1.1 Features

The Toshiba Desk Station V gives your Toshiba Personal Computer the expansion capabilities of a desktop computer. The Desk Station V connects with any Toshiba Personal Computer that has a 240-pin docking interface. This interface is designed for easy, one-step connection. The Desk Station V has the following features, functions, and capabilities:

- ❑ Plug and Play

  Supports plug and play technology. Under a plug and play OS, automatic device configuration and hot/warm docking (also undocking) with the computer is insured (hot: system power on, warm: system suspended).

- ❑ PCI/ISA bus expansion slot

  Two PCI/ISA (Peripheral Component Interconnect, Industry Standard Architecture) bus slots and one half-size PCI bus slot.

- ❑ MultiBox

  The MultiBox provides for connection of either an FDD or a CD-ROM module. A Floppy Disk Drive supports 3.5-inch 2HD (1.44 MB) disks and 2DD (720 KB) disks. A full-size, quadruple-speed CD-ROM drive contains an ATAPI (AT attachment packet interface) controller.

- ❑ PC card slot

  Two PC card (PCMCIA) slots support standard version release 2.0 cards. Each slot can accommodate one Type III (10.5 mm) card.

- ❑ SCSI expansion

  On-board SCSI-2 (Small Computer System Interface) controller. It enables connection of the following: one 5.25-inch SCSI device can be installed in the internal drive bay; external SCSI devices can be connected to the SCSI port on the back panel.

- ❑ Audio expansion

  Provides stereo speakers and the following jacks to connect external audio devices: stereo headphone, stereo microphone, audio line-in, and audio line-out.

- ❑ Joystick port

  This port is used to connect a joystick. The signals pass through the Desk Station V.

- CRT port

  Used to connect an analog interface display. The signals pass through the Desk Station V.

- Mouse port

  Used to connect a PS/2 keyboard. The signals pass through the Desk Station V.

- Keyboard port

  Used to connect a PS/2 keyboard. The signals pass through the Desk Station V.

- Parallel port

  Used to connect a Centronics compatible printer or other parallel device. The signals pass through the Desk Station V.

- Serial port

  Used to connect serial devices such as a serial printer, serial mouse, or external modem. The signals pass through the Desk Station V.

- Security lock key

  Provides a security lock key to protect the computer and installed devices. It disables docking/undocking of the computer and prevents opening of the expansion slot and SCSI drive bay.

The Desk Station V is shown in figure 1-1.

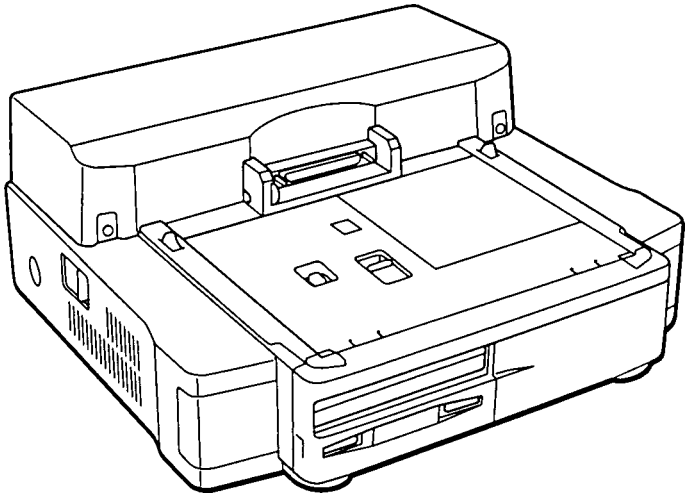


Figure 1-1 Desk Station V

The Desk Station V system configuration is shown in figure 1-2.

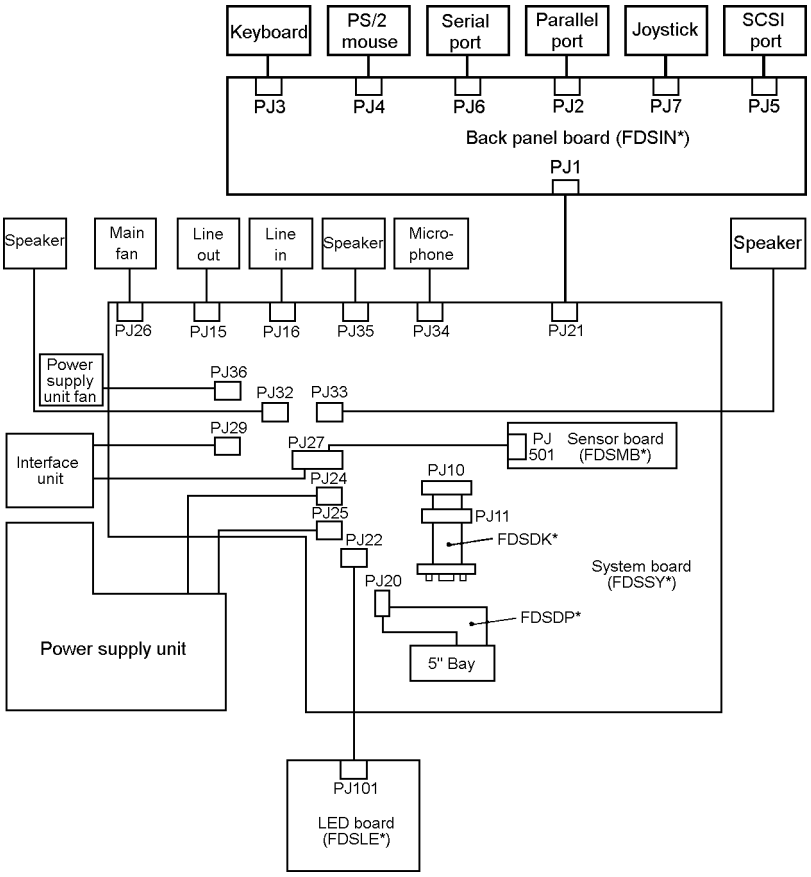


Figure 1-2 Desk Station V system unit configuration

1.2 System Unit Block Diagram

The block diagrams of the Desk Station V and Toshiba 700 Series Personal Computer are shown in figures 1-3 and 1-4. They show how the Desk Station V is configured and how it works when the computer is attached.

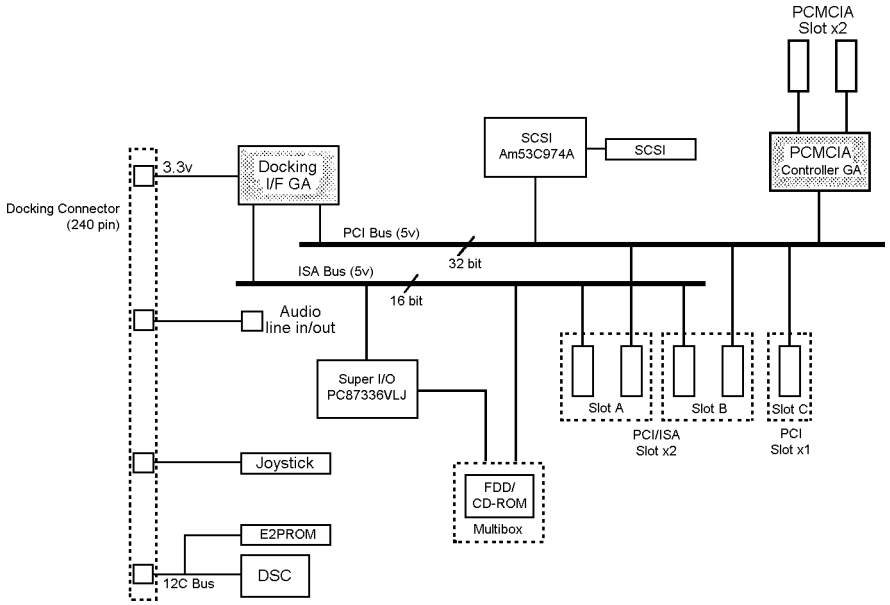


Figure 1-3 Desk Station V block diagram

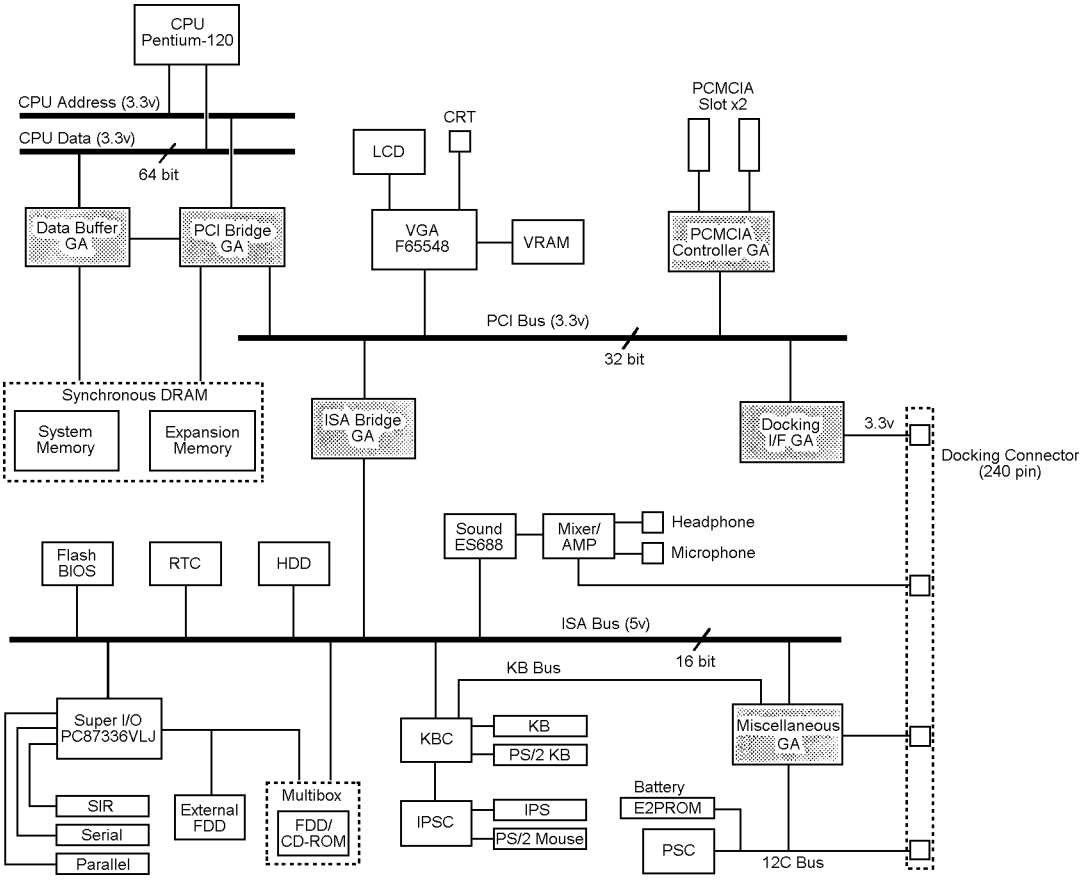


Figure 1-4 700 series computer block diagram

The system board is composed of the following major components:

- ❑ Docking Interface Gate Array
  This gate array has the following functions:
  - Docking interface
  - PCI-PCI bus bridge
  - PCI-ISA bus bridge
  - High speed ISA bus control

- ❑ PCMCIA Controller Gate Array
  This gate array has the following function:
  - PCMCIA card control

- ❑ Super I/O
  National Semiconductor PC87336VLJ has the following functions:
  - Two UARTs 16550A equivalent (not used)
  - One FDC mPD765A equivalent
  - One parallel port control (not used)

- ❑ SCSI Controller
  Advanced Micro Devices Am53C974A is used.
  This fast SCSI-2 controller supports PCI bus mastering data transfer.

1.3 Power Supply

1.3.1 AC Input

Voltage:	100 to 115 V 220 to 240 V
Frequency:	50/60 Hz

1.3.2 DC Output

Table 1-1 DC output

Name	Voltage (V)	Ripple (mV)	Ampere (mA)	Use for
VCC	+5.0 ±5%	50	7,200	GA, PCI slot, ISA slot, SCSI bay, MultiBox, PC card
P3V	+3.3 ±5%	30	7,100	GA, PCI slot, PC card
P12V	+12.0 ±5%	120	1,800	PCI slot, ISA slot, PC card
M12V	-12.0 ±10%	240	300	PCI slot, ISA slot
M5V	-5.0 ±10%	100	300	ISA slot
DSV	+5.0 ±5%	50	50	DSC
FP12V	+12.0 ±10%	240	50	LED, Fan, Undock motor
P15V	+15.0 ±5%	150	2,700	Computer

NOTE: *When an AC cord is connected to the Desk Station V, the power supply unit always supplies DSV, FP12V, and P15V even when the system power is off.*

2.1 Troubleshooting

Chapter 2 describes how to determine if a Field Replaceable Unit (FRU) in the Desk Station V is not functioning properly. The FRU's covered are:

1. Power supply unit
2. System board (FDSSY*)
3. Sensor board (FDSMB*)
4. Back panel board (FDSIN*)
5. LED board (FDSLE*)
6. MultiBox cable (FDSDP**)
7. Interface cable (FDSDK*)

The following tools are required to perform the Desk Station V troubleshooting steps:

1. Diagnostics Disk
2. Phillips screwdriver (3 mm)
3. Toshiba MS-DOS system disk(s)
   (You must install the following onto the disk: SYS.COM, FORMAT.COM, FDISK.COM, and FDISK.EXE)
4. 2DD or 2HD formatted work disk for floppy disk drive testing
5. Cleaning kit for floppy disk drive troubleshooting
6. RS-232-C wraparound connector
7. Printer wraparound connector
8. Multimeter
9. External CRT
10. PS/2 or compatible keyboard
11. PS/2 or compatible mouse
12. Serial port wraparound connector
13. PCMCIA wraparound card
14. Multimedia sound system with line-in and line-out ports
15. Headphone
16. CD-ROM drive
17. Toshiba EMI test disk TDY-03
18. Music CD
19. DS bus wraparound board
20. PCI bus wraparound board
21. ISA bus wraparound board
22. Computer system that can be connected to the Desk Station V

2.2 Troubleshooting Flowchart

Use the flowchart in figure 2-1 as a guide to determine which FRU testing procedures to execute. Before performing the flowchart steps, do the following:

1. Remove all optional equipment from the Desk Station V.

2. Connect a personal computer to the Desk Station V.

> ***NOTE**: Refer to the Desk Station V User's Manual for instructions on how to connect the computer to the Desk Station V.*

3. Connect the PCI bus wraparound board connector to the PCI bus port, the ISA bus wraparound board connector to the ISA bus port, the printer wraparound connector to the printer port, the external CRT connector to the external CRT, the PS/2 keyboard connector to the PS/2 or compatible keyboard, the PS/2 mouse to the PS/2 or compatible mouse, the PCMCIA wraparound board to the PCMCIA port, the external speaker to the line-out port, the external microphone to the line-in port, and the RS-232-C wraparound connector to the serial port on the Desk Station V.

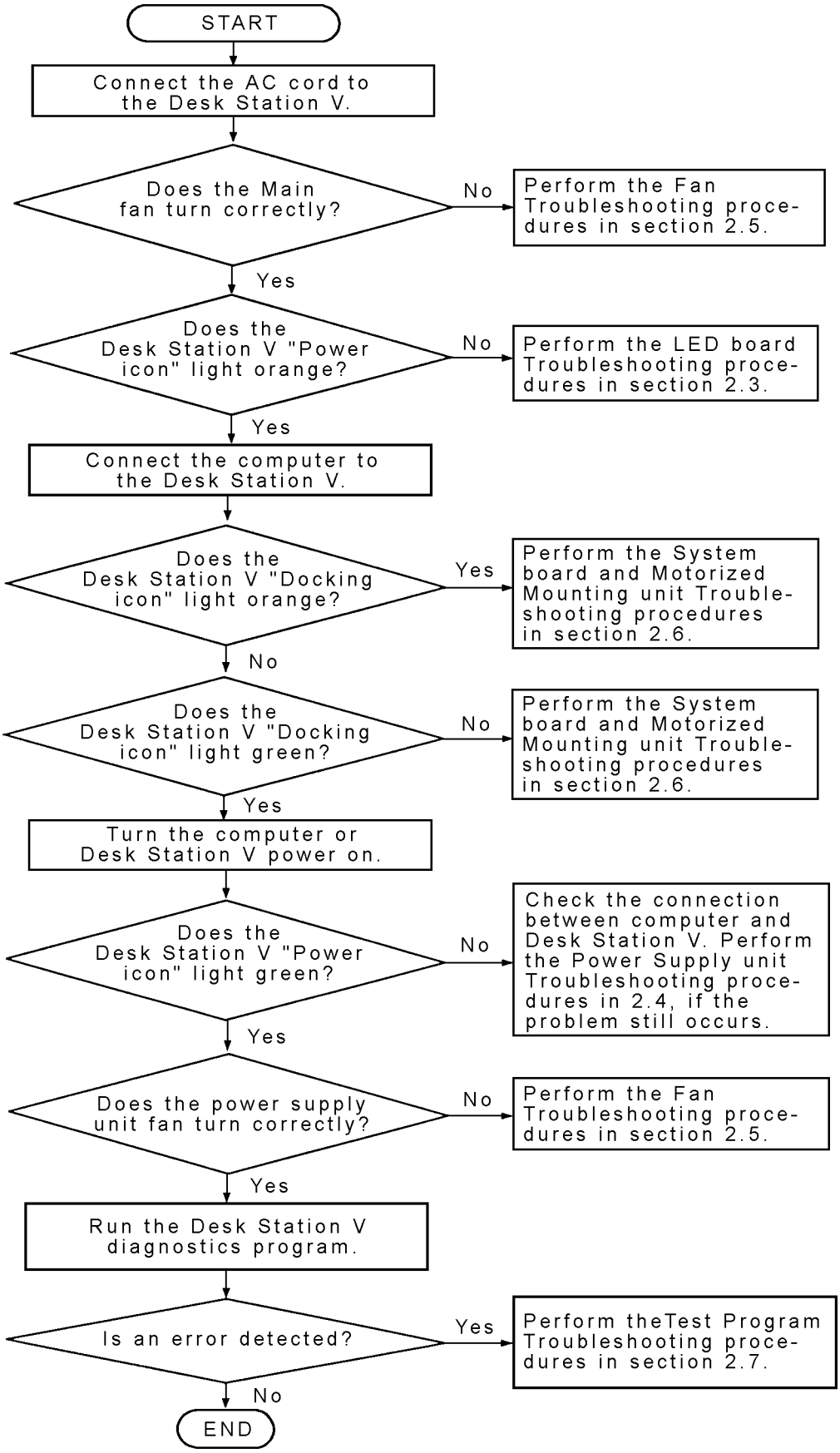


Figure 2-1 Troubleshooting flowchart

2.3 LED Board Troubleshooting

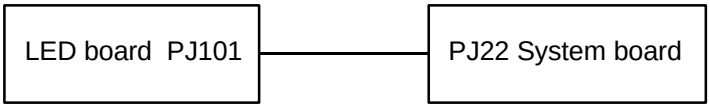
This section describes how to determine if the LED board is defective. Perform Procedure 1 as necessary. The procedure described in this section is:

Procedure 1: Connector Check

Procedure 1 Connector Check

The LED board is connected to the system board (FDSSY*) by a cable. This cable may be disconnected. Check the connection. Disassembly procedures are described in Chapter 4, *Replacement Procedures.*

Check 1 Make sure the LED cable is properly connected to the system board as shown below:



Restart the system. If the problem still occurs, perform Check 2.

Check 2 The LED board may be damaged. Replace it with a new one.

Restart the system. If the problem still occurs, perform Check 3.

Check 3 The system board may be damaged. Replace it with a new one.

Restart the system.

2.4 Power Supply Unit Troubleshooting

This section describes how to determine if the power supply unit is defective. Start with Procedure 1 and continue with the other procedures as instructed. The procedures described in this section are:

Procedure 1: AC Cord Check

Procedure 2: Power Supply Connector Check

Procedure 3: Power Supply Output Voltage Check

Procedure 4: Power Supply Unit Replacement Check

Procedure 1 AC Cord Check

Power is supplied to the Desk Station V from a wall outlet through the AC cord.

Check 1 Make sure the AC cord is firmly plugged into the AC IN socket on the back of the Desk Station V.

Check 2 Unplug the AC cord from the Desk Station V. Check the AC cord output voltage with a multimeter.

If output voltage is normal, perform Procedure 2.

If output voltage is abnormal, perform Check 3.

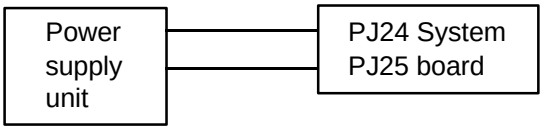
Check 3 Replace the AC cord with a new one. Perform Check 2 again.

If the problem still exists, perform Procedure 2.

Procedure 2 Power Supply Connector Check

The Desk Station V power supply provides voltage to the system board (FDSSY*) through the power supply cables.

Check 1 Make sure the two power supply cables are properly connected to the system board (FDSSY*) as shown below:



Restart the system. If the problem still exists, perform Check 2.

Check 2 The four power supply cables may be damaged. Perform Procedure 3.

Procedure 3 Power Supply Output Voltage Check

Table 2-1 shows the Desk Station V power supply output voltage specifications.

Table 2-1 Power supply specifications

Board name	PJ number	Pin No.	Signal name
System board	PJ24	1	DOCPWN
		2	DOCPWN
		3	GND
		4	P12V
		5	FP12V
		6	NC
		7	DSVCC
		8	GND
		9	GND
		10	P3V
		11	P3V
	PJ25	1	DSG
		2	P15V
		3	GND
		4	M5V
		5	M12V
		6	GND
		7	GND
		8	VCC
		9	VCC
		10	PCONF

Check 1 Check the output voltage of each cable.

> ***NOTE**: To check the output voltage, a computer must be connected to the Desk Station V and the computer and the Desk Station V must be turned on.*

If the output voltage is normal, another unit may be damaged.

If the output voltage is abnormal, perform Procedure 4.

Procedure 4 Power Supply Unit Replacement Check

The power supply unit may be damaged. Replace the power supply unit following the procedures described in Chapter 4, *Replacement Procedures.*

If the problem still remains, the system board may be damaged. Perform the System Board and Motorized Mounting Unit Troubleshooting Procedures in section 2.6.

2.5 Fan Troubleshooting

This section describes how to determine if the fans are defective. Start with Procedure 1 and continue with the other procedures as instructed. The procedures described in this section are:

Procedure 1: Connector Check

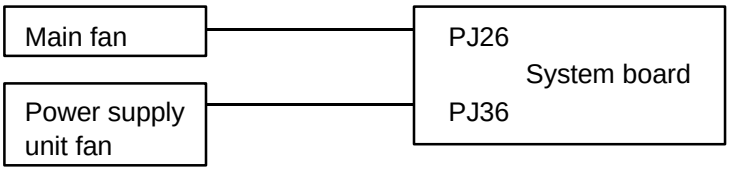
Procedure 2: Circuit Check

> ***NOTE**: To operate the power fan, a computer must be connected to the Desk Station V and the computer and Desk Station V must be turned on.*

Procedure 1 Connector Check

The main fan and the power supply unit fan are connected to the system board (FDSSY*) by cables. Open the top cover of the Desk Station V to check the cable connections. Disassembly procedures are described in Chapter 4, *Replacement Procedures.*

Check 1 Make sure the fan cables are properly connected to the System board as shown below:



Restart the system. If the problem still occurs, perform Check 2.

Check 2 The main fan and/or the power supply unit fan may be damaged. Replace with a new main fan and/or power supply unit fan.

Restart the system. If the problem still occurs, perform Procedure 2.

Procedure 2 Circuit Check

There may be problems with the circuit connecting the power supply. Perform the power supply unit troubleshooting procedures described in section 2.4.

2.6 System Board and Motorized Mounting Unit Troubleshooting

This section describes how to determine if the system board (FDSSY*) or the Motorized Mounting Unit is defective. Start with Procedure 1 and continue with the other steps as instructed. The procedures described in this section are:

Procedure 1: Connections Between the Computer and the Desk Station V Check

Procedure 2: Connector and Replacement Check

Procedure 1 Connections Between the Computer and the Desk Station V Check

If the eject icon is flashing orange, the computer is not connected to the Desk Station V, go to check 1.

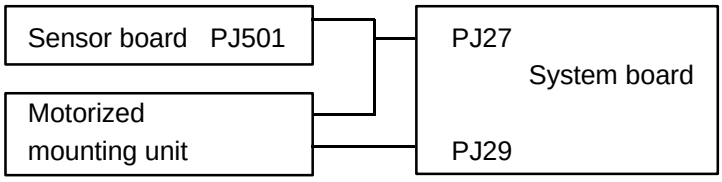
Check 1 The Desk Station V is connected to the computer through the docking I/F connector. Check this connector, and connect the computer if it is not properly connected. Restart the system.

If the system still does not function properly, perform Procedure 2.

Procedure 2 Connector and Replacement Check

The interface unit is connected to the system board by a socket. This socket may be disconnected from the system board (FDSSY*). Check this connection. Disassembly procedures are described in Chapter 4, *Replacement Procedures.*

Check 1 Make sure the Motorized mounting unit is properly connected to the system board as shown below:



Restart the system. If the problem still occurs, perform Check 2.

Check 2 The Motorized mounting unit or system board (FDSSY*) may be damaged.

Replace the Motorized mounting unit with a new one, and restart the system.

If the problem still exists, the system board may be damaged. Replace it with a new system board.

2.7 Test Program Troubleshooting

This section describes how to determine which part is defective when an error is detected on one of the items in the test program. Test program operation is described in Chapter 3.

If an error is detected on any of the following seven tests, perform the appropriate procedure.

Procedure 1: Printer Test Check

Procedure 2: Serial Port Check

Procedure 3: Expansion Test Check

Procedure 4: FDD Test Check

Procedure 5: Keyboard/Mouse Test Check

Procedure 6: CD-ROM Test Check

Procedure 7: Display Test Check

Procedure 1 Printer Test Check

Perform this procedure when an error is detected on subtests 01 (Ripple pattern), 02 (Function), and 03 (Wraparound) of the printer test. Disassembly procedures are described in Chapter 4, *Replacement Procedures.*

Check 1 Make sure the printer and wraparound connector are properly connected to the Desk Station V. If the error still occurs, perform Check 2.

Check 2 The back panel board (FDSIN*) may be damaged. Replace it with a new one. If the error still occurs, perform Check 3.

Check 3 The system board may be damaged. Replace the system board (FDSSY*) with a new one. If the error still occurs, perform Check 4.

Check 4 The interface cable may be damaged. Replace it with a new one.

Procedure 2 Serial Port Check

Perform this procedure when an error is detected on subtest 01 (Serial port wraparound) of the serial port test. Disassembly procedures are described in Chapter 4, *Replacement Procedures*.

Check 1 Make sure the RS-232-C wraparound connector is properly connected to the Desk Station V. If the error still occurs, perform Check 2.

Check 2 Check that the computer's setup program is set correctly. Perform the test program again. If the error still occurs, perform Check 3.

Check 3 The back panel board (FDSIN*) may be damaged. Replace it with a new one. If the error still occurs, perform Check 4.

Check 4 The system board may be damaged. Replace the system board (FDSSY*) with a new one. If the error still occurs, perform Check 5.

Check 5 The interface cable may be damaged. Replace it with a new one.

Procedure 3 Expansion Test Check

Perform this procedure when an error is detected during the expansion test. Disassembly procedures are described in Chapter 4, *Replacement Procedures.*

Check 1 Make sure the wraparound board is properly connected to the Desk Station V. If the error still occurs, perform Check 2.

Check 2 Make sure the interface cable is properly connected. If the error still occurs, perform Check 3.

Check 3 The back panel board (FDSIN*) may be damaged. Replace it with a new one. If the error still occurs, perform Check 4.

Check 4 The system board may be damaged. Replace the system board (FDSSY*) with a new one. If the error still occurs, perform Check 5.

Check 5 The interface cable may be damaged. Replace it with a new one.

Procedure 4 FDD Test Check

Perform this procedure when an error is detected during the FDD test. Disassembly procedures are described in Chapter 4, *Replacement Procedures.*

When the FDD is connected to the MultiBox **port**, perform the following procedures:

Check 1 Make sure the FDD cable is properly connected to the FDD and Desk Station V MultiBox port. If the error still occurs, perform Check 2.

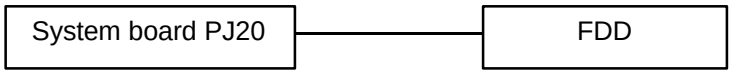
Check 2 Make sure you turn on the Desk Station V after you turn on the FDD. If the error still occurs, perform Check 3.

Check 3 The system board may be damaged. Replace the system board (FDSSY*) with a new one. If the error still occurs, perform Check 4.

Check 4 The MultiBox cable may be damaged. Replace it with a new one.

When the FDD is connected to the MultiBox **bay**, perform the following procedures:

Check 1 Make sure the MultiBox cable is connected between the FDD and the system board (PJ20) as shown below. If the error still occurs, perform Check 2.



Check 2 The system board may be damaged. Replace it with a new one. If the error still occurs, perform Check 3.

Check 3 The FDD may be defective. Replace it with a new one.

Procedure 5 Keyboard/Mouse Test Check

Perform this procedure when an error is detected during the keyboard (mouse) test. Disassembly procedures are described in Chapter 4, *Replacement Procedures.*

Check 1 Verify that the external keyboard cable or PS/2 mouse cable is properly connected to the Desk Station V. If the error still occurs, perform Check 2.

Check 2 Make sure you turn on the Desk Station V after you connect the external keyboard or PS/2 mouse. If the error still occurs, perform Check 3.

Check 3 The back panel board may be damaged. Replace it with a new one. If the error still occurs, perform Check 4.

Check 4 The system board may be damaged. Replace it with a new one. If the error still occurs, perform Check 5.

Check 5 The interface cable may be damaged. Replace it with a new one. If the error still occurs, the 3.5-inch diagnostic FDD you are using may be defective.

Procedure 6 CD-ROM Test Check

Perform this procedure when an error is detected during the CD-ROM test. Disassembly procedures are described in Chapter 4, *Replacement Procedures.*

When the CD-ROM drive is connected to the MultiBox **port**, perform the following procedures:

Check 1 Make sure the MultiBox cable is properly connected to the CD-ROM drive and the Desk Station V MultiBox. If the error still occurs, perform Check 2.

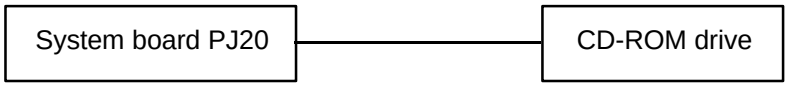
Check 2 Make sure you turn on the Desk Station V after you turn on the CD-ROM drive. If the error still occurs, perform Check 3.

Check 3 The system board may be damaged. Replace the system board (FDSSY*) with a new one. If the error still occurs, perform Check 4.

Check 4 The MultiBox cable may be damaged. Replace it with a new one.

When the CD-ROM drive is connected to the MutiBox **bay**, perform the following procedures:

Check 1 Make sure the MultiBox is properly connected to the CD-ROM drive and the system board (PJ20) as shown below. If the error still occurs, perform Check 2.



Check 2 The system board may be damaged. Replace it with a new one. If the error still occurs, go to Check 3.

Check 3 The CD-ROM drive may be defective. Replace it with a new one.

Procedure 7 Display Test Check

Perform this procedure when an error is detected during the display test. Disassembly procedures are described in Chapter 4, *Replacement Procedures.*

When the external CRT is connected to the display port, perform the following procedures:

Check 1 Make sure the external CRT cable is properly connected to the Desk Station V display port. If the error still occurs, perform Check 2.

Check 2 Make sure you turn on the Desk Station V after you turn on the external CRT. If the error still occurs, perform Check 3.

Check 3 The back panel board may be damaged. Replace it with a new one. If the error still occurs, perform Check 4.

Check 4 The system board may be damaged. Replace the system board (FDSSY*) with a new one.

3.1 The Diagnostic Test

This chapter explains how to use the Diagnostic Test program to test the functions of the Desk Station V's hardware modules. The Diagnostics Program, stored on the Diagnostic Disk, consists of nine programs grouped into the Service Program Module (DIAGNOSTICS MENU) and thirteen tests in the Test Program Module (DIAGNOSTIC TEST).

> ***NOTE:*** *To start the diagnostics, follow these steps:*
>
> 1. *Check all cables for loose connections.*
> 2. *Exit any application you may be using and close Windows.*

The DIAGNOSTICS MENU consists of the following functions.

- ❑ DIAGNOSTIC TEST
- ❑ HARD DISK FORMAT
- ❑ HEAD CLEANING
- ❑ LOG UTILITIES
- ❑ RUNNING TEST
- ❑ FDD UTILITIES
- ❑ SYSTEM CONFIGURATION
- ❑ EXIT TO MS-DOS
- ❑ SETUP

Chapter 3 explains the operation of three functions: DIAGNOSTICS TESTS, HEAD CLEANING, and FDD UTILITIES. For an explanation of the other functions, refer to the *700 Series Maintenance Manual.*

Of the thirteen functional tests in the DIAGNOSTIC TEST MENU, nine(*) are used for the Desk Station V test. Functional tests not marked by an asterisk are not used for the Desk Station V.

- ❑ SYSTEM TEST*
- ❑ MEMORY TEST
- ❑ KEYBOARD TEST*
- ❑ DISPLAY TEST*
- ❑ FLOPPY DISK TEST*
- ❑ PRINTER TEST*
- ❑ ASYNC TEST*
- ❑ HARD DISK TEST
- ❑ REAL TIMER TEST
- ❑ NDP TEST
- ❑ EXPANSION TEST*
- ❑ SOUND TEST*
- ❑ CD-ROM TEST*

You will need the following equipment to perform some of the Diagnostic test programs.

- ❑ The Diagnostics Disk (All tests)
- ❑ Formatted working disk for the floppy disk drive test (All tests)
- ❑ 3.5-inch 2HD/2DD disk for external 3.5-inch FDD
- ❑ Cleaning kit to clean the floppy disk drive heads (Head Cleaning)
- ❑ PCMCIA wraparound board for the I/O card test (PCMCIA test)
- ❑ Printer wraparound connector for the printer wraparound test (Printer test)
- ❑ RS-232-C wraparound connector for the RS-232-C port wraparound test (ASYNC test)
- ❑ CD test media (Toshiba-EMI test disk TDY-03 and music CD) (CD-ROM test)
- ❑ External CRT (All tests)
- ❑ PS/2 or compatible keyboard (All tests)
- ❑ PS/2 or compatible mouse (Keyboard test)
- ❑ Multimedia sound system with line-in and line-out ports (Sound test)
- ❑ Headphone (Sound test)
- ❑ CD-ROM drive (CD-ROM test)
- ❑ Computer system that can be connected to the Desk Station V (All tests)

The following sections detail the tests within the Diagnostic Test function of the DIAGNOSTIC TEST MENU.

3.2 Executing the Diagnostic Test

Toshiba MS-DOS is required to run the DIAGNOSTICS PROGRAM. To start the DIAGNOSTICS PROGRAM, follow these steps:

1. Set the computer on the Desk Station V.

2. Insert the Diagnostics disk into the computer's floppy disk drive and turn on the Desk Station V or the computer.

> ***NOTE**: If you intend to run the FDD test, install the FDD in the Desk Station V MultiBox. To run the CD-ROM test, install the optional CD-ROM drive in the Desk Station V MultiBox.*

The following menu will appear:

```
TOSHIBA personal computer xxx DIAGNOSTICS
version X.XX (c) copyright TOSHIBA Corp. 19XX

DIAGNOSTICS MENU :

  1 - DIAGNOSTIC TEST
  2 - HARD DISK FORMAT
  3 -
  4 - HEAD CLEANING
  5 - LOG UTILITIES
  6 - RUNNING TEST
  7 - FDD UTILITIES
  8 - SYSTEM CONFIGURATION
  9 - EXIT TO MS-DOS
  0 - SETUP
                              ↑↓→←    :   Select items
                              Enter   :   Specify
                              Esc     :   Exit
```

> ***NOTE**: To exit the DIAGNOSTICS MENU, press the **Esc** key. If a test program is in progress, press **Ctrl** + **Break** to exit the test program or press **Ctrl** + **C** to stop the test program.*

3. To select the DIAGNOSTIC TEST MENU from the DIAGNOSTICS MENU, set the highlight bar to **1**, and press **Enter**. The following screen will appear:

```
TOSHIBA personal computer xxx DIAGNOSTICS
version X.XX (c) copyright TOSHIBA Corp. 19XX
DIAGNOSTIC TEST MENU :

 1 - SYSTEM TEST
 2 - MEMORY TEST
 3 - KEYBOARD TEST
 4 - DISPLAY TEST
 5 - FLOPPY DISK TEST
 6 - PRINTER TEST
 7 - ASYNC TEST
 8 - HARD DISK TEST
 9 - REAL TIMER TEST
10 - NDP TEST
11 - EXPANSION TEST
12 - SOUND TEST
13 - CD-ROM TEST
88 - ERROR RETRY COUNT SET [HDD & FDD]
99 - EXIT TO DIAGNOSTICS MENU
                                  ↑↓→←  :  Select items
                                  Enter  :  Specify
                                  Esc    :  Exit
```

Refer to sections 3.4 through 3.12 for detailed descriptions of the nine Diagnostic Tests that apply to the Desk Station V. Function 88 sets the floppy disk drive and hard disk drive error retry count. Function 99 exits the submenus of the Diagnostic Test and returns to the Diagnostic Menu.

4. Select the option you want to execute and press **Enter**. The following message will appear:

```
SYSTEM TEST    XXXXXXX
                                  xxx DIAGNOSTIC TEST VX.XX
                                  [Ctrl]+[Break]; test end
                                  [Ctrl]+[C]    ; key stop
SUB-TEST : XX
PASS COUNT: XXXXX ERROR COUNT: XXXXX
WRITE DATA: XX  READ DATA : XX
ADDRESS : XXXXXX STATUS  : XXX

SUB-TEST MENU :

01 - PCMCIA wraparound (Main)
02 - PCMCIA wraparound (DS-V)
03 - DS bus wraparound
04 - PCI bus wraparound
05 - ISA bus wraparound
06 - SCSI bus wraparound
07 - RGB monitor ID
08 - Joystick
09 - Joystick wraparound
99 - Exit to DIAGNOSTIC TEST MENU
                                  ↑↓→←    :   Select items
                                  Enter    :   Specify
                                  Esc      :   Exit
```

***NOTE**: The menu displayed by your computer may be slightly different from the one shown above.*

5. Select the desired subtest number from the subtest menu and press **Enter**. The following message will appear:

```
TEST LOOP   : YES
```

   Selecting **YES** increases the pass counter by one each time the test cycle ends and restarts the test cycle.

   Selecting **NO** returns the subtest menu to the main menu after the test is complete.

6. The following message will appear:

```
ERROR STOP : YES
```

   Use the left or right arrow keys to move the cursor to the desired option and press **Enter**.

   Selecting **YES** stops the test program when an error is found and displays the operation guide on the right side of the display screen as shown below:

```
ERROR STATUS NAME    [[ HALT OPERATION ]]

                                      1: Test end
                                      2: Continue
                                      3: Retry
```

   These three selections have the following functions, respectively:

   1: Terminates the test program and exits to the subtest menu.
   2: Continues the test.
   3: Restarts the test from the error.

   Selecting **NO** keeps the test running even if an error is found.

7. Use the arrow keys to move the cursor to the desired option and press **Enter**.

   Table 3-1 in section 3.3 describes the function of each test on the subtest menu. Table 3-2 in section 3.13 describes the error codes and error status for each error.

3.3 Subtest Names

Table 3-1 lists the subtest names for each test program in the DIAGNOSTIC TEST MENU which applies to the Desk Station V.

Table 3-1 Subtest names (1/2)

No.	Test name	Subtest No.	Subtest item
1	SYSTEM	06	Serial ID check
		07	DSC version
		08	Key position check
3	KEYBOARD	01	Pressed key display
		02	Pressed keycode display
		03	PS/2 Mouse connect check
		04	Pointing stick
4	DISPLAY	01	VRAM read/write
		02	Character attributes
		03	Character set
		04	80x25/30 Character display
		05	320x200 Graphics display
		06	640x200 Graphics display
		07	640x350/480 Graphics display
		08	Display page
		09	“H” pattern display/Border color
		10	LED/DAC pallet
		11	Color display
5	FDD	01	Sequential read
		02	Sequential read/write
		03	Random address/data
		04	Write specified address
		05	Read specified address
6	PRINTER	01	Ripple pattern
		02	Function
		03	Wraparound
7	ASYNC	01	Wraparound (board)
		02	Point to point (send)
		03	Point to point (receive)
		04	Interrupt test
		05	SIR Wraparound test
		06	SIR point to point (send)
		07	SIR point to point (receive)

Table 3-1 Subtest names (2/2)

No.	Test name	Subtest No.	Subtest item
11	EXPANSION	01	PCMCIA wraparound (Main)
		02	PCMCIA wraparound (DS-V)
		03	DS bus wraparound (DS-V)
		04	PCI bus wraparound (DS-V)
		05	ISA bus wraparound (DS-V)
		06	SCSI bus wraparound (DS-V)
		07	RGB monitor ID
		08	Joystick
		09	Joystick wraparound
12	SOUND	01	CODEC (Recoding/Playback)
		02	FM-Synthesizer
		03	SINE-Wave Playback
		04	CODEC (Line In/Out)
13	CD-ROM	01	Sequential read
		02	Read specified address
		03	Random address/data
		04	Playback Music

3.4 System Test

To execute the System Test select **1** from the DIAGNOSTIC TEST MENU, press **Enter**, and follow the directions displayed on the screen. Move the highlight bar to the subtest you want to execute and press **Enter**.

Subtest 01 to 05 Not used

Subtest 06 Serial ID check

This subtest checks the Desk Station V serial ID, which is stored in EEPROM. If the ID is not found, this test generates a four-byte random number plus one checksum byte. It writes the four-byte number to EEPROM address 88h-8Bh and the one checksum byte to 8Fh.

Subtest 07 DSC version

This subtest checks the DSC version.

Subtest 08 Key position check

This subtest checks the position of the Desk Station V key. To execute the test, insert the key, turn it to the NORMAL position and press **Enter**. Turn the key again and a message should indicate its current position.

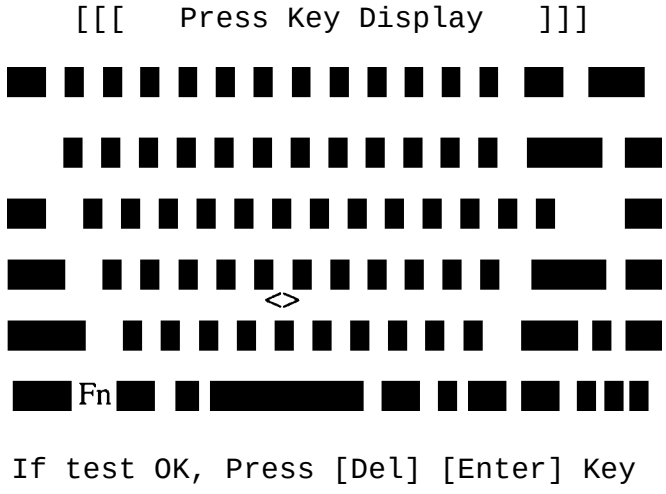
3.5 Keyboard Test

To execute the Keyboard Test, select **3** from the DIAGNOSTIC TEST MENU, press **Enter**, and follow the directions displayed on the screen. The Keyboard test contains three subtests that test the computer's keyboard actions. Move the highlight bar to the subtest you want to execute and press **Enter**.

Subtest 01 Pressed key display

> ***NOTES:*** *1. To execute subtests 01 to 02, a PS/2 keyboard must be connected to the Desk Station V.*
> *2. The **Num Lock** and the **Overlay** mode must be off to execute this subtest.*

When you execute this subtest, the keyboard layout is drawn on the display as shown below. When any key is pressed, the corresponding key on the screen changes to an "*****" character. Holding a key down enables the auto-repeat function which causes the key's display character to blink.



Subtest 02 Pressed key code display

When a key is pressed, the scan code, character code, and keytop name are displayed on the screen in the format shown below. The **Ins**, **Caps Lock**, **Num Lock**, **Scroll Lock**, **Alt**, **Ctrl**, **Left Shift**, and **Right Shift** keys are displayed in reverse screen mode when pressed.

```
KEYBOARD TEST  IN PROGRESS  302000

               Scan code        =
               Character code   =
               Keytop           =

Ins Lock Caps Lock Num Lock  Scroll Lock
Alt  Ctrl  Left Shift Right Shift

PRESS [Enter] KEY
```

Subtest 03 PS/2 mouse connect check

> ***NOTE**: To execute the PS/2 mouse connect check, a PS/2 mouse must be connected to the Desk Station V.*

This subtest checks whether a PS/2 mouse is connected or not.

If this test does not detect an error, it returns to the subtest menu.
If this test detects an error, the following message appears:

```
KBD - MOUSE INTERFACE ERROR

                              [[ HALT OPERATION ]]

                              1: Test end
                              2: Continue
                              3: Retry
```

Subtest 04 Pointing Stick (Not used)

3.6 Display Test

> ***NOTE**: To execute the display test, an external CRT must be connected to the Desk Station V external CRT port.*

To execute the Display Test select **4** from the DIAGNOSTIC TEST MENU, press **Enter**, and follow the directions displayed on the screen. The Display test contains eleven subtests that test the display in various modes. Move the highlight bar to the subtest you want to execute and press **Enter**.

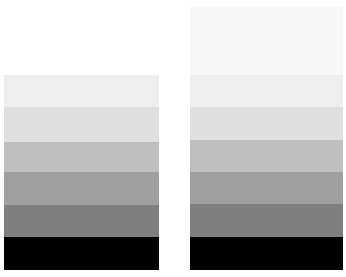
Subtest 01 VRAM Read/Write

This subtest writes constant data FFFFh, AAAAh, 5555h, 0000h, and address data to video RAM (1MB). This data is then read from the video RAM and compared to the original data.

Subtest 02 Character Attributes (mode 1, 13h)

This subtest displays the following character attribute modes; normal, intensified, reverse, and blinking as shown in the display below. The character attribute modes display the foreground color and intensified color (16 colors or 16-level gray scale) using black, blue, red, magenta, green, cyan, yellow, and white from the color display. The display below appears on the screen when this subtest is executed.

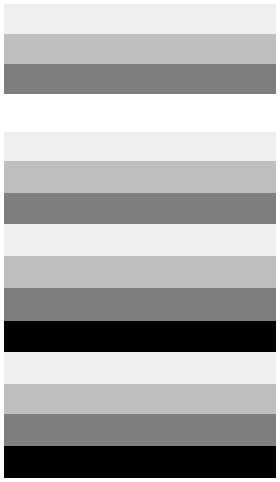
```
CHARACTER ATTRIBUTES

  NEXT LINE SHOWS NORMAL DISPLAY.
   NNNNNNNNNNNNNNNNNNNNNNNNNNNN

  NEXT LINE SHOWS INTENSIFIED DISPLAY.
   IIIIIIIIIIIIIIIIIIIIIIIIIIII

  NEXT LINE SHOWS REVERSE DISPLAY.
   RRRRRRRRRRRRRRRRRRRRRRRRRRRR

  NEXT LINE SHOWS BLINKING DISPLAY.
   BBBBBBBBBBBBBBBBBBBBBBBBBBBB
```



```
00 08 ; BLACK
01 09 ; BLUE
04 0C ; RED
05 0D ; MAGENTA
02 0A ; GREEN
03 0B ; CYAN
06 0E ; YELLOW
07 0F ; WHITE

PRESS [Enter] KEY
```

After pressing **Enter**, 16 colors or 16 gray scales of mode 13h appear in the 320x200 graphics mode as shown below:

```
320*200 GRAPHICS DISPLAY [ 13 ]
```



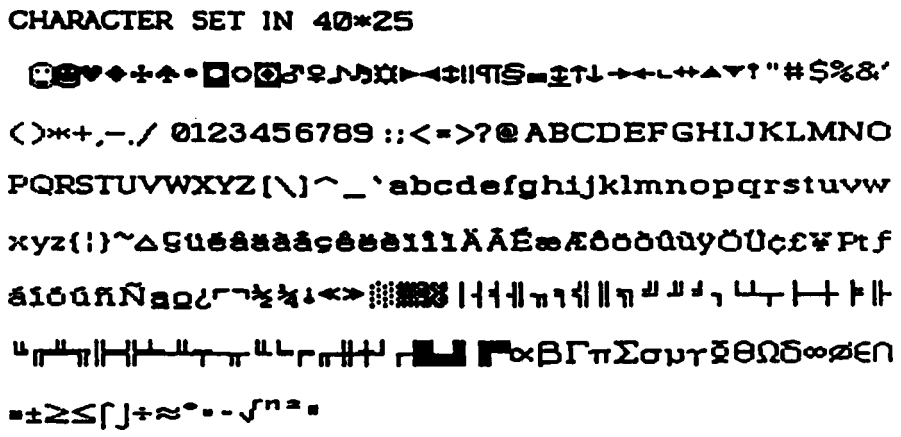
```
BLACK
BLUE
GREEN
CYAN
RED
MAGENTA
BROWN
WHITE
GRAY
LIGHT BLUE
LIGHT GREEN
LIGHT CYAN
LIGHT RED
LIGHT MAGENTA
YELLOW
INTENSE WHITE

PRESS [Enter] KEY
```

Pressing **Enter** toggles between the two tests.

To exit this subtest and return to the DISPLAY TEST menu, press **Ctrl** + **Break**.

Subtest 03 Character Set

In this subtest, the character set (addressed 00h to FFh) is displayed in the 40*25 character mode as shown below.



To exit this subtest and return to the DISPLAY TEST menu, press **Ctrl** + **Break**.

Subtest 04 80x25/30 Character Display (mode 3, 12)

In this subtest, the character string is displayed shifting one character to the right, line by line in the 80x25 and 80x30 character modes as shown below.

```
80*XX CHARACTER DISPLAY
012345678901234567890123456789012345678901234567890123456789012345678901234567
 !"#$%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklm
!"#$%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmn
"#$%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmno
#$%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnop
$%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopq
%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqr
&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrs
'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrst
()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstu
)*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuv
*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvw
+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwx
,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxy
-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz
./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz{
/0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz{|
0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz{|}
123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz{|}~
23456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz{|}~
3456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz{|}~ ç
456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz{|}~ çü

PRESS [Enter] KEY
```

Pressing **Enter** toggles between tests. To exit this subtest and return to the DISPLAY TEST menu, press **Ctrl + Break**.

Subtest 05 320x200 Graphics Display (mode 4,D)

This subtest displays two color sets for the color display in 320x200 dot graphics mode 4 and D. One example is shown below:

```
320*320 GRAPHICS DISPLAY
COLOR SET X : [X]

     GREEN        RED        BROWN
     CYAN       MAGENTA      WHITE
```

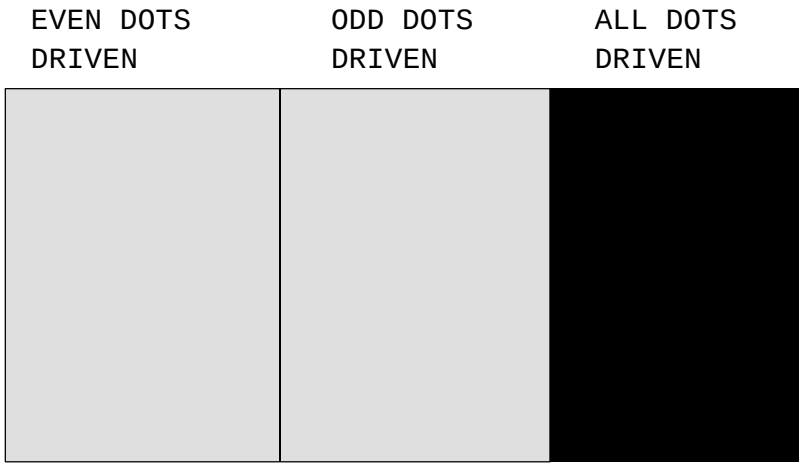
```
PRESS [Enter] KEY
```

Pressing **Enter** toggles between tests. To exit this subtest and return to the DISPLAY TEST menu, press **Ctrl + Break.**

Subtest 06 640x200 Graphics Display (mode 6, E)

This subtest displays even dots, odd dots, and all dots in the 640x200 dot graphics mode 6 and E as shown below:

```
640*200 GRAPHICS DISPLAY : [X]
```



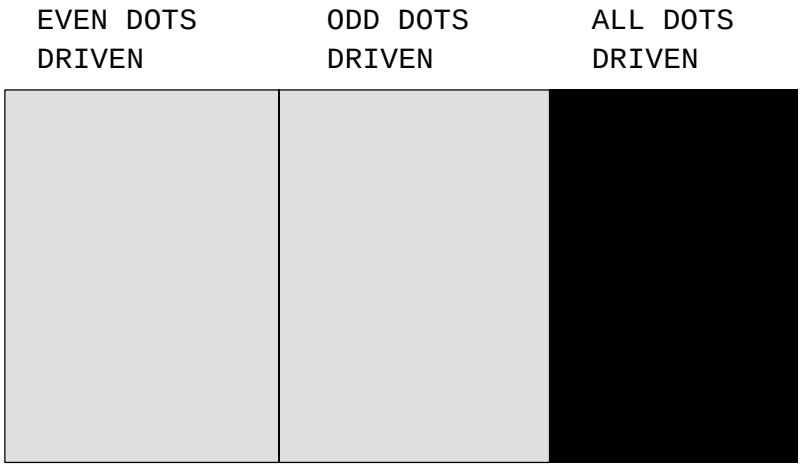

```
PRESS [Enter] KEY
```

To exit this subtest and return to the DISPLAY TEST menu, press **Ctrl + Break.**

Subtest 07 640x350/480 Graphics Display (mode 10, 12)

This subtest displays even dots, odd dots, and all dots in the 640x350 and 640x480 dot graphics mode 10, 12 as shown below:

```
640*XXX GRAPHICS DISPLAY
```




```
PRESS [Enter] KEY
```

Pressing **Enter** changes the size of the displayed image. To exit this subtest and return to the DISPLAY TEST menu, press **Ctrl + Break.**

Subtest 08 Display Page

This subtest confirms that the pages can be changed in order from page 0 through page 7 in 40*25 character mode.

```
DISPLAY PAGE 0

0000000000000000000000000000000000000000
0                                      0
0                                      0
0                                      0
0                                      0
0                                      0
0                                      0
0                                      0
0                                      0
0                                      0
0                                      0
0                                      0
0000000000000000000000000000000000000000
```

Pressing **Ctrl + Break** exits this subtest, after completion of the test, and returns to the DISPLAY TEST menu.

Subtest 09 H Pattern Display/Border Color

This subtest displays 3750 H characters on the entire screen, as shown below.

```
HHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHH
HHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHH
HHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHH
HHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHH
HHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHH
HHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHH
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HHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHH
HHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHH
HHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHHH
```

Pressing **Enter** displays the following message:

```
Setting the color CRT (1:yes/2:no) ?
```

If an external CRT is connected to the computer, choose **1** to display the following message:

```
[Border color test (7 times press [Enter] key]
```

Press **Enter** to execute the border color test. To exit this subtest and return to the DISPLAY TEST menu, press **Ctrl + Break.**

Subtest 10 LED/DAC Pallet

This subtest checks the LED indicator (Caps Lock, Overlay and Num Lock) by key operation.

```
[ Caps/Num/Overlay LED test ]

(1) Press  [ Caps Lock     ]key !...Caps    (on/off)
(2) Press  [ Fn + Num Lock ]key !...Num     (on/off)
(3) Press  [ Fn            ]key !...Overlay (on/off)

PRESS [Enter] KEY
```

Press **Enter** to display the following two messages:

```
[  DAC pallet W-R-CMP test  ]  =  (about 1 second)

[  Processor latch test     ]  =

Processor latch test (1:256 times, 2:endless) ?
```

After pressing **Enter**, this subtest writes the ‘2A’ and ‘15’ data to 6 bit of 256x3 (RGB), then reads the new data and compares the result with the original data.

To exit, press **Ctrl + Break**. Then press **Enter**.

Subtest 11 Color display (TFT only)

This subtest sets the video mode to ’13’ and displays color code (0 to 63) at the same time, then displays seven screens. The first shows many colors at once, the next three display 64 shades of red, green, and blue successively and the last three display 64 shades of red, green, and blue. Also, it sets the video mode ‘5F’ and displays 256 colors.

Press **Enter** to change the display. Press **Ctrl + Break** to exit.

3.7 Floppy Disk Test

NOTES:
1. *To execute the floppy disk test, an FDD must be connected to the Desk Station V MultiBox.*
2. *Before running the floppy disk test, prepare a formatted work disk. Remove the Diagnostics Disk and insert a work disk into the FDD. The contents of the floppy disk will be erased.*

To execute the Floppy Disk Test select **5** from the DIAGNOSTIC TEST MENU, press **Enter**, and follow the directions displayed on the screen. The Floppy Disk test contains five subtests that test the computer's external floppy disk drive. The following messages will appear after selecting the Floppy Disk Test from the DIAGNOSTIC TEST MENU. Answer each question with an appropriate response to execute the test.

1. Select the test drive number of the floppy disk drive to be tested and press **Enter**.

```
Test drive number select (1:FDD#1,2:FDD#2,0:FDD1&2) ?
```

2. Select the media type of the floppy disk in the test drive to be tested, and press **Enter**.

```
Media in drive #X mode (0:2DD,1:2D,2:2D-2HD/2DD,3:2HD) ?
```

3. Select the track you want the test to start on and press **Enter**. Simply pressing **Enter** sets the start track to zero.

```
Test start track  (Enter:0/dd:00-79) ?
```

4. The floppy disk test menu will appear after you select the start track number. Select the number of the subtest you want to execute and press **Enter**. The following message will appear during the floppy disk test.

```
FLOPPY DISK      XXXXXXX
                 xxxx DIAGNOSTIC TEST VX.XX
                 [Ctrl]+[Break]  ;    test end
                 [Ctrl] + [C]    ;    key stop
```

Subtest 01 Sequential Read

This subtest performs a Cyclic Redundancy Check (CRC), that continuously reads all the tracks on a floppy disk. The following tracks are read according to the media type in the floppy disk drive:

Double-sided, double-density (2D): Tracks 0 to 39.

Double-sided, double-density, double-track (2DD) and double-sided, high-density, double-track (2HD): Tracks 0 to 79.

The start track is specified when the FDD test is started from the Diagnostic Test Menu. Refer to step 3 at the beginning of this section to set the start track.

Subtest 02 Sequential Read/Write

This subtest continuously writes data pattern B5ADADh to all the specified tracks selected in subtest 01. The data is then read and compared to the original data.

Subtest 03 Random Address/Data

This subtest writes random data to random addresses on all tracks defined in subtest 01. The data is then read and compared to the original data.

Subtest 04 Write Specified Address

This subtest writes specified data to a specified track, head, and address.

Subtest 05 Read Specified Address

This subtest reads data from a specified track, head, and address.

3.8 Printer Test

To execute the Printer Test select **6** from the DIAGNOSTIC TEST MENU, press **Enter**, and follow the directions displayed on the screen. The Printer Test contains three subtests that test the output of the printer connected to the computer.

> ***NOTE**: An IBM compatible printer must be connected to the Desk Station V to execute this test.*

The following message will appear when the printer test is selected:

```
    channel#1 = XXXXh
    channel#2 = XXXXh
    channel#3 = XXXXh
Select the channel number (1-3) ?
```

The printer I/O port address is specified by the XXXXh number. The computer supports three printer channels. Select the printer channel number and press **Enter** to execute the selected subtest.

Subtest 01 Ripple Pattern

This subtest prints characters for codes 20h through 7Eh line-by-line while shifting one character to the left at the beginning of each new line.

```
 :"#$%£'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmno
:"#$%£'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnop
"#$%£'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopq
#$%£'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqr
$%£'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrs
%£'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrst
£'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstu
'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuv
()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvw
)*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwx
*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxy
```

Subtest 02 Function

This subtest is for IBM compatible printers and tests the following functions:

Normal print
Double width print
Compressed print
Emphasized print
Double strike print
All characters print

This subtest prints the various print types shown below:

```
PRINTER TEST
1.      THIS LINE SHOWS NORMAL PRINT.
2.   THIS LINE SHOWS DOUBLE-WIDTH PRINT.
3.      THIS LINE SHOWS COMPRESSED PRINT.
4.      THIS LINE SHOWS EMPHASIZED PRINT.
5.      THIS LINE SHOWS DOUBLE-STRIKE PRINT.
6.      ALL CHARACTERS PRINT
!"#$%&'()*+,./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmn
opqrstuvwxyz{|}~
```

Subtest 03 Wraparound

> ***NOTE**: To execute this subtest, a printer wraparound connector must be connected to the Desk Station V printer port. The printer wraparound connector (34M741986G01) wiring diagram is described in Appendix B.*

This subtest checks the output and bidirectional modes of the data control and status lines through the printer wraparound connector.

3.9 Async Test

To execute the Async Test select **7** from the DIAGNOSTIC TEST MENU, press **Enter**, and follow the directions displayed on the screen. The async test contains four subtests that test the asynchronous communication functions. Move the highlight bar to the subtest you want to execute and press **Enter**.

Subtests 01 through 07 require the following data format:

Method:	Asynchronous
Speed:	9600BPS (Subtests 01 to 05) 38400BPS (Subtests 06 to 08)
Data:	8 bits and one parity bit (EVEN)
Data pattern:	20h to 7Eh

The following message will appear at the bottom of the screen when subtest 01, 02, 03, or 04 is selected:

```
Channel#1 = XXXXh
Channel#2 = XXXXh
Channel#3 = XXXXh
Select the Channel number (1/2/3)
```

The serial I/O port address is specified by the XXXXh number. Select the serial port channel number and press **Enter** to start the subtest.

Subtest 01 Wraparound (board)

> ***NOTE**: To execute this subtest an RS-232-C wraparound connector (34M741621G01) must be connected to the Desk Station V RS-232-C port. The RS-232-C wraparound connector wiring diagram is described in Appendix B.*

This subtest checks the data send/receive function through the wraparound connector.

Subtest 02 Point to point (Send)

> ***NOTE**: To execute this subtest, two machines must be connected with an RS-232-C direct cable. One machine should be set as "send"(subtest 02) and the other set as "receive" (subtest 03). The wiring diagram for the RS-232-C direct cable is described in Appendix B.*

This subtest sends 20h through 7Eh data to the receive side, then receives the sent data and compares it to the original data.

Subtest 03 Point to point (Receive)

This subtest is used with subtest 02 described above. This subtest receives the data from the send side, then sends the received data.

Subtest 04 Interrupt Test

This subtest checks the Interrupt Request Level of IRQ 4, 3, and 5 from the send side.

> ***NOTE:*** *Subtests 05 through 07 are for the 700 series computer. For procedures on those subtests, refer to the 700 Series Maintenance Manual.*

Subtest 05 SIR Wraparound test (Not used)

Subtest 06 SIR point to point (Send) (Not used)

Subtest 07 SIR point to point (Receive) (Not used)

3.10 Expansion Test

To execute the Expansion Test select **11** from the DIAGNOSTIC TEST MENU, press **Enter**, and follow the directions displayed on the screen. The Expansion test contains nine subtests that test the asynchronous communication functions. Move the highlight bar to the subtest you want to execute and press **Enter**.

Subtest 01 PCMCIA wraparound (main point to point (Receive)) (Not used)

> ***NOTE:*** *Subtest 01 is for the 700 series computer. For procedures on this subtest, refer to the 700 Series Maintenance Manual.*

Subtest 02 PCMCIA wraparound

> ***NOTE:*** *To execute this subtest, the PCMCIA wraparound board is required.*

This test checks the following signal lines of the Desk Station V PCMCIA slots.

- ❑ Address line
- ❑ REG#, CE#1, CE#2 line
- ❑ Data line
- ❑ Speaker line
- ❑ Wait line
- ❑ BSY#, BVD1 line

This subtest is executed in the following order:

Sub#	Address	Good	Bad	Contents
01	00001 00001	nn nn	xx xx	Address line REG#, CE#1, CE#2 nn=A0, 90, 80, 00
02	00002	ww	rr	Data line ww=write data, rr=read data
03	00003	—	—	Speaker line
04	00004	40, 80	xx	Wait line (40<xx<80)
05	00005	nn	xx	Other lines (BSY#, BVD1) nn=21, 00

Subtest 03 DS bus wraparound

Connect the board to be tested to the PCI configuration register and execute all BIOS function calls. Bit shift will be executed on test data AAAAAAAAh, 55555555h, and 00000001h to 40000000h.

> ***NOTE**: When you execute subtest 03, set the LOOP to NO and ERROR STOP to YES. After executing this subtest, turn the power off or reboot the computer, otherwise the computer will hang up.*

Subtest 04 PCI bus wraparound

Use the PCI bus wraparound port (FTSBUS). Connect the board to be tested to the PCI configuration register and execute all BIOS function calls. Bit shift will be executed on test data AAAAAAAAh, 55555555h, and 00000001h to 40000000h.

The following boards are used for PCI wraparound:

84h	Test flag register
88h - 8Bh	Test output register 0
90h - 93h	Test input register 0

Subtest 05 ISA bus wraparound

Use the ISA bus wraparound port (FTSBUS)(B36076461018). Connect the board to be tested to the ISA configuration register and execute all BIOS function calls. Bit shift will be executed on test data AAAAAAAAh, 55555555h, and 00000001h to 40000000h.

The following boards are used for ISA wraparound:

84h	Test flag register
88h - 8Bh	Test output register 0
8Ch - 8Fh	Test output register 1
90h - 93h	Test input register 0
94h - 97h	Test input register 1

Subtest 06 SCSI wraparound

> ***NOTE**: Before you execute subtest 06, load the PSCSIDRV and SCSIAUI files.*

The SCSI connector is a 50-pin connector. An 18-pin interface is used to test for shorts and broken or disconnected wires. If an error is found, the signal name shown in parentheses below is displayed on the screen.

Data line	Control line	
(DB0)	Attention	(ATN)
(DB1)	Busy	(BSY)
(DB2)	Acknowledge	(ACK)
(DB3)	Reset	(RST)
(DB4)	Message	(MSG)
(DB5)	Select	(SEL)
(DB6)	Command/Data	(C/D)
(DB7)	Request	(REQ)
(DBP)	Input/Output	(I/O)

Subtest 07 RGB monitor ID

Use the RGB monitor ID wraparound port (UL0232P05). Connect the board to be tested to the general index port (Port/Index:Data) = (E4/E5:F1h). First, 0FFh data is written to this port, then it is read and compared to the original data. The following shows the write data and compare data.

Write	Compare
FEH	xAh
FDh	x5h
FBh	xAh
F7h	x5h

Subtest 08 Joystick

To execute this subtest, a joystick is required. For minimum sampling data, turn the stick to the upper left and press the A or B button. For maximum sampling data, turn the stick to the lower right and press the A or B button (it must be a different button than the one used for minimum sampling data). If two sampling data are the same, an error occurs.

Subtest 09 Joystick wraparound test

Use the joystick wraparound port (FWTJSO(B36074081010)).

3.11 Sound Test

To execute the Sound test select **12** from the DIAGNOSTICS TEST MENU, press **Enter**, and follow the directions on the screen. The Sound test contains four subtests that test the computer's sound functions.

> ***NOTES:*** *To execute this subtest, an external microphone and external headphone (or internal speaker) are required.*
>
> *The system is capable of producing high volume sound, so when you use the headphones be careful to set the volume low and adjust it as necessary. Using the headphones at full volume could damage your ears.*

Subtest 01 CODEC (REC/PLAY)

Tests the functions of the Codec (ES688) A/D, D/A converter. At the same time, tests the microphone terminals and Headphone terminals. When you execute this subtest the following message is displayed.

```
[Quick REC & PLAY for ES488/688]
Press any key to *** REC ***
```

Press any key, start recording, and immediately play the sound. (It takes three seconds.)

Subtest 02 FM Synthesizer

Tests the OPL# (YMF262) functions. Connect the headphone and check the scale on the right and left sides. Also check the sound adjustment volume.

Subtest 03 SINE wave playback

This subtest expands the sine wave data table to 64KB and creates sine wave data. The play data is transferred between DMA and CODEC and plays the sound. (It is a long beep.) Using the oscilloscope, observe the sine waveform.

Subtest 04 Codec line in/out (record sound/replay)

Load the file ESS688L.COM. Connect a sound source such as a CD player or stereo to the line-in port. Next, connect an output device such as an amplifier for the internal speaker or a radio/cassette player to the line-out port.

After making the connections a dialogue box will be displayed. Press **Enter** to play a recorded sound. About three seconds after the recorded sound is played, the dialogue box will be displayed again.

3.12 CD-ROM Test

> ***NOTE**: To execute the CD-ROM test, an optional CD-ROM drive must be connected to the Desk Station V MultiBox.*

First, make sure the CD-ROM driver (CDROMDRV.COM) is installed, then insert the test media CD (Toshiba-EMI Test Disk TDY-03). To execute the CD-ROM test select **13** from the DIAGNOSTICS TEST MENU, press **Enter**, and follow the directions on the screen. The CD-ROM test contains four subtests that test the CD-ROM functions.

Subtest 01 Sequential Read

This subtest is a sequential reading of one block unit (512 bytes) of all logical addresses.

Subtest 02 Random Address/Data

This subtest reads one-block data and multi-block data from random addresses 200 times.

Subtest 03 Read Specified Address

This subtest reads one-block data from a specified address.

Subtest 04 Playback Music

> ***NOTE**: The Toshiba-EMI Test Disk TDY-03 cannot be used for Subtest 04. For this test, use an ordinary music CD.*

This subtest reads track data from a specified track and plays the sound.

3.13 Error Code and Error Status Names

Table 3-2 lists the error codes and error status names for the Diagnostic Tests.

Table 3-2 Error codes and error status names (1/2)

Device name	Error code	Error status name
(COMMON)	FF	Data Compare Error
System	02	Location ID Error
	03	Serial ID Write Error
	04	Version Check Error
	05	Key Sensor Error
Keyboard	01	Mouse Interface Error
	02	IPS Interface Error
	03	Interface Error
	04	Retransmit Error
	05	Mouse Handler Not Supported
	06	PS/2 Mouse & IPS Not Supported
FDD	01	Bad Command
	02	Address Mark Not Found
	03	Write Protected
	04	Record Not Found
	06	Media Removed
	08	DMA Overrun Error
	09	DMA Boundary Error
	10	CRC Error
	20	FDC Error
	40	Seek Error
	60	FDD Error
	80	Time Out Error
	EE	Write Buffer Error
Printer	01	Time Out
	08	Fault
	10	Select Line
	20	Out of Paper
	40	Power Off
	80	Busy Line

Table 3-2 Error codes and error status names (2/2)

Device name	Error code	Error status name
ASYNC	01	DSR On Time Out
	02	CTS On Time Out
	04	RX-READY Time Out
	08	TX-BUFFER Full Time Out
	10	Parity Error
	20	Framing Error
	40	Overrun Error
	80	Line Status Error
	88	Modem Status Error
PCMCIA	C1	Address Line Error
	C2	REG# Line Error
	C3	CE#1 Line Error
	C4	CE#2 Line Error
	C5	DATA Line Error
	C6	WAIT Line Error
	C7	BSY# Line Error
	C8	BVD1 Line Error
	CD	No PCMCIA
CD-ROM	01	Bad Command
	02	Illegal Length
	03	Unit Attention
	04	Media Change Request
	05	Media Detected
	06	Additional Sense
	09	Boundary Error
	11	Corrected Data Error
	20	Drive Not Ready
	40	Seek Error
	80	Time Out
	90	Reset Error
	B0	Address Error

3.14 Head Cleaning

3.14.1 Function Description

This function cleans the heads in the FDD by executing a series of head load/seek and read operations. A cleaning kit is necessary to perform this program.

3.14.2 Operations

1. Selecting test **4** from the DIAGNOSTIC MENU and pressing **Enter** displays the following messages:

```
DIAGNOSTICS - FLOPPY DISK HEAD CLEANING : VX.XX

Mount cleaning disk(s) on drive(s).

Press any key when ready.
```

2. Remove the Diagnostics Disk from the FDD, insert the cleaning disk and press **Enter**.

3. When the cleaning start message appears, the FDD head cleaning has begun.

4. The display automatically returns to the DIAGNOSTIC MENU when the program is completed.

3.15 Floppy Disk Drive Utilities

3.15.1 Function Description

This function formats the FDD, copies the floppy disk, and displays the dump list for both the FDD and HDD.

1. FORMAT

   > ***NOTE**: This program is only for testing a floppy disk drive. The option is different from the Toshiba MS-DOS FORMAT command.*

   This program can format a 3.5-inch floppy disk in the following formats:

   (a) 2D: Double-sided, double-density, 48/67.5 TPI, MFM mode, 512 bytes, 9 sectors/track.

   (b) 2DD: Double-sided, double-density, double-track, 96/135 TPI, MFM mode, 512 bytes, 9 sectors/track.

   (c) 2HD: Double-sided, high-density, double-track, 96/135 TPI, MFM mode, 512 bytes, 18 sectors/track.

2. COPY

   This program copies data from a source floppy disk to a target floppy disk.

3. DUMP

   This program displays the contents of the floppy disk and the designated sectors of the hard disk on the display.

3.15.2 Operations

1. Selecting **7** from the DIAGNOSTIC MENU and pressing **Enter** displays the following message:

```
[ FDD UTILITIES ]

   1 - FORMAT
   2 - COPY
   3 - DUMP
   9 - EXIT TO DIAGNOSTICS MENU
```

2. FORMAT program

(a) Selecting FORMAT displays the following message:

```
DIAGNOSTICS - FLOPPY DISK FORMAT : VX.XX

Drive number select (1:A, 2:B) ?
```

(b) Select a drive number to display the following message:

```
Type select (0:2DD-2DD,1:2D-2D,2:2D-2HD,3:2HD-2HD) ?
```

(c) Select a media/drive type number and press **Enter**. A message similar to the one below will be displayed:

```
Warning : Disk data will be destroyed.

Insert work disk into drive A:
Press any key when ready.
```

(d) Remove the Diagnostics Disk from the FDD, insert the work disk, and press any key.

The following message will be displayed when the FDD format is executed:

```
[ FDD TYPE ] : TRACK  = XXX
[ FDD TYPE ] : HEAD   = X
[ FDD TYPE ] : SECTOR = XX

Format start

                          [[track, head = XXX X]]
```

After the floppy disk is formatted, the following message will appear:

```
Format complete
Another format (1:Yes/2:No) ?
```

(e) Typing **1** displays the message from step (c) above. Typing **2** returns the test to the DIAGNOSTIC MENU.

3. COPY program

(a) When COPY is selected, the following message appears:

```
FLOPPY DISK FORMAT & COPY : VX.XX
Type select (0:2DD-2DD,1:2D-2D,2:2D-2HD,3:2HD-2HD) ?
```

(b) Selecting a media/drive type number will display a message similar to the one below:

```
Insert source disk into drive A:
Press any key when ready.
```

(c) Remove the Diagnostics Disk from the FDD, insert the source disk, and press any key. The following message will appear, indicating the program has started.

```
[ FDD TYPE ] : TRACK  = XXX
[ FDD TYPE ] : HEAD   = X
[ FDD TYPE ] : SECTOR = XX

Copy start

                    [[ track,head  =  XXX X ]]
```

(d) Remove the source disk from the FDD, insert a formatted work disk, and press any key. The [[track, head = XXX X]] message will appear and start copying to the target disk. When the amount of data is too large to be copied in one operation, the message from step (b) is displayed again. After the floppy disk has been copied, the following message will appear:

```
Copy complete
Another copy (1:Yes/2:No) ?
```

(e) To copy another disk, type **1** and the message from step (a) will be displayed again. Entering **2** returns the test program to the DIAGNOSTIC MENU.

4. DUMP program

(a) When dump is selected, the following message appears:

```
DIAGNOSTICS-HARD  DISK & FLOPPY DISK DUMP : VX.XX
Drive type select (1:FDD, 2:HDD) ?
```

(b) Select a format type number. If **C or D** is selected, the display will go to step (e).

```
Select drive number     (1:A, 2:B) ?
                        (1:C, 2:D) ?
```

(c) Select a drive number and the following message will be displayed:

```
Format type select (1:2DD, 2:2D, 3:2HD) ?
```

(d) Select a media type number and the following message will appear:

```
Insert source disk into drive A:
Press any key when ready.
```

(e) Insert a source disk, press any key, and the following message will appear:

```
—— Max. address ——
  [Track ] = 0079
  [ Head ] = 01
  [Sector] = 09

  Track  number ??
```

(f) Set the track number you want to dump. Then, the system will access the disk and dump a list.

4.1 General

This section explains how to disassemble the Desk Station V and replace Field Replaceable Units (FRUs). It may not be necessary to remove all the FRUs in order to replace one. The chart below is a guide to which FRUs need to be removed in order to remove others. Follow the chart to determine which FRU you must remove next in order to repair the one you think is causing the Desk Station V to operate improperly.

- ❑ Cover
- ❑ Key Unit
- ❑ Fan
- ❑ Rear Panel
- ❑ Motorized Mounting Unit
- ❑ Interface Cable
- ❑ Sensor Board
- ❑ 5-inch Expansion Bay
- ❑ Multibox
- ❑ Speakers
- ❑ LED Board
- ❑ Separator Frame
- ❑ Middle Frame
- ❑ Power Supply Unit
- ❑ System Board

Safety precautions

Before you begin disassembly, read the following safety precautions and observe them carefully as you work.

DANGER:

The power supply and other components carry high voltages. To avoid the risk of electric shock when you turn on the power of a partially disassembled Desk Station V to check its operation, be very careful not to touch connectors or components. Also, do not disassemble individual components during first-level maintenance.

WARNING:

To avoid the risk of electric shock or other injury:

1. *Always turn the power off and disconnect the AC power cord from the power source.*
2. *The Desk Station V contains many sharp edges and corners, so be careful not to injure yourself..*

CAUTION:

To avoid damage to the Desk Station V:

1. *When you change a component, be sure the replacement component meets the required specifications. Never use foreign parts.*
2. *Be sure metal objects such as screws or paper clips do not fall into the unit, they can cause short-circuit, fire, or other internal damage. Make sure you use the correct screws to secure the various pieces in place. Screw sizes are listed in the corresponding figures. Make sure all screws are securely fastened. Loose screws can cause short circuits, resulting in heat, smoke, or fire.*
3. *Before removing an FRU or other component, make sure all cables to the component have been disconnected.*
4. *If you use AC power, be sure to use the cable that came with the Desk Station V or one recommended by Toshiba.*
5. *Make sure that all replacement components meet the specifications for the Desk Station V and that all cables and connectors are securely fastened.*

Before You Begin

Look over the procedures in this section before you begin disassembling the Desk Station V. Familiarize yourself with the disassembly and reassembly steps. Begin each procedure by removing the AC power cord*:*

1. Do not disassemble the Desk Station V unless it is operating abnormally.

2. Use only the correct and approved tools.

3. Make sure the working environment is free from the following elements whether you are using or storing the Desk Station V:

   - ❑ Dust and contaminates
   - ❑ Static electricity
   - ❑ Extreme heat, cold, and humidity

4. Make sure the FRU you are replacing is causing the abnormal operation by performing the necessary diagnostics tests described in this manual.

5. Do not perform any operations that are not necessary and use only the described procedures for disassembling and installing FRUs in the Desk Station V.

6. After removing parts from the Desk Station V, place them in a safe place away from the Desk Station V so they will not be damaged and will not interfere with your work.

7. You will remove and replace many screws when you disassemble the Desk Station V. When you remove screws, make sure they are placed in a safe place and are identified with the correct parts.

8. When assembling the Desk Station V make sure you use the correct screws to secure the various pieces in place. Screw sizes are listed in the corresponding figures.

9. The Desk Station V contains many sharp edges and corners, so be careful not to injure yourself.

10. After you have replaced an FRU, make sure the Desk Station V is functioning properly by performing the appropriate test on the FRU you have fixed or replaced.

Disassembly Procedures

The Desk Station V has two basic types of cable connectors:

- ❑ Pressure Plate Connectors
- ❑ Normal Pin Connectors

To disconnect a Pressure Plate connector, lift up the tabs on either side of the connector's plastic pressure plate and slide the cable out of the connector. To connect the cable to a Pressure Plate connector, make sure the pressure plate is fully lifted and slide the cable into the connector. Secure the cable in place by pushing the sides of the pressure plate down so the plate is flush with the sides of the connector. Gently pull on the cable to make sure the cable is secure. If you pull the connector out, connect it again making sure the connector's pressure plate is fully lifted when you insert the cable.

Standard pin connectors are used with all other cables. These connectors can be connected and disconnected by simply pulling them apart or pushing them together.

Assembly Procedures

After you have disassembled the Desk Station V and have fixed or repaired the problem that was causing the Desk Station V to operate abnormally, you will need to reassemble the Desk Station V.

While assembling the Desk Station V, remember the following general points:

- ❑ Take your time, making sure you follow the instructions closely. Most problems arise when you hurry to assemble the Desk Station V.

- ❑ Make sure all cables and connectors are securely fastened.

- ❑ Before securing the FRU or other parts, make sure that no cables will be pinched by screws or by the FRU.

- ❑ Check that all latches are closed securely in place.

- ❑ Make sure all the correct screws are used to secure all FRUs. Using the wrong screw can damage the threads or the head of the screw and may prevent proper seating of an FRU.

After installing an FRU in the Desk Station V confirm that the FRU and the Desk Station V are functioning properly.

Tools and Equipment

The use of ElectroStatic Discharge (ESD) equipment is very important for your safety and the safety of those around you. Proper use of these devices will increase the success rate of your repairs and lower the cost for damaged or destroyed parts. The following equipment is necessary to disassemble and reassemble the Desk Station V:

- ❑ One M3 Phillips screwdriver to remove and replace screws.
- ❑ One box wrench to remove and replace a bolt.
- ❑ Tweezers, to lift out screws that you cannot grasp with your fingers.
- ❑ ESD mats for the floor and the table you are working on.
- ❑ An ESD wrist strap or heel grounder.
- ❑ Anti-static carpeting or flooring.
- ❑ Air ionizers in highly static sensitive areas.

Screw Tightening Torque

When you fasten screws be sure to follow the torque list below. Overtightening can damage components and screws; undertightening can result in electrical shorts or other damage if the screws or components come loose.

- ❑ M3 5.0 kgfcm

4.2 Interface Cover, Front Cover, and Top Cover

Removing the Interface Cover, Front Cover, and Top Cover

To remove the interface cover, front cover, and top cover follow the steps below and refer to figures 4-1 to 4-5.

1. Disconnect the computer, power cord, and all external cables connected to the Desk Station V.

2. Remove all optional PCMCIA cards and expansion boards from the Desk Station V.

3. Push two **latches** (marked “PUSH”) on the **interface cover**, raise it about 45 degrees and remove it.

4. Push two **latches** (marked “PUSH”) on the **front cover** to release the latches. Pull the top of the front cover away from the main unit and lower the front cover to free it from three latches at the bottom. Remove the front cover.

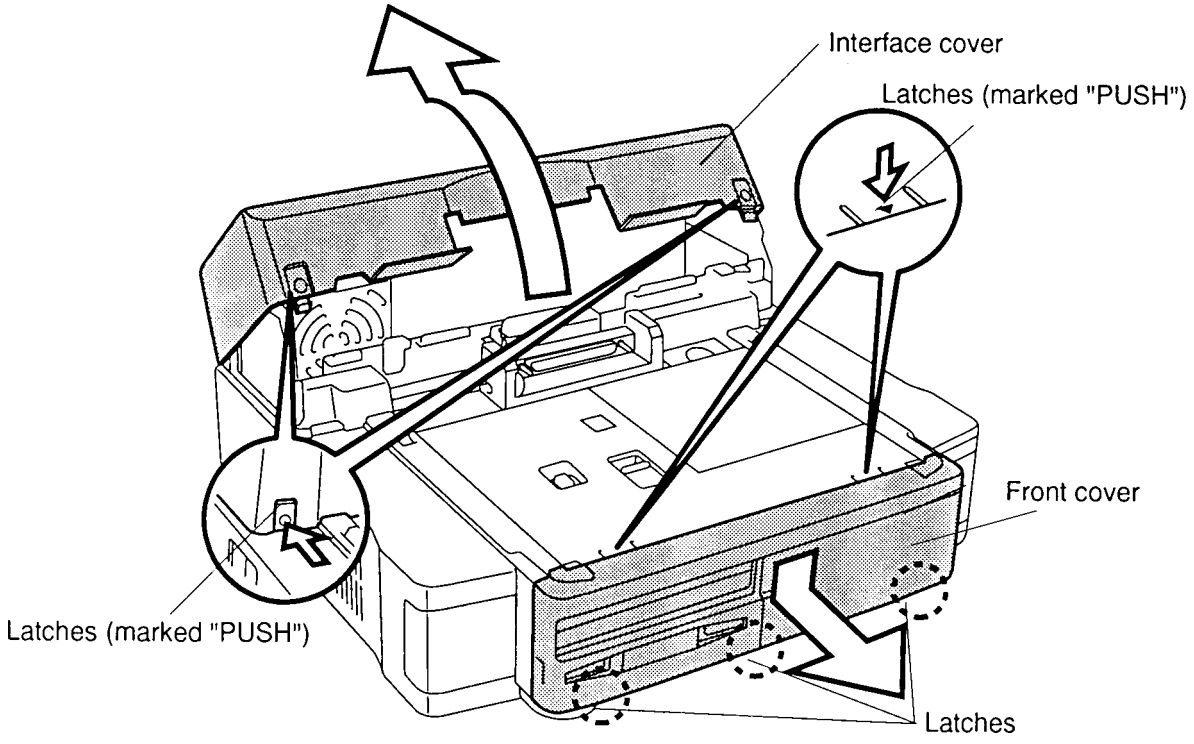

Figure 4-1 Removing the interface cover and front cover

5. To remove the **slot covers** from the **front cover** push the covers toward the springs and lift up.

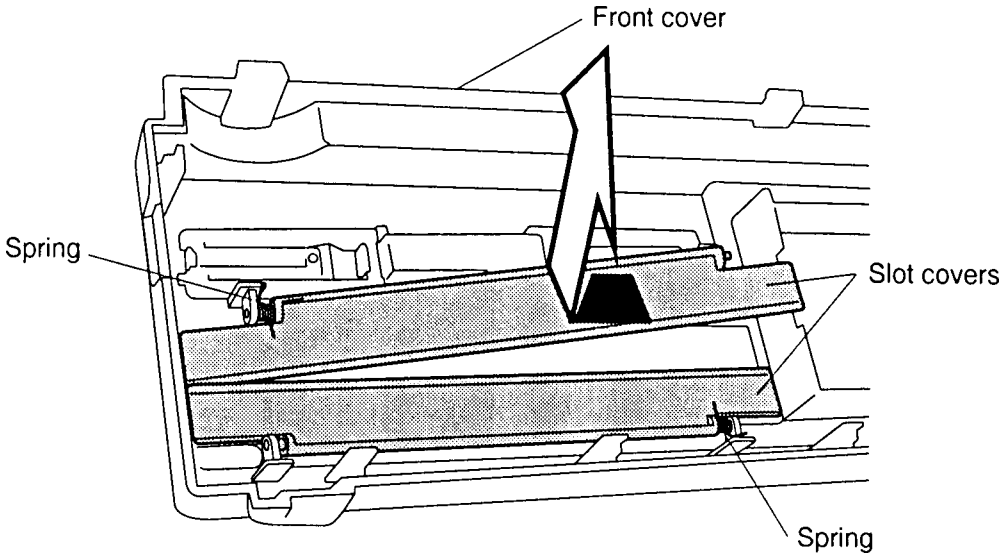

Figure 4-2 Removing the slot covers

> ***NOTE:*** *The springs will come off with the covers. Be careful not to lose the springs.*

6. Put your finger into the hole in the **sub-top cover** and lift up to remove the sub-top cover from the **top cover**.

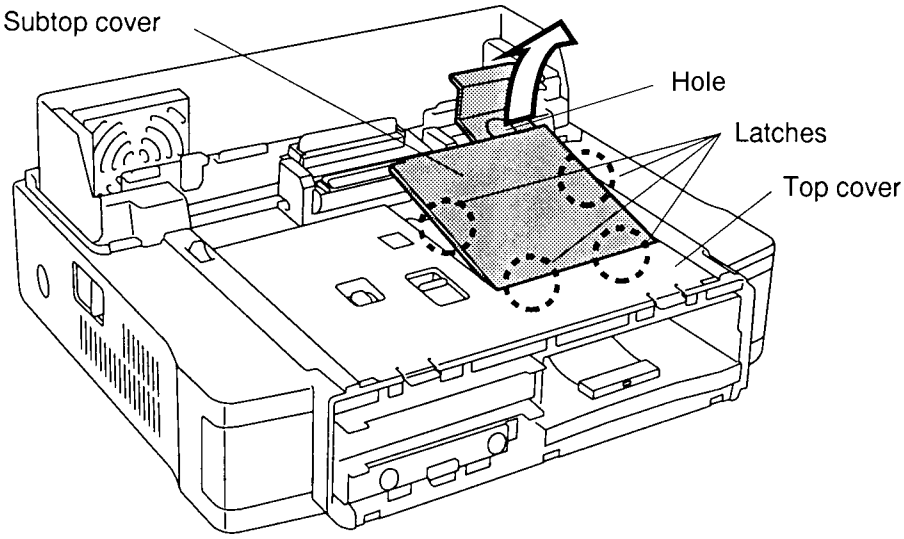

Figure 4-3 Removing the sub-top cover

7. Remove the **seal** concealing one screw and remove **three M3x6 screws** securing the **top cover**.

8. Press the main unit panel just under the top cover latches and pull up on the cover to free it from the latches. Then, lift off the top cover.

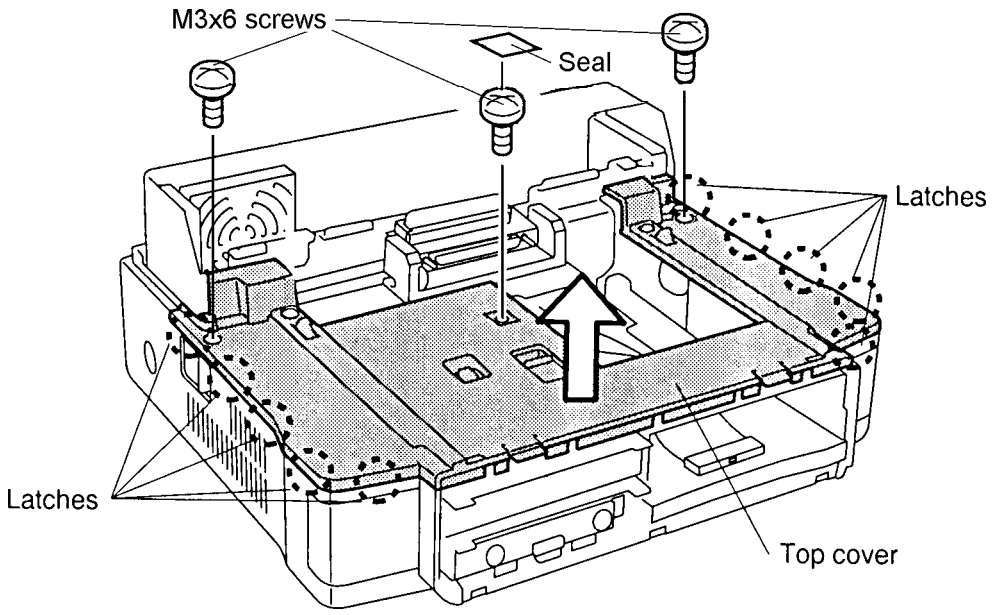

Figure 4-4 Removing the top cover

9. Remove **four M3x6 screws** securing the **fastening clasps**. Remove the **fastening clasps** from the **top cover** and the **springs** from the **fastening clasps**.

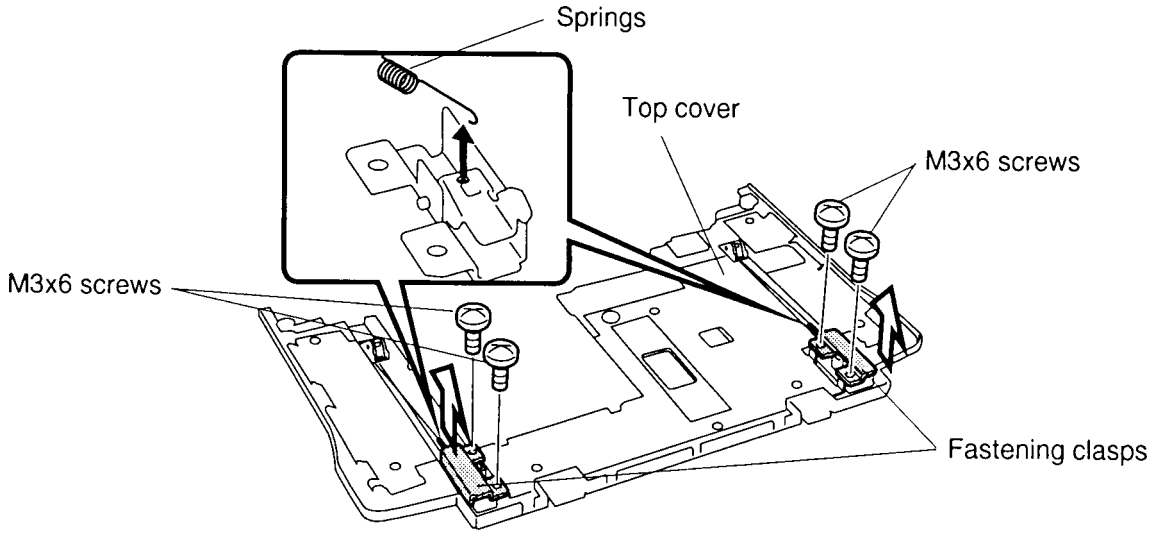

Figure 4-5 Removing the clasps

Installing the Interface Cover, Front Cover, and Top Cover

To install the interface cover, front cover, and top cover, follow the steps below and refer to figures 4-1 through 4-5.

1. Hook the **springs** onto the **fastening clasps** and secure the **fastening clasps** with **four M3x6 screws**. Be sure the springs work by pressing the levers that release the top cover locks.

2. Place the **top cover** about 1/4" from the proper position. Secure the two wide latches (one on each side of the front) and press toward the back and down at the same time to secure the latches. Do not press straight down, it can damage the latches. Secure the top cover with **three M3x6 screws**.

3. Seat the **sub-top cover** on the top cover.

4. Set the **slot covers** with the **springs** on the **front cover**.

5. Set the **three latches** into their corresponding holes and press the **front cover** into place to secure the **two latches** marked “PUSH.”

6. Set the **interface cover** in place and press down to secure the two latches marked “PUSH.”

4.3 Back Cover and Side Covers

Removing the Back Cover and Side Covers

To remove the back cover and side covers, follow the steps below and refer to figures 4-6 and 4-7.

1. Disconnect the computer, power cord, and all external cables connected to the Desk Station V.

2. Remove all optional PCMCIA cards and expansion boards from the Desk Station V.

3. Remove the interface cover, front cover, and top cover as described in section 4.2.

4. Remove **two M3x6 silver screws** securing the **back cover**. Pull at the latches to free them and remove the cover.

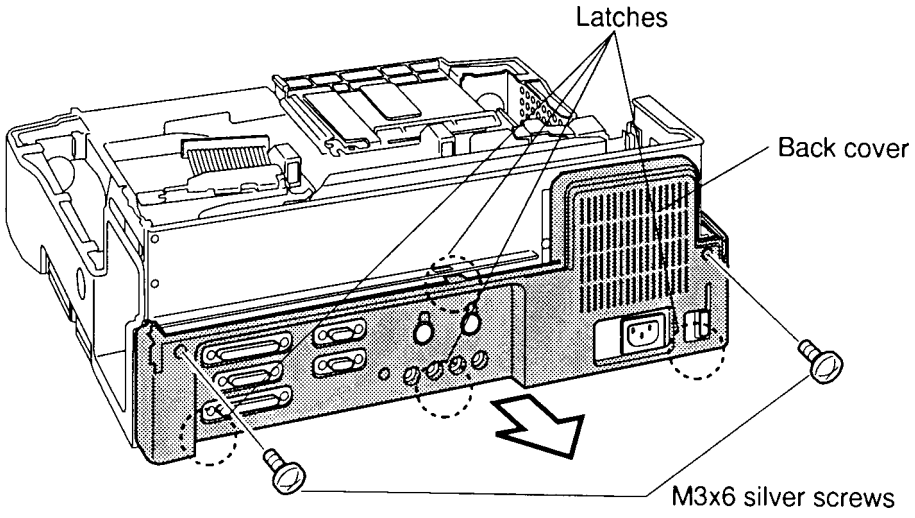

Figure 4-6 Removing the back cover

5. Pull at the latches to free them and remove the **side covers**.

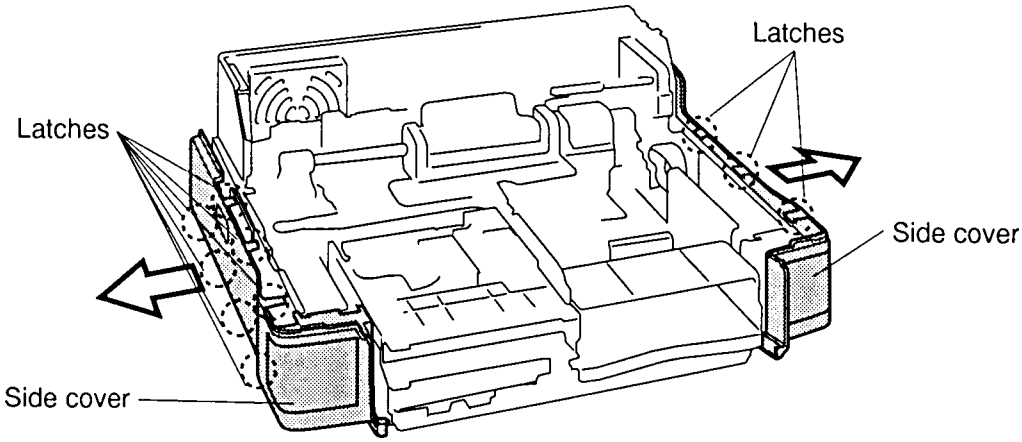

Figure 4-7 Removing the side cover

Installing the Back Cover and Side Covers

To install the back cover and side covers, follow the steps below and refer to figures 4-6 and 4-7.

1. Set the **side covers** in place (use the two guide pins on each side cover) and press to secure the lower latches first, then push up to secure the top latches.

2. Set the **back cover** in place and press to secure the latches. Secure the back cover with **two M3x6 silver screws**.

3. Install the interface cover, front cover, and top cover as described in section 4.2.

4.4 Key Unit, Fan, and Rear Panel

Removing the Key Unit, Fan, and Rear panel

To remove the key unit, fan, and rear panel, follow the steps below and refer to figures 4-8 through 4-10.

1. Disconnect the computer, power cord, and all external cables connected to the Desk Station V.

2. Remove all optional PCMCIA cards and expansion boards from the Desk Station V.

3. Remove the interface cover, front cover, top cover, back cover, and side covers as described in sections 4.2 and 4.3.

4. Remove **two M3x6 screws** securing the **key unit** and remove it.

> ***NOTE:*** *When you remove the key unit, pull it out from the inside of the Desk Station V.*

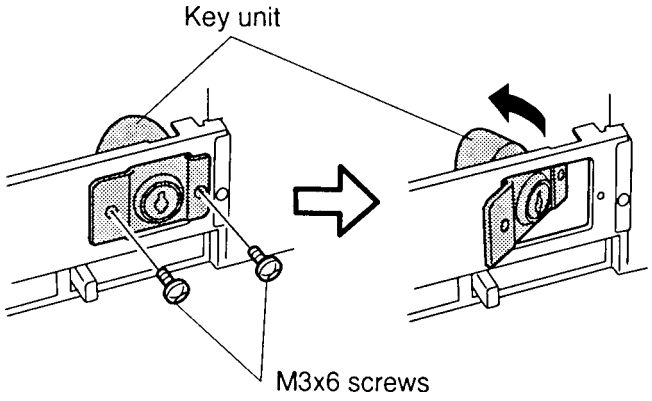

Figure 4-8 Removing the key unit

5. Disconnect the **fan cable** from **PJ26** on the **system board**.

6. Remove **two M3x6 screws** securing the **fan** and remove it.

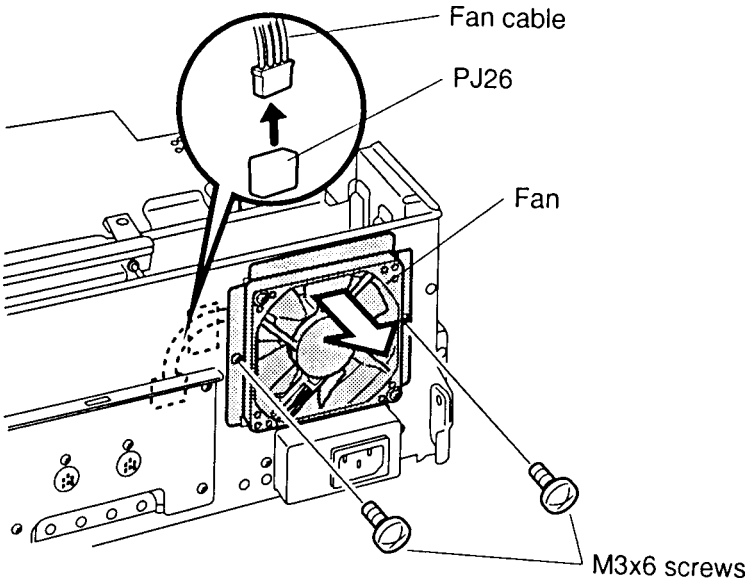

Figure 4-9 Removing the fan

7. Remove **four M3x6 screws** securing the **rear panel**.

8. Pull up on the **rear panel** to disconnect it from **PJ21** on the **system board** and lift off the panel.

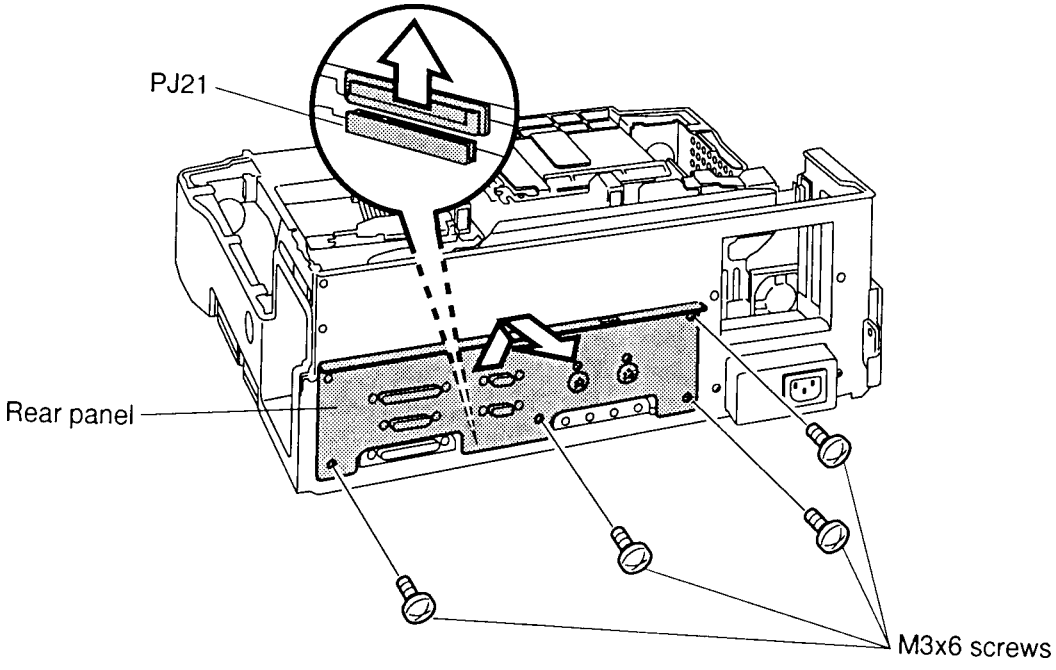

Figure 4-10 Removing the rear panel

Installing the Key Unit, Fan, and Rear Panel

To install the key unit, fan, and rear panel follow the steps below and refer to figures 4-8 through 4-10.

1. Connect the **rear panel** to **PJ21** on the **system board**.

2. Secure the **rear panel** with **four M3x6 screws**.

3. Secure the **fan** with **two M3x6 screws**.

4. Connect the **fan cable** to **PJ26** on the **system board**. You may want to use a piece of glass tape to secure the fan cable against the rear panel so it is out of the way.

5. Secure the **key unit** with **two M3x6 screws**.

> ***NOTE:*** *Seat the key unit from the inside of the Desk Station V.*

6. Install the back cover, side covers, interface cover, front cover, and top cover as described in sections 4.3 and 4.2.

4.5 Motorized Mounting Unit

Removing the Motorized Mounting Unit

To remove the motorized mounting unit, follow the steps below, and refer to figures 4-11 to 4-13.

1. Disconnect the computer, power cord, and all external cables connected to the Desk Station V.

2. Remove all optional PCMCIA cards and expansion boards from the Desk Station V.

3. Remove the interface cover, front cover, top cover, back cover, side covers, key unit, fan, and rear panel as described in sections 4.2, 4.3, and 4.4.

4. Remove **two M3x6 screws** securing the **interface cable** and lay the **interface cable** and the **interface cable cover** (a metal frame behind the interface cable) back on the middle frame, so the cable doesn't get in the way.

5. Reach behind the middle frame and press the lower latches together and push them through the holes in the middle frame. Lift out the **sensor cover**.

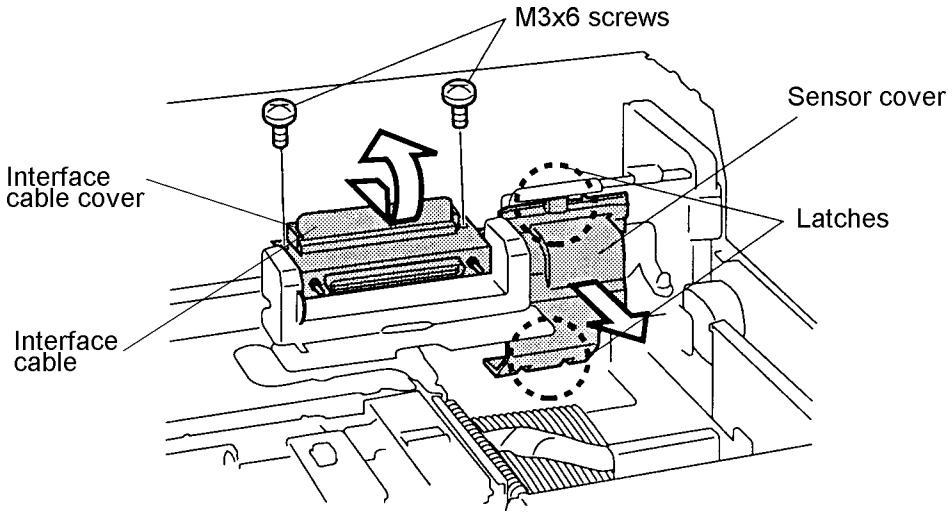

Figure 4-11 Removing the screws and sensor cover

6. Remove **three M3x6 screws** securing the **motorized mounting unit** and remove the **spring** from the **separator frame**.

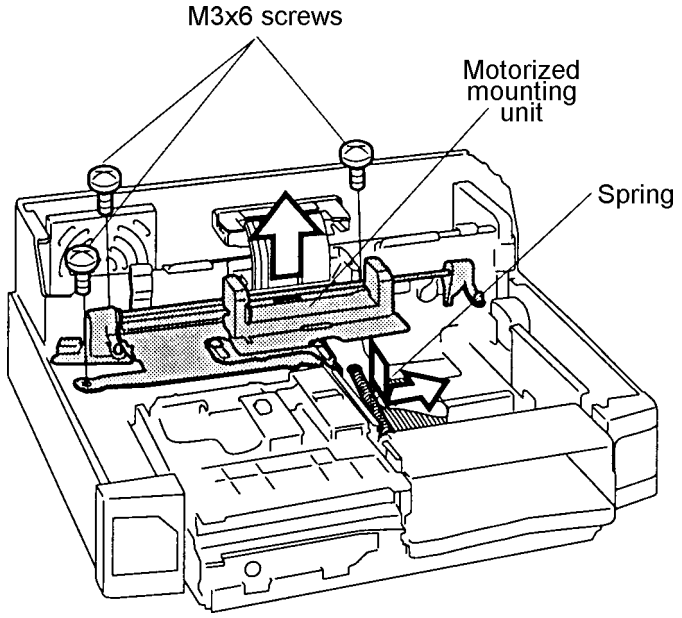

Figure 4-12 Removing the screws and spring

7. Carefully lift up the **motorized mounting unit** and disconnect the **motor cable** from **PJ29** on the **system board** and the **motorized mounting unit cable** (left side) from the **motorized mounting unit**.

> ***NOTE:*** *The motorized mounting unit cable has connectors on both the right and the left sides.*

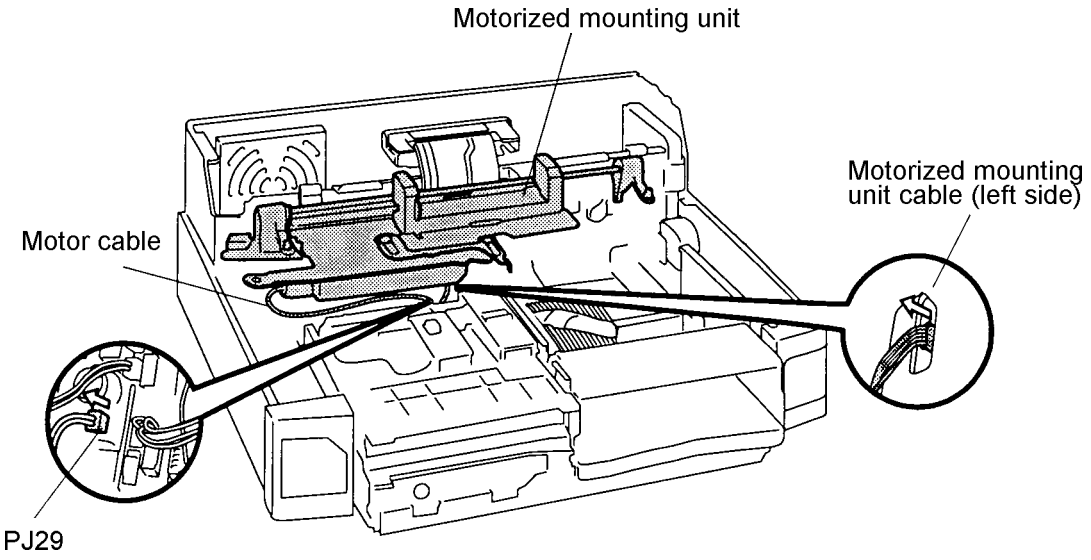

Figure 4-13 Removing the motorized mounting unit

Installing the motorized mounting unit

To install the motorized mounting unit, follow the steps below and refer to figures 4-11 through 4-13.

1. Connect the **motor cable** to **PJ29** on the **system board** and the **motorized mounting unit cable** (left side) to the **motorized mounting unit**. Be careful that the mounting unit cable is not pinched under the motorized mounting unit.

2. Set the **motorized mounting unit** and secure it with **three M3x6 screws** and set the **spring** onto the **separator frame**.

3. Seat the **sensor cover** (bottom first) and secure the **interface cable** and **interface cable cover** with **two M3x6 screws**. Be sure to press the interface cable down before seating the interface cable cover.

4. Install the rear panel, fan, key unit, back cover, side covers, interface cover, front cover, and top cover as described in sections 4.4, 4.3, and 4.2.

> ***NOTE:*** *Silicone grease is on the moving parts. Do not touch, otherwise the grease may be transferred to other parts of the unit.*

4.6 Interface Cable and Sensor Board

Removing the Interface Cable and Sensor Board

To remove the interface cable and sensor board, follow the steps below and refer to figures 4-14 and 4-15.

1. Disconnect the computer, power cord, and all external cables connected to the Desk Station V.

2. Remove all optional PCMCIA cards and expansion boards from the Desk Station V.

3. Remove the interface cover, front cover, top cover, back cover, side covers, key unit, fan, rear panel, and motorized mounting unit as described in sections 4.2 through 4.5.

4. Disconnect the **motorized mounting unit cable** (right side) from **PJ50** on the **sensor board**.

5. Remove the **M3x4 screw** (with washer) securing the **system cable plate** and remove the **system cable plate**.

6. Disconnect the **interface cable** from **PJ10** and **PJ11** on the **system board** and remove the **interface cable**.

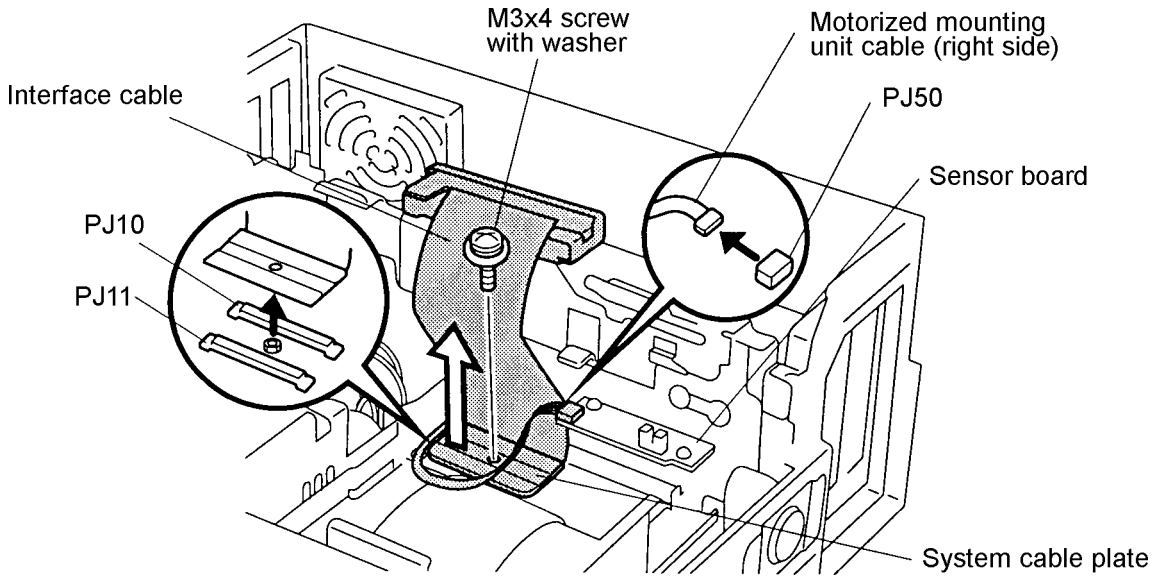

Figure 4-14 Removing the system cable plate and interface cable

7. Remove **two M3x6 screws** securing the **sensor board** and lift it out of the **middle frame**.

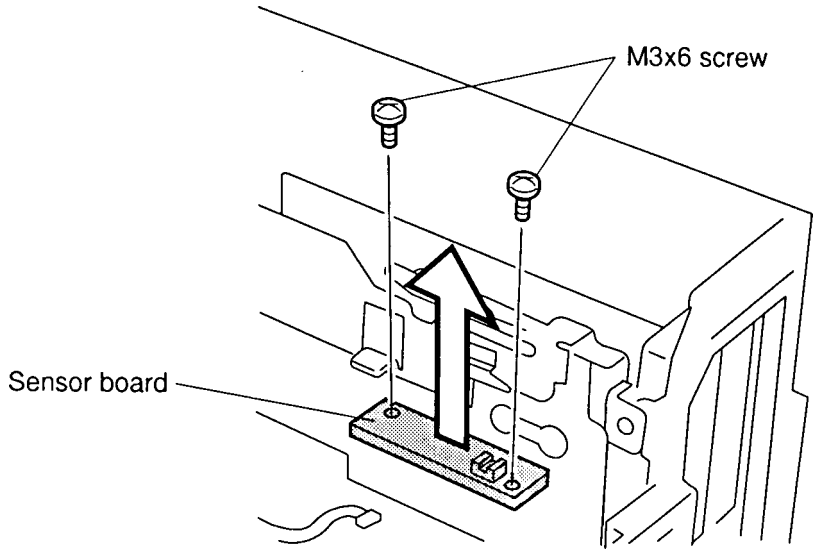

Figure 4-15 Removing the sensor board

Installing the Interface Cable and Sensor Board

To install the interface cable and sensor board, follow the steps below and refer to figures 4-14 and 4-15.

1. Seat the **sensor board** onto the **middle frame**.

> ***NOTE:*** *When you seat the sensor board, gently push it backward and then push it to the left. Otherwise, the sensor on the sensor board may function improperly.*

2. Secure the **sensor board** with **two M3x6 screws**.

3. Connect the **interface cable** to **PJ10** (first) and **PJ11** (second) on the **system board**. Be sure both connectors are firmly joined. If you are replacing the cable be sure to refer to the old one to duplicate how it is bent.

> ***NOTE:*** *After you connect the interface cable, lay the cable back on the middle frame so it doesn't get in the way.*

4. Set the **system cable plate** onto the **interface cable** and secure the **system cable plate** with **one M3x4 screw** (with washer).

> ***NOTE:*** *The left side of the system cable plate slips under the separator frame.*

5. Connect the **motorized mounting unit cable** (right side) to **PJ50** on the **system board**.

> ***NOTE:*** *The motorized mounting unit cable has connectors on both the right and the left sides.*

6. Install the motorized mounting unit, rear panel, fan, key unit, back cover, side covers, interface cover, front cover, and top cover as described in sections 4.5 back through 4.2.

4.7 5-inch Expansion Bay

Removing the 5-inch expansion bay

To remove the 5-inch expansion bay, follow the steps below and refer to figures 4-16 through 4-18.

1. Disconnect the computer, power cord, and all external cables connected to the Desk Station V.

2. Remove all optional PCMCIA cards and expansion boards from the Desk Station V.

3. Remove the interface cover, front cover, top cover, back cover, side covers, key unit, fan, rear panel, motorized mounting unit, interface cable, and sensor board as described in sections 4.2 through 4.6.

4. Remove the **tape** securing the **SCSI cable** and **power cable**, then remove the **M3x6 screw** securing the **5-inch expansion bay lower frame**.

5. Slide the **5-inch expansion bay lower frame** forward to remove it.

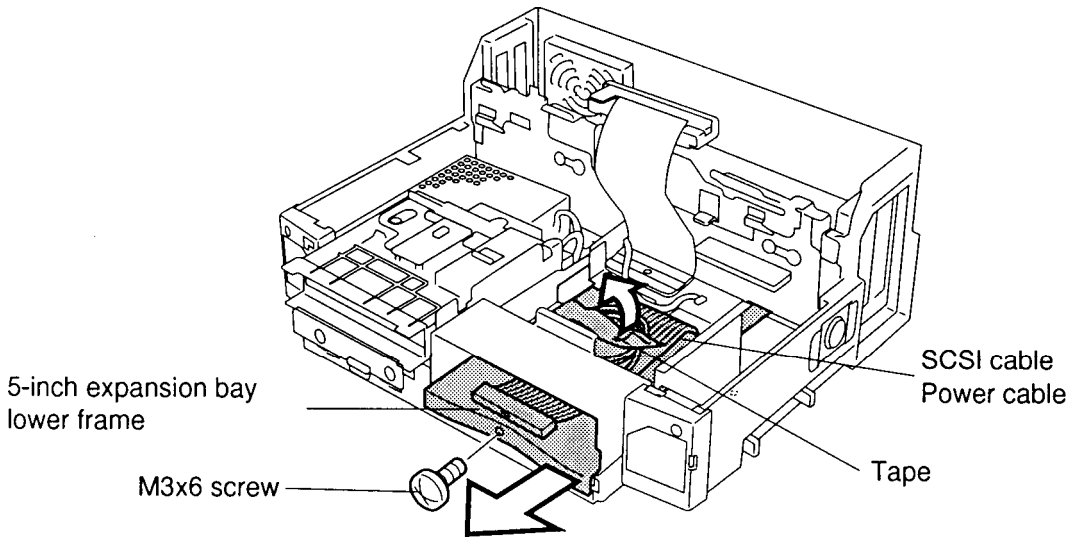

Figure 4-16 Removing the 5-inch expansion bay lower frame

6. Remove **four M3x6 screws** securing the **5-inch expansion bay upper frame**.

7. Slide the **5-inch expansion bay upper frame** forward to remove it.

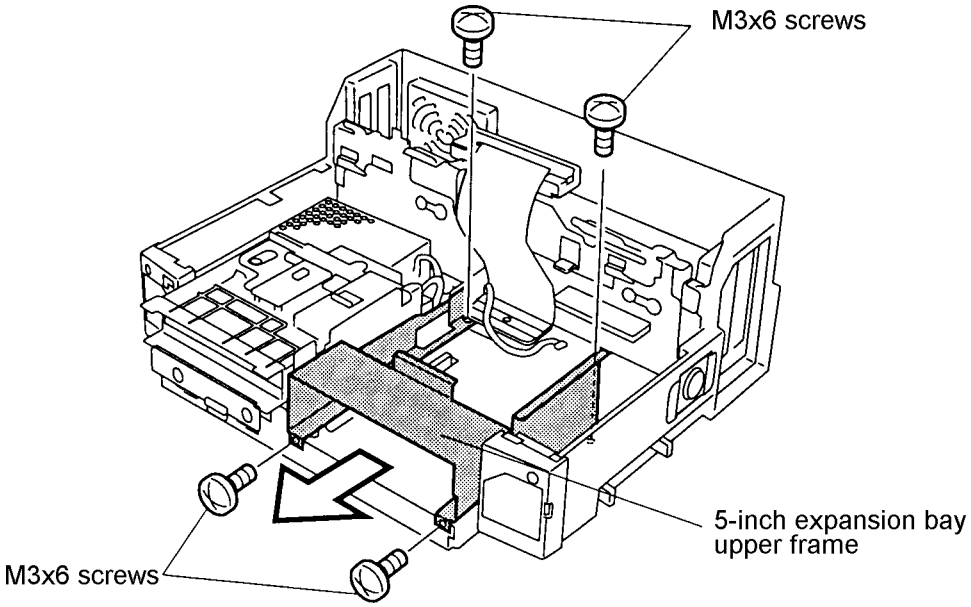

Figure 4-17 Removing the 5-inch expansion bay upper frame

8. Disconnect the **SCSI cable** from **PJ23** on the **system board** and the **power cable** from **PJ28** on the **system board**.

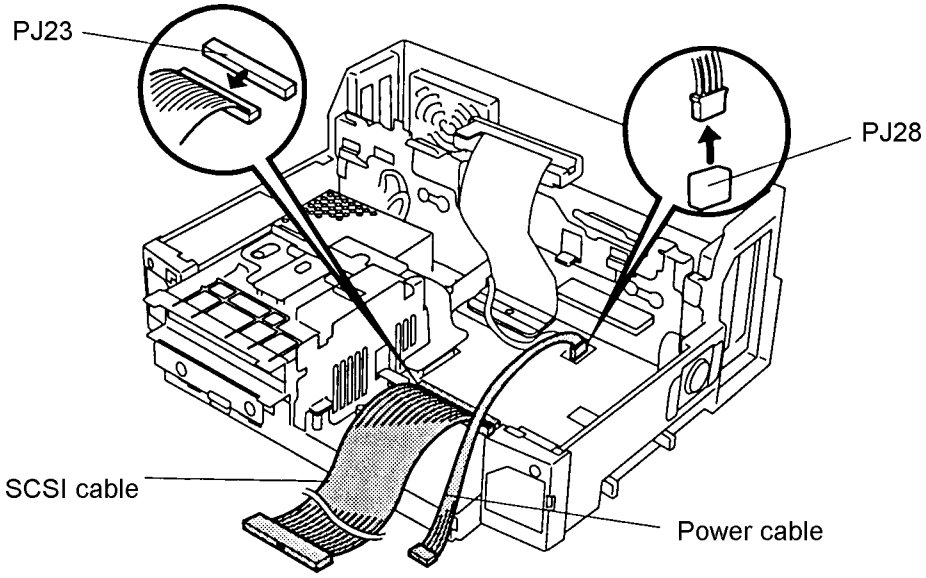

Figure 4-18 Disconnecting the SCSI cable and power cable

Installing the 5-inch expansion bay

To install the 5-inch expansion bay, follow the steps below and refer to figures 4-16 to 4-18.

1. Connect the **SCSI cable** to **PJ23** on the **system board** and the **power cable** to **PJ28** on the **system board**. Be sure no pressure is applied to the multibox cable.

2. Set the **5-inch expansion bay upper frame** in place and slide it back to fully seat it.

3. Secure the **5-inch expansion bay upper frame** with **four M3x6 screws**.

4. Set the **5-inch expansion bay lower frame** in place and slide it back to fully seat it.

5. Secure the **5-inch expansion bay lower frame** with **one M3x6 screw** and secure the **SCSI cable** and **power cable** with **tape**.

6. Install the interface cable, sensor board, motorized mounting unit, rear panel, fan, key unit, back cover, side covers, interface cover, front cover, and top cover as described in sections 4.6 back through 4.2.

4.8 Multibox

Removing the multibox

To remove the multibox, follow the steps below and refer to figures 4-19 and 4-20.

1. Disconnect the computer, power cord, and all external cables connected to the Desk Station V.

2. Remove all optional PCMCIA cards and expansion boards from the Desk Station V.

3. Remove the interface cover, front cover, top cover, back cover, side covers, key unit, fan, rear panel, motorized mounting unit, interface cable and sensor board, and 5-inch expansion bay as described in sections 4.2 through 4.7.

4. Disconnect the **multibox cable** from **PJ20** on the **system board** (Figure 4-19).

5. Remove **two M3x6 screws** securing the **multibox,** then push it back slightly and lift it out.

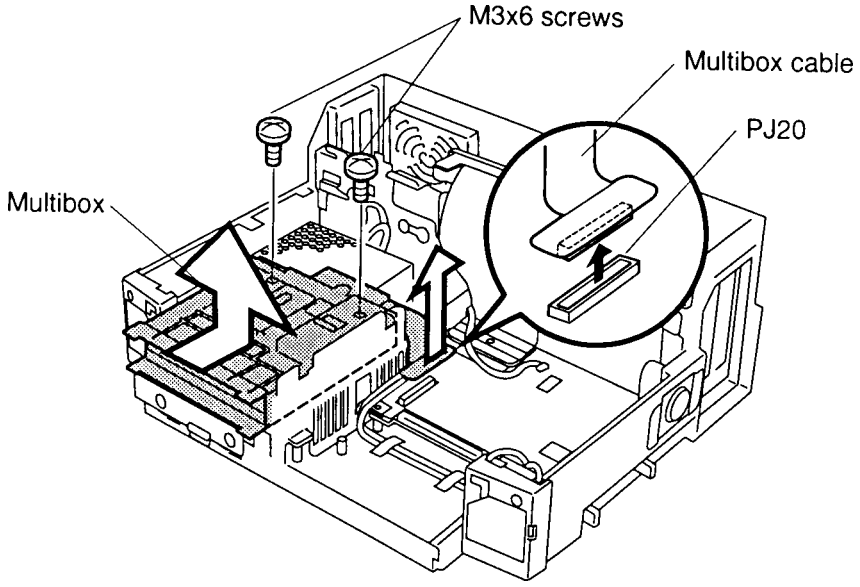

Figure 4-19 Removing the multibox

6. Use a thin object to release **four latches** on the **multibox**, open the **multibox**, and remove the **multibox cable**.

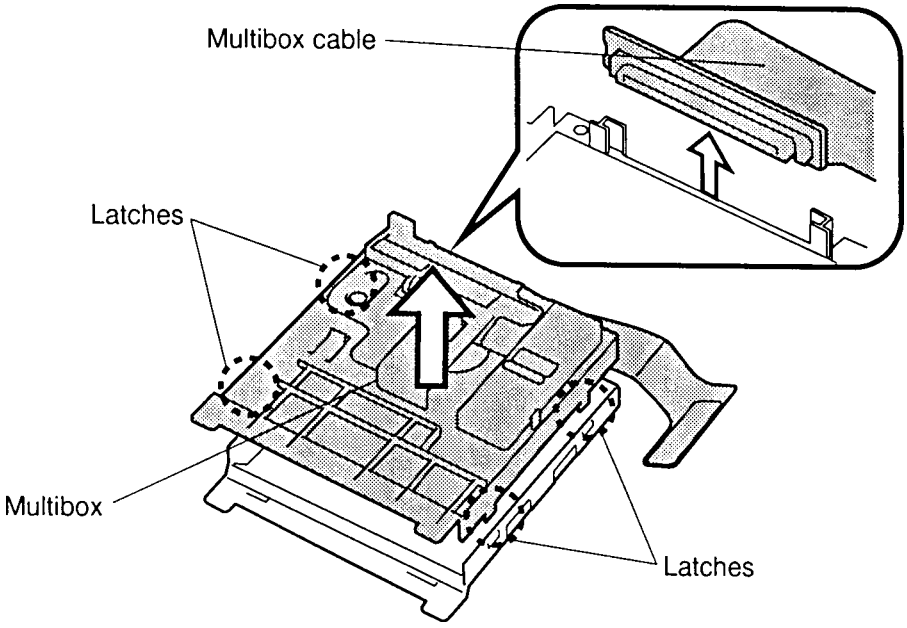

Figure 4-20 Opening the multibox

Installing the multibox

To install the multibox, follow the steps below and refer to figures 4-19 and 4-20.

1. Connect the **multibox cable** and close the **multibox**. If you are replacing the cable, be sure to refer to the old cable to duplicate how it is bent.

2. Set the **multibox** in place, right side first, and slide it back to fully seat it.

> ***NOTE:*** *When you seat the multibox, gently push it to the right.*

3. Secure the **multibox** with **two M3x6 screws**.

4. Connect the **multibox cable** to **PJ20** on the **system board**.

5. Install the 5-inch expansion bay, interface cable and sensor board, motorized mounting unit, rear panel, fan, key unit, back cover, side covers, interface cover, front cover, and top cover as described in sections 4.7 back through 4.2.

4.9 Speakers and LED Board

Removing the Speakers and LED Board

To remove the speakers and LED board, follow the steps below, and refer to figures 4-21 and 4-22.

1. Disconnect the computer, power cord, and all external cables connected to the Desk Station V.

2. Remove all optional PCMCIA cards and expansion boards from the Desk Station V.

3. Remove the interface cover, front cover, top cover, back cover, side covers, key unit, fan, rear panel, motorized mounting unit, interface cable and sensor board, 5-inch expansion bay, and multibox as described in sections 4.2 through 4.8.

4. Disconnect the **two speaker cables** from **PJ32** (left speaker) and **PJ33** (right speaker) on the **system board** and remove three pieces of **tape**. Be sure to take note of how the cables are threaded.

5. Remove **two M3x6 screws** securing the **two speakers** and remove the **speakers**.

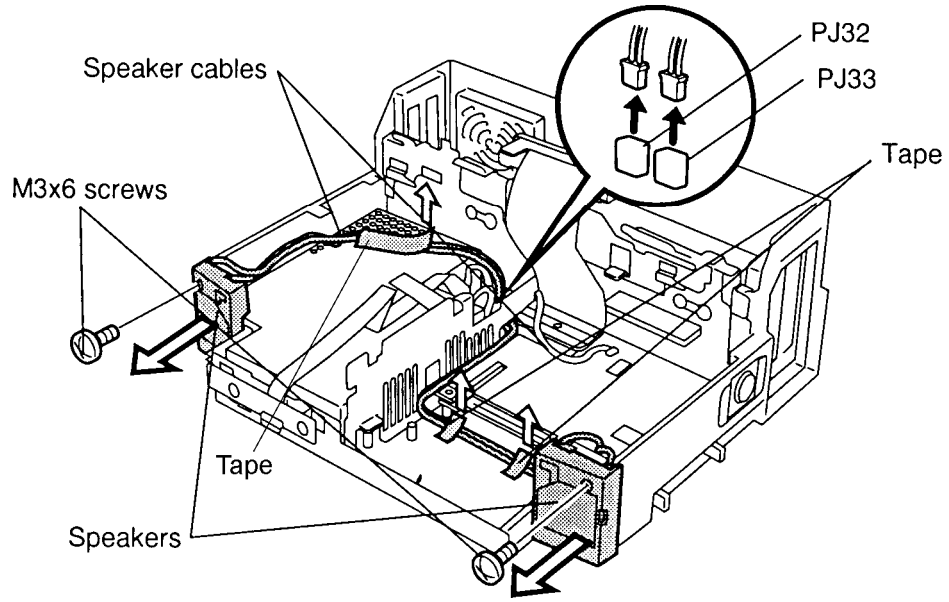

Figure 4-21 Removing the speakers

6. Disconnect the **LED cable** from **PJ22** on the **system board** and remove the **tape**.

7. Remove **two M3x6 screws** securing the **LED board** and remove it.

8. Disconnect the **LED cable** from **PJ101** on the **LED board**.

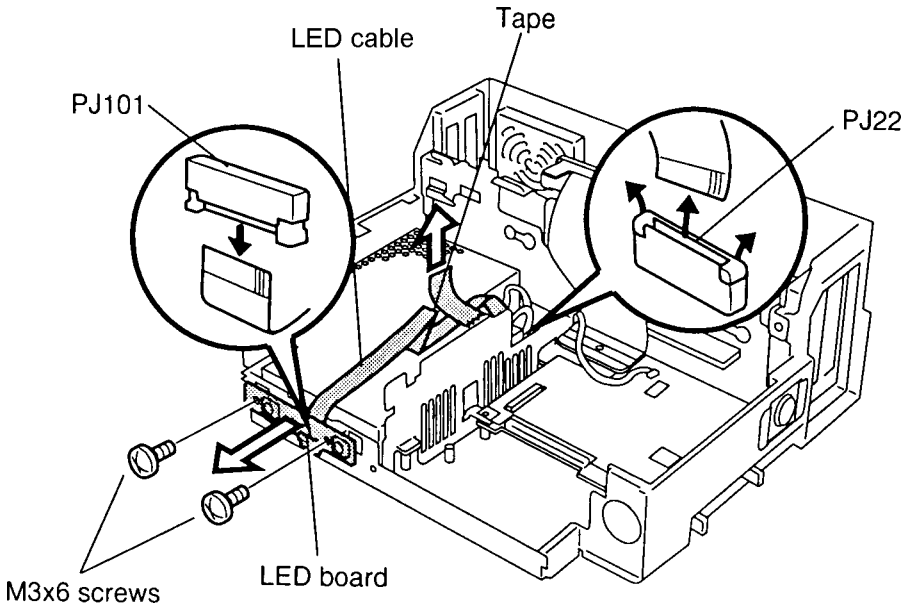

Figure 4-22 Removing the LED board

Installing the Speakers and LED Board

To install the speakers and LED board, follow the steps below and refer to figures 4-21 and 4-22.

1. Connect the **LED cable** to **PJ101** on the **LED board**.

2. Secure the **LED board** with **two M3x6 screws**.

3. Connect the **LED cable** to **PJ22** on the **system board** and secure the **LED cable** with **tape**. If you are installing a new cable, be sure to refer to the old one to duplicate the bends. If the new cable is a tight fit, use a plastic ruler to align the cable then insert it straight into the connector.

4. Seat the **speakers** and secure them with **two M3x6 screws**.

5. Connect the **speaker cables** to **PJ32** (left speaker) and **PJ33** (right speaker) on the **system board** and secure the excess **speaker cables** with three pieces of **tape**. Be sure to rethread the cables as you found them, they will need to be in place before the separator frame is installed.

6. Install the multibox, 5-inch expansion bay, interface cable and sensor board, motorized mounting unit, rear panel, fan, key unit, back cover, side covers, interface cover, front cover, and top cover as described in sections 4.8 back through 4.2.

4.10 Separator Frame and Middle Frame

Removing the Separator Frame and Middle Frame

To remove the separator frame and middle frame, follow the steps below and refer to figures 4-23 to 4-25.

1. Disconnect the computer, power cord, and all external cables connected to the Desk Station V.

2. Remove all optional PCMCIA cards and expansion boards from the Desk Station V.

3. Remove the interface cover, front cover, top cover, back cover, side covers, key unit, fan, rear panel, motorized mounting unit, interface cable and sensor board, 5-inch expansion bay, multibox, speakers, and LED board as described in sections 4.2 through 4.9.

4. Remove **three M3x6 screws** securing the **separator frame** and remove it.

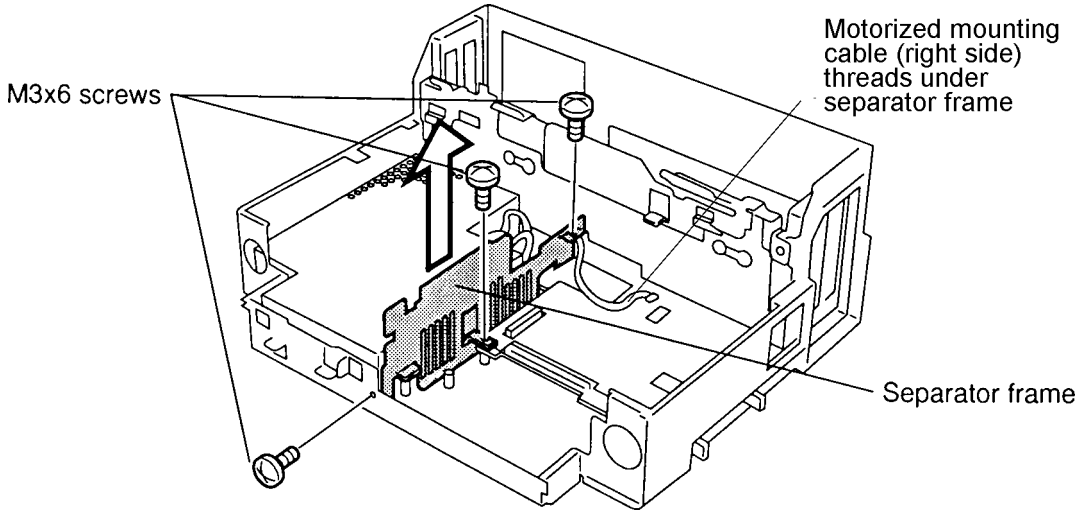

Figure 4-23 Removing the separator frame

5. Disconnect the **middle frame fan cable** from **PJ36** on the **system board**. Note that the cable is threaded under the middle frame.

6. Remove **three M3x6 screws** securing the **middle frame** and remove it.

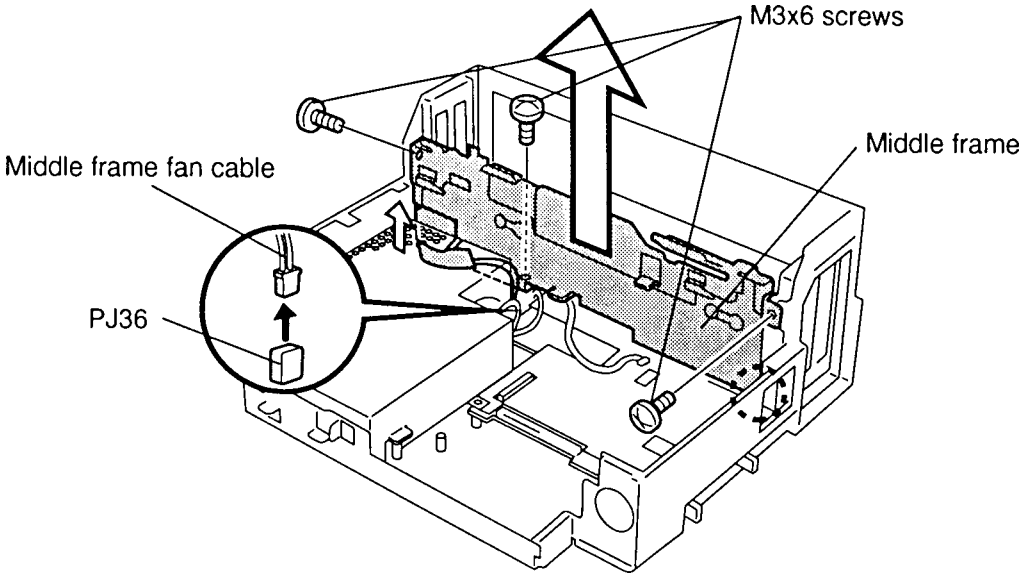

Figure 4-24 Removing the middle frame

7. Remove **two M3x6 screws** securing the **middle frame fan**.

8. Slide the **middle frame fan** to the left and remove it.

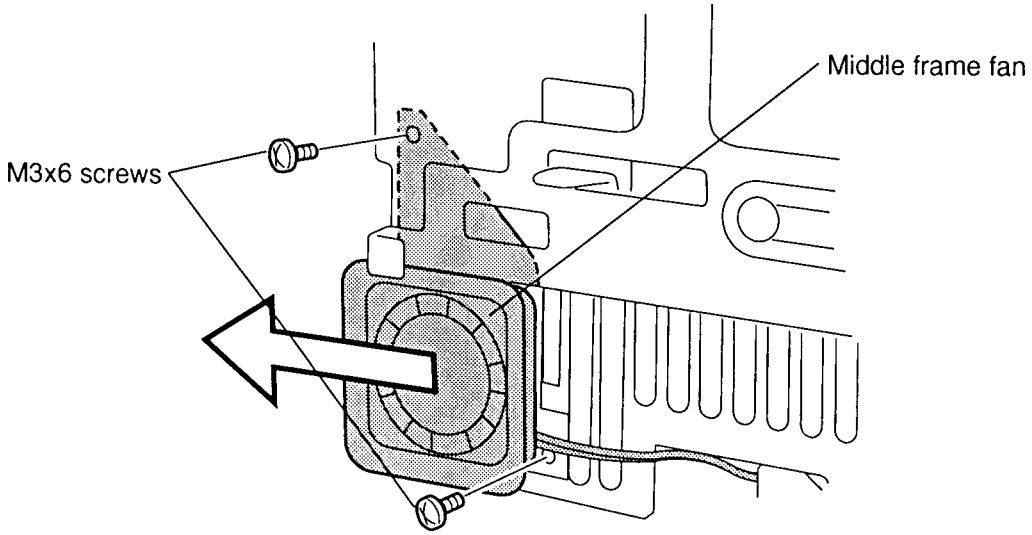

Figure 4-25 Removing the middle frame fan

Installing the Separator Frame and Middle Frame

To install the separator frame and middle frame, follow the steps below and refer to figures 4-23 to 4-25.

1. Set the **middle frame fan** in place and slide it to the right to seat it. Secure it with **two M3x6 screws**.

2. Seat the **middle frame** and secure it with **three M3x6 screws**. Be sure the plastic protector on the back is flush against the frame. The middle frame fan cable should be in place (under the frame), be sure it will not be pinched.

3. Connect the **middle frame fan cable** to **PJ36** on the **system board**.

4. Seat the **separator frame** and secure it with **three M3x6 screws**.

> ***NOTE:*** *When you seat the separator frame, the motorized mounting unit cable (right side - connected to PJ27) must be threaded under, not over, the separator frame (Figure 4-23).*

5. Install the speakers, LED board, multibox, 5-inch expansion bay, interface cable and sensor board, motorized mounting unit, key unit, fan, rear panel, back cover, side covers, interface cover, front cover, and top cover as described in sections 4.9 back through 4.2.

4.11 Power Supply Unit

Removing the Power Supply Unit

To remove the power supply unit, follow the steps below and refer to figures 4-26 to 4-28.

1. Disconnect the computer, power cord, and all external cables connected to the Desk Station V.

2. Remove all optional PCMCIA cards and expansion boards from the Desk Station V.

3. Remove the interface cover, front cover, top cover, back cover, side covers, key unit, fan, rear panel, motorized mounting unit, interface cable and sensor board, 5-inch expansion bay, multibox, speakers, LED board, separator frame and middle frame as described in sections 4.2 through 4.10.

4. Remove **three M3x15 screws** securing the **power supply unit**.

5. Remove **two M3x6 screws** securing the **AC cord cover** and remove it.

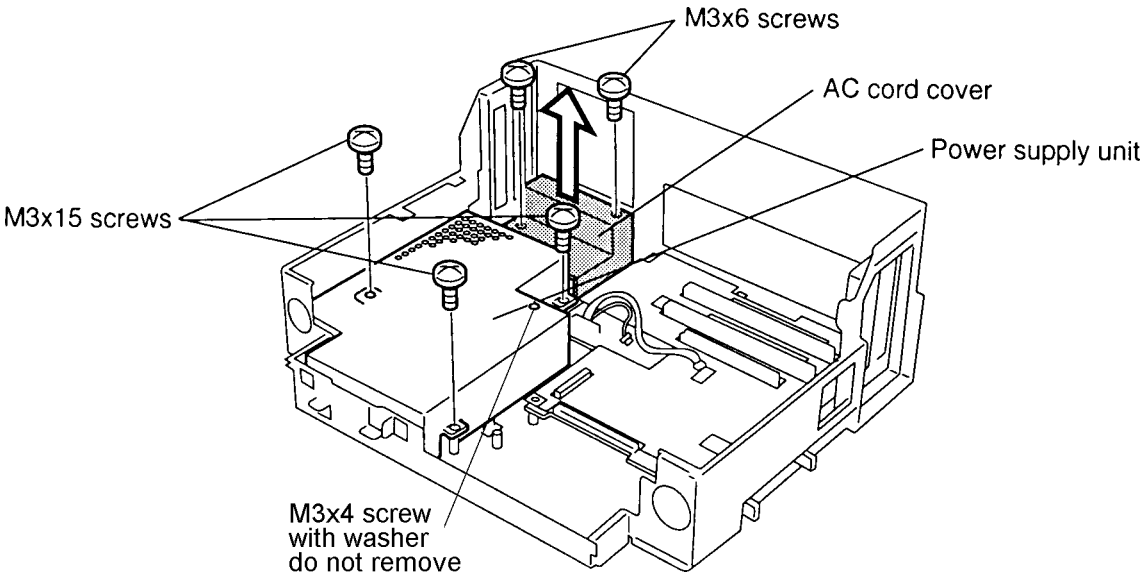

Figure 4-26 Removing the screws and AC cord cover

6. Remove **two M3x6 screws** securing the **AC cord connector**.

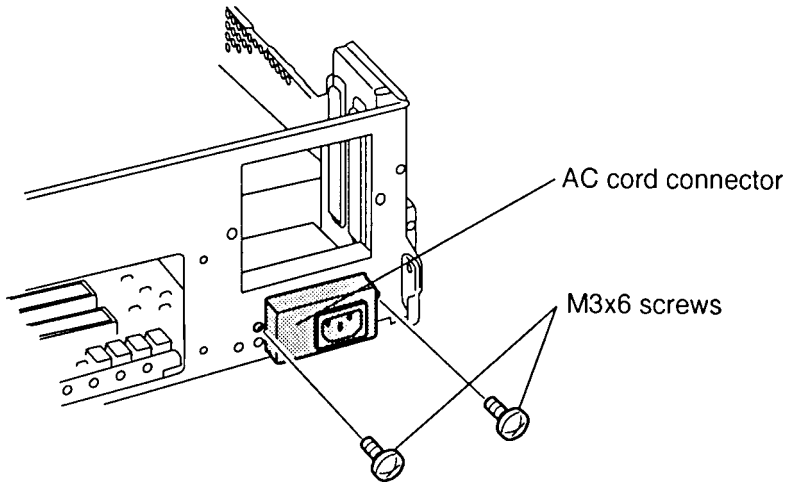

Figure 4-27 Removing the screws

7. Disconnect the **power supply cables** from **PJ24** and **PJ25** on the **system board** and lift out the **power supply unit**.

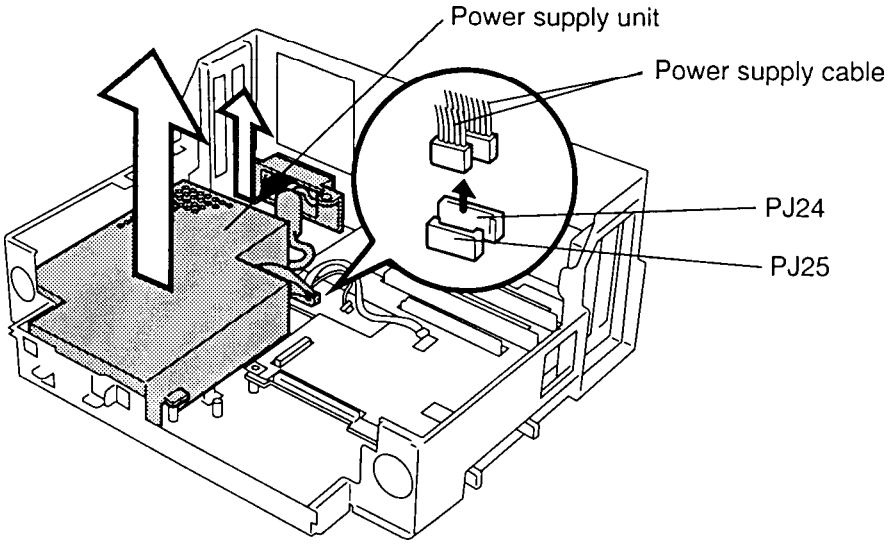

Figure 4-28 Removing the power supply unit

> ***NOTE:*** *If you are replacing the power supply unit, remove the plastic spacer on the old power supply unit for use with the new power supply unit.*

Installing the Power Supply Unit

To install the power supply unit, follow the steps below and refer to figures 4-26 to 4-28.

1. Seat the **power supply unit** and connect the **power supply cables** to **PJ24** and **PJ25** on the **system board**.

   > ***NOTE:*** *When you seat the power supply unit, gently push it forward and then push it to the right.*

2. Secure the **AC cord connector** with **two M3x6 screws**.

3. Seat the **AC cord cover** and secure it with **two M3x6 screws**.

4. Secure the **power supply unit** with **three M3x15 screws**.

5. Install the separator frame, middle frame, speakers, LED board, multibox, 5-inch expansion bay, interface cable and sensor board, motorized mounting unit, key unit, fan, rear panel, back cover, side covers, interface cover, front cover, and top cover as described in sections 4.10 back through 4.2.

4.12 System Board

Removing the System Board

To remove the system board, follow the steps below and refer to figure 4-29.

1. Disconnect the computer, power cord, and all external cables connected to the Desk Station V.

2. Remove all optional PCMCIA cards and expansion boards from the Desk Station V.

3. Remove the interface cover, front cover, top cover, back cover, side covers, key unit, fan, rear panel, motorized mounting unit, interface cable, and sensor board, 5-inch expansion bay, multibox, speakers, LED board, separator frame, middle frame, and power supply unit as described in sections 4.2 through 4.11.

4. Disconnect the **motorized mounting unit cable** (center) from **PJ27** on the **system board** and remove the cable.

5. Remove **seven M3x6 screws** and one **bolt** securing the **system board**.

6. Lift out the **system board**.

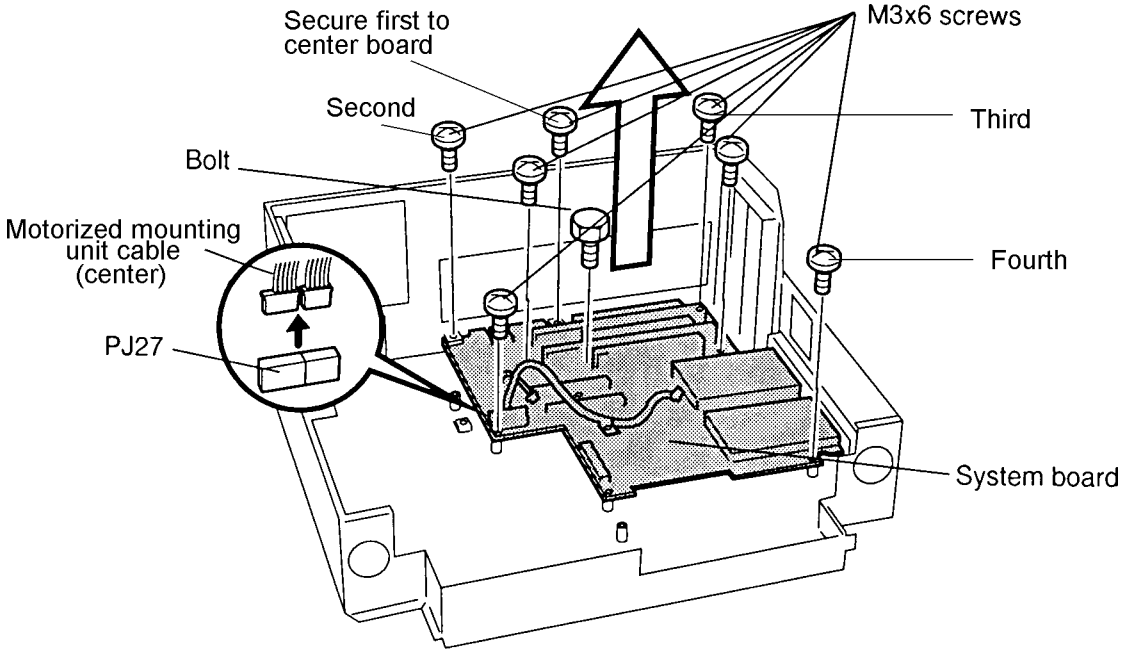

Figure 4-29 Removing the system board

> ***NOTE:*** *Slide the system board to the left and then lift it up to release it from the eject buttons of the PCMCIA slot.*

Installing the System Board

To install the system board, follow the steps below and refer to figure 4-29.

1. Seat the **system board** and secure it with **seven M3x6 screws** and one **bolt** in the order shown (first through fourth).

   > ***NOTE:*** *When you seat the system board, gently push it back.*

2. Connect the **motorized mounting unit cable** (center) to **PJ27** on the **system board**.

3. Install the power supply unit, separator frame, middle frame, speakers, LED board, multibox, 5-inch expansion bay, interface cable and sensor board, motorized mounting unit, key unit, fan, rear panel, back cover, side covers, interface cover, front cover, and top cover as described in sections 4.11 back through 4.2.

Appendix A Board Layout

A.1 System Board (Front)

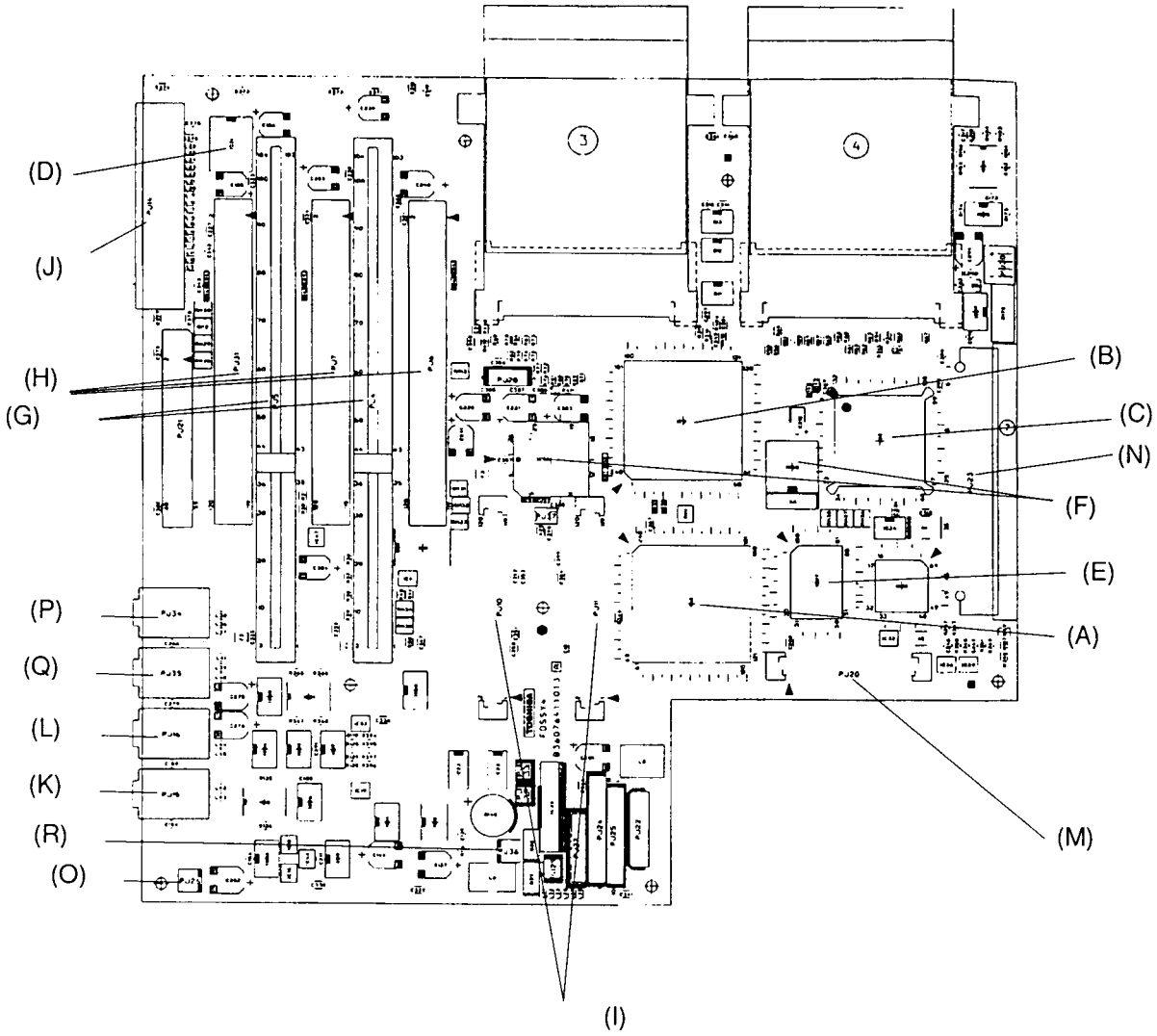

Figure A-1 System board (Front)

A.2 System Board Back View

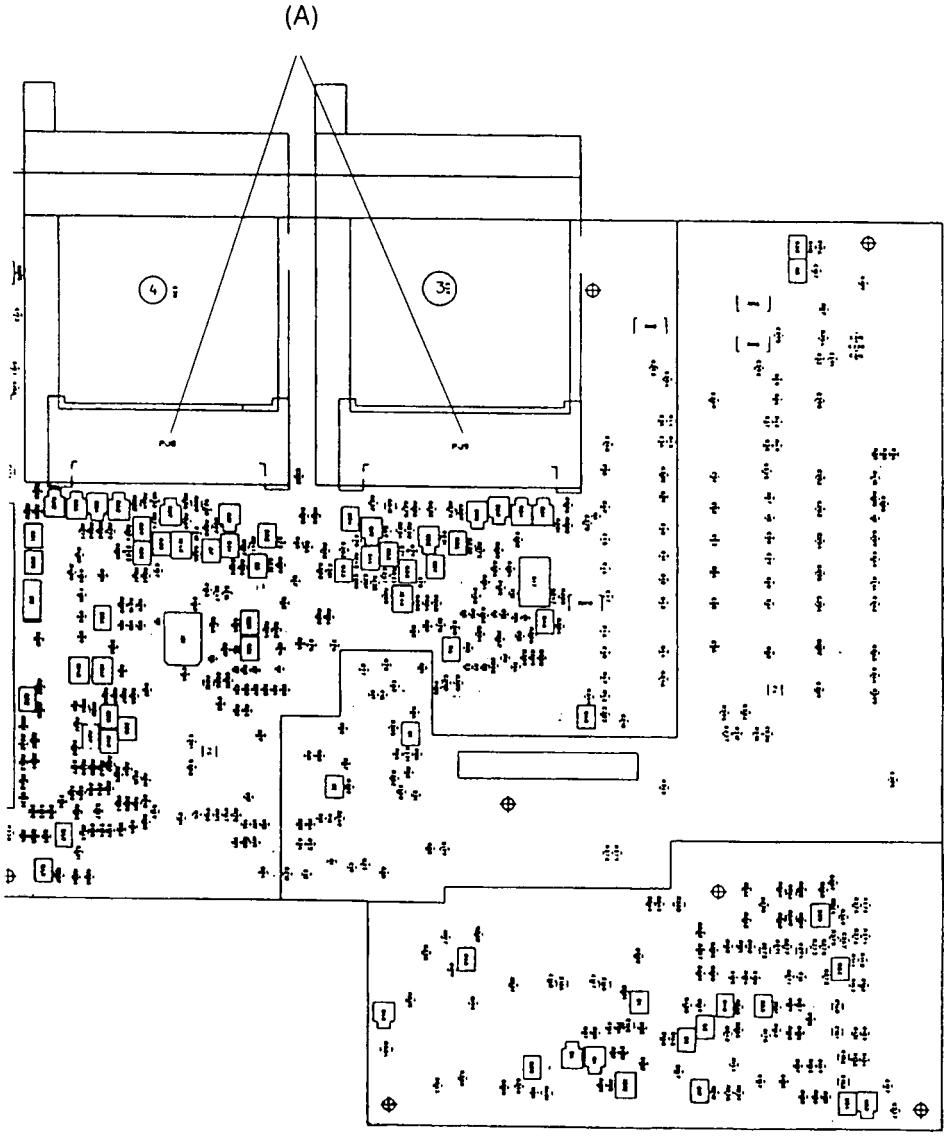

Figure A-2 Board layout (back)

Table A-1 System board ICs and connectors (front)

Mark	Number	Name
(A)	IC3	Docking I/F Connector GA
(B)	IC6	PCMCIA Card Controller GA
(C)	IC8	SCSI Controller
(D)	IC31	External SCSI Controller
(E)	IC27	Super I/O Controller GA
(F)	IC40,55	Clocks Controller
(G)	PJ4,5	ISA Connector
(H)	PJ6,7,31	PCI Connector
(I)	PJ10,11	System I/F Connector
(J)	PJ14	External SCSI Connector
(K)	PJ15	Line out Connector
(L)	PJ16	Line in Connector
(M)	PJ20	FDD CD-ROM pack I/F Connector
(N)	PJ23	Internal SCSI Connector
(O)	PJ26	Main Fan Connector
(P)	PJ34	Microphone Connector
(Q)	PJ35	Headphone Connector
(R)	PJ36	Power Supply Fan Connector

Table A-2 System board IC and connector (back)

Mark	Number	Name
(A)	PJ8,9	PCMCIA Card I/F Connector

Appendix B Wiring Diagrams

B.1 Printer Wraparound Connector

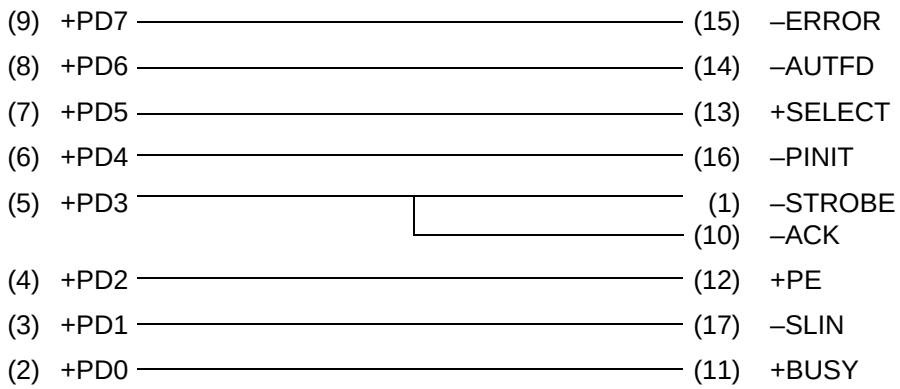

Figure B-1 Printer wraparound connector

B.2 RS-232-C Wraparound Connector

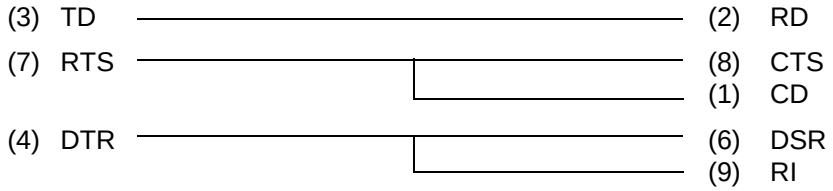

Figure B-2 RS-232-C wraparound connector

B.3 RS-232-C Direct Cable (9-Pin to 9-Pin)

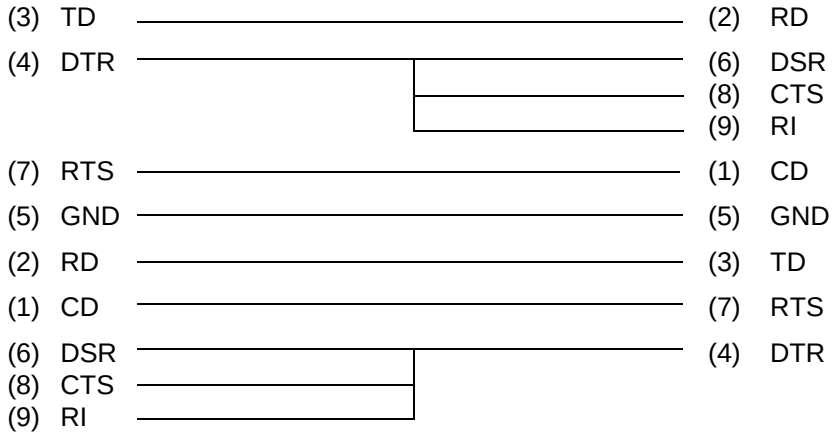

Figure B-3 RS-232-C direct cable (9-pin to 9-pin)

B.4 RS-232-C Direct Cable (9-Pin to 25-Pin)

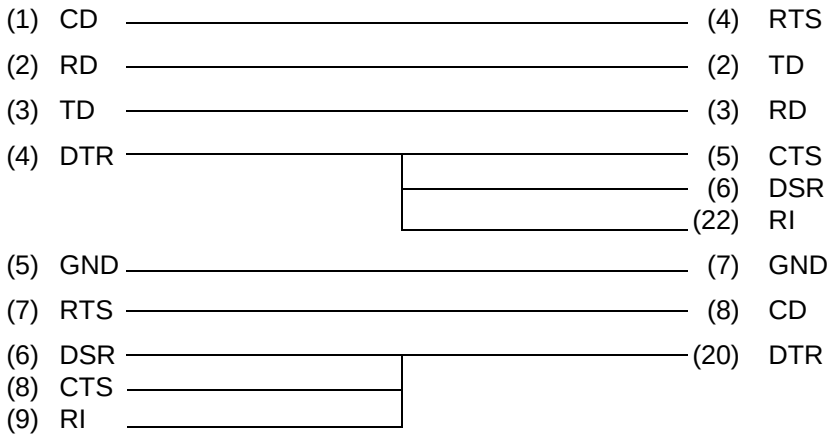

Figure B-4 RS-232-C direct cable (9-pin to 25-pin)

Appendix C Pin Assignments

C.1 PJ4 ISA Slot (A) Connector (104-pin)

Table C-1 ISA slot (A) connector pin assignments (104-pin)

Pin No.	Signal name	I/O	Pin No.	Signal Name	I/O
01	ISD15;100	I/O	02	GND	-
03	ISD14;100	I/O	04	MASTER;000	I
05	ISD13;100	I/O	06	VCC	-
07	ISD12;100	I/O	08	IDRQ7;100	I
09	ISD11;100	I/O	10	IDACK7;000	O
11	ISD10;100	I/O	12	IDRQ6;100	I
13	ISD09;100	I/O	14	IDACK6;000	O
15	ISD08;100	I/O	16	IDRQ5;100	I
17	IMEMW;000	I/O	18	IDACK5;000	O
19	IMEWR;000	I/O	20	IDRQ0;100	I
21	ILA17;100	I/O	22	IDACK0;000	O
23	ILA18;100	I/O	24	IIRQ14;100	I
25	ILA19;100	I/O	26	IIRQ15;100	I
27	ILA20;100	I/O	28	IIRQ12;100	I
29	ILA21;100	I/O	30	IIRQ11;100	I
31	ILA22;100	I/O	32	IIRQ10;100	I
33	ILA23;100	I/O	34	IOCS16;000	I
35	ISBHE;000	I/O	36	MECS16;000	I
37	NC	-	38	NC	-
39	NC	-	40	NC	-
41	NC	-	42	NC	-
43	ISA00;100	I/O	44	GND	-
45	ISA01;100	I/O	46	$14R3M;120	I
47	ISA02;100	I/O	48	VCC	-
49	ISA03;100	I/O	50	IBALE;100	O
51	ISA04;100	I/O	52	ITC;100	O
53	ISA05;100	I/O	54	IDACK2;000	O
55	ISA06;100	I/O	56	IIRQ3;100	I
57	ISA07;100	I/O	58	IIRQ4;100	I
59	ISA08;100	I/O	60	IIRQ5;100	I
61	ISA09;100	I/O	62	IIRQ6;100	I
63	ISA10;100	I/O	64	IIRQ7;100	I
65	ISA11;100	I/O	66	ISCLK$;100	O

Table C-1 ISA slot (A) connector pin assignments (104-pin)(continued)

Pin No.	Signal name	I/O	Pin No.	Signal Name	I/O
67	ISA12;100	I/O	68	IRFRSH;000	I/O
69	ISA13;100	I/O	70	IDRQ1;100	I
71	ISA14;100	I/O	72	IDACK1;000	O
73	ISA15;100	I/O	74	IDRQ3;100	I
75	ISA16;100	I/O	76	IDACK3;000	O
77	ISA17;100	O	78	IIOR;000	I/O
79	ISA18;100	O	80	IIOW;000	I/O
81	ISA19;100	O	82	ISMEMR;000	O
83	IAEN;100	O	84	ISMEMW;000	O
85	IIOCRY;100	I	86	GND	-
87	ISD00;100	I/O	88	P12V	-
89	ISD01;100	I/O	90	IOWAIT;000	I
91	ISD02;100	I/O	92	M12V	-
93	ISD03;100	I/O	94	IDRQ2;100	I
95	ISD04;100	I/O	96	M5V	-
97	ISD05;100	I/O	98	IIRQ9;100	I
99	ISD06;100	I/O	100	VCC	-
101	ISD07;100	I/O	102	IRESET;100	O
103	IIOCHK;000	I	104	GND	-

C.2 PJ5 ISA Slot (B) Connector (104-pin)

Table C-2 ISA slot (B) connector pin assignments (104-pin)

Pin No.	Signal name	I/O	Pin No.	Signal Name	I/O
01	ISD15;100	I/O	02	GND	-
03	ISD14;100	I/O	04	MASTER;000	I
05	ISD13;100	I/O	06	VCC	-
07	ISD12;100	I/O	08	IDRQ7;100	I
09	ISD11;100	I/O	10	IDACK7;000	O
11	ISD10;100	I/O	12	IDRQ6	I
13	ISD09;100	I/O	14	IDACK6;000	O
15	ISD08;100	I/O	16	IDRQ5;100	I
17	IMEMW;000	I/O	18	IDACK5;000	O
19	IMEWR;000	I/O	20	IDRQ0;100	I
21	ILA17;100	I/O	22	IDACK0;000	O
23	ILA18;100	I/O	24	IIRQ14;100	I
25	ILA19;100	I/O	26	IIRQ15;100	I
27	ILA20;100	I/O	28	IIRQ12;100	I
29	ILA21;100	I/O	30	IIRQ11;100	I
31	ILA22;100	I/O	32	IIRQ10;100	I
33	ILA23;100	I/O	34	IOCS16;100	I
35	ISBHE;000	I/O	36	MECS16;000	I
37	NC	-	38	NC	-
39	NC	-	40	NC	-
41	NC	-	42	NC	-
43	ISA00;100	I/O	44	GND	-
45	ISA01;100	I/O	46	$14R3M;130	I
47	ISA02;100	I/O	48	VCC	-
49	ISA03;100	I/O	50	IBALE;100	O
51	ISA04;100	I/O	52	ITC;100	O
53	ISA05;100	I/O	54	IDACK2;000	O
55	ISA06;100	I/O	56	IIRQ3;100	I
57	ISA07;100	I/O	58	IIRQ4;100	I
59	ISA08;100	I/O	60	IIRQ5;100	I
61	ISA09;100	I/O	62	IIRQ6;100	I
63	ISA10;100	I/O	64	IIRQ7;100	I
65	ISA11;100	I/O	66	ISCLK$;100	O

Table C-2 ISA slot (B) connector pin assignments (104-pin) (continued)

Pin No.	Signal name	I/O	Pin No.	Signal Name	I/O
67	ISA12;100	I/O	68	IRFRSH;000	I/O
69	ISA13;100	I/O	70	IDRQ1;100	I
71	ISA14;100	I/O	72	IDACK1;000	O
73	ISA15;100	I/O	74	IDRQ3;100	I
75	ISA16;100	I/O	76	IDACK3;000	O
77	ISA17;100	O	78	IIOR;000	I/O
79	ISA18;100	O	80	IIOW;000	I/O
81	ISA19;100	O	82	ISMEMR;000	O
83	IAEN;100	O	84	ISMEMW;000	O
85	IIOCRY;100	I	86	GND	-
87	ISD00;100	I/O	88	P12V	-
89	ISD01;100	I/O	90	IOWAIT;000	I
91	ISD02;100	I/O	92	M12V	-
93	ISD03;100	I/O	94	IDRQ2;100	I
95	ISD04;100	I/O	96	M5V	-
97	ISD05;100	I/O	98	IIRQ9;100	I
99	ISD06;100	I/O	100	VCC	-
101	ISD07;100	I/O	102	IRESET;100	O
103	IIOCHK;000	I	104	GND	-

C.3 PJ6 PCI Slot (A) Connector (120-pin)

Table C-3 PCI slot (A) connector pin assignments (120-pin)

Pin No.	Signal name	I/O	Pin No.	Signal Name	I/O
01	PIAVCC	-	02	M12V	-
03	P12V	-	04	GND	-
05	PIAVCC	-	06	GND	-
07	PIAVCC	-	08	NC	-
09	PIAVCC	-	10	PIAVCC	-
11	PINTC;000	I	12	PIAVCC	-
13	PINTA;000	I	14	PINTD;000	O
15	PIAVCC	-	16	PINTB;000	O
17	NC	-	18	PSNTOA;000	I
19	PIAVCC	-	20	NC	-
21	NC	-	22	PSNT1A;000	I
23	GND	-	24	GND	-
25	GND	-	26	GND	-
27	NC	-	28	NC	-
29	PRST;000	O	30	GND	-
31	PIAVCC	-	32	$PCLK2;100	O
33	PGNTD;000	O	34	GND	-
35	GND	-	36	PREQD;000	I
37	NC	-	38	PIAVCC	-
39	PAD30;100	I/O	40	PAD31;100	I/O
41	PIA3V	-	42	PAD29;100	I/O
43	PAD28;100	I/O	44	GND	-
45	PAD26;100	I/O	46	PAD27;100	I/O
47	GND	-	48	PAD25;100	I/O
49	PAD24;100	I/O	50	PIA3V	-
51	IDSELD;100	O	52	PCBE3;000	I/O
53	PIA3V	-	54	PAD23;100	I/O
55	PAD22;100	I/O	56	GND	-
57	PAD20;100	I/O	58	PAD21;100	I/O
59	GND	-	60	PAD19;100	I/O
61	PAD18;100	I/O	62	PIA3V	-
63	PAD16;100	I/O	64	PAD17;100	I/O
65	PIA3V	-	66	PCBE2;000	I/O

Table C-3 PCI slot (A) connector pin assignments (120-pin)(continued)

Pin No.	Signal name	I/O	Pin No.	Signal Name	I/O
67	PFRAME;000	I/O	68	GND	-
69	GND	-	70	PIRDY;000	I/O
71	PTRDY;000	I/O	72	PIA3V	-
73	GND	-	74	PDVSEL;000	I/O
75	PSTOP;000	I/O	76	GND	-
77	PIA3V	-	78	PLOCK;000	I/O
79	SDONE;100	I/O	80	PPERR;000	I/O
81	SBO;000	I/O	82	PIA3V	-
83	GND	-	84	PSERR;000	I/O
85	PPAR;100	I/O	86	PIA3V	-
87	PAD15;100	I/O	88	PCBE1;000	I/O
89	PIA3V	-	90	PAD14;100	I/O
91	PAD13;100	I/O	92	GND	-
93	PAD11;100	I/O	94	PAD12;100	I/O
95	GND	-	96	PAD10;100	I/O
97	PAD09;100	I/O	98	GND	-
99	PCBE0;000	I/O	100	PAD08;100	I/O
101	PIA3V	-	102	PAD07;100	I/O
103	PAD06;100	I/O	104	PIA3V	-
105	PAD04;100	I/O	106	PAD05;100	I/O
107	GND	-	108	PAD03;100	I/O
109	PAD02;100	I/O	110	GND	-
111	PAD00;100	I/O	112	PAD01;100	I/O
113	PIAVCC	-	114	PIAVCC	-
115	REQ64;000	I/O	116	ACK64;000	I/O
117	PIAVCC	-	118	PIAVCC	-
119	PIAVCC	-	120	PIAVCC	-

C.4 PJ7 PCI Slot (B) Connector (120-pin)

Table C-4 PCI slot (B) connector pin assignments (120-pin)

Pin No.	Signal name	I/O	Pin No.	Signal Name	I/O
01	PIBVCC	-	02	M12V	-
03	P12V	-	04	GND	-
05	PIBVCC	-	06	GND	-
07	PIBVCC	-	08	NC	-
09	PIBVCC	-	10	PIBVCC	-
11	PINTD;000	I	12	PIBVCC	-
13	PINTB;000	I	14	PINTC;000	O
15	PIBVCC	-	16	PINTA;000	O
17	NC	-	18	PSNTOB;000	I
19	PIBVCC	-	20	NC	-
21	NC	-	22	PSNT1B;000	I
23	GND	-	24	GND	-
25	GND	-	26	GND	-
27	NC	-	28	NC	-
29	PRST;000	O	30	GND	-
31	PIBVCC	-	32	$PCLK3;100	O
33	PGNTE;000	O	34	GND	-
35	GND	-	36	PREQE;000	I
37	NC	-	38	PIBVCC	-
39	PAD30;100	I/O	40	PAD31;100	I/O
41	PIB3V	-	42	PAD29;100	I/O
43	PAD28;100	I/O	44	GND	-
45	PAD26;100	I/O	46	PAD27;100	I/O
47	GND	-	48	PAD25;100	I/O
49	PAD24;100	I/O	50	PIB3V	-
51	IDSELE;100	O	52	PCBE3;000	I/O
53	PIBVCC	-	54	PAD23;100	I/O
55	PAD22;100	I/O	56	GND	-
57	PAD20;100	I/O	58	PAD21;100	I/O
59	GND	-	60	PAD19;100	I/O
61	PAD18;100	I/O	62	PIB3V	-
63	PAD16;100	I/O	64	PAD17;100	I/O
65	PIB3V	-	66	PCBE2;000	I/O

Table C-4 PCI slot (B) connector pin assignments (120-pin)(continued)

Pin No.	Signal name	I/O	Pin No.	Signal Name	I/O
67	PFRAME;000	I/O	68	GND	-
69	GND	-	70	PIRDY;000	I/O
71	PTRDY;000	I/O	72	PIB3V	-
73	GND	-	74	PDVSEL;000	I/O
75	PSTOP;000	I/O	76	GND	-
77	PIB3V	-	78	PLOCK;000	I/O
79	SDONE;100	I/O	80	PPERR;000	I/O
81	SBO;000	I/O	82	PIB3V	-
83	GND	-	84	PSERR;000	I/O
85	PPAR;100	I/O	86	PIB3V	-
87	PAD15;100	I/O	88	PCBE1;000	I/O
89	PIB3V	-	90	PAD14;100	I/O
91	PAD13;100	I/O	92	GND	-
93	PAD11;100	I/O	94	PAD12;100	I/O
95	GND	-	96	PAD10;100	I/O
97	PAD09;100	I/O	98	GND	-
99	PCBE0;000	I/O	100	PAD08;100	I/O
101	PIB3V	-	102	PAD07;100	I/O
103	PAD06;100	I/O	104	PIB3V	-
105	PAD04;100	I/O	106	PAD05;100	I/O
107	GND	-	108	PAD03;100	I/O
109	PAD02;100	I/O	110	GND	-
111	PAD00;100	I/O	112	PAD01;100	I/O
113	PIBVCC	-	114	PIBVCC	-
115	REQ64;001	I/O	116	ACK64;000	I/O
117	PIBVCC	-	118	PIBVCC	-
119	PIBVCC	-	120	PIBVCC	-

C.5 PJ31 PCI Slot (C) Connector (120-pin)

Table C-5 PCI slot (C) connector pin assignments (120-pin)

Pin No.	Signal name	I/O	Pin No.	Signal Name	I/O
01	PIBVCC	-	02	M12V	-
03	P12V	-	04	GND	-
05	PIBVCC	-	06	GND	-
07	PIBVCC	-	08	NC	-
09	PIBVCC	-	10	PIBVCC	-
11	PINTB;000	I	12	PIBVCC	-
13	PINTD;000	I	14	PINTA;000	O
15	PIBVCC	-	16	PINTC;000	O
17	NC	-	18	NC	-
19	PIBVCC	-	20	NC	-
21	NC	-	22	NC	-
23	GND	-	24	GND	-
25	GND	-	26	GND	-
27	NC	-	28	NC	-
29	PRST;000	O	30	GND	-
31	PIBVCC	-	32	$PCLK4;100	O
33	PGNTB;000	O	34	GND	-
35	GND	-	36	PREQB;000	I
37	NC	-	38	PIBVCC	-
39	PAD30;100	I/O	40	PAD31;100	I/O
41	PIB3V	-	42	PAD29;100	I/O
43	PAD28;100	I/O	44	GND	-
45	PAD26;100	I/O	46	PAD27;100	I/O
47	GND	-	48	PAD25;100	I/O
49	PAD24;100	I/O	50	PIB3V	-
51	IDSELC;100	O	52	PCBE3;000	I/O
53	PIBVCC	-	54	PAD23;100	I/O
55	PAD22;100	I/O	56	GND	-
57	PAD20;100	I/O	58	PAD21;100	I/O
59	GND	-	60	PAD19;100	I/O
61	PAD18;100	I/O	62	PIB3V	-
63	PAD16;100	I/O	64	PAD17;100	I/O
65	PIB3V	-	66	PCBE2;000	I/O

Table C-5 PCI slot (C) connector pin assignments (120-pin)(continued)

Pin No.	Signal name	I/O	Pin No.	Signal Name	I/O
67	PFRAME;000	I/O	68	GND	-
69	GND	-	70	PIRDY;000	I/O
71	PTRDY;000	I/O	72	PIB3V	-
73	GND	-	74	PDVSEL;000	I/O
75	PSTOP;000	I/O	76	GND	-
77	PIB3V	-	78	PLOCK;000	I/O
79	SDONE;100	I/O	80	PPERR;000	I/O
81	SBO;000	I/O	82	PIB3V	-
83	GND	-	84	PSERR;000	I/O
85	PPAR;100	I/O	86	PIB3V	-
87	PAD15;100	I/O	88	PCBE1;000	I/O
89	PIB3V	-	90	PAD14;100	I/O
91	PAD13;100	I/O	92	GND	-
93	PAD11	I/O	94	PAD12;100	I/O
95	GND	-	96	PAD10;100	I/O
97	PAD09;100	I/O	98	GND	-
99	PCBE0;000	I/O	100	PAD08;100	I/O
101	PIB3V	-	102	PAD07;100	I/O
103	PAD06;100	I/O	104	PIB3V	-
105	PAD04;100	I/O	106	PAD05;100	I/O
107	GND	-	108	PAD03;100	I/O
109	PAD02;100	I/O	110	GND	-
111	PAD00;100	I/O	112	PAD01;100	I/O
113	PIBVCC	-	114	PIBVCC	-
115	REQ64;000	I/O	116	ACK64;000	I/O
117	PIBVCC	-	118	PIBVCC	-
119	PIBVCC	-	120	PIBVCC	-

C.6 PJ8 PCMCIA/Card Bus Connector (85-pin)

Table C-6 PCMCIA/Card Bus connector pin assignments (85-pin)

Pin No.	Signal name	I/O	Pin No.	Signal Name	I/O
01	GND	-	02	AD03;100	I/O
03	AD04;100	I/O	04	AD05;100	I/O
05	AD06;100	I/O	06	AD07;100	I/O
07	ACE1;000	O	08	AA10;100	O
09	AOE;000	O	10	AA11;100	O
11	AA09;100	O	12	AA08;100	O
13	AA13;100	O	14	AA14;100	O
15	AWE;000	O	16	AIREQ;000	I
17	MCVCCA	-	18	MCVP1A	-
19	AA16;100	O	20	AA15;100	O
21	AA12;100	O	22	AA07;100	O
23	AA06;100	O	24	AA05;100	O
25	AA04;100	O	26	AA03;100	O
27	AA02;100	O	28	AA01;100	O
29	AA00;100	O	30	AD00;100	I/O
31	AD01;100	I/O	32	AD02;100	I/O
33	AIIS16;000	I	34	GND	-
35	GND	-	36	ACD1;000	I
37	AD11;100	I/O	38	AD12;100	I/O
39	AD13;100	I/O	40	AD14;100	I/O
41	AD15;100	I/O	42	ACE2;000	O
43	AVS1;100	I/O	44	AIORD;000	I/O
45	AIOWR;000	I/O	46	AA17;100	O
47	AA18;100	O	48	AA19;100	O
49	AA20;100	O	50	AA21;100	O
51	MCVCCA	-	52	MCVP1A	-
53	AA22;100	O	54	AA23;100	O
55	AA24;100	O	56	AA25;100	O
57	AVS2;100	I	58	ARESET;100	O
59	AWAIT;000	I	60	AINPCK;000	I
61	AREG;000	O	62	ASPKR;000	I
63	ATSCHG;000	I	64	AD08;100	I/O
65	AD09;100	I/O	66	AD10;100	I/O

Table C-6 PCMCIA/Card Bus connector pin assignments (85-pin) (continued)

Pin No.	Signal name	I/O	Pin No.	Signal Name	I/O
67	ACD2;000	I	68	GND	-
69	GND	-	70	GND	-
71	GND	-	72	GND	-
73	GND	-	74	GND	-
75	GND	-	76	GND	-
77	GND	-	78	GND	-
79	GND	-	80	GND	-
81	GND	-	82	GND	-
83	GND	-	84	GND	-
85	GND	-			

C.7 PJ9 PCMCIA/Card Bus Connector (85-pin)

Table C-7 PCMCIA/Card Bus connector pin assignments (85-pin)

Pin No.	Signal name	I/O	Pin No.	Signal Name	I/O
01	GND	-	02	BD03;100	I/O
03	BD04;100	I/O	04	BD05;100	I/O
05	BD06;100	I/O	06	BD07;100	I/O
07	BCE1;000	O	08	BA10;100	O
09	BOE;000	O	10	BA11;100	O
11	BA09;100	O	12	BA08;100	O
13	BA13;100	O	14	BA14;100	O
15	BWE;000	O	16	BIREQ;000	I
17	MCVCCB	-	18	MCVP1B	-
19	BA16;100	O	20	BA15;100	O
21	BA12;100	O	22	BA07;100	O
23	BA06;100	O	24	BA05;100	O
25	BA04;100	O	26	BA03;100	O
27	BA02;100	O	28	BA01;100	O
29	BA00;100	O	30	BD00;100	I/O
31	BD01;100	I/O	32	BD02;100	I/O
33	BIIS16;000	I	34	GND	-
35	GND	-	36	BCD1;000	I
37	BD11;100	I/O	38	BD12;100	I/O
39	BD13;100	I/O	40	BD14;100	I/O
41	BD15;100	I/O	42	BCE2;000	O
43	BVS1;100	I/O	44	BIORD;000	I/O
45	BIOWR;000	I/O	46	BA17;100	O
47	BA18;100	O	48	BA19;100	O
49	BA20;100	O	50	BA21;100	O
51	MCVCCB	-	52	MCVP1B	-
53	BA22;100	O	54	BA23;100	O
55	BA24;100	O	56	BA25;100	O
57	BVS2;100	I	58	BRESET;100	O
59	BWAIT;000	I	60	BINPCK;000	I
61	BREG;000	I	62	BSPKR;000	I
63	BTSCHG;000	I	64	BD08;100	I/O
65	BD09;100	I/O	66	BD10;100	I/O

Table C-7 PCMCIA/Card Bus connector pin assignments (85-pin) (continued)

Pin No.	Signal name	I/O	Pin No.	Signal Name	I/O
67	BCD2;000	I	68	GND	-
69	GND	-	70	GND	-
71	GND	-	72	GND	-
73	GND	-	74	GND	-
75	GND	-	76	GND	-
77	GND	-	78	GND	-
79	GND	-	80	GND	-
81	GND	-	82	GND	-
83	GND	-	84	GND	-
85	GND	-			

C.8 PJ10 System I/F (1) Connector (120-pin)

Table C-8 System I/F (1) connector pin assignments (120-pin)

Pin No.	Signal name	I/O	Pin No.	Signal Name	I/O
01	GND	-	02	PDB02;100	I/O
03	GND	-	04	PDB06;100	I/O
05	GND	-	06	PCONF;100	I/O
07	GND	-	08	MCV	-
09	GND	-	10	DAD07;100	I/O
11	PDB07;100	I/O	12	DAD08;100	I/O
13	SLIN;000	O	14	DAD31;100	I/O
15	PDB01;100	I/O	16	DAD06;100	I/O
17	AUTFD;000	I	18	DAD05;100	I/O
19	PE;100	O	20	DAD30;100	I/O
21	DAD15;100	I/O	22	DAD03;100	I/O
23	NC	-	24	DAD04;100	I/O
25	DGND	-	26	DAD29;100	I/O
27	DGND	-	28	DAD02;100	I/O
29	DGND	-	30	DAD01;100	I/O
31	DGND	-	32	DAD00;100	I/O
33	NC	-	34	DAD28;100	I/O
35	P15V	-	36	DRST;000	I
37	P15V	-	38	DAD27;100	I/O
39	P15V	-	40	DREFRH;000	I/O
41	P15V	-	42	DAD26;100	I/O
43	GND	-	44	DFRAME;000	I/O
45	GND	-	46	DAD25;100	I/O
47	GND	-	48	DLOCK;000	I/O
49	GND	-	50	DPERR	I/O
51	GND	-	52	DAD24;100	I/O
53	GND	-	54	DAD12;100	I/O
55	GND	-	56	DSTOP;000	I/O
57	GND	-	58	DAD23;100	I/O
59	GND	-	60	DTRDY;000	I/O
61	GND	-	62	DAD22;100	I/O
63	GND	-	64	DCBE2;000	I/O
65	GND	-	66	DAD11;100	I/O

Table C-8 System I/F (1) connector pin assignments (120-pin) (continued)

Pin No.	Signal name	I/O	Pin No.	Signal Name	I/O
67	GND	-	68	DAD21;100	I/O
69	GND	-	70	DIRQCK;100	I/O
71	GND	-	72	DCBE0;000	I/O
73	GND	-	74	DAD20;100	I/O
75	NC	-	76	DIOCHK;000	I/O
77	IFVCC	-	78	DAD19;100	I/O
79	IFVCC	-	80	DSERR;000	I/O
81	NC	-	82	DAD09;100	I/O
83	GND	-	84	DAD18;100	I/O
85	GND	-	86	RTS;100	I
87	GND	-	88	SD1;100	I
89	GND	-	90	SNDMUT;000	I/O
91	GND	-	92	DSCREQ;000	I/O
93	GND	-	94	SIRRXD;000	I/O
95	GND	-	96	DSCGNT;000	I/O
97	GND	-	98	SIRTXD;100	I/O
99	GND	-	100	DTR;100	I
101	GND	-	102	HSYNC;100	I
103	GND	-	104	MNTIDO;100	I/O
105	GND	-	106	OVSYNC;100	I
107	GND	-	108	MNTID1;100	I/O
109	LINEIL;100	O	110	RED;100	I
111	CDL;100	O	112	MNTDID2;100	I/O
113	DSKCHG;000	O	143	LGREN;100	I
115	JOYDT1;100	I/O	116	MNTID3;100	I/O
117	JOYDT3;100	I/O	118	BLUE;100	I
119	LINEOL;100	I	120	GND	-

C.9 PJ11 System I/F (2) Connector (120-pin)

Table C-9 System I/F (2) connector pin assignments (120-pin)

Pin No.	Signal name	I/O	Pin No.	Signal Name	I/O
01	SELECT;100	I	02	GND	-
03	GND	-	04	GND	-
05	PDB05;100	I/O	06	GND	-
07	PINIT;000	I	08	GND	-
09	ERROR;000	O	10	GND	-
11	PDB00;100	I/O	12	BUSY;100	O
13	STROB;000	I	14	PDB03;100	I/O
15	DOCPWN;100	I	16	PDB04;100	I/O
17	DAD16;100	I/O	18	ACK;000	O
19	DDEVSL;000	I/O	20	DAD17;100	I/O
21	DPAR;100	I/O	22	DAD14;100	I/O
23	DAD13;100	I/O	24	NC	-
25	DIRDY;000	I/O	26	DGND	-
27	DCBE3;000	I/O	28	DGND	-
29	DCBE1;000	I/O	30	DGND	-
31	DAD10;100	I/O	32	DGND	-
33	DIRQO;000	O	34	DNC	-
35	DINTD;000	I/O	36	P15V	-
37	DINTC;000	I/O	38	P15V	-
39	$DSCLK;100	I/O	40	P15V	-
41	DINTB;000	I/O	42	P15V	-
43	DGNT;000	I/O	44	NC	-
45	DREQ;000	I/O	46	GND	-
47	DINTA;000	I/O	48	GND	-
49	RI1;100	O	50	GND	-
51	DPREQ;000	I/O	52	GND	-
53	DCD1;100	O	54	GND	-
55	DPGNT;000	I/O	56	GND	-
57	DSR1;100	O	58	GND	-
59	EXKBCK;100	I/O	60	GND	-
61	SCL;100	I/O	62	GND	-
63	MIDIN;100	O	64	GND	-
65	RD1;000	O	66	GND	-

Table C-8 System I/F (2) connector pin assignments (120-pin) (continued)

Pin No.	Signal name	I/O	Pin No.	Signal Name	I/O
67	EXKBDT;100	I/O	68	GND	-
69	MIDOUT;100	I	70	GND	-
71	SDA;100	I/O	72	GND	-
73	DOCRI;100	O	74	GND	-
75	MOUSCK;100	I/O	76	NC	-
77	DOCKEN;000	I	78	IFVCC	-
79	CTS1;100	O	80	IFVCC	-
81	MOUSDT;100	I/O	82	NC	
83	SPKDIS;100	O	84	GND	-
85	PCM2SP;100	O	86	GND	-
87	MICDIS;100	O	88	GND	-
89	LINEIL;000	O	90	GND	-
91	LINEIR;100	O	92	GND	-
93	LINEIR;000	O	94	GND	-
95	DCPCLR;100	I	96	GND	-
97	DOCSMI;100	O	98	GND	-
99	CDR;100	O	100	GND	-
101	NC	-	102	GND	-
103	MICR;000	O	104	GND	-
105	JOYDTO;100	I/O	106	GND	-
107	MICL;000	O	108	GND	-
109	JOYDT2;100	I/O	110	CDR;000	O
111	LINEOL;000	I	112	CDL;100	O
113	JOYDT5;100	I/O	114	MICR;100	O
115	JOYDT4;100	I/O	116	LINEOR;100	I
117	JOYDT7;100	I/O	118	LINEOR;000	I
119	JOYDT6;100	I/O	120	MICL;100	O

C.10 PJ14 External SCSI I/F Connector (50-pin)

Table C-10 External SCSI I/F connector pin assignments (50-pin)

Pin No.	Signal name	I/O	Pin No.	Signal Name	I/O
01	GND	-	02	SCD0;000	I/O
03	GND	-	04	SCD1;000	I/O
05	GND	-	06	SCD2;000	I/O
07	GND	-	08	SCD3;000	I/O
09	GND	-	10	SCD4;000	I/O
11	GND	-	12	SCD5;000	I/O
13	GND	-	14	SCD6;000	I/O
15	GND	-	16	SCD7;000	I/O
17	GND	-	18	SCDP;000	I/O
19	GND	-	20	GND	-
21	GND	-	22	GND	-
23	GND	-	24	GND	-
25	NC	-	26	TRMPWR	-
27	GND	-	28	GND	-
29	GND	-	30	GND	-
31	GND	-	32	SCATN;000	O
33	GND	-	34	GND	-
35	GND	-	36	SCBSY;000	I/O
37	GND	-	38	SCACK;000	O
39	GND	-	40	SCRST;000	I/O
41	GND	-	42	SCMSG;000	I
43	GND	-	44	SCSEL;000	I/O
45	GND	-	46	SCCD;000	I
47	GND	-	48	SCREQ;000	I
49	GND	-	50	SCIO;000	I

C.11 PJ23 Internal SCSI I/F Connector (50-pin)

Table C-11 Internal SCSI I/F connector pin assignments (50-pin)

Pin No.	Signal name	I/O	Pin No.	Signal Name	I/O
01	GND	-	02	SCD0;000	I/O
03	GND	-	04	SCD1;000	I/O
05	GND	-	06	SCD2;000	I/O
07	GND	-	08	SCD3;000	I/O
09	GND	-	10	SCD4;000	I/O
11	GND	-	12	SCD5;000	I/O
13	GND	-	14	SCD6;000	I/O
15	GND	-	16	SCD7;000	I/O
17	GND	-	18	SCDP;000	I/O
19	GND	-	20	GND	-
21	GND	-	22	GND	-
23	GND	-	24	GND	-
25	NC	-	26	GND	-
27	GND	-	28	GND	-
29	GND	-	30	GND	-
31	GND	-	32	SCATN;000	O
33	GND	-	34	GND	-
35	GND	-	36	SCBSY;000	I/O
37	GND	-	38	SCACK;000	O
39	GND	-	40	SCRST;000	I/O
41	GND	-	42	SCMSG;000	I
43	GND	-	44	SCSEL;000	I/O
45	GND	-	46	SCCD;000	I
47	GND	-	48	SCREQ;000	I
49	GND	-	50	SCIO;000	I

C.12 PJ15 Line Out Connector (6-pin)

Table C-12 Line out connector pin assignments (6-pin)

Pin No.	Signal name	I/O	Pin No.	Signal Name	I/O
01	GND	-	02	LINEOL;000	O
03	LINEOR;000	O	04	NC	-
05	GND	-	06	NC	-

C.13 PJ32 Speaker (1) Connector (2-pin)

Table C-13 Speaker (1) connector pin assignments (2-pin)

Pin No.	Signal name	I/O	Pin No.	Signal Name	I/O
01	SPKOL;100	O	02	SPKOL;000	O

C.14 PJ33 Speaker (2) Connector (2-pin)

Table C-14 Speaker (2) connector pin assignments (2-pin)

Pin No.	Signal name	I/O	Pin No.	Signal Name	I/O
01	SPKOR;100	O	02	SPKOR;000	O

C.15 PJ35 Headphone Connector (6-pin)

Table C-15 Headphone connector pin assignments (6-pin)

Pin No.	Signal name	I/O	Pin No.	Signal Name	I/O
01	GND	-	02	LINEL;100	O
03	LINER;100	O	04	NC	-
05	GND	-	06	SPKDIS;000	I

C.16 PJ34 Microphone Connector (6-pin)

Table C-16 Microphone connector pin assignments (6-pin)

Pin No.	Signal name	I/O	Pin No.	Signal Name	I/O
01	GND	-	02	MICL;000	I
03	MICR;000	I	04	NC	-
05	MICDIS;100	I	06	GND	-

C.17 PJ16 Line in Connector (6-pin)

Table C-12 Line in connector pin assignments (6-pin)

Pin No.	Signal name	I/O	Pin No.	Signal Name	I/O
01	GND	-	02	LINEIL;000	I
03	LINEIR;000	I	04	NC	-
05	NC	-	06	NC	I

C.18 PJ20 FDD/CD-ROM Pack I/F Connector (80-pin)

Table C-18 FDD/CD-ROM Pack I/F connector pin assignments (80-pin)

Pin No.	Signal name	I/O	Pin No.	Signal Name	I/O
01	VCC	-	02	VCC	-
03	VCC	-	04	VCC	-
05	GND	-	06	VCC	-
07	INCDL;100	I	08	GND	-
09	INCDR;100	I	10	ISD07;100	I/O
11	GND	-	12	GND	-
13	ISA02;100	I/O	14	ISD08;100	I/O
15	ISA00;100	I/O	16	GND	-
17	CDRCS0;000	O	18	TRK0;000	I
19	WDATA;000	O	20	GND	-
21	IFSL;000	O	22	HDSEL;000	O
23	ISA01;100	I/O	24	GND	-
25	GND	-	26	IRESET;000	O
27	IOCS16;000	I	28	GND	-
29	CDRCS1;000	O	30	ISD09;100	I/O
31	CDRIRQ;100	I	32	GND	-
33	GND	-	34	ISD06;100	I/O
35	CDDACK;000	O	36	GND	-
37	INDEX;000	I	38	WGATE;000	O
39	RDATA;000	I	40	GND	-
41	GND	-	42	ISD10;100	I/O
43	HIORDY;100	I	44	GND	-
45	DSKCHG;000	I	46	ISD05;100	I/O
47	IIOR;000	I/O	48	GND	-
49	GND	-	50	ISD11;100	I/O
51	IIOW;000	I/O	52	GND	-
53	MBSTS0;100	I	54	ISD04;100	I/O
55	CDDRQ;100	I	56	GND	-
57	NC	-	58	STEP;000	O
59	CDRLED;000	I	60	GND	-
61	IFMO;000	O	62	ISD12;100	I/O
63	MBSTS1;100	I	64	GND	-
65	ISD00;100	I/O	66	ISD03;100	I/O

Table C-18 FDD/CD-ROM Pack connector pin assignments (80-pin) (continued)

Pin No.	Signal name	I/O	Pin No.	Signal Name	I/O
67	GND	-	68	GND	-
69	ISD15;100	I/O	70	ISD13;100	I/O
71	WP;000	I	72	GND	-
73	ISD01;100	I/O	74	ISD02;100	I/O
75	DENSEL;100	O	76	GND	-
77	ISD14;100	I/O	78	DIR;000	O
79	NC	-	80	NC	-

C.19 PJ26 Main Fan Connector (2-pin)

Table C-19 Main fan connector pin assignments (2-pin)

Pin No.	Signal name	I/O	Pin No.	Signal Name	I/O
01	FP12V	-	02	FANON;100	I

C.20 PJ36 Power Supply Unit Fan Connector (2-pin)

Table C-19 Power supply unit fan connector pin assignments (2-pin)

Pin No.	Signal name	I/O	Pin No.	Signal Name	I/O
01	SF12V	-	02	GND	-