 2.

1. Remove the plate [A] (4 screws).

2. Remove the printer controller [B] (2 screws).

3. Install the PostScript kit [C], as shown.
   NOTE: Make sure that the PostScript kit is set properly.

4. Install the printer controller into the mainframe (refer to the Printer Controller Installation Procedure).

5. Reattach the plate [A].

6. Attach the PostScript decal [D] to the front cover, as shown.

3.4 NETWORK INTERFACE BOARD

3.4.1 INSTALLATION PROCEDURE
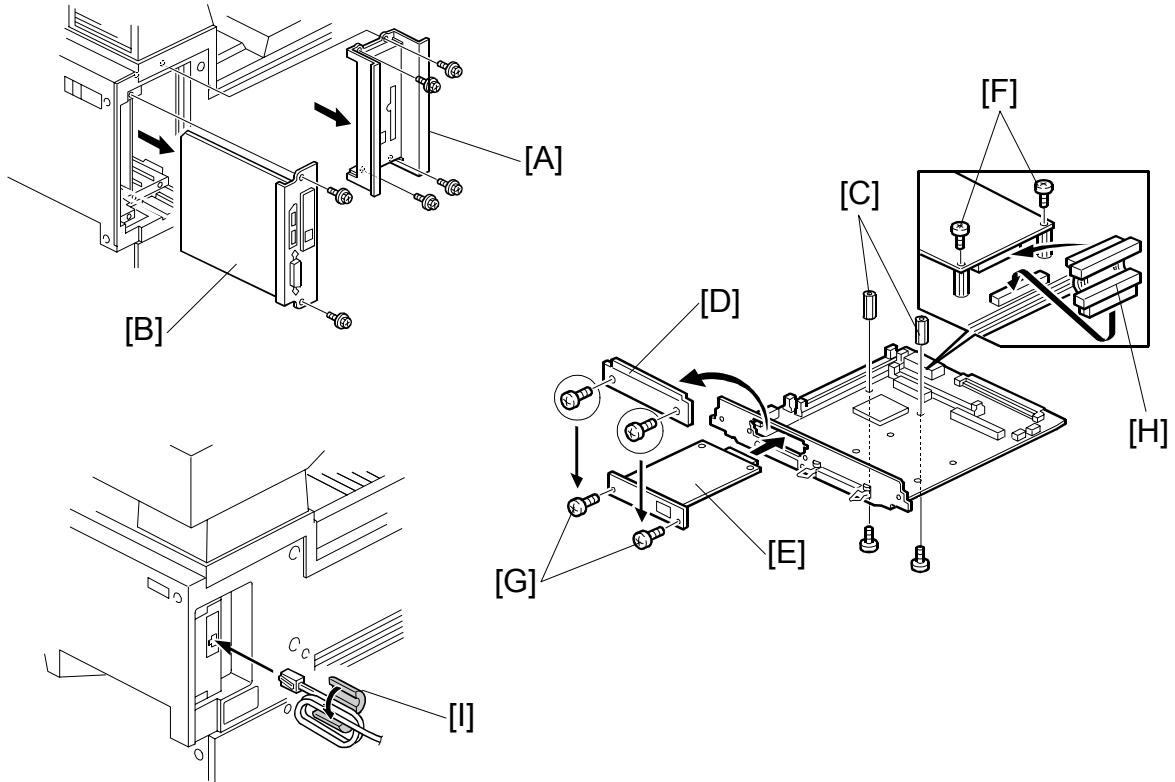
⚠️**CAUTION**
Unplug the copier power cord before starting the following procedure.

NOTE: If installing this network interface board and the printer controller (B358) at the same time, skip step 1.

1. Remove the plate [A] (4 screws) and the printer controller [B] (2 screws).

2. Attach two spacers [C] to the printer controller (1 screw each).

3. Remove the cover bracket [D] (2 screws).

4. Install the network interface board [E] using the 2 screws [F] in the accessory box and the 2 screws [G] that were used for the cover bracket [D].

5. Connect the cable [H] to both the network interface board and the printer controller.

6. Install the printer controller into the mainframe (refer to the Printer Controller Installation Procedure).

7. Reattach the plate [A].

8. Attach the core [I] to the network (STP) cable as shown.
   NOTE: The STP cable should be coiled twice inside the core as shown.

3.5 DRAM SIMM

3.5.1 REQUIRED SPECIFICATION CHECK

Before installing the DRAM SIMM, check that it satisfies the requirements below.

Type	PC Compatible
Number of bins	72 pins
Access speed	70 ns or faster
Capacity	8, 16, or 32 MB
Parity	Any OK

3.5.2 INSTALLATION PROCEDURE
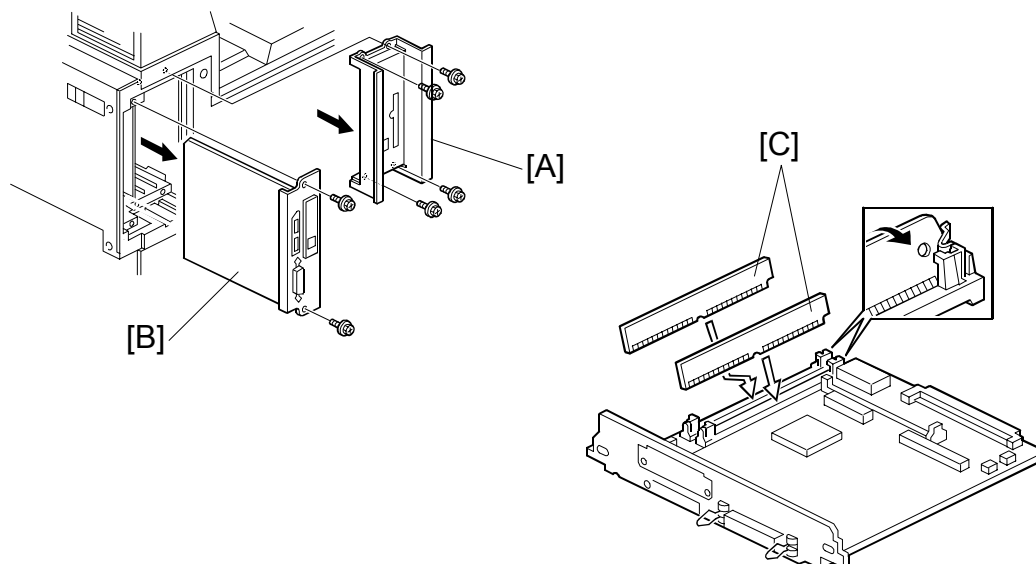
⚠CAUTION
Unplug the copier power cord before starting the following procedure.

NOTE: If installing this DRAM SIMM and the printer controller (B358) at the same time, skip step 1.

1. Remove the plate [A] (4 screws) and the printer controller [B] (2 screws).

2. Install the DRAM SIMM [C], as shown.
    NOTE: Make sure that the DRAM SIMM is installed properly.

3. Install the printer controller in the mainframe (refer to the Printer Controller Installation Procedure).

4. Reattach the plate [A].

3.6 CONNECTING THE INTERFACE CABLES

3.6.1 PARALLEL INTERFACE

An IEEE1284 compatible printer cable is required to connect the printer controller to a host PC parallel port.

3.6.2 NETWORK INTERFACE

An STP (Shielded Twisted Pair) cable with RJ45 connectors is required to connect the Network Interface Board to the computer network. (The cable should be Category/Type 5 or better.) After hardware setup, the network setup should be done by the user. The setup procedure is described in the NIB manual.

3.7 CHECKING THE CONNECTIONS

3.7.1 CONNECTION BETWEEN PRINTER CONTROLLER (and related options; PostScript ROM, DRAM SIMM, Hard Disk Drive, NIB) AND ENGINE.

1. Plug in the power cord and turn on the main and operation switches.
2. Enter the printer user mode.
    1) Press the User Tool key.
    2) Press 4 using the ten-key pad.
3. Print out the printer configuration page.
    1) Press the Next button then press 7 using the ten-key pad to select List Printing.
    2) Press the Next button then press 5 using the ten-key pad to print the configuration page. The machine prints the printer configuration page automatically.

NOTE: For more detailed information about the operation panel settings, refer to the operation manual.

The printer configuration page is similar to that shown on the next page.

Printer Configuration Page

PCL MENU
ORIENTATION = PORTRAIT
FORM LENGTH = 60 LINES
FONT SOURCE = INTERNAL
FONT NUMBER = 0
POINT SIZE = 12.00
FONT PITCH = 10.00
SYMBOL SET = ROMAN-8

POSTSCRIPT MENU
PRINT ERRORS = OFF

FEEDER MENU
PAGE SIZE = LETTER
TRAY PRIORITY = AUTO
AUTO TRAY SWITCH = ON
BYPASS PAPER TYPE = NORMAL
DUPLEX = OFF
BINDING = LONG
SORT = OFF
STAPLE = OFF
PUNCH = OFF

PARALLEL MENU
EMULATION = AUTO
BIDIRECTION = ON
I/O TIMOUT = 30

CONFIGURATION MENU
RESOLUTION = 600
AUTO CONTINUE = ON
EDGE SMOOTHING = ON
AUTOCONT. TIMEOUT = 10

NETWORK MENU
I/O TIMEOUT = 30
TCP/IP SETTING:
IP ADDRESS = 131.100.100.111
SUBNET MASK = 255.255.255.0
GATEWAY ADDRESS = 131.100.100.1

PRINTER DETAILS
MODEL:
MANUFACTURER:
MACHINE S/N: 00000010200
SERVICE PHONE: 00-0000-0000
FIRMWARE LEVELS:
Controller 1.84e
Emulation Language of PCL5e V 1.4.10 98/05/06
Emulation Language of PCL6 V 1.1.10 98/05/06
PS 1.18
PRINTER OPTIONS
Printer Hard Disk Drive
Adobe Postscript
Network Interface Board
PAPER HANDLING OPTIONS:
MSU Installed
Standard Tray 1
Standard Tray 2
Standard Tray 3
Standard Tray 4
Manual Paper Tray
Large Capacity Tray
Duplex Unit
9 Bin Mailbox Unit
Finisher 3000
Multi-Function Inner Tray
Punch Unit, 2 Hole

TOTAL MEMORY = 72 MB

PCL, PCL5e and PCL6 are trademarks of Hewlett- Packard Corporation.
Adobe, PostScript, the Adobe logo and the Postscript logo are the trademarks of
Adobe Systems Incorporated.

CONFIGURATION MENU
RESOLUTION = 600
AUTO CONTINUE = OFF
EDGE SMOOTHING = ON
AUTOCONT.TIMEOUT = 10   [C]

NETWORK MENU

I/O TIMEOUT = 30
TCP/IP SETTING:
IP ADDRESS = 131.100.100.111
SUBNET MASK = 255.255.255.0
GATEWAY ADDRESS = 131.100.100.1

PRINTER DETAILS

MODEL:
MANUFACTURER:
MACHINE S/N: 00000010200   [D]
SERVICE PHONE: 00-0000-0000

FIRMWARE LEVELS:
Controller 1.84e
Emulation Language of PCL5e V 1.4.10 98/05/06
Emulation Language of PCL6 V 1.1.10 98/05/06
PS 1.18

PRINTER OPTIONS:
Printer Hard Disk Drive
Adobe Postscript
Network Interface Board

PAPER HANDLING OPTIONS:
MSU Installed   [A]
Standard Tray 1
Standard Tray 2
Standard Tray 3
Standard Tray 4
Manual Paper Tray
Large Capacity Tray
Duplex Unit
9 Bin Mailbox Unit
Finisher 3000   [B]
Multi-Function Inner Tray
Punch Unit, 2 Hole

TOTAL MEMORY = 72 MB

Installation

Check the following:

- For the printer controller board, confirm that the machine prints the printer configuration page.
- For the hard disk drive and PS kit, confirm that the configuration page includes them in the "Printer Options" section [A].
- For DRAM SIMM, confirm that "Total Memory" [B] printed on the configuration page shows the correct amount of memory in the machine (including the 8 MB on board and the SIMM).
- For the NIB, confirm that the configuration page includes the "Network Menu" section [C] and includes the network interface board in the "Printer Options" section [A].
- For the firmware version, check "Firmware Levels" [D].

If any problem occurs with the above checks, reinstall the printer controller and other options. Then set up the machine again and redo the test.

3.7.2 CONNECTION BETWEEN MAIN CONTROLLER BOARD AND THE NETWORK INTERFACE BOARD

There are two ways to check the connection between the main controller board and the network interface board.

1. Check "Network Menu" on the configuration page.

2. Check the Network Interface Board Status Sheet with the network information that is printed automatically after power on.

Printing the Network Interface Board Status Sheet

Whenever the main switch is turned on, the machine prints the network interface board status sheet automatically.

NOTE: If the machine does not print the status sheet, check the Network menu in the printer user tools.

If any problem occurs with the above check, reinstall the printer controller and other options. Then set up the machine again and redo the test.

SERVICE TABLES

4. SERVICE TABLE

4.1 GENERAL CAUTION

Do not turn off the machine or switch the controller off-line when the data LED is blinking or is lit, or the data which has been sent to the controller will be lost. If you need to do this, ask the customer for consent.

4.2 SERVICE PROGRAM MODE

4.2.1 SERVICE PROGRAM ACCESS PROCEDURE

The service program access procedure, such as "Entering Service Program (SP) Mode" and "Exiting SP Mode" is the same procedure as for copier and fax, as follows.

Entering SP mode

⊗/⊘ → ① → ⓪ → ⑦ → ©/⊘ (hold it for more than 3 seconds.)

Exiting SP mode

Press the "Back" and "Exit" keys until the standby mode display appears.

4.1.2 SERVICE PROGRAM MODE TABLES

No.	Description	Function
01	Flash System From Parallel	Downloads the printer controller firmware from a PC through the parallel port.
02	Flash System From PCMCIA	Downloads the printer controller firmware using an IC card through the PCMCIA port.
03	Flash Postscript From Parallel	Downloads the PostScript firmware from a PC through the parallel port.
04	Flash Postscript From PCMCIA	Downloads the PostScript firmware using an IC card through the PCMCIA port.
05	Copy Flash ROM	Copies the printer controller firmware between ROM DIMM and printer controller
06	Format Disk	Formats the hard disk drive
07	Print Job Log Data	Prints the print/job count log page
08	Print Error Log Data	Prints the printer error log page
09	Clear Job Log Counter	Clears the print/job counter
10	Clear Error Log Data	Clears the error log counter
11	Parallel Loop Back Test	Performs the parallel loop back test

Service Tables

4.3 DOWNLOADING NEW FIRMWARE

New firmware for the printer controller and PostScript can be downloaded from a PC through the parallel cable and from a flash memory card through the PCMCIA port.

4.3.1 FIRMWARE UPDATE USING A FLASH MEMORY CARD (SP02 AND 04)

1. Prepare a flash memory card that has been programmed with the latest firmware.
   NOTE: When you program a flash memory card with a firmware file, use the following parameter settings.
   - Start Address – 000000h
   - Length – 3FFFFFh

2. Turn off the machine, remove the cover [A], and insert the flash memory card [B] into the slot so that the "A" side of the card faces the front of the machine.
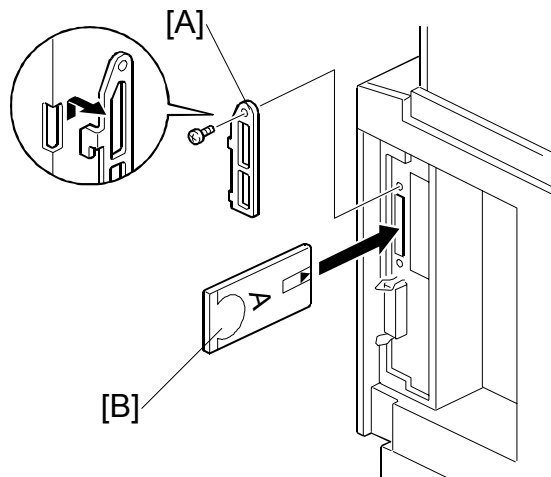
3. Turn on the machine and enter the printer SP mode.

4. Choose "02 – Flash System From PCMCIA" or "04 – Flash Postscript From PCMCIA" depending on the firmware type.

5. Press "Yes" in reply to the confirmation message. Firmware download will take several minutes.

6. After new firmware has been downloaded successfully, turn off the machine, remove the card from the slot, and turn the machine back on.

7. Print the "Printer Configuration Page" to check the new firmware version ([User Tools] – [4. Printer] – [7. List Print] – [5. Configuration Page]).
   The firmware version number is printed in the "Printer Details" section of the configuration page.

4.3.2 FIRMWARE UPDATE FROM PARALLEL PORT (SP01 AND 03)

1. Prepare the latest firmware file and Fcopy.exe on a host computer.

2. Turn off the machine, connect the host computer using a parallel cable, and turn the machine back on.

3. Enter the printer SP mode.

4. Choose "01 – Flash System from Parallel" or "03 – Flash Postscript From Parallel" depending on the firmware type.

5. Press "Yes" in reply to the confirmation message.

6. On the host computer, start MS-DOS Prompt and type the following command.

   Either
   C:\> FCOPY path\filename

   or
   C:\> COPY /b path\filename port

CAUTION: Do not turn off the machine while "Downloading New System Software" is displayed on the LCD, even if FCOPY has finished in the MS-DOS Prompt.

7. After new firmware has been downloaded successfully, turn off the machine, disconnect the printer cable if necessary, and turn the machine back on.

8. Print the "Printer Configuration Page" to check the new firmware version ([User Tools] – [4. Printer] – [7. List Print] – [5. Configuration Page]).
   The firmware version number is printed in the "Printer Details" section of the configuration page.

4.3.3 FORMATTING THE HARD DISK (SP06)

This function is used to format the printer hard disk. If the hard disk is formatted, the stored data (downloaded fonts and macros) will be erased. So, when performing this function, ask the customer for consent. After this operation, advise the customer to restore their data, if necessary.

1. Enter the printer SP mode.

2. Choose "06 – Format Disk".

3. Press "Yes" in reply to the confirmation message. Hard disk formatting will take several minutes.

4. After confirming that formatting was successful, turn the machine off and back on again.

Service
Tables

4.3.4 COPY FLASH ROM (SP05)

There are two functions; one is to copy the printer controller firmware from the ROM DIMM to the printer controller, the other is the opposite way.

Download from ROM SIMM to printer controller

When downloading the printer controller firmware from either the flash memory card or a PC was not successful and the printer controller does not start up, the controller firmware cannot be downloaded from the flash memory card or a PC to recover the machine. However, the firmware can be downloaded from ROM SIMM using this function, using the following procedure.
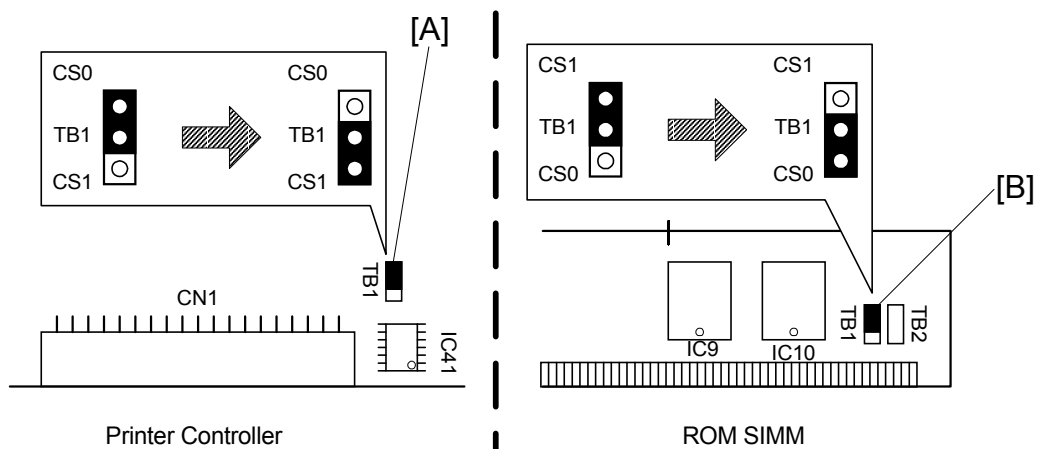
1. Remove the printer controller.

2. Change the position of the TB1 jumper [A] on the controller from CS0 to CS1.

3. Change the position of the TB1 jumper [B] on the ROM DIMM that contains the controller firmware from CS1 to CS0.

4. Install the ROM SIMM on the controller.
CAUTION: Make sure to install the correct ROM SIMM in the PostScript SIMM.

5. Install the printer controller and turn on the machine.

6. Enter the printer SP mode and select "05 – Copy Flash ROM".

7. Press "Yes" in reply to the confirmation message.

8. After downloading is successful, turn off the machine and remove the printer controller then remove the ROM SIMM as well.

9. Reposition the jumpers on the printer controller and ROM SIMM.

10. Reinstall the printer controller then turn on the machine.

11. Check that the printer controller starts up.

Download from the controller to ROM SIMM

CAUTION: Never perform this function if the PostScript ROM SIMM is installed on the controller. Otherwise, the controller firmware will be copied to the PostScript kit. Take out the PostScript ROM SIMM and install a blank one.

1. Remove the printer controller.

2. Install the ROM SIMM on the controller.

3. Install the printer controller and turn on the machine.

4. Enter the printer SP mode and select "05 – Copy Flash ROM".

5. Press "Yes" in reply to the confirmation message.

6. After downloading is successful, turn off the machine and remove the printer controller then remove the ROM SIMM as well.

7. Reinstall the printer controller then turn on the machine.

4.3.5 PARALLEL LOOP BACK TEST (SP11)

1. Plug the loop back connector into the parallel port of the printer.

2. Enter the printer SP mode then select "11 – Parallel Loop Back Test".

3. Press "Yes" in reply to the confirmation message. The result of the test will be displayed on the operation panel.

Pin No.	Signal Name
1	/STROBE
2	DATA_1
3	DATA_2
4	DATA_3
5	DATA_4
6	DATA_5
7	DATA_6
8	DATA_7
9	DATA_8
10	/ACK
11	BUSY
12	PE
13	SELECT
14	/AUTOFD
15	NC
16	GND
17	GND
18	PLH
19	GND
20	GND
21	GND
22	GND
23	GND
24	GND
25	GND
26	GND
27	GND
28	GND
29	GND
30	GND
31	/INIT
32	/FAULT
33	NC
34	NC
35	NC
36	/SELECTION

Service Tables
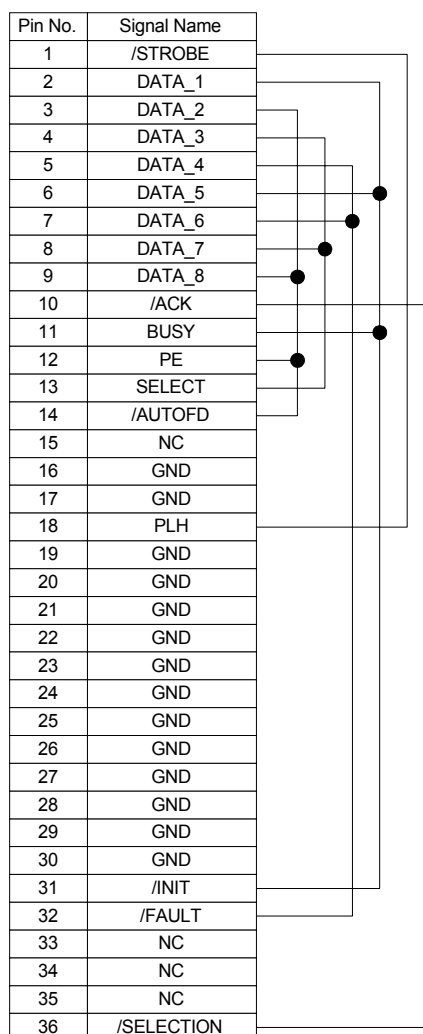
4.4 USER PROGRAM MODE

A user program (UP) mode is available for printer features as well as for copy and fax. Press the User Tools button to access it.

4.4.1 UP MODE TABLE

NOTE: The function of each UP mode is explained in the Printer Reference section of the operating instructions.

1. PCL	1. Orientation	
	2. Form Lines	
	3. Font Source	
	4. Font Number	
	5. Point Size	
	6. Font Pitch	
	7. Symbol Set	
2. Postscript	1. Print Errors	
3. Paper Feed	1. Input	1. Paper Size
		2. Tray Priority
		3. Auto Tray Switch
		4. Bypass Paper Type
	2. Output	1. Duplex
		2. Sort
		3. Staple
		4. Punch
4. Parallel	1. Emulation	
	2. Bi-direction	
	3. I/O Timeout	
5. Network	1. I/O Timeout	
	2. TCP/IP Menu	
6. Configuration	1. Resolution	
	2. Auto Continue	
	3. Edge Smoothing	
	4. Autocont. Timeout	
7. List Print	1. PS Font List	
	2. PCL Font List	
	3. PS Demo Page	
	4. PCL Demo Page	
	5. Configuration Page	
8. Reset Select	1. Job Reset	
	2. Menu Reset	
	3. System Reset	

4.5 DIP SWITCHES/JUMPER PINS/LEDS

4.5.1 DIP SWITCHES

SW2:

No.	Function	On	OFF
1	Destination for firmware downloading	**To flash ROM**	To ROM SIMM
2	*Not used*	*Do not change this setting. Keep these both off.*	
3			
4	Operation mode	**Normal operation**	Programming firmware

NOTE: The functions of DIP switches no.1 is enabled when changing the setting of no.4 to the off position. However, **do not change the default settings**. Always do the firmware downloading using SP mode.

4.5.2 JUMPER PINS

TB1:

Function	CS0	CS1
Bank setting for resident flash ROM	**Bank setting for flash ROM is "0".**	Bank setting for flash ROM is "1".

TB2:

Function	UN-PROT	PROT
Not used	Do not change this setting. Keep at "UN-PROT".	

4.5.3 LEDS

Symbol	Function
PWR	This LED turns on when +5 V is supplied to the printer controller.
LED2	Refer to section 6.2 (LEDs) for more detail.
LED3	
LED4	
LED5	

4.6 SPECIAL TOOLS

Part Number	Description	Q'ty
A8545120	ROM SIMM	1
G0219350	Loop Back Connector	1

Service Tables

REPLACEMENT AND ADJUSTMENT

5. REPLACEMENT AND ADJUSTMENT

⚠️**CAUTION**
Turn off the main power switch and unplug the machine before attempting any of the procedures in this section.

5.1 PRINTER CONTROLLER BOARD
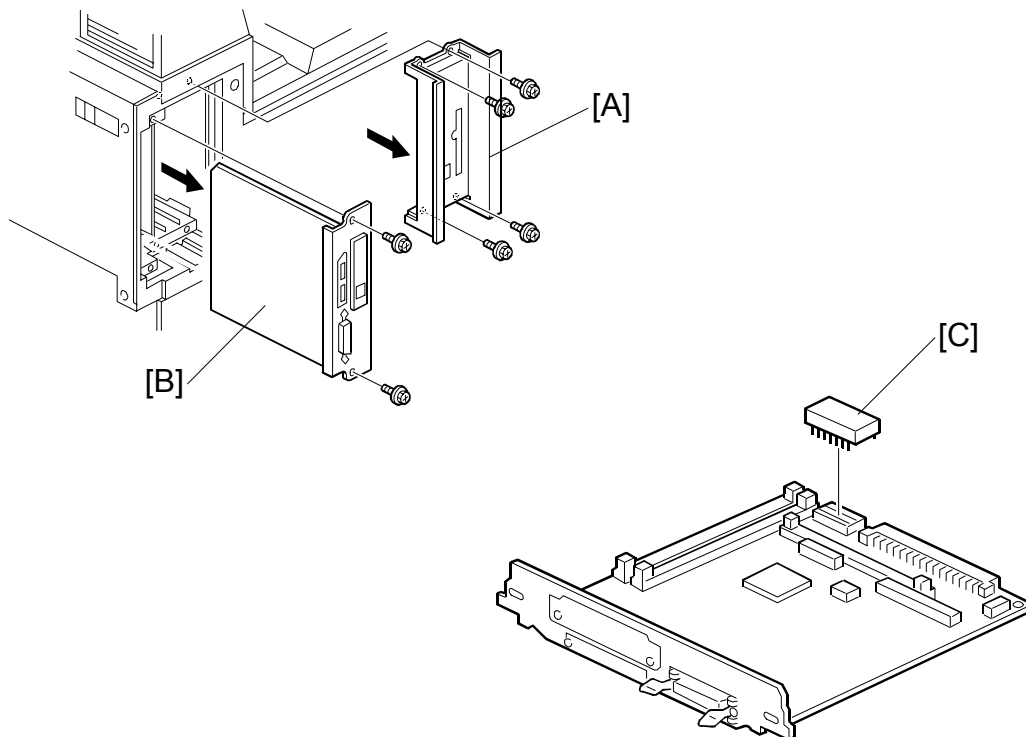
1. Remove the printer cables from the printer controller.

2. Remove the plate [A] (4 screws).

3. Slide out the printer controller board [B] (2 screws).

4. Remove the optional hard disk, network interface board, PS kit, and DRAM SIMMs if they are installed (see their replacement procedures).

5. Remove the NVRAM [C] from the old printer controller and install it on the new printer controller.

6. Install the options on the new printer controller.

7. Reattach the plate [A].

5.2 HARD DISK
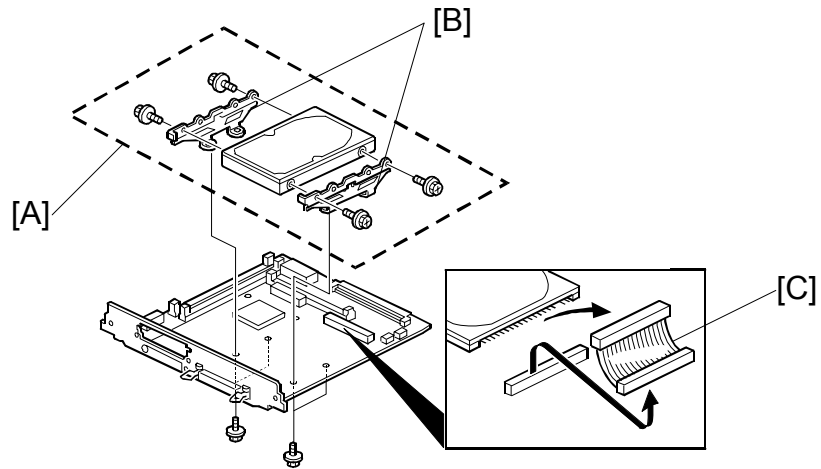
1. Slide out the printer controller (see Printer Controller).

2. Dismount the hard disk [A] with bracket and IDE cable from the printer controller (4 screws).

3. Remove two brackets [B] (2 screws each).

4. Disconnect the IDE cable [C].

5.3 NETWORK INTERFACE BOARD
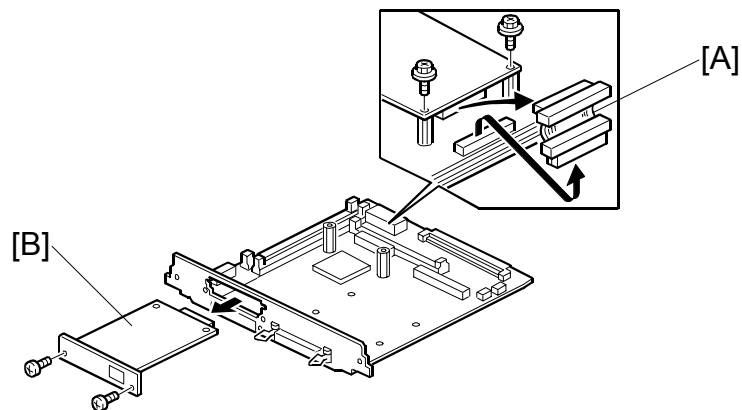
1. Slide out the printer controller (see Printer Controller).

2. Disconnect the cable [A] from the printer controller and network interface board.

3. Remove the network interface board [B] (4 screws).

5.3.1 POSTSCRIPT ROM BOARD AND DRAM SIMM
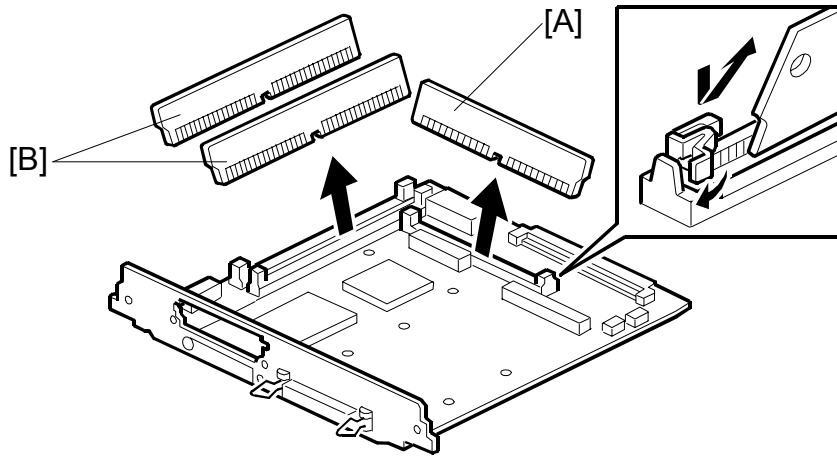
1. Slide out the printer controller (see Printer Controller).

2. Remove the PS ROM board [A].

3. Remove the DRAM SIMMs [B].

Replacement and Adjustment

TROUBLESHOOTING

6. TROUBLESHOOTING

6.1 ERROR MESSAGES

If an error occurred, the error LED lights (red light with the printer key) and an error message is displayed on the LCD.
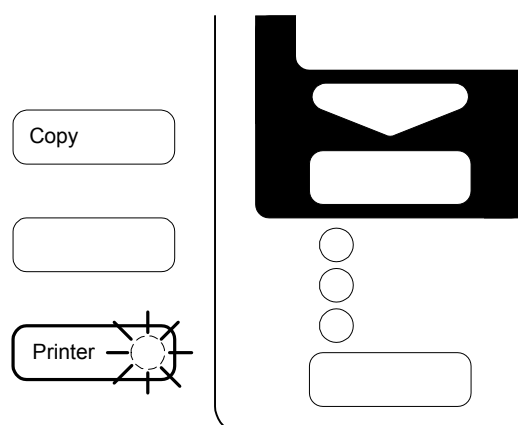
Service Call (SC) Codes

SC No.	Description / Definition	Possible Cause
SC2000	Functional problems (Self diagnostic error)	Printer controller board defective.
	A diagnostic error occurred at power on. The controller has a hardware problem.	
SC2001	Functional problems (Debug trap error)	The controller software has a problem.
	An error has occurred in the controller. The controller has a software problem.	
SC2002	Functional problems (Exception error)	Printer controller board defective.
	An error has occurred in the controller. The controller has a software or hardware problem.	

Trouble-shooting

Other Messages

The following errors might need assistance from service.

Error Message	Condition	Possible Cause
Printer HDD Error. Press Reset to cancel current job.	A hard disk error was detected during downloading the macro or fonts.	• Printer HDD defective • Printer controller defective
Parallel Communication Error. Please set up communication parameters in parallel menu. Press Reset to cancel current job.	Parallel communication error occurred during a print job via the parallel port.	• An item in the parallel menu was set incorrectly • Parallel cable defective • Printer controller defective
Print overrun. Press Reset to cancel current job, or press Continue to print.	This error occurred when a file was being printed in banding mode. A complex page may not have enough time to image a band while the engine is printing the previous page.	• Insufficient memory • A complex page is printed • The DRAM SIMM board is defective • The controller is defective
Memory overflow. Press Reset to cancel current job.	This error occurred during printing. The language has sent a file that is too complex to interpret in the available memory.	• Insufficient memory • A complex page is printed • The DRAM SIMM is board defective • The controller is defective

6.2 LEDS

6.2.1 LOCATION

Four LEDs (LED2 to LED5) are located near SW2 on the printer controller. They indicate display the progress of the self test, and errors and status conditions.
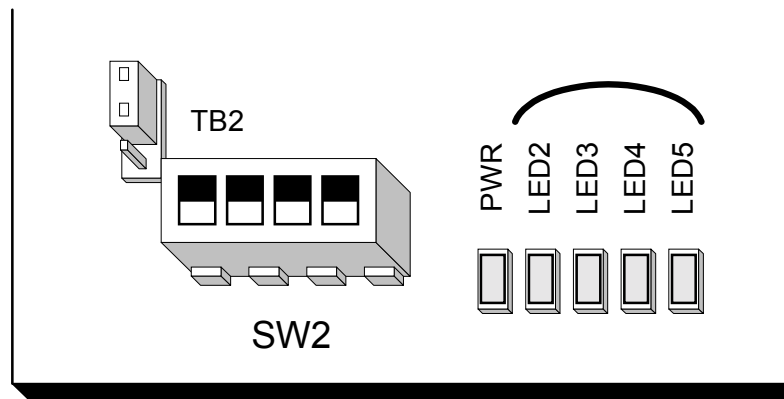
6.2.2 LED CODE TABLE

Self Diagnostic

The following LED table is for the self diagnostic function. When an error occurs during the self diagnostic test, all four LEDs blink then indicate the error as shown in the following table.

e.g.) RAM error:

All LEDs on (1 s) $\rightarrow$ off (1 s) $\rightarrow$ on (1 s) $\rightarrow$ off (1 s) $\rightarrow$ LED4 on (5 s) $\rightarrow$ from the beginning.

1 = LED is lit, 0 = LED is off

LEDs				Description
LED2	LED3	LED4	LED5	
0	0	0	1	ROM error
0	0	1	0	RAM (resident, SIMM) error: note 1)
0	0	1	1	NVRAM error: note 1)
0	1	0	1	Fatal error
0	1	1	0	Debug trap error: note 2)

NOTE: 1) SC2000 is also displayed.
2) SC2002 is also displayed.

Trouble-shooting

LEDS

Controller Firmware Copy/Download

During controller firmware copying and downloading, the following LED status will be indicated.

1 = LED is lit, 0 = LED is off, 1/0 = LED is blinking

LEDs				Description
LED2	LED3	LED4	LED5	
1	0	0	0	Data downloading
0	1/0	0	0	Erasing
1/0	1/0	1	0	Programming
0	0	0	1	Verifying
1	0	0	1	Insufficient RAM error
1	0	1	0	Verify failure
1	0	1	1	Download failure (check sum error)
1	1	0	0	Erase failure
1	1	0	1	Download failure (other error)
1	1	1	1	Copy/download success

TECHNICAL SERVICE BULLETINS

Gestetner ®
RICOH ®
savin ®

TECHNICAL SERVICE BULLETIN

BULLETIN NUMBER: B358 - 001   **05/15/2000**

APPLICABLE MODEL:
   GESTETNER – PRINTER CONTROLLER for 3235e/3245e
   RICOH – PRINTER CONTROLLER for AFICIO 350e/450e
   SAVIN – PRINTER CONTROLLER for 9935DPE/9945DPE

■ **PARTS**

SUBJECT: KEYTOP – PRINTER

GENERAL:

The following part correction is being issued for all B358 Parts Catalog Sections.

OLD PART NO.	NEW PART NO.	DESCRIPTION	QTY	INT	REFERENCE	
					PAGE	ITEM
A8507213	B3581544	Key Printer -NA	1	1	3	7

INTERCHANGEABILITY CHART:

0	OLD and NEW parts can be used in both OLD and NEW machines.	2	NEW parts CAN NOT be used in OLD machines. OLD parts can be used in OLD and NEW machines.
1	NEW parts can be used in OLD and NEW machines. OLD parts CAN NOT be used in NEW machines.	3	OLD parts CAN NOT be used in NEW machines. NEW parts CAN NOT be used in OLD machines.
3/S	Must be installed as a set on units manufactured prior to the S/N cut-in. On units manufactured after the S/N cut-in or previously modified, use the new part numbers individually.		

CONTROL NO.022ALL

Gestetner RICOH savin
TECHNICAL SERVICE BULLETIN

BULLETIN NUMBER: B358 – 002　　　　　　　　　　08/03/2001

APPLICABLE MODEL:
　　GESTETNER – PRINTER CONTROLLER for 3225e/3245e
　　RICOH - PRINTER CONTROLLER for AFICIO 350e/450e
　　SAVIN - PRINTER CONTROLLER for 9935DPE/9945DPE

SUBJECT:　　**SERVICE MANUAL - INSERT**

GENERAL:

The Service Manual pages listed below must be replaced with the pages supplied. Each bulletin package contains 1 set of replacement pages.

PAGES:

The revised areas have been highlighted by an arrow ⟹.

- iii　　　　　　　　　　　　　Updated Information (Table of Contents)
- 6-5　　　　　　　　　　　　Updated Information (Firmware History B358)

■ SERVICE MANUAL

　　　　　　　　CONTROL NO. 052ALL

TROUBLESHOOTING

6.3 FIRMWARE HISTORY

<table>
<tr><th colspan="4">B358 FIRMWARE MODIFICATION HISTORY</th></tr>
<tr><th>DESCRIPTION OF MODIFICATION</th><th>FIRMWARE LEVEL</th><th>SERIAL NUMBER</th><th>FIRMWARE VERSION</th></tr>
<tr><td>First release of firmware</td><td>B3586080 A</td><td>Initial production</td><td>1.88</td></tr>
<tr><td>

This firmware has been modified to support Job MIB.
This version is DAZEL certified.
The position of the image is different when using the PCL driver vs. the PS driver.
The firmware has been modified to allow downloading of document formats.
This firmware has been modified to support Page Count MIB.
SC2001 sometimes occurs during a print job if Auto Tray Select has been selected.
SC365 sometimes occurs during a duplex print job.
A paper jam sometimes occurs after Auto Reset has been performed.
Any of the fonts that have been downloaded to the HDD can be set as the default font.

</td><td>B3586080 B</td><td>May 2000 production</td><td>1.92</td></tr>
<tr><td>

After Danish has been set as the language, extra characters are printed out.
When the Dazel system is used, there is no job completion notification.
- With PortNavi, the job completion notification is either printed out but incorrect, or is not printed out at all.
- Jobs performed without using registered user codes do not appear on the job history list.

</td><td>B3586080 C</td><td>Nov. 2000 production</td><td>1.97</td></tr>
<tr><td>

When performing a mixed copy job with Letter and Legal, the machine does not switch between the trays from an AS400 system.
Grid lines do not appear on MS-Excel originals.
When printing from an SAP application, extra sheets of paper are fed.

</td><td>B3586080 D</td><td>Feb. 2001 production</td><td>1.98</td></tr>
</table>

Trouble-shooting

Gestetner®
RICOH®
SAVIN®
TECHNICAL SERVICE BULLETIN

BULLETIN NUMBER: B358 – 003 02/12/2003

APPLICABLE MODEL:
GESTETNER - PRINTER CONTROLLER for 3225e/3245e
RICOH - PRINTER CONTROLLER for AFICIO 350e/450e
SAVIN -PRINTER CONTROLLER for 9935DPE/9945DPE

SUBJECT: FIRMWARE MODIFICATION

■ **FIRMWARE**

GENERAL:

The latest firmware version can be downloaded at the Technology Solution Center FTP Site
http://tsc.ricohcorp.com. Be sure to check the README file for important notes and explanations.

NOTE: *Refer to Facts Line Bulletin # FL002 and Publication Bulletin #023 for more information about the FTP Internet Web Site and EPROM/Flash Card Exchange program.*

B358 PRINTER CONTROLLER FIRMWARE MODIFICATION			
DESCRIPTION OF MODIFICATION	**FIRMWARE LEVEL**	**SERIAL NUMBER**	**FIRMWARE VERSION**
Corrects the following: • After NIB reset has been performed, "NIB Initializing …." is sometimes displayed, and the machine does not enter stand-by mode • When using the Smart Net Monitor, sometimes nothing is printed out. • When printing two pages from a UNIX system, a blank page may be inserted in between.	B3586080 **F**	Feb. '02 Prod.	2.02

TECHNICAL SERVICE BULLETIN

BULLETIN NUMBER: B358 – 004   **08/28/2003**

APPLICABLE MODEL:
  GESTETNER – PRINTER CONTROLLER TYPE 450E for 3235E/3245E
  LANIER – PRINTER CONTROLLER TYPE 450E for 5435/5445
  RICOH – PRINTER CONTROLLER TYPE 450E for AFICIO 350E/450E
  SAVIN – PRINTER CONTROLLER TYPE 450E for 9935DPE/9945DPE

SUBJECT: SERVICE MANUAL - INSERT

The Service Manual pages listed below must be replaced with the pages supplied.

The revised areas have been highlighted by an arrow $\Rightarrow$.

PAGES:

- iii   Updated Information (Table of Contents)

- Remove page 6-5 from the B358 Service Manual. The "Firmware History Section," in the B358 Service Manual has been replaced by the B358 Firmware History document released on 08/28/2003.

TROUBLESHOOTING

FIRMWARE HISTORY

FIRMWARE HISTORY

PRODUCT CODE: B358

APPLICABLE MODEL:

GESTETNER – PRINTER CONTROLLER TYPE 450E for 3235E/3245E
**LANIER – PRINTER CONTROLLER TYPE 450E for 5435/5445**
RICOH – PRINTER CONTROLLER TYPE 450E for AFICIO 350E/450E
SAVIN – PRINTER CONTROLLER TYPE 450E for 9935DPE/9945DPE

Flash
Memory
Card

■

FIRMWARE

GENERAL:

The latest firmware version can be downloaded at the Technology Solutions Center FTP Site at
http://tsc.ricohcorp.com. Be sure to check the README file for important notes and explanations.

NOTE: *Refer to Facts Line Bulletin # FL002 and Publication Bulletin #023 for more information about
the FTP Internet Web Site and EPROM/Flash Card Exchange program.*
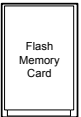
TABLE OF CONTENTS:

B358 FIRMWARE HISTORY:

(For Gestetner, Ricoh and Savin Models)

B3586080	VERSION	CHECK SUM	PRODUCTION
A	1.88	03E4	1st Mass Prod.
B	1.92	D344	May '00 Prod.
C	1.97	1769	November '00 Prod.
D	1.98	576D	February '01 Prod.
E	2.01	BC8F	September '01 Prod.
F	2.02	B89C	February '02 Prod.
G	2.03	2E14	March '02 Prod.
H	2.05	5112	May '02 Prod.

(For Lanier Models)

B3586081	VERSION	CHECK SUM	PRODUCTION
A	1.88	03E4	1st Mass Prod.
B	1.92	D344	May '00 Prod.
C	1.97	1769	November '00 Prod.
D	1.98	576D	February '01 Prod.
E	2.01	BC8F	September '01 Prod.
F	2.02	B89C	February '02 Prod.
G	2.03	2E14	March '02 Prod.
H	2.05	5112	May '02 Prod.

B358 FIRMWARE MODIFICATION HISTORY:

DESCRIPTION OF MODIFICATION	FIRMWARE LEVEL	SERIAL NUMBER	FIRMWARE VERSION
First release of firmware	**A**	Initial production	1.88
- This firmware has been modified to support Job MIB. - This version is DAZEL certified. - The position of the image is different when using the PCL driver vs. the PS driver. - The firmware has been modified to allow downloading of document formats. - This firmware has been modified to support Page Count MIB. - SC2001 sometimes occurs during a print job if Auto Tray Select has been selected. - SC365 sometimes occurs during a duplex print job. - A paper jam sometimes occurs after Auto Reset has been performed. - Any of the fonts that have been downloaded to the HDD can be set as the default font.	**B**	May 2000 production	1.92
- After Danish has been set as the language, extra characters are printed out. - When the Dazel system is used, there is no job completion notification. - With PortNavi, the job completion notification is either printed out but incorrect, or is not printed out at all. - Jobs performed without using registered user codes do not appear on the job history list.	**C**	Nov. 2000 production	1.97
- When performing a mixed copy job with Letter and Legal, the machine does not switch between the trays from an AS400 system. - Grid lines do not appear on MS-Excel originals. - When printing from an SAP application, extra sheets of paper are fed.	**D**	Feb. 2001 production	1.98

DESCRIPTION OF MODIFICATION	FIRMWARE LEVEL	SERIAL NUMBER	FIRMWARE VERSION
• SmartNetMonitor shows wrong total counter value. • The right edge of the image is missing when printing out from the AS400. • Cannot perform auto conversion for A4/Letter.	E	Sept. 2001 production	2.01
• After NIB reset has been performed, "NIB Initializing …." is sometimes displayed, and the machine does not enter stand-by mode. • When using the Smart Net Monitor, sometimes nothing is printed out. • When printing two pages from a UNIX system, a blank page may be inserted in between.	F	Feb. 2002 production	2.02
• Added Euro symbol sets (containing the Euro currency symbol) to match the capability of HP printers (PCL5e, PCLXL). • A PS job is deleted when the Bypass tray is selected as the default tray in the PS driver.	G	Mar. 2002 production	2.03
• All characters from Euro symbol sets are printed out in Arial regardless of the font selected (except for Times New Roman).	H	May 2002 production	2.05