

IBM Expandable Storage Plus

2104 Models DL1 and TL1 Operator's Guide

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First Edition (September 1999)

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Contents

Communications Statements	v
Federal Communications Commission (FCC) Statement	v
Japanese Voluntary Control Council for Interference (VCCI) Statement	v
Korean Government Ministry of Communication (MOC) Statement	v
New Zealand Compliance Statement	vi
International Electrotechnical Commission (IEC) Statement	vi
Avis de conformité à la réglementation d'Industrie Canada	vi
Industry Canada Compliance Statement	vi
United Kingdom Telecommunications Requirements	vi
European Union (EU) Statement	vi
Radio Protection for Germany	vi
Taiwan Class A Compliance Statement	vii
 Safety Notices	 ix
Definitions of Safety Notices	ix
Acoustic Noise Declaration	ix
 About This Book	 xi
If You Need More Information	xi
Trademarks	xi
Numbering Convention	xii
 Chapter 1. Using the 2104	 1
2104 Model DL1	2
2104 Model TL1	5
Controls and Lights	7
Disk Drive Module Lights	8
Lights and Switches on the Fan-and-Power-Supply and Fan Assemblies	11
Lights and Switches on the SCSI Interface Cards	14
The Switch Card	16
Identifying 2104 Disk Enclosures	19
Identifying Disk Drive Modules	20
Security	21
Cover Locks for the 2104 Model TL1	21
Ordering Cover-Lock Keys	22
 Chapter 2. Adding Disk Drive Modules	 23
Before Adding a Disk Drive Module	24
To Add a Disk Drive Module	26
 Chapter 3. Moving a 2104 Model DL1 or TL1 Safely	 31
 Chapter 4. Dealing with Problems	 33
Starting to Deal with Problems	33
Exchanging Disk Drive Modules	34
Before Exchanging a Disk Drive Module	35
To Exchange a Disk Drive Module	36

Exchanging a Fan-and-Power-Supply Assembly	43
Before Exchanging a Fan-and-Power-Supply Assembly	43
To Exchange a Fan-and-Power-Supply Assembly	44
Exchanging a Fan Assembly	53
Before Exchanging a Fan Assembly	53
To Exchange a Fan Assembly	54
Exchanging an SCSI Interface Card Assembly	60
Before Exchanging the SCSI Interface Card Assembly.	61
To Exchange an SCSI Interface Card Assembly	62
Exchanging the Switch Card Assembly	72
Before Exchanging the Switch Card Assembly	72
To Exchange the Switch Card Assembly	73
Reporting Problems	79
 Appendix A. Operating with RISC Systems	 81
SCSI Adapters and Cables	81
SCSI Service Aids.	81
Identifying IBM Expandable Storage Plus Disk Enclosures and Disk Drive Modules	82
Problem Determination	82
Checking the SCSI Error Log	82
Configuring a 2104 to the using system	82
Unconfiguring a 2104 from the using system	82
Web Support Page	83
Related Publications	83
 Appendix B. Translated Safety Notices	 85
 Index	 107

Communications Statements

The following statements apply to this product. The statements for other products intended for use with this product appear in their accompanying manuals.

Federal Communications Commission (FCC) Statement

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 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.

Properly shielded and grounded cables and connectors must be used in order to meet FCC emission limits. Neither the provider nor the manufacturer is responsible for any radio or television interference caused by using other than recommended cables and connectors or by unauthorized changes or modifications to this equipment. Unauthorized changes or modifications could void the user's authority to operate the equipment.

This device complies with Part 15 of FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Japanese Voluntary Control Council for Interference (VCCI) Statement

This product is a Class A Information Technology Equipment and conforms to the standards set by the Voluntary Control Council for Interference by Information Technology Equipment (VCCI). In a domestic environment, this product might cause radio interference, in which event the user might be required to take adequate measures.

Korean Government Ministry of Communication (MOC) Statement

Please note that this device has been approved for business purposes with regard to electromagnetic interference. If you find that this device is not suitable for your use, you can exchange it for one that is approved for non-business purposes.

New Zealand Compliance Statement

This is a Class A product. In a domestic environment this product might cause radio interference, in which event the user might be required to take adequate measures

International Electrotechnical Commission (IEC) Statement

This product has been designed and built to comply with (IEC) Standard 60950.

Avis de conformité à la réglementation d'Industrie Canada

Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

Industry Canada Compliance Statement

This Class A digital apparatus complies with IECS-003.

United Kingdom Telecommunications Requirements

This apparatus is manufactured to the International Safety Standard EN60950 and as such is approved in the U.K. under approval number NS/G/1234/J/100003 for indirect connection to public telecommunications systems in the United Kingdom.

European Union (EU) Statement

This product is in conformity with the protection requirements of EU council directive 89/336/EEC on the approximation of the laws of the Member States relating to electromagnetic compatibility. Neither the provider nor the manufacturer can accept responsibility for any failure to satisfy the protection requirements resulting from a non-recommended modification of the product, including the fitting of option cards not supplied by the manufacturer.

This product is in conformity with the EU council directive 73/23/EEC on the approximation of the laws of the Member States relating to electrical equipment designed for use within certain voltage limits. This conformity is based on compliance with the following harmonized standard: EN60950.

Radio Protection for Germany

Zulassungsbescheinigung laut Gesetz über die elektromagnetische Verträglichkeit von Geräten (EMVG) vom 30. August 1995.

Dieses Gerät ist berechtigt in Übereinstimmung mit dem deutschen EMVG das EG-Konformitätszeichen zu führen.

Der Aussteller der Konformitätserklärung ist die IBM Deutschland.

Informationen in Hinsicht EMVG Paragraph 3 Abs. (2):

Das Gerät erfüllt die Schutzanforderungen nach EN 50082-1 und EN 55022 Klasse A.
--

EN55022 Klasse A Geräte bedürfen folgender Hinweise:

Nach dem EMVG: "Geräte dürfen an Orten, für die sie nicht ausreichend entstört sind, nur mit besonderer Genehmigung des Bundesministeriums für Post und Telekommunikation oder des Bundesamtes für Post und Telekommunikation betrieben werden. Die Genehmigung wird erteilt, wenn keine elektromagnetischen Störungen zu erwarten sind." (Auszug aus dem EMVG, Para.3, Abs.4). Dieses Genehmigungsverfahren ist nach Paragraph 9 EMVG in Verbindung mit der entsprechenden Kostenverordnung (Amtsblatt 14/93) kostenpflichtig.

Nach der EN 55022: "Dies ist eine Einrichtung der Klasse A. Diese Einrichtung kann im Wohnbereich Funkstörungen verursachen; in diesem Fall kann vom Betreiber verlangt werden, angemessene Massnahmen durchzuführen und dafür aufzukommen."

Anmerkung: Um die Einhaltung des EMVG sicherzustellen, sind die Geräte wie in den Handbüchern angegeben zu installieren und zu betreiben.

Taiwan Class A Compliance Statement

警告使用者:

這是甲類的資訊產品，在居住的環境中使用時，可能會造成射頻干擾，在這種情況下，使用者會被要求採取某些適當的對策。

Safety Notices

For a translation of the *danger* and *caution* notices contained in this book, see “Appendix B. Translated Safety Notices” on page 85.

Definitions of Safety Notices

A *danger* notice indicates the presence of a hazard that has the potential of causing death or serious injury.

A *danger* notice appears on page 48.

A *caution* notice indicates the presence of a hazard that has the potential of causing moderate or minor personal injury.

Caution notices appear on pages 66, 45, and 47.

An *attention* notice indicates an action that could cause damage to a program, device, system, or data.

Acoustic Noise Declaration

The equivalent continuous A-weighted sound pressure level at the bystander’s position measured for a 2104 Model DL1 does not exceed 68 dB(A). This level has been measured under the following conditions:

- The 2104 Model DL1 had 10 disk drive modules installed.
- The 2104 Model DL1 was installed in a 7202 Rack with the bottom of the 2104 Model DL1 system at EIA position 17.
- The remainder of the rack was filled with units to which power was not connected.

The equivalent continuous A-weighted sound pressure level at the bystander’s position measured for a 2104 Model TL1 does not exceed 68 dB(A). This level has been measured for a 2104 Model TL1 with 10 disk drive modules installed.

These levels were measured using a procedure in accordance with ISO standard DIS7779, *Measurement of Airborne Noise Emitted by Computer and Business Equipment*. The equipment was installed and operated as described in Appendix C.8 of that standard.

About This Book

This book is for people who operate a system that has one or more 2104 Model DL1 or TL1 disk enclosures connected to it.

Throughout this book, *service representative* means a person who has been authorized by your organization to maintain your 2104 disk enclosure.

Chapter 1 describes the 2104 Model TL1 and DL1 disk enclosures, their controls, and how to use them.

Chapter 2 describes how to add disk drive modules to a 2104 disk enclosure that is already installed as part of your system.

Chapter 3 gives advice on moving a 2104 disk enclosure.

Chapter 4 describes what to do if you have a problem with your 2104 disk enclosure. It tells you how to replace particular failed components, such as disk drive modules, and what to report if you need to call your service representative for assistance.

Appendix A gives additional information about using 2104 disk enclosures that are attached to RISC systems.

Appendix B gives a translation of all danger and caution notices contained in this book.

An index is provided at the back of this book.

If You Need More Information

Other books that you might need are:

- *IBM Expandable Storage Plus : 2104 Model DL1 Installation Guide*, GA33-3292
- *IBM Expandable Storage Plus : 2104 Model TL1 Installation Guide*, GA33-3293
- *The Operator Guide* for your system
- *The User's Guide* for your using-system SCSI attachment (for example, your SCSI adapter)
- *The Site and Hardware Planning Information* for your system
- *The Problem Solving Guide and Reference* for your system.

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- AIX
- IBM

- RS/6000

Numbering Convention

In this book:

KB means 1 000 bytes.

MB means 1 000 000 bytes.

GB means 1 000 000 000 bytes.

Chapter 1. Using the 2104

Important: The installation of this product is a customer responsibility.

Attention: Before continuing with any of the actions described in this book, PLEASE READ THE SAFETY NOTICES NOW.

These are in “Appendix B. Translated Safety Notices” on page 85.

Attention:

When you handle field-replaceable units (FRUs) and other computer parts, take these precautions to avoid static damage:

- Limit your movement. Movement can cause static electricity to build up around you.
- Always touch computer parts carefully. Hold adapters and memory-modules by their edges. Never touch any exposed circuits. Prevent other people from touching computer parts.
- Before you install a new part, touch the static-protective package that contains the part against an unpainted metal part of the 2104 or using system for at least two seconds. This action reduces static electricity in the package and in your body.
- Remove the part from its package and, if possible, install it directly into the 2104 without putting the part down. If you need to put the part down, first place the static-protective package that contained the part onto a smooth, level surface, then place the part onto the package. Do not place the part onto any metal surface.

This section describes the IBM Expandable Storage Plus: 2104 Model TL1 and DL1 disk enclosures, their controls, and how to use them. These disk enclosures can be attached to any computer that provides support for any of the Small Computer System Interface (SCSI) adapters listed in “SCSI Adapters and Cables” on page 81.

The 2104 Model TL1 and DL1 disk enclosures look like this:

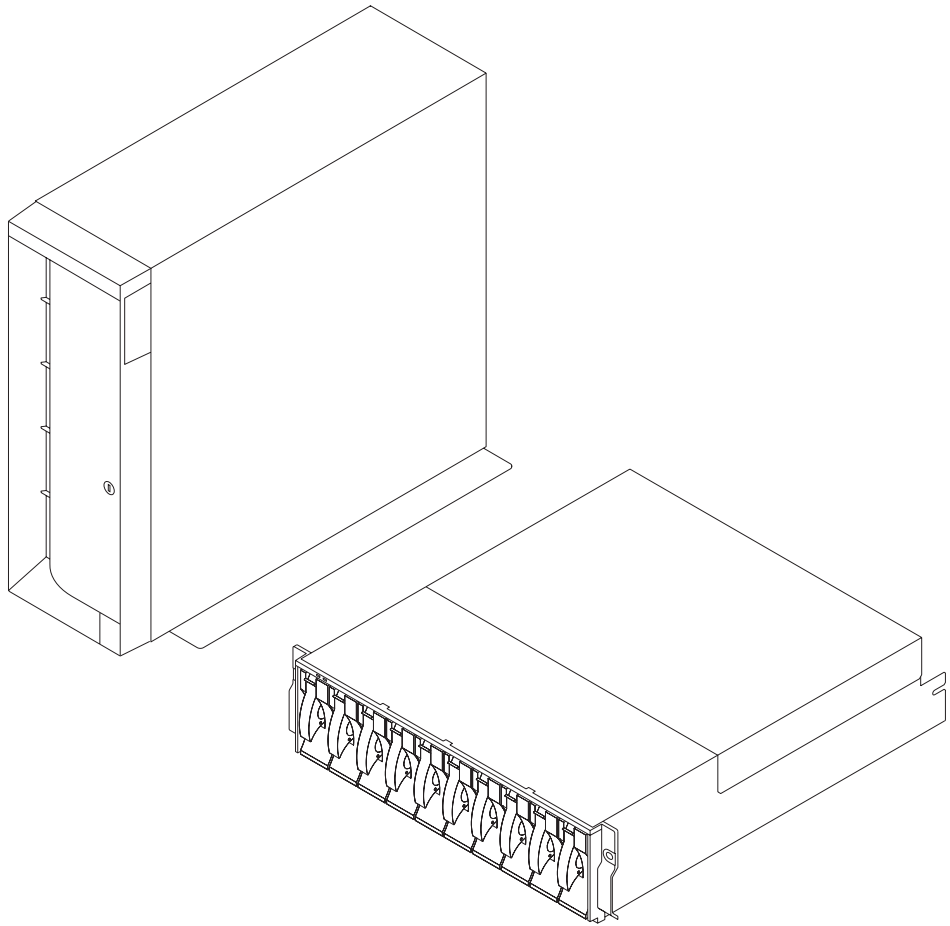


Figure 1. 2104 Model TL1 (left) and DL1 (right)

2104 Model DL1

The 2104 Model DL1 is a rack-mounted SCSI disk enclosure that can be installed into a standard Electrical Industries Association (EIA) 19-inch rack.

A fully configured 2104 Model DL1 looks like this:

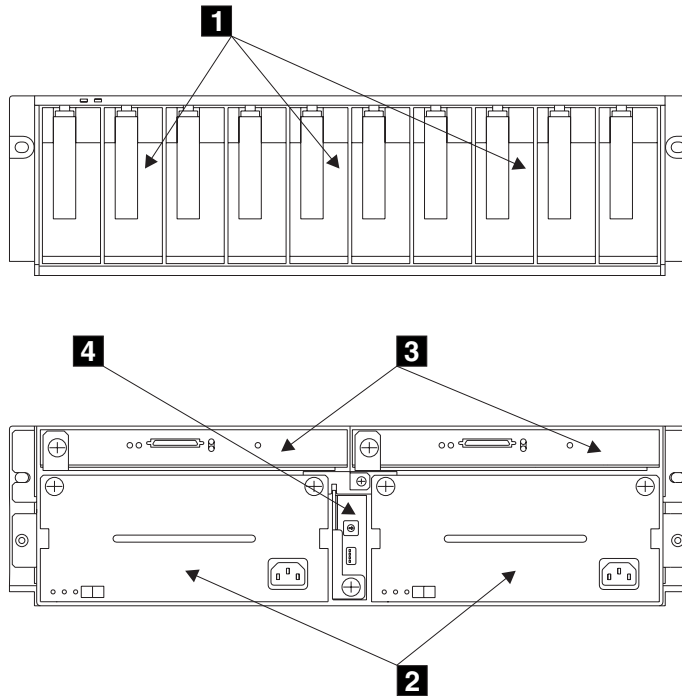


Figure 2. A Fully Configured 2104 Model DL1 viewed from the front (top) and back (bottom)

At the front of a 2104 Model DL1 are ten device slots **1**. Each slot must contain either an SCSI disk drive module, or a dummy module. Each disk drive module connects to a backplane which is mounted vertically about halfway between the front and back of the 2104 Model DL1. Note that at least one SCSI disk drive module must be present in each 2104 Model DL1.

On the back of the backplane are connectors for two fan-and-power-supply assemblies **2**, two SCSI interface cards **3**, and a switch card **4**.

The 2104 can have either two fan-and-power-supply assemblies or one fan-and-power-supply assembly and one fan assembly. Either option provides all the necessary power and cooling for the 2104 disk enclosure.

It is better, however, to have two fan-and-power-supply assemblies, rather than one fan-and-power-supply assembly and one fan assembly, because then the amount of power required from each power supply is reduced, and, if one power supply fails, power for the 2104 disk enclosure continues to be supplied by the other power supply.

The SCSI interface cards are used to connect host machines to the 2104 Model DL1. These cards contain logic that provides information about what is happening in the 2104 Model DL1, and controls the operation of the subsystem.

The switch card contains switches that control how the 2104 Model DL1 is supplied with power, and what enclosure services are enabled. It also contains a rotary switch that sets the ID of the 2104 disk enclosure.

Options for configuring a 2104 Model DL1 are described in the *IBM Expandable Storage Plus: 2104 Model DL1 Installation Guide*.

2104 Model TL1

The 2104 Model TL1 is a deskside SCSI disk enclosure. A fully configured 2104 Model TL1 looks like this:

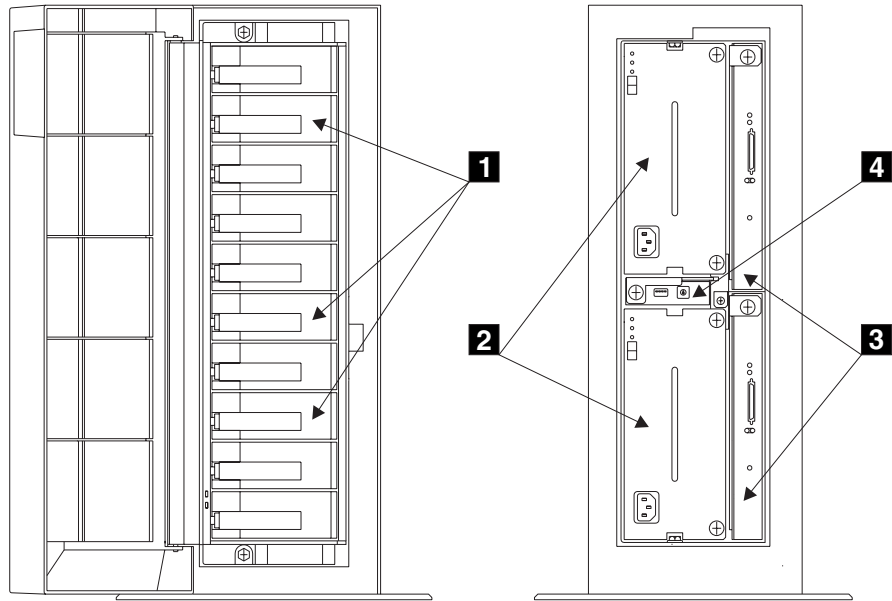


Figure 3. A Fully Configured 2104 Model TL1 viewed from the front (left) and back (right)

At the front of a 2104 Model TL1 are ten device slots **1**. Each slot must contain either an SCSI disk drive module, or a dummy module. Each disk drive module connects to a backplane which is mounted vertically about halfway between the front and back of the 2104 Model TL1. Note that at least one SCSI disk drive module must be present in each 2104 Model TL1.

The 2104 Model TL1 has a front cover that hinges to the left to give access to the disk drive modules. A lock is provided on the cover to prevent unauthorized access to the disk drive modules.

On the back of the backplane are connectors for two fan-and-power-supply assemblies **2**, two SCSI interface cards **3**, and a switch card **4**.

The 2104 can have either two fan-and-power-supply assemblies or one fan-and-power-supply assembly and one fan assembly. Either option provides all the necessary power and cooling for the 2104 disk enclosure.

It is better, however, to have two fan-and-power-supply assemblies, rather than one fan-and-power-supply assembly and one fan assembly, because then the amount of power required from each power supply is reduced, and, if one power supply fails, power for the 2104 disk enclosure continues to be supplied by the other power supply.

The SCSI interface cards are used to connect host machines to the 2104 Model TL1. These cards also contain logic that provides information about what is happening in the 2104 Model TL1, and controls the operation of the disk enclosure.

The switch card contains switches that control how the 2104 Model TL1 is supplied with power, and what enclosure services are enabled. It also contains a rotary switch that sets the ID of the 2104 disk enclosure.

Options for configuring a 2104 Model TL1 are described in the *IBM Expandable Storage Plus: 2104 Model TL1 Installation Guide*.

Controls and Lights

This section describes the switches and lights on a 2104 Model DL1 or TL1.

The 2104 enclosure has no main power switch. However, each fan-and-power-supply assembly has an On/Standby switch.

During normal operations, you do not need to check the lights on 2104 disk enclosures.

You can see the 2104 disk enclosure lights at the front of the 2104 disk enclosure.

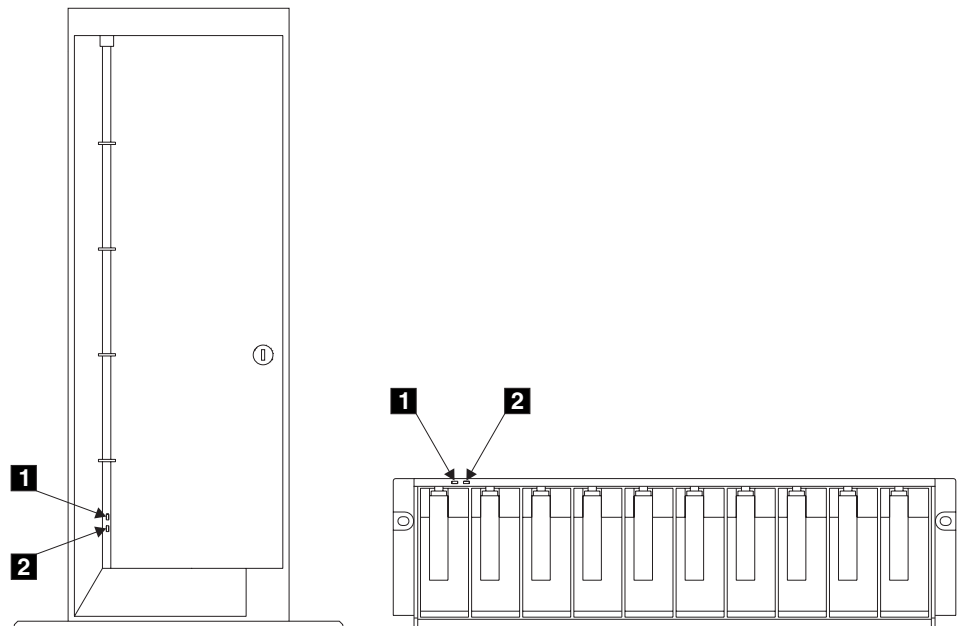


Figure 4. Disk Enclosure Lights on a 2104 Model TL1(left) and a 2104 Model DL1(right)

Power light 1

The Power light, which is green, comes on continuously when power is being supplied to the disk enclosure by one or both of the fan-and-power-supply assemblies within the 2104.

Check light 2

The Check light, which is amber, comes on if a failure occurs in the 2104 disk enclosure and an active SCSI connection to the enclosure exists.

Note that the 2104 disk enclosure might be able to continue operating correctly even when the failure of a single part has been detected.

Disk Drive Module Lights

The lights on disk drive modules that are installed in a 2104 Model DL1 are visible at the front of the 2104 Model DL1.

To see the lights on disk drive modules installed in a 2104 Model TL1, open the front cover:

1. If necessary, unlock the cover by using the key provided.
2. Grip the right-hand side of the front cover, and pivot the cover to the left.

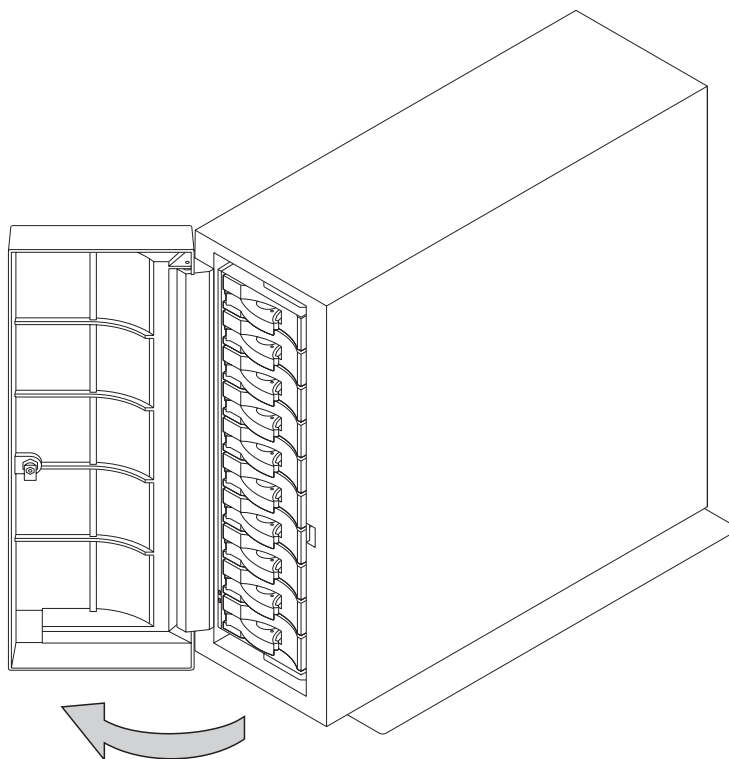


Figure 5. 2104 Model TL1 with Cover Opened

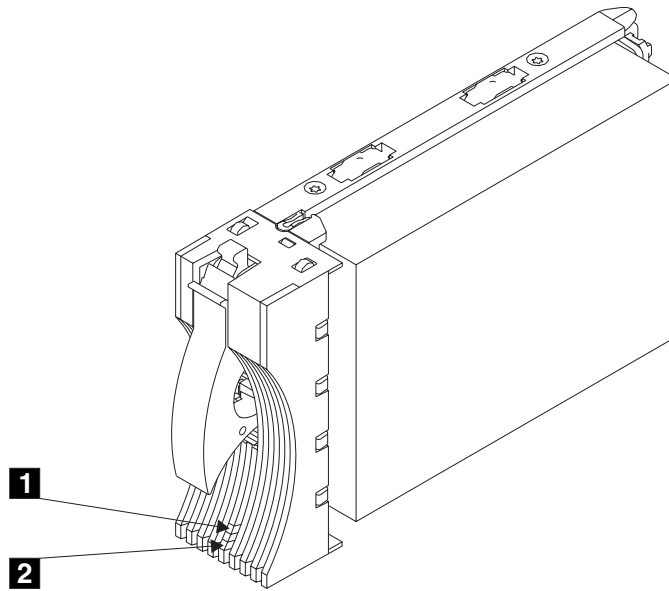


Figure 6. Disk Drive Module Lights

Each disk drive module has two lights:

1 Activity light

The Activity light, which is green, shows the following conditions:

Off The SCSI link to the disk drive is not active.

Flashing

This disk drive module is active with a command in progress.

2 Check light

The Check light, which is amber, shows the following conditions:

Off Normal operating condition

Permanently On

The service aid has set **Remove** for this disk drive module (See “Appendix A. Operating with RISC Systems” on page 81),

OR the drive has reported a Predictive Failure Analysis (PFA) error (this error indicates that the disk drive has had an excessive number of internally recovered errors),

OR the disk drive is faulty (this is a Conner/Intel SCSI-Accessed Fault-Tolerant Enclosures (SAF-TE) function).

Flashing (2 seconds on, 2 seconds off)

The Check light has been set by an SCSI service aid to identify the position of this disk drive module.

Flashing (0.5 seconds on, 0.5 seconds off)

The disk drive is part of an array which is in the process of being rebuilt (this is a SAF-TE function).

Note: SAF-TE services are not used with RS/6000.

Lights and Switches on the Fan-and-Power-Supply and Fan Assemblies

Up to two fan-and-power-supply assemblies **1** are installed in the back of a 2104 Model DL1 or TL1.

The power switch and lights are visible at the back of the 2104.

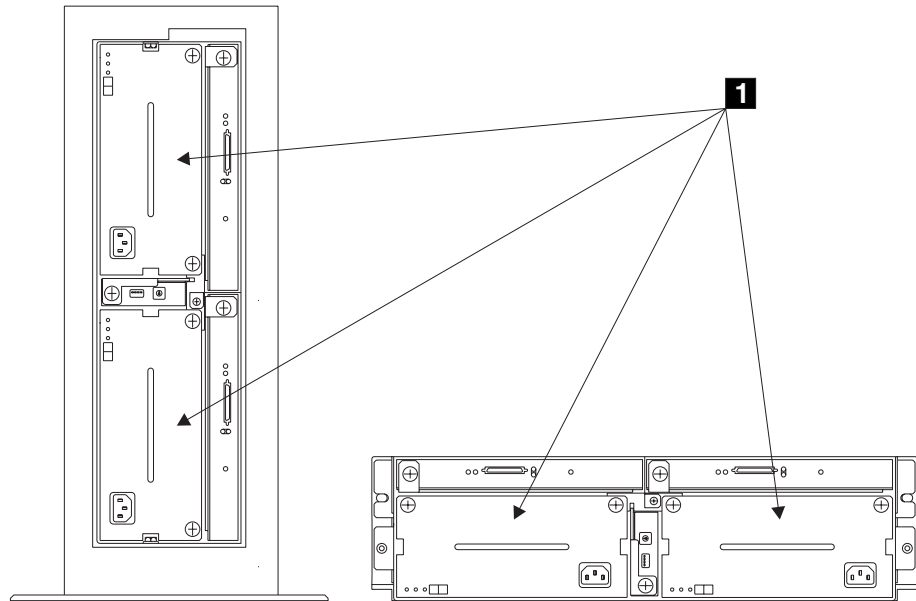


Figure 7. 2104 Model TL1 (left) and 2104 Model DL1(right) showing the Fan-and-Power-Supply Assemblies

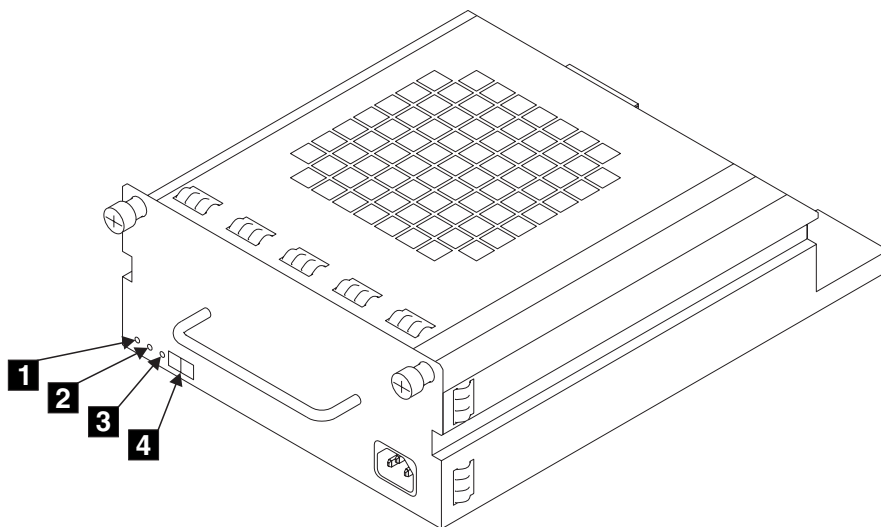


Figure 8. Fan-and-Power-Supply Assembly Lights and Switch

A fan-and-power-supply assembly has the following lights and switch:

AC PWR light 1

The AC PWR light, which is green, comes on when the mainline power supply is connected to the fan-and-power-supply assembly.

DC PWR light 2

The DC PWR light, which is green, comes on when this fan-and-power-supply assembly is supplying power to the 2104.

CHK light 3

The CHK light, which is amber, indicates a failure in the fan-and-power-supply assembly.

Note: This light is **always** off when the DC On/Standby switch is set to standby.

DC On/Standby switch 4

The DC On/Standby switch connects dc electrical power from the fan-and-power-supply assembly to the disk drives and other components in the 2104. This switch must be set to on for the fan-and-power-supply unit to start.

If the DC On/Standby switch on either of the two fan-and-power-supply assemblies is set to on, power in a 2104 Model DL1 or TL1 unit is switched on automatically if all of the following conditions exist:

- Input power to the 2104 is present.
- The fan-and-power-supply assembly is fully home in its slot.
- - **Either** the power control switch on the switch card is set to on,

- **Or** terminator power is active in an external SCSI connection.

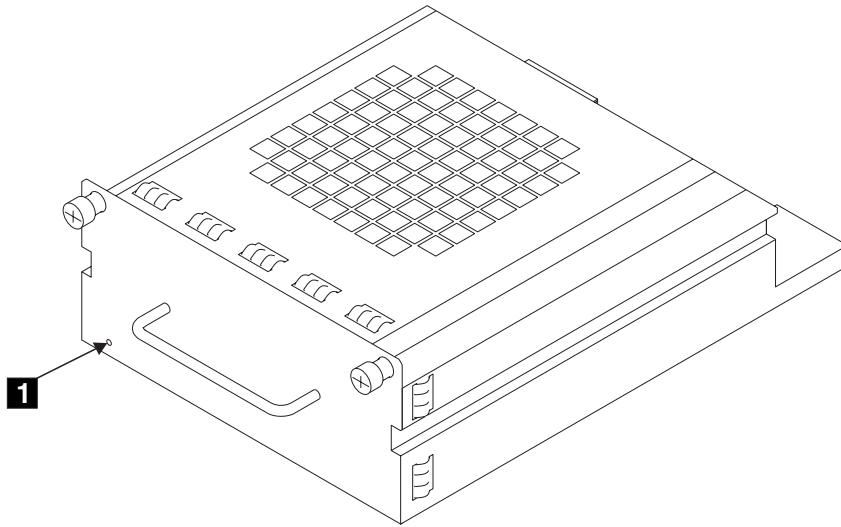


Figure 9. Fan Assembly

A fan assembly has one light:

CHK light 1

The CHK light, which is amber, is on when the fan fails.

Lights and Switches on the SCSI Interface Cards

Up to two SCSI interface **1** cards can be installed in the back of a 2104.

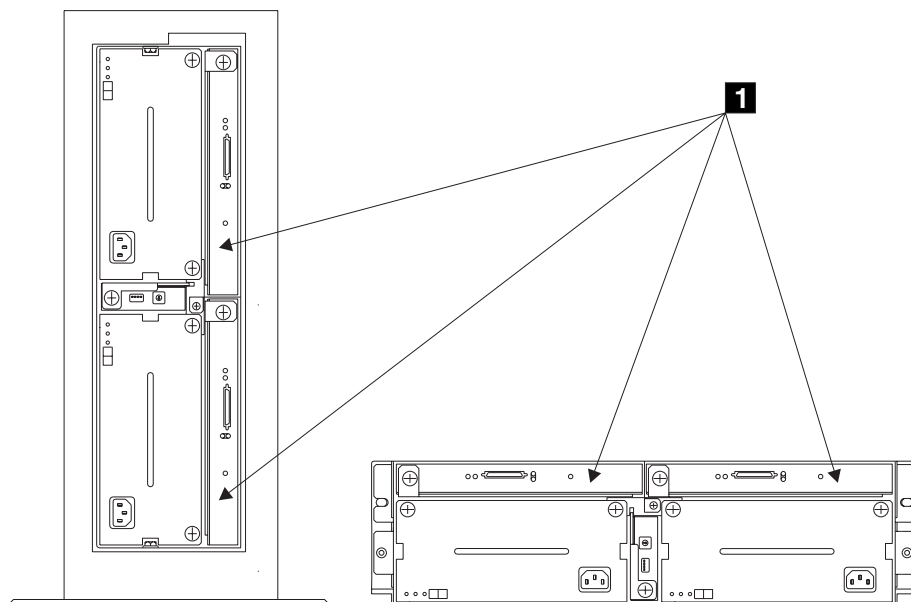


Figure 10. 2104 Model TL1 (left) and 2104 Model DL1(right) Showing the SCSI Interface Cards

An SCSI interface card has the following lights:

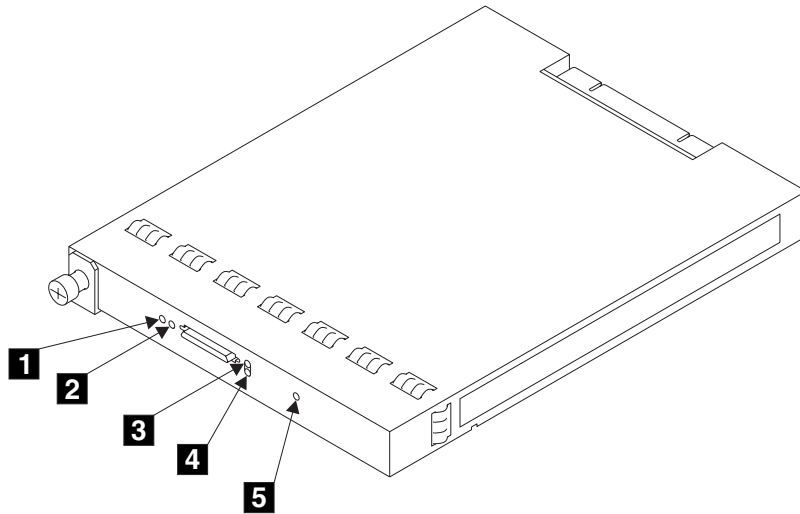


Figure 11. SCSI Interface Card Assembly Lights

TERM POWER light 1

The TERM POWER light, which is green, is lit when an active SCSI connection is present.

LVD/SE light 2

The LVD/SE light indicates the type of host SCSI cable. It is green, and when lit indicates an active Low Voltage Differential (LVD) SCSI connection. If this light is off and the TERM_PWR light is on, there is an active single-ended (SE) SCSI connection.

ACTIVE light 3

The ACTIVE light, which is amber, is lit when the using system is communicating with the SCSI Enclosure Services (SES) processor or the disk drives.

RESET light 4

The RESET light, which is amber, comes on when a Power On Reset (POR) or an SCSI Bus Reset occurs. This light is switched off by the SES processor.

FAULT light 5

The FAULT light, which is amber, comes on if the SCSI interface card fails.

The Switch Card

A Switch Card **1** is installed in the back of a 2104 disk enclosure.

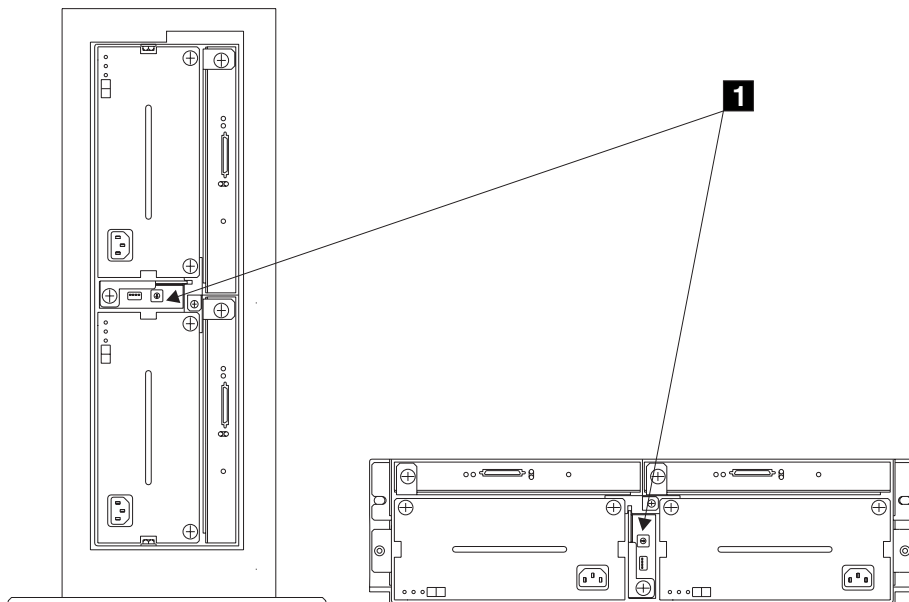


Figure 12. 2104 Model TL1 (left) and 2104 Model DL1(right) Showing Switch Card

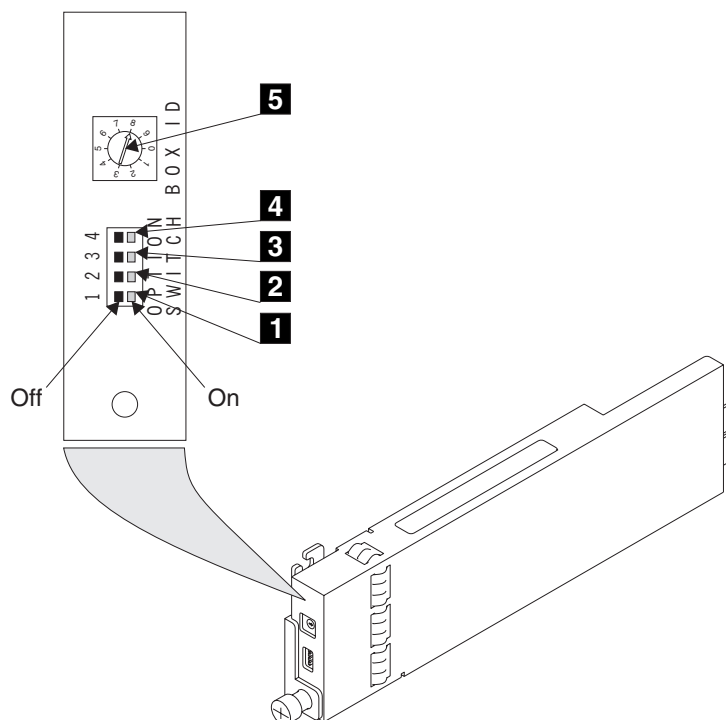


Figure 13. Switch Card

The switch card contains the following switches:

Box ID switch 5

This 10-position rotary switch indicates the ID of the IBM Expandable Storage Plus disk enclosure. The operator selects the required setting which can be used by the SES Inquiry command and the SAF-TE buffer 1 command.

Note: SAF-TE services are not provided on an RS/6000.

Below the Box ID switch are four ON/OFF switches indicating:

Switch 1 — Power Control Switch 1

If this switch is off, the 2104 automatically switches off or on when the using system is switched on or off. If set on, the 2104 must be powered up or down independently of the using system. If the switch card assembly is not present when the 2104 is first switched on, or when the 2104 receives a 'Reset' signal, the default logical setting is on, which means that the 2104 is not automatically switched on when the using system is switched on.

Switch 2 — Not used 2

This switch is not used.

Switch 3 — Enable Enclosure Services Switch **3**

If this switch is on, the enclosure services can operate. If the switch is off, no response occurs to any request to use the enclosure services. If the switch card assembly is not present when the 2104 is first switched on, or when the 2104 receives a 'Reset' signal, the default logical setting is on, indicating that enclosure services can operate.

Switch 4 — Select Enclosure Services Switch **4**

This switch selects which enclosure services can be used — SAF-TE or SES. If set off, it selects SAF-TE. If set on, it selects SES. If the switch card assembly is not present when the 2104 is first switched on, or when the 2104 receives a 'Reset' signal, the default logical setting is on, indicating SES.

Note: The switch card has other switches that are accessible only when the switch card is removed from the 2104 disk enclosure.

One of these switches is used to indicate whether the disk enclosure is a 2104 Model DL1 or a 2104 Model TL1, and another allows the order of the SCSI addresses of the disk drive modules to be reversed.

More information about these switches is given in the *IBM Expandable Storage Plus: 2104 Service Guide, GY33-0194*

Identifying 2104 Disk Enclosures

The Box ID switch on the switch card is a 10-position rotary switch that indicates the ID of the 2104 disk enclosure. Its setting is used by the SES Inquiry command or the SAF-TE buffer 1 command.

Labels are supplied with the 2104 to enable the operator to identify each 2104 disk enclosure. It is recommended that the label that represents the ID set by the Box ID switch is attached to the front of the 2104 disk enclosure.

Identifying Disk Drive Modules

You can identify a disk drive module by the serial number that appears on a label **1** on the front of the module:

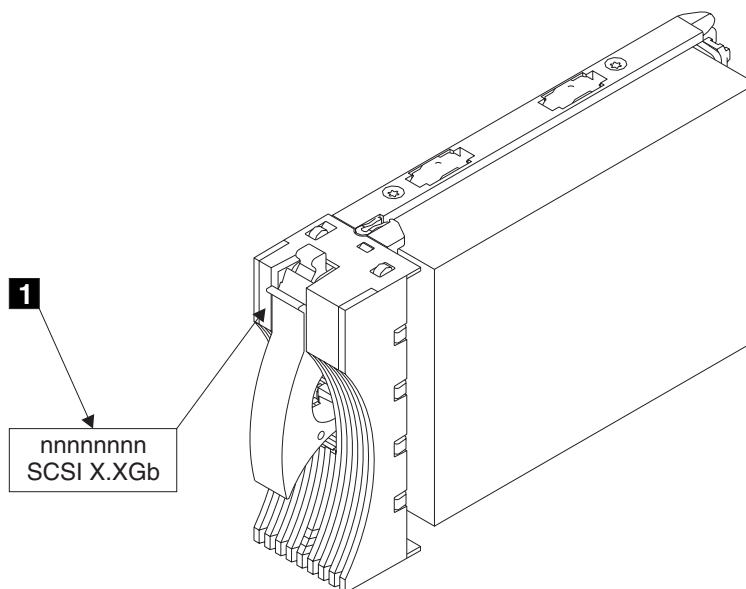


Figure 14. Disk Drive Module Label

This label also shows the size of the disk drive.

Each disk drive module also has an SCSI address that is related to its position in the 2104 disk enclosure.

The addresses used are 0, 1, 2, 3, 4, 8, 9, 10, 11 and 12. These addresses are assigned, in sequence, from left to right in the 2104 Model DL1 and from bottom to top in the 2104 Model TL1.

Security

To protect your disk drives from unauthorized access, a lock **1** is provided on the cover of a 2104 Model TL1. The 2104 Model DL1 has no cover or lock.

Cover Locks for the 2104 Model TL1

On the 2104 Model TL1, a lock **1** on the front cover provides physical security for the disk drives. You do not need to remove this cover during normal operations. If you lock the cover, it cannot be opened for servicing without the use of the key. You do not need to lock the cover for it to stay closed.

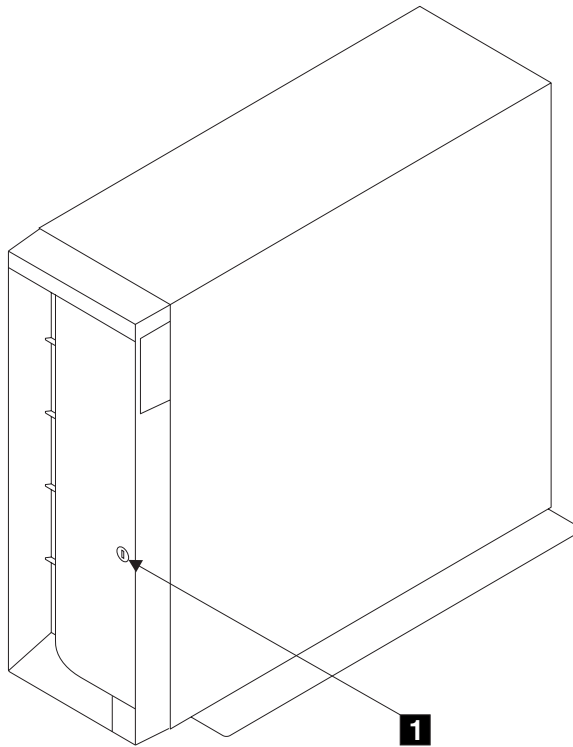


Figure 15. 2104 Model TL1 Lock

Ordering Cover-Lock Keys

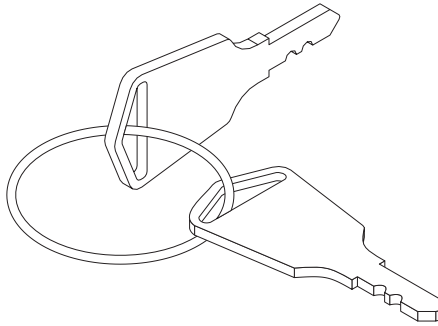


Figure 16. Cover-lock Keys

For protection against unauthorized key duplication, the cover lock is a high-security lock. Keys (see Figure 16) for these locks are a factory-restricted series and duplicate keys are *not* available through normal commercial channels. The serial number of the lock is stamped on each key. Make a note of this number. The additional key supplied, and your note of its number, should be stored in separate secure areas.

If you lose the key, or it becomes faulty, a replacement key can be purchased from the Illinois Lock Company.

Their address is:

Illinois Lock Company,
301, W. Hintz Road,
Wheeling, Illinois 60090.

Phone: (800) 299-5880 (inside USA)
001-847-537-1800 (from outside USA)

FAX: 001-847-537-1881

e-mail: illock@aol.com

website: www.illinoislock.com

Chapter 2. Adding Disk Drive Modules

This chapter describes how to add disk drive modules to a 2104 disk enclosure that is already installed as part of your system.

You can do this only if:

1. You are authorized by your organization.
2. You have the correct disk drive module. Refer to Figure 17. This disk drive module has, at the front, a handle **1** that can be pulled upward to open. The disk drive module should also be the correct size. The size of a disk drive module is shown on a label **2** at the front of the disk drive module. The label is shown in more detail in Figure 14 on page 20.

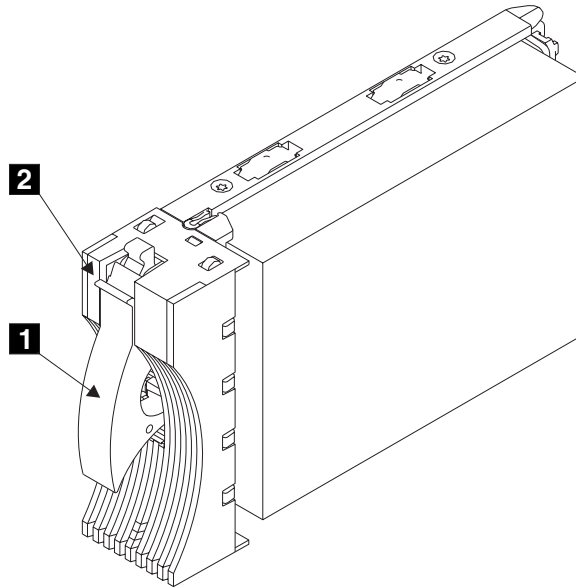


Figure 17. Disk Drive Module Handle and Label

Attention: Disk drive modules are fragile. Handle them with care. Keep them well away from strong magnetic fields.

You do not need to remove power from the 2104 disk enclosure when adding a disk drive module.

After you have added a disk drive module to a 2104 disk enclosure, you must add it into your system software configuration by using the system programs. Refer to “Appendix A. Operating with RISC Systems” on page 81.

Before Adding a Disk Drive Module

1. Identify the slot for the new disk drive module by using the configuration planning information for your system. A dummy disk drive module should be in the slot. Refer to Figure 18.

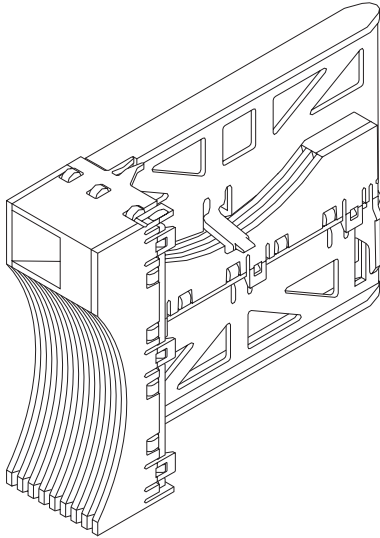


Figure 18. Dummy Disk Drive Module

Use the SCSI Device Identification and Removal service aid to set the disk drive slot to **Insert**. If you then remove the dummy disk drive module from the identified slot, an amber light on the backplane should be visible. This verifies that you have selected the correct slot in which to add the new disk drive module. This light goes off when a disk drive module is added. If it does not, it is visible as the amber Check light on the disk drive module you have added.

2. If you are adding a disk drive module to a 2104 Model TL1, open the front cover of the unit:
 - a. If necessary, unlock the cover using the key provided.
 - b. Grip the right-hand side of the cover and pivot the cover to the left.

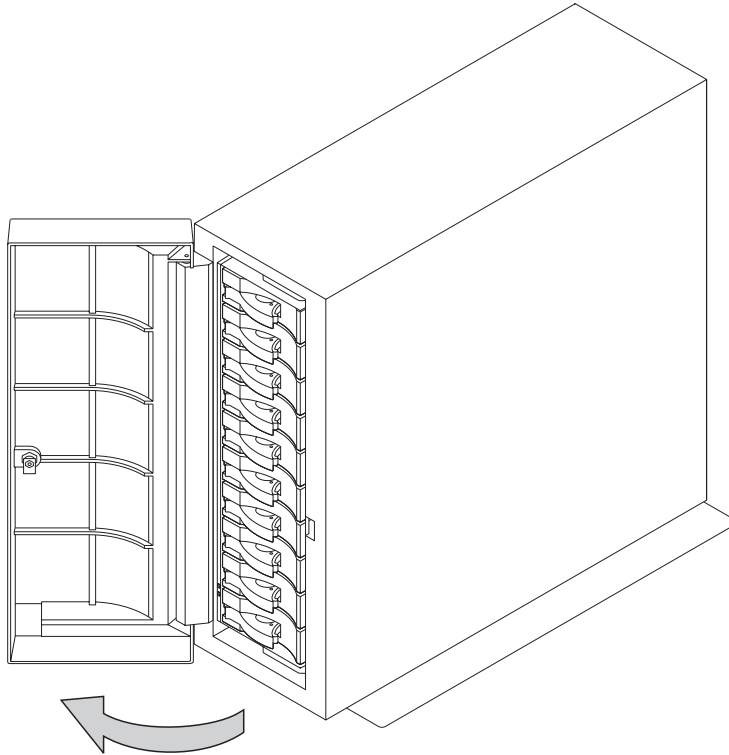


Figure 19. Disk Drive Modules in a 2104 Model TL1

To Add a Disk Drive Module

The diagrams in the following instructions show a 2104 Model DL1. The steps for adding a disk drive module to a 2104 Model TL1 are the same, but the parts are turned through 90 degrees.

1. Pull the dummy module out of the 2104 disk enclosure.

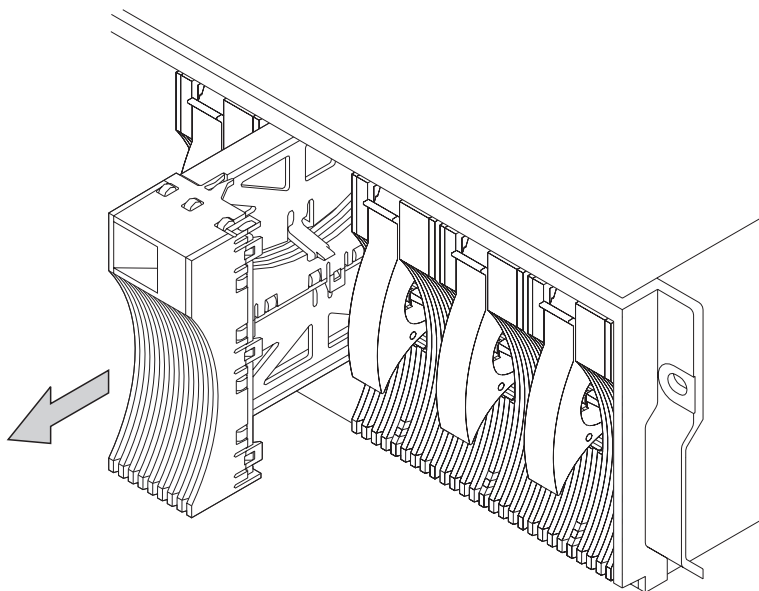


Figure 20. Removing a Dummy Module

Attention: The fans might increase in speed. Do not leave the slot empty for more than 30 minutes; if you do, the 2104 disk enclosure and the disk drive modules might overheat and be damaged.

2. With one hand giving support to the base of the disk drive module and the other hand holding the handle **1**, insert the module and push it into the slot. When the handle touches the front surface of the enclosure, the module stops. Note that the module is not yet fully home.

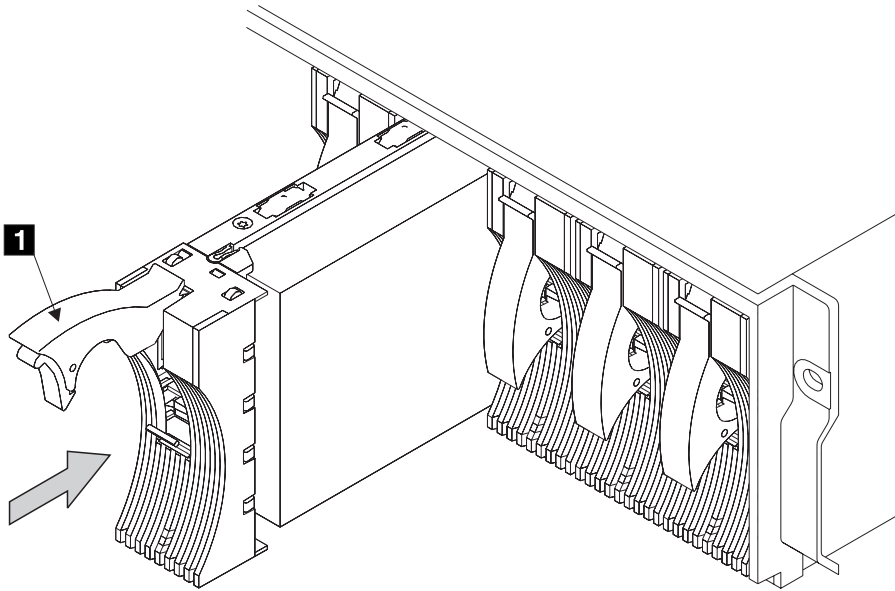


Figure 21. Adding a Disk Drive Module

3. While continuing to push the disk drive module into the slot, slowly close the handle **1** until it stops with a click. This action pushes the module fully home.

Attention: The fans might decrease in speed.

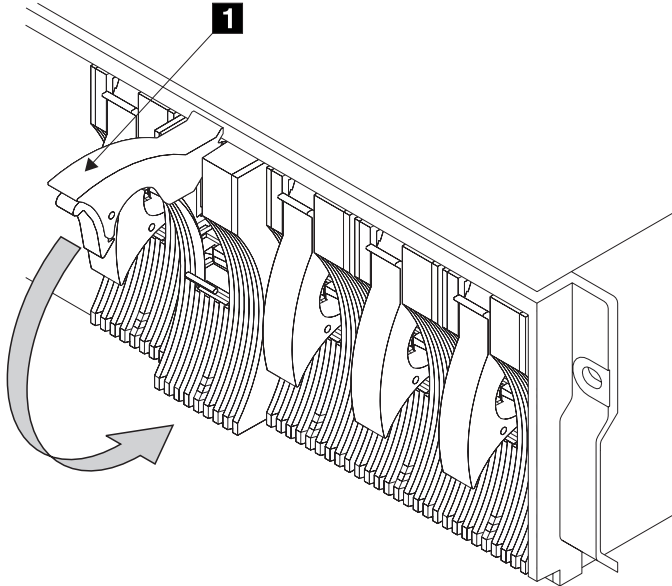


Figure 22. Closing the Handle of a Disk Drive Module

4. Verify that the disk drive module that you have just installed is aligned with the sides of the 2104, and that no gap exists between this module and the modules that are next to it.

Verify also that the front edge of this disk drive module aligns with the front edges of the modules next to it.

If the disk drive module is not correctly aligned, remove it (see 2 on page 37) and reinstall it (steps 2 through 3 above).

5. If the amber check light **2** comes on, first verify that the new disk drive module has been correctly installed, and then run diagnostics in Problem Determination mode to check the error log. See “Appendix A. Operating with RISC Systems” on page 81.

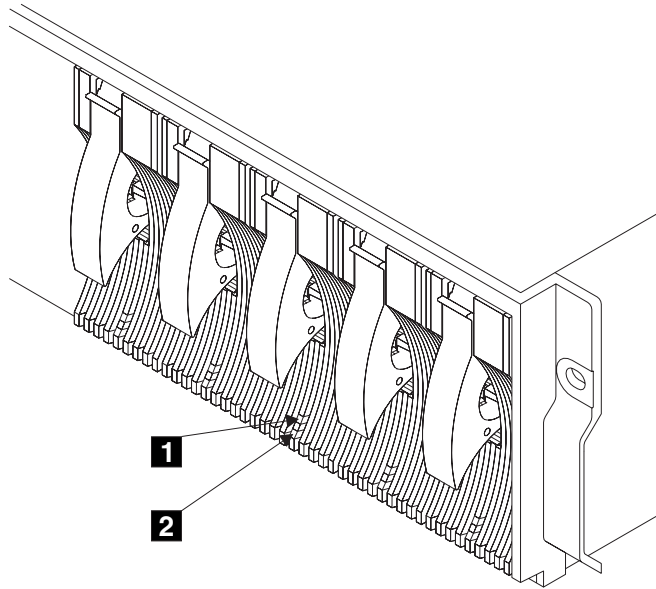


Figure 23. Disk Drive Module Lights

6. If you have just added a disk drive module to a 2104 Model TL1, close the cover and, if required, lock it with the key provided.

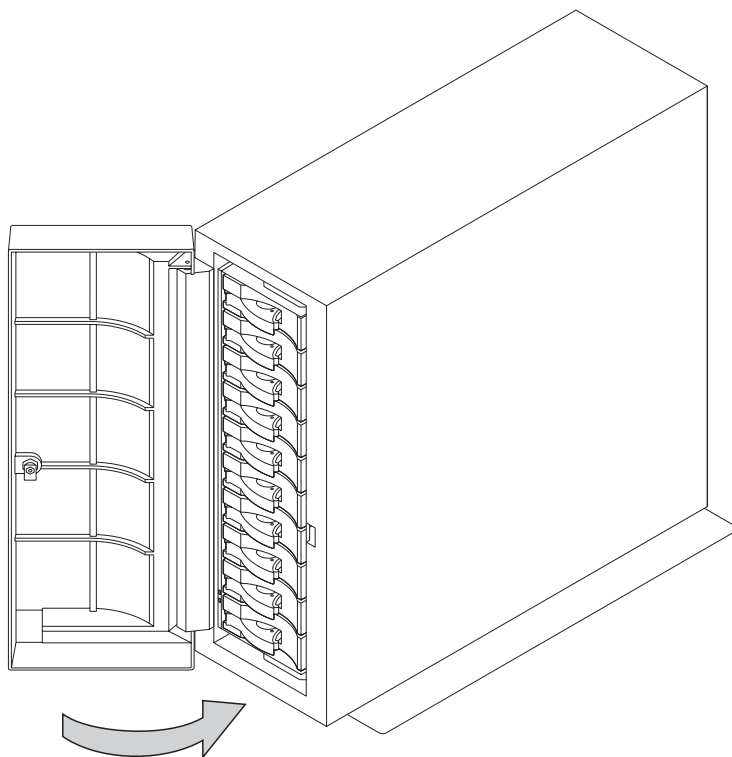


Figure 24. Closing Cover of 2104 Model TL1

7. Add the new disk drive module into your system software configuration, using the system programs. Refer to “Appendix A. Operating with RISC Systems” on page 81.

Chapter 3. Moving a 2104 Model DL1 or TL1 Safely

Attention: Damage as a result of improper handling might cancel your equipment warranty.

Caution: Do not attempt to lift the 2104 by yourself. Ask another person for aid.

Chapter 4. Dealing with Problems

This chapter describes what to do if you have a problem with a 2104 Model DL1 or TL1. It describes how to exchange a faulty disk drive module, a fan-and-power-supply assembly, a fan assembly, an SCSI interface card or a switch card. It also describes what information to provide when you report a problem with a 2104 Model DL1 or TL1, or a device installed in it.

Starting to Deal with Problems

How you start dealing with problems depends on the system to which your 2104 disk enclosure is attached.

“Appendix A. Operating with RISC Systems” on page 81 describes what to do if you are using RISC based systems.

Exchanging Disk Drive Modules

Sometimes, you can exchange a faulty disk drive module without the assistance of a service representative. You can do this only if:

- You are authorized by your organization.
- You have the correct disk drive module.

Only disk drive modules that have a **blue** trigger behind a handle **1** that you pull **upward** to open, can be installed in 2104 disk enclosures. The size of a disk drive module is shown on a label **2** at the front of the module:

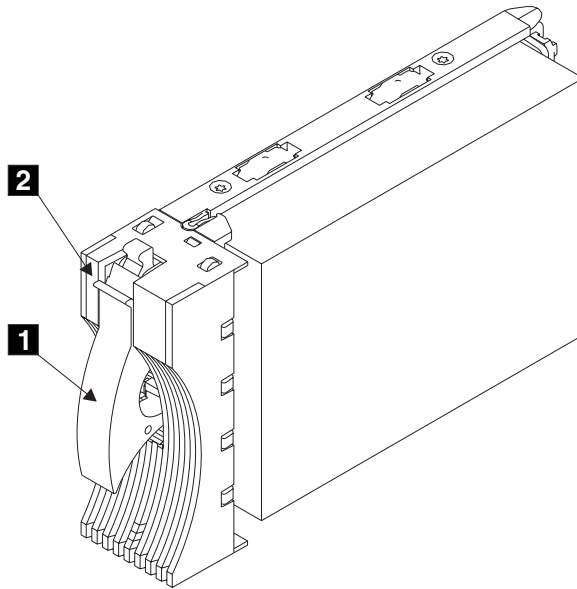


Figure 25. Disk Drive Module Handle and Capacity

Attention:

- Disk drive modules are fragile. Handle them with care. Keep them well away from strong magnetic fields.
- Any slot that has no disk drive module installed must contain a dummy disk drive module. The dummy module ensures that the correct airflow is maintained around the disk drive modules in the other slots. If a slot remains empty, overheating might occur.

You do not need to remove power from the 2104 disk enclosure when exchanging a disk drive module.

After you have exchanged a disk drive module in a 2104 disk enclosure, you must restore it into your system by using the system programs.

Before Exchanging a Disk Drive Module

1. Check the error log; “Appendix A. Operating with RISC Systems” on page 81 describes how to do this if you have a RISC-based system.
2. Find the failing disk drive module by using the location code supplied in the error log.
3. Use the SCSI Device Identification and Removal service aid to set **Remove** on the failing disk drive module. (“Appendix A. Operating with RISC Systems” on page 81 describes how to do this if you have a RISC-based system.)
4. Check the lights on this disk drive module. (“Disk Drive Module Lights” on page 8 describes where these are, and how to see them.)

If the Check light is not on, you cannot exchange the disk drive module; call your service representative and report the problem.

If the Check light is on, exchange the disk drive module for a new one using the procedure described in the following section.

To Exchange a Disk Drive Module

1. If the failing disk drive module is in a 2104 Model TL1, open the front cover of the disk enclosure by:
 - a. If necessary, unlocking the cover, using the key provided.
 - b. Gripping the cover at the right and pivoting it to the left.

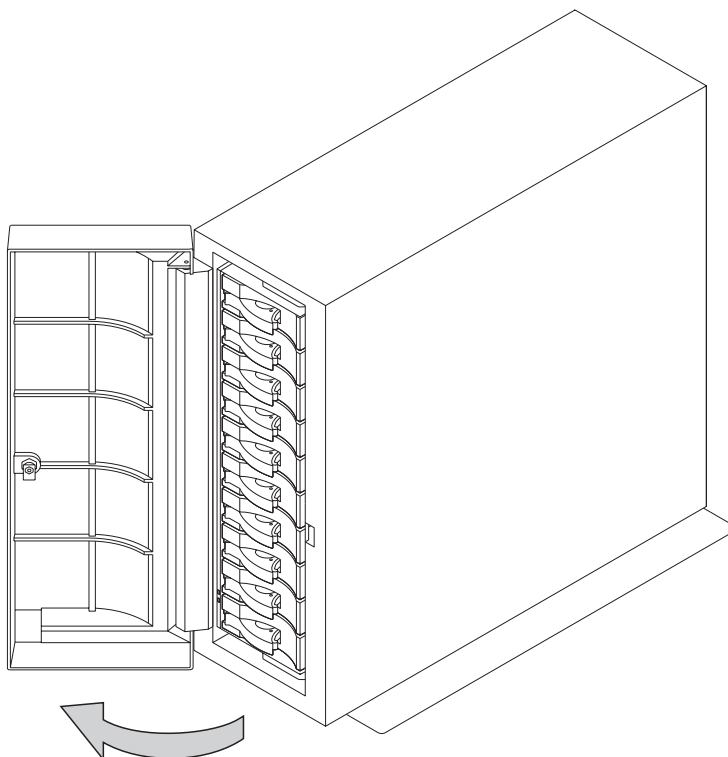


Figure 26. Disk Drive Modules in a 2104 Model TL1.

The diagrams in the following instructions show a 2104 Model DL1. The steps for exchanging a disk drive module in a 2104 Model TL1 are the same, but the parts are turned through 90 degrees.

2. Pull upward on the blue trigger **1** and pull outward the handle **2** of the failing disk drive module. This action moves the module partly out of the slot.

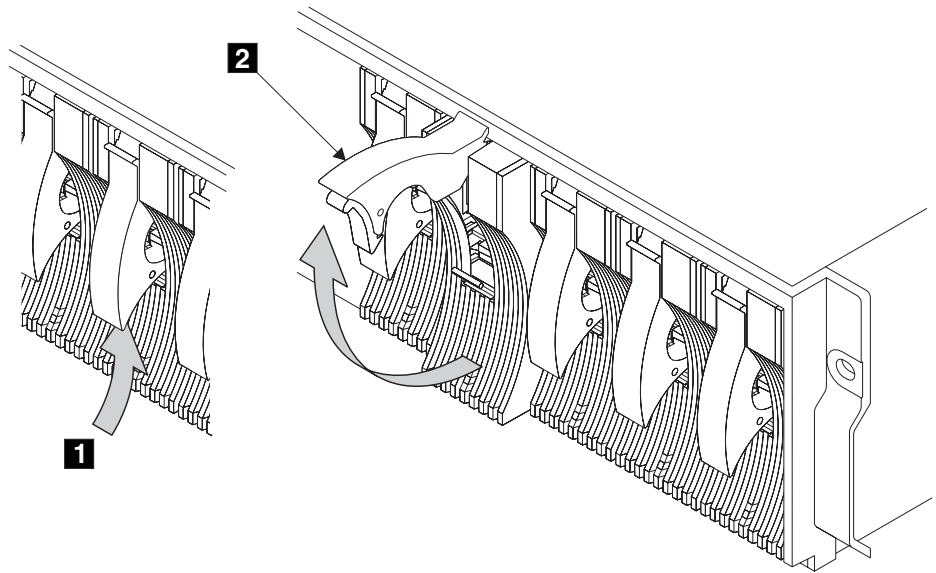


Figure 27. Opening the Disk Drive Module Handle

3. Carefully pull the module out of the 2104 disk enclosure. Support the module with your other hand as you take it from the disk enclosure.

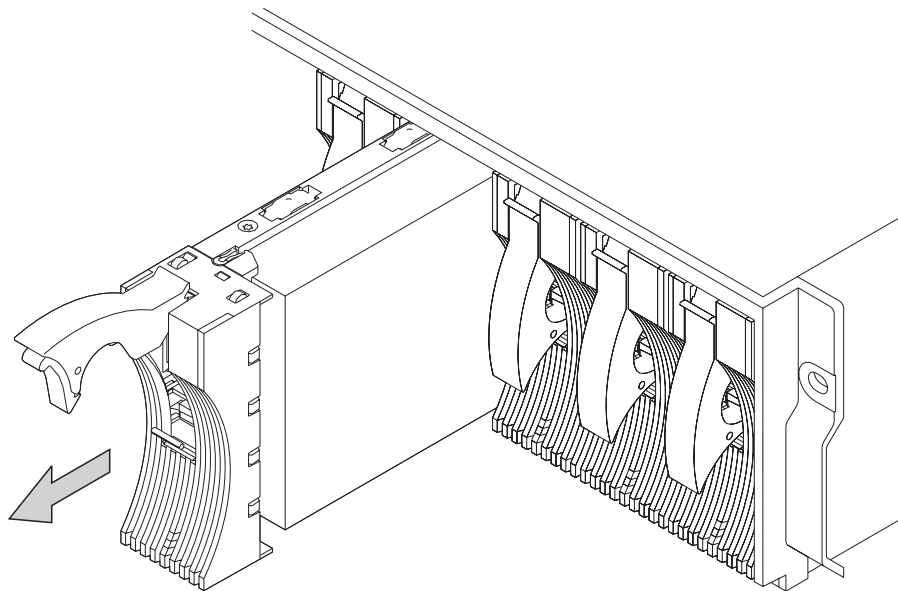


Figure 28. Removing a Disk Drive Module

Attention: The fan speed might increase. Do not leave the slot empty for more than 30 minutes; if you do, the 2104 disk enclosure, and the disk drive modules, might overheat and be damaged.

4. With one hand giving support to the base of the replacement module and the other hand holding the handle **1**, insert the module and push it into the slot. When the handle touches the front surface of the enclosure, the module stops. Note that the disk drive module is not yet fully home.

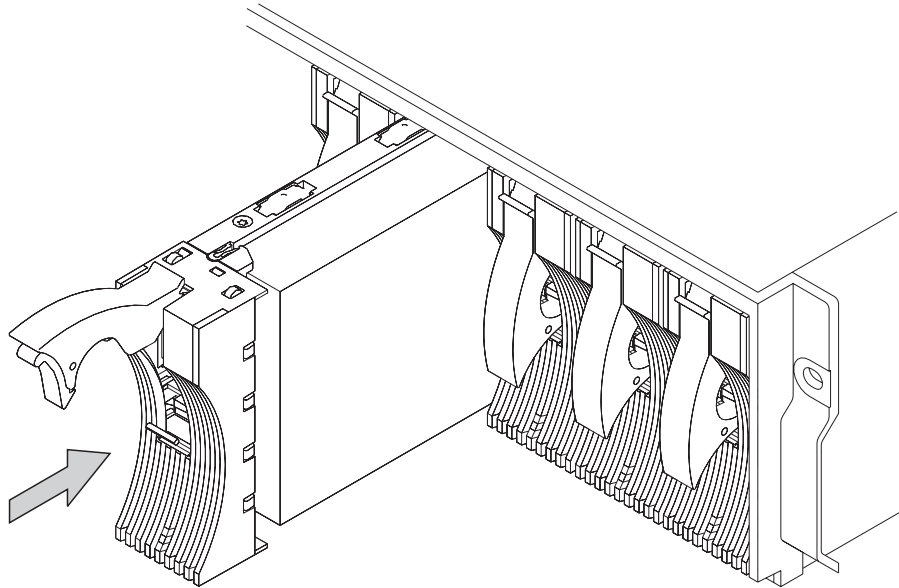


Figure 29. Inserting a Disk Drive Module

5. While continuing to push the disk drive module into the slot, slowly close the handle **1** until it stops with a click. This action pushes the module fully home.

Attention: The fans might decrease their speed.

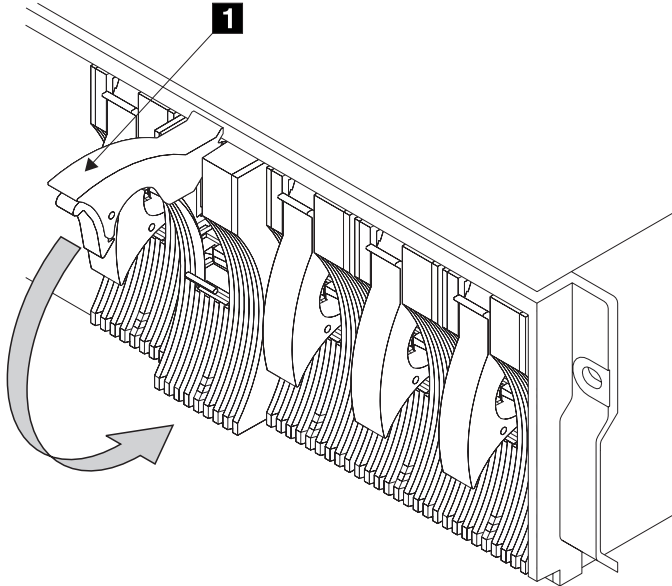


Figure 30. Closing the Handle

6. Verify that the disk drive module that you have just installed is aligned with the sides of the 2104 and that no gap exists between this module and the modules that are next to it.

Verify also that the front edge of this disk drive module aligns with the front edges of the modules next to it.

If the disk drive module is not correctly aligned, remove it (see 2 on page 37) and reinstall it (steps 4 through 6 above).

7. If the amber check light **2** comes on, first verify that the new disk drive module has been correctly installed, and then run diagnostics in Problem Determination mode to check the error log. See “Appendix A. Operating with RISC Systems” on page 81.

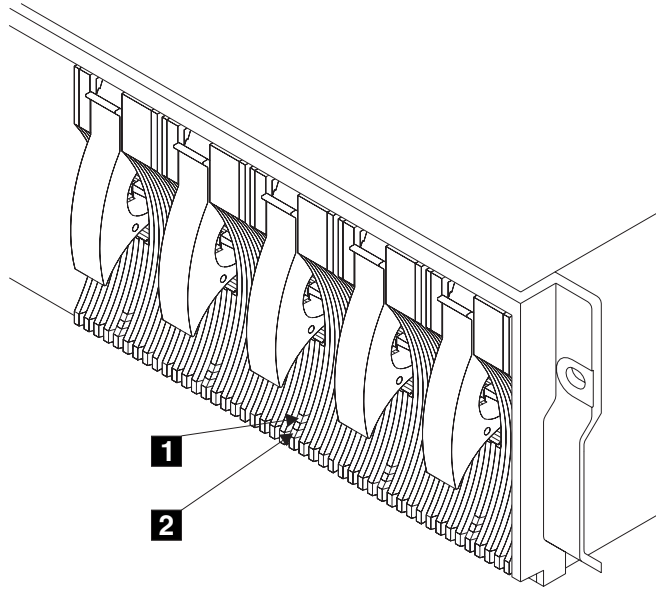


Figure 31. Disk Drive Module Lights

8. If you have just exchanged a disk drive module in a 2104 Model TL1, close the cover and, if required, lock it with the key provided.

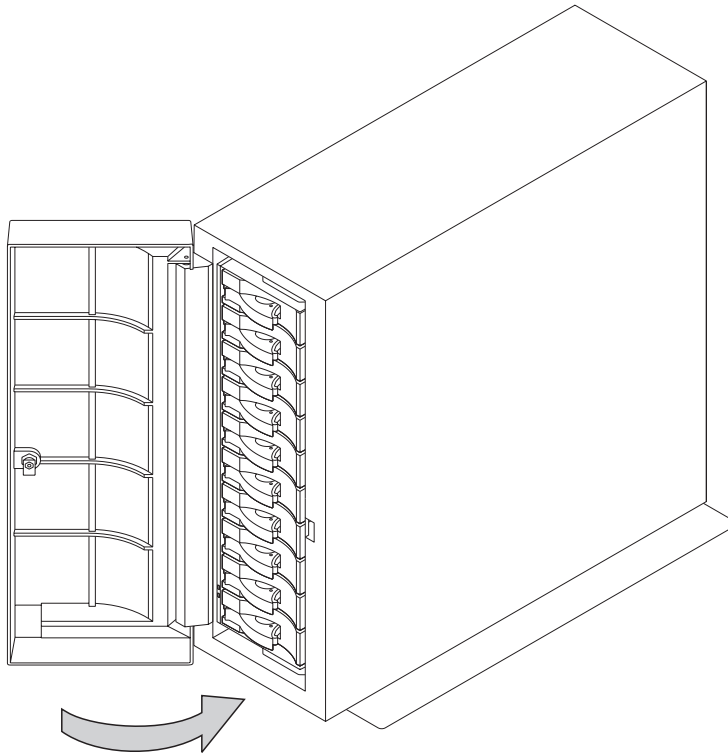


Figure 32. Closing the Cover of a 2104 Model TL1

9. Restore the disk drive module into your system, using the system programs. Refer to "Appendix A. Operating with RISC Systems" on page 81.

Exchanging a Fan-and-Power-Supply Assembly

You can exchange a faulty fan-and-power-supply assembly if:

- You have a correct spare fan-and-power-supply assembly or fan assembly.
- Another fan-and-power-supply assembly is still present in the 2104 disk enclosure.

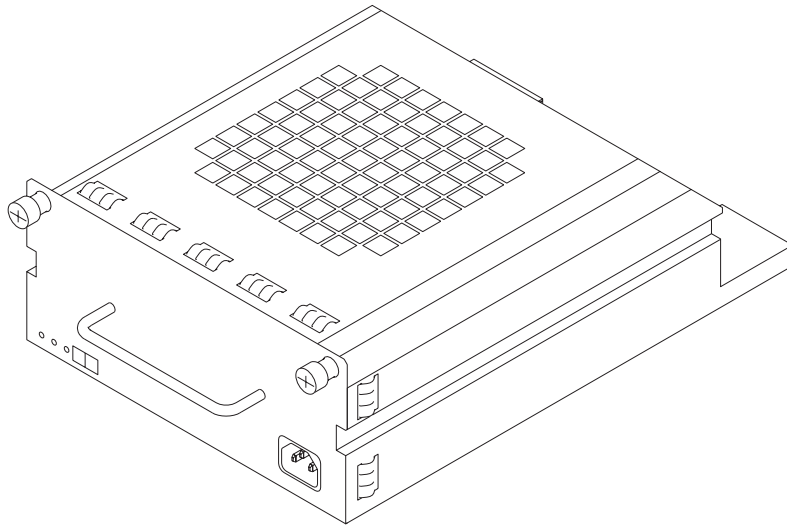


Figure 33. A Fan-and-Power-Supply Assembly

You do not need to remove power from the 2104 disk enclosure when exchanging a fan-and-power-supply assembly.

Before Exchanging a Fan-and-Power-Supply Assembly

- Check the lights on this fan-and-power-supply assembly (“Lights and Switches on the Fan-and-Power-Supply and Fan Assemblies” on page 11 describes these lights and how to see them.). Ensure that the DC On/Standby switch is on.

If the Check light is not on, do not exchange the power-supply assembly; call your service representative and report the problem.

If the Check light is on, exchange the fan-and-power-supply assembly by using the procedure in the following section.

To Exchange a Fan-and-Power-Supply Assembly

Note: The illustrations in the following instructions show a 2104 Model DL1. The steps for exchanging a fan-and-power-supply assembly in a 2104 Model TL1 are the same, but the parts are turned through 90 degrees.

1. If you are exchanging a fan-and-power-supply assembly, set the On/Standby switch **1** on the fan-and-power-supply assembly to standby.

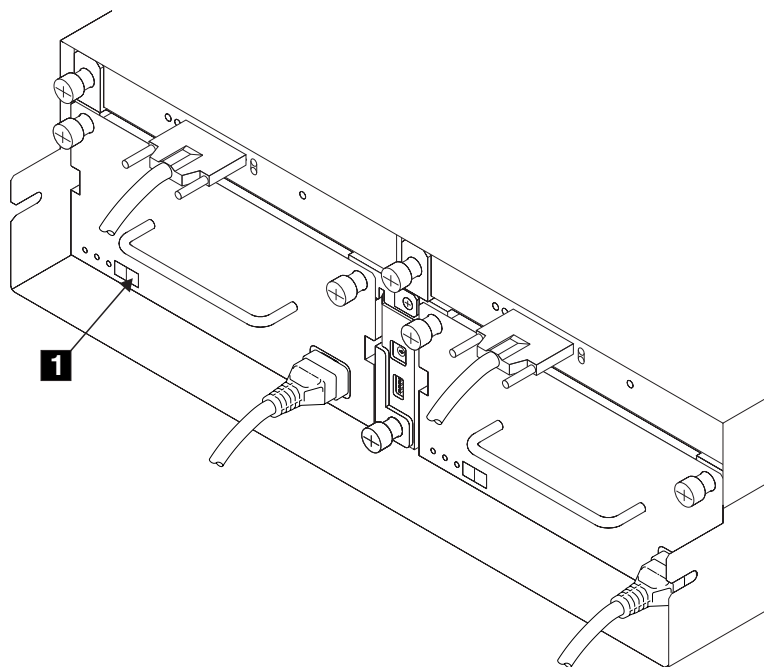


Figure 34. Fan-and-Power-Supply On/Standby Switch

Note: The fan-and-power-supply lights might stay on for a short time. Wait until they are all off before you go to the next step.

2. Unplug the mainline power cable from the failing fan-and-power-supply assembly.

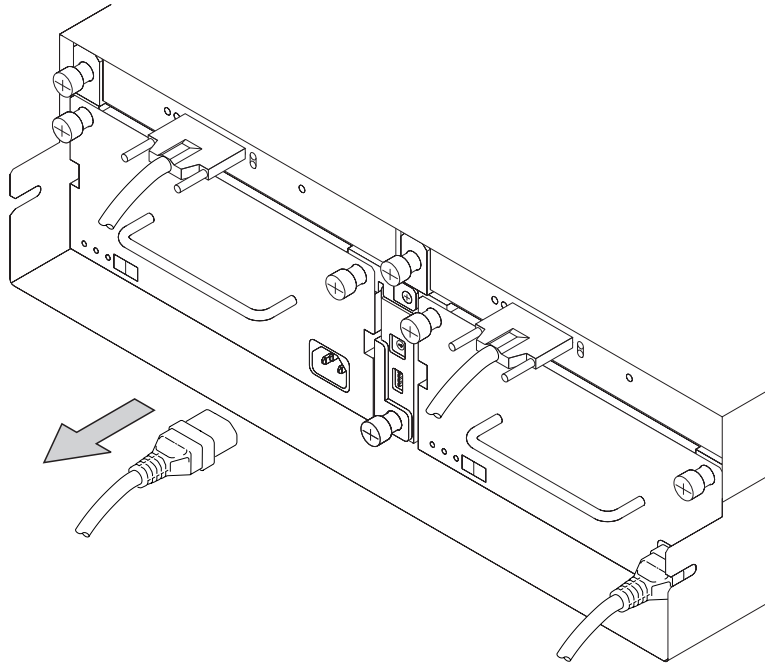


Figure 35. Unplugging the Mainline Power Cable

Caution: Ensure that the mainline power cable has been removed from the failing fan-and-power-supply before continuing.

3. Unscrew the two thumbscrews on the fan-and-power-supply assembly.

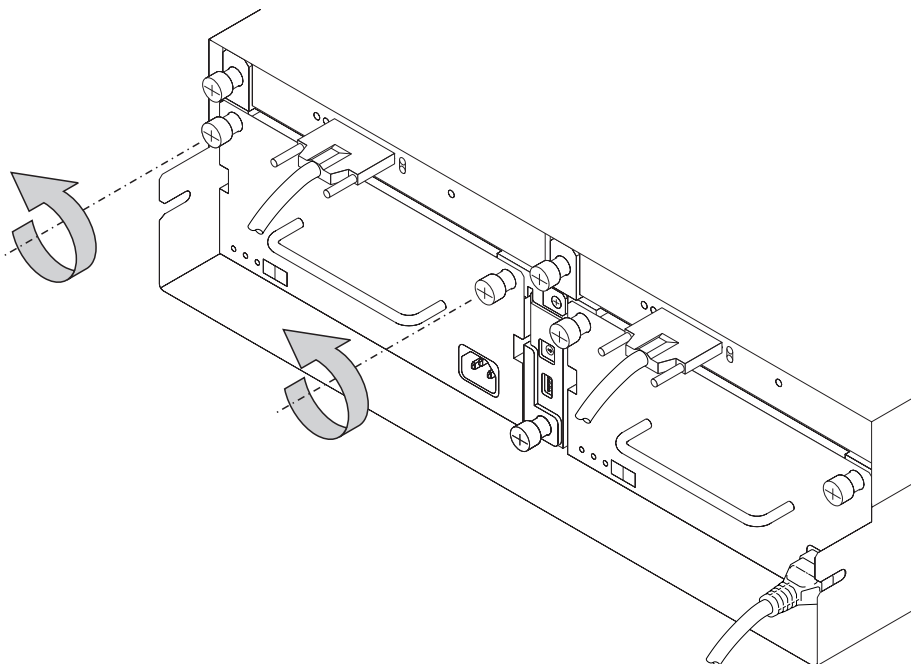


Figure 36. Unscrewing the Thumbscrews on the Fan-and-Power-Supply Assembly

4. Pull the fan-and-power-supply assembly from the disk enclosure. The speed of the other fan in the 2104 might increase.

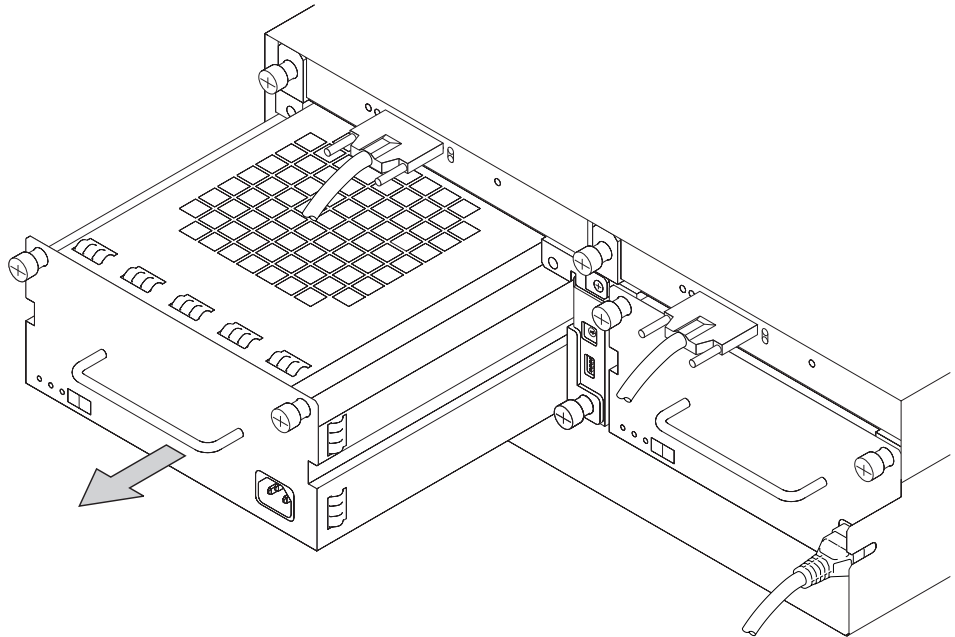


Figure 37. Removing the Fan-and-Power-Supply Assembly

Attention: Do not leave the space empty for more than 30 minutes; if you do, the 2104 disk enclosure, and the disk drive modules, might overheat and be damaged.

Caution: Do not insert hands or tools into the empty space where the fan-and-power-supply assembly was.

5. Push the replacement fan-and-power-supply assembly fully into the disk enclosure.

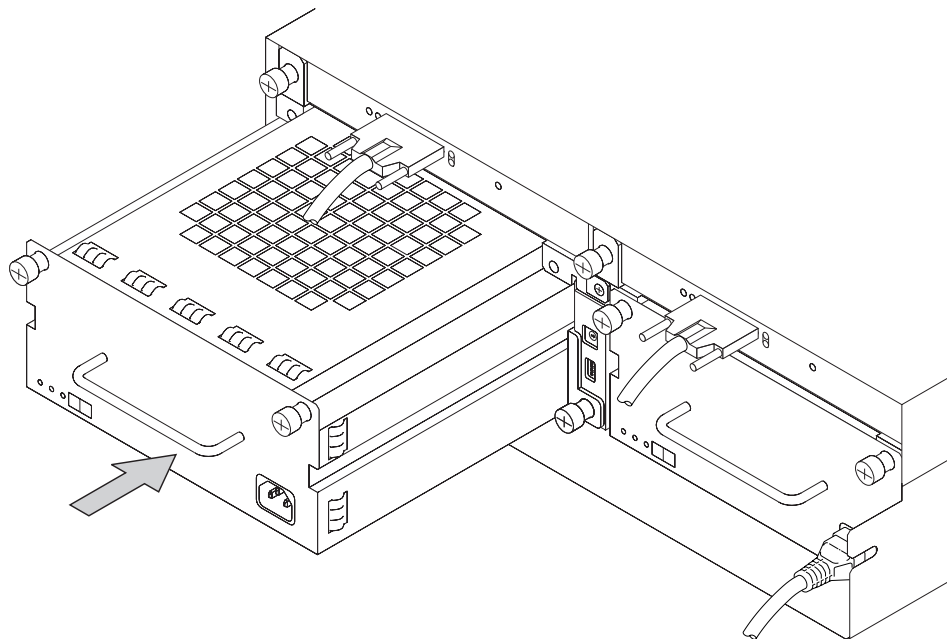


Figure 38. Inserting a Replacement Fan-and-Power-Supply Assembly

DANGER

Do not plug the power supply cord into the fan-and-power-supply assembly until the disk enclosure is completely installed and its retaining screws have been tightened.

6. Tighten the two thumbscrews by turning them clockwise.

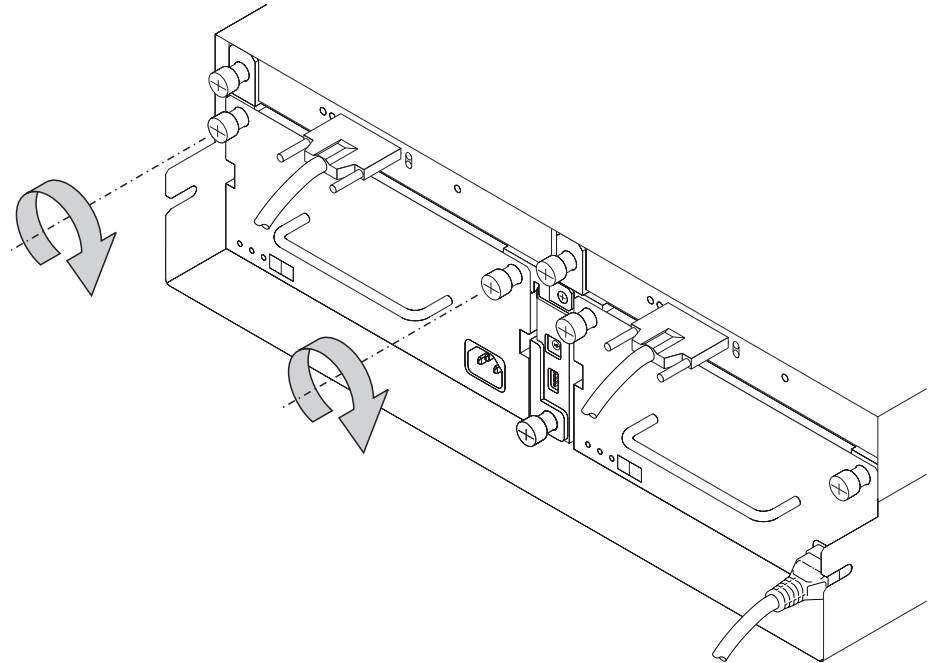


Figure 39. Tightening the Screws on a Fan-and-Power-Supply Assembly

7. Plug the mainline power cable into the new fan-and-power-supply assembly.

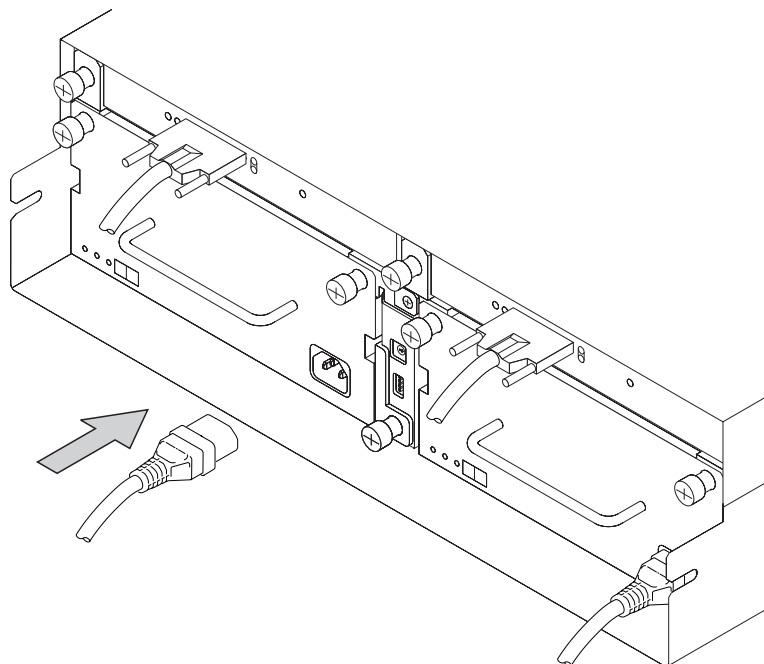


Figure 40. Plugging in the Mainline Power Cable

8. Set the DC On/Standby switch **1** on the new fan-and-power-supply assembly to on. Note that the fan speeds might decrease.

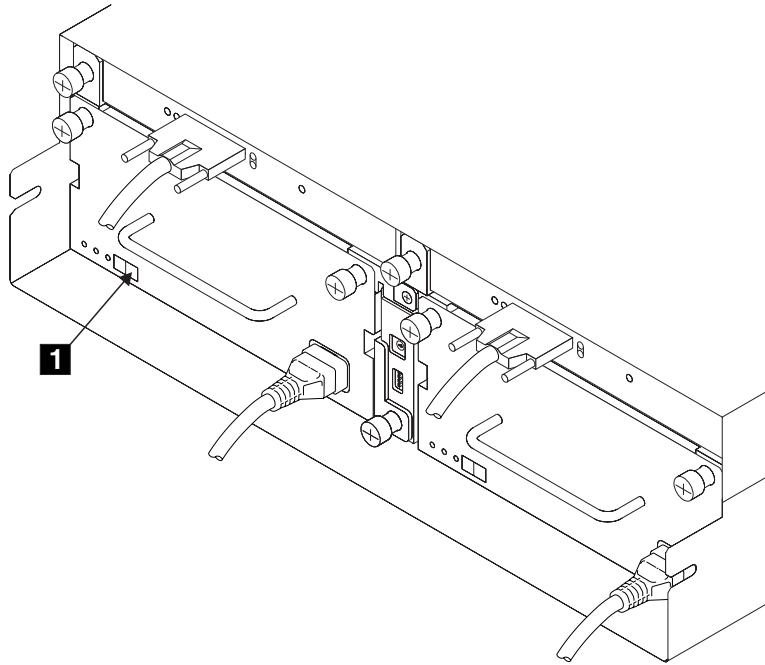


Figure 41. Fan-and-Power-Supply DC On/Standby Switch

9. Verify that the green AC GOOD light **1** comes on immediately and the DC GOOD light **2** shows green within five seconds.

If they do not, or the amber CHK light **3** comes on, verify that the new fan-and-power-supply assembly is correctly installed.

If it is, report the problem to your service representative.

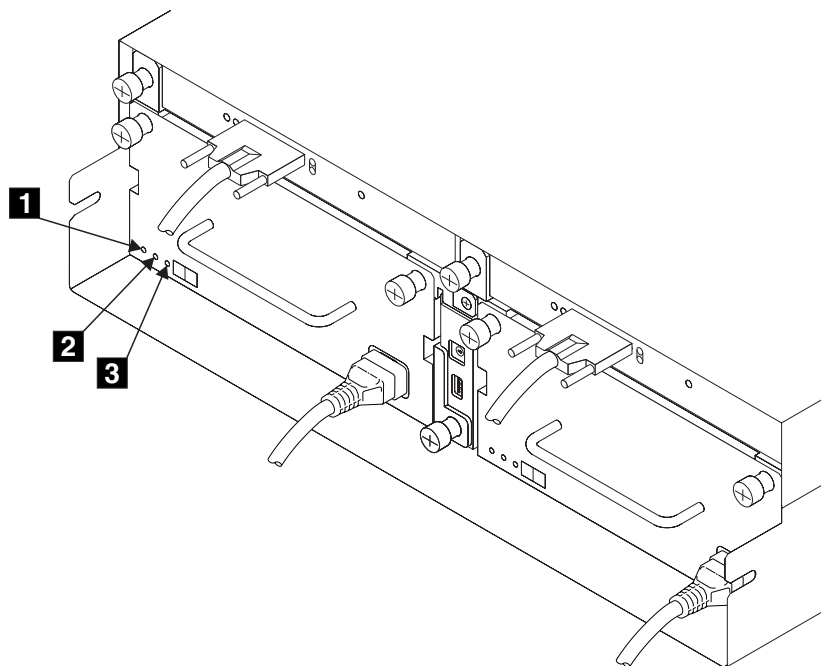


Figure 42. Fan-and-Power-Supply Lights

Exchanging a Fan Assembly

You can exchange a faulty fan assembly if:

- You have a correct spare fan assembly.
- Another fan-and-power-supply assembly is present in the 2104

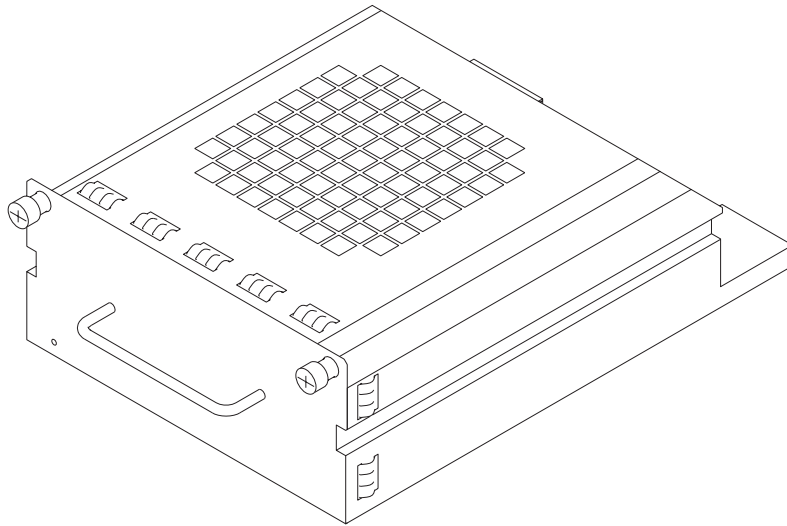


Figure 43. Fan Assembly

You do not need to remove power from the 2104 disk enclosure when exchanging a fan assembly.

Before Exchanging a Fan Assembly

- Look at the Check light on this fan assembly (See “Lights and Switches on the Fan-and-Power-Supply and Fan Assemblies” on page 11.).

If the Check light is not on, do not exchange the fan assembly; call your service representative and report the problem.

If the Check light is flashing, exchange the fan assembly by using the procedure in the following section.

To Exchange a Fan Assembly

The diagrams in the following instructions show a 2104 Model DL1. The steps for exchanging a fan assembly in a 2104 Model TL1 are the same, but the parts are turned through 90 degrees.

1. Verify that the amber CHK light **1** is ON.

If the CHK light is not on, do not exchange the fan assembly; call your service representative and report the problem.

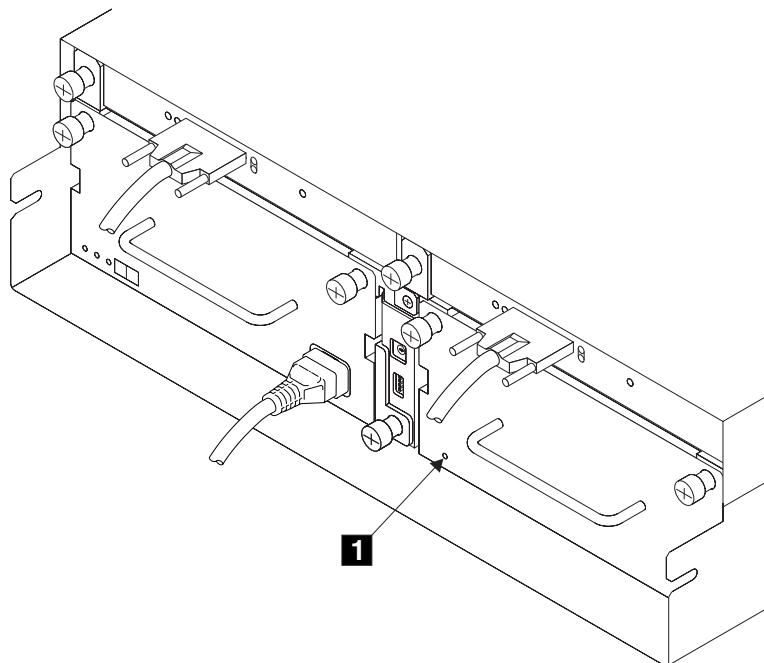


Figure 44. Fan Assembly Light

2. Unscrew the two thumbscrews.

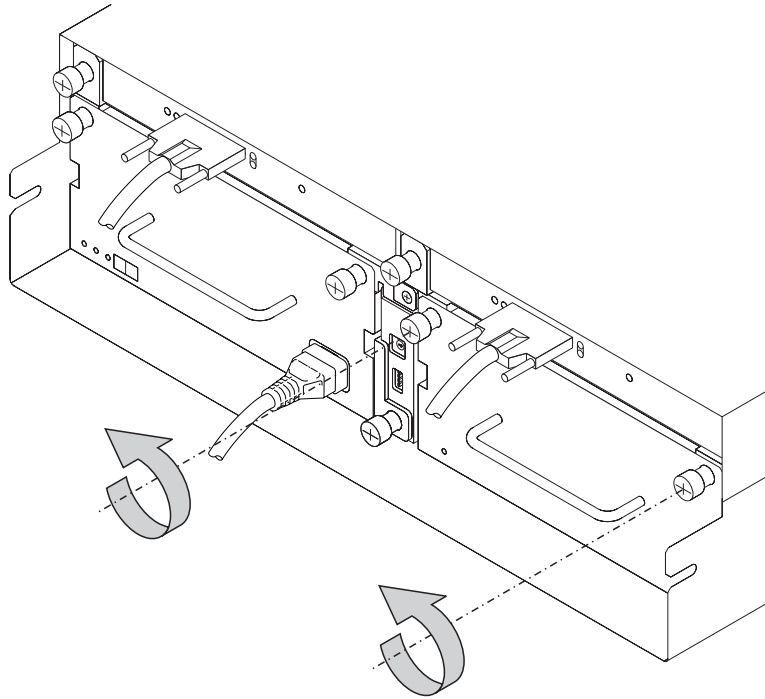


Figure 45. Unscrewing the Thumbscrews on a Fan Assembly

3. Pull the fan assembly from the disk enclosure. The speed of the other fan in the 2104 disk enclosure might increase.

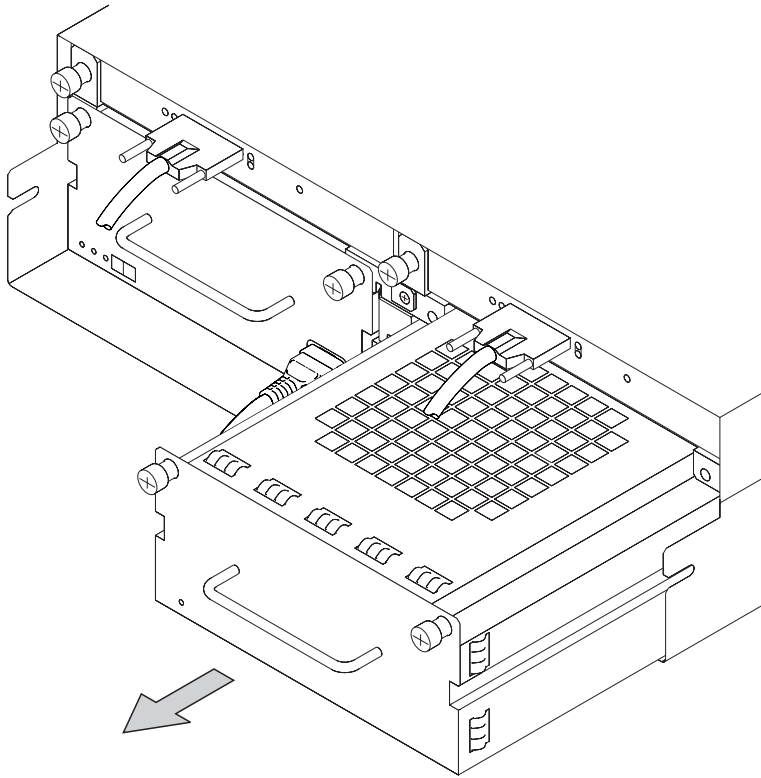


Figure 46. Pulling out a Fan Assembly

Attention: Do not leave the space empty for more than 30 minutes; if you do, the 2104 disk enclosure, and the disk drive modules, might overheat and be damaged.

Caution: Do not insert hands or tools into the empty fan assembly opening.

4. Push the replacement fan assembly fully into the disk enclosure.

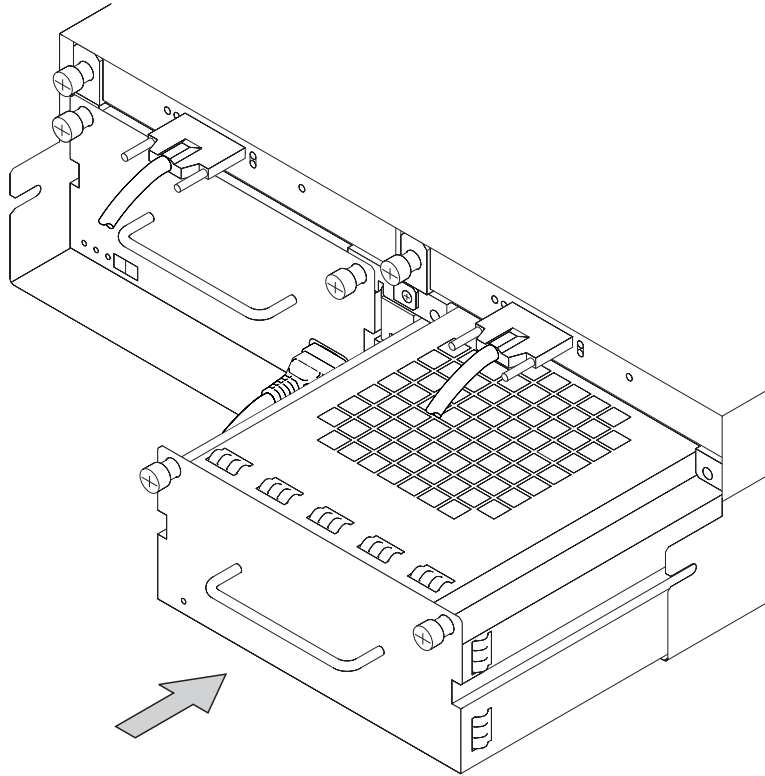


Figure 47. Inserting a Fan Assembly

5. Tighten the two thumbscrews.

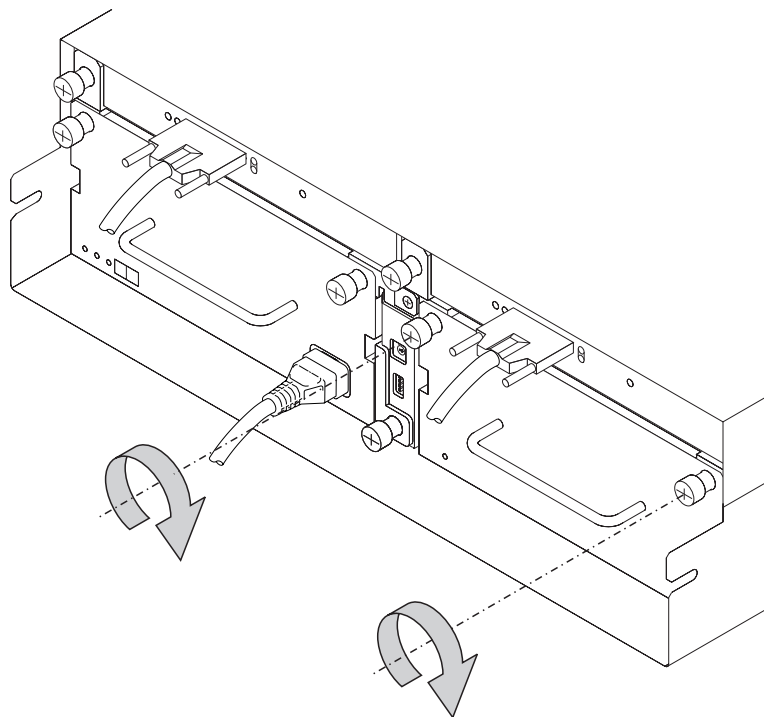


Figure 48. Tightening the Thumbscrews

6. Verify that the amber CHK light **1** is off. You might notice that the speed of the fan in the fan-and-power-supply assembly decreases.

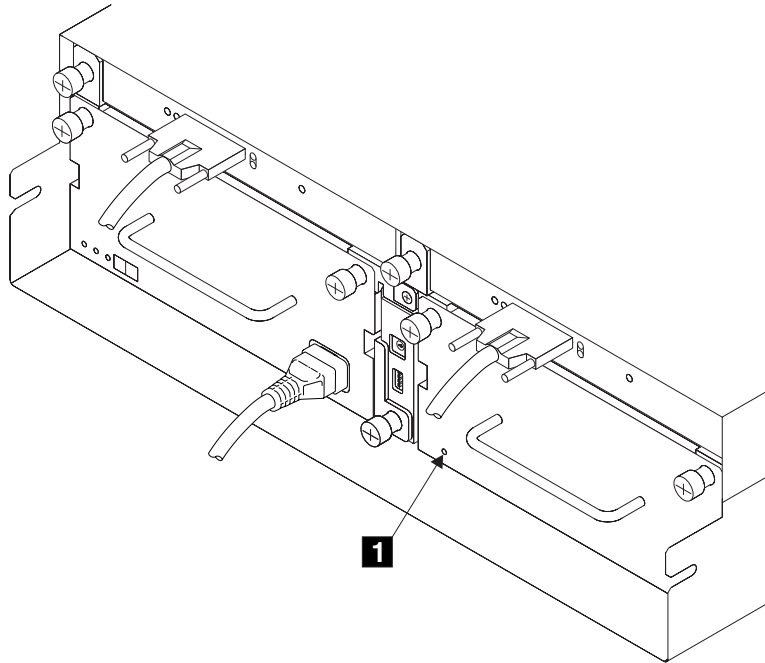


Figure 49. Fan Assembly Light

Exchanging an SCSI Interface Card Assembly

Attention: The SCSI interface card is sensitive to electrostatic discharge (ESD). Use the tools and procedures defined by your organization to protect such parts.

You can exchange a faulty SCSI interface card assembly if:

- You are authorized by your organization.
- You have a correct spare SCSI interface card assembly.

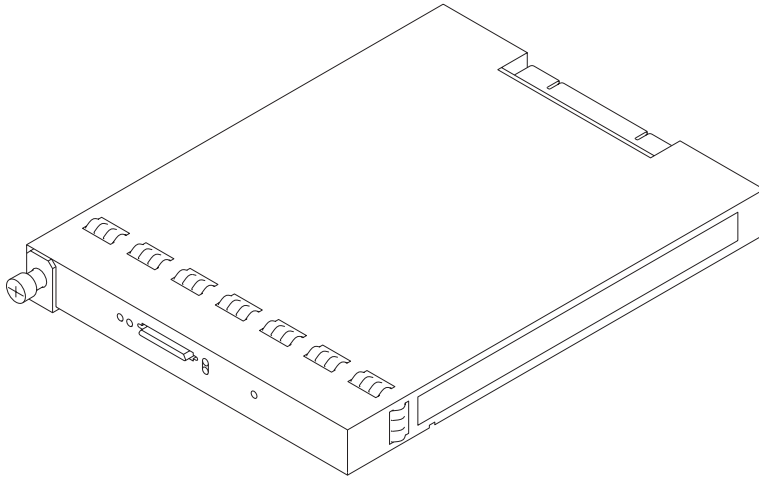


Figure 50. SCSI Interface Card Assembly

You do not need to remove power from the 2104 disk enclosure when exchanging an SCSI interface card assembly.

Before Exchanging the SCSI Interface Card Assembly

Check the lights on the SCSI interface card.

If the amber FAULT light **1 is off, do not exchange the SCSI interface card assembly; call your service representative and report the problem.**

If the FAULT light is on, exchange the SCSI interface card assembly using the procedure in the following section.

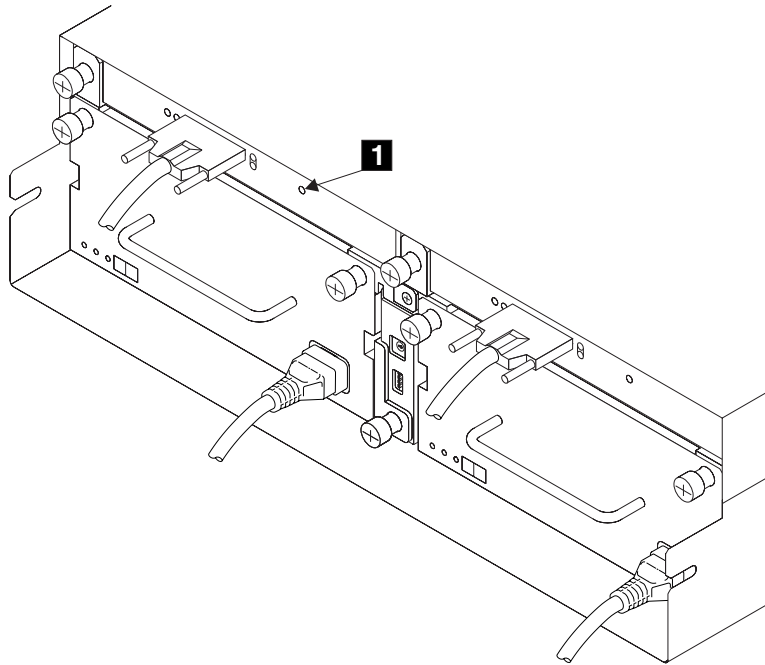


Figure 51. FAULT Light on an SCSI Interface Card Assembly

To Exchange an SCSI Interface Card Assembly

The diagrams in the following instructions show a 2104 Model DL1. The steps for exchanging a SCSI interface card assembly in a 2104 Model TL1 are the same, but the parts are turned through 90 degrees.

1. Unplug the SCSI cable.

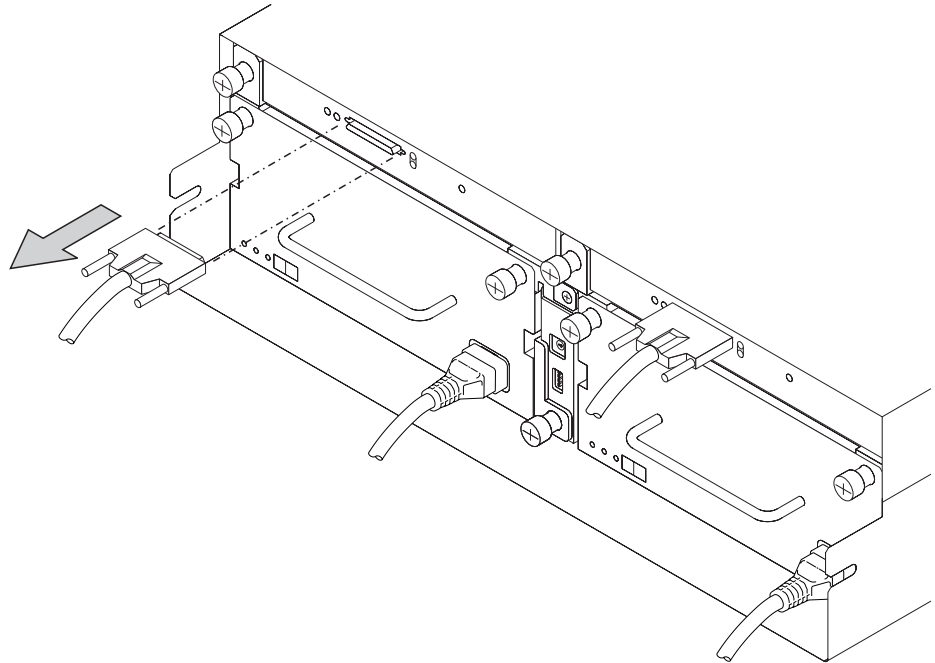


Figure 52. Removing the SCSI Cable

2. Unscrew the thumbscrew on the failing SCSI interface card.

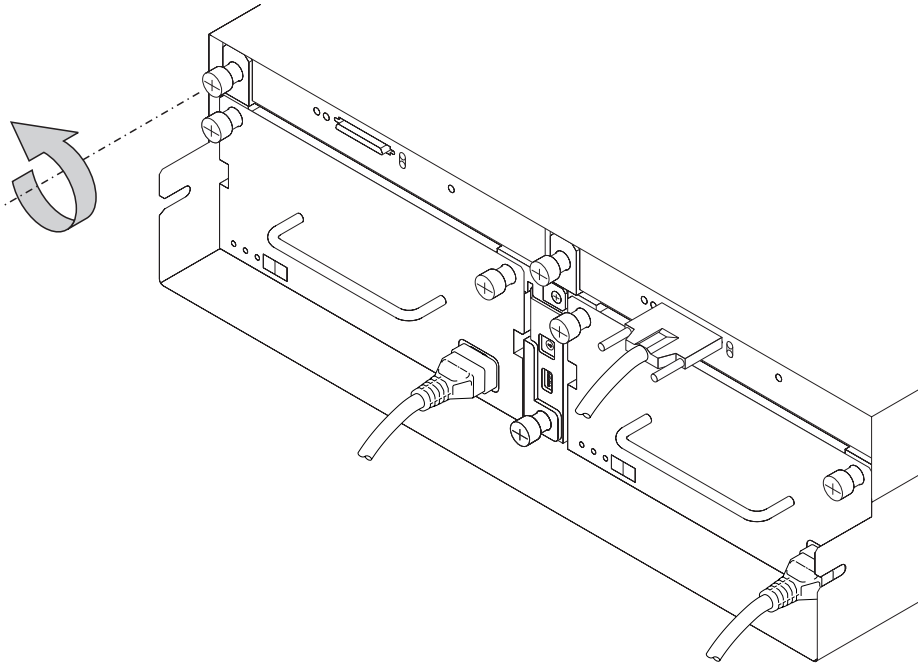


Figure 53. Unscrewing the SCSI Interface Card

3. Open the lever fully by moving it to the right. This action unplugs the card assembly from the backplane.

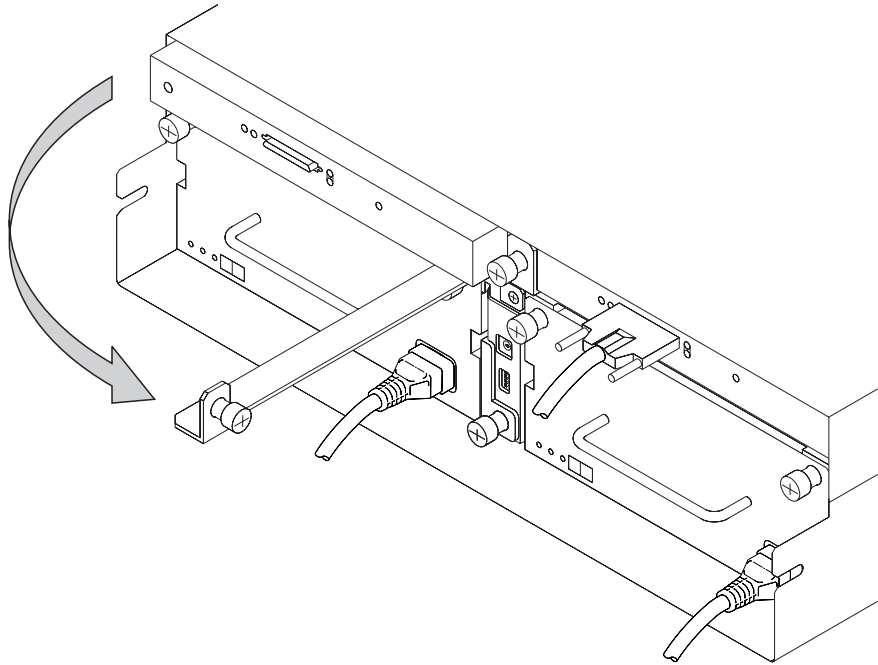


Figure 54. Opening the Lever

4. Pull the SCSI interface card assembly out of the 2104 disk enclosure.

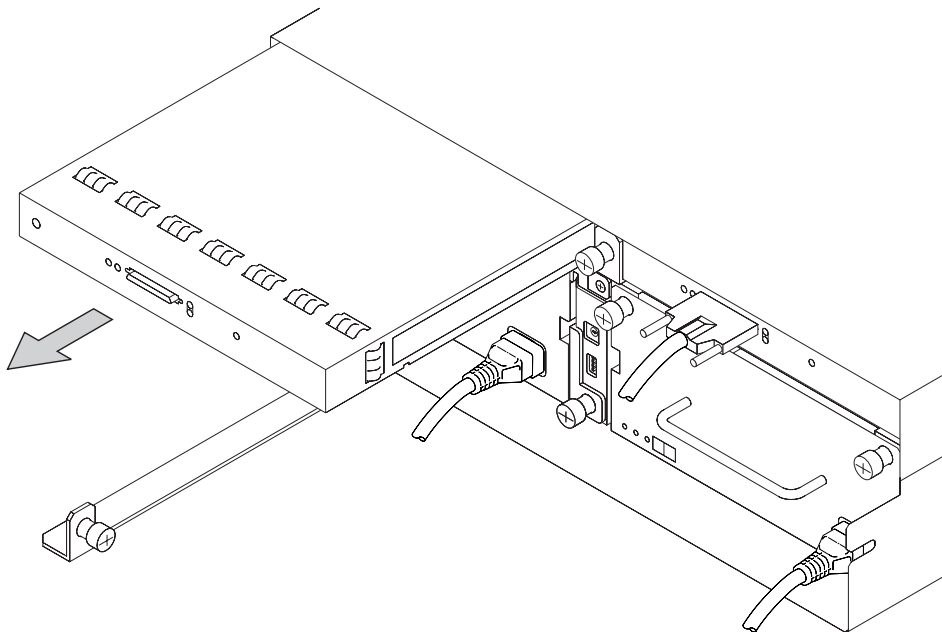


Figure 55. Pulling the SCSI Interface Card Out

Caution: Do not insert hands or tools into the empty space above the power supply assembly.

5. Push the replacement SCSI interface card assembly back into the 2104 disk enclosure.

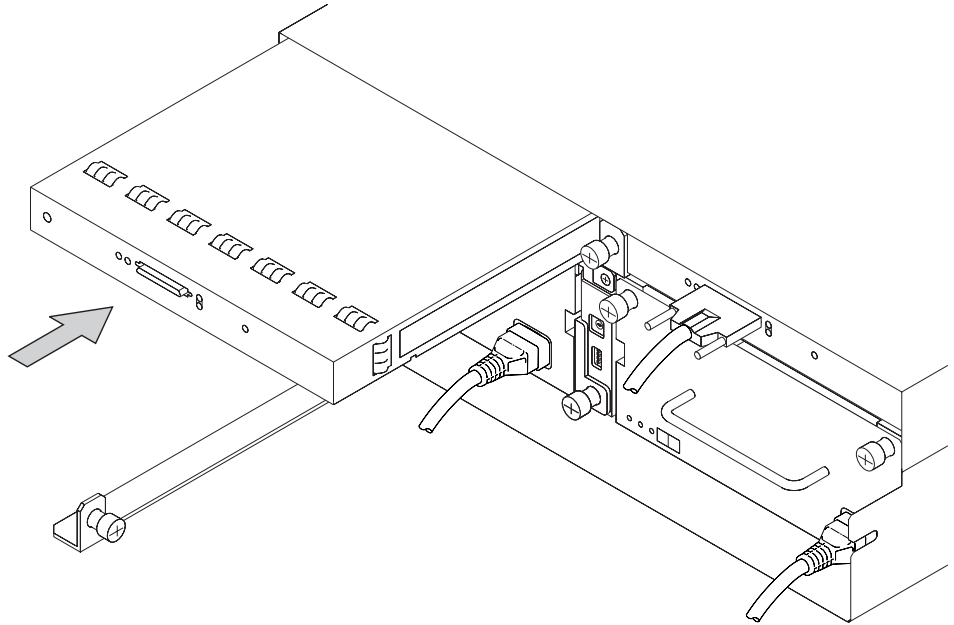


Figure 56. Pushing the Replacement SCSI Interface Card In

6. Move the lever to the left.

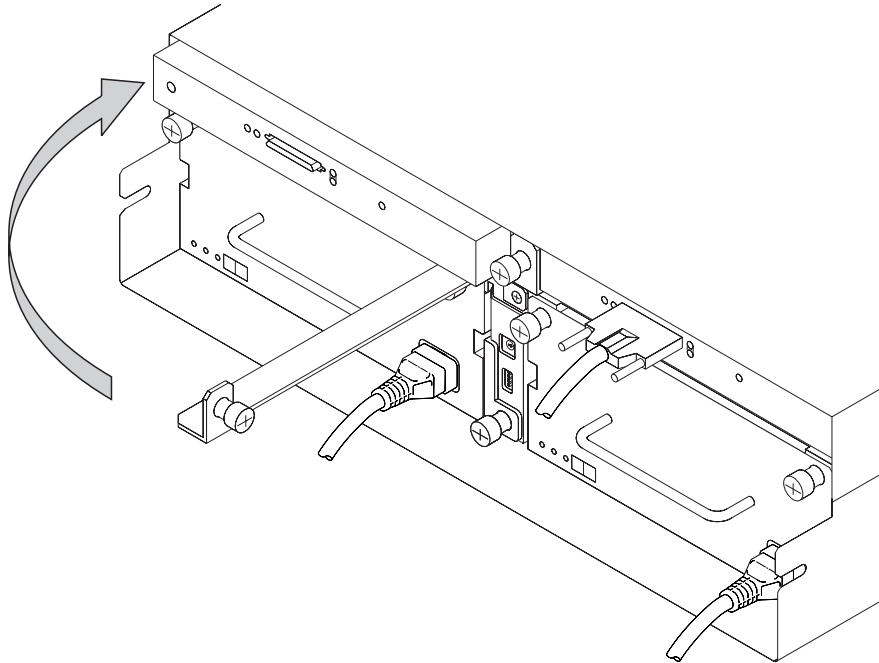


Figure 57. Closing the Lever

7. Tighten the thumbscrew.

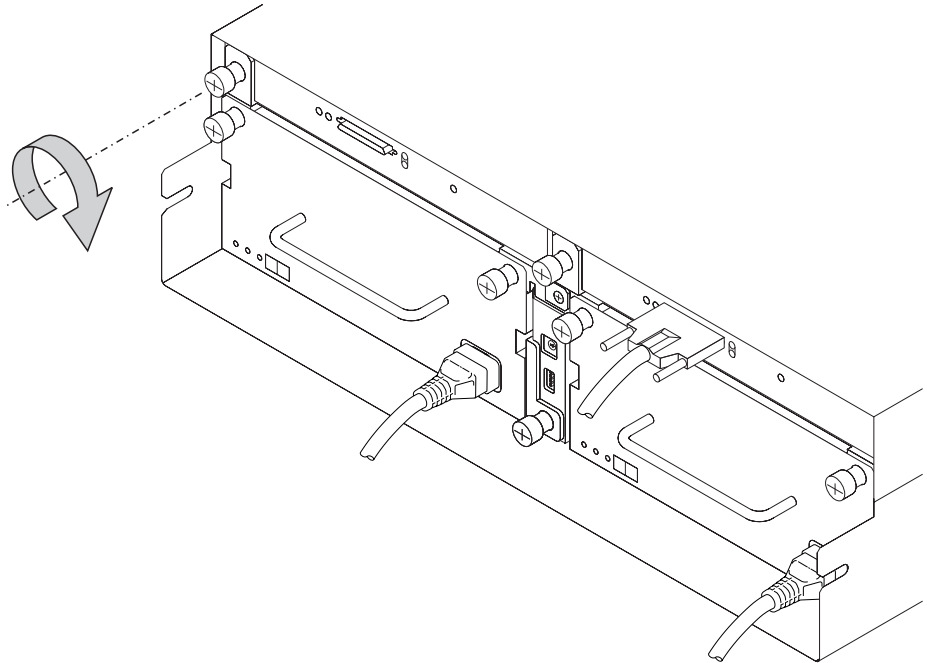


Figure 58. Tightening the Thumbscrew

8. Plug the SCSI connector into the SCSI interface card..

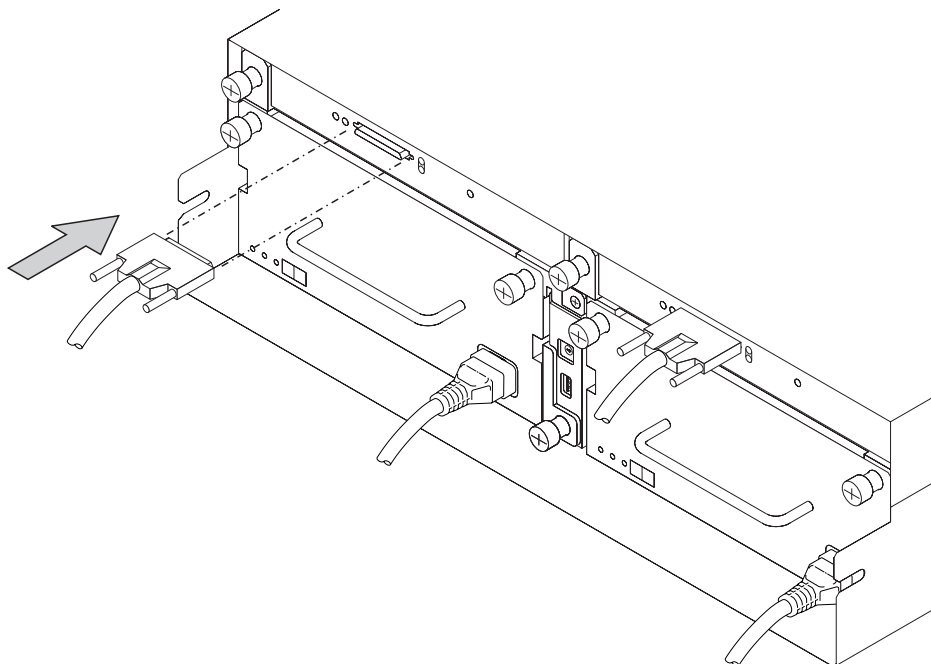


Figure 59. Plugging in the SCSI Cable

9. Check that the green TERM POWER light **1** comes on within five seconds. (If it does not, check that the new SCSI interface card has been correctly installed. If it has been correctly installed, and the green TERM POWER light **1** is still off, report the problem to your service representative.)

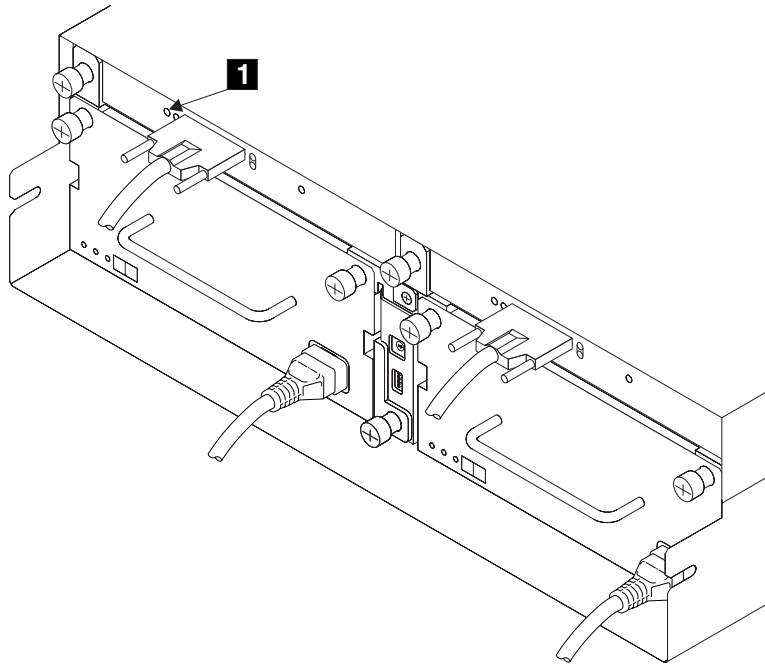


Figure 60. SCSI Interface Card Assembly TERM POWER Light

Exchanging the Switch Card Assembly

Attention: The switch card is sensitive to electrostatic discharge (ESD). Use the tools and procedures defined by your organization to protect such parts.

You can exchange a faulty switch card assembly if:

- You are authorized by your organization.
- You have a correct spare switch card assembly.

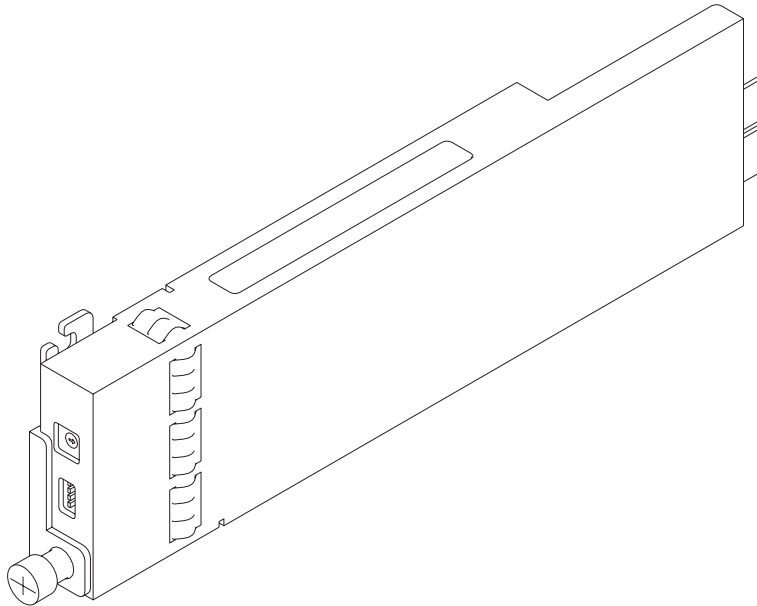


Figure 61. Switch Card

You do not need to remove power from the 2104 disk enclosure when exchanging the switch card.

Before Exchanging the Switch Card Assembly

Note: The settings of the switches on the replacement switch card must be the same as those on the original card. See “The Switch Card” on page 16 for details of the switch settings.

To Exchange the Switch Card Assembly

The diagrams in the following instructions show a 2104 Model DL1. The steps for exchanging the switch card assembly in a 2104 Model TL1 are the same, but the parts are turned through 90 degrees.

1. Unscrew the thumbscrew on the failing switch card assembly.

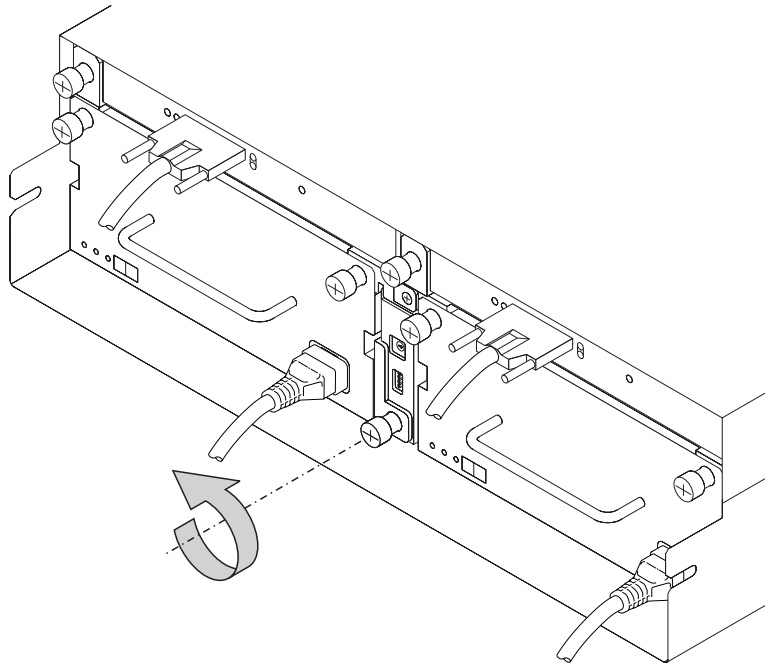


Figure 62. Unscrewing the Thumbscrew on the Switch Card Assembly

2. Pull the lever up. This action unplugs the switch card assembly from the backplane.

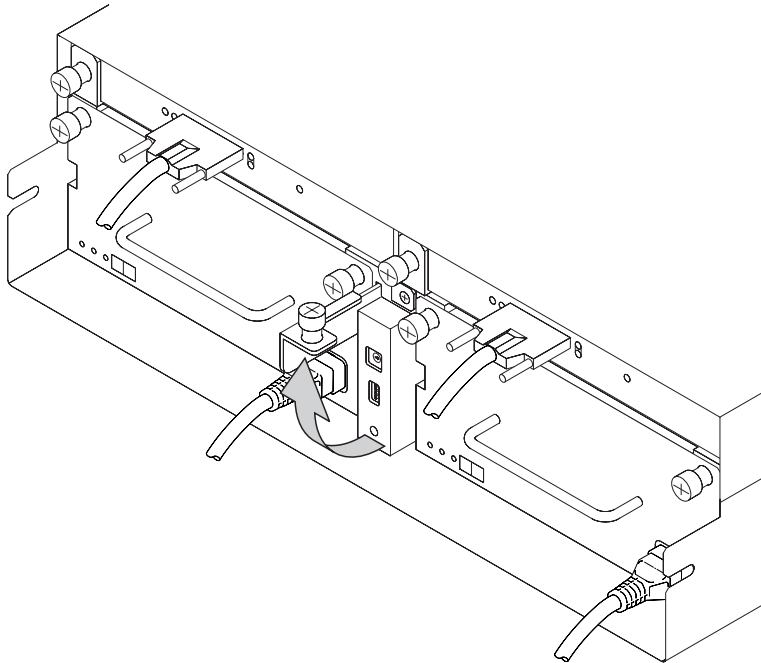


Figure 63. Opening the Lever

Note: If the 2104 is switched on, it might switch off when you unplug the switch card assembly.

3. Pull the switch card assembly out of the 2104 disk enclosure.

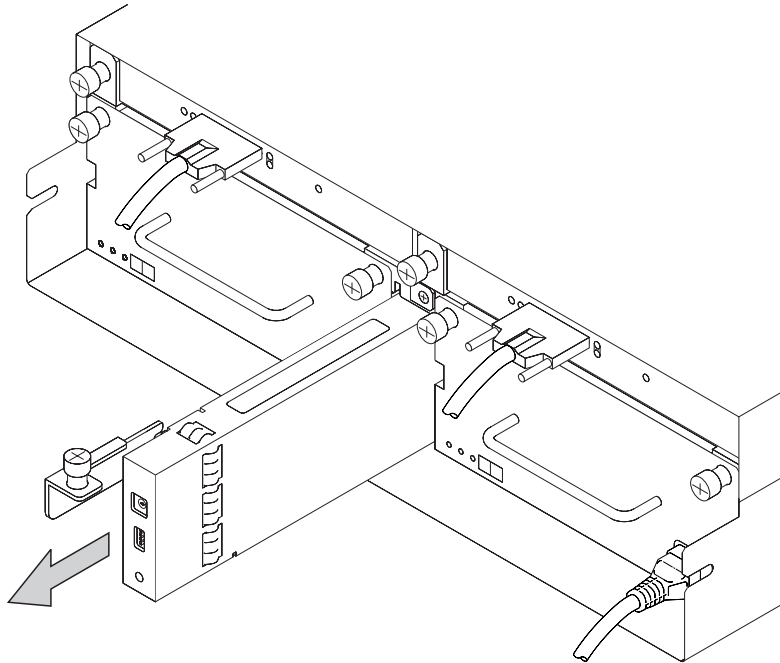


Figure 64. Remove the Switch Card

Caution: Do not insert hands or tools into the empty space between the power supply assemblies.

4. Push the replacement switch card assembly back into the disk enclosure.

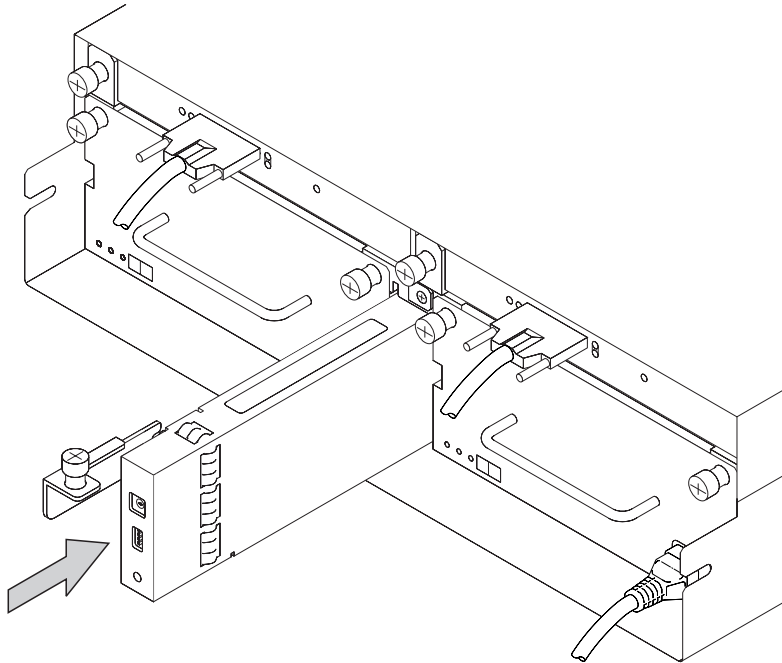


Figure 65. Pushing the Switch Card Assembly into the 2104

5. Push the lever down.

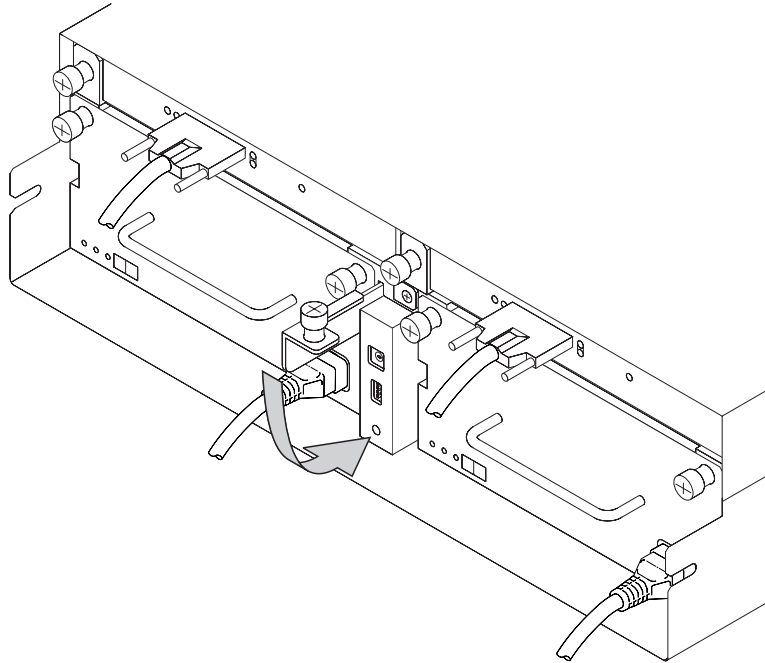


Figure 66. Closing the Lever

6. Tighten the thumbscrew.

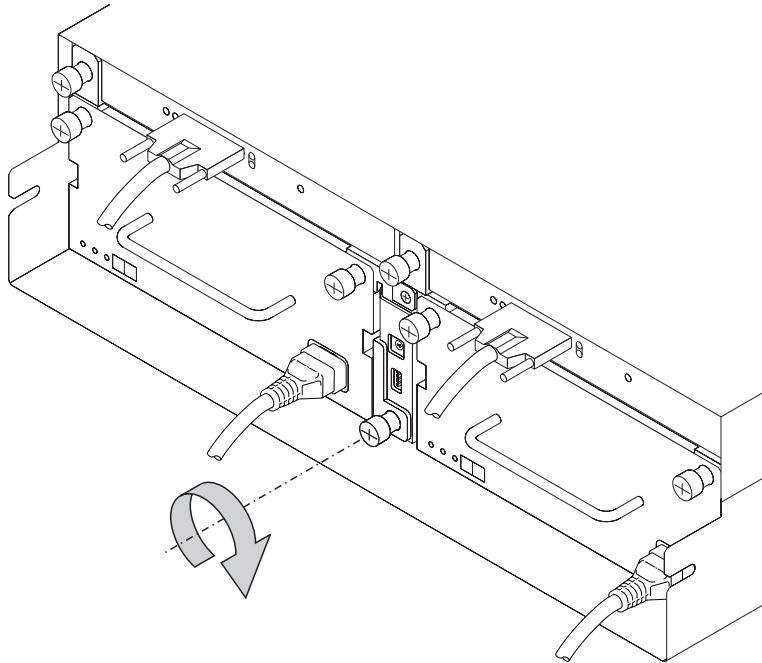


Figure 67. Tightening the Thumbscrew

Reporting Problems

When you report a problem that has occurred in a 2104 disk enclosure, it is important that you report the following information, in addition to the error information (the SRN) given to you by your operating system:

The machine type number	2104
The machine model number	DL1 or TL1
The machine serial number	xx-xxxxx

The serial number can be read from the label at the bottom right of the front of the 2104 disk enclosure, or from the label on the back of the 2104 disk enclosure.

Appendix A. Operating with RISC Systems

This appendix contains information that is specific to IBM Expandable Storage Plus disk enclosures that are attached to RISC systems.

SCSI Adapters and Cables

An RS/6000 uses one of the following SCSI adapters to connect to the 2104 Model DL1 or 2104 Model TL1:

- PCI SCSI-2 Fast/Wide Adapter/A (Feature Code 2415 Type Number 4-7)
- PCI SCSI-2 F/W RAID Adapter (Feature Code 2493 Type Number 4-8)
- PCI 3-Channel Ultra2 SCSI RAID Adapter (Feature Code 2494 Type Number 4-T)
- PCI Dual Channel Ultra2 SCSI Adapter (Feature Code 6205 Type Number 4-R)
- PCI Single-Ended Ultra SCSI Adapter (Feature Code 6206 Type Number 4-T)
- PCI Single-Ended Plus SCSI RAID Adapter (Feature Code 6208 Type Number 4_A)

SCSI cables supported by these adapters are:

Adapter (Feature Code)	Cable Length	Feature Code	Part Number
6205 or 2494	20 meters	9320	09L3307
	10 meters	9310	09L3305
	5 meters	9305	09L3303
	3 meters	9303	09L3301
	1 meter	9301	09L3299
6206 or 2493	3 meters	9313	09L3309
2415	3 meters	9323	09L3311

SCSI Service Aids

Service aids are available on the using system to help you service the IBM Expandable Storage Plus disk enclosure. Service aids described in the *IBM Expandable Storage Plus: 2104 Service Guide, GY33-0194* are:

- Format Media
- Certify Media
- SCSI Device Identification and Removal
- Download Microcode

Identifying IBM Expandable Storage Plus Disk Enclosures and Disk Drive Modules

You can identify an IBM Expandable Storage Plus disk enclosure and the disk drive modules installed in it either by the location code contained in system messages that refer to that unit, or by using the SCSI Device Identification and Removal service aid.

See “Location Codes” in the operator guide for your system for general information about location codes.

Problem Determination

For some problems, your system diagnostics tell you to check the lights on the system to determine which part, if any, has a fault. “Controls and Lights” on page 7 of this book shows the position of the lights. The diagnostic programs tell you what to report to your service representative. (“Reporting Problems” on page 79 describes other information you should report.)

Checking the SCSI Error Log

You can check the error log by running diagnostics in Problem Determination mode. They check the error log and present messages about any problems that have been logged. Your system manuals describe how to run the diagnostic programs.

Configuring a 2104 to the using system

Use the **cfgmgr** command to configure or reconfigure a 2104 to the using system.

Unconfiguring a 2104 from the using system

To remove a 2104 from the using system, use the following command:

```
rmdev -l [enclosurenumber] -d
```

where [enclosurenumber] is the enclosure device that was generated by the **cfgmgr** command (for example, [ses0], [ses1], [ses2]).

Remove the ses_healthcheck job from the system cron table.

Web Support Page

You can find the web support page at:

<http://www.rs6000.ibm.com/support>

Related Publications

- *Diagnostic Information for Micro Channel Bus Systems, SA23-2765*
- *Diagnostic Information for Multiple Bus Systems, SA38-0509*
- *Site and Hardware Planning Information, SA38-0508*
- *Adapters, Devices and Cable Information for Micro Channel Bus Systems, SA23-2764*
- *Adapters, Devices and Cable Information for Multiple Bus Systems, SA38-0516*

Appendix B. Translated Safety Notices

This appendix contains the danger and caution notices that are used in the various books related to the Expandable Storage Plus: 2104 Models DL1 and TL1. The notices are shown in English and in various other languages.

Danger notice	A danger notice calls attention to a situation that is potentially lethal or extremely hazardous to people.
Caution notice	A caution notice calls attention to a situation that is potentially hazardous to people because of some existing condition.

Always use safe working procedures whenever you work on machines. Use your own judgment to identify safety conditions that these notices do not describe.

Danger Notices

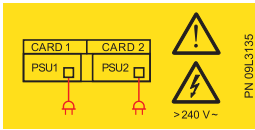
DANGER

In the following step you are going to remove the power cables. These cables are live if the rack power distribution unit or battery-backup unit is still switched on.

DANGER

Do not try to open the covers of the fan-and-power-supply assembly.

Caution Notices



CAUTION:

This unit may have two linecords, to remove all power, disconnect both linecords.



CAUTION:

This unit weighs 38.5 Kg.

CAUTION:

The stabilizer must be correctly attached to the bottom front of the rack to prevent the rack from tipping forward while the units are being removed from the rack. Do not pull out or install any unit if the stabilizer is not attached to the rack.

CAUTION:

A 2104 Model DL1 weighs up to 38.5 kg (85 lb) with disk drive modules installed. Do not attempt to remove the 2104 from the rack unless all the disk drive modules have been removed.

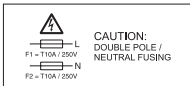
CAUTION:

Do not attempt to lift the 2104 by yourself. Ask another service representative for aid.



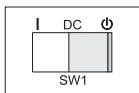
CAUTION:

Do not remove cover, do not service, no serviceable parts.



CAUTION:

Double pole/neutral fusing



CAUTION:

A "Standby" condition is indicated by the symbol to the right of "DC" directly above the switch, SW1. When SW1 is toggled to the right position directly under the "Standby" symbol, the unit's AC-power is not shut off.

Traduction des consignes de sécurité

Français

Cette annexe contient la traduction des consignes de type Danger et Attention figurant dans les différents manuels concernant Expandable Storage Plus: 2104 Models DL1 and TL1.

Consignes de type Danger	Les consignes de sécurité de type Danger indiquent la présence d'un risque de blessures graves, voire mortelles.
Consignes de type Attention	Les consignes de sécurité de type Attention indiquent la présence d'un risque de blessures légères.

Respectez toujours les consignes de sécurité lorsque vous travaillez sur des machines. Mettez vous même en place les conditions de sécurité nécessaires dans les cas non prévus par ces consignes.

Consignes Danger

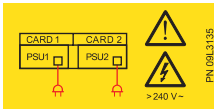
DANGER

Dans l'étape qui suit, vous allez devoir débrancher les cordons d'alimentation. Ces cordons sont toujours alimentés si le cordon d'alimentation de l'armoire ou la batterie de secours sont en fonction.

DANGER

N'essayez pas d'ouvrir le bloc ventilateur-alimentation.

Consignes Attention



ATTENTION:

Cette unité peut posséder deux cordons d'alimentation.
Pour supprimer toutes les tensions dans l'unité, débranchez les deux cordons.



ATTENTION:

Cette unité pèse 38.5 kg.

ATTENTION:

Le stabilisateur doit être solidement fixé au bas de la face avant de l'armoire pour empêcher cette dernière de basculer lorsqu'on en retire des unités.
Ne retirez pas ou n'installez pas d'unité avant d'avoir vérifié que le stabilisateur est bien fixé à l'armoire.

ATTENTION:

Un 2104 Modèle DL1 peut peser jusqu'à 38.5 kg, disque dur compris. N'essayez pas de retirer le 2104 de l'armoire avant d'avoir retiré le disque dur.

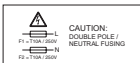
ATTENTION:

N'essayez pas de soulever seul le 2104. Faites-vous aider pour le déplacer en toute sécurité.



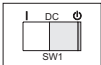
ATTENTION:

Ne pas ouvrir. Ne tenter aucune réparation. Aucune pièce n'est réparable en clientèle.



ATTENTION:

L'un des deux fusibles est sur le neutre.



ATTENTION:

Un état "Attente" est indiqué par le symbole à droite de "DC" au-dessus de l'interrupteur SW1. Lorsque Sw1 bascule dans la bonne position sous le symbole "Attente", l'alimentation (courant alternatif) de l'unité n'est pas coupée.

Sicherheitshinweise

Deutsch

Dieser Abschnitt enthält die Sicherheitshinweise VORSICHT und ACHTUNG, die in den Veröffentlichungen zum IBM Expandable Storage Plus 2104, Modelle DL1 und TL1 verwendet werden.

Hinweis VORSICHT

Der Hinweis VORSICHT macht auf eine Gefahr aufmerksam, die tödliche oder schwere Verletzungen zur Folge haben kann.

Hinweis ACHTUNG

Der Hinweis ACHTUNG macht auf mögliche Probleme aufmerksam, die zu einer Personengefährdung führen können.

Beachten Sie bei Arbeiten an Maschinen stets die Sicherheitsbestimmungen. Es liegt in der Verantwortung jedes einzelnen selbst, mögliche Sicherheitsrisiken zu erkennen.

Hinweise VORSICHT

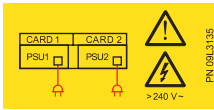
VORSICHT

Im folgenden Schritt werden die Netzkabel gelöst. Ist die Stromversorgungseinheit oder Notstromversorgungseinheit des Gehäuses noch eingeschaltet, führen diese Kabel Strom.

VORSICHT

Abdeckungen des Netzteils nicht abnehmen.

Hinweise ACHTUNG



ACHTUNG:

Sollte die Einheit zwei Stromversorgungskabel besitzen, beide Stromversorgungskabel lösen, um die Einheit ganz von der Netzspannung zu trennen.



ACHTUNG:

Diese Einheit wiegt ungefähr 38.5 kg.

ACHTUNG:

Der Stabilisator muß ordnungsgemäß unten an der Vorderseite des Gehäuses angebracht werden, um ein Vorkippen beim Entfernen der Einheiten aus dem Gehäuse zu verhindern. Die Einheiten nicht installieren oder entfernen, wenn der Stabilisator nicht am Gehäuse montiert ist.

ACHTUNG:

Ein IBM 2104 Modell DL1 kann mit installierten Plattenlaufwerkmodulen bis zu 38.5 kg wiegen. Den IBM 2104 Modell DL1 nicht aus dem Gehäuse entfernen, bevor alle Plattenlaufwerkmodule entfernt wurden.

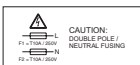
ACHTUNG:

Nicht versuchen, den IBM 2104 alleine anzuheben. Zum Anheben sind zwei Personen erforderlich.



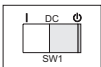
ACHTUNG:

Verkleidung nicht entfernen, nicht reparieren. Es sind keine zu wartenden Teile enthalten.



ACHTUNG:

Zweipolige bzw. Neutralleitersicherung



ACHTUNG:

Eine "Standby"-Bedingung wird durch das Symbol rechts von der Gleichstromkontrolleuchte (DC) direkt über dem Schalter Sw1 angezeigt. Wenn der Schalter Sw1 rechts direkt unter dem Symbol "Standby" steht, ist die Einheit nicht ausgeschaltet.

Greek

Ελληνικά

Το παράρτημα αυτό περιέχει μεταφράσεις των σημειώσεων κινδύνου και προσοχής που χρησιμοποιούνται στα διάφορα εγχειρίδια που σχετίζονται με το προϊόν Expandable Storage Plus: 2104 Τύπος DL1 και TL1.

Σημείωση κινδύνου: Μια σημείωση κινδύνου επισημαίνει μια κατάσταση που μπορεί να είναι πολύ επικίνδυνη ή και θανατηφόρος για τους ανθρώπους.

Σημείωση προσοχής: Μια σημείωση προσοχής επισημαίνει μια κατάσταση που μπορεί να είναι επικίνδυνη για τους ανθρώπους λόγω ορισμένων συνθηκών.

Ακολουθείτε πάντα ασφαλείς διαδικασίες εργασίας όταν εργάζεστε με μηχανές. Χρησιμοποιείτε τη δική σας κρίση για να αναγνωρίζετε άλλες συνθήκες που τυχόν επηρεάζουν την ασφάλεια και δεν περιγράφονται σε αυτές τις σημειώσεις.

Σημειώσεις κινδύνου

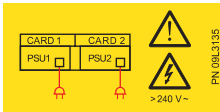
ΚΙΝΔΥΝΟΣ

Στο ακόλουθο βήμα θα αφαιρέσετε τα καλώδια ρεύματος. Στα καλώδια αυτά υπάρχει ηλεκτρικό ρεύμα αν η μονάδα διανομής ρεύματος του ικριώματος (rack) ή η εφεδρική μπαταρία είναι ακόμα σε λειτουργία.

ΚΙΝΔΥΝΟΣ

Μην επιχειρήσετε να ανοίξετε τα καλύμματα της συσκευής που περικλείει την πηγή ρεύματος και τον ανεμιστήρα.

Σημειώσεις προσοχής



ΠΡΟΣΟΧΗ:

Ο σταθεροποιητής πρέπει να προσαρτηθεί σωστά στο κάτω εμπρόσθιο μέρος του ικρίωματος ώστε να μην γείρει προς τα εμπρός το ικρίωμα κατά την αφαίρεση των μονάδων από το ικρίωμα. Μην αφαιρέσετε ή εγκαταστήσετε καμία μονάδα αν δεν έχει προσαρτηθεί στο ικρίωμα ο σταθεροποιητής.



ΠΡΟΣΟΧΗ:

Η μονάδα αυτή έχει βάρος 38,5 Kg.

ΠΡΟΣΟΧΗ:

Μια μονάδα 2104 Τύπου DL1 έχει βάρος 38,5 Kg με εγκατεστημένες τις μονάδες δίσκου. Μην επιχειρήσετε να αφαιρέσετε τη μονάδα 2104 από το ικρίωμα αν δεν έχουν αφαιρεθεί όλες οι μονάδες δίσκου.

ΠΡΟΣΟΧΗ:

Μην επιχειρήσετε να ανυψώσετε τη μονάδα 2104 μόνος σας. Ζητήστε τη βοήθεια ενός ακόμα τεχνικού υπηρεσιών.

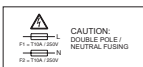
ΠΡΟΣΟΧΗ:

Μην αφαιρέσετε το κάλυμμα, μην επιχειρήσετε να κάνετε συντήρηση της μονάδας, δεν υπάρχουν εξαρτήματα των οποίων μπορεί να γίνει συντήρηση.



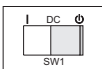
ΠΡΟΣΟΧΗ:

Η μονάδα αυτή μπορεί να έχει δύο καλώδια γραμμής. Για να διακόψετε πλήρως την παροχή ρεύματος, αποσυνδέστε και τα δύο καλώδια γραμμής.



ΠΡΟΣΟΧΗ:

Ασφάλεια δύο πόλων/ουδέτερου.



ΠΡΟΣΟΧΗ:

Η κατάσταση "Standby" σημειώνεται με το σύμβολο που βρίσκεται στα δεξιά της σήμανσης "DC" πάνω από το διακόπτη SW1. Αν ο διακόπτης SW1 είναι στη δεξιά θέση, κάτω ακριβώς από το σύμβολο "Standby", η παροχή εναλλασσόμενου ρεύματος της μονάδας δεν έχει διακοπεί.

הודעות בטיחות מתורגמות

עברית

נספח זה מכיל תרגומים של הודעות הסכנה והזהירות המופיעות בספרים השונים הקשורים אל
Expandable Storage Plus: 2104 דגמים DL1 ו-TL1.

הודעת סכנה הודעת סכנה מפנה את תשומת הלב למצב העלול לגרום מוות או להיות מסוכן ביותר לבני
אדם.

הודעת זהירות הודעת זהירות מפנה את תשומת הלב למצב העלול להיות מסוכן לבני אדם בגלל תנאים
קיימים מסוימים.

יש לנהוג תמיד לפי כללי הזהירות בעת העבודה עם מכונות. השתמשו בשיפוטכם כדי לזהות תנאי
בטיחות שהודעות אלה אינן חלות עליהם.

הודעות סכנה

סכנה

בשלב הבא אתם עומדים לנתק את כבלי החשמל. כבלים אלה מכילים זרם חשמלי אם יחידת
מפצל המתח ויחידת אל-פסק במסד המכשירים עדיין פועלים.

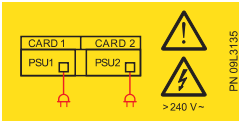
סכנה

אל תנסו לפתוח את המכסים של מכלול המאוורר וספק הכוח.

הודעות זהירות

זהירות:

המייצב חייב להיות מחובר כראוי בתחתית מסד המכשירים כדי למנוע מהמסד ליפול קדימה בזמן הוצאת היחידות מהמסד. אל תמשכו החוצה או תתקינו יחידות אם המייצב אינו מחובר אל מסד המכשירים.



זהירות:

יחידה זו שוקלת 38.5 ק"ג.



זהירות:

יחידת 2104 דגם DL1 שוקלת 38.5 ק"ג כאשר המודולים של כונני הדיסקים מותקנים בתוכה. אל תנסו להוציא את היחידה מהמסד לפני שתנתקו את כל המודולים של כונני הדיסקים.

זהירות:

אל תנסו להרים לבדכם את יחידת 2104. בקשו עזרה מנציג שירות אחר.

זהירות:

אל תסירו את המכסה, אל תבצעו טיפול שירות, אין חלקים שאפשר לטפל בהם.

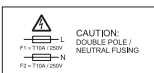
זהירות:

ליחידה זו יכולים להיות שני כבלי חשמל. לניתוק הזרם, יש לנתק את שני הכבלים.



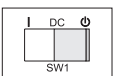
זהירות:

הגנת נתיך כפולה (פאזה/אפס)



זהירות:

חיווי מצב "כוננות" (standby) מופיע מימין לציון DC בדיוק מעל המתג SW1. כאשר מתג SW1 מוסט ימינה, בדיוק מתחת לחיווי הכוונות, מתח הרשת של היחידה אינו מנותק.



Lefordított biztonsági előírások

Magyar

Ez a függelék a veszélyre és az óvatosságra figyelmeztető előírások fordítását tartalmazza, amely a bővíthető tárolók: 2104 Modell DL1 és TL1 berendezésekre vonatkozó különféle könyvekben fordul elő.

Veszélyre utaló megjegyzés

A veszélyre utaló megjegyzés olyan helyzetre hívja fel a figyelmet, amely halálos vagy rendkívüli veszélyt jelent az emberekre.

Figyelmeztető megjegyzés

A figyelmeztető megjegyzés olyan helyzetre hívja fel a figyelmet, amely bizonyos meglévő feltételek miatt veszélyt jelent az emberekre.

Mindig a biztonságos munkavégzésre helyezze a hangsúlyt, valahányszor a berendezésekkel dolgozik. A biztonságos helyzet megítélésében saját véleményére támaszkodjon, ha az alábbi megjegyzések nem ismertetik az adott szituációt.

Veszélyre utaló megjegyzések

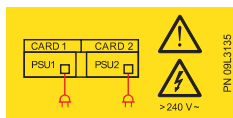
Vigyázat, veszély!

A következő lépésben eltávolítja a tápkábeleket. Ezek a kábelek áram alatt vannak, ha a tartókeret tápfeszültség elosztó egysége vagy a tartalék akkumulátor egysége még bekapcsolt állapotban van.

Vigyázat, veszély!

Ne próbálja meg a ventilátor és a tápegység szerelvény borítóit kinyitni.

Figyelmeztető megjegyzések



Figyelem:

A stabilizátort (rögzítőt) megfelelően szerelje fel a tartókeret elejének alsó részére, hogy megakadályozza a keret megbillenését, amikor az egységeket kihúzza a keretből. Ne húzzon ki és ne telepítsen egyetlen egységet sem, ha a rögzítő nincs felszerelve.



Figyelem:

Az egység súlya 38.5 kg.

Figyelem:

A 2104 Modell DL1 súlya 38.5 kg (85 lb) is lehet, ha a lemezegység modulok telepítve vannak. Ne próbálja meg eltávolítani a 2104-es berendezést a keretből addig, amíg ki nem vette az összes lemezegység modult.

Figyelem:

Ne kísérelje meg egyedül megemelni a 2104-es berendezést. Kérjen meg másik szervíz szakembert, hogy segítsen.

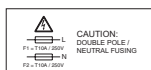
Figyelem:

Ne távolítsa el a borítót, ne szervizeljen nem szervizelhető részeket.



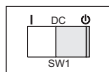
Figyelem:

Ez az egység két tápkábelrel rendelkezik, ezért a teljes áramtalanításhoz húzza ki mind a kettő tápkábelt.



Figyelem:

Dupla pólus/nulla biztosítás



Figyelem:

A "Standby" feltételt a közvetlenül az SW1 kapcsoló felett lévő "DC" felirattól jobbra látható szimbólum jelzi. Amikor az SW1 kapcsolót jobbra kapcsolja közvetlenül a "Standby" szimbólum alá, akkor az egységek AC tápforrása nincs lekapcsolva.

Informazioni relativi alla sicurezza

Italiano

Questo opuscolo contiene la traduzione degli avvisi di pericolo e di attenzione presenti nei manuali relativi all'Expandable Storage Plus: 2104 Modelli DL1 e TI1.

Avviso di pericolo

Un avviso di pericolo richiama l'attenzione su una situazione potenzialmente mortale oppure estremamente pericolosa per le persone.

Avviso di attenzione

Un avviso di attenzione richiama l'attenzione su una situazione che, in presenza di alcune condizioni, è potenzialmente pericolosa per le persone.

Rispettare sempre le norme di sicurezza quando si utilizzano le macchine. Valutare con attenzione eventuali condizioni di rischio che non sono descritte in questi avvisi.

Avvisi di pericolo

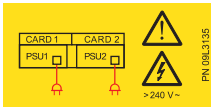
PERICOLO

Al prossimo passo, sarà necessario rimuovere i cavi di alimentazione. Se l'unità di distribuzione dell'energia nel rack e l'unità batteria di riserva sono ancora accese, tali cavi sono in tensione.

PERICOLO

Non tentare di aprire i coperchi dell'assieme ventilatore-alimentatore.

Avvisi di attenzione



ATTENZIONE:

Quest'unità può avere due cavi di alimentazione; per disattivare completamente l'alimentazione, scollegare entrambi i cavi.



ATTENZIONE:

Questa unità pesa 38.5 KG.

ATTENZIONE:

Lo stabilizzatore deve essere correttamente assicurato alla parte frontale, estremità inferiore del rack per evitare che quest'ultimo si inclini in avanti durante la rimozione delle unità dal rack. Non installare o non estrarre alcuna unità se lo stabilizzatore non è installato.

ATTENZIONE:

Un'unità 2104 pesa fino a 38.5 kg (85 lb) con i moduli disco installati. Rimuovere tutti i moduli disk driver prima di estrarre l'unità 2104.

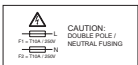
ATTENZIONE:

Non tentare di sollevare l'unità 2104 da solo. Chiedere l'aiuto di un'altra persona del servizio assistenza.



ATTENZIONE:

Non rimuovere il coperchio, non effettuare manutenzione, non contiene parti soggette a manutenzione.



ATTENZIONE:

Fusibili fase e neutro



ATTENZIONE:

La condizione di "Standby" (attesa) viene indicata dal simbolo "DC Standby" posto a destra sopra l'interruttore Sw1. Quando l'interruttore Sw1 è attivato, in basso a destra viene indicata la dicitura "DC ON"; l'unità "AC power" (alimentazione ca) risulta accesa.

ここでは、Exp Plus:2104 モデル DL1 および TL1 に関連する各種マニュアルの中で使われている危険と注意について記述しています。



この表示を無視して誤った取り扱いをすると、人が死亡または重傷を負う可能性がある危険が存在する内容を示しています。



この表示を無視して誤った取り扱いをすると、人が障害を負う可能性が想定される内容または物的障害の発生が想定される内容を示しています。

機器を作動させているときは常に、安全で正しい手続きに従って使用してください。また、ここでの注意書きに記述されていないケースについても、ユーザー自身の判断で安全な条件のもとで機器を使用するようにしてください。

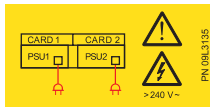


次のステップで電源ケーブルを抜きます。電力配分装置のラックやバッテリー・バックアップ装置の電源がオンの場合、このケーブルには電流が通っています。



ファン / 電源機構のカバーを開けないでください。

⚠ 注意



⚠ 注意

装置をラックから取り外す時には、ラックが前に傾かないように、ラックの底面の前部に安定板を正しく取り付けてください。安定板がラックに付いていないときには、装置をラックに収めたり、ラックから引き出すことはしないでください。



⚠ 注意

この装置の重量は 38.5 kg です。

⚠ 注意

2104 モデル DL1 の重量は、ディスク・ドライブ・モジュールをインストールすると、38.5 kg になります。すべてのディスク・ドライブ・モジュールを取り外してから、ラックから 2104 を取り出すようにしてください。

⚠ 注意

2104 をひとりで持ち上げないでください。他の保守担当員の助けを借りてください。

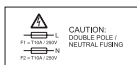
⚠ 注意

この装置には電源コードが 2 本あります。遮断を完全に行うには、2 本とも引き抜いてください。



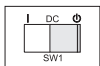
⚠ 注意

カバーを外さないでください。保守作業をしないでください。保守可能な部品はありません。



⚠ 注意

両極 / 中性線ヒューズ



⚠ 注意

「スタンバイ」状態は、SW1 スイッチの真上の DC の右に記号で示されます。SW1 が「スタンバイ」記号の真下で右側に倒されている場合、装置の AC 電源は遮断されていません。

안전 주의사항

한글

이 부록에는 Expandable Storage Plus: 2104 모델 DL1 및 TL1과 관련된 여러 책에서 사용되는 위험 및 경고 주의사항을 번역한 내용이 들어 있습니다.

위험 주의사항	사용자에게 치명적일 수 있거나 매우 위험한 상황에 대해 주의를 환기시킵니다.
경고 주의사항	기존의 조건때문에 사용자에게 위험할 수 있는 상황에 대해 주의를 환기시킵니다.

기계 작업을 할 때는 항상 안전 작업 절차를 따르십시오. 이 주의사항에 나와있지 않은 안전에 관한 상황은 스스로 판단해서 조치를 취하십시오.

위험 주의사항

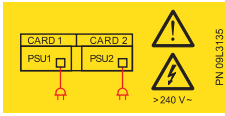
위험

다음 단계에서 전원 케이블을 제거하는 경우, 랙 분산 장치 또는 배터리 백업 장치의 전원이 켜져 있으면 이 케이블에는 전류가 흐르고 있는 상태입니다.

위험

송풍기 및 전원 공급 장치의 덮개를 열지 마십시오.

경고 주의사항



경고:

이 장치에는 두 개의 라인코드가 있습니다. 모든 전원을 차단하려면 두 개의 라인코드를 모두 연결 해제하십시오.



경고:

이 장치의 무게는 38.5 kg 입니다.

경고:

장치가 랙에서 제거되는 동안 앞으로 넘어지는 것을 방지하기 위해서는 스테블라이저가 랙의 앞쪽 아래 부분에 제대로 설치되어 있어야 합니다. 스테블라이저가 랙에 접속되어 있지 않다면 어떤 장치도 꺼내거나 설치하지 마십시오.

경고:

디스크 드라이브 모듈이 설치되어 있는 2104 모델 DL1은 38.5 kg (85 파운드) 까지 무게가 나갑니다. 모든 디스크 드라이브 모듈이 제거되지 않은 경우, 2104를 랙에서 제거하지 마십시오.

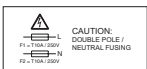
경고:

2104를 혼자 들어올리려고 하지 마십시오. 다른 서비스 직원에게 도움을 요청하십시오.



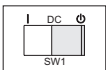
경고:

덮개를 제거하지 마십시오. 서비스 가능 부품이 아니오니 서비스하지 마십시오.



경고:

이중 중성극 퓨즈



경고:

"Standby" 상태는 SW1 스위치 바로 위쪽의 "DC" 오른쪽에 기호로 표시됩니다. SW1이 "Standby" 기호 아래의 오른쪽 위치로 설정되면 장치의 AC 전원은 차단되지 않습니다.

Avisos de Segurança Traduzidos

Português

Este apêndice contém traduções dos avisos de perigo e cuidado utilizados em diversos manuais relacionados ao produto Expandable Storage Plus: 2104 Modelos DL1 e TI1.

Aviso de perigo	Um aviso de perigo adverte sobre uma situação potencialmente letal ou extremamente prejudicial às pessoas.
Aviso de cuidado	Um aviso de cuidado adverte sobre uma situação potencialmente prejudicial às pessoas devido a alguma condição existente.

Sempre utilize procedimentos de trabalho seguros ao operar máquinas. Utilize seu próprio julgamento para identificar as condições de segurança não descritas nestes avisos.

Avisos de Perigo

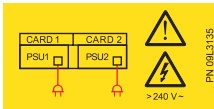
PERIGO

Na etapa a seguir você removerá os cabos de alimentação. Estes cabos conduzirão corrente elétrica, se a unidade de distribuição de energia do rack ou a unidade de bateria de backup ainda estiverem ligadas.

PERIGO

Não tente abrir as tampas do conjunto de ventilador e fonte de alimentação.

Avisos de Cuidado



CUIDADO:

Esta unidade pode ter dois cabos de alimentação;
para desligar toda a energia, desconecte os dois cabos.



CUIDADO:

Esta unidade pesa 38,5 kg.

CUIDADO:

O estabilizador deve estar conectado corretamente à parte frontal inferior do rack para evitar que o rack caia para frente quando as unidades estiverem sendo removidas do rack. Não retire ou instale nenhuma unidade, se o estabilizador não estiver conectado ao rack.

CUIDADO:

Um subsistema 2104 Modelos DI1 e TI1 pode pesar até 38.5 kg (85 lb) com os módulos de unidade de disco instaladas. Não tente remover o subsistema 2104 do rack, a menos que todos os módulos da unidade de disco tenham sido removidos

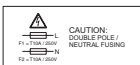
CUIDADO:

Não tente erguer o subsistema 2104 sozinho. Peça ajuda de outro representante técnico.



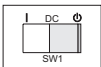
CUIDADO:

Não remova a tampa, não faça manutenção, não existem peças que possam ser consertadas.



CUIDADO:

Fusão dupla polo/neutro



CUIDADO:

Uma condição de "Standby" é indicada pelo símbolo à direita de "DC", diretamente acima da chave, Sw1. Quando a chave SW1 é comutada para a direita, diretamente abaixo do símbolo "Standby", a energia AC da unidade não é desligada.

Avisos de seguridad traducidos

Español

Este apéndice contiene las traducciones de los avisos de peligro y precaución que se utilizan en diversos manuales relacionados con los Modelos DL1 y TL1 del Expandable Storage Plus: 2104.

Aviso de peligro

Un aviso de peligro llama la atención ante una situación potencialmente mortal o extremadamente peligrosa para los usuarios.

Aviso de precaución

Un aviso de precaución llama la atención ante una situación potencialmente peligrosa para los usuarios debido a alguna condición existente.

Deben utilizarse siempre procedimientos de trabajo seguros en el trabajo con máquinas. Utilice su propio criterio para identificar las condiciones de seguridad que no están descritas en estos avisos.

Avisos de peligro

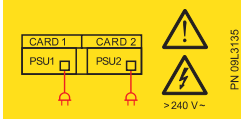
PELIGRO

En el próximo paso va a eliminar los cables de alimentación. Estos cables están activos si la unidad de distribución de alimentación del bastidor o la unidad de batería de reserva todavía está conectada.

PELIGRO

No intente abrir las cubiertas del conjunto del ventilador y la fuente de alimentación.

Avisos de precaución



PRECAUCIÓN:

Esta unidad puede tener dos cables de línea; para eliminar toda la alimentación, desconecte ambos cables.



PRECAUCIÓN:

Esta unidad pesa 38,5 kg.

PRECAUCIÓN:

El estabilizador debe estar correctamente conectado a la parte frontal inferior del bastidor, para evitar que el bastidor se incline hacia adelante cuando se extraigan las unidades de su interior. No extraiga ni instale ninguna unidad si el estabilizador no está conectado al bastidor.

PRECAUCIÓN:

Un 2104 Modelo DL1 pesa hasta 38,5 kg. (85 libras) si tiene instalados los módulos de unidad de disco. No intente extraer el 2104 del bastidor a menos que se hayan extraído los módulos de unidad de disco.

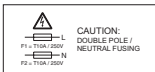
PRECAUCIÓN:

No intente levantar usted mismo el 2104. Solicite ayuda de otro representante del servicio técnico.



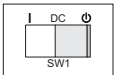
PRECAUCIÓN:

No quite la cubierta, no preste servicio de mantenimiento, estas piezas no son susceptibles de recibir servicio de mantenimiento.



PRECAUCIÓN:

Fusión neutra/polo doble



PRECAUCIÓN:

Una condición de "Espera" se indica mediante el símbolo que aparece a la derecha de "DC" (CC), directamente encima del conmutador, SW1. Cuando SW1 está conmutado a la posición derecha directamente debajo del símbolo de "Espera", la alimentación CA de la unidad no está desactivada.

Index

A

- Active light
 - SCSI interface card 15
- Active light, SCSI interface card 15
- activity light, disk drive module 9

C

- check light
 - disk drive module 9
 - disk enclosure 7
 - fan assembly 13
 - power supply assembly 12
- check light, power supply assembly 12
- configurations
 - deskside 5
 - rack-mounted 2
- controls
 - disk drive module 8
 - Subsystem 7
- cover locks 21

D

- DC ON/Standby switch
 - power supply assembly 12
- DC Power, power supply assembly 12
- disk drive module
 - adding 23
 - exchanging 34
 - identifying 20
 - lights 8

E

- Enable Enclosure Services switch
 - switch card 18
- Enable Enclosure Services switch, interface card 18
- Enclosure ID switch
 - interface card 17

F

- fan assembly
 - exchanging 53
 - lights 11
- Fault light
 - SCSI interface card 15
- Fault light, SCSI interface card 15

I

- identifying disk drive modules 20
- interface card
 - lights 14

K

- keys, reordering 22

L

- lights
 - disk drive module 8
 - enclosure check 7
 - enclosure power 7
 - fan assembly 11
 - interface card 14
 - power supply assembly 11
 - Subsystem 7
 - switch card 16
- locks
 - deskside unit covers 21
- LVD/SE light
 - SCSI interface card 15
- LVD/SE light, SCSI interface card 15

M

- model number, machine 79

N

- numbers, machine 79

P

- Power Control switch
 - switch card 17
- power light
 - disk enclosure 7
- Power light
 - power supply assembly 12
- Power light, power supply assembly 12
- Power-Good light
 - power supply assembly 12
- power supply assembly
 - lights 11
 - Power light 12
- power-supply assembly
 - exchanging 43
- power switch
 - power supply assembly 12
- problems
 - dealing with 33
 - reporting 79

R

- Reset light
 - SCSI interface card 15
- Reset light, SCSI interface card 15
- Rotary switch
 - interface card 17

S

- safety notices
 - translated 85

- SCSI Cable type
 - SCSI interface card 15
- SCSI Interface Card
 - exchanging 60
- security 21
- Select Enclosure Services switch
 - switch card 18
- Select Enclosure Services switch, interface card 18
- serial number, machine 79
- Subsystem
 - configuration 2, 5
 - controls 7
 - lights 7
 - power control 7
 - turning power on and off 7
- switch
 - power supply assembly power 12
- switch card
 - lights 16
- Switch Card
 - exchanging 72
- system
 - identifying 79

T

- TERM POWER light
 - SCSI interface card 15
- TERM POWER light, SCSI interface card 15
- translated safety notices 85
- turning power on and off 7
- type number, machine 79

Part Number: 09L3325

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