

*Sun™ Ultra™ 1 Series
to Sun™ Ultra™ 30 System
Upgrade Guide*



The Network Is the Computer™

Sun Microsystems Computer Company

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Shielded Cables: Connections between the workstation and peripherals must be made using shielded cables in order to maintain compliance with FCC radio frequency emission limits. Networking connections can be made using unshielded twisted-pair (UTP) cables.

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- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/television technician for help.

Shielded Cables: Connections between the workstation and peripherals must be made using shielded cables in order to maintain compliance with FCC radio frequency emission limits. Networking connections can be made using unshielded twisted pair (UTP) cables.

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Preface

This document describes how to upgrade a Sun™ Ultra™ 1 or Ultra™ 1 Creator Series system to a Sun™ Ultra™ 30 System.

How This Book Is Organized

Chapter 1, “Overview,” outlines the process to be followed in upgrading a Sun Ultra 1 or Ultra 1 Creator Series system to a Sun Ultra 30 System.

Chapter 2, “Removing Ultra 1 Series Internal Components,” describes how to remove components from an Ultra 1 Series system to be transferred to an Ultra 30 System.

UNIX Commands

This document does not include specific software commands or procedures. Instead, it may name software tasks and refer you to operating system documentation or the handbook that was shipped with your new hardware.

The type of information that you might need to use references for includes:

- Shutting down the system
- Booting the system
- Configuring devices
- Other basic software procedures

See one or more of the following:

- *Solaris 2.x Handbook for SMCC Peripherals* contains Solaris™ 2.x software commands. (If you are incorporating the software commands in your document, delete this sentence.)
- On-line AnswerBook™ for the complete set of documentation supporting the Solaris 2.x software environment.
- Other software documentation that you received with your system.

Typographic Conventions

The following table describes the typographic changes used in this book.

Typeface or Symbol	Meaning	Example
AaBbCc123	The names of commands, files, and directories; on-screen computer output	Edit your <code>.login</code> file. Use <code>ls -a</code> to list all files. <code>machine_name%</code> You have mail.
AaBbCc123	What you type, contrasted with on-screen computer output	<code>machine_name%</code> su Password:
<i>AaBbCc123</i>	Command-line placeholder: replace with a real name or value	To delete a file, type <code>rm filename</code> .
<i>AaBbCc123</i>	Book titles, new words or terms, or words to be emphasized	Read Chapter 6 in the <i>User's Guide</i> . These are called <i>class</i> options. You <i>must</i> be root to do this.

Shell Prompts

The following table shows the default system prompt and superuser prompt for the C shell, Bourne shell, and Korn shell.

Shell	Prompt
C shell	machine_name%
C shell superuser	machine_name#
Bourne shell and Korn shell	\$
Bourne shell and Korn shell superuser	#

Related Documents

The following documents contain topics that relate to the information in *Sun Ultra 1 Series to Sun Ultra 30 System Upgrade Guide*

Application	Title	Part Number
Installation	<i>Sun Ultra 30 Hardware Setup Instructions</i>	805-7714-xx
	<i>Sun Ultra 30 System Installation Guide</i>	805-7715-xx, 805-7716-xx, 805-7717-xx

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Luxembourg	32-2-720-09-09	32-2-725-88-50
Germany	01-30-81-61-91	01-30-81-61-92
The Netherlands	06-022-34-45	06-022-34-46
Sweden	020-79-57-26	020-79-57-27
Switzerland	155-19-26	155-19-27
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Overview



Read the documentation in the RMA (Return Material Authorization) information package provided with the upgrade.

Review the information in this chapter, and then proceed to Chapter 2, “Removing Ultra 1 Series Internal Components” for information on:

1. Disconnecting the Sun Ultra 1 Series monitor, keyboard, mouse, and associated cables.
2. Removing DIMMs (memory modules) and internal storage devices from the Sun Ultra 1 Series system, and installing them in the Sun Ultra 30 system.

Refer to the *Sun Ultra 30 System Installation Guide* for information about installing components removed from the Sun Ultra 1 Series system into the Sun Ultra 30 system.

Note – SBus cards are not supported by the Sun Ultra 30 system. Refer to *Sun Ultra 30 System Product Notes* for more information.

3. Connecting the monitor, keyboard, and mouse to the Sun Ultra 30 system as shown in the *Sun Ultra 30 Installation Guide*.
4. Packing the old components, following the instructions in the RMA information package about packing, and returning the Sun Ultra 1 Series enclosure and those components not used in the Sun Ultra 30 system.

5. Returning the old system to Sun, as directed by the RMA information package documents.

If you have any additional questions, contact your Sun sales representative.

Upgrade Kit

The upgrade kit contains some hardware parts needed to complete the upgrade process, as well as upgrade instructions.

- Electrostatic discharge kit, part number 560-1302-xx, so you can safely handle parts that are sensitive to damage by static electricity.
- *Sun Ultra 1 Series to Sun Ultra 30 System Upgrade Guide*, (part number 802-7723-10).

Safety Requirements

For protection, observe the following safety precautions when working on the equipment:

- Follow all cautions, warnings, and instructions marked on the equipment.
- Ensure that the voltages and frequency rating of the power receptacle match the electrical rating label on the equipment.
- Never push objects of any kind through openings in the equipment. They may touch dangerous voltage points or short components resulting in fire or electric shock.
- Refer servicing of equipment to qualified personnel.

Symbols

The following symbols mean:



Caution – Risk of personal injury and equipment damage. Follow the instructions.



Caution – Hazardous voltages are present. To reduce the risk of electric shock and danger to personal health, follow the instructions.



Caution – Hot surfaces. Avoid contact. Surfaces are hot and may cause personal injury if touched.

Safety Precautions

Modification to Equipment



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

Placement of a Sun Product



Caution – To ensure reliable operation of the 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 hot air register.

Power Cord Connection



Caution – Not all power cords have the same current ratings. Household extension cords do not have overload protection. Do not use household extension cords with the Sun product.



Caution – The power switch of this product functions as a standby type device only. The power cord serves as the primary disconnect device for the system. Be sure to connect the power cord into a grounded electrical receptacle that is nearby the system and is readily accessible.

Do not connect the power cord when the power supply has been removed from the system chassis.

Electrostatic Discharge



Caution – The boards and hard disk drive contain electronic components that are extremely sensitive to static electricity. Ordinary amounts of static electricity from clothes or work environment can destroy components. Do not touch the components themselves or any metal parts. Wear a wrist strap when handling the drive assemblies, boards, or cards.

Lithium Battery



Caution – On Sun system boards, a lithium battery is molded into the real-time clock, SGS No. MK48T59Y. Batteries are not customer replaceable parts. They can explode if mistreated. Do not dispose of the battery in fire. Do not disassemble it or attempt to recharge.

Tools Required

You will need the following tools and equipment:

- Antistatic mat
- Wrist strap (included in upgrade kit)
- Phillips screwdriver
- Torx T-15 screwdriver
- Container for screws

Electrostatic Discharge (ESD) Precautions



Caution – The system chassis power must be set to Standby, and the AC power cord must remain connected to a power source to ensure a proper ground.

To minimize electrostatic discharge, observe the following precautions:

- Hold the system board, SBus cards, DIMMs, or system components by the edges only.
- When removing a board, card, or module from an antistatic bag, lay it on an antistatic surface such as a Sun ESD mat, antistatic bag, or disposable antistatic mat.
- Transport boards, cards, or modules in an antistatic bag.
- Always wear an antistatic wrist strap that is connected to a metal surface on the chassis, preferably the power supply case, when working on system components and parts.
- Do not place the boards, cards, or modules on an unprotected surface. Use a cushioned antistatic mat or antistatic bag. Connectors and components have very thin pins that bend easily.

Removing Ultra 1 Series Internal Components



Powering Off the System

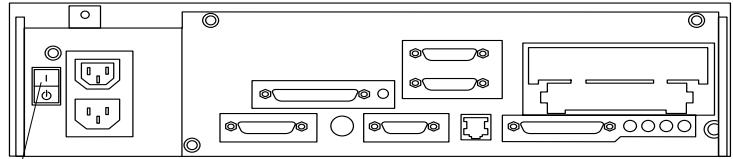
Caution – Before you turn off system power, exit from the operating system. Failure to do so may result in loss of data.

1. If the system that you are upgrading is being used as a server, notify users that the system is going down.
2. Back up system files and data.
3. If the system that you are upgrading is being used as a server, shutdown the operating system by becoming superuser and issuing the shutdown command.

```
kiwi% su
Password:
# shutdown -gl -y
```

4. Turn off the power to the monitor.
5. Turn off all attached external devices.

6. Place the power on/standby switch to standby (⏻) (Figure 2-1).
7. Verify the following:
 - a. Front panel LED is off.
 - b. System fans are disabled.



Power on/standby switch

Figure 2-1 Rear View of an Ultra 1 System



Warning – Disconnect the AC power cord only before handling the power supply. Otherwise, leave the AC power cord connected and connected to a power receptacle. When the power on/standby switch is in standby (⏻) and the AC power cord remains connected to a power receptacle, AC voltage is present in the power supply transformer primary.

8. Disconnect cables to all peripheral equipment.

Removing the Cover

1. Verify that the system is powered off.
2. Use a Phillips screwdriver to remove the lock block (if installed) on the cover (Figure 2-2).

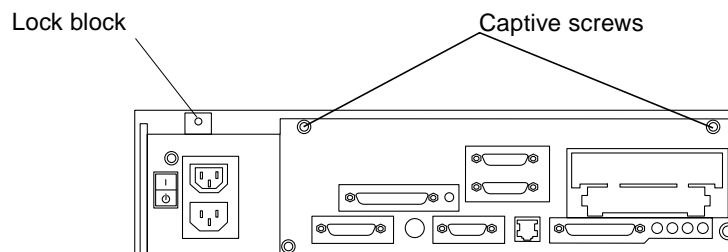


Figure 2-2 Location of Lock Block

3. Loosen the captive screws securing the cover with a Phillips screwdriver. (Figure 2-2).

4. Grasp the sides of the cover and lift up the back of the cover (Figure 2-3). After the cover clears the back panel, push the cover away from the front panel.

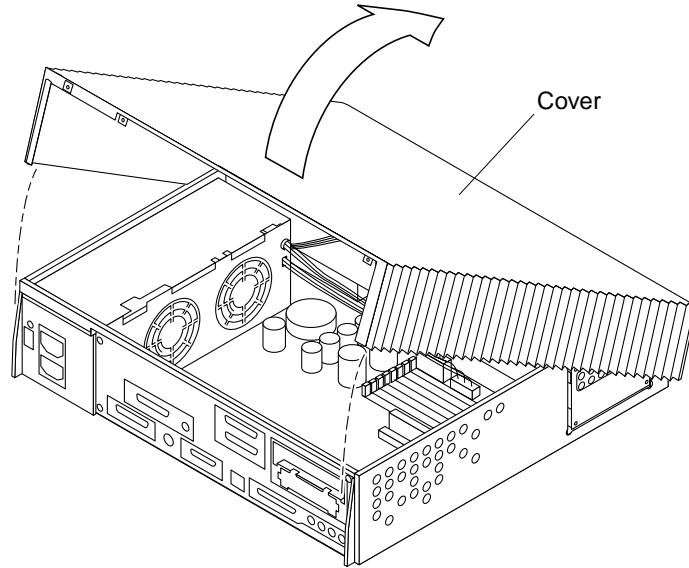


Figure 2-3 Removing the Cover

Attaching the Wrist Strap

1. Unwrap the first two folds of the wrist strap and wrap the adhesive side firmly against your wrist (Figure 2-4).
2. Peel the liner from the copper foil at the opposite end of the wrist strap and attach the copper end of the wrist strap to the power supply top.

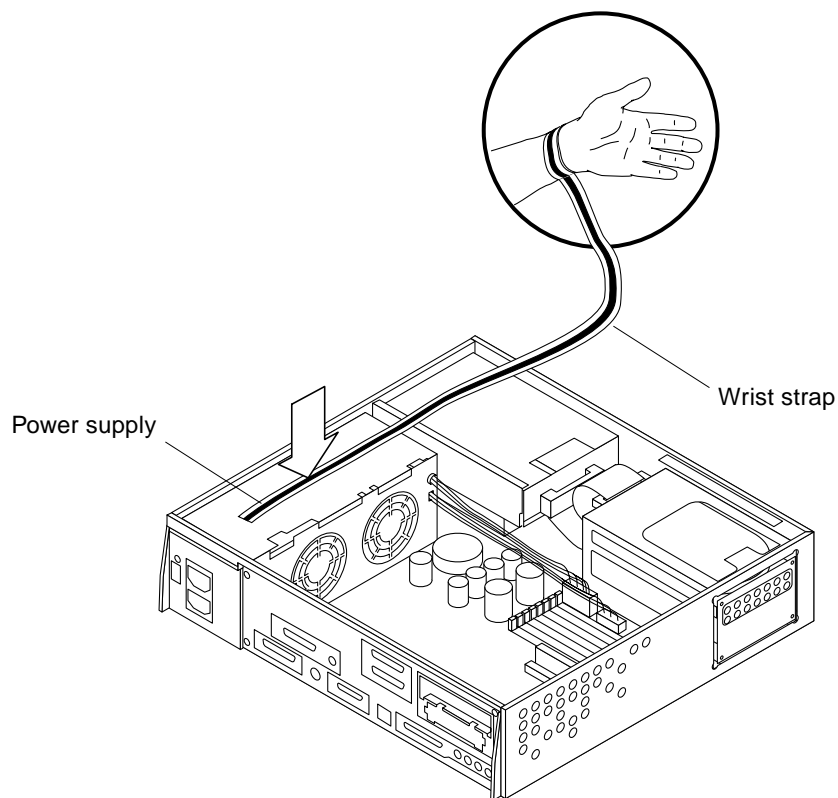


Figure 2-4 Attaching the Wrist Strap

Removing DIMMs



Caution – DIMMs are made of electronic components that are extremely sensitive to static electricity. Ordinary amounts of static electricity from your clothes or work environment can destroy the modules.

Do not remove any DIMM from an antistatic container until you are ready to install it on the system board. Handle the modules only by the edges. Do not touch the components or any metal parts. Always wear a grounding strap when you handle the modules.

All Ultra 1 Series systems have at least two identical DIMMs, each pair having the same speed and capacity, installed in paired sockets of any DIMM bank. Table 2-1 identifies DIMM locations.

Table 2-1 DIMM Bank and Socket Pair Locations

Bank	Socket Pair
0	U0701 + U0601
1	U0702 + U0602
2	U0703 + U0603
3	U0704 + U0604

1. **Locate the DIMM to be removed (Figure 2-6).**
2. **Place an antistatic surface next to the system.**

3. Use your fingers or the eraser end of a pencil to move the ejection lever away from the DIMM that you want to remove.

Ejection levers are greatly enlarged to show detail in Figure 2-5.

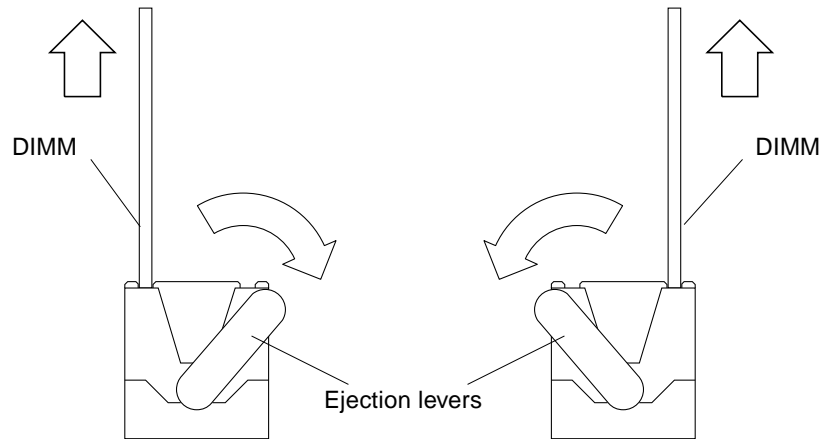


Figure 2-5 DIMM Ejection Levers

4. Grasp the upper corners of the DIMM and lift to remove it from the slot (Figure 2-6).

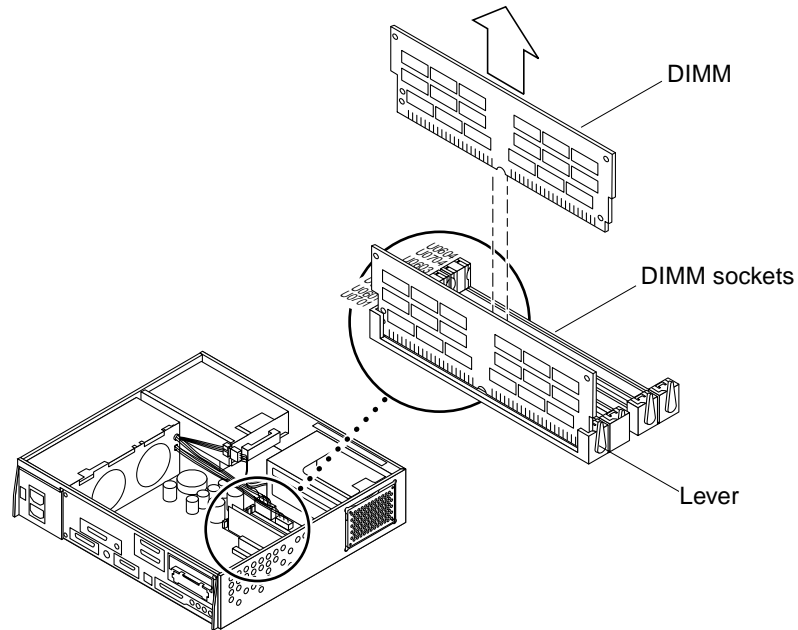


Figure 2-6 Removing a DIMM

Caution – The Sun Ultra 30 System must have DIMMs installed in matched pairs. A matched pair consists of DIMMs of the same capacity and speed.

For maximum performance, install DIMMs in groups of four DIMMs, filling the bank of four. Do not mix DIMM densities in any bank.

5. Install the DIMMs in the Sun Ultra 30 System.

Removing Disk Drives

1. Remove the EMI door.
 - a. Open the EMI door with a screwdriver (Figure 2-7).
 - b. Remove the door from the chassis.

Note – The EMI door must be replaced after the drive has been removed.

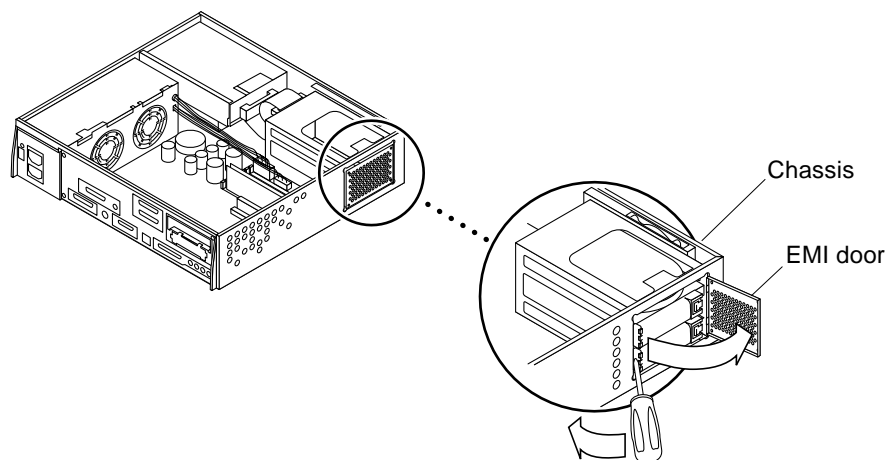


Figure 2-7 EMI Door

2. Locate the disk drive(s) that you want to remove (Figure 2-8).

Check the disk drive part number to select which drives may be transferred to the Sun Ultra 30 System.

Note – The disk drive part number is affixed to the front of the diskdrive handle.

The disk drives supported by the Sun Ultra 30 System have part numbers 540-2936-xx and 540-2938-xx. No other internal disk drives supported on the Sun Ultra 1 Series may be transferred to the Sun Ultra 30 System.

3. Unlatch the drive handle and swing it open (Figure 2-8).

Move the drive latch to the right to unlock the drive handle.

Note – The drive rear connector is disconnected when disk drive is removed.

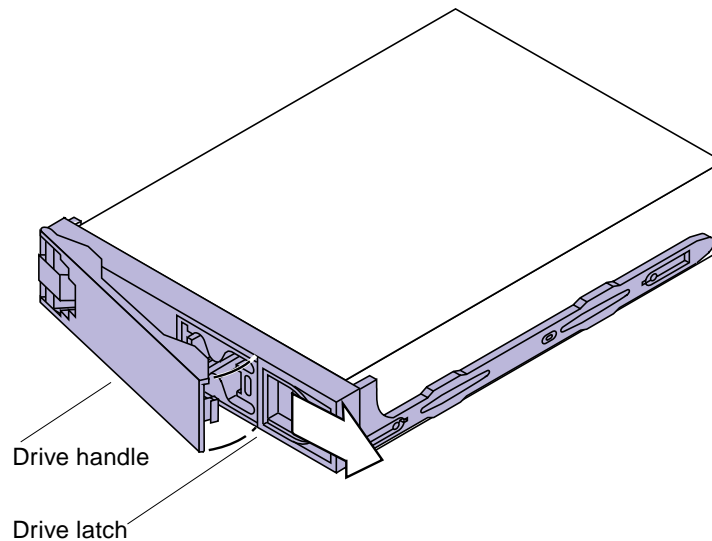


Figure 2-8 Removing the Disk Drive

4. Hold the drive handle and pull it out to remove the drive from the chassis (Figure 2-8).

5. Place the drive on an antistatic surface.

6. Replace the EMI door.

Note – The EMI door must be flush with the chassis or the top cover will not fit correctly.

- a. Position the EMI door on the chassis. The two tabs should be hooked into the two slots (Figure 2-9).
- b. Push the door in until it is flush with the chassis

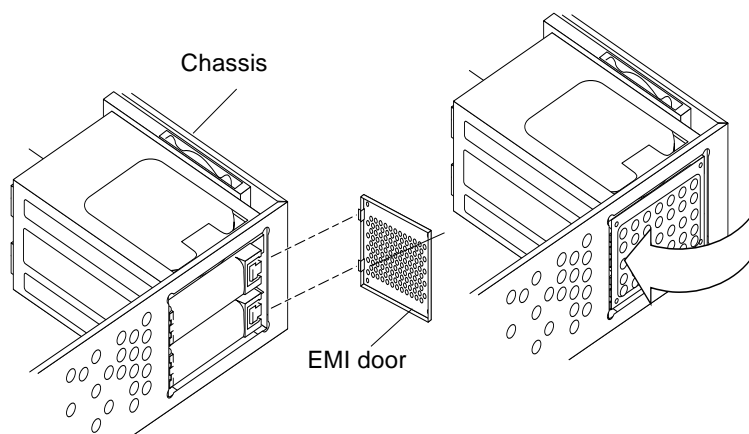


Figure 2-9 Replacing the EMI Door

7. Install the disk drive in the Sun Ultra 30 system.

Refer to the *Sun Ultra 30 Installation Guide* for installation instructions.

Removing a CD-ROM/Tape Drive

Removing the Bracket from the Chassis

1. Remove the two screws from the chassis that secure the drive bracket (Figure 2-10).
2. Remove the DC harness from the clip located on the drive bracket (Figure 2-10).
3. Disconnect the DC harness from the peripheral power cable at P1.
4. Push the drive bracket toward the disk drive bay and gently flip it over. Place the drive bracket on top of the disk drive bay (Figure 2-11).
5. Place the bracket on an antistatic surface.

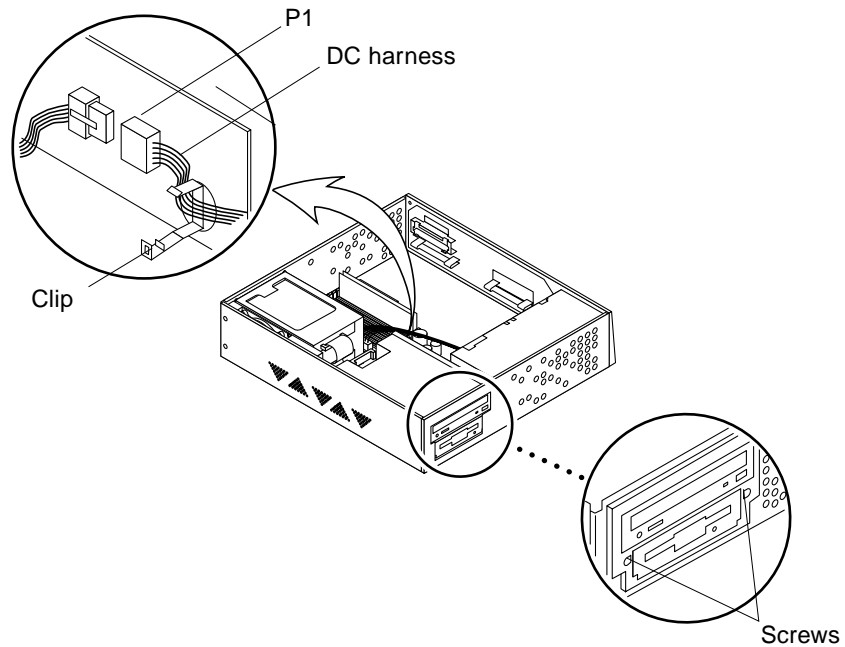


Figure 2-10 Drive Bracket

6. Disconnect the SCSI cable from the CD-ROM/tape drive (Figure 2-11).

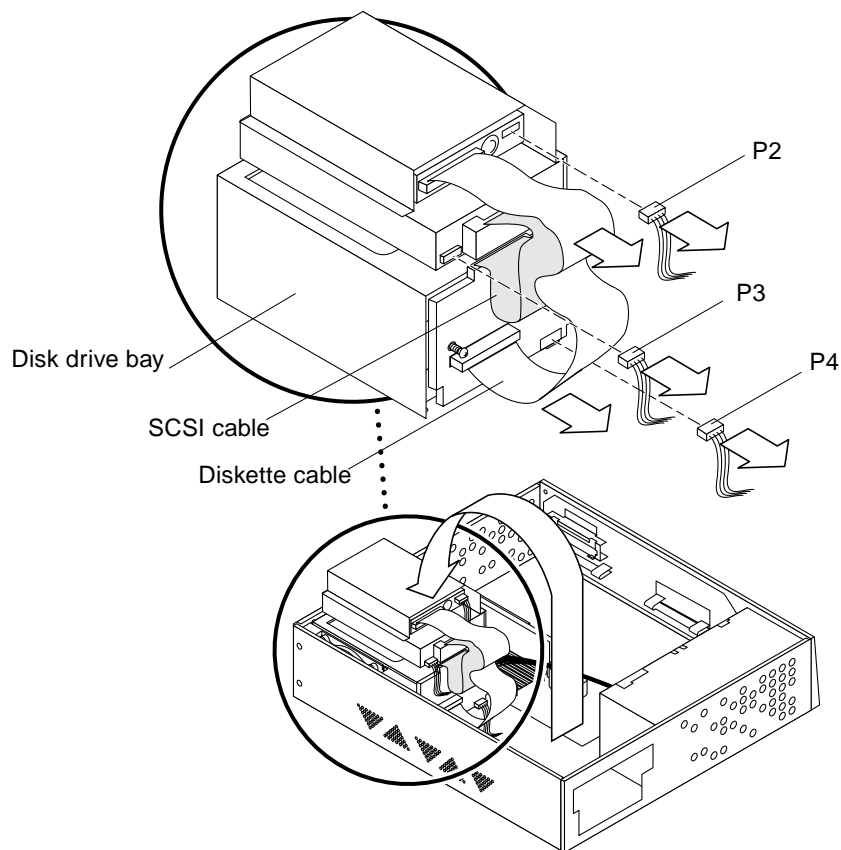


Figure 2-11 Placing the Drive Bracket on Top of the Disk Drive

7. Disconnect the peripheral power cable from the CD-ROM/tape drive (P3), and from the diskette drive (P2).
8. If present, disconnect the diskette cable from the diskette drive.

Removing a CD-ROM or Tape Drive From the Bracket

1. Position the bracket on top of a flat surface, so that the CD-ROM or tape drive is flat (Figure 2-12).
2. Use a Phillips screwdriver to remove the four screws securing the CD-ROM or tape drive to the drive bracket (Figure 2-12).

Note – Save the four screws that you just removed. You will need them to install the drive in the Sun Ultra 30 system.

3. Remove the CD-ROM or tape drive, and place it aside on an antistatic surface.

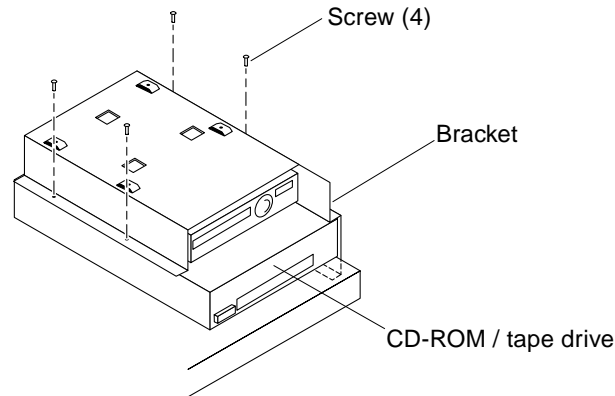


Figure 2-12 Positioning the CD-ROM/Tape Drive

4. Install the CD-ROM or tape drive in the Sun Ultra 30 system.
Refer to the *Sun Ultra 30 Installation Guide* for installation instructions.

Replacing the Bracket into the Chassis

1. Place the drive bracket on top of the disk drive bay (Figure 2-13).

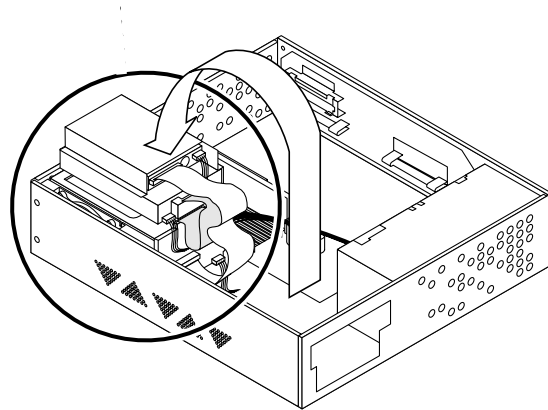


Figure 2-13 Replacing the Drive Bracket in the Disk Drive Bay

2. Position the bracket in the chassis.
3. Slide the bracket toward the opening in the side of the chassis (Figure 2-14).

Note – Hooks at the chassis base must lock into the bottom holes of the drive bracket.

4. Replace the two screws securing the drive bracket to the chassis.

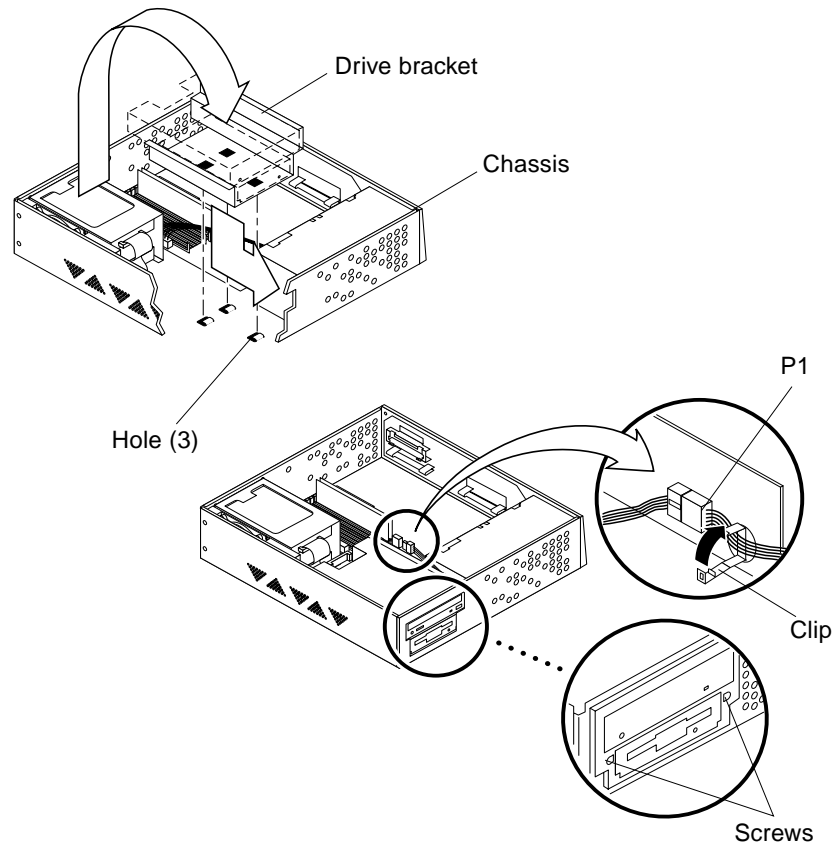


Figure 2-14 Positioning the Drive Bracket in the Chassis

Replacing the Cover

1. Position the cover on the system as shown (Figure 2-15).
2. Lower the back side of the cover until the channels on each side of the cover align with the two flanges at the rear of the system. Press down on both sides of the cover until it is firmly seated (Figure 2-15).
3. Tighten the captive screws on the back panel with a Phillips screwdriver.
4. Replace the lock block with a Phillips screwdriver (Figure 2-2).

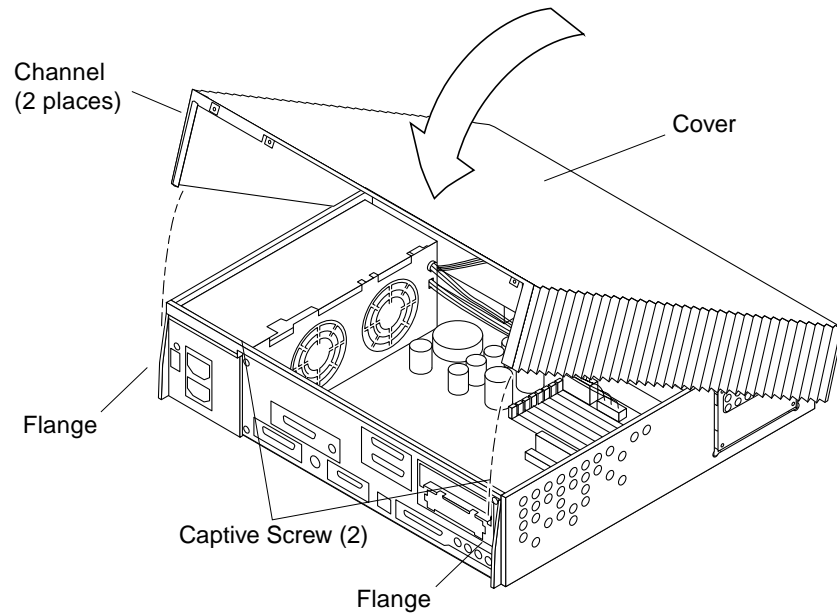


Figure 2-15 Replacing the Cover

Returning the Old System

Follow the instructions in the RMA documentation to repackage and return the Sun Ultra 1 Series system to Sun.

