

Installing SPARCstation 2 Internal Drives



Sun Microsystems, Inc.
2550 Garcia Avenue
Mountain View, CA 94043
U.S.A.

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2550 Garcia Avenue, Mountain View, California 94043-1100 U.S.A.

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Preface

This manual accompanies the 207 MB Internal hard disk drive or internal diskette drive when ordered as options for a SPARCstation 2.™

This book tells you how to:

- Halt and restore power to your SPARCstation 2
- Open and close the System Unit which contains the internal drives
- Remove and re-install an internal hard disk drive or diskette drive in the System Unit

For other information on your SPARCstation 2, consult the following publications in the SPARCstation 2 Owner's Set:

- *SPARCstation 2 Installation Guide*
- The System User's Guide for your system
- The System & Network Manager's Guide for your system

How to Use This Book

It is essential that you read and understand the instructions and safety precautions, with special attention to the “Safety Agency Compliance” section later in this Preface. These instructions and cautions explain how to work safely with the internal components of your SPARCstation 2. This Preface, and Chapter 1, apply to *both* hard and diskette drives.

Chapter 1, “Preparation for Installing Drives,” explains how to access the internal section of the SPARCstation 2, shows where you will install the drives.

Chapter 2, “Hard Disk Drive Installation and Replacement,” is specific to *207 MB hard disk drives*. If a *207 MB hard disk drive* is the only drive you will be installing, read Chapter 1 then Chapter 2.

Chapter 3, “Diskette Drive Installation and Replacement,” is specific to *diskette drives*. If a *diskette drive* is the only drive you will be installing, read Chapter 1 then skip to Chapter 3.

If you are installing both drives at the same time, read all the chapters in order. Skim through a procedure (so you will know what is coming) before you follow the specific steps.

When You Need Help with UNIX

This manual does not include specific software commands or procedures. In their place, a software task is named. Refer to the operating system documentation that was shipped with your system when you need help with commands or procedures such as:

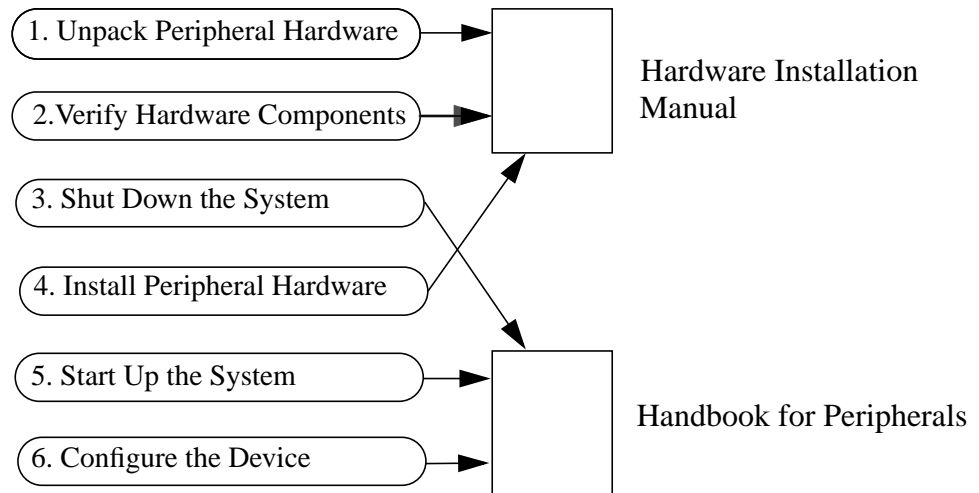
- shutting down the system
- booting the system
- configuring devices
- other software procedures

Depending on the operating system you are using, complete descriptions of commands and procedures can be found in:

- *Solaris 1.x (SunOS 4.x) Handbook for SMCC Peripherals 801-2424-xx*
- *Solaris 2.x Handbook for SMCC Peripherals 801-2425-xx*
- the on-line *AnswerBook* documentation that comes with Solaris
- other software documentation you received with your system

Task Map for Getting Your System Running

The diagram below outlines the tasks you can perform to successfully install a new peripheral. Each numbered item in the diagram represents a procedure and the arrows point to manuals in which these procedures are detailed.



After you perform these tasks, you will be ready to use the new peripheral with your system.

Safety Agency Compliance

This Preface provides safety precautions to follow when you are installing a Sun Microsystems Computer Corporation (SMCC) product.

Safety Precautions

For your protection, observe the following safety precautions when setting up your equipment:

- Follow all warnings and instructions marked on the equipment.
- Ensure that the voltage and frequency of your power source match the voltage and frequency inscribed on the equipment's electrical rating label.
- Never push objects of any kind through openings in the equipment. Dangerous voltages may be present. Conductive foreign objects could produce a short circuit that can cause fire, electric shock, or damage to your equipment.

Symbols

The following international symbols appear in this book when you must perform procedures requiring proximity to electrical current.



Caution – You risk damaging your equipment if you do not heed the instructions.



Warning – Hazardous voltages are present. To decrease the risk of electrical shock and danger to personal health, follow the instructions carefully.

Modifications to Equipment

Do not make mechanical or electrical modifications to the equipment. Sun Microsystems, Inc. is not responsible for regulatory compliance of a modified Sun product.

Placement of a Sun Product



Caution – To ensure reliable operation of your Sun product and to protect it from overheating, openings in the equipment must not be blocked or covered. A Sun product should never be placed near a radiator or heat register.

Power Cord Connections



Warning – Sun products are designed to work with single-phase power systems having a grounded neutral conductor. To reduce the risk of electrical shock, do not plug Sun products into any other type of power system. Contact your facilities manager or a qualified electrician if you are not sure what type of power is supplied to your building.



Warning – Not all power cords have the same current ratings. Household extension cords do not have overload protection and are not meant for use with computer systems. Do not use household extension cords with your Sun product.



Warning – Your Sun product is shipped with a grounding type (3-wire) power cord. To reduce the risk of electric shock, always plug the cord into a grounded power outlet.

Ergonomics

Your Sun product is designed to conform with the West German ergonomics standard, ZH1/618. An anti-glare screen (such as an OCLI filter) is required on the monitor to comply with this standard. Anti-glare filters are standard on color monitors. For text processing, a positive mode display (black characters on a white background) is recommended to reduce eyestrain.

To comply with the layout requirements of ZH1/618, a German keyboard is required.

Lithium Battery



Caution – On Sun CPU boards, a lithium battery is molded into the Mostek real-time clock, No. MK48T02BU or No. MK48T02BU-xx.

Batteries are not customer replaceable parts. They may explode if mistreated. Do not dispose of the battery in fire. Do not disassemble it or attempt to recharge it.

System Unit Cover

You must open the Sun computer system unit to add boards, memory, and internal storage devices. Be sure to close the system unit before powering up your computer system.



Caution – It is not safe to operate Sun products without the system unit cover in place. Failure to take this precaution may result in personal injury and system damage.

Preparation for Installing Drives



This chapter explains the steps necessary before adding or replacing an internal disk drive on a SPARCstation 2. Topics covered in this chapter include:

- How to shut down the system
- Tools needed
- How to disconnect External Memory Storage
- Removing the system cover
- Attaching a wrist strap

This chapter presumes that your SPARCstation 2 is installed and functioning properly, and starts with instructions on how to power-down.

Alternatively, you may be installing internal drives before powering-up your workstation for the first time. In that case, plug the power cord into the system unit and a wall socket, but do not turn on the system (See the Caution on page 5). Then skip the "Halting the System" section and follow the instructions in this chapter starting with "Tools Needed" on page 5.

1.1 *Shutting Down the System*

The first step in installing or replacing an internal disk drive is halting the system, and turning off the system power. See the *Preface*, “When You Need Help with UNIX,” if you need references to help with the commands or system administration procedures listed below. Follow these steps to shut down the system:

1. **Become superuser.**
2. **Back up the system files and data.**
3. **Use the appropriate command to halt or shut down the system.**
4. **After the system has halted, use the power switch to turn off the system power.**
5. **Turn off the power in this order:**
 - Desktop or External Storage Units (if applicable)
 - System unit
 - Monitor



Caution – Make sure your system is shut off. The green LED at the front of the system unit should not be lit, and the fan should not be running. Do not disconnect the power cord from the system unit's power outlet or the wall socket. This connection provides the ground path necessary to safely remove and install the printed circuit boards and components.

1.2 *Turning off the Power When Your System Does Not Respond Normally*

If your system does not respond to the mouse or keyboard, turn off the power as follows:

1. **If your system is on a network, wait a few minutes before turning off the power.**
Your system's slow response might be due to NIS problems or network delays.

2. Press the keyboard combination that halts your system, as described in your system User's Guide or Operating System Guide.

For example, the keyboard combination could be **L1-a**, **Stop-a** or **Break**. This will put the system into the PROM (Programmable Read Only Memory) monitor mode.

The monitor mode command prompt is indicated on the screen with either a "greater than symbol" (>) or with the letters ok.

3. Enter the command to synchronize your hard disk(s).

For example, the synchronize command could be **sync**. This command protects your system drives from losing information.

4. Reboot the system.

5. When the system displays the login request, turn off the system power.

For additional information on the halt procedure, see Chapter 1 of the *Sun System & Network Managers Guide*, and also the *System & Network Administration* manual.

1.3 Tools Needed

To remove and replace internal drives, you will need the following tools and materials:

- Phillips screwdriver
- Flat blade screwdriver
- Wrist strap
- Container for screws

1.4 Disconnecting External Memory Storage

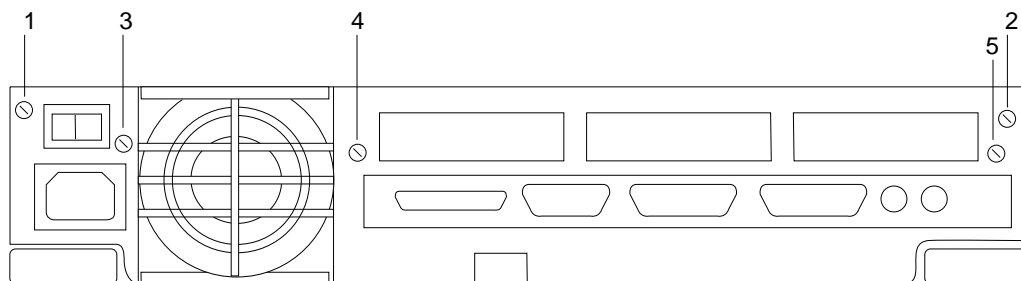
First, turn off any Desktop Storage Packs or External Storage Modules attached to your system. Remove the SCSI connectors from the system unit by pressing in on the finger clips, and pulling the connectors off.

1.5 *Removing the System Cover*

Three tabs on the front of the cover fit into three slots in the chassis. These tabs secure the front of the cover to the chassis. A security loop secured to the cover goes through the bottom of the chassis. Refer to Figure 1-2.

To remove the cover, do the following:

- 1. Make sure that the power to your system unit is turned off, but that the power cord remains plugged in to the system unit and to the power source. See "Shutting Down the System" earlier in this chapter.**
- 2. Remove the two screws holding the cover to the back panel (see Figure 1-1).**
- 3. Grasp the sides of the cover from the rear and tilt the cover until the security loop clears the chassis (see Figure 1-2).**
- 4. Gently push the cover forward about 1/2 inch (13 mm) so that the plastic tabs clear the chassis.**
- 5. Remove the cover by lifting vertically.**



Note: There are five screws on the back panel. Remove screws 1 and 2. Do not remove screws 3, 4, and 5.

Figure 1-1 System Unit Backplane

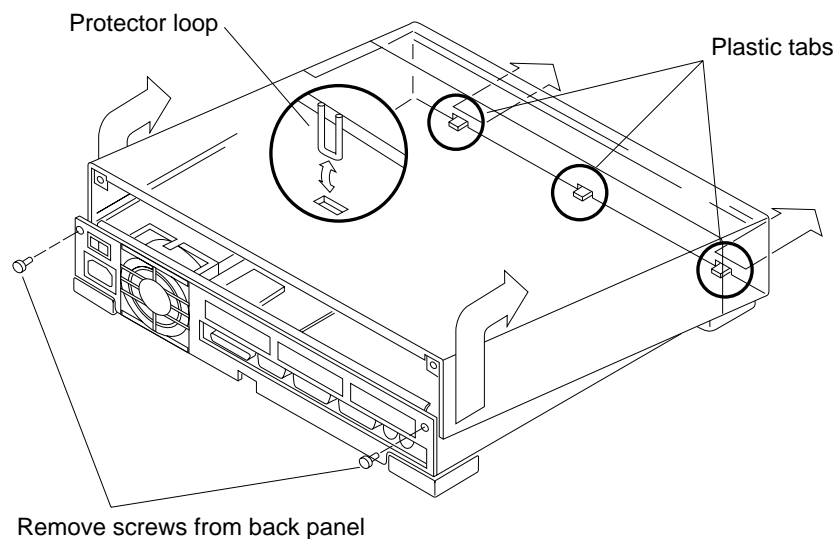


Figure 1-2 Removing the Cover Panel



Warning – Before powering up your system again, be sure to replace the top cover. See "Replacing the System Unit's Cover" toward the end of Chapter 4. It is not safe to operate the SPARCstation 2 without its top cover in place.

The left front area of the chassis is reserved for two hard disk drives (refer to Figure 1-3). Opposite, in the right front area of the chassis is space for a diskette drive. Mounted just behind the diskette drive is the power supply.

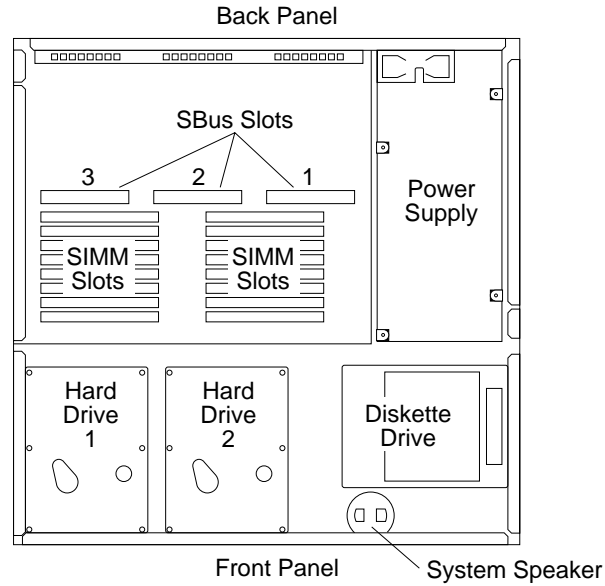


Figure 1-3 Top View of the System with the Cover Removed

1.6 Attaching a Wrist Strap

The wrist strap is a device that provides grounding between your body and the system unit's chassis for static electricity. Attach the wrist strap to your wrist and to the system chassis. Parts that require the use of a wrist strap are packed with one.

Boards and modules can be damaged by harmful electrical charges if you do not wear a wrist strap.

To attach the wrist strap (refer to Figure 1-4):

- 1. Wrap the grounding strap with the conductive adhesive tape twice around your wrist. Make sure the adhesive side is against your skin.**

Attach end to metal
case of power supply

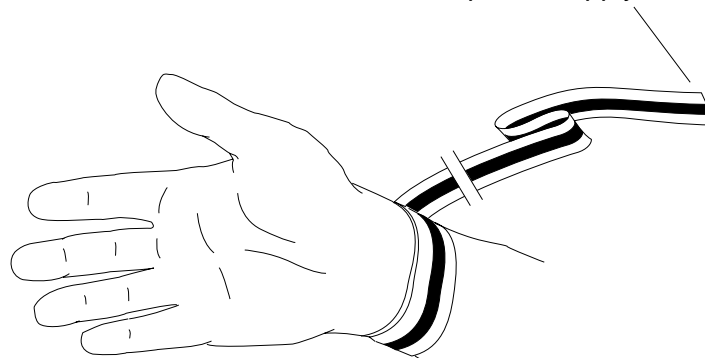


Figure 1-4 Attaching a Static Wrist Strap

- 2. Attach the end with the adhesive copper strip to the metal casing of the power supply in the system unit.**

Hard Disk Drive Installation and Replacement



This chapter explains the procedure for removing or replacing internal hard disk drives. *Diskette* drive installation instructions are in Chapter 3.

This chapter assumes that you have followed the instructions in Chapter 1, and that you have halted your system, removed any expansion units, opened the system cover, and have a wrist strap attached.

This chapter contains the following steps:

- Identify the Internal Hard Disk Drives
- Remove a Hard Disk Drive
- Verify the Jumper Settings
- Replace the Hard Disk Drive
- Restore Power to the System

If you are *replacing* a drive, follow the steps above in sequence. If you are *installing* a drive in an empty slot, follow the steps above in sequence, skipping the removal instructions.

Note – Please read through the entire set of instructions before removing and replacing an internal disk drive.

2.1 Internal Hard Disk Drive Identification

Before you attempt to replace or install a new internal hard disk drive, make sure that you have the right unit. Hard disk drives can be located in the center and left side of the front of the System Unit chassis (See Figure 2-1 and Figure 2-2).

Two 3 1/2-inch half-height hard disk drives can be installed in the system chassis. A 50-pin SCSI data cable and a 4-pin power cable connect to the rear of each drive. Each drive and its plastic mounting bracket are secured to the chassis by four mounting tabs and two locking tabs. These tabs fit into corresponding slots in the bottom of the chassis.

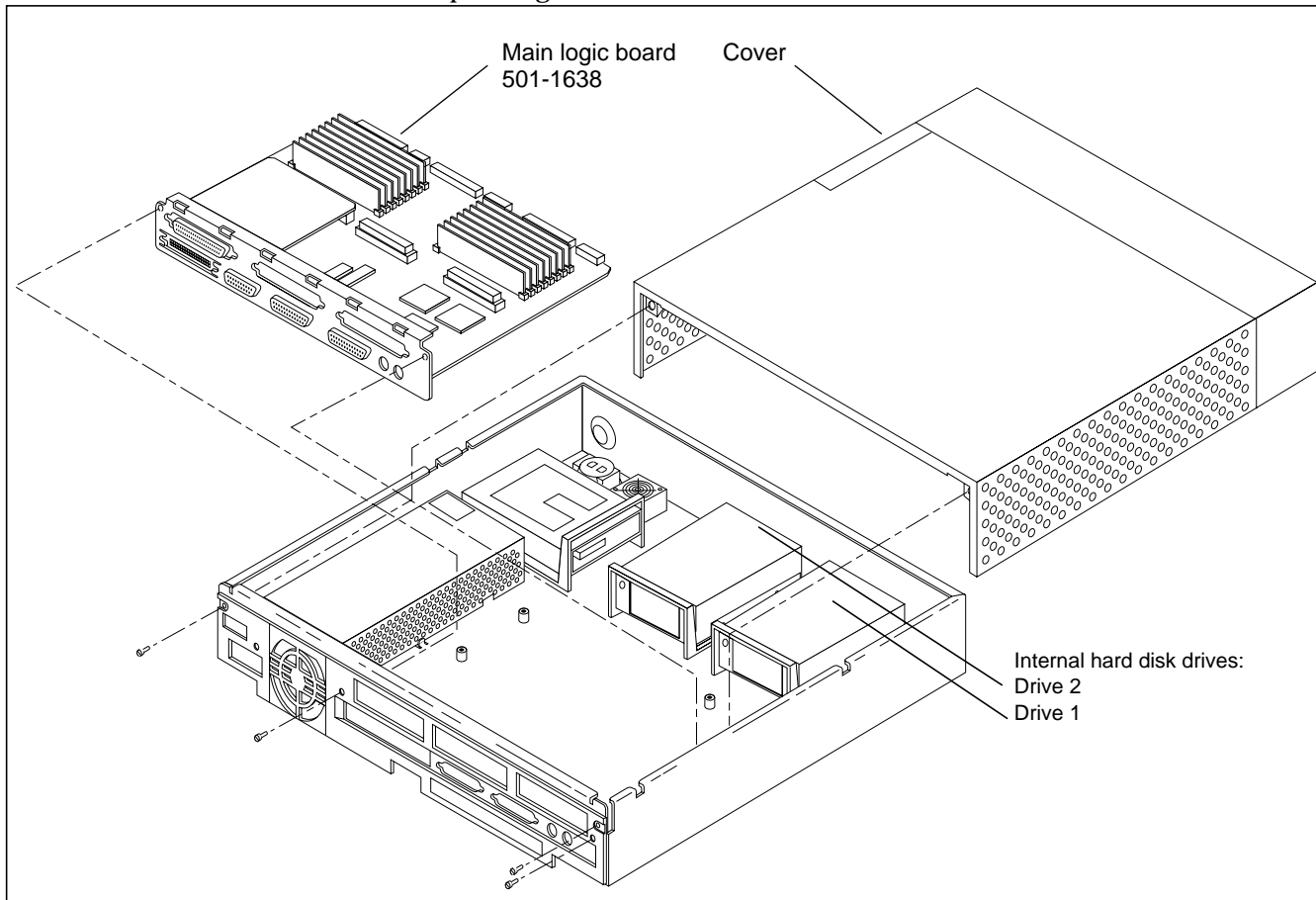


Figure 2-1 Exploded View of the System Unit

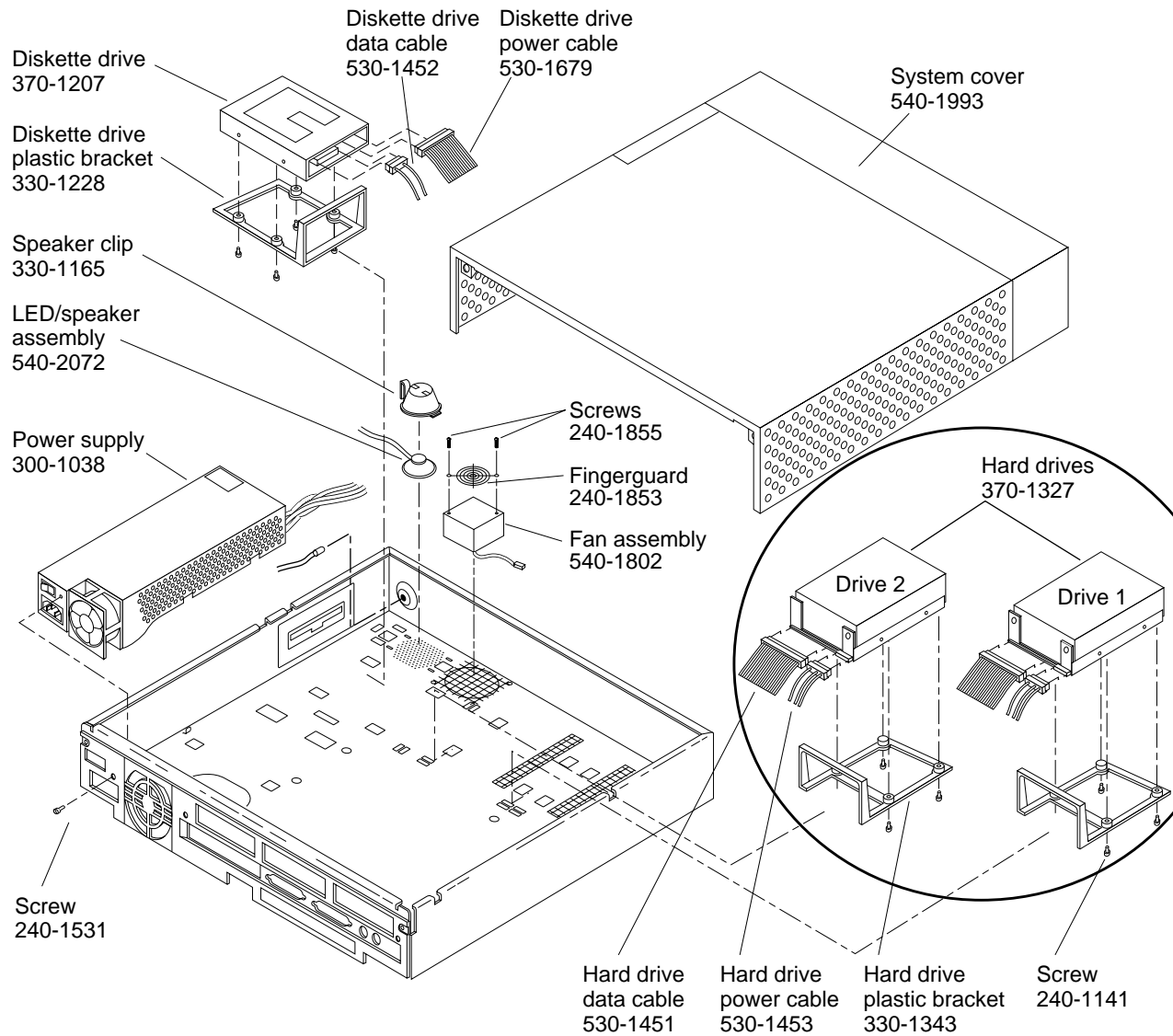


Figure 2-2 Exploded View of the System Unit Showing Internal Hard Drives

2.2 Removing a Hard Disk Drive



Caution – The hard disk drive contains electronic components that are extremely sensitive to static electricity. Ordinary amounts of static from your clothes or work environment can destroy the components.

Do not touch the components themselves or any metal parts; static from your clothes or work environment can destroy the components. Wear a grounding strap when handling the drive. See “Attaching a Wrist Strap” in Chapter 1.

Make sure that the system unit’s power is turned off by checking to make sure that the green LED at the front of the chassis is not lit and that the fan in the power supply is not running.

Do not disconnect the power cord from the system unit’s power outlet or from the wall socket. This connection provides the ground path necessary to safely remove and install the diskette drive.

To remove a hard disk drive:

- 1. Make sure that the system unit’s power is turned off, and that you have a wrist strap attached.**
- 2. Disconnect the hard disk drive power and data cables from the main logic board (These are identified in Figure 2-2).**
- 3. Grasp the hard disk drive mounting bracket handle (see Figure 2-7). Pull it up slightly to release the locking tabs on the bottom of the mounting bracket.**
- 4. Slide the hard disk drive toward the rear of the chassis. Lift the hard disk drive out of the chassis.**
- 5. Remove the two screws from each side of the bracket and slide the bracket off the drive. Save them in your screw container for the replacement drive. Lift off the mounting bracket and keep it handy for the replacement drive. Set the old drive aside on the antistatic mat.**

This completes the hard disk drive removal process. Once the jumper settings on the new drive are set, it will be ready to install.

2.3 Verifying the Hard Disk Drive Jumper Settings

Before replacing a hard disk drive, you must verify that the SCSI drive address ID on the new drive is set correctly. The SCSI drive addresses that you can use if the system is running SunOS 4.x is shown in Table 2-1. See the *Preface*, “When You Need Help With UNIX,” for SCSI addressing information with Solaris 2.x, or another compatible operating system.

The SCSI device target ID of drive 1 must be 3. The SCSI device target ID of drive 2 must be 1, (see Figure 2-7 showing these drive locations). The factory setting for all replacement hard disk drives is SCSI device ID 3.

Table 2-1 Hard Disk IDs, Jumper Settings, and Unit Number (for SunOS 4.x)

Drive Number	SCSI Target Number	Jumper Setting	Physical Device Number*	4.x Device number
1	3	see Figure 2-3 and Figure 2-4	sd @ 3, 0	sd0
2	1	see Figure 2-5 and Figure 2-6	sd @ 1, 0	sd1
*Used when installing software on the drive				

Depending on the replacement drive available, the jumpers are located either near the lower right corner of the drive controller board, or near the lower left corner.

Note – The marking for the jumpers on the drive shown in Figure 2-3 and are etched or labeled onto the drive’s controller board. The jumpers on the drive shown in Figure 2-3 and Figure 2-5 are not marked on the drive’s controller board.

2.3.1 Verifying the Jumper Settings for Drive 1

To verify, or set the jumper settings on the controller board for drive 1, do the following:

1. **Remove the replacement drive from its protective packaging and set it component side up on the antistatic mat. This gives you access to the drive controller board.**

- 2. Inspect the jumper settings. Compare them to the settings shown in Figure 2-3 or Figure 2-3, as follows:**
 - a. If the settings are the same as in the figure that matches your drive, leave them as they are.**
 - a. If the settings are *not* the same, change them to match the settings in the figure.**
- 3. Remove the power and data cables from the old drive, and connect them to the replacement drive. The power and data cables are keyed so they will only fit one way (See Figure 2-2 on page 2-3).**
- 4. Attach the mounting bracket to the new drive with the four mounting screws.**

The drive is now ready for installation in the system unit.

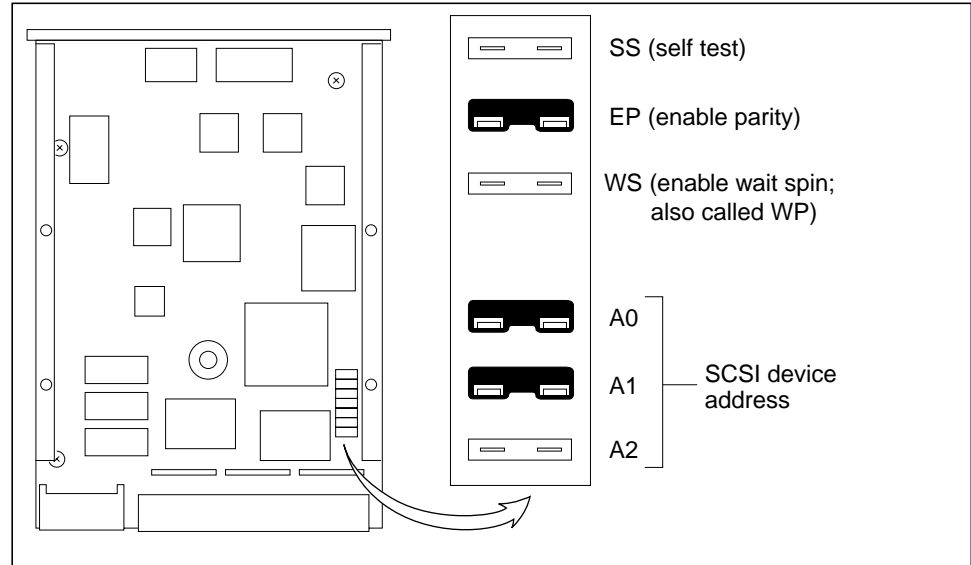


Figure 2-3 Hard Disk Drive with 6 Jumpers — Jumper Setting for Drive 1

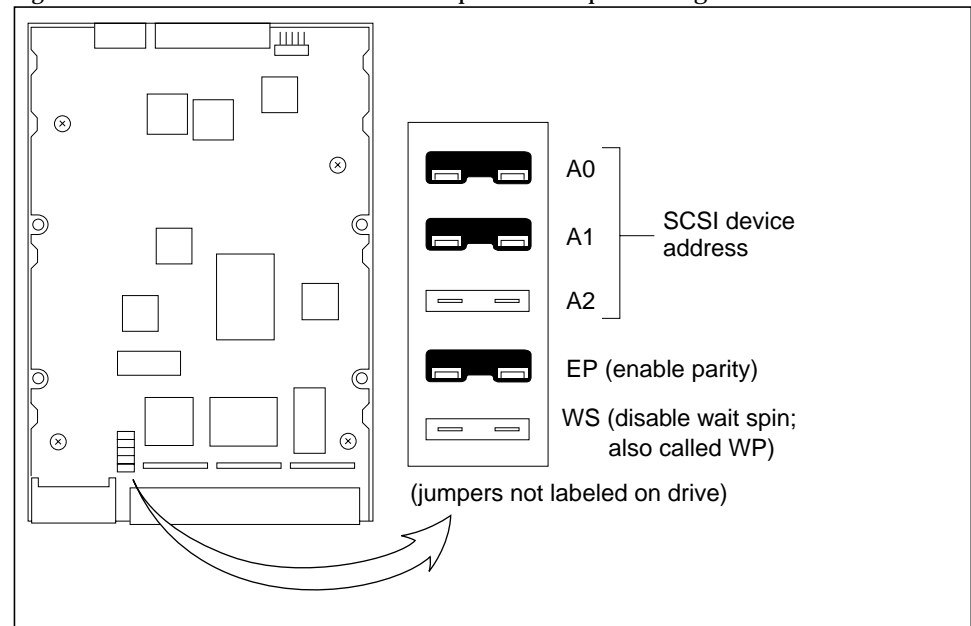


Figure 2-4 Hard Disk Drive with 5 Jumpers—Jumper Setting for Drive 1

2.3.2 *Verifying the Jumper Settings for Drive 2*

To verify, or set the jumper settings on the controller board for drive 2, do the following:

- 1. Remove the replacement drive from its protective packaging and set it component side up on the antistatic mat. This gives you access to the drive controller board.**
- 2. Inspect the jumper settings. Compare them to the settings shown in or Figure 2-5, as follows:**
 - a. If the settings are the same as in the figure that matches your drive, leave them as they are.**
 - a. If the settings are *not* the same, change them to match the settings in the figure.**
- 3. Attach the mounting bracket to the new drive with the four mounting screws.**
- 4. Remove the power and data cables from the old drive, and connect them to the replacement drive. The power and data cables are keyed so they will only fit one way (See Figure 2-2).**

The drive is now ready for installation in the system unit.

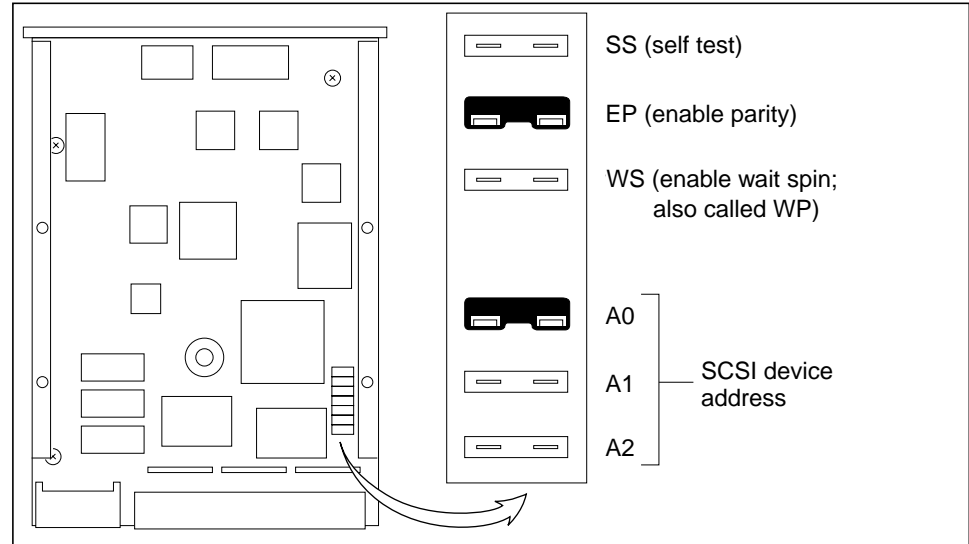


Figure 2-5 Hard Disk Drive with 6 Jumpers—Jumper Setting for Drive 2

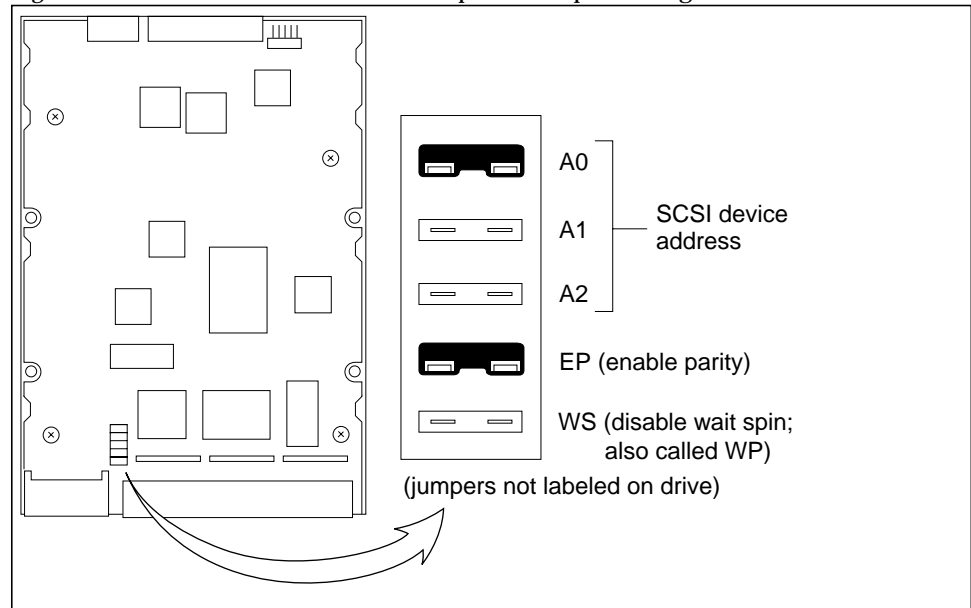


Figure 2-6 Hard Disk Drive with 5 Jumpers—Jumper Setting for Drive 2

2.4 *Installing a Hard Disk Drive*

Make sure you have followed the previous procedure on preparing the hard disk drive for replacement. The system cover should be off the system unit, the power should still be off (LED not lit, fans not running), and the wrist strap should be attached.

To install a hard disk drive, do the following:

- 1. Lower the drive and bracket into the chassis, and align the four mounting tabs on the bottom of the mounting bracket with the slots in the bottom of the chassis (see Figure 2-7). The drive unit's data and power sockets should be facing the rear of the chassis. Slide the drive forward toward the front of the chassis. You will hear a click when the two rear locking tabs seat firmly in their slots.**

2. Connect the data and power cables to the main logic board (see Figure 2-8).

The data cable plugs into the data connector on the main logic board. The power cable plugs into the power connector on the main logic board. These cables are keyed so that they will fit only one way.

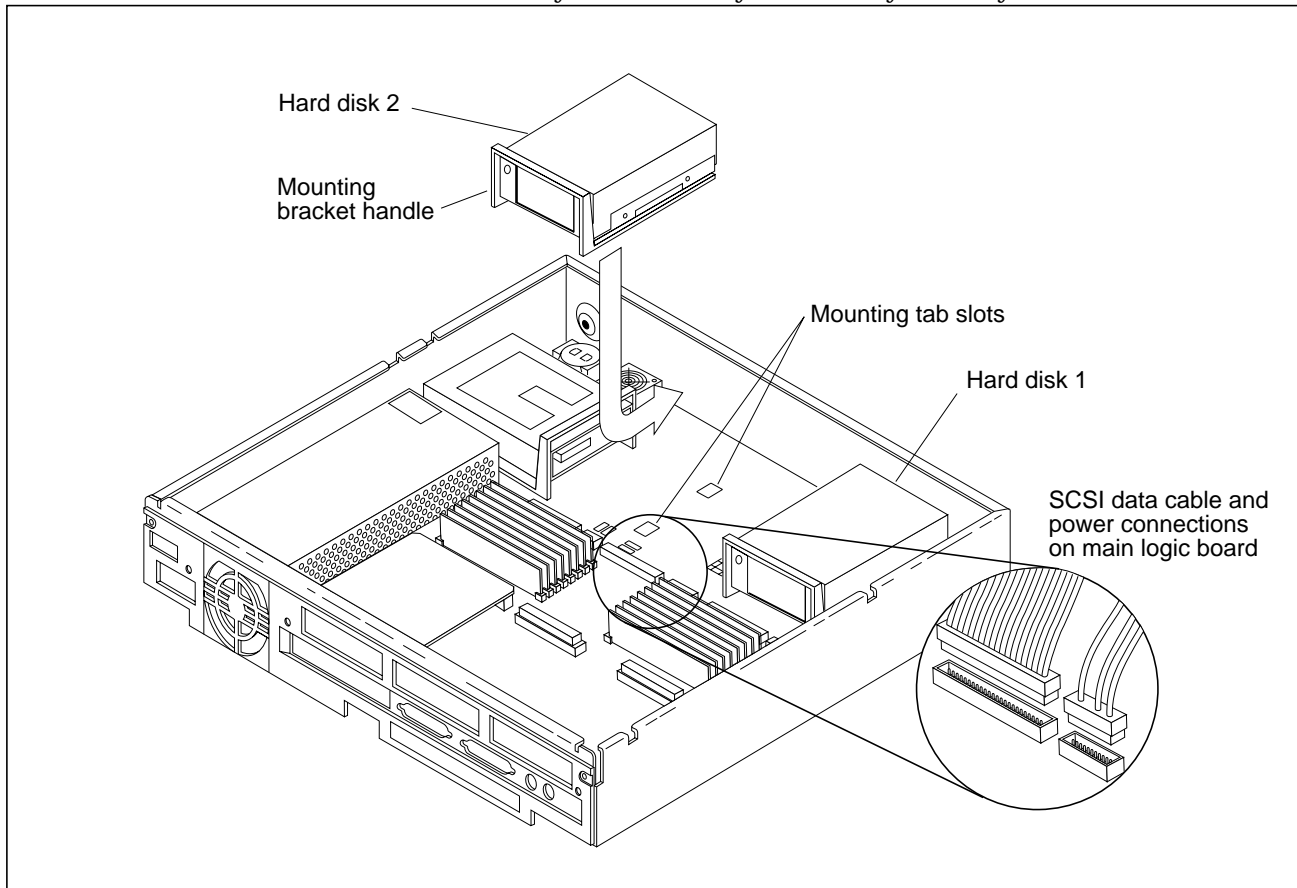


Figure 2-7 Installing the Hard Disk Drive.

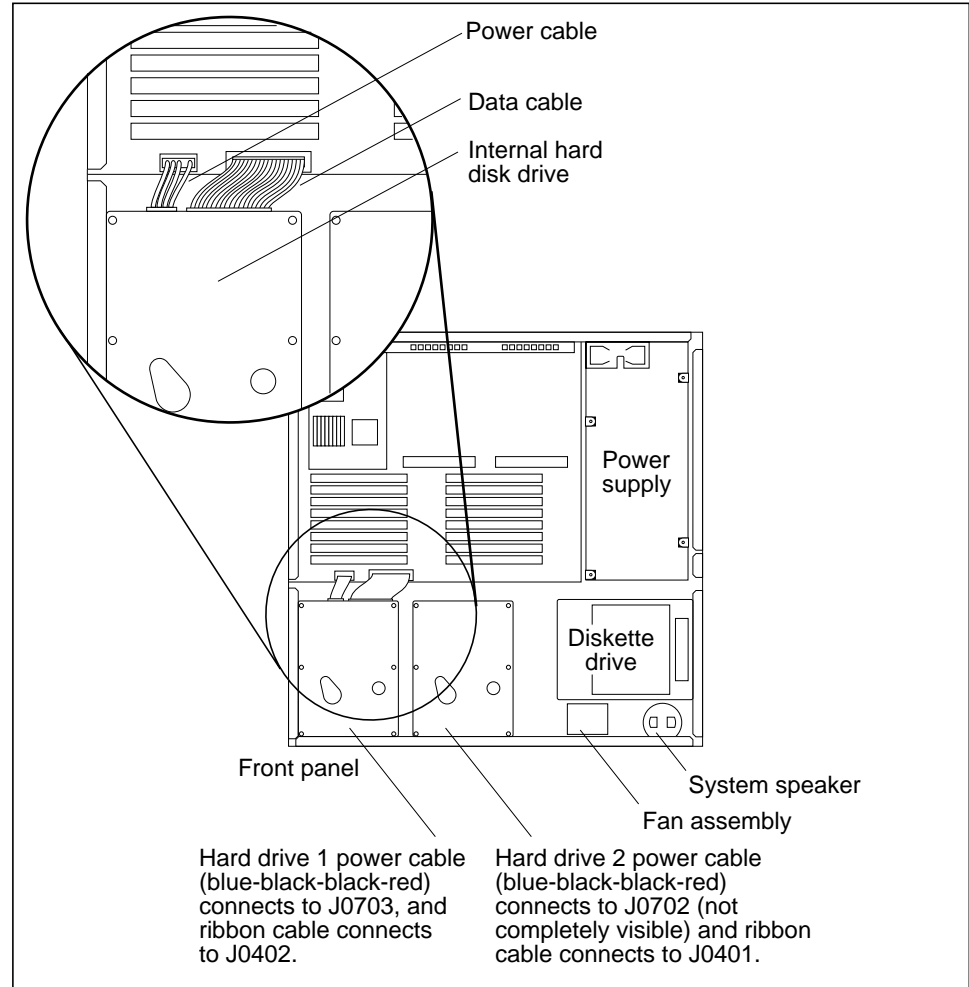


Figure 2-8 Connecting Power and Data Cables to the Hard Disk Drive

3. Disconnect the wrist strap from the system unit and store it for future use.
4. Hold the cover at an angle of approximately 30 degrees in relation to the system unit chassis (front end down, back end up). Gently guide the plastic tabs on the front of the cover into the tab slots on the front of the chassis (see Figure 2-9). Continue to hold the cover with your hands.

Caution – Holding the cover at angles greater than 30 degrees can prevent insertion of the tabs into the tab slots. Once the tabs are in the slots, raising the cover to angles greater than 30 degrees can break the tabs.

5. Slowly lower the cover onto the chassis, and be sure the security loop clears the diskette drive (if equipped) and seats into the security loop slot on the bottom of the chassis.
6. Insert the two screws that hold the top cover to the back panel. Tighten the two screws with a screwdriver.

This completes the hard disk replacement procedure, you are not ready to restore power to the system.

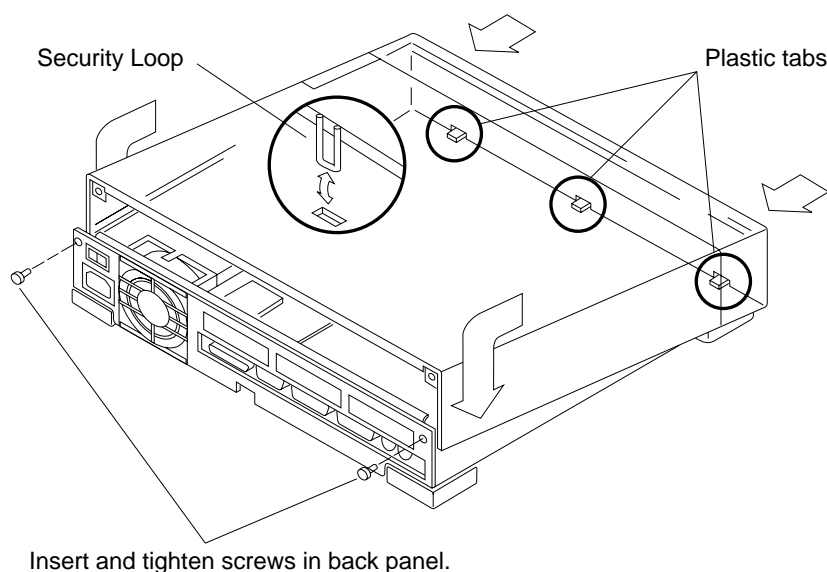


Figure 2-9 Replacing the Cover on the System Unit

2.5 Booting the System



Warning – Do not power up the system unit without replacing the cover and securing it. Failure to take this precaution may result in personal injury and system damage. Do not block vents on the sides or rear of this unit; permanent damage may occur.



Warning – This device is equipped with a 3-wire grounded power cord. To reduce the risk of electrical shock, always plug the power cord into a properly grounded outlet.



Caution – Always allow 10 seconds between turning off the power and turning it back on again. This pause prevents possible damage to power supply components in your system unit.

Turn the power on in the following order:

- Monitor
- Desktop or External Storage (if applicable)
- System unit

Boot the system using the procedure that is appropriate for your operating system. For a newly installed peripheral device to work in a computer system, its device driver must be added or activated. If your system is running Solaris Version 2.x, you will need to reboot the system using the `boot -r` command. See the *Preface*, “When You Need Help with UNIX” for references to more information.

Diskette Drive Installation and Replacement



This chapter explains the procedure for installing or replacing internal diskette drives. See Chapter 2 for hard disk drive installation instructions.

This Chapter assumes that you have followed the instructions in Chapter 1, and that you have halted your system, removed any expansion units, opened the system cover, and have a wrist strap attached.

This chapter contains the following steps which you should follow in sequence:

- Identify the Diskette Drive
- Remove a Diskette Drive
- Install a Diskette Drive
- Restore Power to the System

Note – Please read through the entire set of instructions before removing and replacing a internal disk drive.

3.1 Diskette Drive Identification

Before you attempt to replace or install an internal diskette drive, make sure that you have the right unit. The diskette drive is located at the front right side of the chassis next to the hard disk drives (See Figure 3-1 and Figure 3-2).

A 34-pin data cable and a 4-pin power cable connect to the rear of the drive. The drive and its plastic mounting bracket are secured to the chassis by four mounting tabs and two locking tabs that fit into the slots in the bottom of the chassis.

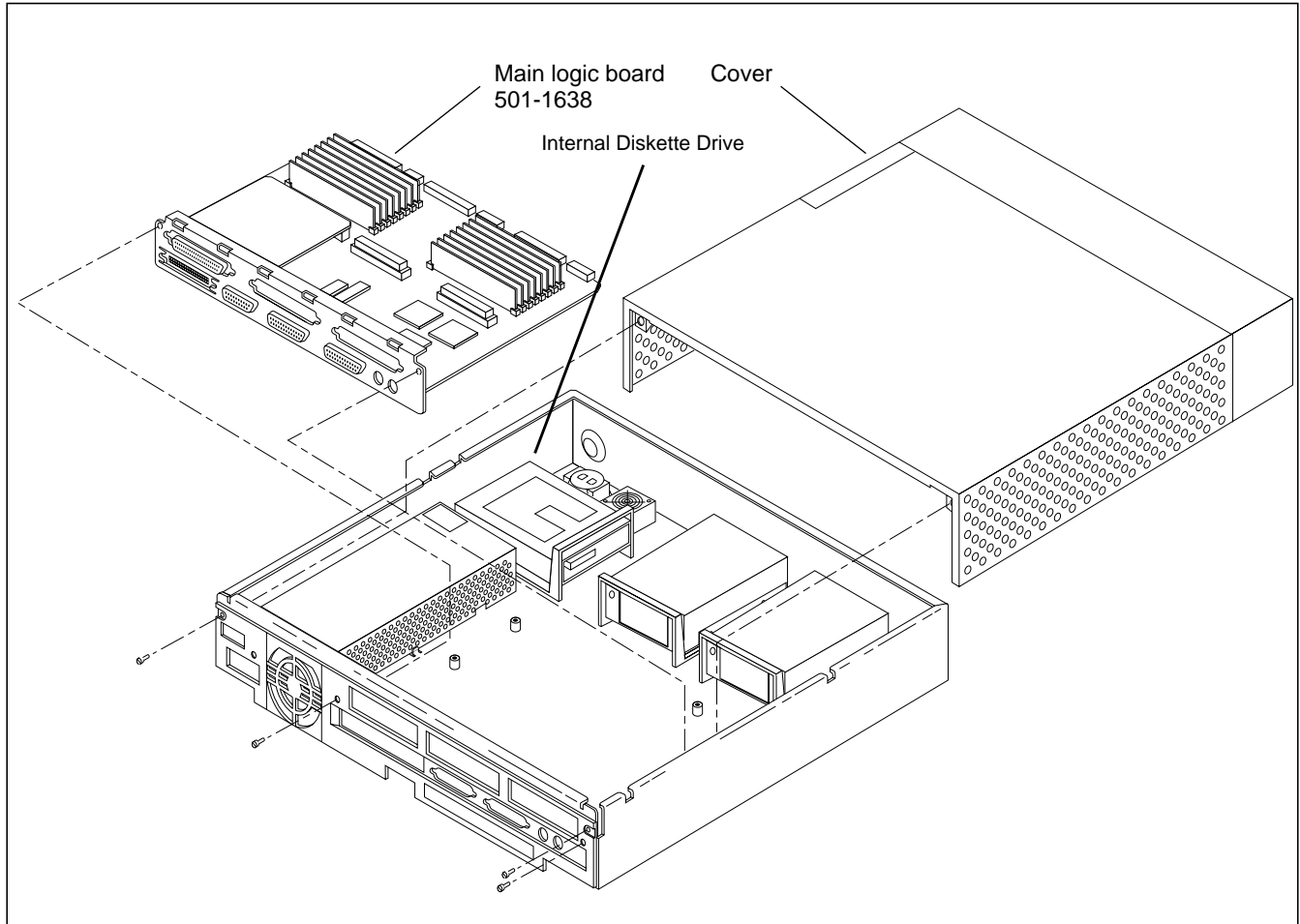


Figure 3-1 Exploded View of the System Unit

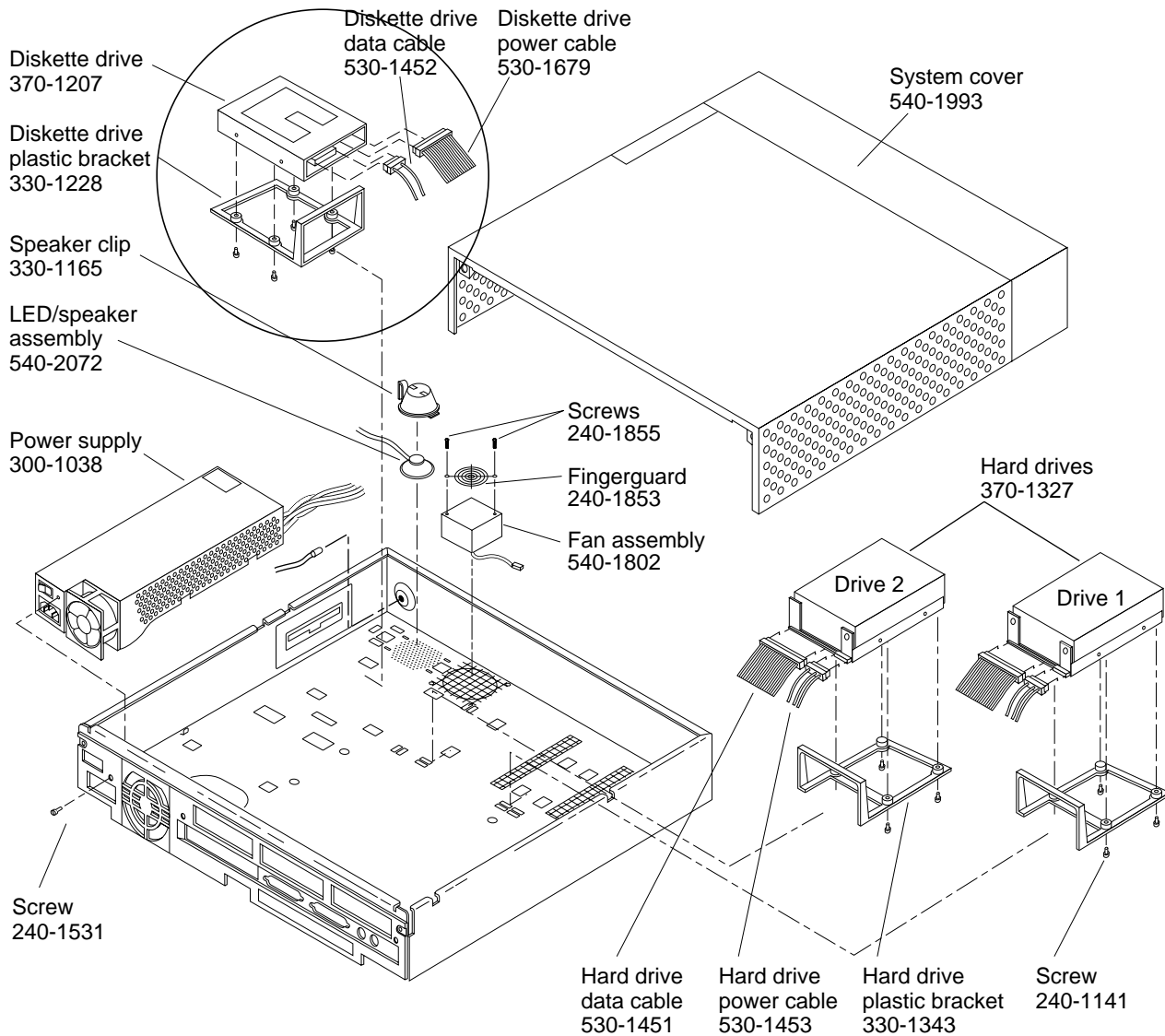


Figure 3-2 Exploded View of the System Unit showing Diskette Drive and Brackets

3.2 *Removing a Diskette Drive*



Caution – The diskette drive contains electronic components that are extremely sensitive to static electricity. Ordinary amounts of static from your clothes or work environment can destroy the components.

Do not touch the components themselves or any metal parts. Wear a grounding strap when handling the drive. See “Attaching a Wrist Strap” in Chapter 1.

Make sure that the system unit’s power is turned off by checking to make sure that the green LED at the front of the chassis is not lit and that the fan in the power supply is not running.

Do not disconnect the power cord from the system unit’s power outlet or from the wall socket. This connection provides the ground path necessary to safely remove and install the diskette drive.

To remove a diskette drive:

- 1. Make sure that the system unit’s power is turned off, and that you have a wrist strap attached.**
- 2. Disconnect the diskette drive’s data cable from the main logic board. Disconnect the “Y” power cable from the main logic board and the fan assembly (See Figure 3-4).**
- 3. Grasp the diskette drive mounting bracket handle (see Figure 3-3). Pull it up slightly to release the locking tabs on the bottom of the mounting bracket.**
- 4. Slide the diskette drive toward the center of the chassis. Lift the diskette drive out of the chassis.**
- 5. Remove the two screws from each side of the bracket and slide the bracket off the drive. Save them for the replacement drive. Lift off the mounting bracket and keep it handy for the replacement drive. Set the old drive aside on the antistatic mat.**
- 6. Disconnect the power cable and the data cable from the drive, and keep it for the replacement drive.**

This completes the diskette drive removal process, you are now ready to replace the diskette drive.

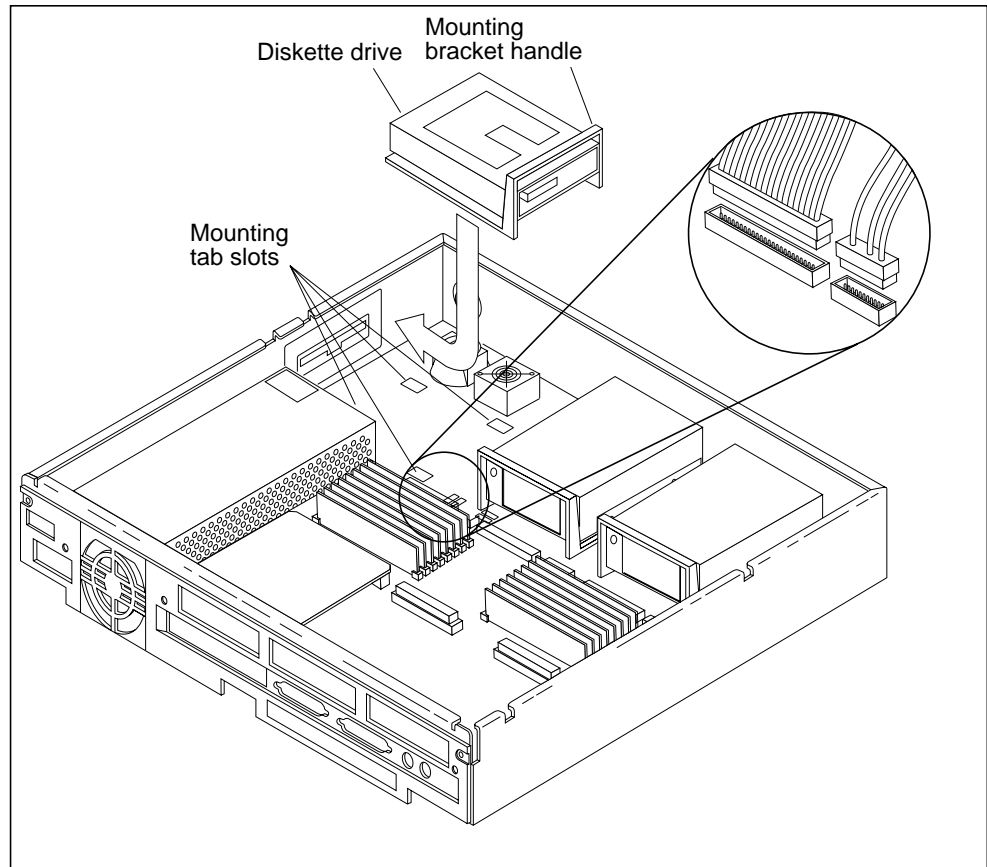


Figure 3-3 Installing or Removing the Diskette Drive

3.3 Installing a Diskette Drive

1. Make sure that the system's power is off, and that you have a wrist strap attached (Chapter 1).
2. Remove the replacement drive from its protective packaging.
3. Attach the mounting bracket to the new drive by inserting and tightening the four mounting screws.
4. Align the four mounting tabs on the bottom of the drive mounting bracket with the slots in the bottom of the chassis (see Figure 3-3 on page 3-5).

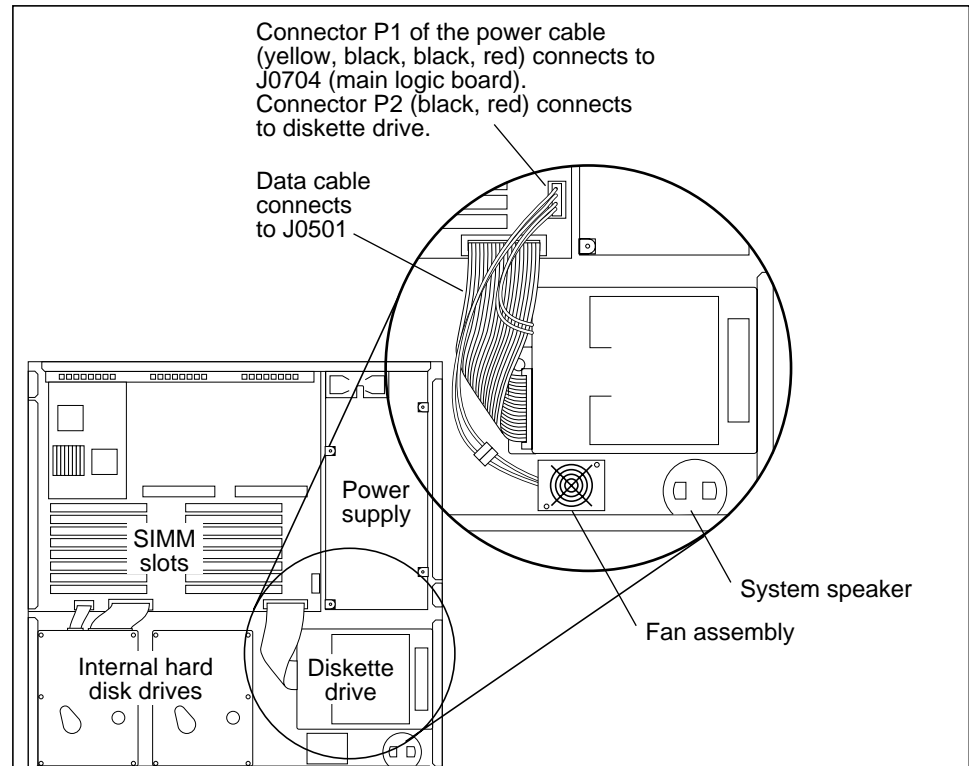


Figure 3-4 The Power and Data Cables to the Diskette Drive

5. Slide the drive forward towards the outside of the chassis until the two locking tabs click into their slots.
6. Connect the data cable to the new drive. Connect the “Y” power cable to the main logic board and the fan assembly. The power and data connectors are keyed so they will fit only one way. (See Figure 3-4).
7. Disconnect the wrist strap from the system unit and store it for future use.

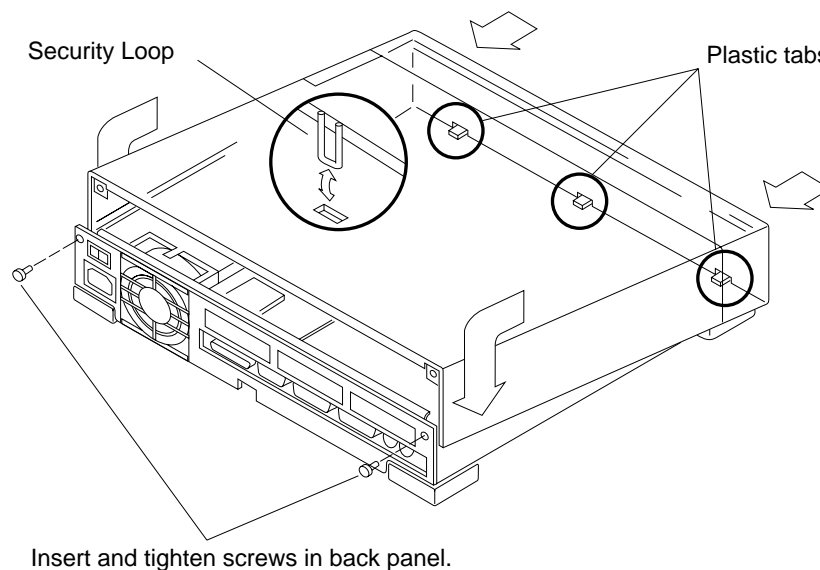


Figure 3-5 Replacing the Cover on the System Unit

8. Hold the cover at an angle of approximately 30 degrees in relation to the system unit chassis (front end down, back end up). Gently guide the plastic tabs on the front of the cover into the tab slots on the front of the chassis (see Figure 3-5). Continue to hold the cover with your hands.



Caution – Holding the cover at angles greater than 30 degrees can prevent insertion of the tabs into the tab slots. Once the tabs are in the slots, raising the cover to angles greater than 30 degrees can break the tabs.

9. Slowly lower the cover onto the chassis, and be sure the security loop clears the diskette drive (if equipped) and seats into the security loop slot on the bottom of the chassis.
10. Insert the two screws that hold the top cover to the back panel. Tighten the two screws with a screwdriver.

This completes the diskette installation procedure; you are now ready to power-up your SPARCstation2.

3.4 Booting the System



Warning – Do not power up the system unit without replacing the cover and securing it. Failure to take this precaution may result in personal injury and system damage. Do not block vents on the sides or rear of this unit; permanent damage may occur.



Warning – This device is equipped with a 3-wire grounded power cord. To reduce the risk of electrical shock, always plug the power cord into a properly grounded outlet.



Caution – Always allow 10 seconds between turning off the power and turning it back on again. This pause prevents possible damage to power supply components in your system unit.

Turn the power on in the following order:

- Monitor
- Desktop or External Storage (if applicable)
- System unit

Boot the system using the procedure that is appropriate for your operating system. For a newly installed peripheral device to work in a computer system, its device driver must be added or activated. See the *Preface*, “When You Need Help with UNIX” for references to documentation that describes this procedure.

Revision History

Revision	Dash	Date	Comments
800-5661-11	A	August 1992	Second Revision

Reader Comments

We welcome your comments and suggestions to help improve the *Installing SPARCstation 22 Internal Drives manual part no. 800-5661-11*. Please take time to let us know what you think about this manual.

- The tasks were well documented and easy to follow.

Strongly Agree	Agree	Disagree	Strongly Disagree	Not Applicable
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- The information provided in *Installing SPARCstation 22 Internal Drives manual* was complete.

Strongly Agree	Agree	Disagree	Strongly Disagree	Not Applicable
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- The information I needed was easy to find.

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Comments _____

- The manual was useful to me.

Strongly Agree	Agree	Disagree	Strongly Disagree	Not Applicable
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments _____

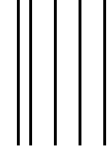
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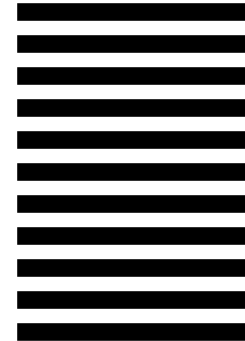
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