

Sun™ StorEdge™ MultiPack User's Guide



THE NETWORK IS THE COMPUTER™

Sun Microsystems Computer Company

A Sun Microsystems, Inc. Business
901 San Antonio Road
Palo Alto, CA 94303-4900 USA
1 650 960-1300 fax 1 650 969-9131

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Please
Recycle



Adobe PostScript

Regulatory Compliance Statements

Your Sun product is marked to indicate its compliance class:

- Federal Communications Commission (FCC) — USA
- Department of Communications (DOC) — Canada
- Voluntary Control Council for Interference (VCCI) — Japan

Please read the appropriate section that corresponds to the marking on your Sun product before attempting to install the product.

FCC Class A Notice

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

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.

Modifications: Any modifications made to this device that are not approved by Sun Microsystems, Inc. may void the authority granted to the user by the FCC to operate this equipment.

FCC Class B Notice

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- 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.

Modifications: Any modifications made to this device that are not approved by Sun Microsystems, Inc. may void the authority granted to the user by the FCC to operate this equipment.

DOC Class A Notice - Avis DOC, Classe A

This Class A digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.
Cet appareil numérique de la classe A respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

DOC Class B Notice - Avis DOC, Classe B

This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.
Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

VCCI 基準について

第一種 VCCI 基準について

第一種VCCIの表示があるワークステーションおよびオプション製品は、第一種情報装置です。これらの製品には、下記の項目が該当します。

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取り扱い説明書に従って正しくお取り扱いください。

第二種 VCCI 基準について

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取り扱い説明書に従って正しくお取り扱いください。

Declaration of Conformity

Model Number: 711
Product Name: Sun StorEdge MultiPack Family

EMC

USA - FCC Class B

This equipment complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- 1) This equipment may not cause harmful interference.
- 2) This equipment must accept any interference that may cause undesired operation.

European Union

This equipment complies with the following requirements of the EMC Directive 89/336/EEC:

EN55022 / CISPR22	(1985)	Class B
EN50082-1	IEC801-2	(1991) 4 kV (Direct)8 kV (Air)
IEC801-3	(1984)	3 V/m
IEC801-4 (1988)		1.0 kV Power Lines, 0.5 kV Signal Lines
EN61000-3-2/IEC1000-3-2(1994)		Pass

Safety

This equipment complies with the following requirements of Low Voltage Directive 73/23/EEC:

EC Type Examination Certificates:

EN60950/IEC950		(1993)TUV Rheinland Certificate # S9577298
EN60950 w/	Nordic Deviations	CB Scheme Certificate # UL672-138989/USA

Supplementary Information:

This product was tested and complies with all the requirements for the CE Mark when connected to a Sun workstation or server.

/ S /

Dennis P. SymanskiDATE

Manager, Compliance Engineering

Sun Microsystems, Inc.
901 San Antonio Road, M/S UMPK15-102
Palo Alto, CA 94303, USA
Tel: 650-786-3255
Fax: 650-786-3723

/ S /

John Shades DATE

Quality Assurance Manager

Sun Microsystems Scotland, Limited
Springfield, Linlithgow
West Lothian, EH49 7LR
Scotland, United Kingdom
Tel: 0506 670000
Fax: 0506 760011

Safety Agency Compliance Statements

Read this section before beginning any procedure. The following text provides safety precautions to follow when installing a Sun Microsystems product.

Safety Precautions

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

- Follow all cautions 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 could cause fire, electric shock, or damage to your equipment.

Symbols

The following symbols may appear in this book:



Caution – There is risk of personal injury and equipment damage. Follow the instructions.



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



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



On – Applies AC power to the system.

Depending on the type of power switch your device has, one of the following symbols may be used:



Off – Removes AC power from the system.



Standby – The On/Standby switch is in the *standby* position.

Modifications to Equipment

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 – Do not block or cover the openings of your Sun product. Never place a Sun product near a radiator or heat register. Failure to follow these guidelines can cause overheating and affect the reliability of your Sun product.

SELV Compliance

Safety status of I/O connections comply to SELV requirements.

Power Cord Connection



Caution – Sun products are designed to work with single-phase power systems having a grounded neutral conductor. To reduce the risk of electric 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.



Caution – 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.



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

The following caution applies only to devices with a **Standby** power switch:



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 plug the power cord into a grounded power outlet 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.

Lithium Battery



Caution – On Sun CPU boards, there is a lithium battery molded into the real-time clock, SGS No. MK48T59Y, MK48TXXB-XX, MK48T18-XXXPCZ, M48T59W-XXXPCZ, or MK48T08. Batteries are not customer replaceable parts. They may explode if mishandled. Do not dispose of the battery in fire. Do not disassemble it or attempt to recharge it.

System Unit Cover

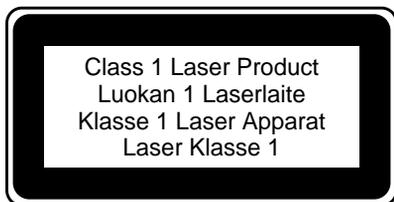
You must remove the cover of your Sun computer system unit in order to add cards, memory, or internal storage devices. Be sure to replace the top cover before powering up your computer system.



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

Laser Compliance Notice

Sun products that use laser technology comply with Class 1 laser requirements.



CD-ROM



Caution – Use of controls, adjustments, or the performance of procedures other than those specified herein may result in hazardous radiation exposure.

Einhaltung sicherheitsbehördlicher Vorschriften

Auf dieser Seite werden Sicherheitsrichtlinien beschrieben, die bei der Installation von Sun-Produkten zu beachten sind.

Sicherheitsvorkehrungen

Treffen Sie zu Ihrem eigenen Schutz die folgenden Sicherheitsvorkehrungen, wenn Sie Ihr Gerät installieren:

- Beachten Sie alle auf den Geräten angebrachten Warnhinweise und Anweisungen.

- Vergewissern Sie sich, daß Spannung und Frequenz Ihrer Stromquelle mit der Spannung und Frequenz übereinstimmen, die auf dem Etikett mit den elektrischen Nennwerten des Geräts angegeben sind.
- Stecken Sie auf keinen Fall irgendwelche Gegenstände in Öffnungen in den Geräten. Leitfähige Gegenstände könnten aufgrund der möglicherweise vorliegenden gefährlichen Spannungen einen Kurzschluß verursachen, der einen Brand, Stromschlag oder Geräteschaden herbeiführen kann.

Symbole

Die Symbole in diesem Handbuch haben folgende Bedeutung:



Achtung – Gefahr von Verletzung und Geräteschaden. Befolgen Sie die Anweisungen.



Achtung – Hohe Temperatur. Nicht berühren, da Verletzungsgefahr durch heiße Oberfläche besteht.



Achtung – Gefährliche Spannungen. Anweisungen befolgen, um Stromschläge und Verletzungen zu vermeiden.



Ein – Setzt das System unter Wechselstrom.

Je nach Netzschaltertyp an Ihrem Gerät kann eines der folgenden Symbole benutzt werden:



Aus – Unterbricht die Wechselstromzufuhr zum Gerät.



Wartezustand (Stand-by-Position) - Der Ein-/Wartezustand-Schalter steht auf Wartezustand. Änderungen an Sun-Geräten.

Nehmen Sie keine mechanischen oder elektrischen Änderungen an den Geräten vor. Sun Microsystems, übernimmt bei einem Sun-Produkt, das geändert wurde, keine Verantwortung für die Einhaltung behördlicher Vorschriften

Aufstellung von Sun-Geräten



Achtung – Um den zuverlässigen Betrieb Ihres Sun-Geräts zu gewährleisten und es vor Überhitzung zu schützen, dürfen die Öffnungen im Gerät nicht blockiert oder verdeckt werden. Sun-Produkte sollten niemals in der Nähe von Heizkörpern oder Heizluftklappen aufgestellt werden.

Einhaltung der SELV-Richtlinien

Die Sicherung der I/O-Verbindungen entspricht den Anforderungen der SELV-Spezifikation.

Anschluß des Netzkabels



Achtung – Sun-Produkte sind für den Betrieb an Einphasen-Stromnetzen mit geerdetem Nulleiter vorgesehen. Um die Stromschlaggefahr zu reduzieren, schließen Sie Sun-Produkte nicht an andere Stromquellen an. Ihr Betriebsleiter oder ein qualifizierter Elektriker kann Ihnen die Daten zur Stromversorgung in Ihrem Gebäude geben.



Achtung – Nicht alle Netzkabel haben die gleichen Nennwerte. Herkömmliche, im Haushalt verwendete Verlängerungskabel besitzen keinen Überlastungsschutz und sind daher für Computersysteme nicht geeignet.



Achtung – Ihr Sun-Gerät wird mit einem dreidradigen Netzkabel für geerdete Netzsteckdosen geliefert. Um die Gefahr eines Stromschlags zu reduzieren, schließen Sie das Kabel nur an eine fachgerecht verlegte, geerdete Steckdose an.

Die folgende Warnung gilt nur für Geräte mit Wartezustand-Netzschalter:



Achtung – Der Ein/Aus-Schalter dieses Geräts schaltet nur auf Wartezustand (Stand-By-Modus). Um die Stromzufuhr zum Gerät vollständig zu unterbrechen, müssen Sie das Netzkabel von der Steckdose abziehen. Schließen Sie den Stecker des Netzkabels an eine in der Nähe befindliche, frei zugängliche, geerdete Netzsteckdose an. Schließen Sie das Netzkabel nicht an, wenn das Netzteil aus der Systemeinheit entfernt wurde.

Lithiumbatterie



Achtung – CPU-Karten von Sun verfügen über eine Echtzeituhr mit integrierter Lithiumbatterie (Teile-Nr. MK48T59Y, MK48TXXB-XX, MK48T18-XXXPCZ, M48T59W-XXXPCZ, oder MK48T08). Diese Batterie darf nur von einem qualifizierten Servicetechniker ausgewechselt werden, da sie bei falscher Handhabung explodieren kann. Werfen Sie die Batterie nicht ins Feuer. Versuchen Sie auf keinen Fall, die Batterie auszubauen oder wiederaufzuladen.

Gehäuseabdeckung

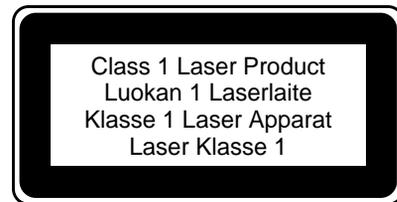
Sie müssen die obere Abdeckung Ihres Sun-Systems entfernen, um interne Komponenten wie Karten, Speicherchips oder Massenspeicher hinzuzufügen. Bringen Sie die obere Gehäuseabdeckung wieder an, bevor Sie Ihr System einschalten.



Achtung – Bei Betrieb des Systems ohne obere Abdeckung besteht die Gefahr von Stromschlag und Systemschäden.

Einhaltung der Richtlinien für Laser

Sun-Produkte, die mit Laser-Technologie arbeiten, entsprechen den Anforderungen der Laser Klasse 1.



CD-ROM



Warnung – Die Verwendung von anderen Steuerungen und Einstellungen oder die Durchführung von Prozeduren, die von den hier beschriebenen abweichen, können gefährliche Strahlungen zur Folge haben.

Conformité aux normes de sécurité

Ce texte traite des mesures de sécurité qu'il convient de prendre pour l'installation d'un produit Sun Microsystems.

Mesures de sécurité

Pour votre protection, veuillez prendre les précautions suivantes pendant l'installation du matériel :

- Suivre tous les avertissements et toutes les instructions inscrites sur le matériel.
- Vérifier que la tension et la fréquence de la source d'alimentation électrique correspondent à la tension et à la fréquence indiquées sur l'étiquette de classification de l'appareil.
- Ne jamais introduire d'objets quels qu'ils soient dans une des ouvertures de l'appareil. Vous pourriez vous trouver en présence de hautes tensions dangereuses. Tout objet conducteur introduit de la sorte pourrait produire un court-circuit qui entraînerait des flammes, des risques d'électrocution ou des dégâts matériels.

Symboles

Vous trouverez ci-dessous la signification des différents symboles utilisés :



Attention : risques de blessures corporelles et de dégâts matériels. Veuillez suivre les instructions.



Attention : surface à température élevée. Evitez le contact. La température des surfaces est élevée et leur contact peut provoquer des blessures corporelles.



Attention : présence de tensions dangereuses. Pour éviter les risques d'électrocution et de danger pour la santé physique, veuillez suivre les instructions.



MARCHE – Votre système est sous tension (courant alternatif).

Un des symboles suivants sera peut-être utilisé en fonction du type d'interrupteur de votre système:



ARRÊT – Votre système est hors tension (courant alternatif).



VEILLEUSE – L'interrupteur Marche/Veilleuse est en position « Veilleuse ».

Modification du matériel

Ne pas apporter de modification mécanique ou électrique au matériel. Sun Microsystems n'est pas responsable de la conformité réglementaire d'un produit Sun qui a été modifié.

Positionnement d'un produit Sun



Attention : pour assurer le bon fonctionnement de votre produit Sun et pour l'empêcher de surchauffer, il convient de ne pas obstruer ni recouvrir les ouvertures prévues dans l'appareil. Un produit Sun ne doit jamais être placé à proximité d'un radiateur ou d'une source de chaleur.

Conformité SELV

Sécurité : les raccordements E/S sont conformes aux normes SELV.

Connexion du cordon d'alimentation



Attention : les produits Sun sont conçus pour fonctionner avec des alimentations monophasées munies d'un conducteur neutre mis à la terre. Pour écarter les risques d'électrocution, ne pas brancher de produit Sun dans un autre type d'alimentation secteur. En cas de doute quant au type d'alimentation électrique du local, veuillez vous adresser au directeur de l'exploitation ou à un électricien qualifié.



Attention : tous les cordons d'alimentation n'ont pas forcément la même puissance nominale en matière de courant. Les rallonges d'usage domestique n'offrent pas de protection contre les surcharges et ne sont pas prévues pour les systèmes d'ordinateurs. Ne pas utiliser de rallonge d'usage domestique avec votre produit Sun.



Attention : votre produit Sun a été livré équipé d'un cordon d'alimentation à trois fils (avec prise de terre). Pour écarter tout risque d'électrocution, branchez toujours ce cordon dans une prise mise à la terre.

L'avertissement suivant s'applique uniquement aux systèmes équipés d'un interrupteur VEILLEUSE:



Attention : le commutateur d'alimentation de ce produit fonctionne comme un dispositif de mise en veille uniquement. C'est la prise d'alimentation qui sert à mettre le produit hors tension. Veuillez donc à installer le produit à proximité d'une prise murale facilement accessible. Ne connectez pas la prise d'alimentation lorsque le châssis du système n'est plus alimenté.

Batterie au lithium



Attention : sur les cartes CPU Sun, une batterie au lithium (référence MK48T59Y, MK48TXXB-XX, MK48T18-XXXPCZ, M48T59W-XXXPCZ, ou MK48T08.) a été moulée dans l'horloge temps réel SGS. Les batteries ne sont pas des pièces remplaçables par le client. Elles risquent d'exploser en cas de mauvais traitement. Ne pas jeter la batterie au feu. Ne pas la démonter ni tenter de la recharger.

Couvercle

Pour ajouter des cartes, de la mémoire, ou des unités de stockage internes, vous devrez démonter le couvercle de l'unité système Sun. Ne pas oublier de remettre ce couvercle en place avant de mettre le système sous tension.



Attention : il est dangereux de faire fonctionner un produit Sun sans le couvercle en place. Si l'on néglige cette précaution, on encourt des risques de blessures corporelles et de dégâts matériels.

Conformité aux certifications Laser

Les produits Sun qui font appel aux technologies lasers sont conformes aux normes de la classe 1 en la matière.



CD-ROM



Attention – L'utilisation de contrôles, de réglages ou de performances de procédures autre que celle spécifiée dans le présent document peut provoquer une exposition à des radiations dangereuses.

Normativas de seguridad

El siguiente texto incluye las medidas de seguridad que se deben seguir cuando se instale algún producto de Sun Microsystems.

Precauciones de seguridad

Para su protección observe las siguientes medidas de seguridad cuando manipule su equipo:

- Siga todas las avisos e instrucciones marcados en el equipo.
- Asegúrese de que el voltaje y la frecuencia de la red eléctrica concuerdan con las descritas en las etiquetas de especificaciones eléctricas del equipo.
- No introduzca nunca objetos de ningún tipo a través de los orificios del equipo. Pueden haber voltajes peligrosos. Los objetos extraños conductores de la electricidad pueden producir cortocircuitos que provoquen un incendio, descargas eléctricas o daños en el equipo.

Símbolos

En este libro aparecen los siguientes símbolos:



Precaución – Existe el riesgo de lesiones personales y daños al equipo. Siga las instrucciones.



Precaución – Superficie caliente. Evite el contacto. Las superficies están calientes y pueden causar daños personales si se tocan.



Precaución – Voltaje peligroso presente. Para reducir el riesgo de descarga y daños para la salud siga las instrucciones.



Encendido – Aplica la alimentación de CA al sistema.

Según el tipo de interruptor de encendido que su equipo tenga, es posible que se utilice uno de los siguientes símbolos:



Apagado – Elimina la alimentación de CA del sistema.



En espera – El interruptor de Encendido/En espera se ha colocado en la posición de *En espera*.

Modificaciones en el equipo

No realice modificaciones de tipo mecánico o eléctrico en el equipo. Sun Microsystems no se hace responsable del cumplimiento de las normativas de seguridad en los equipos Sun modificados.

Ubicación de un producto Sun



Precaución – Para asegurar la fiabilidad de funcionamiento de su producto Sun y para protegerlo de sobrecalentamientos no deben obstruirse o taparse las rejillas del equipo. Los productos Sun nunca deben situarse cerca de radiadores o de fuentes de calor.

Cumplimiento de la normativa SELV

El estado de la seguridad de las conexiones de entrada/salida cumple los requisitos de la normativa SELV.

Conexión del cable de alimentación eléctrica



Precaución – Los productos Sun están diseñados para trabajar en una red eléctrica monofásica con toma de tierra. Para reducir el riesgo de descarga eléctrica, no conecte los productos Sun a otro tipo de sistema de alimentación eléctrica. Póngase en contacto con el responsable de mantenimiento o con un electricista cualificado si no está seguro del sistema de alimentación eléctrica del que se dispone en su edificio.



Precaución – No todos los cables de alimentación eléctrica tienen la misma capacidad. Los cables de tipo doméstico no están provistos de protecciones contra sobrecargas y por tanto no son apropiados para su uso con computadores. No utilice alargadores de tipo doméstico para conectar sus productos Sun.



Precaución – Con el producto Sun se proporciona un cable de alimentación con toma de tierra. Para reducir el riesgo de descargas eléctricas conéctelo siempre a un enchufe con toma de tierra.

La siguiente advertencia se aplica solamente a equipos con un interruptor de encendido que tenga una posición "En espera":



Precaución – El interruptor de encendido de este producto funciona exclusivamente como un dispositivo de puesta en espera. El enchufe de la fuente de alimentación está diseñado para ser el elemento primario de desconexión del equipo. El equipo debe instalarse cerca del enchufe de forma que este último pueda ser fácil y rápidamente accesible. No conecte el cable de alimentación cuando se ha retirado la fuente de alimentación del chasis del sistema.

Batería de litio



Precaución – En las placas de CPU Sun hay una batería de litio insertada en el reloj de tiempo real, tipo SGS Núm. MK48T59Y, MK48TXXB-XX, MK48T18-XXXPCZ, M48T59W-XXXPCZ, o MK48T08. Las baterías no son elementos reemplazables por el propio cliente. Pueden explotar si se manipulan de forma errónea. No arroje las baterías al fuego. No las abra o intente recargarlas.

Tapa de la unidad del sistema

Debe quitar la tapa del sistema cuando sea necesario añadir tarjetas, memoria o dispositivos de almacenamiento internos. Asegúrese de cerrar la tapa superior antes de volver a encender el equipo.



Precaución – Es peligroso hacer funcionar los productos Sun sin la tapa superior colocada. El hecho de no tener en cuenta esta precaución puede ocasionar daños personales o perjudicar el funcionamiento del equipo.

Aviso de cumplimiento con requisitos de láser

Los productos Sun que utilizan la tecnología de láser cumplen con los requisitos de láser de Clase 1.

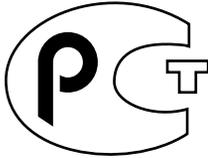
Class 1 Laser Product
Luokan 1 Laserlaite
Klasse 1 Laser Apparat
Laser Klasse 1

CD-ROM



Precaución – El manejo de los controles, los ajustes o la ejecución de procedimientos distintos a los aquí especificados pueden exponer al usuario a radiaciones peligrosas.

GOST-R Certification Mark



Nordic Lithium Battery Cautions

Norge



A D V A R S E L - Litiumbatteri — Eksplosjonsfare. Ved utskifting benyttes kun batteri som anbefalt av apparatfabrikanten. Brukt batteri returneres apparatleverandøren.

Sverige



WARNING - Explosionsfara vid felaktigt batteribyte. Använd samma batterityp eller en ekvivalent typ som rekommenderas av apparattillverkaren. Kassera använt batteri enligt fabrikantens instruktion.

Danmark



ADVARSEL! - Litiumbatteri — Eksplosionsfare ved fejlagtig håndtering. Udsiftning må kun ske med batteri af samme fabrikat og type. Levér det brugte batteri tilbage til leverandøren.

Suomi



VAROITUS - Paristo voi räjähtää, jos se on virheellisesti asennettu. Vaihda paristo ainoastaan laitevalmistajan suosittelemaan tyyppiin. Hävitä käytetty paristo valmistajan ohjeiden mukaisesti.

Contents

Preface	xvii
Set-up Commands and Procedures	xvii
Related Documentation	xviii
Ordering Sun Documents	xviii
Sun Documentation on the Web	xix
Sun Welcomes Your Comments	xix
1. Installation Considerations	21
Minimum Hardware	21
Placement	22
Daisy Chaining SCSI Devices	23
UltraSCSI	23
Fast Wide or Narrow SCSI Buses	23
Installing a Terminator	24
Sun StorEdge MultiPack Disks	25
Sun StorEdge MultiPack Addresses	25
	26
2. Sun StorEdge MultiPack LEDs	27
Status LEDs	27

Power-On LED 27

Front Disk Drive LEDs 27

3. Parts Replacement 31

Sun StorEdge MultiPack Disk Drives 31

Disk Drive Replacement 32

Power Supply Units 35

A. Internal and External CableLengths 39

External SCSI Cable Length 39

Internal SCSI Cable Length 40

Preface

The *Sun StorEdge MultiPack User's Guide* describes how to use the Sun StorEdge MultiPack disk drive enclosure. Procedures for replacing hard disks and the power supply are in Chapter 3, "Parts Replacement."

Set-up Commands and Procedures

See these sources for more specific information on commands and procedures:

- The *Solaris Handbook for SMCC Peripherals* that corresponds to your operating system
- *AnswerBook* on-line software, which contains the complete set of documentation supporting the Solaris 1.x or Solaris 2.x environments
- Other software documentation that you received with your system

The *Solaris Handbook for SMCC Peripherals* for your system software release contains information about shutting down and configuring your system.

Related Documentation

TABLE P-1 Related Documentation

Application	Title	Part Number
Installation	<i>Sun StorEdge MultiPack Installation</i>	805-3953-xx
Service	<i>Sun StorEdge MultiPack Service Manual</i>	805-3956-xx
Hot-plug Instructions	<i>Sun StorEdge MultiPack Storage Guide</i>	805-3955-xx

Ordering Sun Documents

SunDocsSM is a distribution program for Sun Microsystems technical documentation. Contact SunExpress for easy ordering and quick delivery. You can find a listing of available Sun documentation on the World Wide Web.

TABLE P-2 SunExpress Contact Information

Country	Telephone	Fax
Belgium	02-720-09-09	02-725-88-50
Canada	1-800-873-7869	1-800-944-0661
France	0800-90-61-57	0800-90-61-58
Germany	01-30-81-61-91	01-30-81-61-92
Holland	06-022-34-45	06-022-34-46
Japan	0120-33-9096	0120-33-9097
Luxembourg	32-2-720-09-09	32-2-725-88-50
Sweden	020-79-57-26	020-79-57-27
Switzerland	0800-55-19-26	0800-55-19-27
United Kingdom	0800-89-88-88	0800-89-88-87
United States	1-800-873-7869	1-800-944-0661

World Wide Web: <http://www.sun.com/sunexpress/>

Sun Documentation on the Web

The `docs.sun.com` web site enables you to access Sun technical documentation on the Web. You can browse the `docs.sun.com` archive or search for a specific book title or subject at:

`http://docs.sun.com`.

Sun Welcomes Your Comments

We are interested in improving our documentation and welcome your comments and suggestions. You can email your comments to us at:

`smcc-docs@sun.com`.

Please include the part number of your document in the subject line of your email.

Installation Considerations

Minimum Hardware

The Sun StorEdge MultiPack storage enclosure runs at Fast or UltraSCSI (Fast20) speeds with a small computer system interface (SCSI) host connection. The UltraSCSI label on the front and on the removable door of the MultiPack indicates UltraSCSI capability.

Note – For UltraSCSI functionality, the host or host adapter to which you connect your Sun StorEdge MultiPack unit must be capable of UltraSCSI speeds. You can connect a Sun StorEdge MultiPack enclosure to a fast wide or narrow SCSI-capable host adapter, but in such a case, the Sun StorEdge MultiPack unit performs at the lower speed.

Only one Sun StorEdge MultiPack enclosure loaded with up to six disk drives can be connected on each bus for UltraSCSI operation.

The number of UltraSCSI host adapters you can install is limited only by the number of slots available on your computer. Each wide or UltraSCSI host adapter you add increases the number of SCSI devices you can connect to your computer by 15 addresses.

A computer with a narrow (50-pin connector) SCSI bus has only seven SCSI addresses available for internal or external devices. To use devices using SCSI addresses 8 through 15, you must have a computer equipped with a wide SCSI bus (68-pin connector) or a wide SCSI adapter card.

For Fast speeds, use a Sun supplied terminator for the OUT port of the Sun StorEdge MultiPack enclosure. For UltraSCSI speeds, do not use a terminator.

Placement

The Sun StorEdge MultiPack enclosure weighs up to 30 lbs (13.6 kg) when loaded with disk drives. Choose a location that is relatively permanent.

Keep cable lengths in mind. For UltraSCSI operation, the cable you connect to the UltraSCSI capable on-board host port of your computer must be no longer than .8 meters. You can connect a 2-meter cable to an UltraSCSI host bus adapter.

For narrow or fast wide operation, or when daisy chaining peripherals, the SCSI bus length is limited to 6 meters (20 feet) on each bus. See Appendix A for tables of SCSI bus lengths.

Place the Sun StorEdge MultiPack enclosure on its feet.

Because the drive replacement panel opens at the left side of the unit, place the Sun StorEdge MultiPack box (front facing you) at the left side of your computer, or where the panel can open freely.

Leave three or more inches of space in front of the air vents on both the Sun StorEdge MultiPack enclosure and your computer.

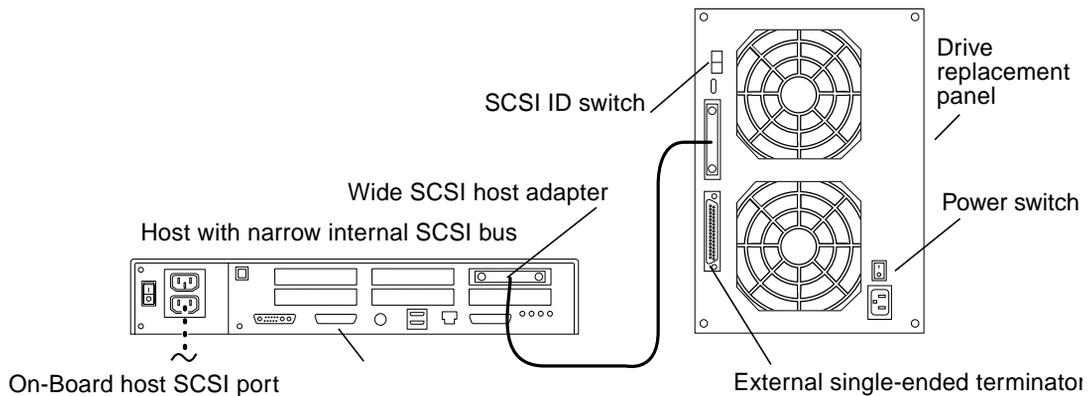


FIGURE 1-1 Sun StorEdge MultiPack unit with a SPARCstation 20—Rear View

Refer to the *Sun StorEdge MultiPack Installation* card for cabling information and installation procedures.

Daisy Chaining SCSI Devices

More than one six-drive Sun StorEdge MultiPack enclosure can be connected to a single wide SCSI bus, provided enough target addresses remain for use. If two six-disk enclosures are chained on one wide SCSI bus, one must be set for the 9-14 addresses and the other for the 1-6 addresses.



Caution – Chaining more than one Sun StorEdge MultiPack enclosure on a single bus causes both units to operate at less than UltraSCSI speeds.

Refer to the *Sun StorEdge MultiPack Installation* instructions for illustrations and more information about chaining.

UltraSCSI

One Sun StorEdge MultiPack six-drive unit may be attached to the host port of a host interface or to a host adapter. If you connect your Sun StorEdge MultiPack enclosure to the on-board host port of your computer, you can use only a .8 meter cable. You can use a 2-meter cable if you connect it to a host adapter. Do not use an external terminator.



Caution – Chaining other external SCSI devices at any point in the chain with the Sun StorEdge MultiPack enclosure causes the Sun StorEdge MultiPack to operate at less than UltraSCSI speed.

Fast Wide or Narrow SCSI Buses

You can daisy-chain the Sun StorEdge MultiPack unit with tape or CD-ROM devices if you do not exceed the number of host ID addresses available. Narrow SCSI hosts have only seven SCSI ID addresses available and must include internal disks.



Caution – Be sure you have no conflicting SCSI ID addresses. See the *Solaris Handbook for SMCC Peripherals* for more information about determining addresses.

If your computer has a narrow (50 pin) SCSI connector, you must set the SCSI ID switch on the back of the Sun StorEdge MultiPack unit to IDs 1-6. If the unit is loaded with six drives, you cannot chain any other devices on that bus.

If a narrow SCSI tape drive, such as a Desktop Storage Module, is chained on the same narrow SCSI bus with a Sun StorEdge MultiPack enclosure, the narrow device should be first.

Sun StorEdge MultiPack, SPARCstorage MultiPack, and SPARCstorage UniPack Configuration Guidelines

External Subsystem Daisy Chain Configurations	UltraSCSI Host or Host Bus Adapter	UltraSPARC™ Fast/Wide Onboard Hosts	Fast/Wide Host Bus Adapter (SWIS/S, SunSwift™)	Fast/Narrow Onboard Hosts	Fast/Narrow Host Bus Adapter
UltraSCSI MultiPack 2-6 drives	1 MultiPack only*	1 MultiPack + 1 UniPack	2 MultiPack + 1 UniPack	1 MultiPack + 1 UniPack**	1 MultiPack + 1 UniPack**
MultiPack 2-12 drives		1 MultiPack-12 only	1 MultiPack-12 only	None	None
MultiPack 2-6 drives		1 MultiPack-6 + 1 UniPack	2 MultiPack-6 + 1 UniPack	1 MultiPack-6 + 1 UniPack**	1 MultiPack-6 + 1 UniPack**
2.1 Gbyte 7200 rpm UniPack		3	4	4	4
4.2/1/05 Gbyte UniPack		4	5	4	5
Tape/CD UniPack		4***	4***	4***	4***

*This configuration alone permits UltraSCSI performance

** Maximum of seven devices are allowed on a SCSI bus (including the internal devices).

*** When mixing disk and tape devices on a SCSI chain, only two tape devices are allowed.

Installing a Terminator

Each Sun StorEdge MultiPack drive enclosure comes with an external single-ended terminator. For UltraSCSI operation, do not use the external terminator. The on-board autoterminator functions in UltraSCSI mode.

For Fast operation, install the terminator on the SCSI OUT port of a Sun StorEdge MultiPack unit after you have connected it to the host.

Sun StorEdge MultiPack Disks

All Sun StorEdge MultiPack disks are single connector disks; they eliminate interior cables and disk drive ID jumpers, and so reduce the SCSI bus length. In addition, disk replacement is simple. See Chapter 3, “Parts Replacement,” for instructions on how to replace a drive.

Refer to the *Solaris™ Handbook for SMCC Peripherals* appropriate to your particular system software for information on setting up the disk drives.

Refer to the *AnswerBook* on-line documentation that came with your operating system for more information.

Sun StorEdge MultiPack Addresses

When you connect a Sun StorEdge MultiPack unit to your system, you must choose either SCSI addresses 1–6 or SCSI addresses 9–14 for your drives. (FIGURE 1-2 and FIGURE 1-3).

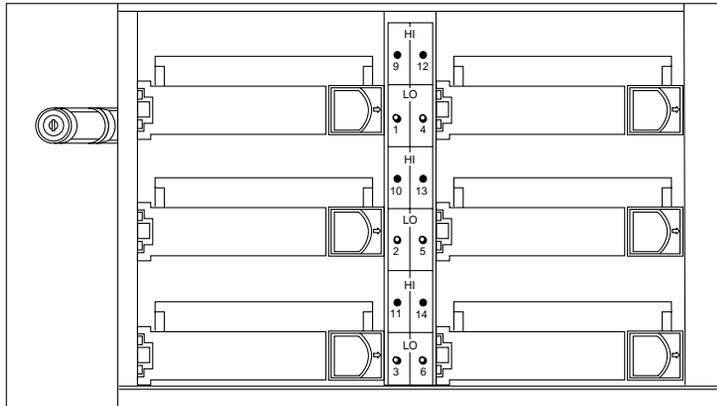


FIGURE 1-2 Sun StorEdge MultiPack Unit

The SCSI ID address switch is on the back of the enclosure (FIGURE 1-3).

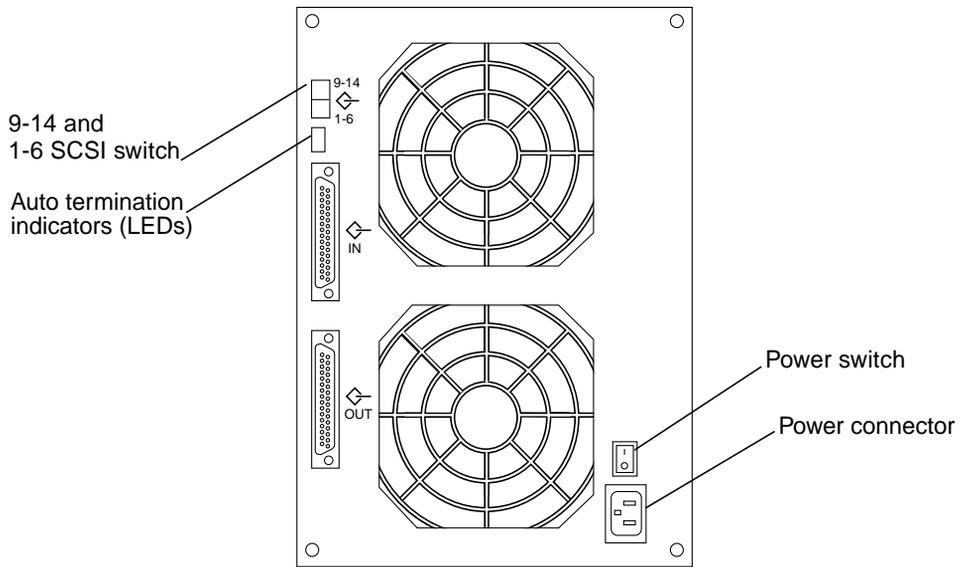


FIGURE 1-3 Sun StorEdge MultiPack Six-Drive Back Panel With SCSI Switch

Sun StorEdge MultiPack LEDs

Status LEDs

The Sun StorEdge MultiPack enclosure has a power-on LED, termination indicator LEDs, and two sets of disk drive LEDs.

Power-On LED

When lit, the green LED near the lower right front corner shows that power is on.

Front Disk Drive LEDs

When lit, the LEDs on the front of the enclosure indicate which drive bays have hard disk drives. The LEDs blink when a particular drive is active on a SCSI bus.

Note – With heavy activity, an LED can be off for ten seconds. While a drive is being formatted, the LED can be off for ten or more minutes. During the power-on process, the drives spin up sequentially. An LED may be on or off during the initialization process.

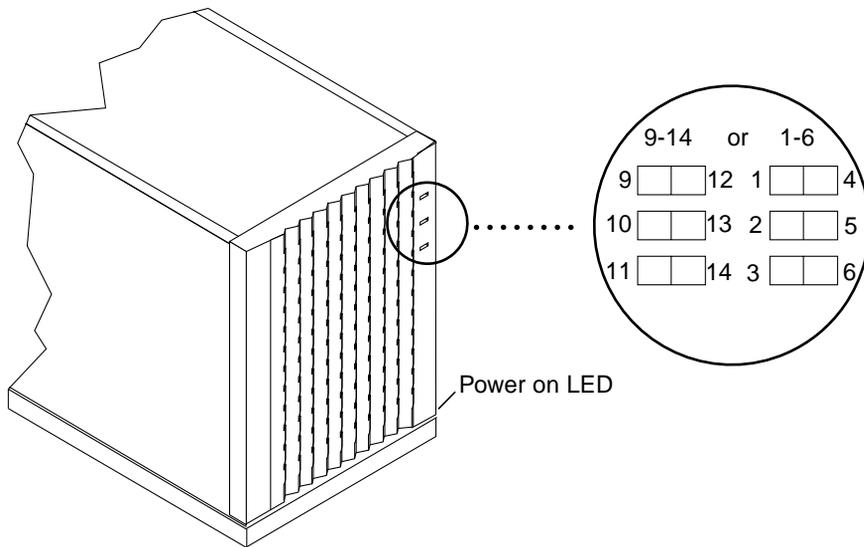


FIGURE 2-1 Sun StorEdge MultiPack LEDs

The LEDs on the front of the enclosure are mapped to correspond with the LEDs next to the drive bays.

If you have opted to use the 9-14 SCSI target addresses, both the front and internal LEDs 9-14 light.

If the enclosure has the minimum two drives, LEDs 9 and 10 light and blink when the drive is active (FIGURE 2-2).

If you have opted to use the 1-6 SCSI target addresses and the enclosure has the minimum two drives, LEDs 1 and 2 light.

The auto termination LED on the back of the unit goes out when an external terminator is installed.

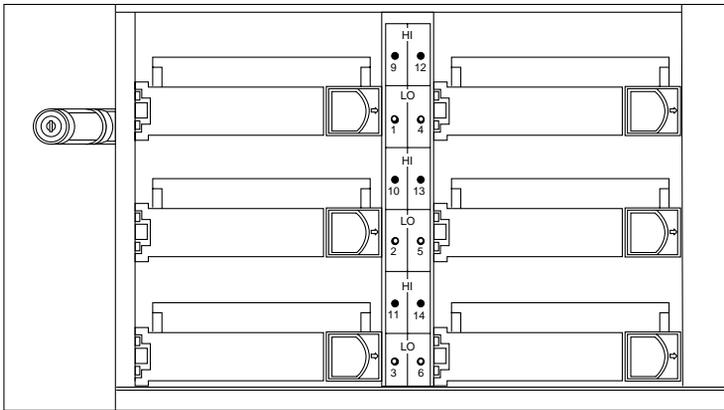


FIGURE 2-2 Interior LEDs and SCSI Target Addresses

Parts Replacement

Sun StorEdge MultiPack Disk Drives

The Sun StorEdge MultiPack disks must have brackets similar to the ones already in the unit. FIGURE 2-1 shows one type of bracket used on Sun StorEdge MultiPack drives. Instructions for a different type of bracket may differ.

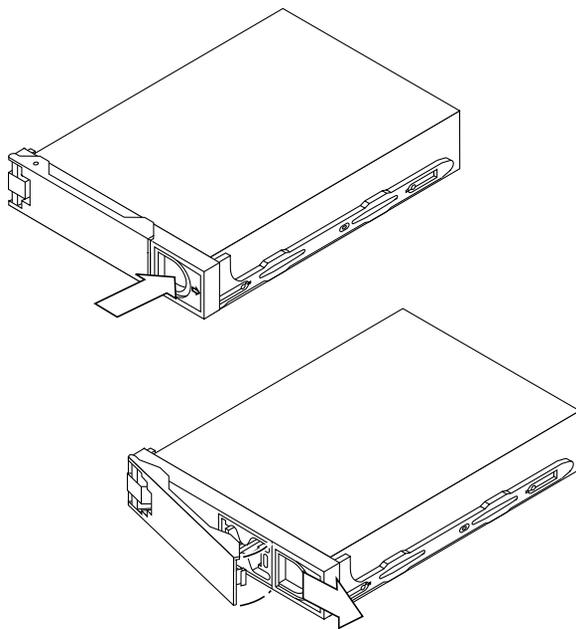


FIGURE 2-1 Disk Drive With Bracket

Disk Drive Replacement

The Sun StorEdge MultiPack disk drive unit is a customer serviceable disk enclosure with removable disk modules. When coupled with high-availability software solutions (such as Solstice™ DiskSuite™), the disk drives are hot-pluggable. The *Sun StorEdge MultiPack Storage Guide* contains instructions for hot-plug replacement of disks.

Drives should not be pulled out randomly. If there is activity on a drive, you must stop that activity before removing the drive. You can do this without bringing down the operating system or powering down the Sun StorEdge MultiPack unit. For more details on hot-plugging, refer to the *Sun StorEdge MultiPack Storage* manual that came with your unit.

A number of symptoms can indicate that a disk drive needs replacement. To determine which drive is bad, refer to the system administration documentation included in the *AnswerBook* online documentation that came with your system.

▼ To Remove the Old Drive

- 1. Follow the procedure in the *Sun StorEdge MultiPack Storage Guide* to perform hot-plug drive replacement for your application.**
- 2. Unlock and remove the left side cover (FIGURE 2-2).**

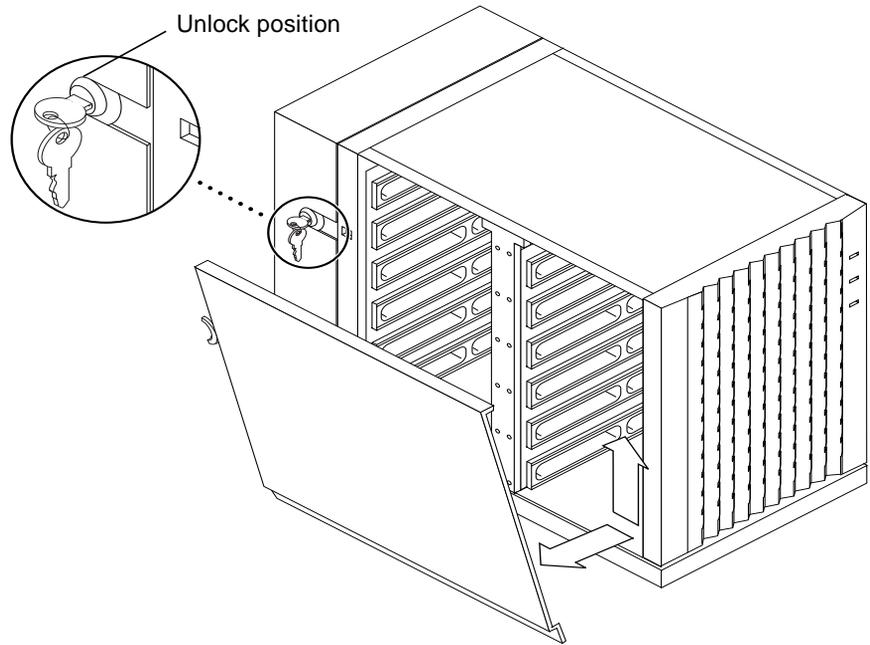


FIGURE 2-2 Removing the Left Side Cover

3. **Attach a wrist strap to your wrist and to the section of chassis exposed at the left of the drive bays (FIGURE 2-3).**

Note – Be sure the power cord to the Sun StorEdge MultiPack unit remains connected to the wall plug to ensure a ground.

4. **Unlatch the drive bracket handle (on the right) to release it (FIGURE 2-1).**
5. **Pull the bracket handle out and swing it open until it pushes against the chassis.**
6. **Continue pushing the handle against the chassis, applying mild pressure until the drive pops out from the connector.**
7. **Slide the drive out and set it on an antistatic mat.**

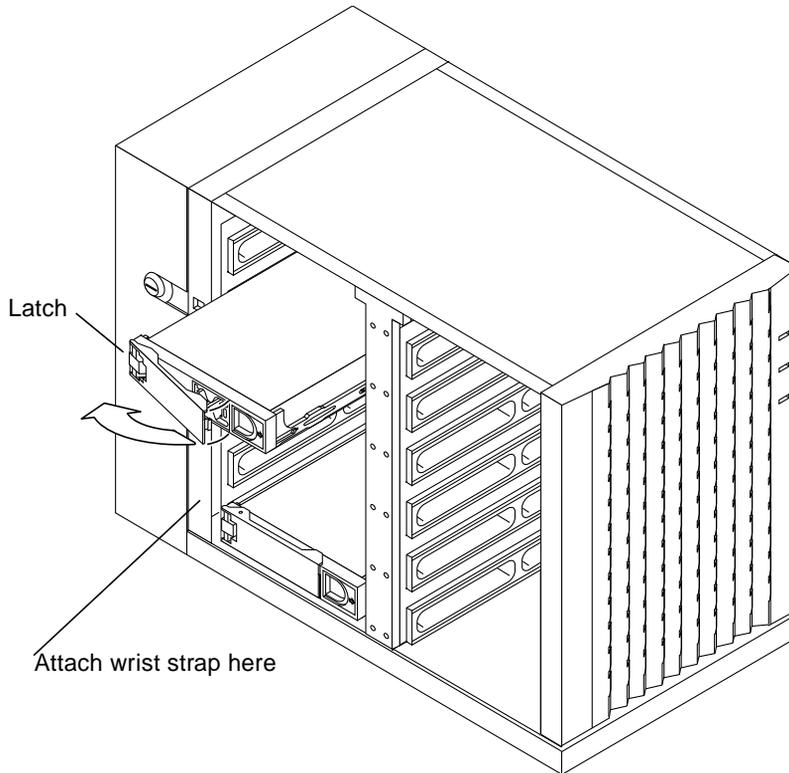


FIGURE 2-3 Removing the Disk Drive

▼ To Install the New Drive

When you install an additional drive in your Sun StorEdge MultiPack enclosure, the preferred loading order is the same as the SCSI address order.

When you replace a defective drive, replace it into the same bay the old one occupied.

1. **With the bracket extended, insert the disk drive into the drive bay, aligning the connector on the drive with the connector on the backplane (FIGURE 2-3).**
2. **Slowly and gently push the drive in until the metal drive handle contacts the enclosure metal rib.**

Note – Make sure you insert the drive in the correct drive bay to mate with the connector on the backplane.

3. Swing the drive bracket handle closed until it latches.
4. Remove the wrist strap.
5. Replace the left side cover (FIGURE 2-2).
Push on the right side of the door to ensure the door is completely latched.

Power Supply Units



Caution – You must shut down the operating system and turn the power off before you open the Sun StorEdge MultiPack unit to remove the power supply.

▼ To Remove the Old Power Supply

1. Refer to the *Solaris Handbook for SMCC Peripherals* that came with your computer to shut down the operating system.
The handbook is included in the *AnswerBook* online documentation.
2. Shut off the power to the Sun StorEdge MultiPack unit (FIGURE 1-1).
3. Disconnect the SCSI cable and the power cord from the Sun StorEdge MultiPack enclosure (FIGURE 1-1).

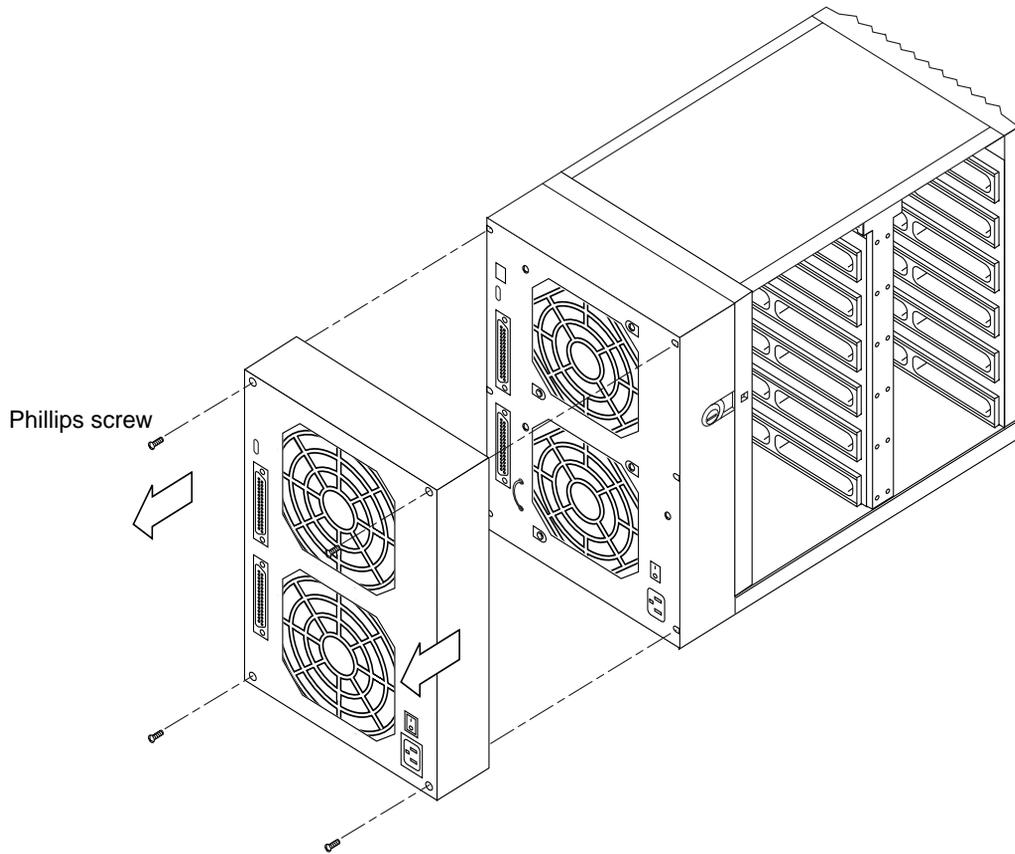


FIGURE 2-4 Removing the Back Cover

4. Remove the three screws and the lock block that hold the back cover (FIGURE 2-4).
5. Remove the two Phillips screws that attach the power supply to the unit (FIGURE 2-5).
6. Remove the four 3/16 inch jackscrews that secure the board to the power supply (FIGURE 2-5).

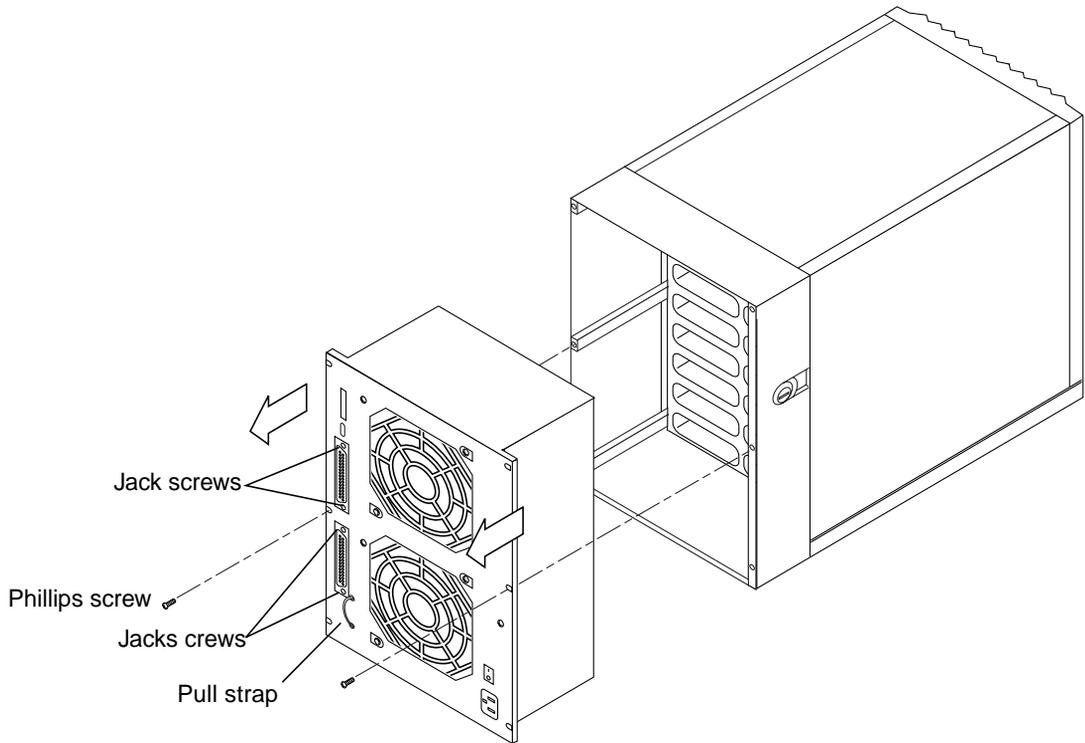


FIGURE 2-5 Removing the Power Supply

- 7. Carefully pull the power supply out from the unit using the pull strap and set it aside (FIGURE 2-6).**

The connector at the back of the power supply connects to the backplane (FIGURE 2-6). Because of this connection, the power supply will not slide out of the unit easily. Slowly work the power supply loose from the connector as you remove it from the enclosure.

▼ To Install the New Power Supply

- 1. Align the power supply at the back of the unit so that the connector plug on the power supply lines up with the connector on the backplane (FIGURE 2-6).**

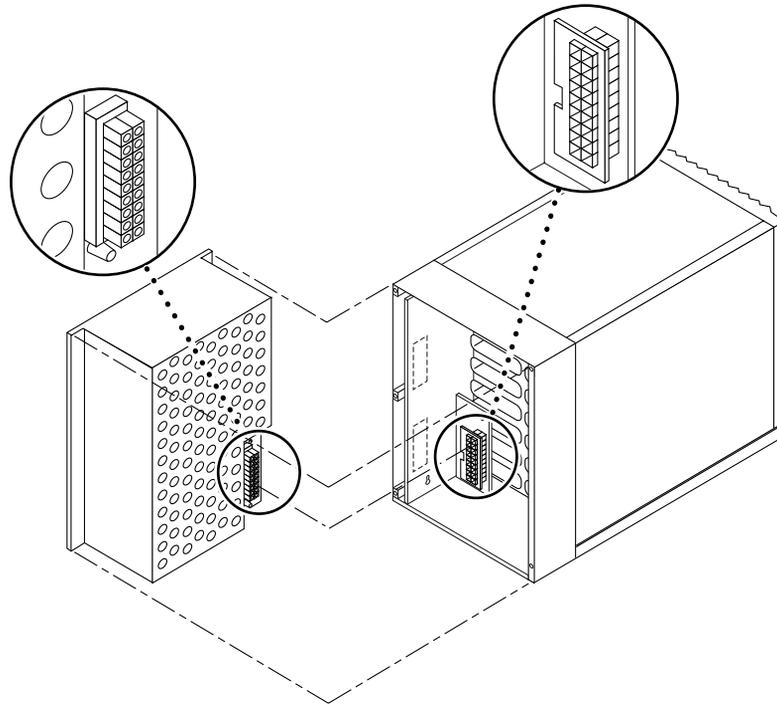


FIGURE 2-6 Lining Up the Power Supply Connector Pins

- 2. Insert the power supply into the unit until the edges of the power supply are flush against the edge of the chassis.**
- 3. Insert and tighten the four jack screws to secure the board to the power supply (FIGURE 2-5).**
- 4. Insert and tighten the two screws to secure the power supply in the enclosure (FIGURE 2-5).**
- 5. Push the pull strap back into the power supply casing.**

The pull strap should be pushed in enough so that it is not in the way when you replace the back cover.
- 6. Replace the back cover (FIGURE 2-2.).**
- 7. Insert and tighten the three corner screws and install the lock block to hold the back panel to the enclosure (FIGURE 2-4).**
- 8. Connect the SCSI cable and power cord to the enclosure (FIGURE 1-1).**
- 9. Turn on the power.**

Internal and External Cable Lengths

External SCSI Cable Length

To connect a Sun StorEdge MultiPack enclosure to the onboard host port of an UltraSCSI capable host, use only a .8 meter cable.

To connect a Sun StorEdge MultiPack enclosure to an UltraSCSI host adapter, you can use either a .8 meter cable or a 2 meter cable.

To directly connect a Sun StorEdge MultiPack enclosure to your desktop system, or to daisy chain it to another SCSI peripheral, use the UltraSCSI cable that ships with the unit.



Caution – Using cables other than those recommended by Sun may result in data loss.

TABLE A-1 SCSI External Cable Lengths

Cables	Meters	Inches
68-68 pin cable	0.8	31.4
50-68 pin cable	1.2	47.2
68-68 pin cable or 50-68 pin cable	2.0	78.6

Internal SCSI Cable Length

The Sun StorEdge MultiPack enclosure does not use internal cables. TABLE A-2 lists the internal cable lengths of supported systems.

TABLE A-2 Internal Cable Lengths of Supported Systems

Devices and Cables	SCSI Cable Length	
	Meters	Inches
Sun StorEdge UniPack (rem. media)	0.4	15.7
Sun StorEdge UniPack (disk)	0.3	11.8
Sun StorEdge MultiPack	0.9	35.4
Desktop Disk Pack (tape, disk, CD-ROM)	0.3	11.8
Ultra™ 1 Model 140, Model 170	0.9	35.4
Ultra™ 1 Creator and Ultra™ 1 Creator 3D	0.9	35.4
Ultra Enterprise 450	0.9	35.4
Ultra™ 2 Creator and Ultra™ 2 Creator 3D	0.9	35.4
Ultra 30	0.9	35.4
SPARCstation™ 5, 20	1.6	62.6
SPARCstation 4	1.2	48.0
SPARCstation 10, LX, SPARCclassic	0.9	35.4
SPARCstation™ Voyager™	0.4	15.7
SPARCserver™ 1000	1.8	70.2
SBus cards (SBE/S, FSBE/S, SBus SCSI host adapter)	0.1	3.9
Sun Swift PCI Adapter	0.1	3.9
PCI Ultra Single-Ended 2 Channel SCSI Adapter	0.2	7.8
SBus Expansion Subsystem	0.9	35.4