Network Color PS/PCL Board-A1

SERVICE MANUAL

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INTRODUCTION

This Service Manual provides facts and figures needed to service the Network Color PS / PCL Board-A1 in the field, and consists of the following chapters:

Chapter 1 *General Description* provides an outline of the printer board, introduces its features, specifications, and external views, and shows how it may be operated.

Chapter 2 *Basic Operations* describes the construction of the printer board, its operations, transfer of print data, processing of print data, and how data is dealt with by the host copier.

Chapter 3 *User Software* provides an outline of user software, printer driver, and utilities (including Webtools and NetSpot).

Chapter 4 *Disassembly/Assembly* shows how the printer board may be disassembled/assembled with points to note during the work.

Chapter 5 *Installation* provides an outline of installation work with points to note during the work.

Chapter 6 *Maintenance and Servicing* describes how information about the printer board (version number) may be obtained and how self diagnosis may be used, and shows how system software may be installed.

Chapter 7 *Parts Catalog*

Appendix.

This Service Manual briefly describes network-related work usually performed by the user's network supervisor and topics related to software. You may obtain a media package, also available as a service part (consisting of the document package and the user software CD-ROM). If detailed information is needed, refer to the appropriate item of the package.

The descriptions in this Service Manual are subject to change without notice for product improvement or other purposes, and major changes will be communicated in the form of *Service Information* bulletins.

All service persons are expected to have a good understanding of the contents of this Service Manual and all relevant *Service Information* bulletins and be able to identify and isolate faults in the machine.

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CHAPTER 1

GENERAL DESCRIPTION

I. PRODUCT OUTLINE

The Printer Board is designed for installation to a CP660 so that the machine may be used as a color printer. The Board comes standard with an IEEE1284 (bi-Centronics) parallel port and an Ethernet interface, not requiring any additional board.

In addition to generally used 10BASE-T, its network interface supports the high-speed 100BASE-TX standards. It supports multiple protocols (TCP/IP, IPX/SPX, AppleTalk), and is capable of receiving and printing print data coming from a network on which different protocols coexist.

The page description languages it supports are PCL5c and PostScript 3; as for internal fonts, it contains 46 types for PCL and 136 types for PostScript.

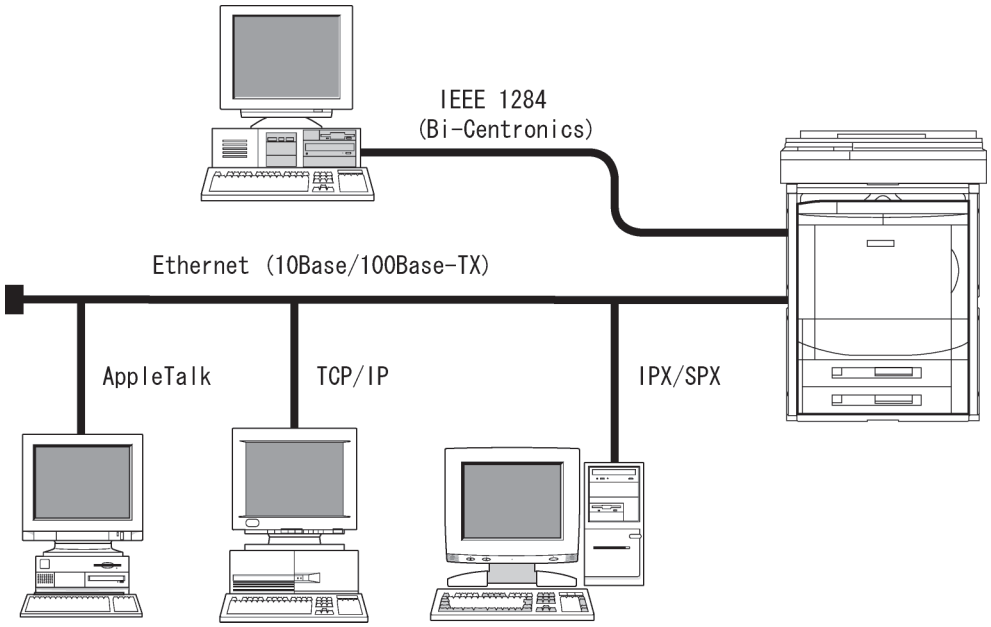


Figure 1-101

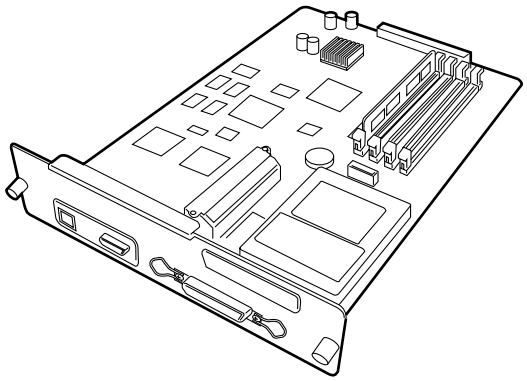
II. SYSTEM CONFIGURATION

The Board is designed for installation inside a CP660. (The printer control panel is installed to each CP660 before shipment from the factory.)

If installation of such accessories as a sorter is expected, you will have to install an Accessory Controller-A1 and an Accessory Interface Board-B1 in advance. (If an Accessory Interface Unit-B1 has already been installed, you will have to relocate its parts to the Printer Board.) All these boards are installed inside the CP660.

1. Required for Printer Functions
   - Network Color PS/PCL Board-A1
2. Required for Accessories
   - Accessory Controller Board-A1 (Option Control Board)
   - Accessory Interface Board-B1

   or
   - Accessory Interface Unit-B1



Network Color PS/PCL Board-A1

Figure 1-201

III. FEATURES

1. It possesses a high-performance RISC-type MIPS R4700 CPU (operating frequency of 133 MHz) and a 64MB memory (DIMM), and is capable of processing print data at high speed for printing. Its memory may be expanded up to 256 MB.
2. It supports two page description languages: PCL5c and PostScript 3. As standard, it comes with 46 types of PCL fonts and 136 types of PS fonts.
3. It comes standard with a 2.1G hard disk drive, and is capable of spooling print jobs and downloading external fonts.
4. It supports the popular Ethernet standards 10BASE-T and the high-speed Ethernet standards BASE100-TX. It also comes with an AUI connector so that it may be connected to 10BASE5.
5. It supports SMB over TCP/IP, in which SMB (Server Message Block, i.e., Windows' file/printer protocol) is used in a TCP/IP environment, enabling it to operate as a network printer in a Windows 95/98-only network environment.
6. On a TCP/IP network, the state of a print job may be checked or controlled from a browser (Netscape Navigator, Internet Explorer) using WebTools.
7. It has an IP address auto procurement function and supports DHCP (Dynamic Host Configuration Protocol), BOOTP (BOOT Protocol), and RARP (Reverse Address Resolution Protocol), enabling central control of IP addresses by servers running them.
8. It comes with Visual CAL, in which calibration is executed without an instrument to measure density, enabling correction of changes in hues caused by changes in the environment.

IV. SPECIFICATIONS

Item		Description
CPU		MIPS R4700 133MHz
RAM	Mounting	168-pin DIMM, 4 slots
	Type	SDRAM
	Capacity	64MB DIMM × 1 (standard) 64MB DIM × 3 (option) 256 MB max. in total
Hard disk drive	Capacity	2.1GB
	Interface	E-IDE
Parallel interface	Standards	IEEE1284 (bi-Centronics)
	Connector	IEEE1284-B receptacle (36-pin connector)
Network interface	Standards	Ethernet, TokenRing (Option)
	Connector	RJ-45 (10Base-T/100Base-TX) AUI (10Base5)
Operating system	Client OS	Windows NT 4.0 Windows 95/98 MacOS 7.1 or later
	Server OS	Windows NT 4.0 UNIX Netware ver. 3.11 or later
Protocol		TCP/IP (LPD, SMB over TCP/IP) IPX/SPX (PServer, NDS) AppleTalk (EtherTalk)
Page description language		PCL5c PostScript 3
Font		46 fonts for PCL5 136 fonts for PostScript
Print paper size		Same as CP660
Non-image area		Envelope: 10 mm on all sides Others: 5 mm on all sides

The specifications are subject to change for product improvement.

Table 1-401

V. EXTERNAL VIEW

Figure 1-501 shows the external view of the Printer Board.

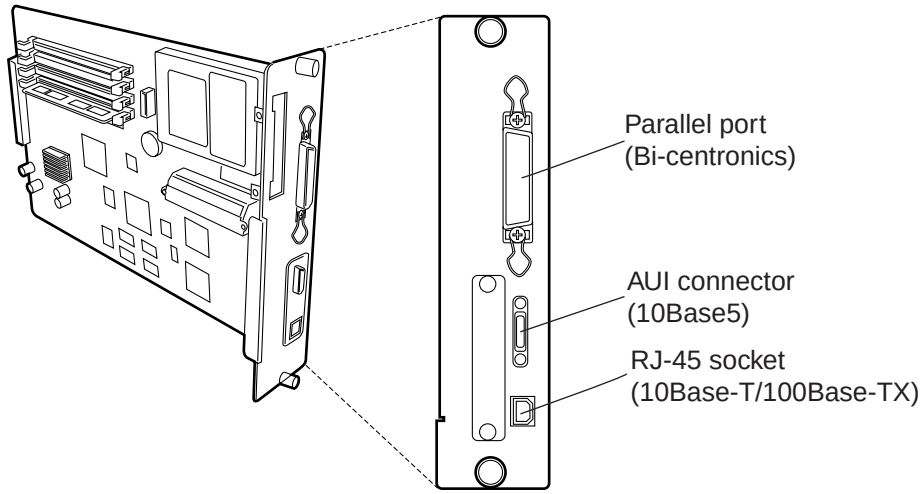


Figure 1-501

VI. USING THE PRINTER BOARD

A. Control Panel

1. Control Panel

The control panel on the top of the printer enables you to set options and view the status of print jobs and the printer.

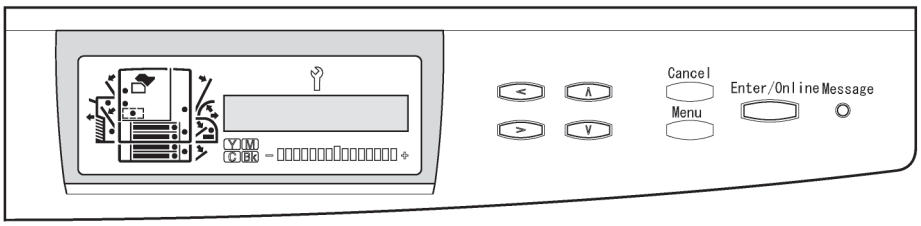


Figure 1-601

The control panel has the following parts:
Activity lights
Display window
Buttons

2. Display Window

The LCD window on the control panel displays status messages, error message, and a graphical representation of the printer. The window also displays the menus to specify the printer settings, PCL and PostScript settings for the printer, settings for the network protocols and other useful settings.

3. Activity Lights

The activity lights indicate the status of the printer.

This light	Indicates
Enter/Online 	Enter/Online LED—On when the printer is online (ready to accept and process new jobs), blinking when receiving, processing or printing data, and off when the printer is offline or the power is off. NOTE: When the printer is offline, you cannot print.
Message 	When the printer is offline, you cannot print. Message LED—On when the printer requires a service call. Blinking when the printer requires operator intervention (e.g., load paper).

Table 1-601

4. Buttons

The buttons on the control panel are used to control printer functions and to enter information.

This button	Indicates
	Down arrow—In a fixed-length list, takes you to the next item in the list. When entering numbers or text, decrements to the next number or character. Hold down the button to decrement rapidly.
	Up arrow—In a fixed-length list, takes you to the previous item in the list. When entering numbers or text, increment to the previous number or character. Hold down the button to increment rapidly.
	Right arrow—When entering numbers or text, advances the cursor.
	Left arrow—When entering numbers or text, backspaces and deletes.
Menu 	Menu button—From Ready or Power Saver mode, enters the Setup menus. In Setup menus, advances from one menu to the next. From a setup menu option, returns to the previous setup menu.
Enter/Online 	Enter/Online button—Accepts an option and advances to the next choice. When the printer is in Ready mode, takes the printer offline.
Cancel 	Cancel button—In Setup menus, exits menus entirely, returning to Ready. While printing, Cancel stops printing or processing the current job.

Table 1-602

5. Status Messages

When the printer is printing normally, status information about current jobs appears in the display window. The messages are:

Initializing-Displays while the printer is initializing.

Ready-Displays while the printer is ready to print but not processing or printing a job.

Printing-Appears when a job is currently printing.

Processing-Appears when a job is currently processing.

Canceling Job-Appears when you cancel a print job.

Power Saver On-Appears when the printer is in Power Saver mode, an energy-saving mode which can reduce the total power consumption of the printer to less than 45 watts. Full power mode is restored when the printer receives a print job or when you press the Enter, Cancel, or Menu button.

Before the printer can print after being in Power Saver mode, it needs to warm up to heat up the fuser. The actual warm-up time depends on how long the printer has been in Power Saver mode. The longer the printer was in Power Saver mode, the longer the warm-up time required.

6. Error Messages

If there is a printing problem, the Message LED blinks, and an error appears in the display window.

B. Operation

1. Outline

All operations related to the Printer Board are performed on the printer control panel. If a reader unit is installed, the Board cannot be used by pressing the Options button on the reader control panel.

The operation mode of the Board consists of normal mode (used for normal printing) and settings mode (for various modes). You can enter settings mode by pressing the Menu button on the printer control panel.

To prevent starting settings mode inadvertently by a user, a password may be set for the administrator. For the flow of messages, see the Appendix.

2. Normal Mode

Normal mode consists of the following three types:

- 'READY'
- 'PROCESSING'
- 'PRINTING'

When the start-up processing ends and preparations for a print job have been completed, the message "READY" is indicated on the printer control panel.

When a print job has been received and processing starts, on the other hand, the message "PROCESSING" is indicated.

When transfer of image data to the CP660 starts, the message "PRINTING" is indicated. At the end of printing, the message "READY" will be indicated.

3. Settings Mode

When the menu button is pressed while the message "READY" is indicated, the menu for settings mode will be displayed in sequence: the following items are available, each with a sub menu.

1. RESETS
2. SYSTEM SETUP
3. PRINTER SETUP
4. PS SETUP
5. PCL SETUP
6. VISUALCAL
7. COLOR ADJUSTMENT
8. I/O PORT SETUP
9. NETWORK PROTOCOL SETUP
10. NETWORK SERVICES SETUP
11. PANEL LANGUAGES

For detailed information on settings, see the Getting Started Guide.

4. Page Output

The Printer Board is equipped with a function capable of generating the following test prints:

• CONFIGURATION

Generates a page showing the settings made to the Board.

• START PAGE

If 'Yes' is selected on the Start Page of system settings, automatically generates when this Board is started.

• JOB LOG

Generates a page showing a print log (document name, control information, i.e., user name) stored on the hard disk.

• PCL FONT LIST

Generates a page showing a list of PCL fonts stored on the internal hard disk.

• PS FONT LIST

Shows a list of PS fonts stored on the internal hard disk.

• MENU HELP

Generates a page showing explanations of the printer control panel.

• TEST PAGE

Generates a page showing patches used for checking color graduation and sample images.

Perform the following to generate an appropriate page:

1) While the message "READY" is displayed on the printer control panel, press the menu button so that the control panel will indicate the message "PRINT PAGES FROM LIST."
2) Press the Enter/On-line button.
3) Press the Up/Down arrow button to select an appropriate page.
4) Press the enter/On-line button.

For a sample of each page, see the Appendix.

CHAPTER 2

BASIC OPERATIONS

I. CONFIGURATION

A. Functions of the Parts

The functions of the parts on the Printer Board are as follows:

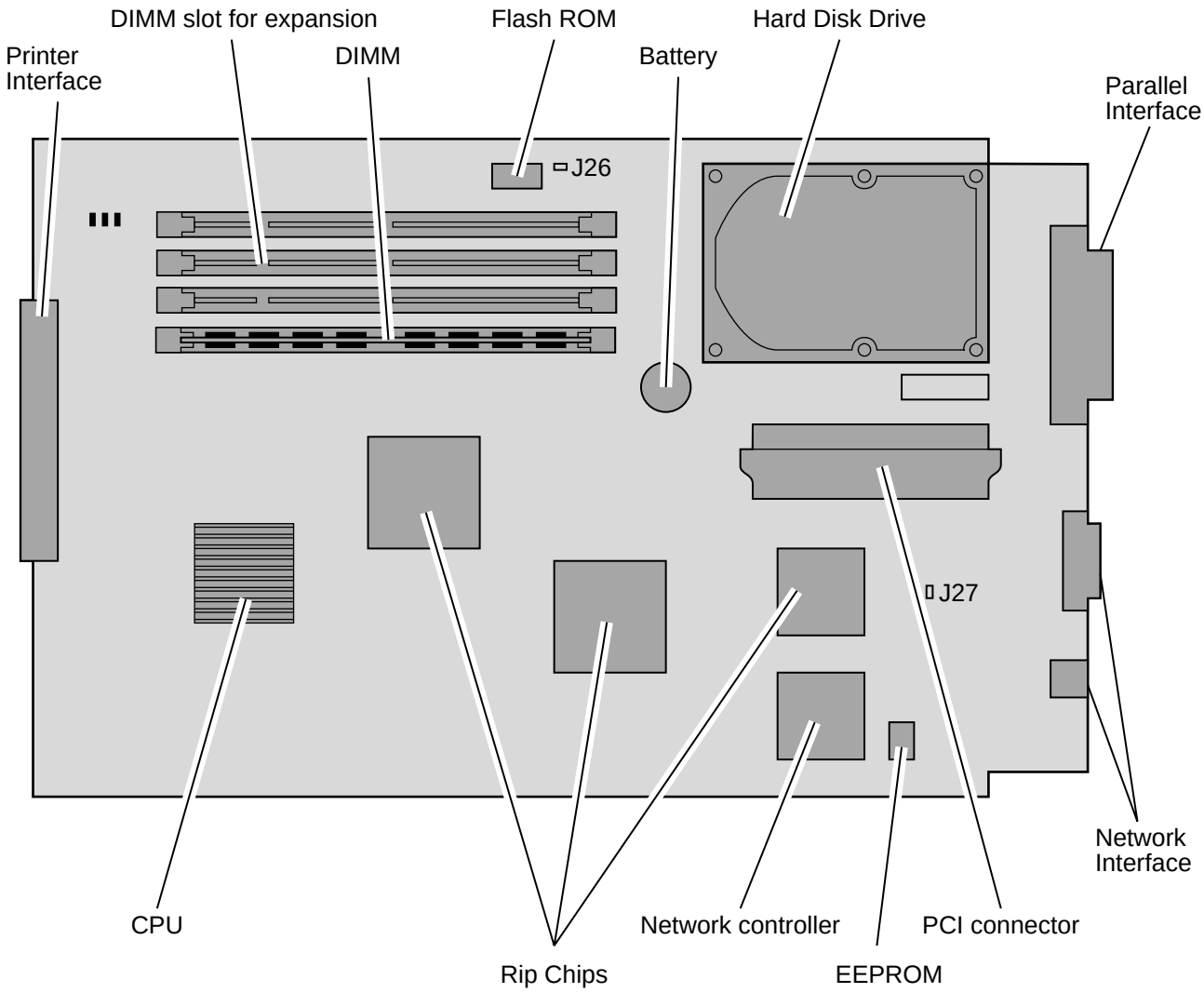


Figure 2-101

CPU. It is a high-performance RISC-type CPU (MIPS R4700), and processes data according to the programs stored in memory.

DIMM. The memory area of a DIMM is roughly divided into a system area and an image data area. The system area contains the program used to control the overall operations of the Board and a program called an "interpreter," which interprets PDL commands to generate image data. The image data area, on the other hand, contains image data generated from PDL files.

Flash ROM. It contains a self-diagnosis program, boot program for the system program, and programs for formatting the hard disk and writing the system program.

RipChip. It controls the transfer of data between CPU and memory, and serves to ensure that the CPU efficiently processes data.

Network controller. It controls communications with the network.

Network interface. It serves as an interface for connection to a network. It supports 10BASE and 100BASE-TX Ethernet.

Parallel interface. It is an interface complying with the IEEE1284 standards for computer connection.

Hard disk drive. It contains system software. The hard disk contains a queue for temporary retention of print data, record of print jobs, and additionally installed fonts. The internal hard disk drive is connected with an E-IDE (Enhanced Integrated Drive Electronics) interface. The Board is designed for connection of one internal hard disk drive, and does not allow connection of an expansion hard disk drive.

Battery. It is mounted on the Board so that the real-time clock on the Board will continue to operate when the machine's main power is turned off or the Board is removed from the machine.

PCI slot. It is a 32-bit PCI (Peripheral Component Interconnector) bus connector for connection of a TokenRing Board (option).

EEPROM. It stands for "Electrically Erasable Programmable Read Only Memory," and contains such data as on the number of prints made using the Board.

II. BASIC OPERATIONS

A. Start-Up Sequence

1. Without a Reader Unit

When the power switch found at the bottom left of the printer unit is turned on, the printer unit will be supplied with power and, consequently, the Printer Board will also be supplied with power.

When the Board is supplied with power, its CPU executes the self-diagnosis program contained in the flash ROM, and indicates the result in the display on the control panel.

The CPU on the Board and the D-CPU (DC controller) of the printer unit communicate in serial as necessary; in the event of a fault, 'E240' will be indicated on the printer control panel at the end of self diagnosis.

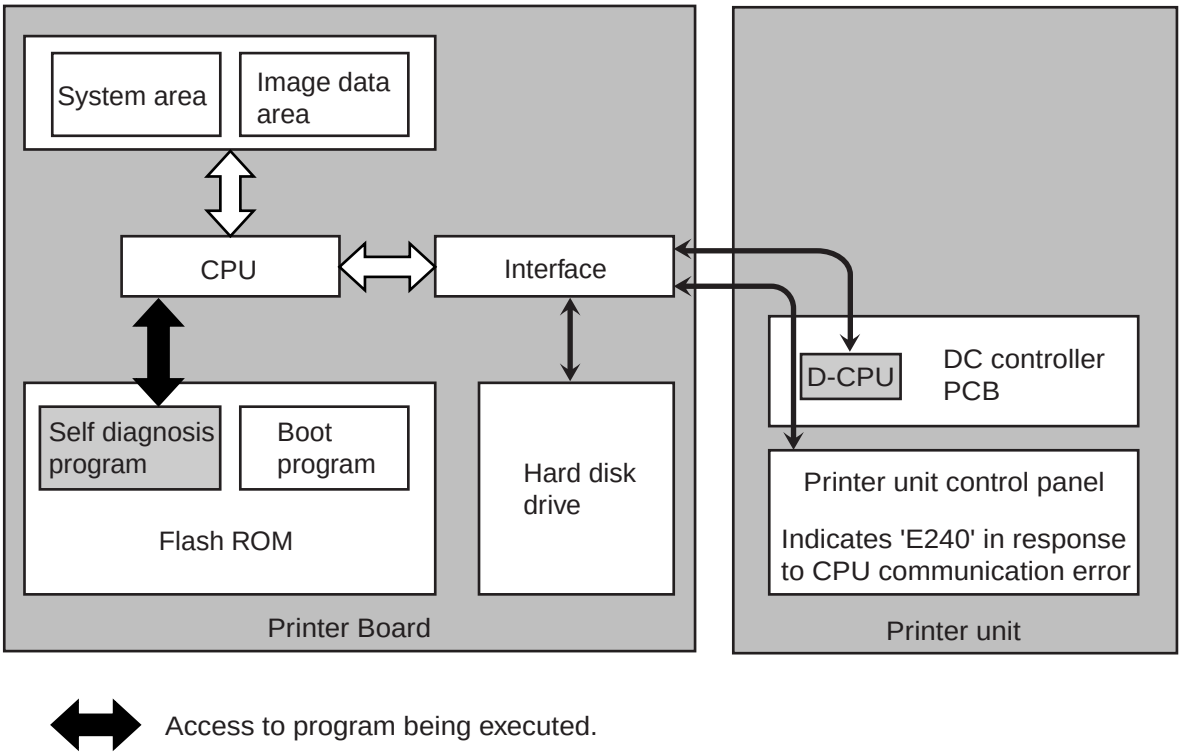


Figure 2-201

When diagnosis of all parts ends, the boot program stored in the flash ROM starts to read the main system program from the hard disk and starts to write to the main memory.

When writing ends, the main system program starts, and sends a command to the printer unit for initialization. When all preparations are done, the message “READY” is indicated in the display of the printer unit control panel.

The system program of the Board consists of multiple modules, and the module needed at a particular time will be called into the system area of the main memory (RAM).

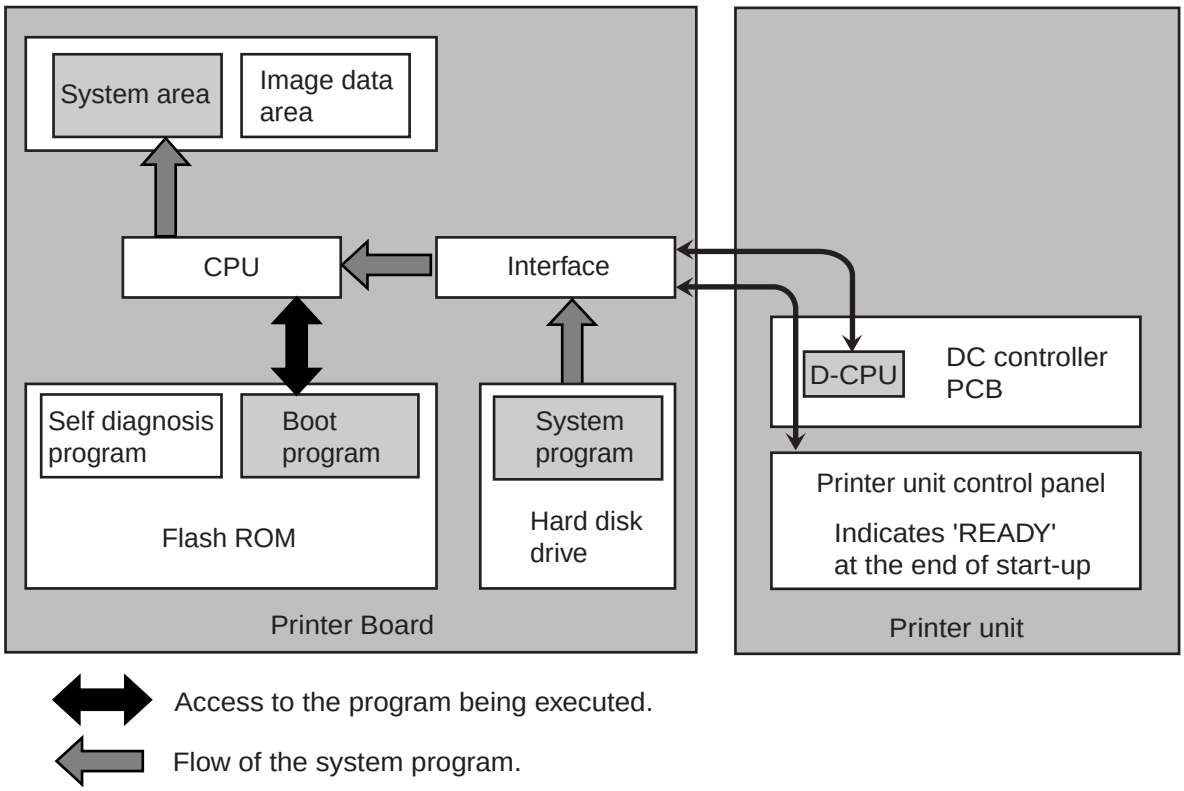


Figure 2-202

2. With a Reader Unit

When the main power switch of the reader unit is turned on and the control panel soft switch of the reader unit is turned on, the printer unit is supplied with power and, consequently, the Printer Board unit is supplied with power.

When the Board is supplied with power, the CPU of the Board executes the self-diagnosis program stored in the flash ROM, and indicates the result in the display on the printer unit control panel.

The CPU of the Board and the CPU (reader controller) of the reader unit communicate in serial as necessary, and the communication with the D-CPU of the DC controller is by way of the CPU of the reader controller. If a fault is detected at start-up, 'E240' will be indicated on the reader control unit; at the end of self diagnosis by the Printer Board, 'E240' will also be indicated on the control panel of the printer unit.

If the cable from the reader unit is not connected to the printer unit properly, 'E240' will be indicated on the reader unit, and the printer unit repeats self diagnosis. If such a fault is noted, be sure to check the connection of the cable from the reader unit.

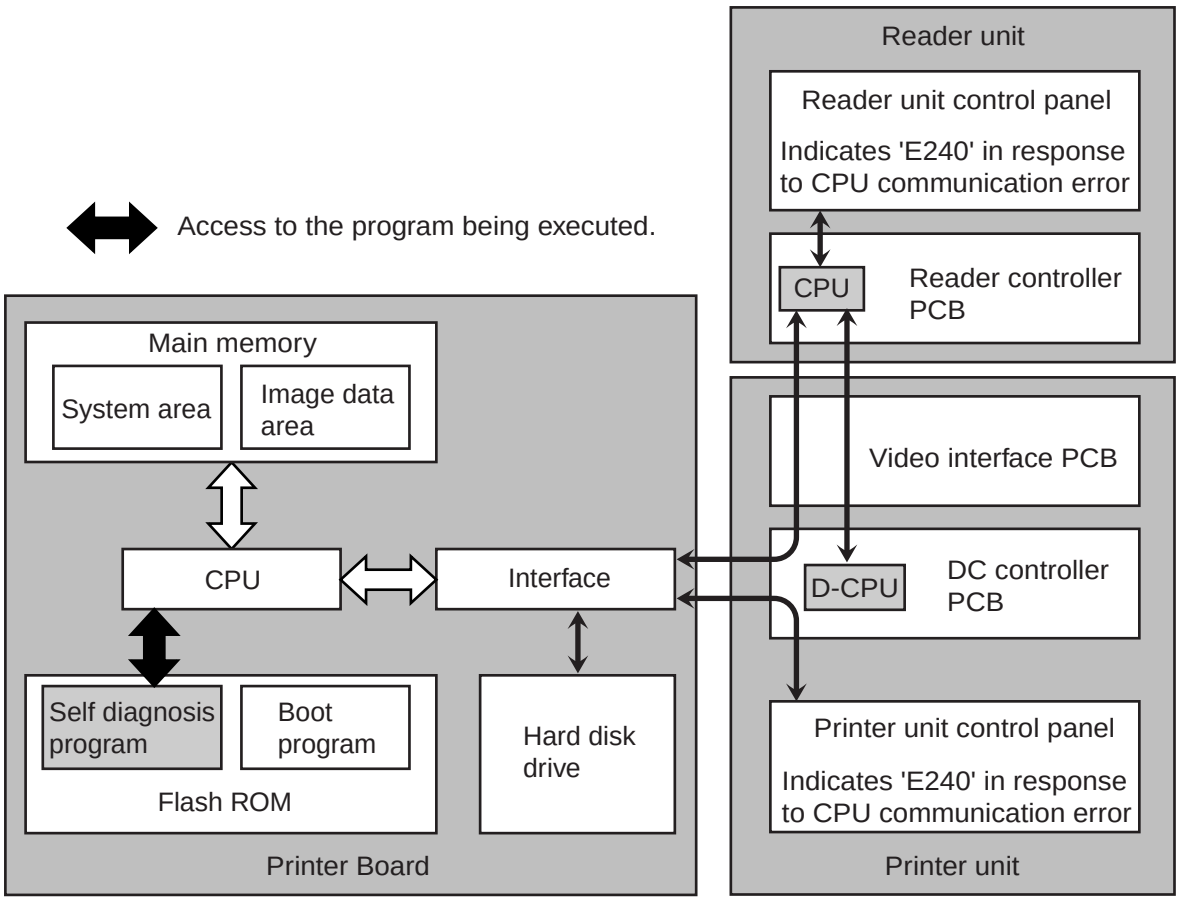


Figure 2-203

When self diagnosis of all parts ends, the boot program (stored in the flash ROM) starts to read the main system program from the hard disk to start writing to the main memory.

When writing ends, the main system program starts, and sends a command to the printer unit through a reader unit. When all parts are ready, the message “READY” will be indicated in the display of the printer unit control panel.

The system program of the Board consists of multiple modules, and the modules needed at a particular time are called into the system area of the main memory (RAM).

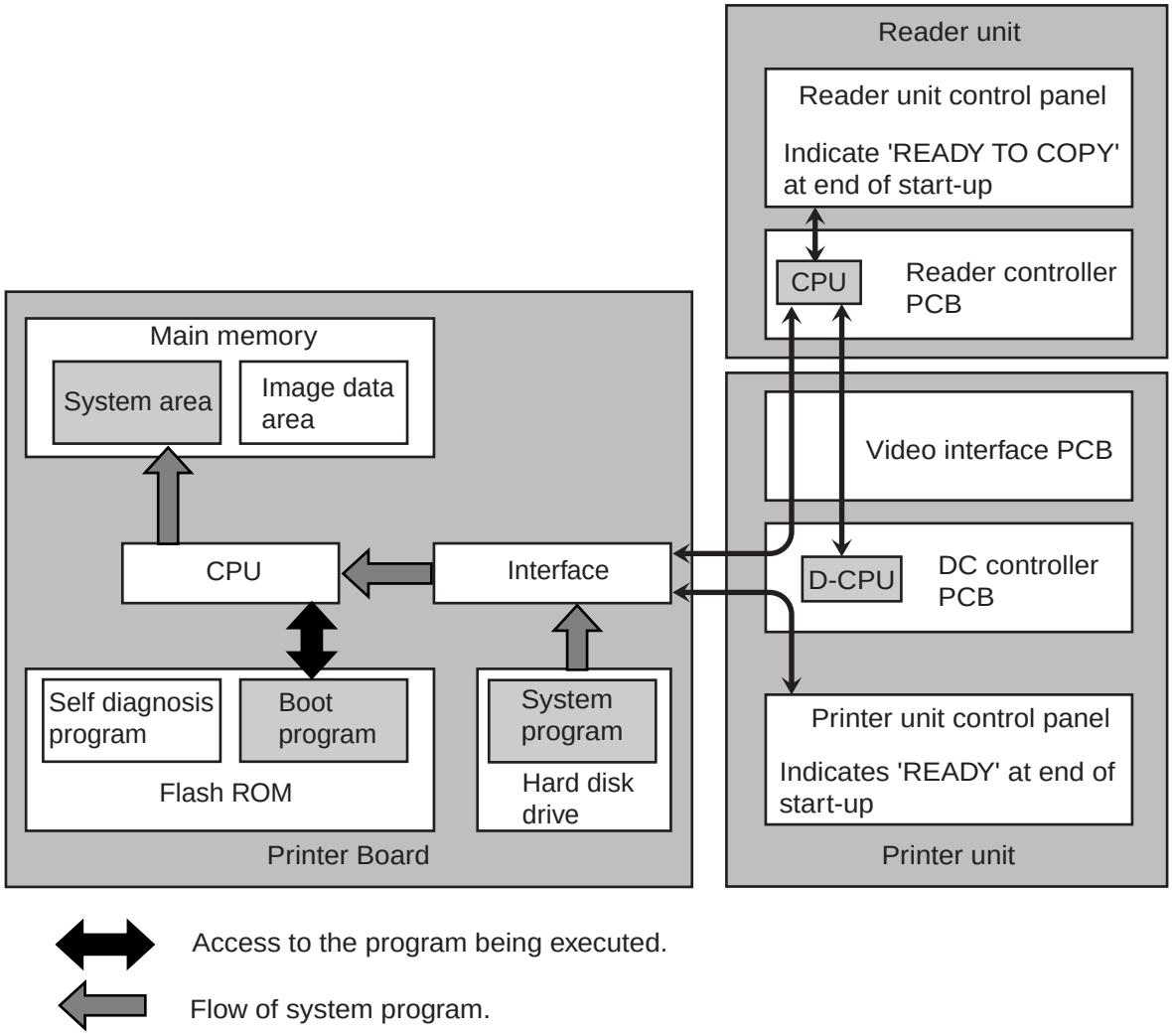


Figure 2-204

B. Printing

1. Processing on the Computer

When the user sends a print command to the application program, the application program in response sends image data to the printer driver with the help of the operating system.

The printer driver translates the image data and the settings data into commands of a page description language. The print data expressed by a page description language is sent to the Printer Board as a print job through the parallel port or the network port, as determined by the configuration of the computer and the Board.

Each page description language needs its own printer driver, and the Board comes with both PCL printer driver and PostScript printer driver. (These drivers are found on the user CD-ROM, which is packaged with the Board.)

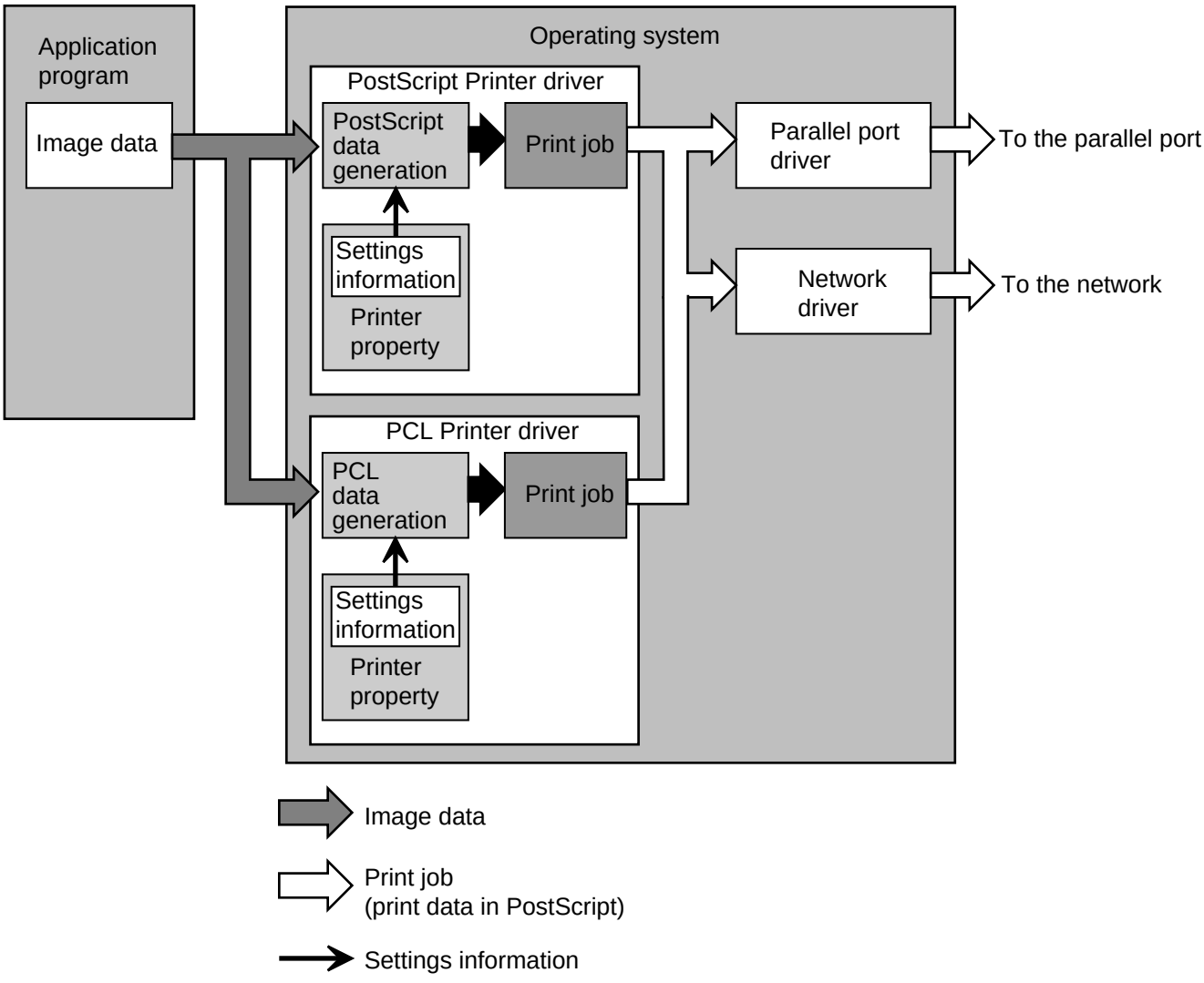


Figure 2-205

2. Processing by the Printer Board

The print data input block of the Printer Board receives print data from a computer and sends it to the print data processing block using a specific method of connection. In response, the print data processing unit generates image data for printing on the printer unit from print data expressed in a page description language.

When the data for the printer unit is ready, information needed to control printing is sent first, and then image data of each color is sent through the image data output block.

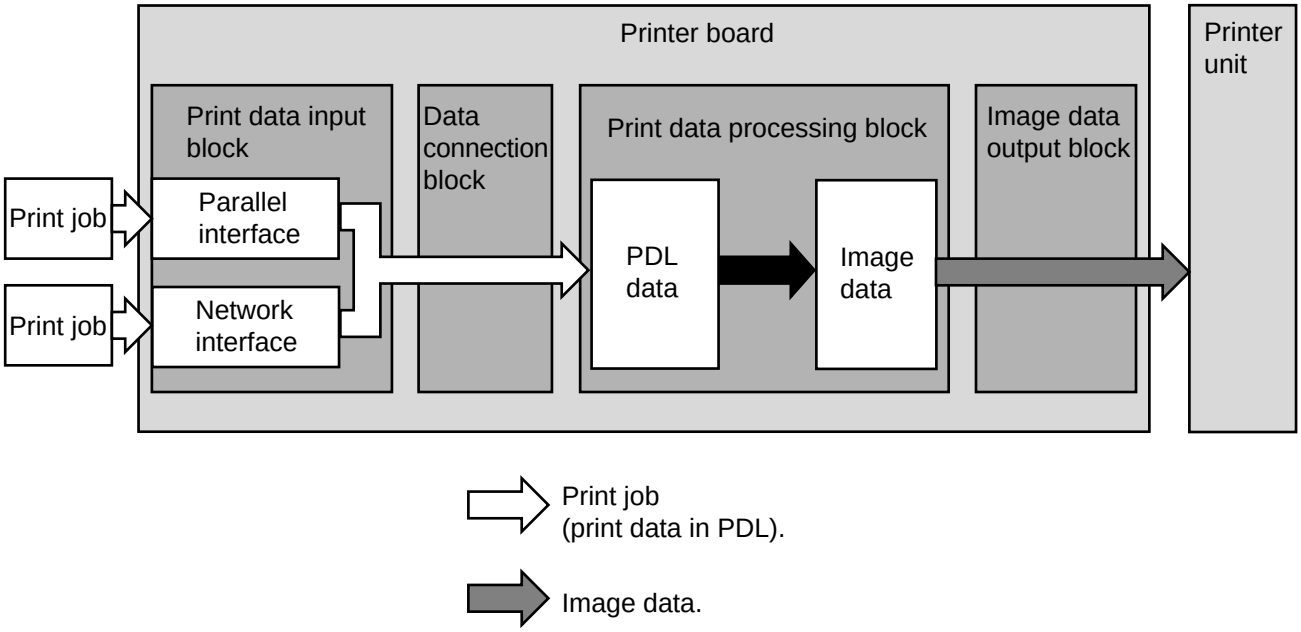


Figure 2-206

With reference to the data it has received, the printer unit starts laser exposure, development, transfer, and fixing to deliver sheets carrying the images in question.

III. TRANSFERRING PRINT DATA

The Print Board comes with a parallel interface and a network interface for connection to a computer. (These interfaces may be used simultaneously.)

A. Connecting to a Parallel Port

The parallel port complies with the IEEE1284 standards (bi-Centronics), and it supports multiple operating modes: Compatibility mode (designed to provide compatibility with existing Centronics interfaces), nibble mode (designed to send data in 4-bit units), and ECP mode (Enhanced Capability Port; designed to enable high-speed bi-directional communication).

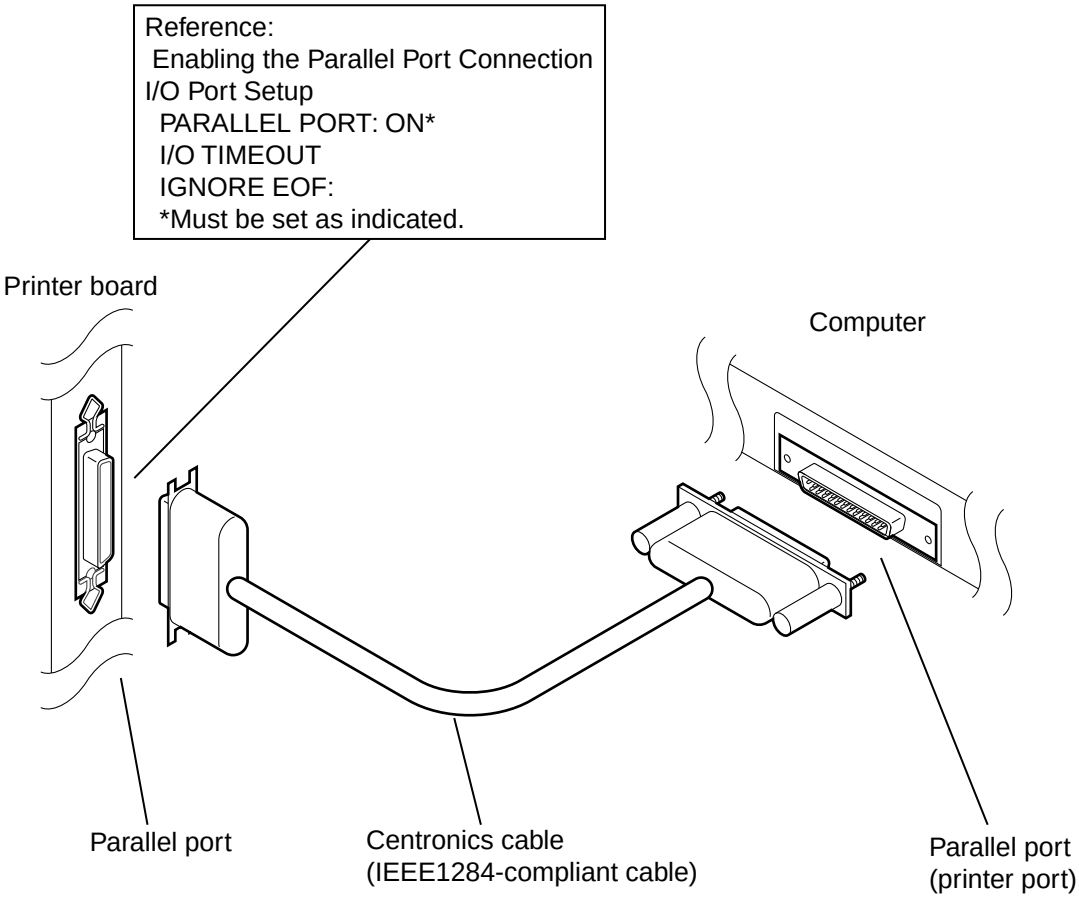


Figure 2-301

B. Connecting to a Network

1. Outline

The Printer Board comes standard with an interface for an Ethernet network: for 10BASE5, it provides an AUI connector; for 10/100BASE-T, it provides an RJ-45 connector.

In the case of 10BASE5, connect an AUI cable to the AUI connector. The AUI connector and the RJ-45 connector are connected as a single network port inside, and cannot be used simultaneously.

The 100BASE standards supported by the Board are 100BASE-TX standards. The Board is capable of automatically switching between 10BASE-T and 100BASE-TX. (Select 'AUTO DETECT' for 'ETHERNET SPEED'.)

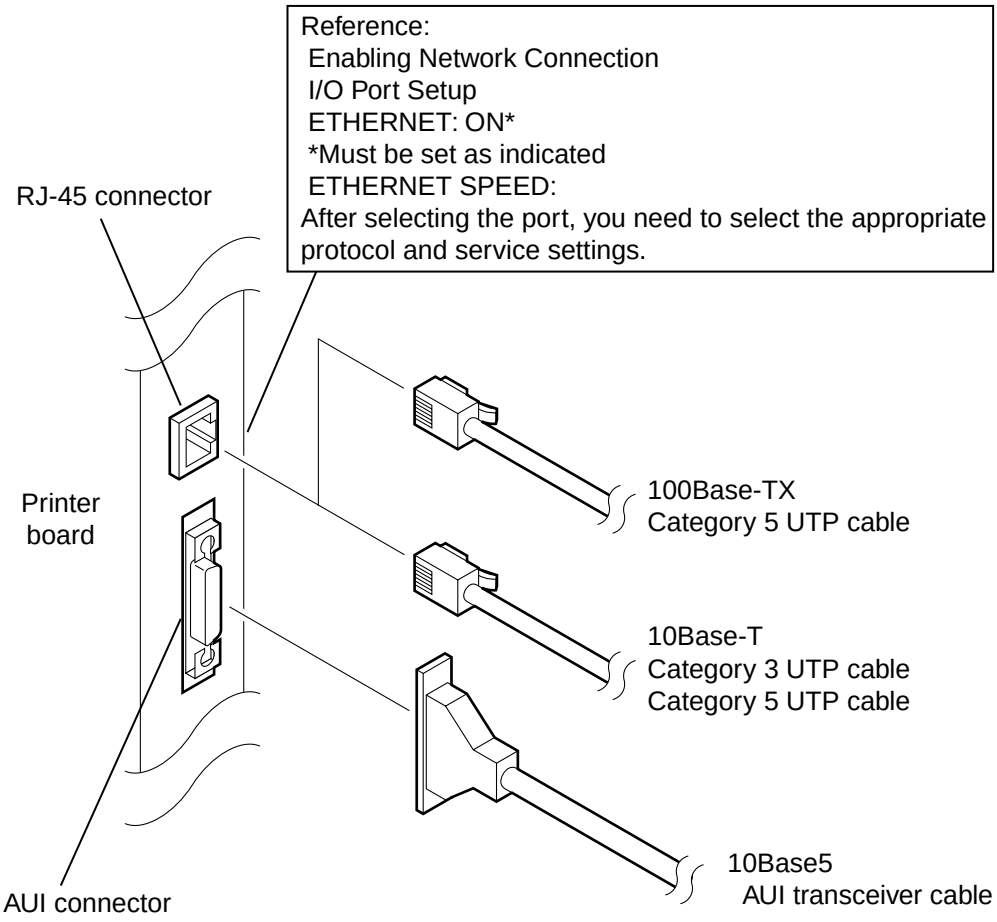


Figure 2-302

2. TCP/IP

Normally, the Internet, intranet, and UNIX networks use TCP/IP as their network protocol. Further, most Windows NT networks usually use TCP/IP. The Board supports LPD (Line Printer Daemon), which is a standard print service of TCP/IP

Since the Board also supports SMB over TCP/IP (Server Message Block), usually used for sharing printers and files on a Windows network, you can send print data directly to the Board from a PC running Windows 95/98.

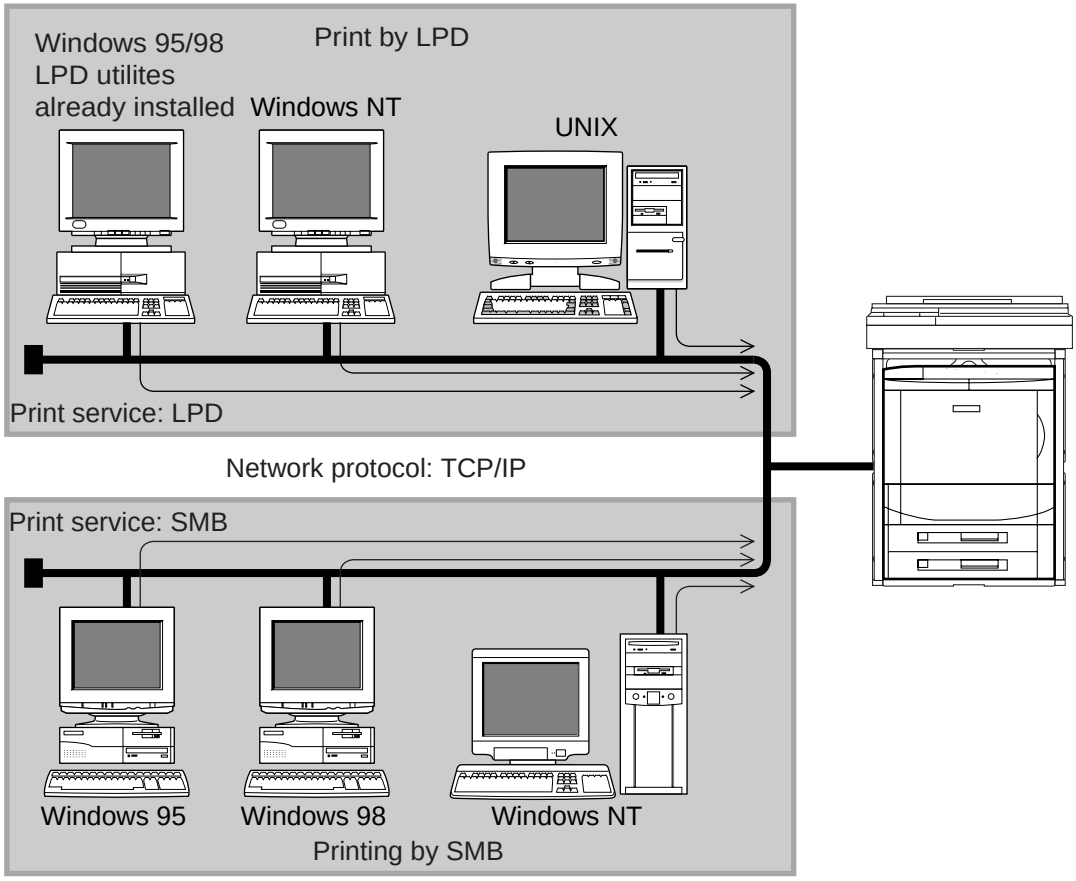


Figure 2-303

a. Using TCP/IP

To use TCP/IP, you must set the subnet mask for the network to which the Printer Board is connected and the IP address of the Board.

An IP address may be set either automatically or manually. So that the Board may automatically obtain an IP address, it supports three types of protocols: DHCP (Dynamic Host Configuration Protocol), BOOTP (BOOT Protocol), and RARP (Reverse Address Resolution Protocol).

To make use of this function, there must be a DHCP server, BOOTP sever, or RARP sever on the network with all required settings made. With this function, you will be able to control the IP addresses of the devices connected to the network from a central location.

When auto is selected, the Board requests the server to send its IP address when it turns on; in response, it will receive its IP address assigned to it.

In the case of DHCP and BOOTP, the subnet mask will also be obtained automatically in addition to the IP address; in the case of RARP, only the IP address will be obtained, and the subnet mask must be set manually.

If an IP address is to be set manually, it must be set together with subnet mask from the printer unit control panel.

If an external user not belonging to the network to which this Board is connected tries to use this Board, a gateway address must be set. A gateway address may be set either automatically or manually; if a DHCP server or BOOTP server is used, automatic setting may be selected.

If an RARP server is used or an IP address must be set manually, the gateway address must also be set manually.

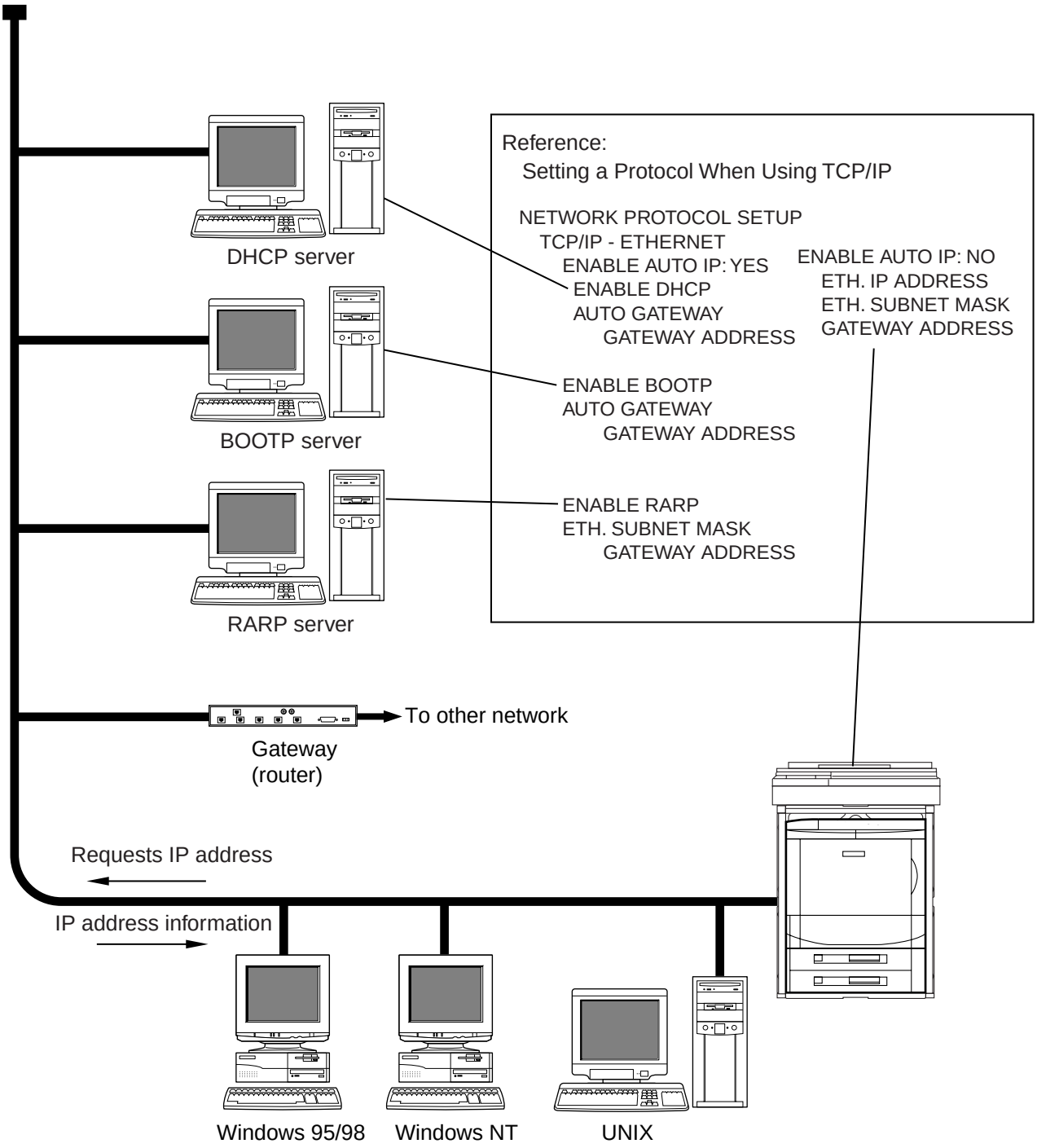

Reference:
Setting a Protocol When Using TCP/IP
NETWORK PROTOCOL SETUP
TCP/IP - ETHERNET
ENABLE AUTO IP: YES
ENABLE DHCP
AUTO GATEWAY
GATEWAY ADDRESS
ENABLE AUTO IP: NO
ETH. IP ADDRESS
ETH. SUBNET MASK
GATEWAY ADDRESS
ENABLE BOOTP
AUTO GATEWAY
GATEWAY ADDRESS
ENABLE RARP
ETH. SUBNET MASK
GATEWAY ADDRESS
DHCP server
BOOTP server
RARP server
To other network
Gateway
(router)
Requests IP address
IP address information
Windows 95/98
Windows NT
UNIX

Figure 2-304

b. Using an LPD Service

When an IP address is set for TCP/IP, the LPD service of the Printer Board will automatically be enabled.

UNIX and Windows NT provides for an LPR port for an LPD service so that print data may be sent to the Board directly from a work station without going through a server.

Although a Window NT system possesses an LPR port function; however, if Windows NT is installed using a standard installation method, the function will not be installed. To use the LPR port, select the network on the control panel, and select 'TCP/IP' as the protocol to use; then, select 'TCP/IP print' for a service to use to add the function.

Windows 95/98 does not come with an LPR port. To print using an LPD service, you must resort to a server equipped with an LPR port or make use of an LPR utility (not part of the Board).

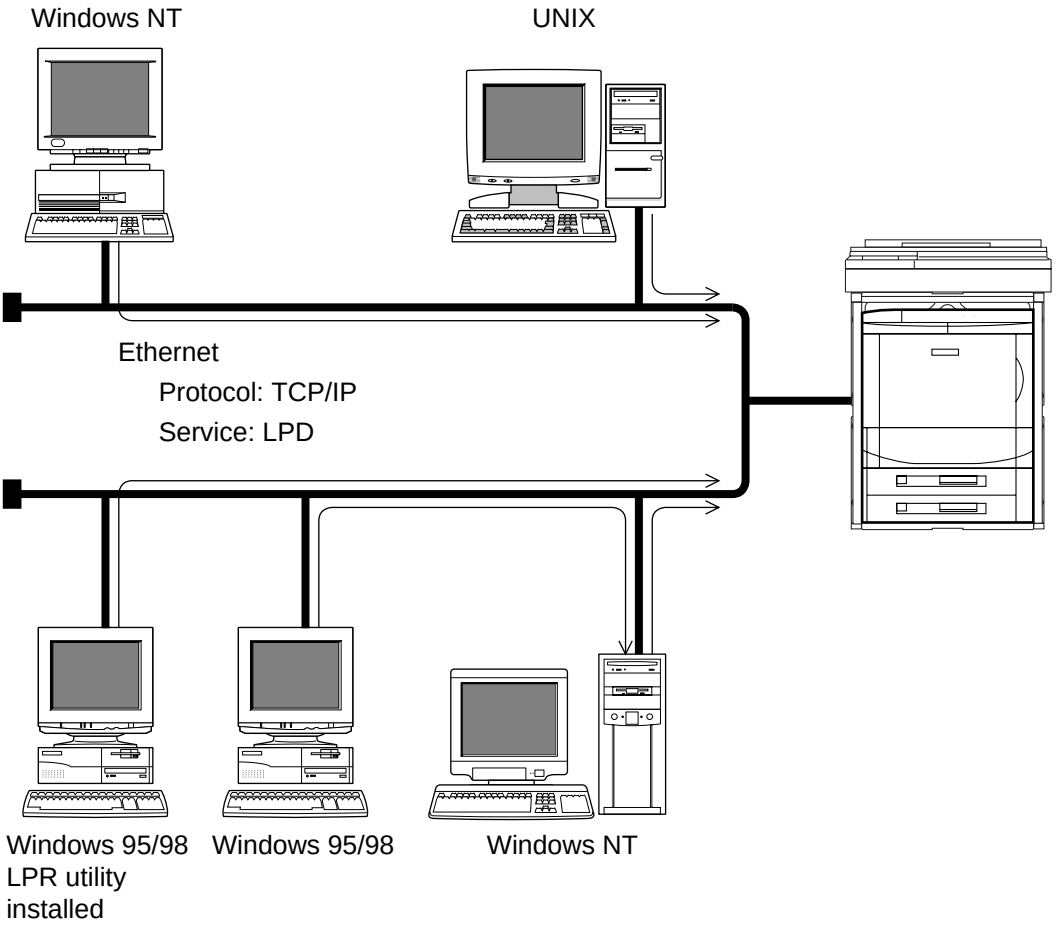


Figure 2-305

c. Using SMB over TCP/IP

SMB has been developed for a network based on NetBIOS (in which a destination is selected with reference to a computer name). SMB over TCP/IP is a protocol designed to enable the use of SMB in conjunction with the TCP/IP protocol.

On a TCP/IP network, a destination must be selected by means of an IP address not a computer name.

If a WINS (Windows Internet Name Service) server, which converts between computer names and IP addresses, exists on the network, the function may be used by connecting to the WINS server. (The auto function must be enabled so that a search will be made automatically to find the WINS server for connection. The use of a WINS server, further, can reduce the volume of communication handled on the network carried out for IP address inquiries.)

The IP address of the WINS sever may be set manually. If there is no WINS server or if you do not want to use a WINS server, the Board will make inquiries of the entire network as necessary to find out the IP address of the destination in question.

The name of the Board for an SMB service is set under 'SERVER NAME', and the notation used will be indicated on Windows network neighborhoods.

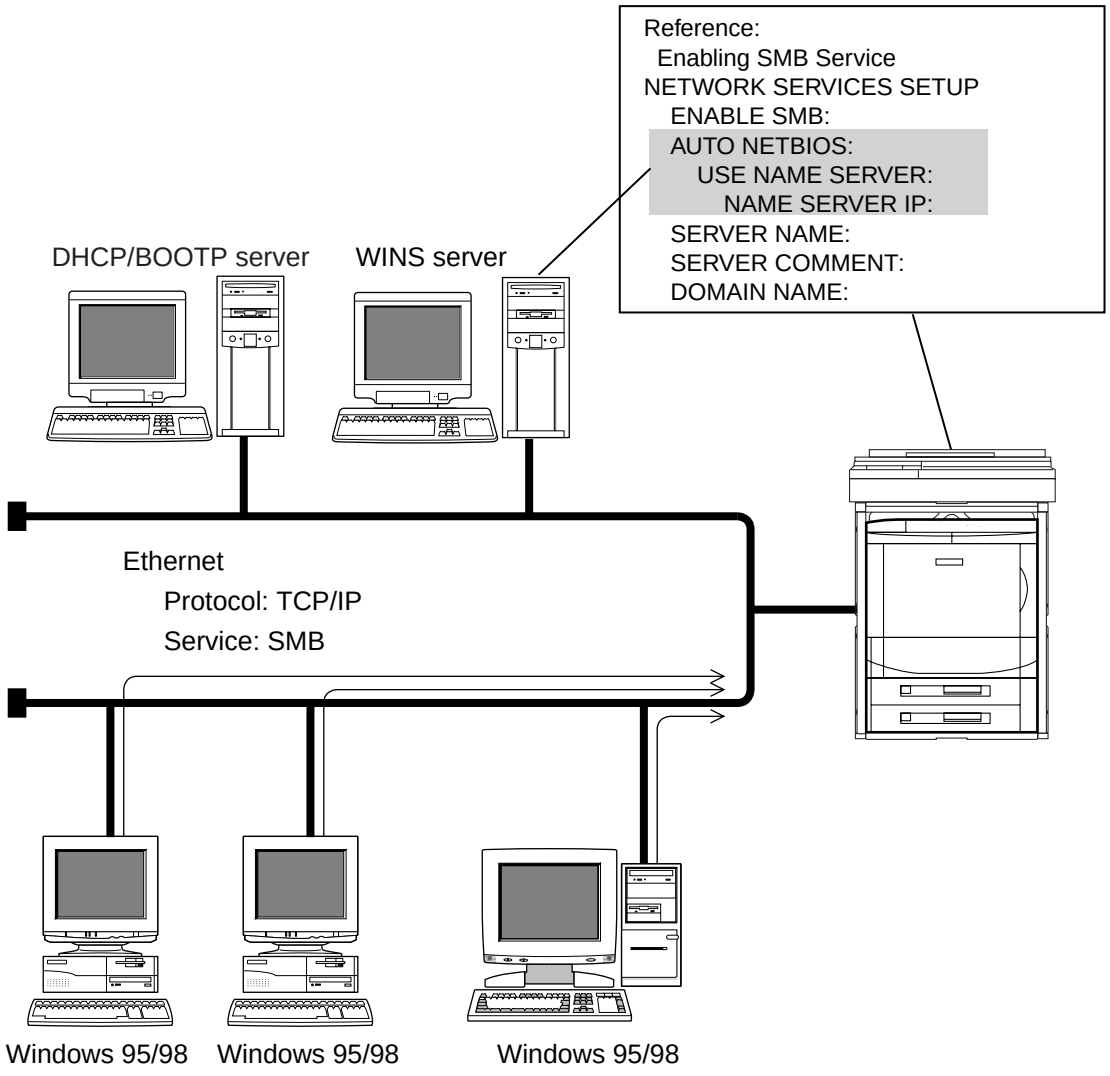


Figure 2-306

3. AppleTalk

A Macintosh network uses AppleTalk as its standard protocol. Depending on the type of network used, the protocol may be either LocalTalk, EtherTalk, or TokenTalk. (The Printer Board supports EtherTalk.)

The print service of the Board for AppleTalk is based on PAP (Printer Access Protocol). When AppleTalk is enabled for the Board, its PAP service will automatically be enabled. The Board also supports EtherTalk Phase II, so that the zone to which the Board belongs may be selected for a network on which AppleTalk zones are set.

Normally, printing in an AppleTalk environment will be direct from each computer to the printer.

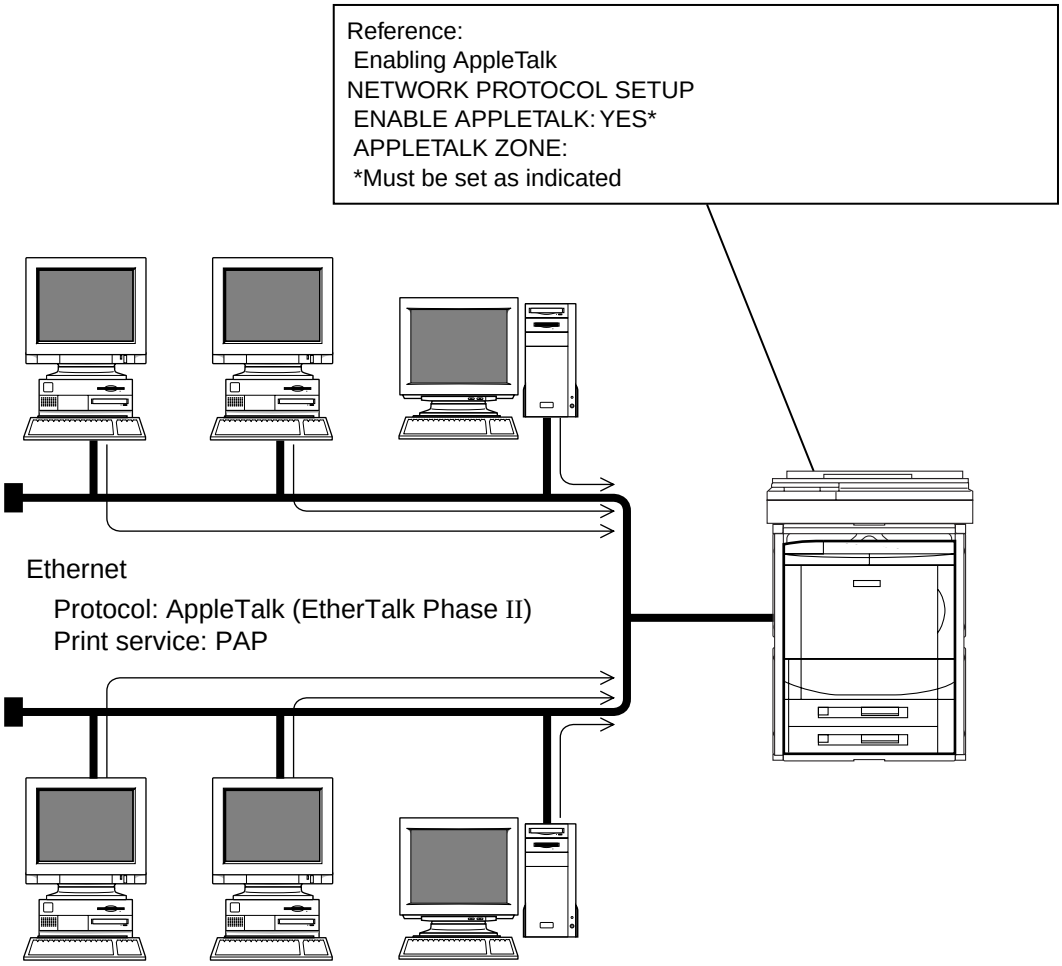


Figure 2-307

4. IPX

A network based on NetWare (from Novell) uses IPX as its protocol for print data, and the Printer Board supports two types of network configurations: bindery mode (including bindery emulation mode of NetWare 4.X) and NDS (NetWare Directory Service, used in NetWare 4.X).

In IPX, all print jobs are sent to the print queue built in a Novell file server; the printer board checks the presence of a job in the print queue at pre-specified intervals. If there is a print job, a request is issued to ask that the print job be sent to the Board, which in response prints it upon its arrival.

For IPX settings, see the Getting Started Guide that comes with the Board. The NDS settings will overwrite bindery mode settings; if two network configurations exist to a network to which the Board is connected, be sure to instruct the user's administrator to make NDS settings first.

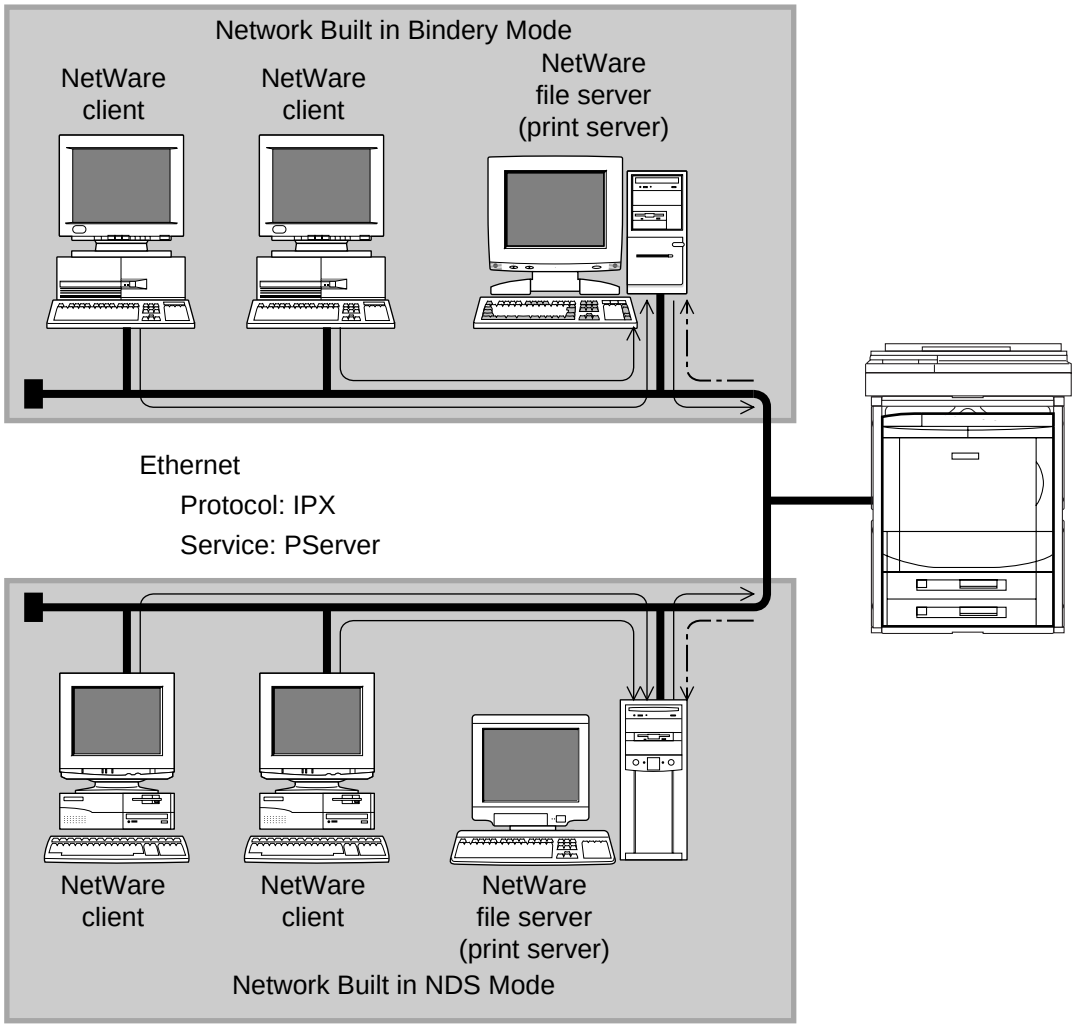


Figure 2-308

IV. PROCESSING PRINT DATA

The Printer Board processes print data as follows:

A. Print Data Connection Block

1. Connecting a Print Job

A print job received through the print data input block is handed to the print data processing block using the method of connection selected on a computer; the connection may be either of three: direct, through print queue, or through hold queue.

1) Direct Connection

A print job sent directly has the highest degree of priority, and is processed even when a job exists in a print queue. If a job is being processed in the print data processing block, a print job sent directly will be processed immediately after that job is processed.

2) Print Queue

Print jobs sent to a print queue are once stored in memory. They are then sent to the print data processing block in sequence as soon as each job has been processed in the print data processing block. The jobs are deleted from the print queue when they have been processed.

3) Hold Queue

A print job sent to the hold queue are stored in memory as it is. To print it, you must move it to the print queue using WebSpooler.

Both print queue and hold queue are built on the hard disk.

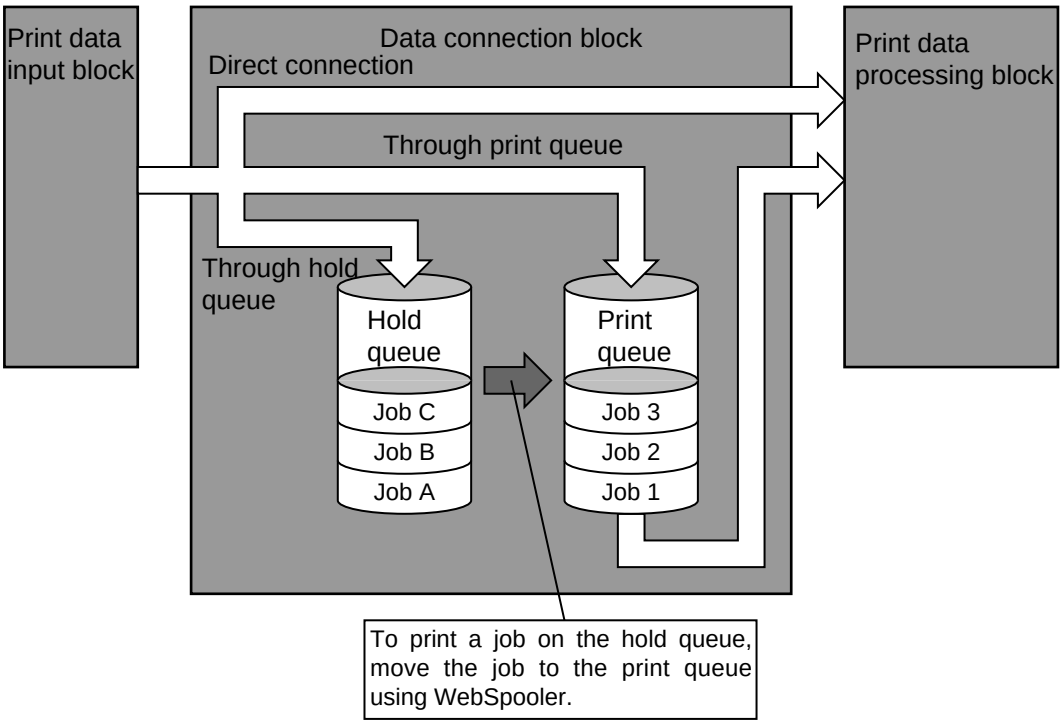


Figure 2-401

2. Printed Queue

If the printed queue is enabled, jobs are stored in printed queue after they have been printed. When you move a stored job to the print queue, you will be able to print the job without starting the application program used to create the job.

The printed queue retains as many jobs as have been set (part of server settings), and jobs in excess of the number are deleted starting with the oldest one. (Print jobs printed directly or by the downlaoder are not retained in the printed queue.)

To print a job in a printed queue, you must move it to the print queue using WebSpooler. Like other queues, the printed queue is also built on the hard disk.

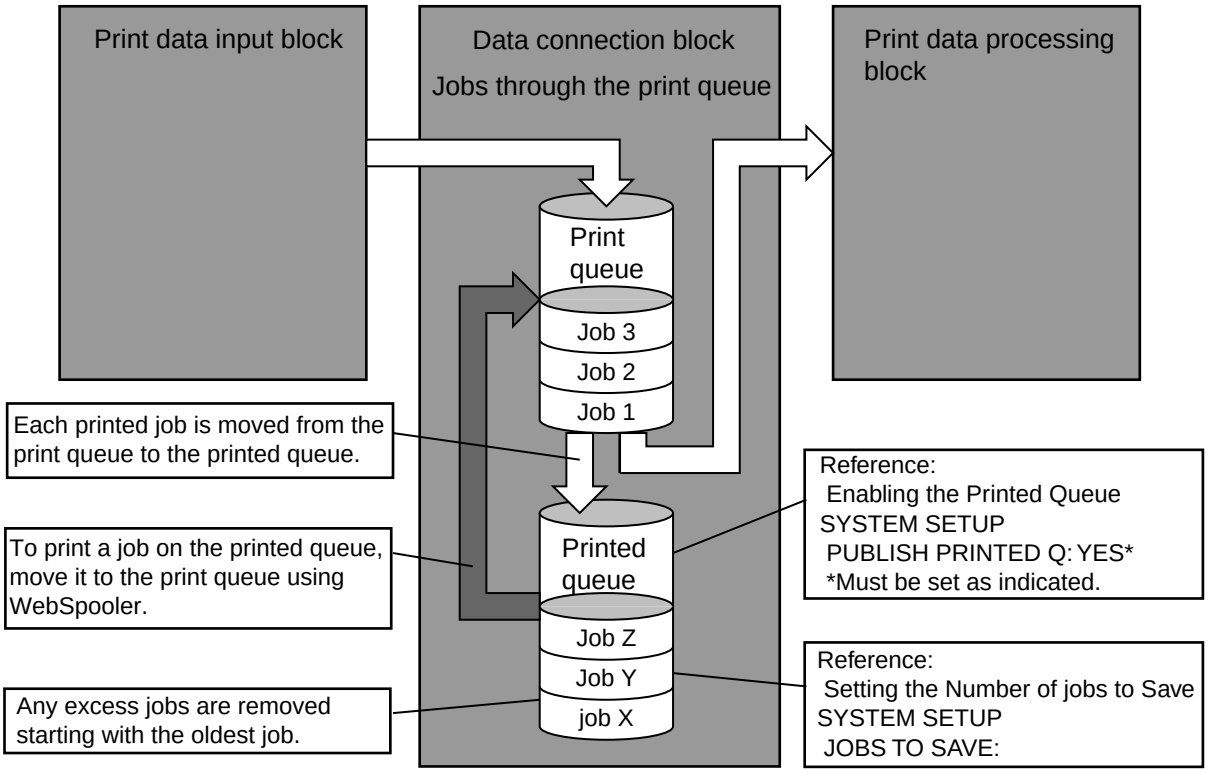


Figure 2-402

B. Print Data Processing Block

The print data processing block develops print data expressed using commands of the page description language used into a type of image data which may be printed on a printer unit (raster image or bitmap data; this process is known as RIP or raster image processing).

The program used to process data by interpreting commands is called an “interpreter,” and the Printer Board comes equipped with a PCL5 interpreter and a PostScript3 interpreter.

As many as 46 PCL fonts for the PCL5 interpreter and 117 AdobeType 1 fonts and 19 TrueType fonts (136 PS fonts in all) are stored on the hard disk.

The Board is equipped with an automatic identification mechanism of page description language, and starts the appropriate interpreter after checking the print job in question, so that it can process both PCL5 jobs and PostScript3 jobs without intervention by the user.

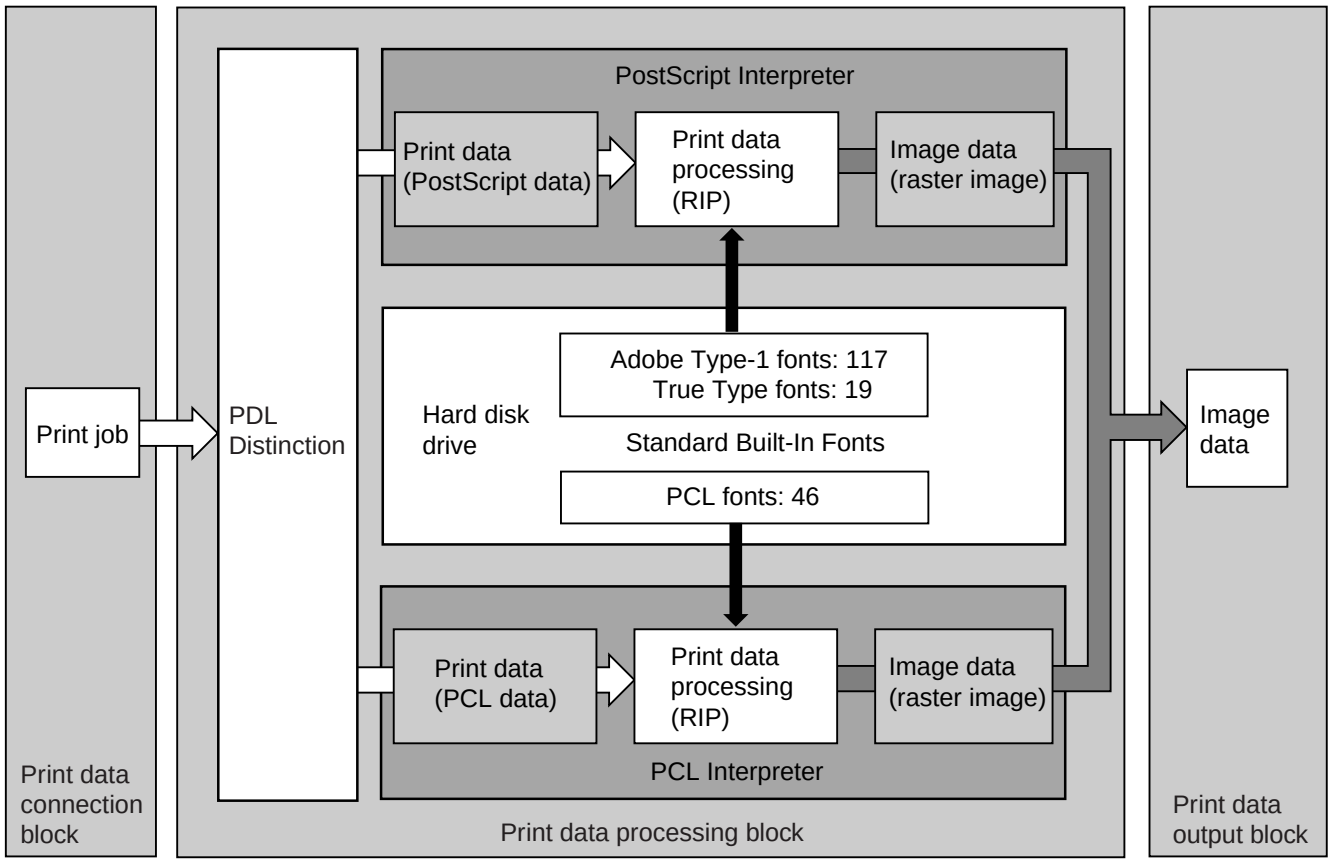


Figure 2-403

C. Image Data Output Block

When print data has been processed on the Printer Board and preparations for printing are done, the CPU on the Board sends to the CPU of the CP660 such control information as on print paper size, pickup cassettes, and delivery tray by way of starting printing operation.

When the printer unit is ready and a sync signal arrives, the image data is sent to the printer unit through the video interface of the image data output block.

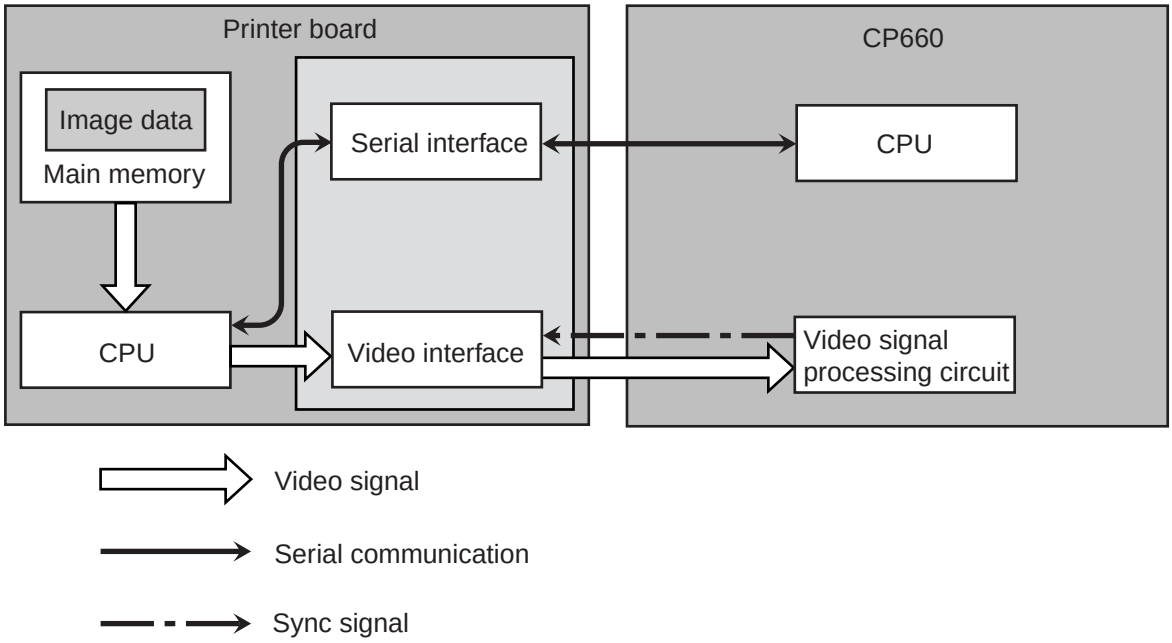


Figure 2-404

V. PROCESSING BY THE PRINTER UNIT

A. Communication by the CPU

1. Without a Reader Unit

The CPU on the Printer Board exchange information with the CPU on the DC controller PCB by way of the video interface PCB of the printer unit.

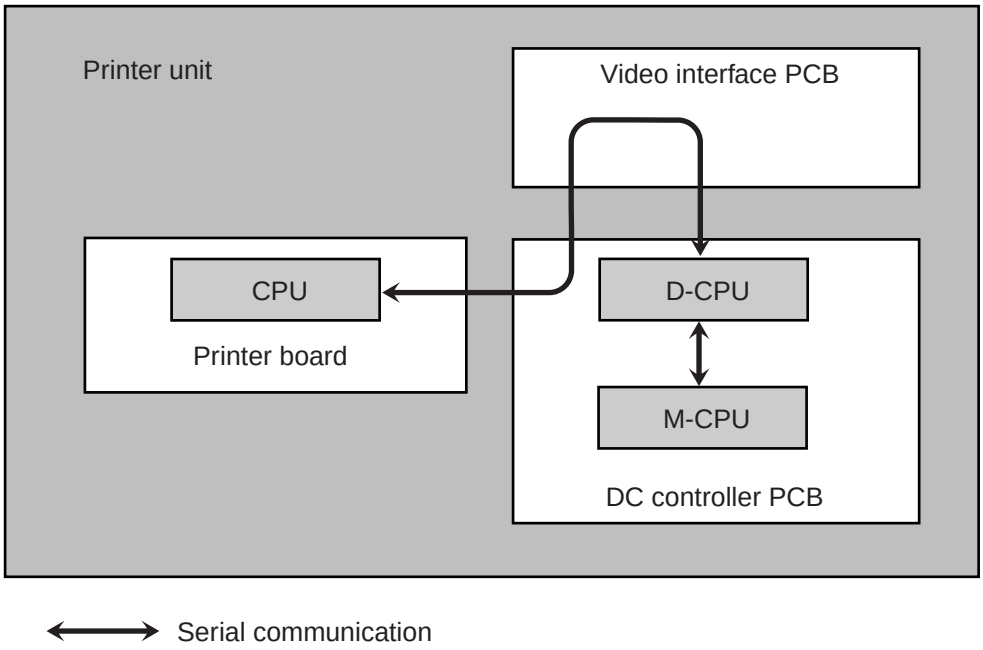


Figure 2-501

2. With a Reader Unit

The CPU on the Printer Board and the CPU on the reader controller PCB exchange information in serial. The CPU on the DC controller PCB and the CPU on the reader controller, further, exchange information in serial. The communication between the CPU on the Board and the CPU on the DC controller PCB, on the other hand, is by way of the CPU on the reader controller PCB.

When copying operation and printer operation conflict, the CPU on the reader controller PCB arbitrates.

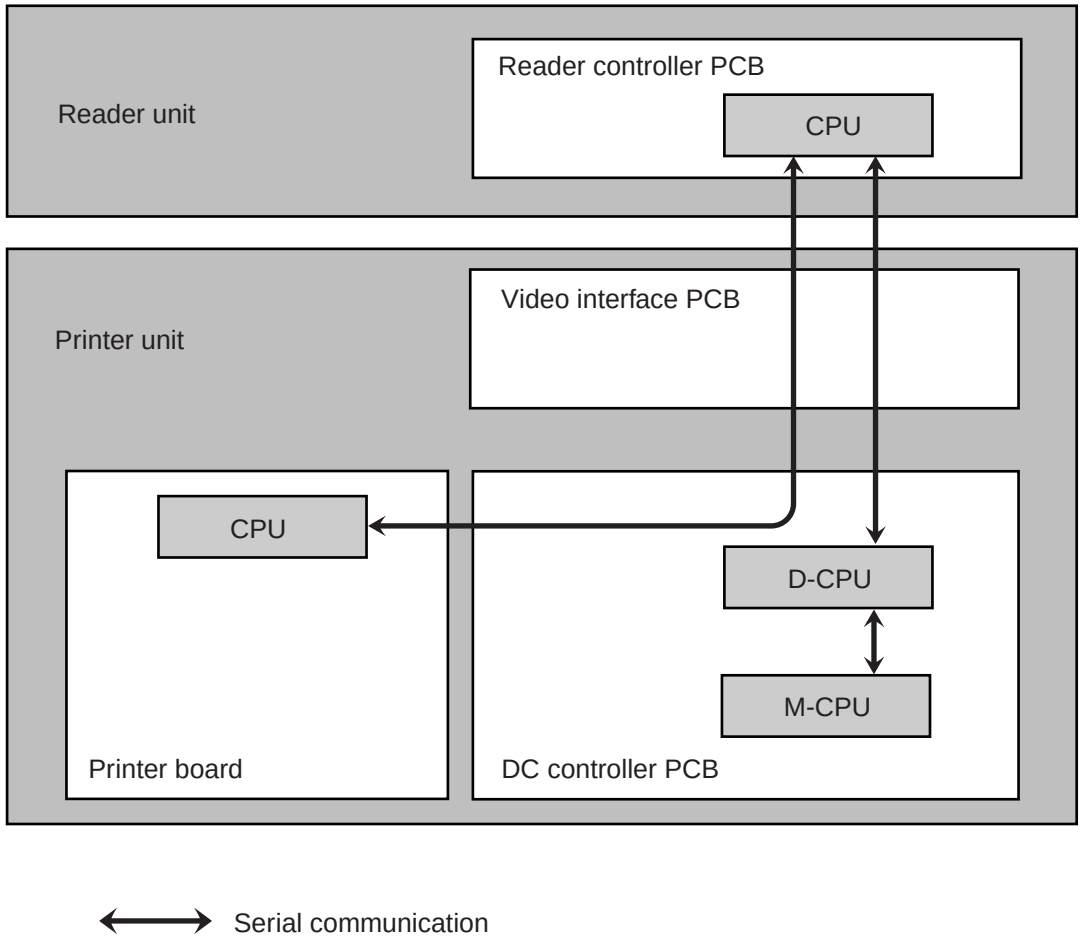


Figure 2-502

B. Printing Image Data

1. Without a Reader Unit

Prior to printing, such information as needed for the operation of the printer unit (on pickup cassette, delivery tray) is communicated to the DC controller PCB of the printer unit. When the printer unit is ready and a sync signal arrives, the image data generated by the Printer Board is sent to the DC controller PCB.

On the DC controller PCB, the image data is processed for smoothing and then sent to the laser driver PCB by generating the laser drive signal. In response to the laser drive signal, the laser driver PCB controls the current flowing to the laser diode to modulate the laser beam used to draw images on the photosensitive drum.

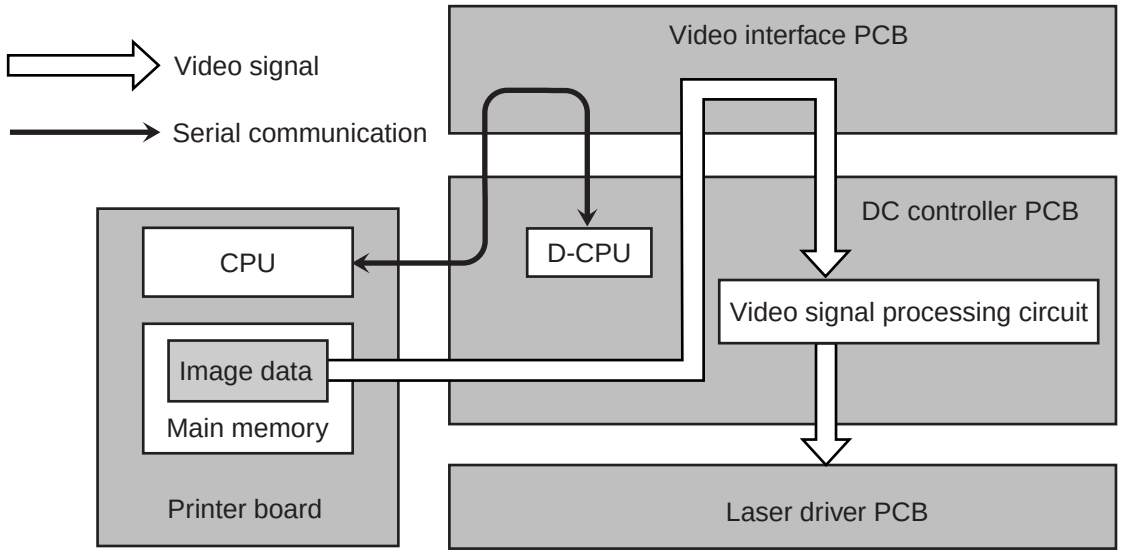


Figure 2-503

2. With a Reader Unit

Prior to printing, a request is sent to the CPU on the reader controller PCB so that the input of the video signal selection circuit on the video interface PCB will be switched to the Printer Board. Then, such information as needed to control the printer unit (on pickup cassette, delivery tray) is sent to the DC controller PCB of the printer unit through the reader controller PCB.

When the printer unit is ready and a sync signal arrives, the image data generated by the Printer Board is sent to the DC controller PCB through the video signal selection circuit. The DC controller PCB processes the image data for smoothing and the like and then sends it to the laser driver PCB by generating the laser drive signal.

The laser driver PCB, in response, modulates the laser beam by controlling the current flowing into the laser diode according to the laser drive signal, thereby drawing the print image on the photosensitive drum.

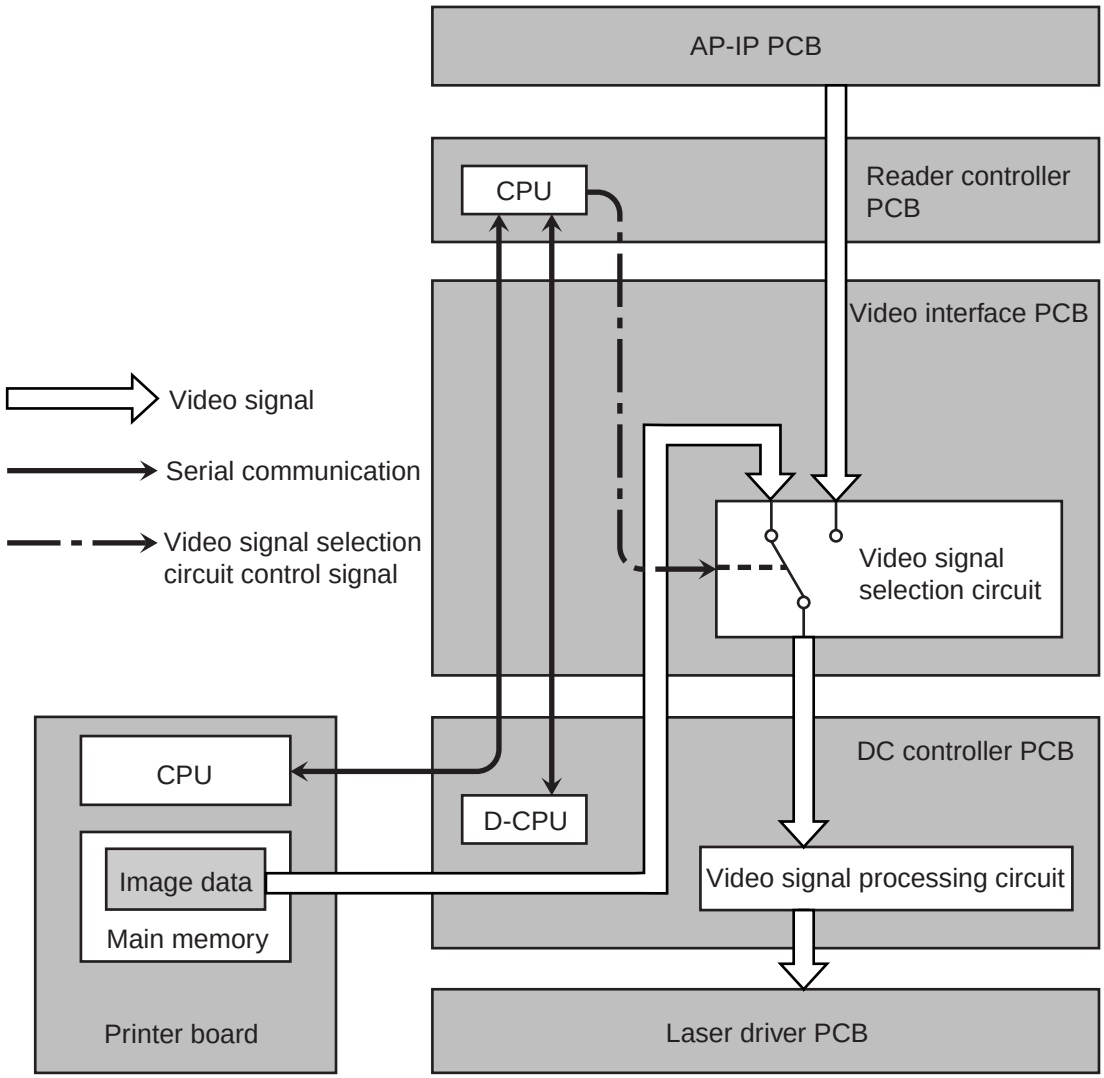


Figure 2-504

VI. PRINTER CONTROL PANEL

A. Printer Control Panel

The printer control panel is controlled by the CPU of the Printer Board.

The CPU on the Printer Board communicates with the printer control panel in serial by way of the DC controller PCB, thereby sending display indications or receiving key inputs.

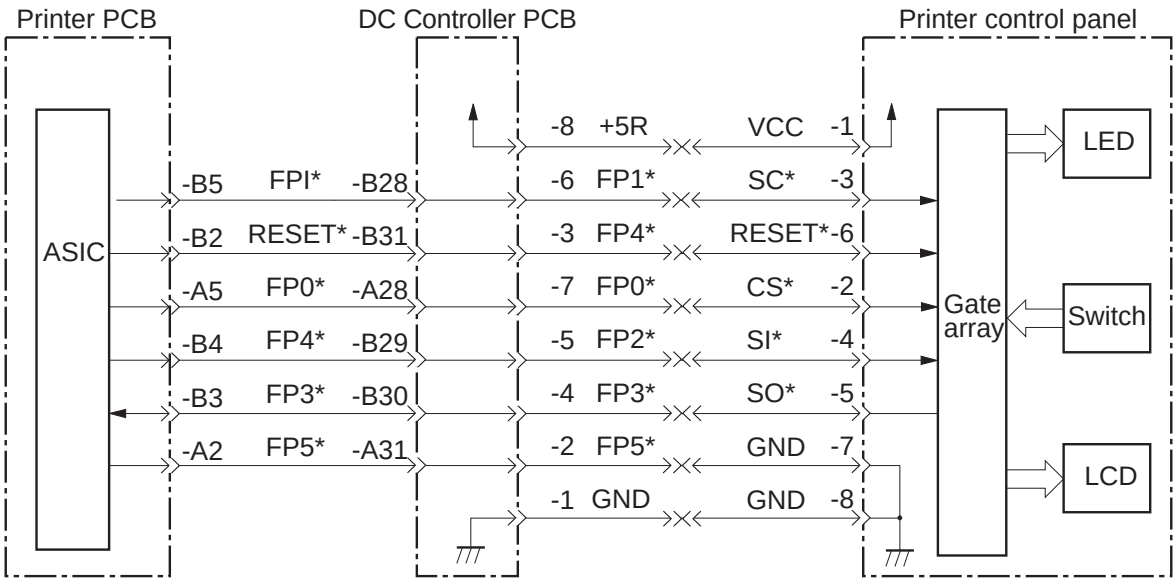


Figure 2-601

CHAPTER 3

USER SOFTWARE

I. OUTLINE

The Printer Board comes packaged with a user software CD-ROM, which contains printer drivers and utility programs. On a TCP/IP network, you can make use of the utility functions of the Board by accessing the Board using a WWW browser.

For details of how to install the user software, functions, and operations, see such user documentation as the Getting Started Guide and the User's Reference.

II. PRINTER DRIVER

When a print command is executed from an application program, the printer driver converts the image data received by the operating system from the application program into commands expressed in the page description language used by the printer. Such settings as made on the Properties screen are also converted into commands and sent to the Printer Board.

The printer drive must be specifically suited to the page description language used. The Board supports both PCL and PostScript, and the user software CD-ROM contains both printer drivers. The rules applied to the exchange of information between the operating system and the printer driver generally differ according to operating systems, requiring a printer driver for each type of operating system.

The user software CD-ROM that comes with the Board contains printer drivers developed for the following operating systems:

• Mac OS 7.1 or later
• Windows 95/98
• Windows NT 4.0

In general, a PostScript or PCL printer driver consists of the printer driver used in common by various models and printer files containing information unique to each model.

A printer information file indicates the types of internal fonts, number of pickup cassettes, presence/absence of a duplexing function, and print area size; as needed, reference to it is made by the application programs and printer drivers.

A printer information file for PostScript is called a PPD (PostScript Printer Description) file, while one for PCL is called PDD (Printer Device Description) file. The user software CD-ROM contains, in addition to printer drivers, printer information files for the Board.

A Macintosh system is built assuming that a PostScript printer will be used and, as such, no PCL printer driver for Macintosh machines (running on Mac OS) is made available. A product intended for the European market comes with PS drivers in multiple languages, and the user selects the language of his/her choice at time of installation.

If a machine is running on the Windows operating system, both PostScript and PCL printer drivers may be installed. If 'Compact' is selected when installing the user software, only the PostScript printer driver will be installed, while selecting 'Typical' will install both PostScript and PCL printer drivers and selecting 'Custom' will enable the selection of specific printer drivers.

In the case of European products, drivers of multiple languages are made available. In the case of Windows, the installation program will check the language of the operating system and will automatically select and install the appropriate driver. (In the absence of an appropriate driver, the English version will be installed.)

The versions of the printer drivers contained on the user software CD-ROM are as follows:

Operating system	PCL driver
Windows 95/98	EFI PCL Driver version 1.0
Windows NT 4.0	EFI PCL Driver version 1.2

Table 3-201

Operating system	PostScript driver
Mac OS	Adobe PostScript Printer Driver version 8.5.1
Windows 95/98	Adobe PostScript Printer Driver for Windows version 4.2.4
Windows NT 4.0	MicroSoft PostScript Driver version 4.00 (PostScript printer driver that comes with the Windows system software)

Table 3-202

The printer driver for Windows NT 4.0 does not support PostScript 3, and there are restrictions on the types of functions that may be used.

The user software CD-ROM also contains Adobe PostScript Printer Driver for Windows Version 5.1 (developed for PostScript 3) for use with Windows NT4.0. This driver, however, may not operate at the guaranteed level of performance.

The following show some of the screens appearing when 'Properties' are selected for the PostScript printer driver for Windows 95/98.

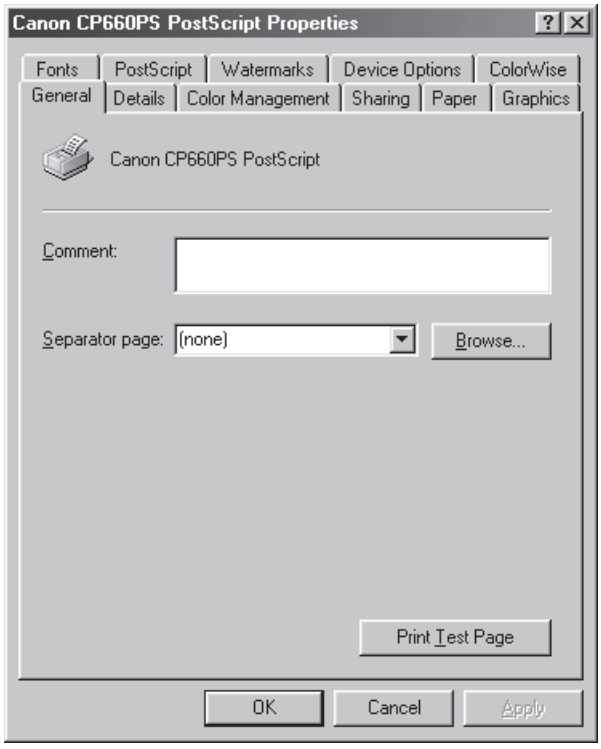


Figure 3-201

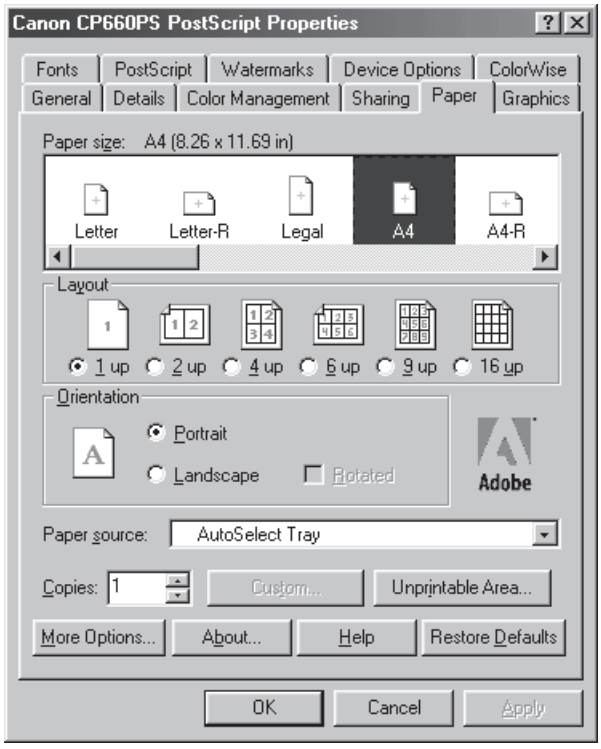


Figure 3-202

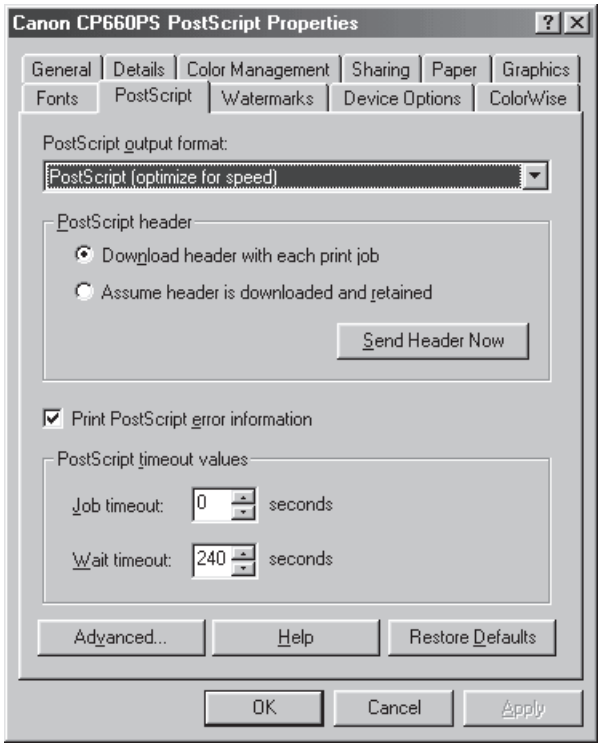


Figure 3-203

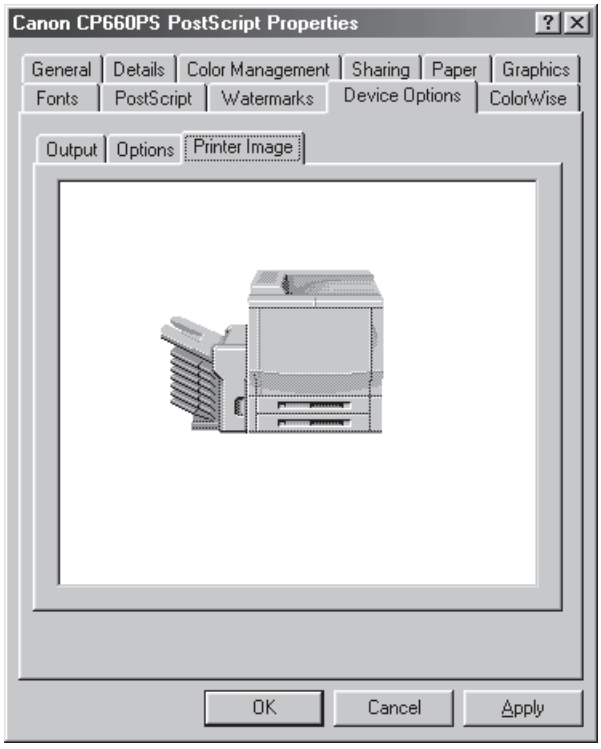


Figure 3-204

The following show some of the screens appearing when 'Properties' are selected or the PCL printer driver for Windows 95/98.

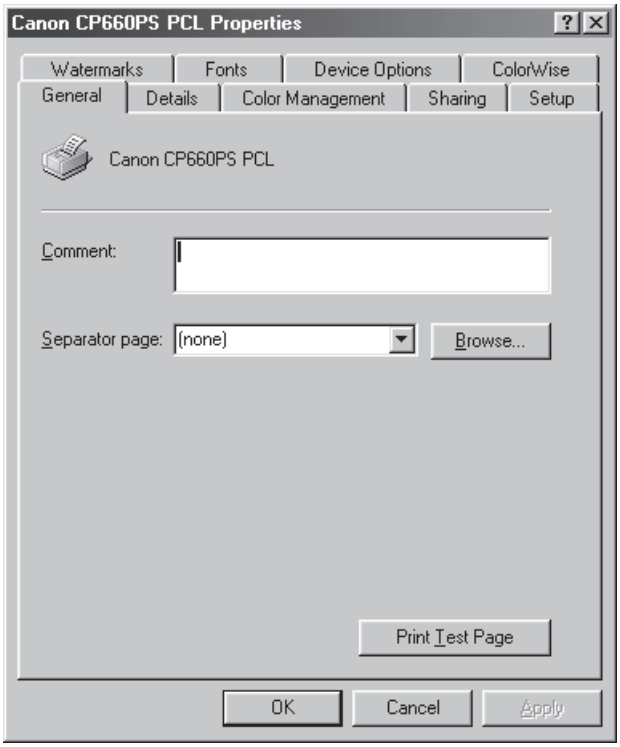


Figure 3-205

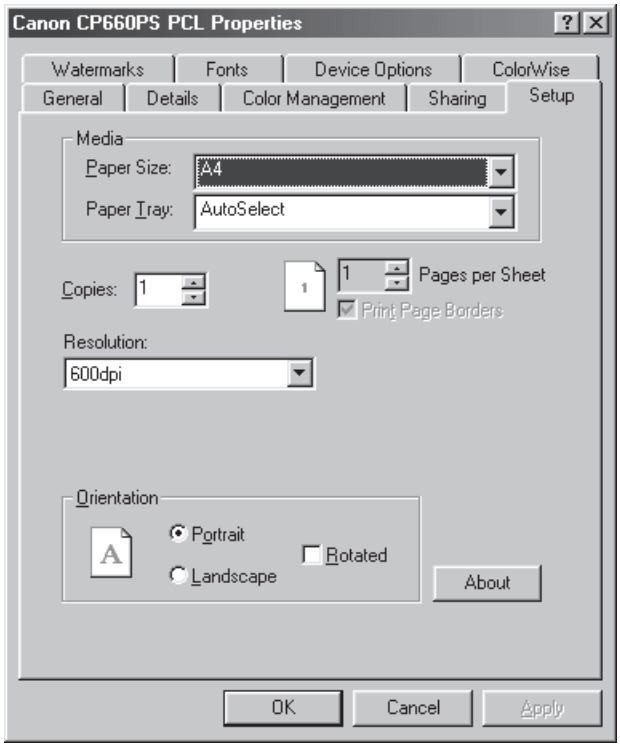


Figure 3-206

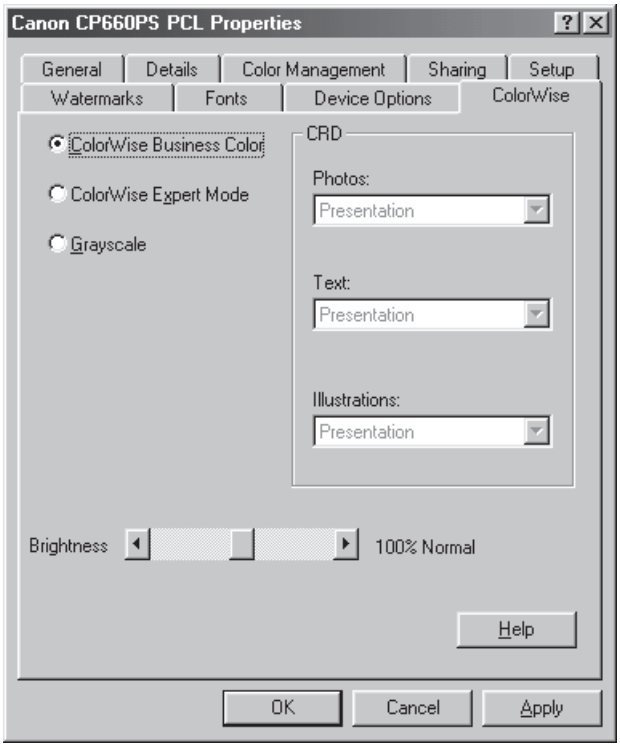


Figure 3-207

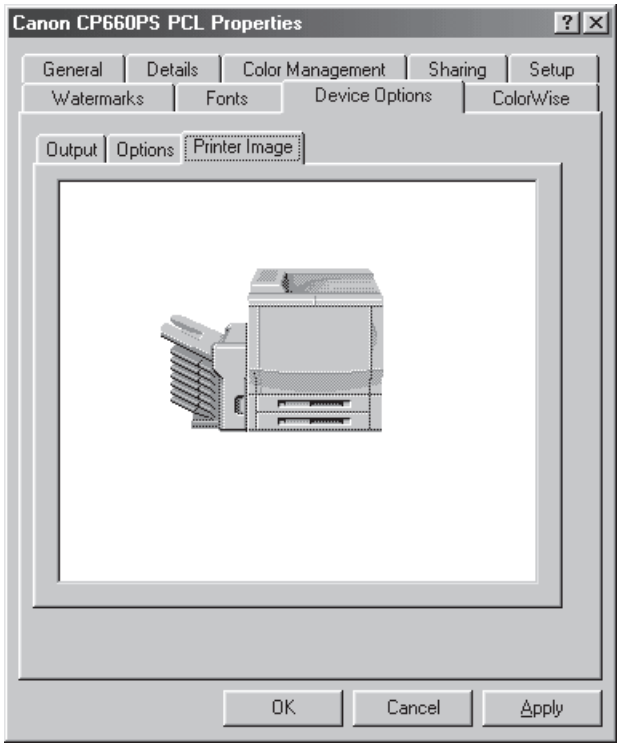


Figure 3-208

III. WebTools

A. Outline

Various functions are provided as WebTools, serving as a useful means when using the Printer Board. WebTools is a home page the Board possesses, and can be used in a TCP/IP network environment.

Table 3-301 shows possible combinations of functions (WebTools) and operating systems. (Mac OS does not allow the use of WebDownloader.)

	Mac OS	Win 95/98	Win NT 4.0
Status	Yes	Yes	Yes
WebSoopler	Yes	Yes	Yes
WebLink	Yes	Yes	Yes
WebDownloader	No	Yes	Yes

Table 3-301

To access WebTools, start the browser from Netscape Navigator or Internet Explorer (not supported by Mac OS) from a PC, and select the Printer Board. The browser must have enabled Java.

Figure 3-301 Main Menu Screen

B. Status

Use it to check the RIP status of the Printer Board and printing.The information is updated automatically.

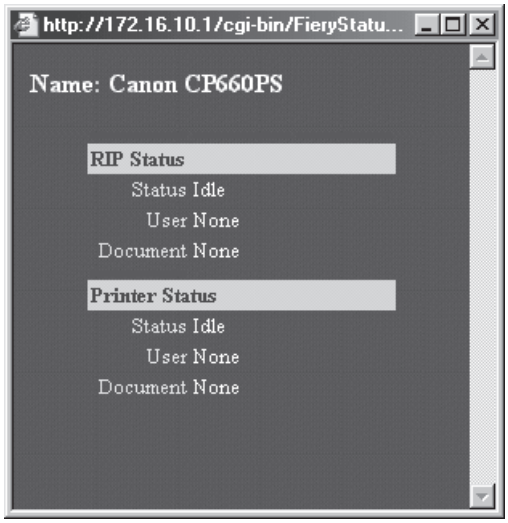


Figure 3-302 Status Screen

C. WebSpooler

WebSpooler provides the following functions to enable management of print jobs sent to the Printer Board. In default settings, the information it indicates is updated every 20 sec.

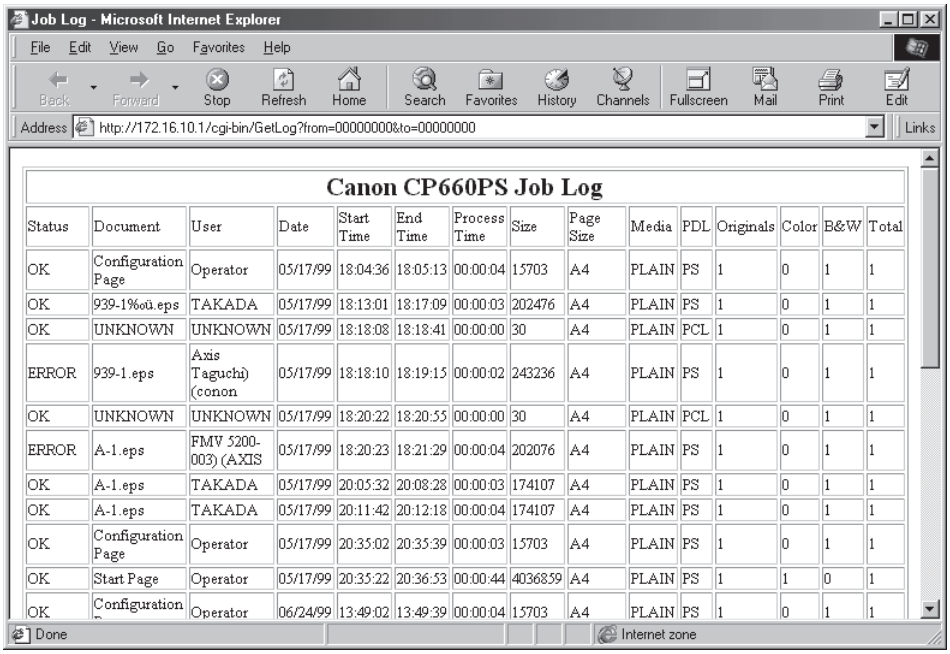
- Checking the status of print jobs.
- Changing the order of printing.
- Moving print jobs between queues.
  Printing jobs held in the hold queue.
  Printing jobs held in the printed queue.
- Canceling a job.

Figure 3-303 Main Screen

The Job Log screen provides the following functions for information used to manage print jobs:

- Checking management information.
- Printing management information.
- Generating files of management information for use by another program.

The information contained in the print log is limited to management, and it cannot be used to print a job (say, for a second time).



Canon CP660PS Job Log

Status	Document	User	Date	Start Time	End Time	Process Time	Size	Page Size	Media	PDL	Originals	Color	B&W	Total
OK	Configuration Page	Operator	05/17/99	18:04:36	18:05:13	00:00:04	15703	A4	PLAIN	PS	1	0	1	1
OK	939-1%oü.eps	TAKADA	05/17/99	18:13:01	18:17:09	00:00:03	202476	A4	PLAIN	PS	1	0	1	1
OK	UNKNOWN	UNKNOWN	05/17/99	18:18:08	18:18:41	00:00:00	30	A4	PLAIN	PCL	1	0	1	1
ERROR	939-1.eps	Axis Taguchi) (conon	05/17/99	18:18:10	18:19:15	00:00:02	243236	A4	PLAIN	PS	1	0	1	1
OK	UNKNOWN	UNKNOWN	05/17/99	18:20:22	18:20:55	00:00:00	30	A4	PLAIN	PCL	1	0	1	1
ERROR	A-1.eps	FMV 5200-003) (AXIS	05/17/99	18:20:23	18:21:29	00:00:04	202076	A4	PLAIN	PS	1	0	1	1
OK	A-1.eps	TAKADA	05/17/99	20:05:32	20:08:28	00:00:03	174107	A4	PLAIN	PS	1	0	1	1
OK	A-1.eps	TAKADA	05/17/99	20:11:42	20:12:18	00:00:04	174107	A4	PLAIN	PS	1	0	1	1
OK	Configuration Page	Operator	05/17/99	20:35:02	20:35:39	00:00:03	15703	A4	PLAIN	PS	1	0	1	1
OK	Start Page	Operator	05/17/99	20:35:22	20:36:53	00:00:44	4036859	A4	PLAIN	PS	1	1	0	1
OK	Configuration	Operator	06/24/99	13:49:02	13:49:39	00:00:04	15703	A4	PLAIN	PS	1	0	1	1

Figure 3-304 Job Log Screen

D. WebLink

If the network to which a Printer board is connected is connected to the Internet, a jump may be made to an external home page selected in advance. In default settings, Canon Home Page is selected, but a different destination may be selected.

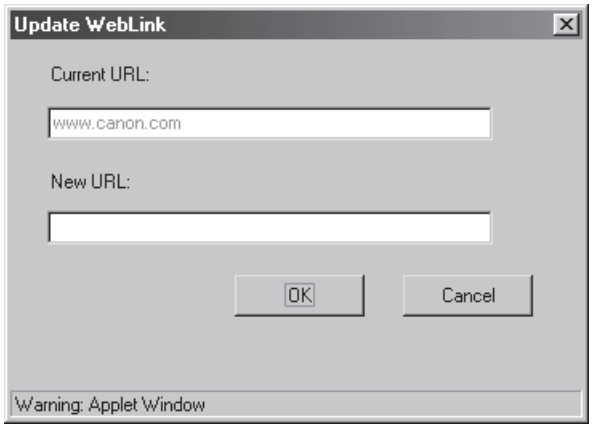


Figure 3-305 Link Change Screen

E. WebDownloader

WebDownloader provides the following functions:

- It downloads PostScript files, EPS (Encapsulated PostScript) files, and PDF (Portable Document Format) files to the Printer Board for printing.

Figure 3-306 File Selection Screen

IV. NetSpot

NetSpot is a printer management utility program which may be used on a TCP/IP, IPX, or AppleTalk network. A printer supporting NetSpot possesses a database for management information called “MIB,” or Management Information Base, and NetSpot installed to the administrator’s PC accesses this database to obtain control information and to make settings, using a protocol called “SNMP,” or Simple Network Management protocol.

Since a computer to which NetSpot has been installed can access all printers supporting NetSpot on the network, the Administrator can keep all printers on the network under his/her control.

CHAPTER 4

DISASSEMBLY/ASSEMBLY

I. DISASSEMBLY/ASSEMBLY

A. Points to Note in General

- ⚠ Be sure to disconnect the power plug for safety before starting disassembly/assembly work.
- Unless otherwise noted, assemble parts by reversing the steps used to disassemble them.
- Identify the screws by type (length, diameter) and location.
- Some screws are equipped with a toothed washer to ensure electric continuity. Be sure to use the same screws and washers.

B. When Turning Off the CP660's Main Power Switch

If the Printer Board is connected to a network, a fault can occur if its host CP660's main power switch is abruptly turned off. Be sure to obtain the consent of the Administrator in advance.

Check to make sure that the message "Ready" is indicated on the printer screen before turning off the CP660's main power switch.

C. When Handling Parts

The components of the Printer Board are susceptible to static electricity. Be sure to put on a static wrist strap before starting to handle them.

The printer board unit contains a hard disk drive, which is vulnerable to magnetism. Do NOT use a magnetic driver during disassembly/assembly work.

The hard disk drive is also rather fragile. Do not subject it to impact.

II. DISASSEMBLY/ ASSEMBLY

A. Removing the Printer Board Unit

1)

a. If no reader unit is installed,

Turn off the power switch found at the bottom left of the printer unit, and disconnect the power plug.

b. If a reader unit is installed,

Turn off the control panel power soft switch (right front of the reader unit) and the reader unit rear power switch (right rear of the reader unit) in sequence; then, disconnect the power plug.

2) Remove the interface cable from the printer board unit.
3) Loosen the two knurled screws [1], and detach the printer board unit [2].

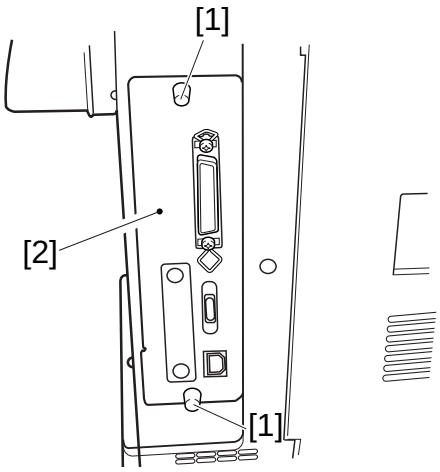


Figure 4-201

B. Removing the Printer Unit

1) Remove the two screws [2], and detach the fixing member cover [1].

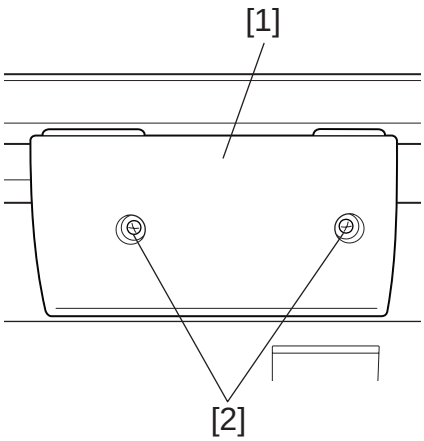


Figure 4-202

2) Remove the two screws [3].

Caution:
If there is no gap between the printer unit [4] and the fixing member [5], loosen the screw [6].

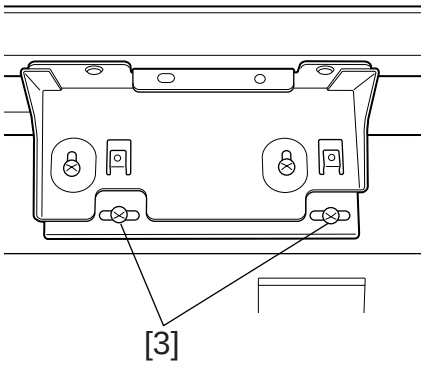


Figure 4-203

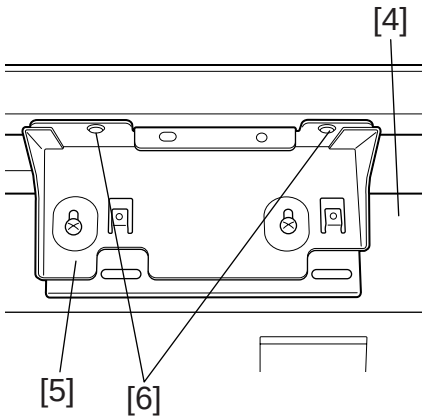


Figure 4-204

3) Pull the two side pins* [7] found on the right and the left of the rack halfway; then, pull the printer unit [8] to the front.
*PIN in the middle only.

Caution:
Be sure to turn the groove in the side pin horizontal using a coin or the like.

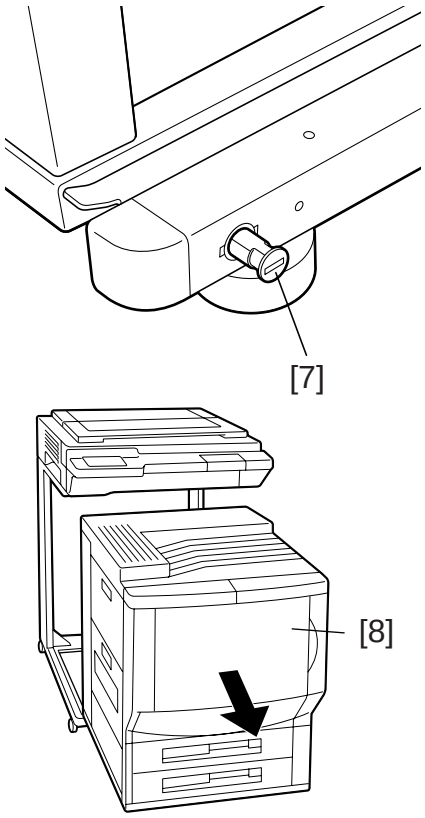


Figure 4-205

C. Removing the Control Panel

Caution:
If a reader unit is installed, be sure to remove the printer unit from the rack first. If a duplexing unit is installed, be sure to remove it before removing the fixing assembly.

1) Open the delivery cover.
2) Shift the two fixing assembly levers [1] and the releasing lever [2] in the direction of the arrows; then, lift the fixing assembly [3] slightly to pull it out to the front.

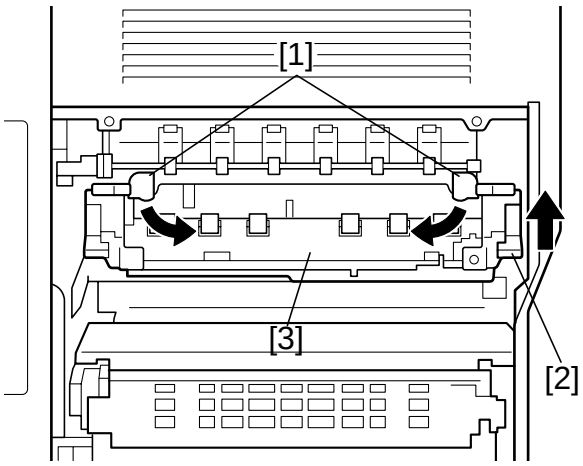


Figure 4-206

3) Open the front door of the printer unit; then, remove the screw [4], and detach the front right cover [5].

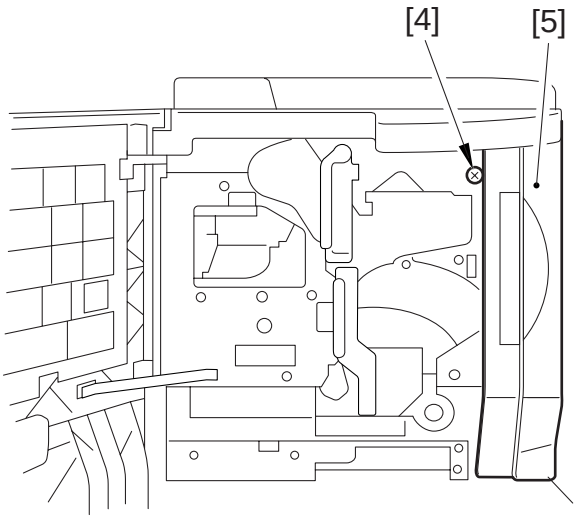


Figure 4-207

4) Open the left cover [6], and loosen the two screws [7].

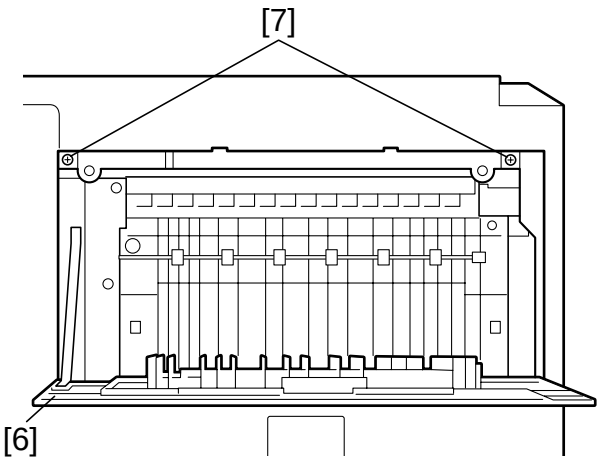


Figure 4-208

5) Open the right cover, and loosen the two screws [8].

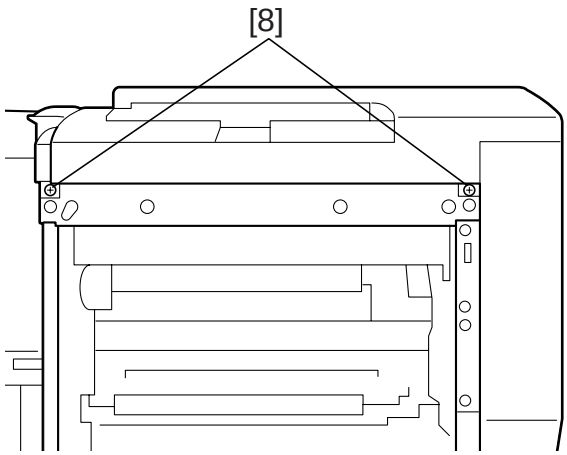


Figure 4-209

6) Lift the upper cover [9], and disconnect the connector [10]; then, detach the upper cover.

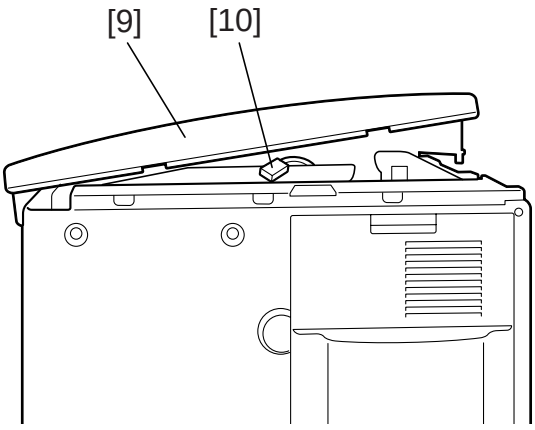


Figure 4-210

7) Remove the four screws [11], disconnect the connector [12], and remove the two cable clamps [13]; then, detach the control panel [14].

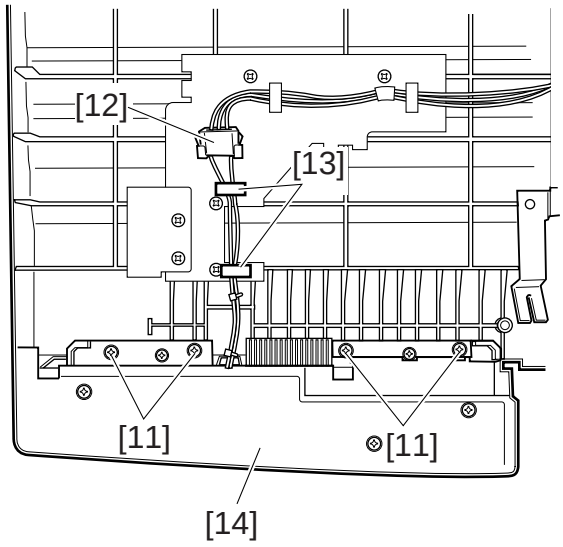


Figure 4-211

Caution:
When mounting the upper cover to the printer unit, check to make sure that its claw [15] is securely engaged with the delivery cover of the printer unit.

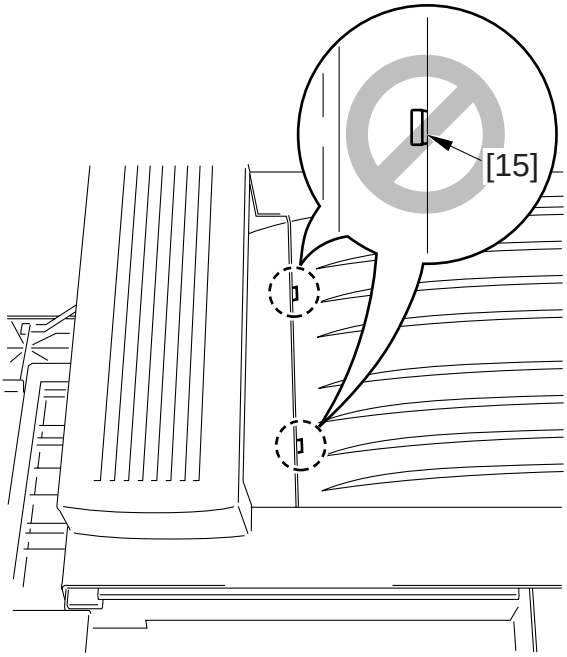


Figure 4-212

D. Removing the Hard Disk Drive

1) Remove the printer board unit from the machine.
2) Remove the four screws [2] from the printer board unit [1].

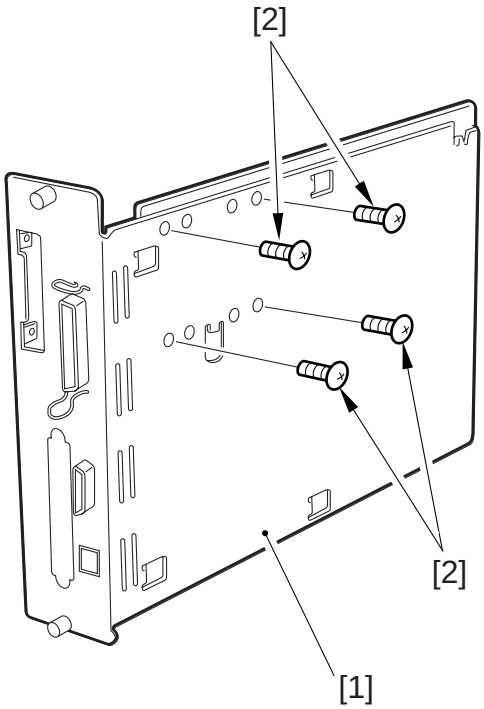


Figure 4-213

3) Pull the hard disk drive [3] toward the face plate; then, pull it to the front to detach.

Caution:
The hard disk drive is vulnerable to impact. Be sure to handle it with care.
It is also vulnerable to magnetism. Be sure to avoid using a magnetic screwdriver or the like near it.
Do not touch the PCBs mounted behind the hard disk drive.

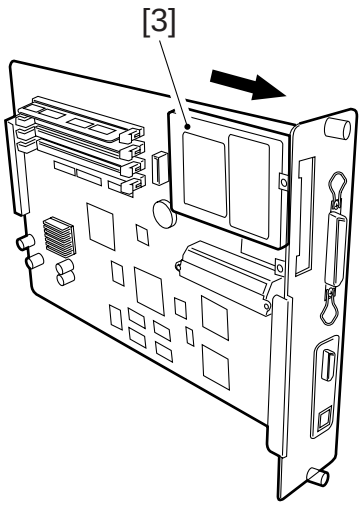


Figure 4-214

E. Removing the DIMM

1) Remove the printer board unit from the machine.
2) Open out the levers on both ends of the connector, and remove the DIMM from the connector.

Caution:

Do not touch the plated terminals on the ends of the DIMM; otherwise, poor contact can occur.

When mounting the DIMM, pay attention to its orientation with reference to the cut-off in it.

CHAPTER 5

INSTALLATION

I. OUTLINE

Figure 5-101 shows the flow of work for installing the printer board.

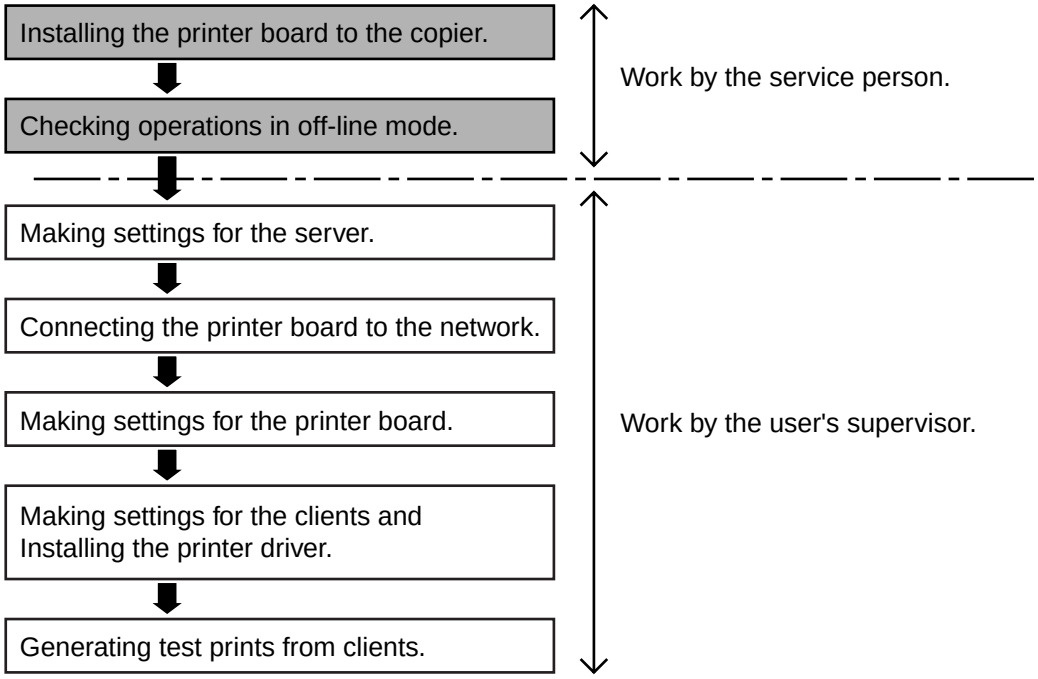


Figure 5-101

II. POINTS TO NOTE

A. ROM Version of the Machine

When installing the Printer Board, be sure the CP660's ROM version is as follows:

- DC Controller PCB D-CON
  MC: 6 or later
  DC: 5 or later
- Reader Controller PCB
  R-CON: 41 or later
- Accessory Controller PCB
  OP-CON: 6.7 or later

The DC controller PCB is upgraded by replacing the PCB itself.
The reader unit is upgraded by replacement of the DIMM or by downloading.
The accessory controller PCB is upgraded by replacement of the PROM.

B. Installation

An "Installation Procedure" is packaged with the Printer Board, showing how the Board may be installed (including the steps to follow in the event that an Accessory Interface Unit-B1 has already been installed).

If you are planning to install the Board together with an Accessory Controller-A1 and an Accessory Interface Board-B1, install the boards according to the instructions in the Installation Procedure that comes with the Accessory Interface Board-B1.

To install the Printer Board, you need to set 'DEFAULT LOCALE'. Be sure to follow the instructions in the Installation Procedure. The setting differs depending on the site of installation; follow the instructions from the Service Department of each Sales Company. (If you changed the setting, on the other hand, be sure to execute 'CLEAR NVRAM PARAMETERS'.)

The Installation Procedure comes with two jumper heads. Store them away, since you will need them when installing the program contained in the flash ROM at time of installation or the like.

C. Default Paper Sizes

The Board uses paper selected as of the default size when printing test pages. The initial size of the default paper is determined by the setting of DEFAULT LOCALE in controller service mode, not by the language selected on the control panel.

At time of shipment from the factory, UNITED STATES is selected so that LTR is the default size. Selecting EUROPE will switch the paper size to A4. If you select a different paper size using DEFAULT PAPER SIZE under PRINTER SETUP, that size will be stored in memory as the default paper size.

D. Checking the Operations

After installation, check the operations by printing configuration pages as follows:

1) Turn on the CP660's power switch.
2) Wait until the message "READY" appears on the printer unit control panel.
3) Press the Menu button so that the message "PRINT PAGES FROM LIST" will appear.
4) Press the Enter/Online button.
5) Select 'CONFIGURATION'.
6) Press the Enter/Online button.
7) Check to make sure that a configuration page has been printed, indicating the current settings of the Printer Board.

The MAC address of the Board is indicated as a network item on the configuration page. You will need to know the MAC address when making settings on the network server or the like. Communicate the MAC address to the Administrator.

E. Media Pack

The Printer Board comes with a media pack, which contains documentation and CD-ROMs, holding user software. When you have installed the Printer Board and checked its operations, request the Administrator to make settings for the Board and the network server by referring to the manuals.

1. User Software CD-ROM

The following two CD-ROMs come packaged with the Board:

• User Software CD-ROM

It contains printer drivers supporting the Board as well as additional fonts and utility programs.

• NetSpot CD-ROM

It contains NetSpot, which is a utility program used to remotely manage the Board on the network.

2. User Documentation

The following documents come packaged with the Board:

• GETTING STARTED GUIDE

This manual describes how to install the printer, the user software, and how to set up printing from Windows and Macintosh computers.

The following major topics are included:

- Overview and system requirements
- Unpacking and setting up the printer
- Adding paper
- Using the printer control panel
- Connecting the printer
- Installing Windows and Macintosh software

• USER'S GUIDE

This manual provides an overview of the printer and how to operate it.

The following major topics are included:

- How to operate the printer
- How to handle and use print media
- Troubleshooting
- Routine user maintenance procedure
- Printer specifications, accessories, and supplies

• USER'S REFERENCE

This manual gives an overview of desktop color concepts and issues and describes how to maintain and calibrate the printer. It explains how to configure and print from various platforms-PostScript printing from the Macintosh and PostScript and PCL printing from Windows 98, Windows 95, and Windows NT 4.0.

The following major topics are included:

- Color printing
- Printing from Macintosh and PC-compatible computers and UNIX workstations
- Printing from popular applications
- Using Fiery WebTools to manage print jobs
- Fonts and aditional font utilities

• Release Notes

This document describe last-minute product information and workaround for some of the problems.

F. Generating the Configuration Page

When you have made settings for the Printer Board, encourage the Administrator to generate and keep a configuration page as a reference for settings as follows:

1) While the message “READY” is indicated on the printer unit control panel, press the Menu button so that the message “PRINT PAGES FROM LIST” appears.
2) Press the Enter/Online button.
3) Select ‘CONFIGURATION’.
4) Press the Enter/Online button.
5) See that a configuration page is generated indicating the current settings of the Printer Board.

CHAPTER 6

MAINTENANCE AND SERVICING

I. VERSION INDICATION

The Printer Board's hard disk drive contains system software, and its flash ROM contains boot strap and bottom code: the version of each of these three pieces of software may be checked as follows:

System Software

The system software of the Board is not given a version number. The date of its creation is indicated as a part of printer information on a start page and on a configuration page (controller firmware version).

Boot Strap

The version and the date of creation may be checked under 'VERSION INFO' of the Board's service mode. For how to obtain the information, see the descriptions on service mode in this chapter.

Boot Code

The version and the date of creation may be checked under 'VERSION INFO' of the Board's service mode. For how to obtain the information, see the descriptions on service mode in this chapter.

II. POINTS TO NOTE WHEN REPLACING PARTS

Keep the following in mind when replacing parts:

Printer Board

If you have replaced the Board, detach the EEPROM (U11) from the old PCB and mount it to the new PCB. After mounting the EEPROM, check to make sure that the IC pins are securely in the socket.

After replacing the Board, fit a jumper head to J27 and start up the Board; then, set 'DEFAULT LOCALE' in service mode. After making settings, remove the jumper head from J27, and store it away.

Hard Disk Drive

If you have mounted a hard disk drive (service part), execute low-level formatting in service mode before installing the system software.

If you have replaced any of the parts, the existing settings will have been cleared; be sure to make the appropriate settings newly:

- Printer Board
- Hard disk drive

The existing settings will also be cleared when you install the system software, requiring you to make settings newly.

If you place the Printer Board or the printer board unit, the existing MAC address will be replaced with a new one. If the user is printing on a network, generate a configuration page after replacement to check the new MAC address and communicate it to the Administrator.

Backup Battery

Note:
Replace the lithium battery only with the one listed in the Parts Catalog. Use of different battery may present a risk of fire or explosion.
The battery may present a fire or chemical burn hazard if mistreated. Do not recharge, disassemble, or dispose of it in fire.
Keep the battery out of reach of children and discard any used battery pomptly.

III. SERVICE MODE

A. Outline

The Printer Board provides controller service mode for use as when installing the system software. You will use the Board's service mode from the printer unit control panel, and the CP660 provides the following:

- Printer service mode
- Reader service mode

Printer service mode is designed for the printer unit, and it is operated from the printer unit control panel. For printer service mode, see the CP660's Service Mode.

The reader service mode is operated from the reader unit control panel, and it includes service mode of the printer unit. If a reader unit is installed, be sure to operate printer service mode from reader service mode. For reader service mode, see the CP660 IR's Service Manual.

B. Starting Controller Service Mode

While holding down the Down Arrow button and the Menu button on the printer unit control panel, turn on the CP660's power switch. Be sure to hold down the button until the display indicates the message "START SELF-TEST."

When self diagnosis ends and the Board starts in controller service mode, the message "VERSION INFO" will appear in the display.

C. Controller Service Mode

The menu items and the functions of controller service mode are as follows:

Item	Function
VERSION INFO BOOTSTRAP/BOOTCODE	Use it to indicate the version of the program stored in the flash ROM.
INSTALL UPGRADES BOOT CODE/FILE SYSTEM	Use it to install programs to the flash ROM or the hard disk. Use BOOT CODE to install programs to the flash ROM. Use FILE SYSTEM to install the system program to the hard disk.
FORMAT DISK NO/LOW LEVEL/HIGH LEVEL	Use it to format the hard disk mounted on the Board.
CHANGE ENET MAC ADDRESS (indicated only when J27 is fitted with a jumper head)	Use it to change the MAC address of the Board's Ethernet interface.
CHANGE DEFAULT LOCALE (indicated only when J27 is fitted with a jumper head) EUROPE/JAPAN/UNITED STATES/UNKNOWN /EUROPE2/JAPAN2/UNITED STATES2	Use it to change default printer names and messages for service maintenance and user maintenance. For specifics, be sure to follow the instructions from the Service Department of the Sales Company.
CLEAR NVRAM PARAMETERS NO/YES	Use it to return all settings made in user mode and service mode to factory settings.

Notes:
1. The high-level formatting of the hard disk finishes in several seconds, while the low-level formatting takes about 30 min.
2. If you have formatted the hard disk, be sure to execute 'CLEAR NVRAM PARAMETERS'
3. 'CHANGE ENET MAC ADDRESS'and 'CHANGE DEFAULT LOCALE'are indicated only when controller service mode is started with the Board's J27 fitted with a jumper head.
4. A significant fault can occur if 'ENET MAC ADDRESS'is changed. As a rule, do not change its factory setting.
5. The setting of 'DEFAULT LOCALE'will not change even if you format the hard disk, install the system software, or execute 'CLEAR NVRAM PARAMETERS'
6. If you changed ‘DEFAULT LOCALE’, be sure to execute ‘CLEAR NVRAM PARAMETERS’.

Table 6-301

D. Default Locale

The name of the host machine to which the Printer Board is installed is different from one sales area to another. Further, depending on whether part of maintenance work is performed by the user or the service person, different messages must be used. The item 'DEFAULT LOCALE' in service mode is provided so that the appropriate switch-over may be made collectively:

Area	Model name on the Start Page	Default Printer Name	Default Paper Size	Message
EUROPE	CP660	Canon CP660PS	A4	Service Maintenance
UNITED STATES	imageCLASS C2100	imageCLASS c2100	Letter	User Maintenance
UNITED STATES2	imageCLASS C2100	imageCLASS c2100	Letter	Service Maintenance

Settings other than those in the table are outside the scope of specifications.

Table 6-302

The setting of 'DEFAULT LOCALE' remains effective until it is changed next time, and it will not be affected even when the hard disk is formatted or the system software is installed newly.

The items 'default printer name' and 'default paper size' represent the initial values occurring as the result of executing 'CLEAR NVRAM PARAMETERS', and may be changed to suit the user's needs.

In the case of 'user maintenance', a message prompting the user to take maintenance work will be indicated instead of an error code in response to a fault associated with E013, E810, E813 and E814.

IV. SELF DIAGNOSIS

A. Self Diagnosis at Start-Up

The Printer Board is equipped with a self diagnosis function which runs a check on each part of the Board at power-on and indicates the result in the display of the printer unit control panel.

B. Error Code (E240)

If no reader unit is installed, the Board communicates with the DC controller PCB of the printer unit at such times as necessary. If a reader unit is installed, on the other hand, it communicates with the reader controller PCB of the reader unit. If a fault occurs in the communication, an error code (E240) will be indicated on the control panels of the printer unit and the reader unit.

If the cable from the reader unit is not properly connected to the connector of the printer unit, 'E240' will be indicated on the control panel of the reader unit, and the printer unit will repeat self diagnosis. If such a symptom is noted, be sure to turn off the main power switch and check the connection of the cable from the reader unit.

If a fault occurs in the printer unit, an error code associated with the symptom will be indicated on the control panel of the printer unit. For descriptions of error codes, see the CP660 's Service Manual.

If a reader unit is installed and a fault occurs in it, an error code associated with the symptom will be indicated on the control panel of the reader unit and the printer unit. For descriptions of error codes, see the CP660 IR's Service Manual.

V. INSTALLING THE SYSTEM SOFTWARE

A. Downloading Tool

1. Outline

The system software of the Printer Board is stored on the hard disk. You will have to copy the system software to the hard disk from an external source if you have replaced the hard disk or when you install or upgrade the system software.

The program used to copy the system software to the hard disk is stored in the flash ROM of the Printer Board, but the system software must be transferred from a computer through the parallel port using a program called "downloading tool."

2. Installing the Downloading Tool

The downloading tool is made available in the form of a self-decompressing file.

1) Double-click the file icon (Pdldl115eng.exe) of the downloading tool from Windows 95/98 My Computer or Explorer to execute. In response, the files necessary for the installation of the downloading tool will decompress, and the set-up program will start up automatically.

Figure 6-501

2) When a message appears asking you if you want to start decompression, click the Yes button.
3) When a message appears asking you if you want to start installation, click the Next button.
4) When you are asked to confirm the folder used to install the downloading tool, click the Next button (default).
5) The downloading tool will automatically be installed into the PDL Downloader folder inside the Program Files found on drive C.

When the downloading tool has been installed, you may delete the Pdldl115eng.exe file used for installation.

To uninstall the downloading tool, select and execute 'PDL Downloader' using 'adding and removing programs' on the control panel.

B. Installing the System Software

1. Points to Note

Before re-installing the system software, be sure to inform the user's administrator that the files and fonts downloaded to the hard disk and the job log will be lost. Ask the administrator to take appropriate measures.

2. Items to Prepare

If you are installing the system software, prepare the following:

- Windows 95/98 computer to which the downloading tool has been installed.
- Centronics cable complying with IEEE 1284 standards (cable showing the notation "IEEE Std 1284 Compliant")
- System Software CD-ROM

3. Preparing the CP660

1) Turn on the CP660's main power switch (if a reader unit is installed, its soft power switch).
2) Hold down the Menu button until PRINT PAGES FROM LIST appears in the display of the control panel of the printer unit.
3) Press the Enter/Online button.
4) Press the Up/Down arrow button to select PRINT CONFIGURATION.
5) Press the Enter/Online button.
6) When a configuration page has been printed showing the settings information of the Printer Board, store it away.

4. Preparing the Computer

Install the downloading tool in advance.

The system software is made available on a CD-ROM. If you are using a computer without a CD-ROM drive, obtain an external CD-ROM drive. Or, copy the following files to the hard disk of the computer from the System Software CD-ROM from the network or by connecting an external CD-ROM drive at the service station.

SYSTEM.SYS

5. Connecting the Printer Board and the Computer

Obtain the consent of the user's administrator. Then, turn off the CP660's main power switch, and disconnect all cables (network cable, Centronics interface cable).

Connect the printer board parallel port and the printer port of the computer to which the downloading tool has been installed with a Centronics cable.

6. Operating the Computer

1) Turn the PC on and start Windows.
2) Select PDL Downloader from Programs in the Start menu of Windows 95/98, and start the download tool.
3) Click the Select button

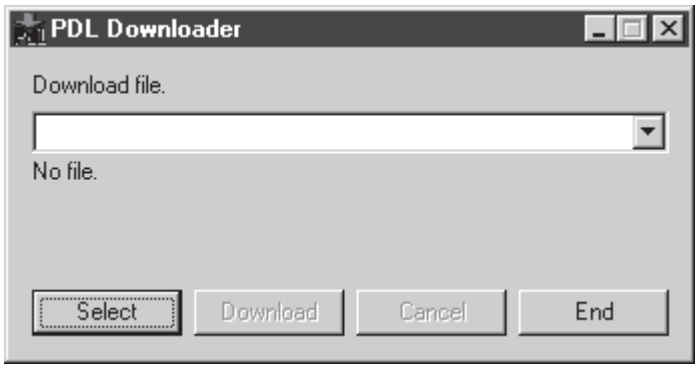


Figure 6-502

4) Select the SYSTEM.SYS file and click the Open button.

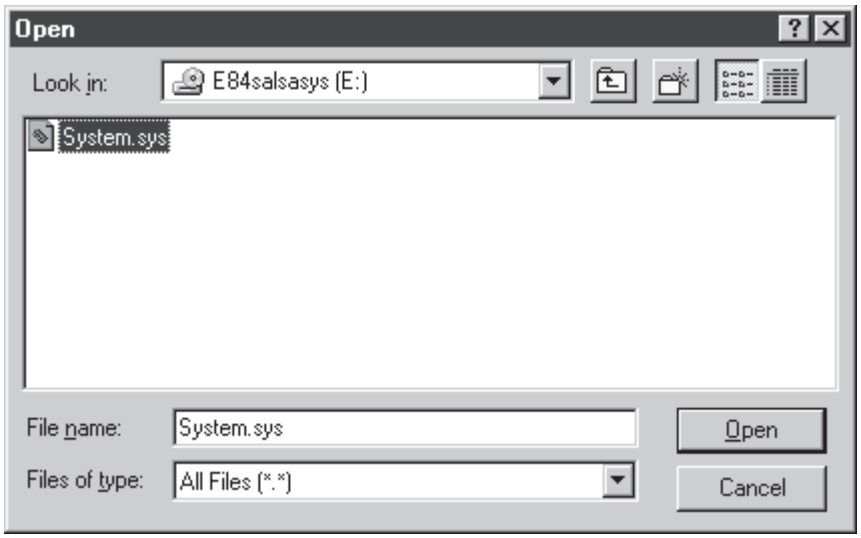


Figure 6-503

7. Operating the CP660

1) While holding down the Down arrow button and the Menu button on the control panel of the printer unit, turn on the CP660' main power switch (if a reader unit is installed, its soft power switch). Be sure to hold down the buttons until the display indicates START SELF TEST.
2) Press the Menu button until FORMAT DISK appears.
3) Press the Enter/Online button.
4) Using Up/Down arrow button, select HIGH LEVEL, and press the Enter/Online button.
5) When the hard disk drive has been formatted, FORMAT DRIVE SUCCESSFUL appears, followed by FORMAT DISK.
6) Press the Menu button until CLEAR NVRAM PARAMETERS appears.
7) Press the Enter/Online button.
8) Using the Up/Down button, select YES, and press the Enter/Online button.
   When NVRAM has been cleared, CLEAR NVRAM SUCCESSFUL will appear, followed by CLEAR NVRAM PARAMETERS.
9) Press the Enter/Online button.
10) Press the Menu button until INSTALL UPGRADES appears.
11) Press the Enter/Online button.
12) Using the Up/Down arrow button, select INSTALL: FILE SYSTEM, and press the Enter/Online button.

The Board will be in wait for a download file, and the display of the printer unit will indicate WAITING.

Memo: If data transfer does not begin in about 2 min after you have pressed the Enter/Online button, a time-out condition will occur to stop processing. If this is the case, press the Menu button so that INSTALL: FILE SYSTEM will appear.

8. Downloading

Click the Download button.

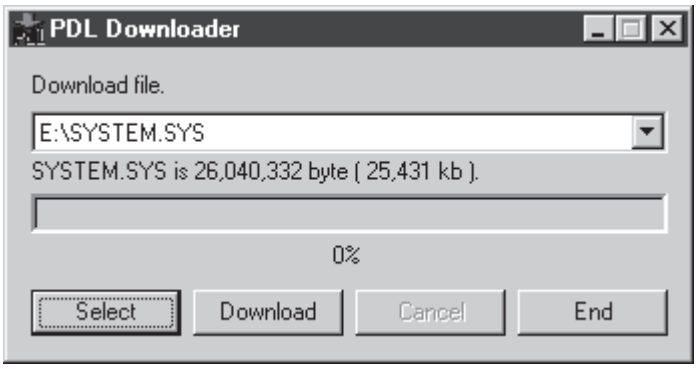


Figure 6-504

While downloading is under way normally, the display on the control panel of the printer unit indicates DOWNLOADING with a bar graph showing the amount of data received.

The download file is in compressed form, and decompresses automatically when transfer has been finished. During decompression, the display indicates PROCESSING FILE with a bar graph showing the status of processing.

When decompression ends and the decompressed file has been stored on the hard disk, INSTALL: FILE SYSTEM appears.

Note:

When you start downloading by clicking the Download button, the Cancel button will become effective. If you stop downloading by clicking the Cancel button, the file will not be transferred normally when you click the Download button for a second time thereafter to start downloading. (The display on the control panel of the printer unit will continue to indicate DOWNLOADING.)

If this is the case, press the Menu button so that INSTALL: FILE SYSTEM will appear. Then, press the Enter/Online button to enable downloading operation. If you want to start downloading once again, prepare the Board, and then click the Download button so that transfer of the file will start at its beginning.

9. After Downloading

1) Click the End button of the download tool to end the tool.
2) Turn off the CP660's main power switch (if a reader unit is installed, the soft power switch on its control panel).
3) Disconnect the Centronics cable used to connect the CP660 to the PC.
4) Connect the network cable and the Centronics interface cable as they were.
5) Turn on the CP660's main power switch (if a reader unit is installed, its soft power switch); then, make settings for the Board according to the information on the configuration page you generated previously.
6) Turn off the CP660's main power switch.

10. Checking the Operation

1) Turn on the CP660's main power switch (if a reader unit is installed, the soft power switch on its control panel).
2) Wait until the message “READY” appears on the printer control panel.
3) Press the Menu button until PRINT PAGES FROM LIST appears on the printer unit control panel.
4) Press the Enter/Online button.
5) Using the Up/Down arrow button, select PRINT TEST PAGE.
6) Press the Enter/Online button.
7) Check to see that a test page has been printed normally.

CHAPTER 7

PARTS CATALOG

FIGURE A ASSEMBLY LOCATION DIAGRAM

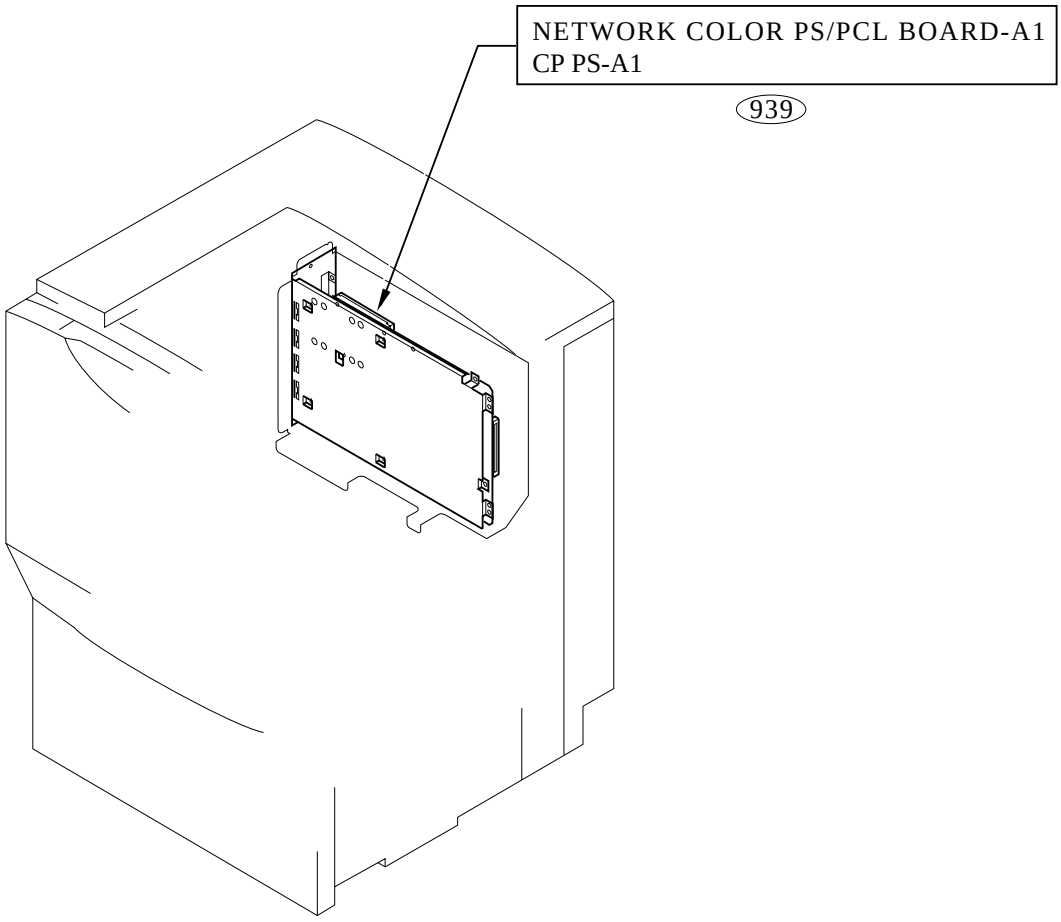


FIGURE 939 NETWORK COLOR PS/PCL BOARD-A1

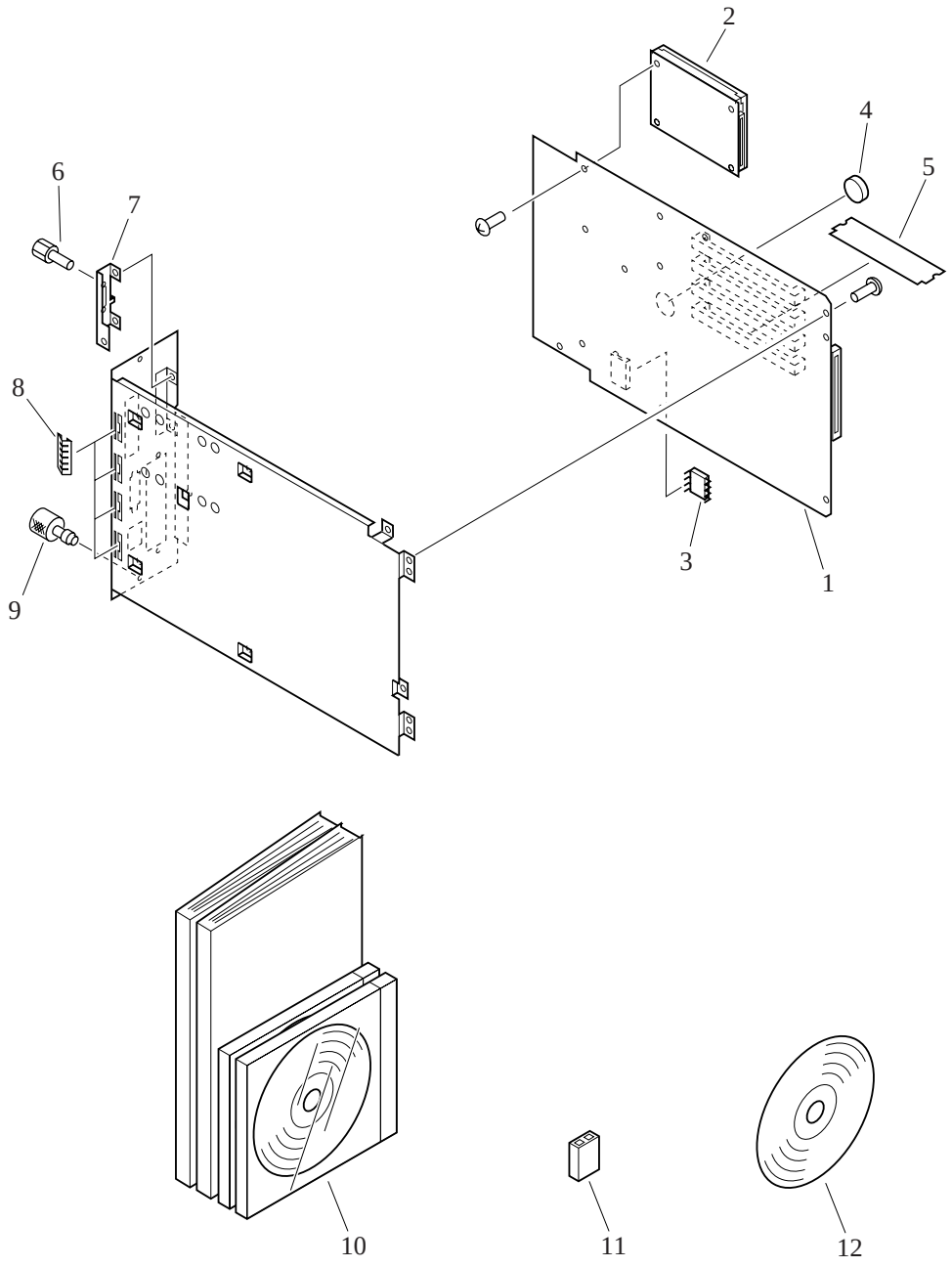


FIGURE & KEY NO.	PART NUMBER	RANK	QTY	DESCRIPTION	SERIAL NUMBER / REMARKS
939-	NPN		RF	NETWORK COLOR PS / PCL BOARD-A1	PS / PCL
1	FE1-5121-000		1	PRINTER BOARD PCB ASSEMBLY	
2	FE1-5122-000		1	HARD DISK DRIVE UNIT	
3	FE1-5123-000		1	IC, 93C46 EEPROM	
4	FE1-5021-000		1	BATTERY. LITHIUM COIN	
5	FE1-5124-000		1	DIMM ASS' Y SM564088574EF1S	
6	WT2-5526-000		2	HEXAGON BOLT, M4	
7	FB5-0004-000		1	PLATE, MOUNT	
8	FB5-0006-000		4	SPRING, LEAF	
9	RB2-0006-000		2	SCREW, M4	
10	FE1-5128-000		1	CD-ROM, MEDIA PACK	FRENCH
	FE1-5129-000		1	CD-ROM, MEDIA PACK	GERMAN
	FE1-5130-000		1	CD-ROM, MEDIA PACK	ITALIAN
	FE1-5131-000		1	CD-ROM, MEDIA PACK	UK ENGLISH
	FE1-5132-000		1	CD-ROM, MEDIA PACK	JAPANESE
11	WT1-5412-000		2	CONNECTOR, CIRCUIT SHORT	
12	FE1-5058-000		1	CD-ROM, SYSTEM SOFTWARE	PS / PCL
	FE1-5125-000		1	CD-ROM, SYSTEM SOFTWARE	PS KANJI JAPANESE

APPENDIX

I. MENU OVERVIEW

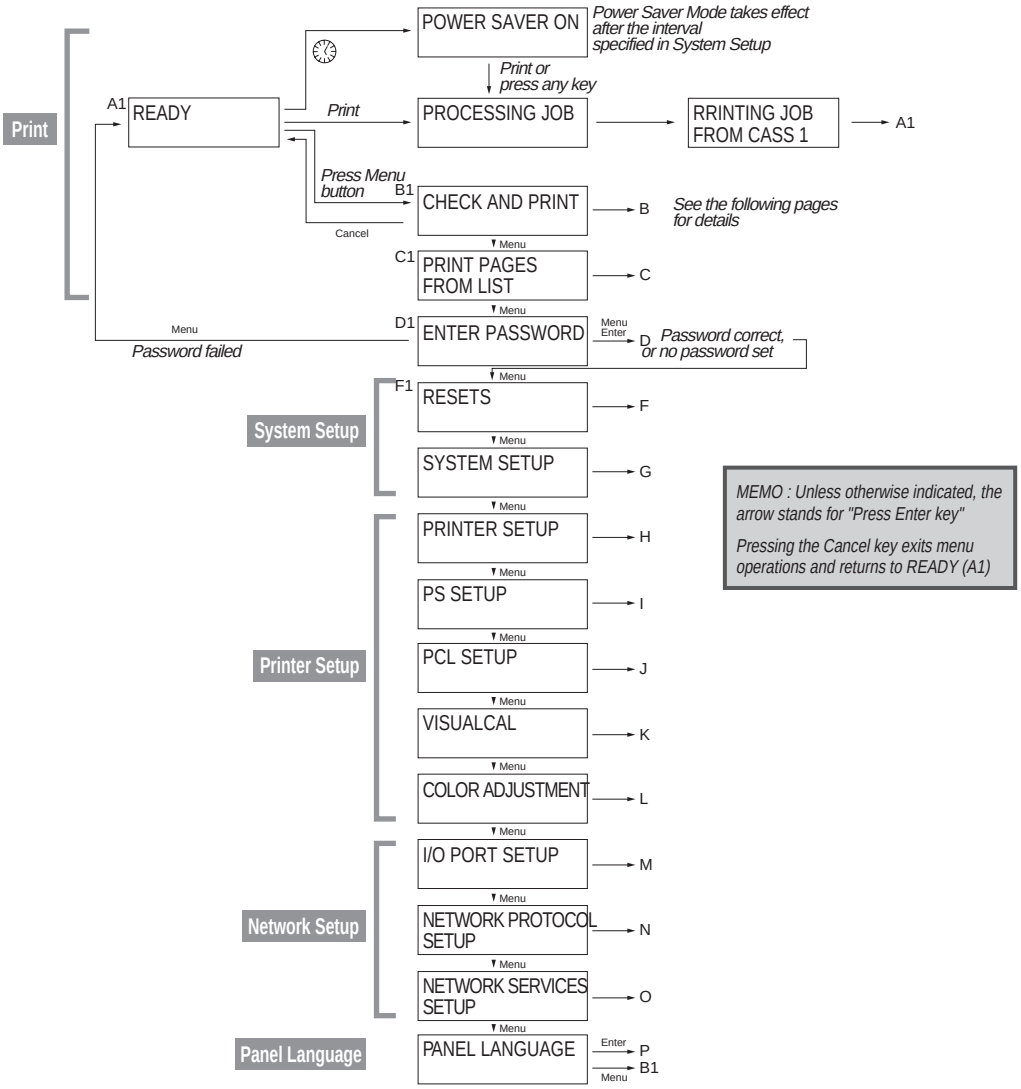


Figure A-101

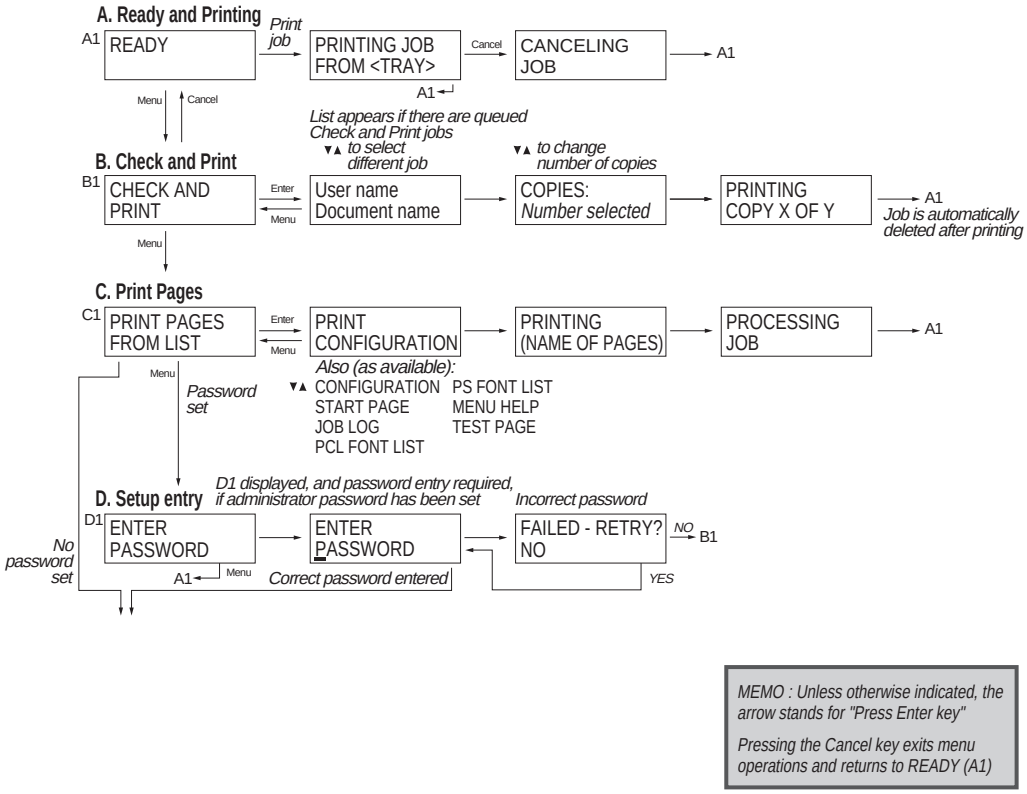
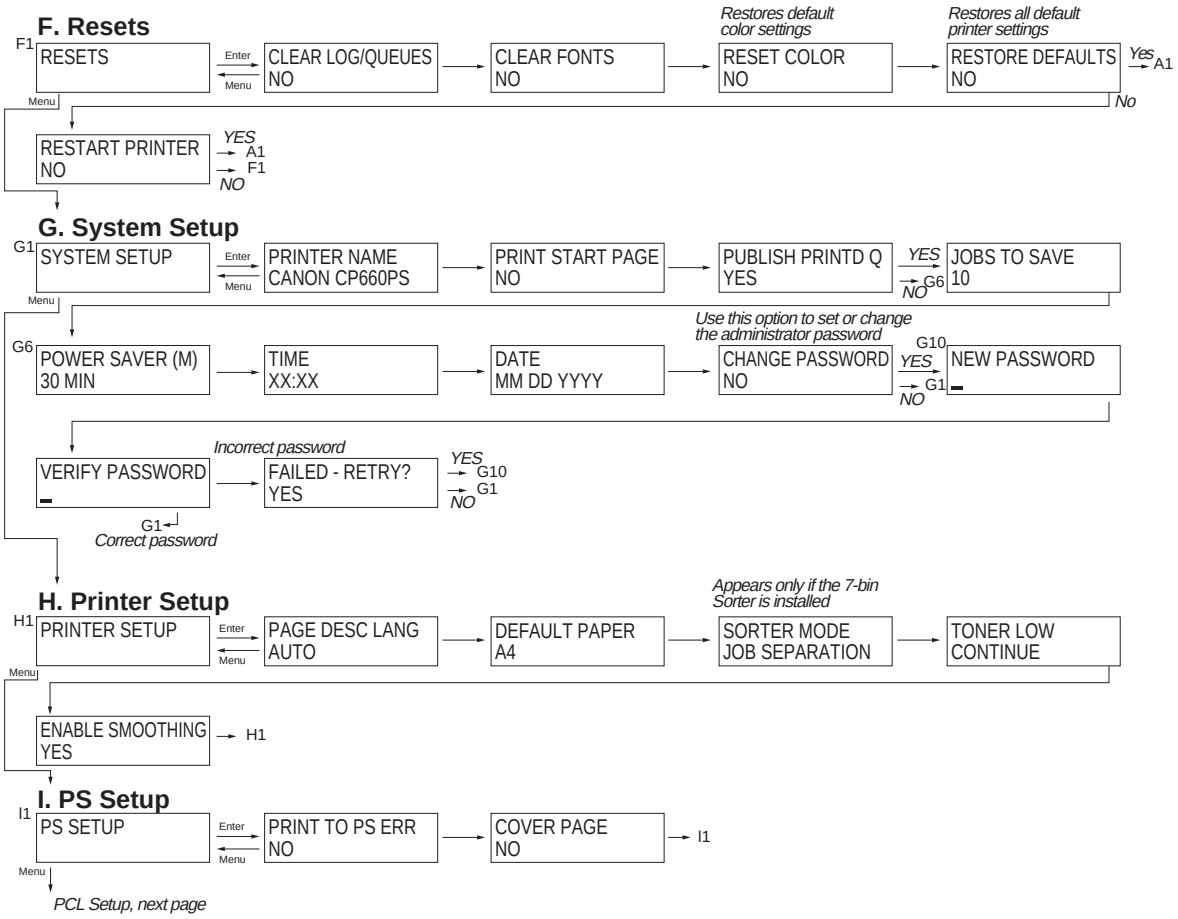


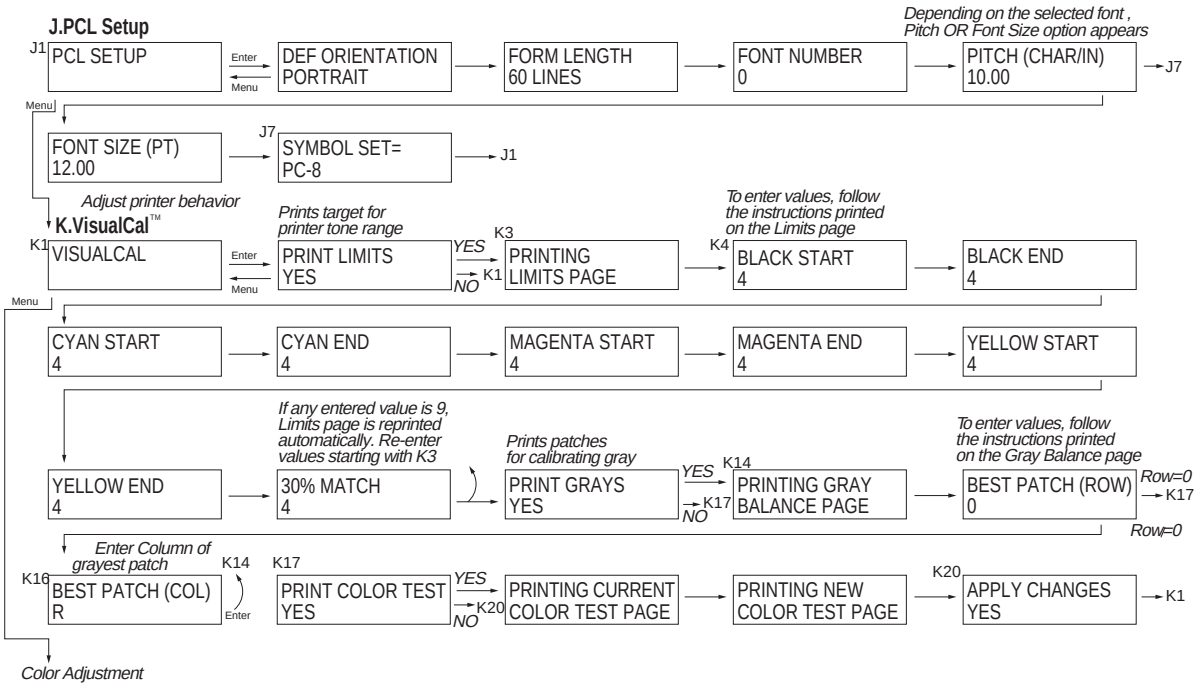
Figure A-102



MEMO : Unless otherwise indicated, the arrow stands for "Press Enter key"

Pressing the Cancel key exits menu operations and returns to READY (A1)

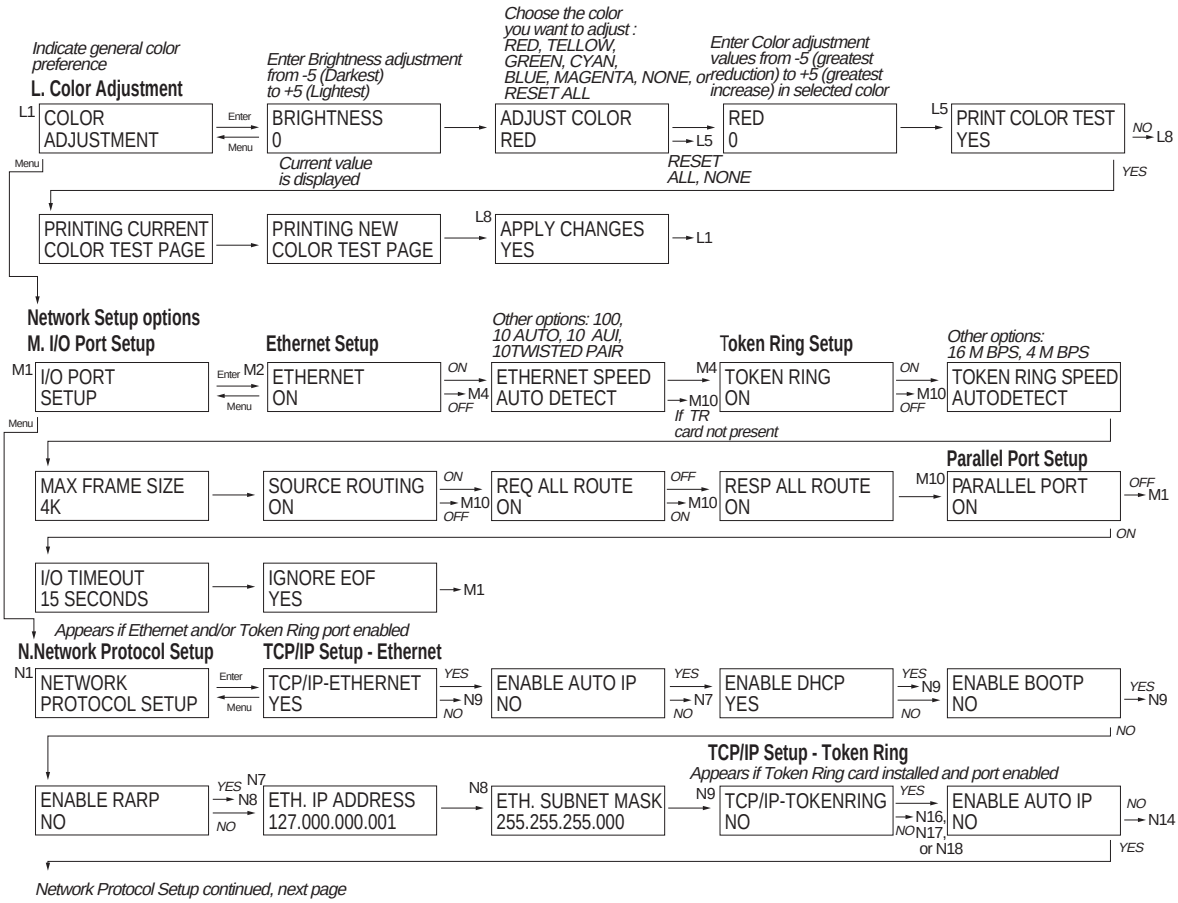
Figure A-103



MEMO : Unless otherwise indicated, the arrow stands for "Press Enter key"

Pressing the Cancel key exits menu operations and returns to READY (A1)

Figure A-104



MEMO : Unless otherwise indicated, the arrow stands for "Press Enter key"

Pressing the Cancel key exits menu operations and returns to READY (A1)

Figure A-105

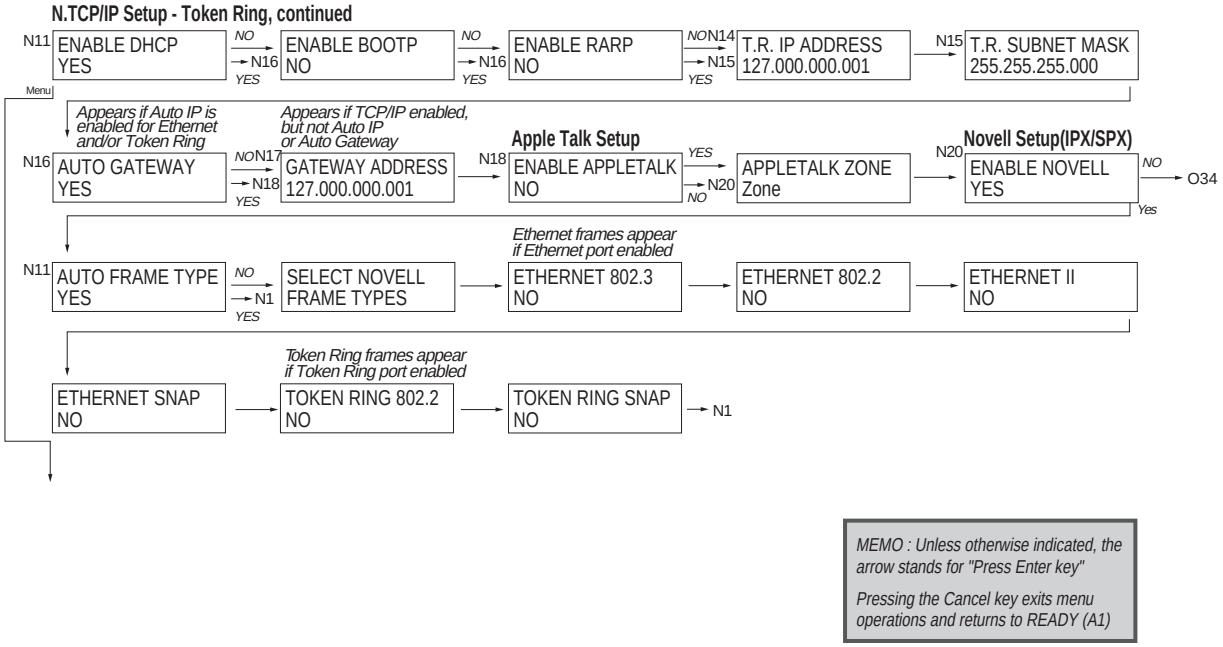


Figure A-106

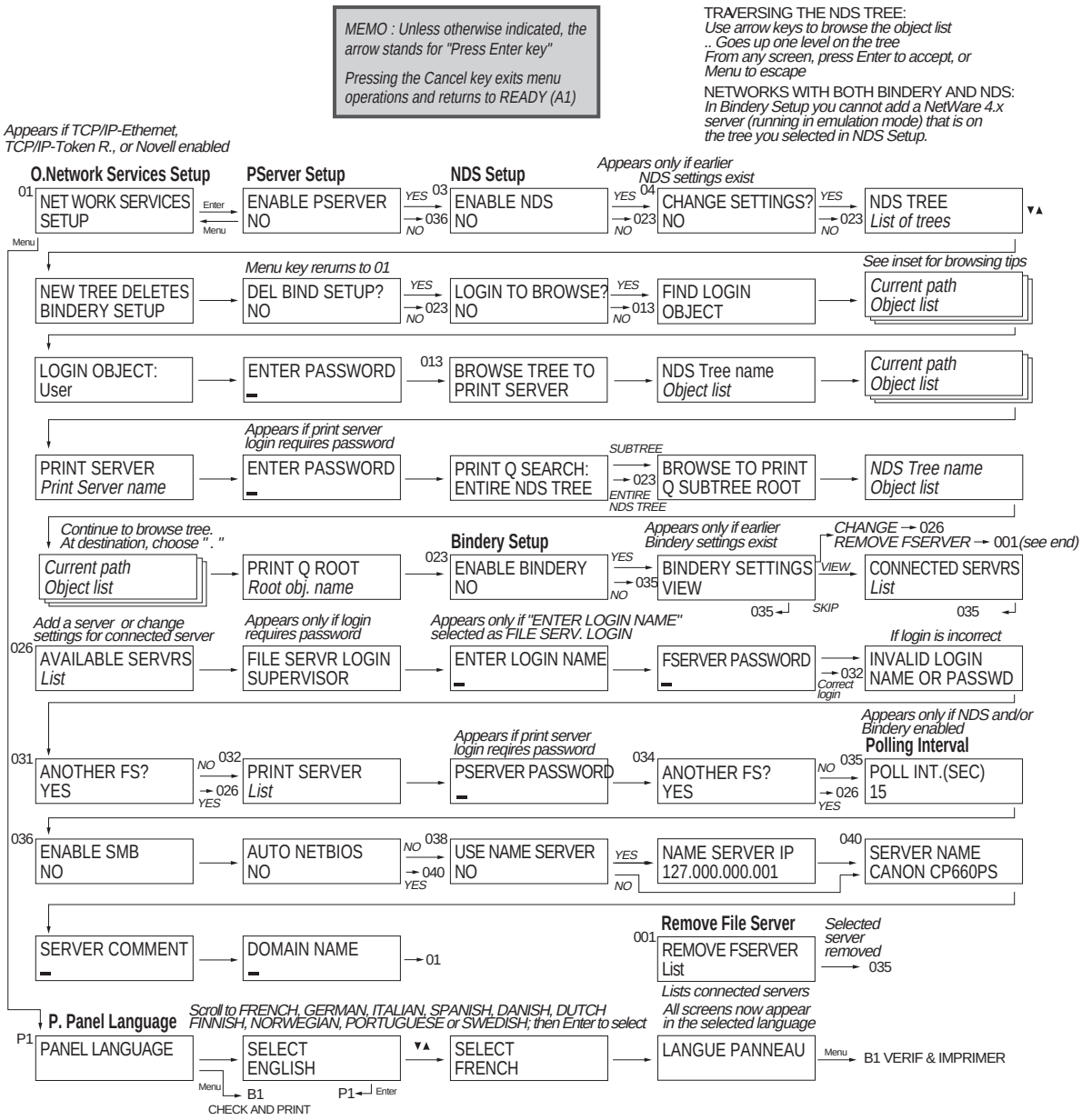
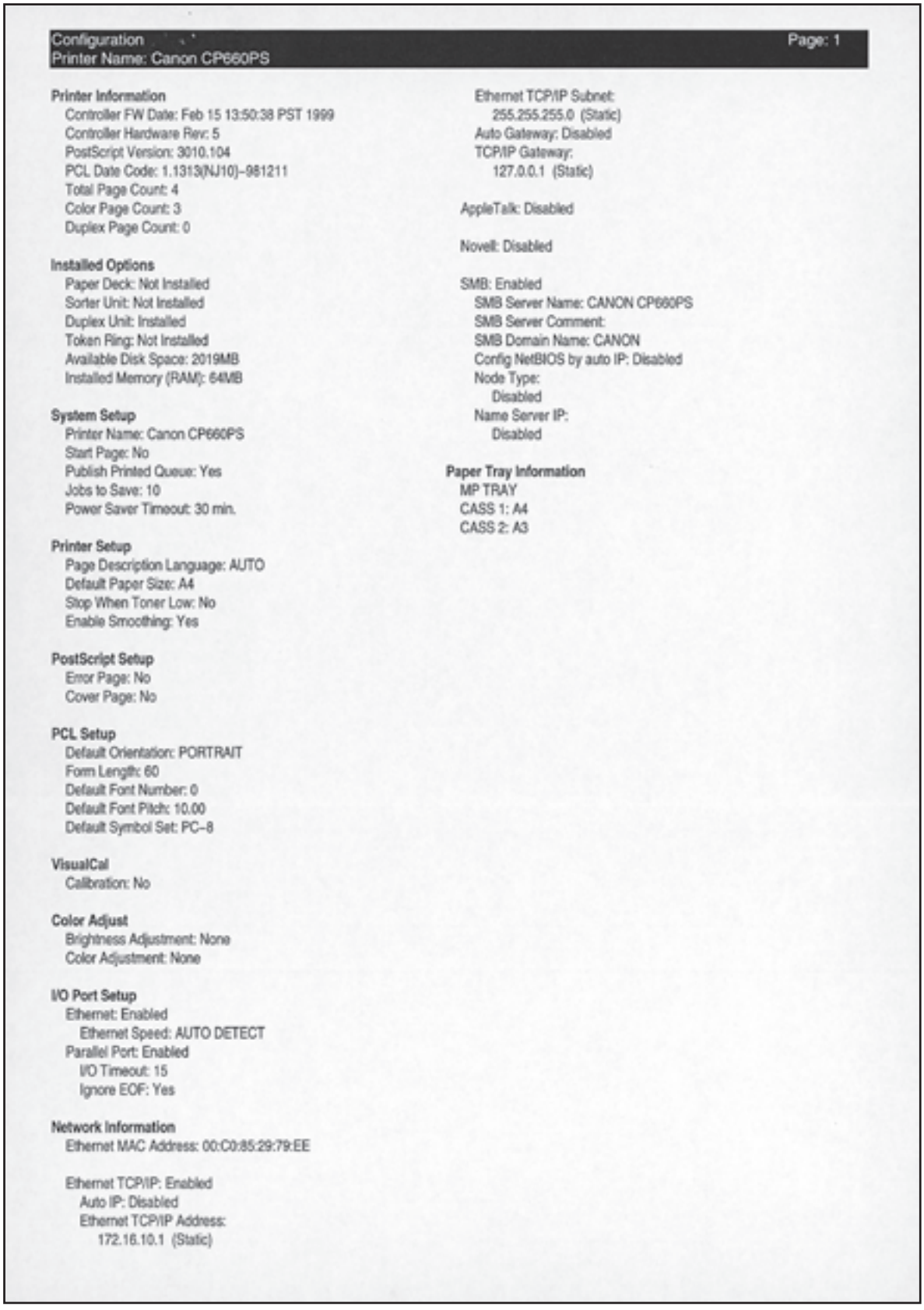

MEMO : Unless otherwise indicated, the arrow stands for "Press Enter key"
Pressing the Cancel key exits menu operations and returns to READY (A1)
TRAVERSING THE NDS TREE:
Use arrow keys to browse the object list
.. Goes up one level on the tree
From any screen, press Enter to accept, or Menu to escape
NETWORKS WITH BOTH BINDERY AND NDS:
In Bindery Setup you cannot add a NetWare 4.x server (running in emulation mode) that is on the tree you selected in NDS Setup.
Appears if TCP/IP-Ethernet, TCP/IP-Token R., or Novell enabled
O.Network Services Setup
PServer Setup
NDS Setup
Appears only if earlier NDS settings exist
01
NET WORK SERVICES SETUP
Enter
Menu
ENABLE PSERVER NO
YES 03
NO 036
ENABLE NDS NO
YES 04
NO 023
CHANGE SETTINGS? NO
YES
NO 023
NDS TREE List of trees
Menu
Menu key reruns to 01
See inset for browsing tips
NEW TREE DELETES BINDERY SETUP
DEL BIND SETUP? NO
YES
NO 023
LOGIN TO BROWSE? NO
YES
NO 013
FIND LOGIN OBJECT
Current path Object list
LOGIN OBJECT: User
ENTER PASSWORD
013
BROWSE TREE TO PRINT SERVER
NDS Tree name Object list
Current path Object list
Appears if print server login requires password
PRINT SERVER Print Server name
ENTER PASSWORD
PRINT Q SEARCH: ENTIRE NDS TREE
SUBTREE
ENTIRE NDS TREE
023
BROWSE TO PRINT Q SUBTREE ROOT
NDS Tree name Object list
Continue to browse tree. At destination, choose ". "
Current path Object list
PRINT Q ROOT Root obj. name
Bindery Setup
023
ENABLE BINDERY NO
YES
NO 035
Appears only if earlier Bindery settings exist
BINDERY SETTINGS VIEW
VIEW
CHANGE → 026
REMOVE FSERVER → 001 (see end)
CONNECTED SERVRS List
035
SKIP
035
Add a server or change settings for connected server
026
AVAILABLE SERVRS List
Appears only if login requires password
FILE SERVR LOGIN SUPERVISOR
Appears only if "ENTER LOGIN NAME" selected as FILE SERV. LOGIN
ENTER LOGIN NAME
FSERVER PASSWORD
032
Correct login
If login is incorrect
INVALID LOGIN NAME OR PASSWD
Appears only if NDS and/or Bindery enabled
Polling Interval
031
ANOTHER FS? YES
NO 032
026
YES
PRINT SERVER List
Appears if print server login reqires password
PSERVER PASSWORD
034
ANOTHER FS? YES
NO 035
026
YES
POLL INT.(SEC) 15
036
ENABLE SMB NO
AUTO NETBIOS NO
NO 038
040
YES
USE NAME SERVER NO
YES
NO
NAME SERVER IP 127.000.000.001
040
SERVER NAME CANON CP660PS
SERVER COMMENT
DOMAIN NAME
01
Remove File Server
001
REMOVE FSERVER List
Selected server removed
035
Lists connected servers
P. Panel Language
Scroll to FRENCH, GERMAN, ITALIAN, SPANISH, DANISH, DUTCH FINNISH, NORWEGIAN, PORTUGUESE or SWEDISH; then Enter to select
All screens now appear in the selected language
P1
PANEL LANGUAGE
SELECT ENGLISH
SELECT FRENCH
LANGUE PANNEAU
Menu
B1 VERIF & IMPRIMER
Menu
B1
CHECK AND PRINT
P1
Enter

Figure A-107

II. PAGE SAMPLES

1. Configuration (Black & White)



Configuration Page: 1
Printer Name: Canon CP660PS

Printer Information
Controller FW Date: Feb 15 13:50:38 PST 1999
Controller Hardware Rev: 5
PostScript Version: 3010.104
PCL Date Code: 1.1313(NJ10)–981211
Total Page Count: 4
Color Page Count: 3
Duplex Page Count: 0

Installed Options
Paper Deck: Not Installed
Sorter Unit: Not Installed
Duplex Unit: Installed
Token Ring: Not Installed
Available Disk Space: 2019MB
Installed Memory (RAM): 64MB

System Setup
Printer Name: Canon CP660PS
Start Page: No
Publish Printed Queue: Yes
Jobs to Save: 10
Power Saver Timeout: 30 min.

Printer Setup
Page Description Language: AUTO
Default Paper Size: A4
Stop When Toner Low: No
Enable Smoothing: Yes

PostScript Setup
Error Page: No
Cover Page: No

PCL Setup
Default Orientation: PORTRAIT
Form Length: 60
Default Font Number: 0
Default Font Pitch: 10.00
Default Symbol Set: PC–8

VisualCal
Calibration: No

Color Adjust
Brightness Adjustment: None
Color Adjustment: None

I/O Port Setup
Ethernet: Enabled
Ethernet Speed: AUTO DETECT
Parallel Port: Enabled
I/O Timeout: 15
Ignore EOF: Yes

Network Information
Ethernet MAC Address: 00:C0:85:29:79:EE

Ethernet TCP/IP: Enabled
Auto IP: Disabled
Ethernet TCP/IP Address:
172.16.10.1 (Static)
Ethernet TCP/IP Subnet:
255.255.255.0 (Static)
Auto Gateway: Disabled
TCP/IP Gateway:
127.0.0.1 (Static)

AppleTalk: Disabled

Novell: Disabled

SMB: Enabled
SMB Server Name: CANON CP660PS
SMB Server Comment:
SMB Domain Name: CANON
Config NetBIOS by auto IP: Disabled
Node Type:
Disabled
Name Server IP:
Disabled

Paper Tray Information
MP TRAY
CASS 1: A4
CASS 2: A3

Figure A-201

2. Start Page (Color)

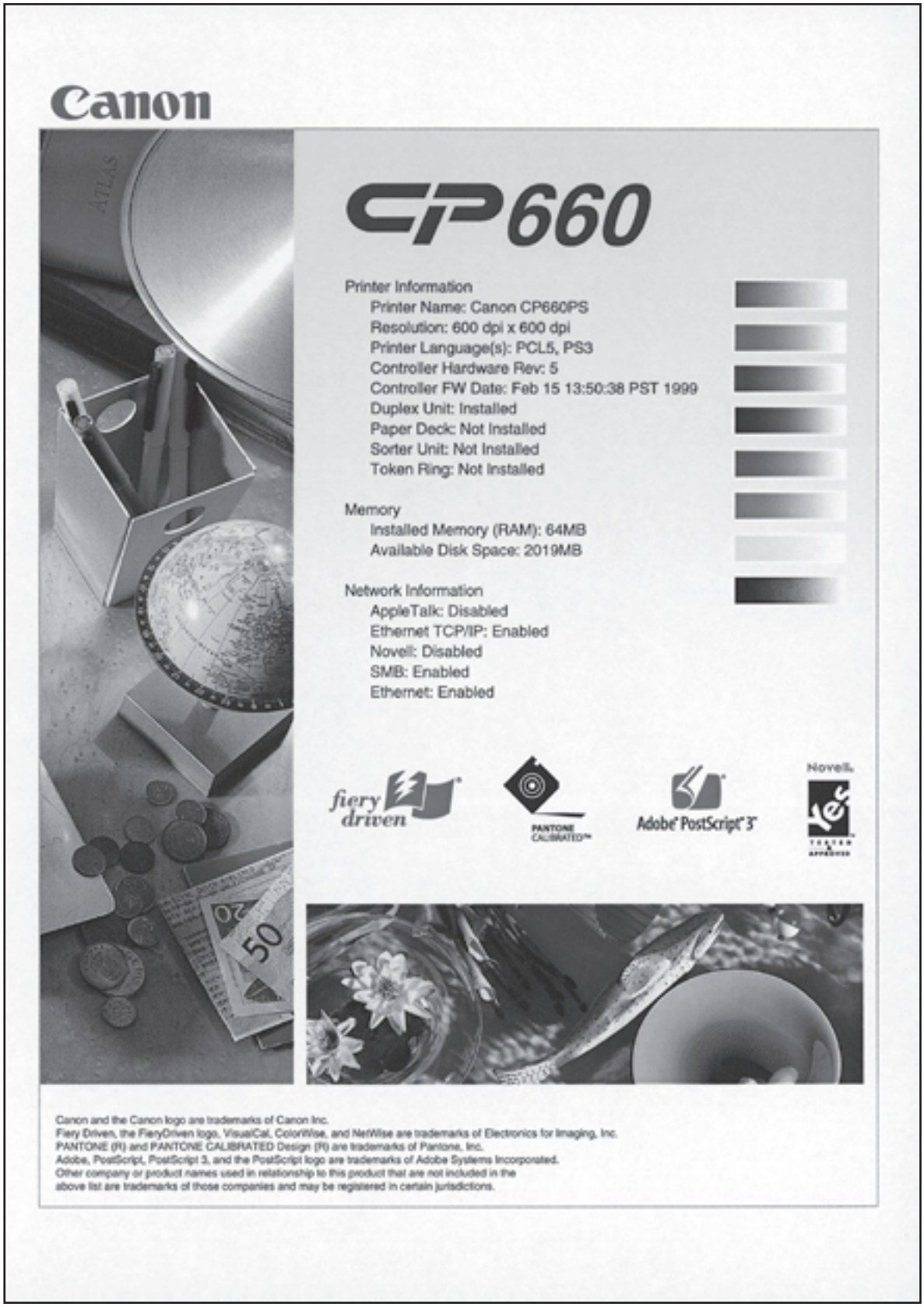


Figure A-202

3. Job Log (Black & White)

Job Log — Page: 1

Printer Name: Canon CP660PS

Status	Document	User	Date	Start	End	Proc. Time	Size	Page Size	Media	PDL	Originals	Color	B&W	Total
OK	Configuration Page	Operator	05/17/99	18:04:36	18:05:13	00:00:04	15 KB	A4	PLAIN	ps	1	0	1	1
OK	939-1 ü.eps	TAKADA	05/17/99	18:13:01	18:17:09	00:00:03	198 KB	A4	PLAIN	ps	1	0	1	1
OK	UNKNOWN	UNKNOWN	05/17/99	18:18:08	18:18:41	00:00:00	30	A4	PLAIN	pcl	1	0	1	1
ERROR	939-1.eps	Axis Taguchi) (canon	05/17/99	18:18:10	18:19:15	00:00:02	238 KB	A4	PLAIN	ps	1	0	1	1
OK	UNKNOWN	UNKNOWN	05/17/99	18:20:22	18:20:55	00:00:00	30	A4	PLAIN	pcl	1	0	1	1
ERROR	A-1.eps	FMV 5200-dcdj (AXIS	05/17/99	18:20:23	18:21:29	00:00:04	197 KB	A4	PLAIN	ps	1	0	1	1
OK	A-1.eps	TAKADA	05/17/99	20:05:32	20:08:26	00:00:03	170 KB	A4	PLAIN	ps	1	0	1	1
OK	A-1.eps	TAKADA	05/17/99	20:11:42	20:12:18	00:00:04	170 KB	A4	PLAIN	ps	1	0	1	1
OK	Configuration Page	Operator	05/17/99	20:35:02	20:35:39	00:00:03	15 KB	A4	PLAIN	ps	1	0	1	1
OK	Start Page	Operator	05/17/99	20:38:22	20:38:53	00:00:44	4 MB	A4	PLAIN	ps	1	1	0	1
OK	Configuration Page	Operator	06/24/99	13:49:02	13:49:39	00:00:04	15 KB	A4	PLAIN	ps	1	0	1	1
CANCEL	Start Page	Operator	07/01/99	13:10:42	13:11:14	00:00:32	2 MB	LETTER	PLAIN	ps	1	1	0	1
OK	Start Page	Operator	07/01/99	13:13:02	13:14:32	00:00:42	4 MB	A4	PLAIN	ps	1	1	0	1
OK	Configuration Page	Operator	07/01/99	13:14:47	13:15:22	00:00:03	15 KB	A4	PLAIN	ps	1	0	1	1
OK	Configuration Page	Operator	07/01/99	14:16:07	14:16:44	00:00:04	15 KB	A4	PLAIN	ps	1	0	1	1
OK	Start Page	Operator	07/01/99	14:16:19	14:17:49	00:00:43	4 MB	A4	PLAIN	ps	1	1	0	1
OK	Configuration Page	Operator	07/01/99	14:21:40	14:22:15	00:00:03	15 KB	A4	PLAIN	ps	1	0	1	1
OK	Start Page	Operator	07/01/99	14:21:46	14:23:16	00:00:43	4 MB	A4	PLAIN	ps	1	1	0	1
OK	Configuration Page	Operator	07/01/99	14:27:31	14:28:08	00:00:03	15 KB	A4	PLAIN	ps	1	0	1	1
OK	Start Page	Operator	07/01/99	14:27:38	14:29:07	00:00:43	4 MB	A4	PLAIN	ps	1	1	0	1
OK	Configuration Page	Operator	07/01/99	14:32:24	14:34:21	00:00:04	15 KB	A4	PLAIN	ps	1	0	1	1
OK	Start Page	Operator	07/01/99	14:32:34	14:34:21	00:00:43	4 MB	A4	PLAIN	ps	1	1	0	1
OK	Start Page	Operator	07/01/99	14:34:28	14:35:58	00:00:42	4 MB	A4	PLAIN	ps	1	1	0	1
OK	Configuration Page	Operator	07/01/99	14:35:47	14:36:30	00:00:03	15 KB	A4	PLAIN	ps	1	0	1	1
OK	Configuration Page	Operator	07/07/99	13:57:57	14:01:59	00:00:04	15 KB	A4	PLAIN	ps	1	0	1	1
OK	Test Page	Operator	07/07/99	14:21:37	14:22:56	00:00:32	21 KB	A4	PLAIN	ps	1	1	0	1
26											26	9	17	26

Figure A-203

4. PCL Font List (Black & White)

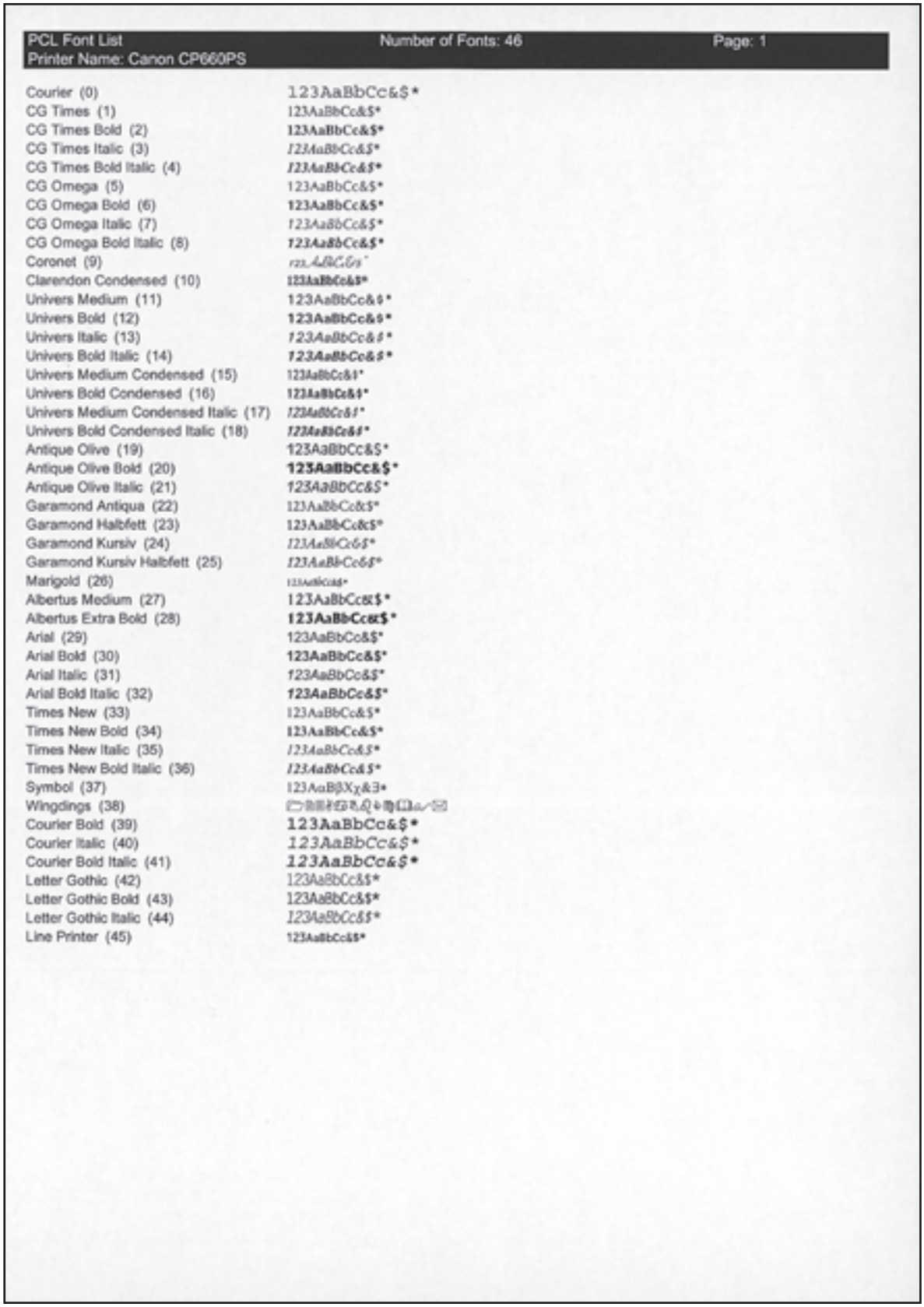


Figure A-204

5. PS Font List (Black & White)

PostScript Font List — Number of Fonts: 136 — Page: 1
Printer Name: Canon CP660PS

AlbertusMT	123AaBbCc&$*	Helvetica-Condensed	123AaBbCc&$*
AlbertusMT-Italic	123AaBbCc&$*	Helvetica-Condensed-Bold	123AaBbCc&$*
AlbertusMT-Light	123AaBbCc&$*	Helvetica-Condensed-BoldObl	123AaBbCc&$*
AntiqueOlive-Bold	123AaBbCc&$*	Helvetica-Condensed-Oblique	123AaBbCc&$*
AntiqueOlive-Compact	123AaBbCc&$*	Helvetica-Narrow	123AaBbCc&$*
AntiqueOlive-Italic	123AaBbCc&$*	Helvetica-Narrow-Bold	123AaBbCc&$*
AntiqueOlive-Roman	123AaBbCc&$*	Helvetica-Narrow-BoldOblique	123AaBbCc&$*
Apple-Chancery	123AaBbCc&$*	Helvetica-Narrow-Oblique	123AaBbCc&$*
Arial-BoldItalicMT	123AaBbCc&$*	Helvetica-Oblique	123AaBbCc&$*
Arial-BoldMT	123AaBbCc&$*	HoeflerText-Black	123AaBbCc&$*
Arial-ItalicMT	123AaBbCc&$*	HoeflerText-BlackItalic	123AaBbCc&$*
ArialMT	123AaBbCc&$*	HoeflerText-Italic	123AaBbCc&$*
AvantGarde-Book	123AaBbCc&$*	HoeflerText-Ornaments	
AvantGarde-BookOblique	123AaBbCc&$*	HoeflerText-Regular	123AaBbCc&$*
AvantGarde-Demi	123AaBbCc&$*	JoannaMT	123AaBbCc&$*
AvantGarde-DemiOblique	123AaBbCc&$*	JoannaMT-Bold	123AaBbCc&$*
Bodoni	123AaBbCc&$*	JoannaMT-BoldItalic	123AaBbCc&$*
Bodoni-Bold	123AaBbCc&$*	JoannaMT-Italic	123AaBbCc&$*
Bodoni-BoldItalic	123AaBbCc&$*	LetterGothic	123AaBbCc&$*
Bodoni-Italic	123AaBbCc&$*	LetterGothic-Bold	123AaBbCc&$*
Bodoni-Poster	123AaBbCc&$*	LetterGothic-BoldSlanted	123AaBbCc&$*
Bodoni-PosterCompressed	123AaBbCc&$*	LetterGothic-Slanted	123AaBbCc&$*
Bookman-Demi	123AaBbCc&$*	LubalinGraph-Book	123AaBbCc&$*
Bookman-DemiItalic	123AaBbCc&$*	LubalinGraph-BookOblique	123AaBbCc&$*
Bookman-Light	123AaBbCc&$*	LubalinGraph-Demi	123AaBbCc&$*
Bookman-LightItalic	123AaBbCc&$*	LubalinGraph-DemiOblique	123AaBbCc&$*
Carta		Marigold	
Chicago	123AaBbCc&$*	MonaLisa-Recut	123AaBbCc&$*
Clarendon	123AaBbCc&$*	Monaco	123AaBbCc&$*
Clarendon-Bold	123AaBbCc&$*	NewCenturySchlbk-Bold	123AaBbCc&$*
Clarendon-Light	123AaBbCc&$*	NewCenturySchlbk-BoldItalic	123AaBbCc&$*
CooperBlack	123AaBbCc&$*	NewCenturySchlbk-Italic	123AaBbCc&$*
CooperBlack-Italic	123AaBbCc&$*	NewCenturySchlbk-Roman	123AaBbCc&$*
Copperplate-ThirtyThreeBC	123AaBbCc&$*	NewYork	123AaBbCc&$*
Copperplate-ThirtyTwoBC	123AaBbCc&$*	Optima	123AaBbCc&$*
Coronet-Regular	123AaBbCc&$*	Optima-Bold	123AaBbCc&$*
Courier	123AaBbCc&$*	Optima-BoldItalic	123AaBbCc&$*
Courier-Bold	123AaBbCc&$*	Optima-Italic	123AaBbCc&$*
Courier-BoldOblique	123AaBbCc&$*	Oxford	123AaBbCc&$*
Courier-Oblique	123AaBbCc&$*	Palatino-Bold	123AaBbCc&$*
Eurostile	123AaBbCc&$*	Palatino-BoldItalic	123AaBbCc&$*
Eurostile-Bold	123AaBbCc&$*	Palatino-Italic	123AaBbCc&$*
Eurostile-BoldExtendedTwo	123AaBbCc&$*	Palatino-Roman	123AaBbCc&$*
Eurostile-ExtendedTwo	123AaBbCc&$*	StempelGaramond-Bold	123AaBbCc&$*
Geneva	123AaBbCc&$*	StempelGaramond-BoldItalic	123AaBbCc&$*
GillSans	123AaBbCc&$*	StempelGaramond-Italic	123AaBbCc&$*
GillSans-Bold	123AaBbCc&$*	StempelGaramond-Roman	123AaBbCc&$*
GillSans-BoldCondensed	123AaBbCc&$*	Symbol	123ΑαΒβΧχ&∃*
GillSans-BoldItalic	123AaBbCc&$*	Tekton	123AaBbCc&$*
GillSans-Condensed	123AaBbCc&$*	Times-Bold	123AaBbCc&$*
GillSans-ExtraBold	123AaBbCc&$*	Times-BoldItalic	123AaBbCc&$*
GillSans-Italic	123AaBbCc&$*	Times-Italic	123AaBbCc&$*
GillSans-Light	123AaBbCc&$*	Times-Roman	123AaBbCc&$*
GillSans-LightItalic	123AaBbCc&$*	TimesNewRomanPS-BoldItalicMT	123AaBbCc&$*
Goudy	123AaBbCc&$*	TimesNewRomanPS-BoldMT	123AaBbCc&$*
Goudy-Bold	123AaBbCc&$*	TimesNewRomanPS-ItalicMT	123AaBbCc&$*
Goudy-BoldItalic	123AaBbCc&$*	TimesNewRomanPSMT	123AaBbCc&$*
Goudy-ExtraBold	123AaBbCc&$*	Univers	123AaBbCc&$*
Goudy-Italic	123AaBbCc&$*	Univers-Bold	123AaBbCc&$*
Helvetica	123AaBbCc&$*	Univers-BoldExt	123AaBbCc&$*
Helvetica-Bold	123AaBbCc&$*	Univers-BoldExtObl	123AaBbCc&$*
Helvetica-BoldOblique	123AaBbCc&$*	Univers-BoldOblique	123AaBbCc&$*

Figure A-205

6. Menu Help (Color)

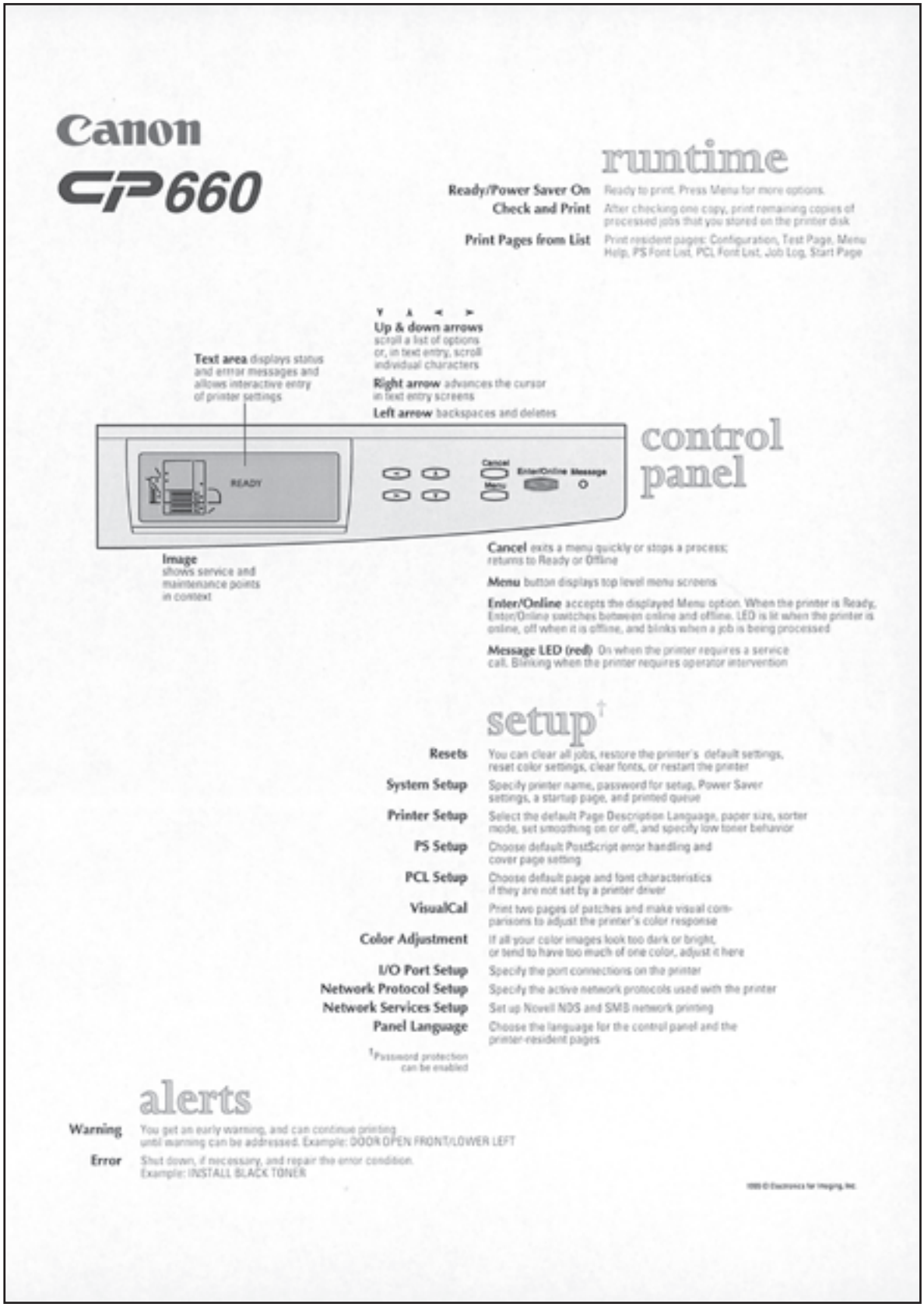


Figure A-206

7. Test Page (Color)

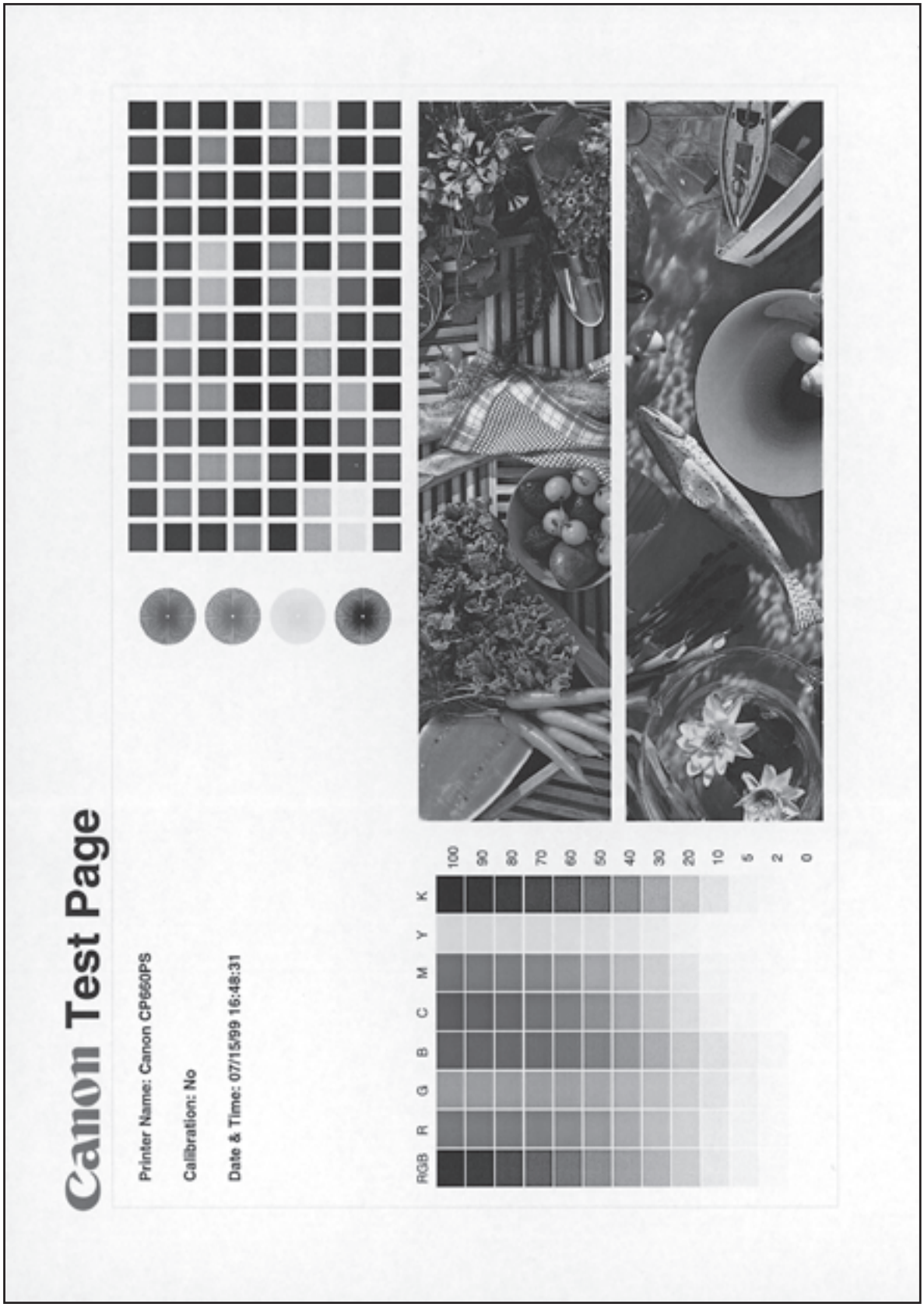


Figure A-207

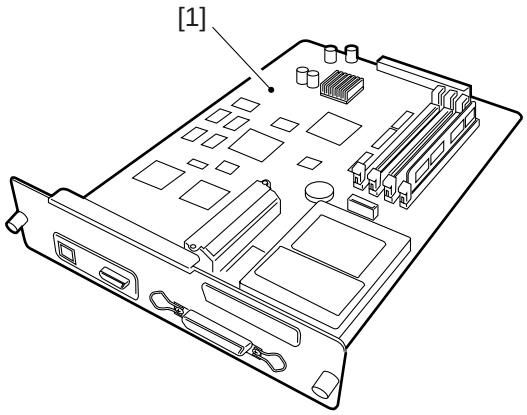
III. INSTALLATION PROCEDURE

Follow the instructions herein when installing the Network Color PS/PCL Board-A1 to the printer.

Caution:
If the printer is furnished with an ACC Interface Unit-B1 as an optional accessory, remove it from the printer and demount the accessory controller PCB and the connector board from it and mount them on the Network Color PS/PCL Board-A1 instead, as instructed herein.

1 Checking Network Color PS/PCL Board-A1

Unpack the network color PS/PCL Board-A1 shipped in a corrugated cardboard box and check the accessories included.



[1] Network Color PS/PCL Board-A1

Figure 1-1

Caution:
Be careful never to touch elements and circuits mounted on the board.

2 Mounting Procedure

Preparations:

If the printer has been installed as a copier

- Check images of copies.
- Turn off the power soft switch on the reader portion control panel (on the right front side of the reader portion) and the power switch on the back of the reader portion (in the right rear of the reader portion) in this order, remove the fixing assembly from the printer, and unplug the printer from the power outlet.

1) Remove two screws [1] to detach controller board cover [2].

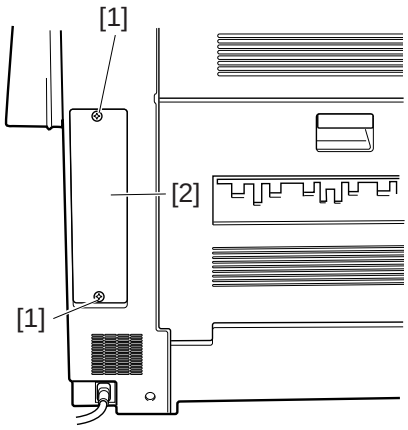
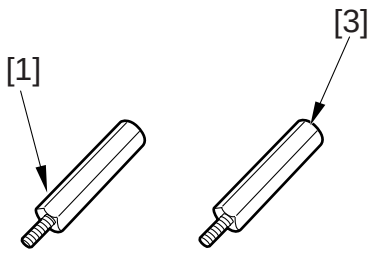


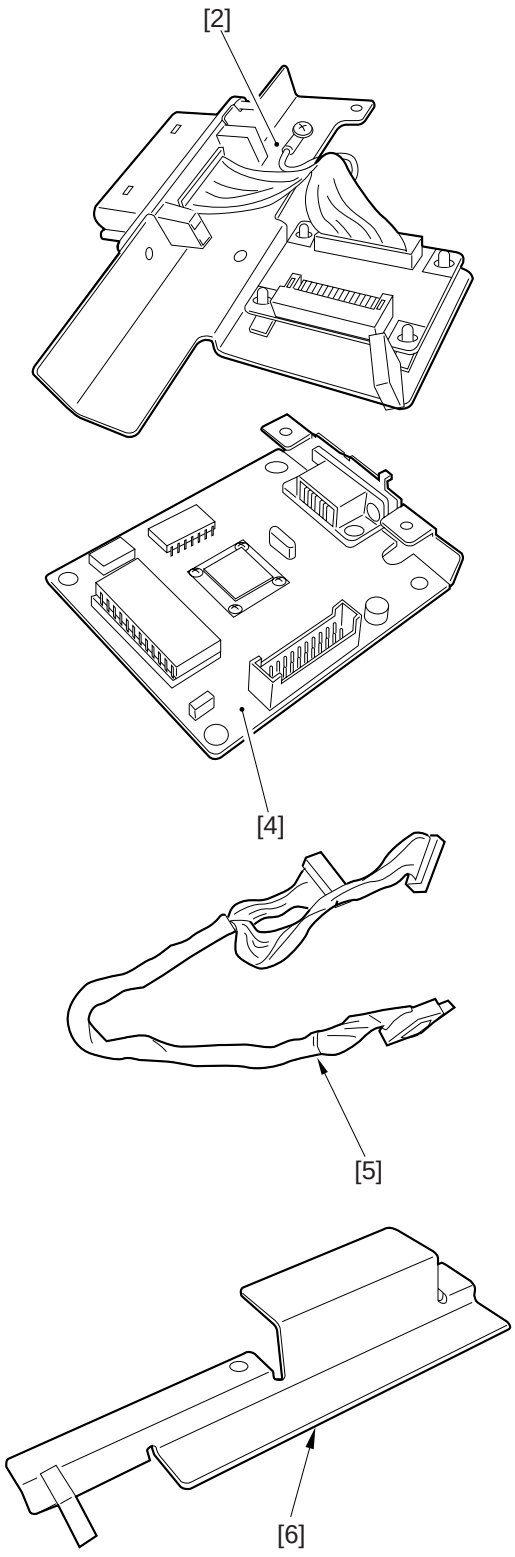
Figure 2-1

Caution:

If the printer is furnished with an ACC Interface Unit-B1 as an optional accessory, do the following:

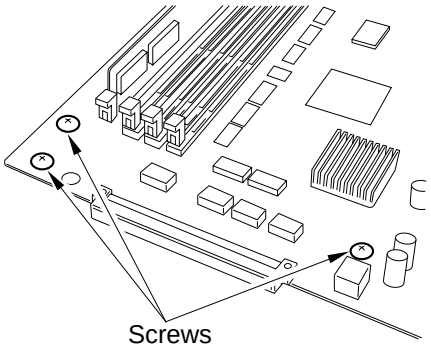
1) Remove of the following parts from ACC Interface Unit-B1:



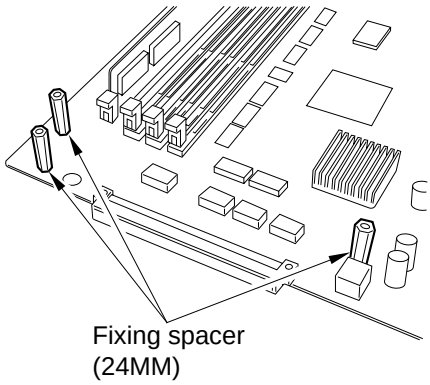


[1] Fixing spacer (24 mm)	3 pcs.
[2] Connector board with a sheet	1 pc.
[3] Fixing spacer (30 mm)	1 pc.
[4] Accessory controller PCB	1 pc.
[5] Cable	1 pc.
[6] Sheet with a cable clamp	1 pc.

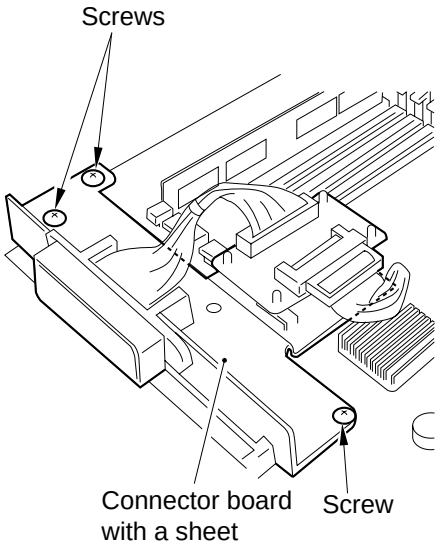
2) Remove the three screws securing the PS/PCL board in position.



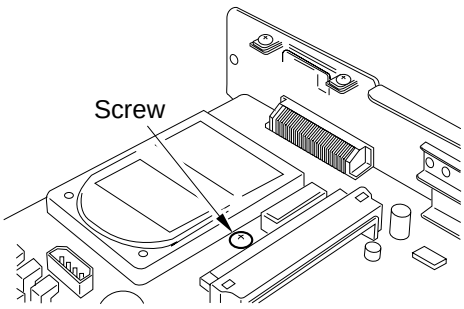
3) Attach three fixing spacers (24 mm) to the PS/PCL board.



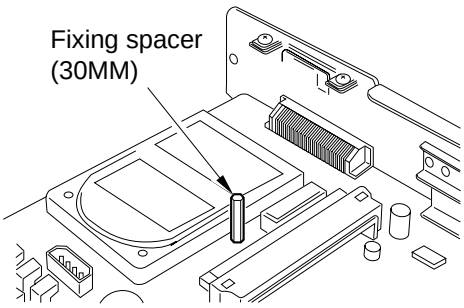
4) Mount the connector board with a sheet using three screws.



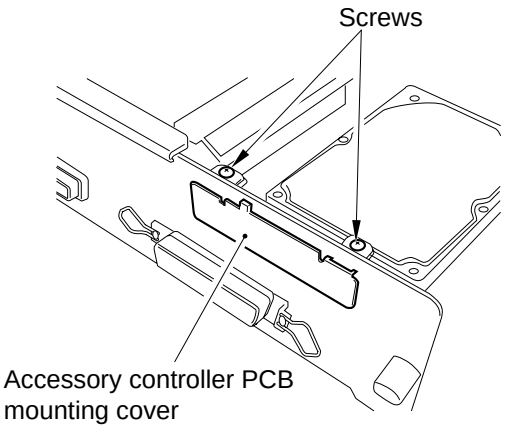
5) Remove the screw by the hard disk drive on the PS/PCL board.



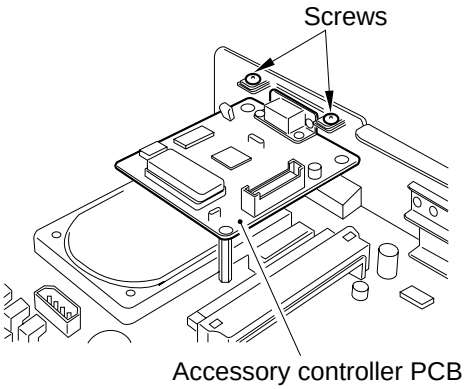
6) Attach a fixing spacer (30 mm) to the network color PS/PCL Board-A1.



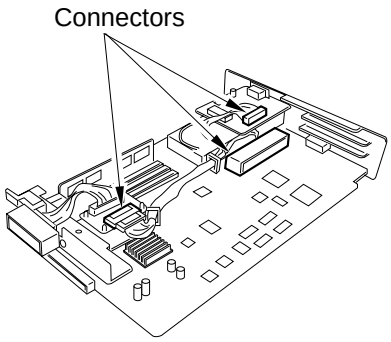
7) Detach the accessory controller PCB mounting cover by removing two screws.



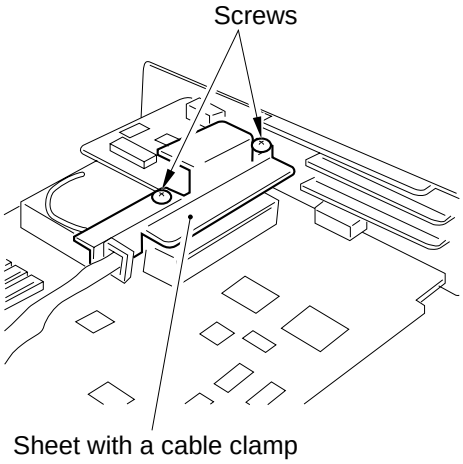
8) Mount the accessory controller PCB using two screws.



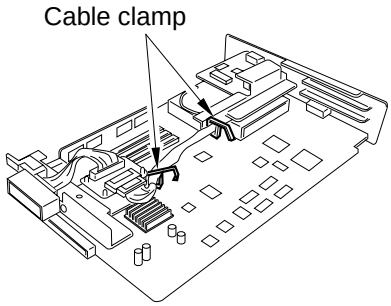
9) Connect one end (one connector) of the cable to the connector board. Connect the other end (two connectors) to one connector (longer cable) of the accessory controller PCB and one connector of the network color PS/PCL Board-A1.



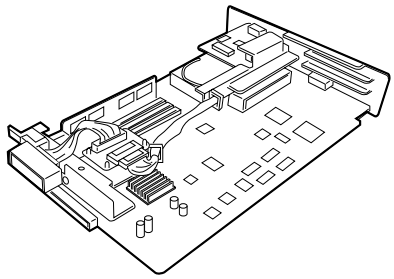
10) Secure the sheet with a cable clamp to the accessory controller PCB using two screws.



11) Fasten the cable to the cable clamp.



12) The resultant assembly should look as shown below.



2) Insert network color PS/PCL Board-A1 [4] along slit [3] into the slot.

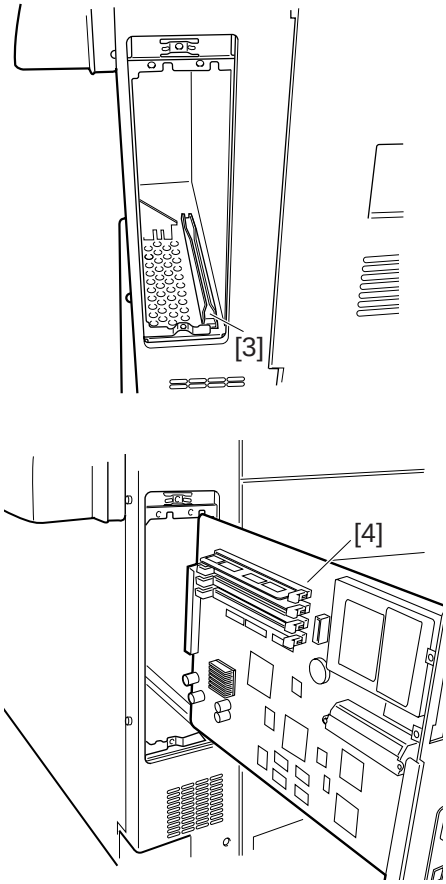


Figure 2-2

Caution:
Be careful never to touch elements and circuits mounted on the board.

3) Secure the network color PS/PCL Board-A1 to the printer by tightening two knurled screws [5].

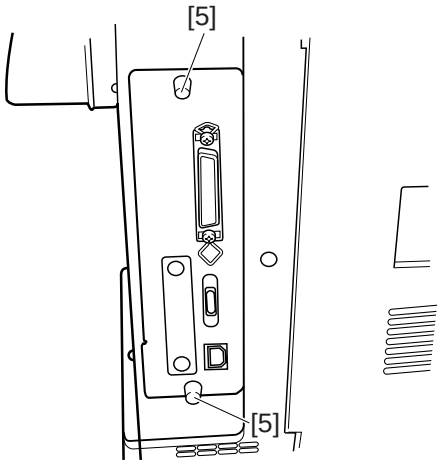


Figure 2-3

3 Selecting the Type of Message for the Printer Unit

If you have installed the PS/PCL Board to the printer unit, you must select the type of message appearing on its control panel.

- EUROPE for service maintenance
- JAPAN not used
- UNITED STATES for user maintenance
- UNKNOWN not used
- EUROPE2 not used
- JAPAN2 not used
- UNITED STATES2 for service maintenance

The default setting is UNITED STATES (i.e., for user maintenance).

To change the type of message, perform the following:

No.	Work	Remarks
1	Turn off the printer unit.	
2	Check to make sure that the jumper head is fitted to J27 of the PS/PCL Board.	
3	Install the PS/PCL Board to the printer unit.	
4	While holding down the Menu and / key on the control panel of the printer unit, turn on the printer unit.At this time, be sure to hold down the two keys until the message 'START SELF-TEST' appears.	
5	Wait until the printer unit has run self diagnosis, and indicates the message 'VERSION INFO'.	If the printer unit has started without displaying the message, turn it off, and start with step 4.
6	Press the Menu key several times so that the message 'CHANGE DEFAULT LOCALE:' appears.	
7	Press the Enter key.	
8	When 'DEFAULT LOCALE:' has appeared, select the item that indicates the site of installation using the or / key. (The currently selected item is indicated by the asterisk* on the last digit.)	• EUROPE for service maintenance • JAPAN not used • UNITED STATES for user maintenance • UNKNOWN not used • EUROPE2 not used • JAPAN2 not used • UNITED STATES2 for service maintenance The default setting is UNITED STATES (i.e., for user maintenance).

No.	Work	Remarks
9	After making the selection, press the Enter key. The message 'LOCALE STORED' will appear and remain for about 1 sec, to be replaced by the message 'CHANGE DEFAULT LOCALE:'.	
10	Turn off the printer unit, and remove the PS/PCL Board from the printer unit.	
11	Detach the jumper head J27 of the PS/PCL Board, and install the PS/PCL Board to the printer unit once again.	Be sure to detach the jumper head from J27, and store away the head for future use.
12	Turn on the printer unit.	

■ Making Sure of the Change

- You can start the printer unit and print a start page. (Check the name of the product, which differs according to the site of installation.)
- While the machine is in ready state, remove the photosensitive drum unit, and close the front door. If 'INSTALL DRUM CARTRIDGE' appears on the control panel of the printer unit, the machine is set for user maintenance; if 'SERVICE CALL E810' appears, it is set for service maintenance.

Caution:

- If the jumper head is not fitted to J27, the menu for 'CHANGE DEFAULT LOCALE:' will not appear during the above procedure.
- Do not change any items except 'CHANGE DEFAULT LOCALE:'.

4 Connecting to a Network

For information on connecting the network color PS/PCL Board-A1 to a network, refer to the accompanying documentation.

IV. SPECIAL TOOLS

You will need the following tool in addition to the special tools set.

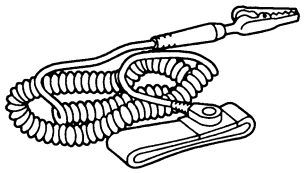
No.	Special tool	Tool No.	Shape	Rank*	Remarks
1	Wrist strap	CK-0534-000		A	

Table A-401

*See Note.

Note:
A: Each service person is expected to carry one.
B: Each group of five service persons is expected to carry one.
C: Each workshop is expected to carry one.

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