

COVER Book Cover

7131 Model 105
SCSI Multi-Storage Tower

User's Guide

Document Number GC26-7095-01

Part Number 21H8721

NOTICES Notices

+--- **Take Note!** -----+
|
| Before using this information and the product it supports, be sure |
| to read the general information under "Notices" in topic FRONT_1. |
|
+-----+

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Second Edition (April 1996)

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Subtopics

FRONT_1.1 Safety and Environmental Notices

FRONT_1.2 Electronic Emission Notices

FRONT_1.3 Trademarks

FRONT_1.1 Safety and Environmental Notices

Note: For a translation of these danger notices, see *External Devices Safety Information*, SA26-7003. Use the reference numbers in parentheses, for example (RSFTD201), at the end of each note to refer to the translated notice.

Subtopics

- FRONT_1.1.1 Danger Notices
- FRONT_1.1.2 Caution Notices
- FRONT_1.1.3 Attention Notices
- FRONT_1.1.4 Product Recycling
- FRONT_1.1.5 Product Disposal
- FRONT_1.1.6 Environmental Design

FRONT_1.1.1 Danger Notices

A danger notice calls attention to a situation that is potentially lethal or extremely hazardous to people. DANGER

```
+-----+
| To prevent a possible electrical shock during an electrical storm, do |
| not connect or disconnect cables or station protectors for          |
| communications lines, display stations, printers, or telephones.    |
| (RSFTD003)                                                            |
+-----+
```

DANGER

```
+-----+
| To prevent a possible electrical shock from touching two surfaces with |
| different electrical grounds, use one hand, when possible, to connect |
| or disconnect signal cables. (RSFTD004)                               |
+-----+
```

DANGER

```
+-----+
| An electrical outlet that is not correctly wired could place hazardous |
| voltage on metal parts of the system or the products that attach to  |
| the system. It is the customer's responsibility to ensure that the    |
| outlet is correctly wired and grounded to prevent an electrical shock. |
| (RSFTD201)                                                            |
+-----+
```

DANGER

```
+-----+
| To prevent a possible electrical shock when adding or removing any   |
| devices to or from the system, ensure that the power cords for those  |
| devices are unplugged before the signal cables are connected or      |
| disconnected. If possible, disconnect all power cords from the       |
| existing system before you add or remove a device. (RSFTD203)       |
+-----+
```

DANGER

```
+-----+
| To prevent a possible electrical shock when installing the device,    |
| ensure that the power cord for that device is unplugged before      |
| installing signal cables. (RSFTD204)                                   |
+-----+
```


FRONT_1.1.2 Caution Notices

A caution notice calls attention to a situation that is potentially hazardous to people because of some existing condition.

FRONT_1.1.3 Attention Notices

An attention notice indicates the possibility of damage to a program, device, system, or data.

FRONT_1.1.4 Product Recycling

This unit contains recyclable materials. These materials should be recycled where facilities are available and according to local regulations. In some areas IBM will provide a product take-back program that ensures proper handling of the product. Contact your IBM representative for more information.

FRONT_1.1.5 Product Disposal

This unit may contain batteries. These batteries must be removed and discarded or recycled according to local regulations and where facilities exist. Specific information per battery type will be referenced throughout the manual where applicable.

FRONT_1.1.6 Environmental Design

The environmental efforts that have gone into the design of this unit signifies IBM's commitment to improve the quality of its products and processes. Some of these activities include elimination of the use of CFCs, development of reusable or recyclable packaging, and reductions in manufacturing wastes.

FRONT_1.2 Electronic Emission Notices

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Federal Communications Commission (FCC) Statement

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

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult an IBM authorized dealer or service representative for help.

Properly shielded and grounded cables and connectors must be used in order to meet FCC emission limits. Proper cables and connectors are available from IBM authorized dealers. IBM is not 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 the 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.

Industry Canada Compliance statement

This Class B digital apparatus meets the requirements of the Canadian Interference-Causing Equipment Regulations.

Avis de conformité à la réglementation d'Industrie Canada

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Properly shielded and grounded cables and connectors (IBM part number 21H1955 or its equivalent) must be used in order to reduce the potential for causing interference to radio and TV communications and to other electrical or electronic equipment. Such cables and connectors are available from IBM authorized dealers. IBM cannot accept responsibility for an interference caused by using other than recommended cables and connectors.

Germany Only: This product is in conformity with the EN55022 class B emission limits.

Japanese Voluntary Control Council for Interference (VCCI) Statement

This equipment is Class 2 Equipment (information equipment to be used in and around residential districts) which is in conformance with the standard set by Voluntary Control for Interference by Data Processing Equipment and Electronic Office Machines (VCCI) with an aim to prevent radio interference in residential districts.

This equipment could cause interference to reception when used in proximity to radio and television receivers.

Please handle the equipment properly according to the instruction manual.

Korean Government Ministry of Communication (MOC) Statement

Please note that this device has been approved for non-business purposes and may be used in any environment including residential area.

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RISC System/6000

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PREFACE About This Guide

This guide provides information for installation, setup, operation, and upgrade of the 7131 SCSI Multi-Storage Tower.

Subtopics

PREFACE.1 Terminology

PREFACE.2 Related Publications

PREFACE.1 Terminology

The terms used throughout this publication to describe the 7131 Storage Tower include:

7131 Refers to the 7131 SCSI Multi-Storage Tower.

address A device's location identity (ID).

bay A compartment or shelf in the 7131 Storage Tower that houses a drive.

hard disk drive A device that provides data storage in the 7131 Storage Tower.

The disk drive provides direct-access data storage for your processor (see system).

hot-swap bay refers to a compartment in the lower half of the 7131 Storage Tower that houses a hot-swap hard disk drive.

media bay Either of 2 upper compartments in the 7131 Storage Tower that houses devices that store data on various media --hard disk drives, tape drives, and CD-ROM drives.

system The processor for which the 7131 Storage Tower provides data storage--for example, a RISC System/6000.

PREFACE.2 Related Publications

For additional information see:

- *7131 SCSI Multi-Storage Tower Service Guide*, SY27-7509, which provides service information for the 7131 Storage Tower.
- *External Devices Safety Information*, SA26-7003, which provides translation of the general safety notes in this publication into various languages.

You will also need the management and hardware publications for your system during installation or upgrade of the 7131 SCSI Multi-Storage Tower.

1.0 Chapter 1. Overview of the 7131 SCSI Multi-Storage Tower

This chapter describes the 7131 Storage Tower, its features, and operating requirements.

The 7131 Storage Tower is a compact, data storage device that connects to a host system, such as a RISC System/6000. It contains 5 hot-swap bays and 2 media bays into which data storage devices can be installed. You can order a 7131 Storage Tower with up to 5 hot-swap hard disk drives for the 5 hot-swap bays. You can equip the 2 media bays with manual-plug tape drives, CD-ROM drives, or hard disk drives. Figure 1-1 shows the front view of the 7131 Storage Tower with the door closed.

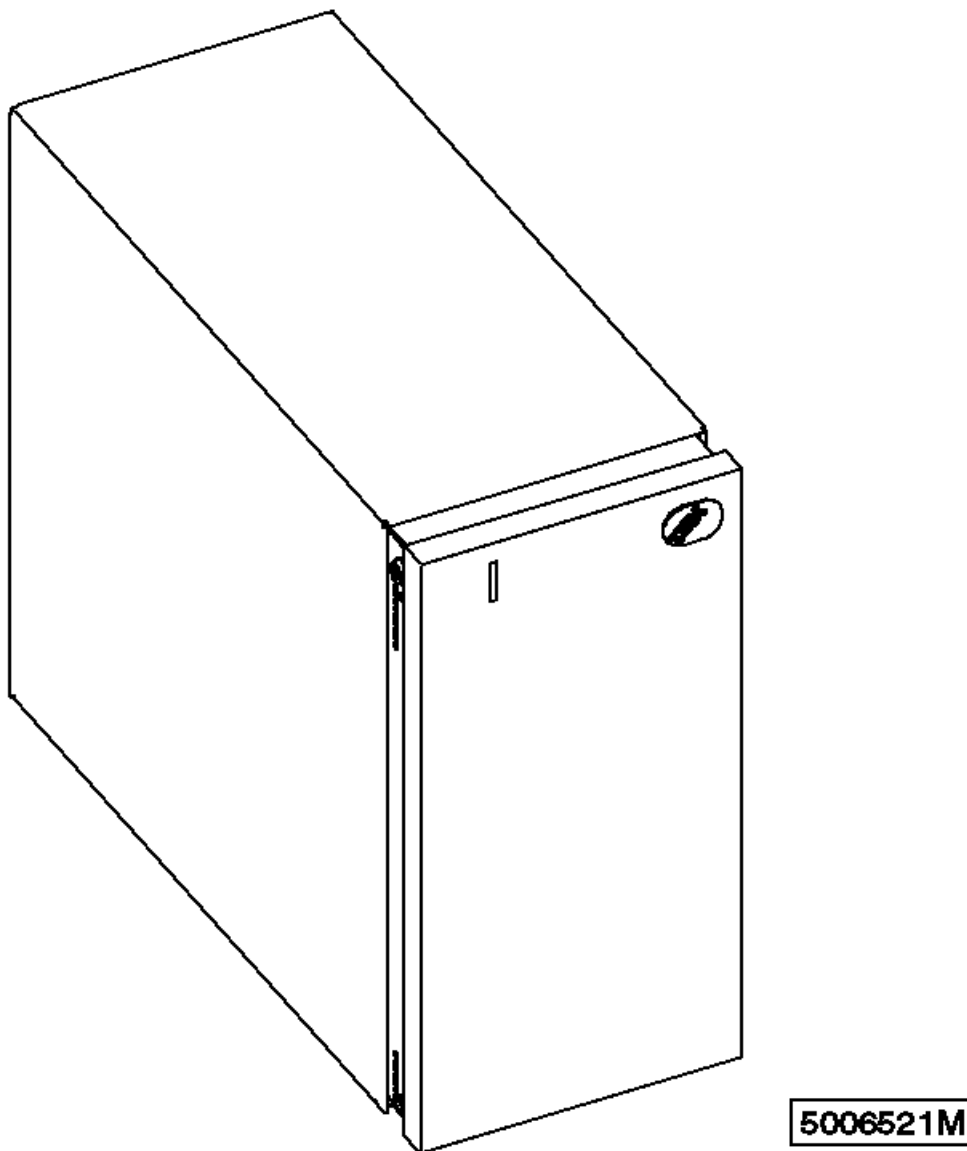


Figure 1-1. The 7131 SCSI Multi-Storage Tower

Subtopics

1.1 Major Features

1.2 Operating Environment

1.1 Major Features

The 7131 Storage Tower provides up to 31.5 gigabytes (GB) of storage. You have the option of linking multiple 7131 Storage Towers to your system, or linking multiple systems to a single 7131 Storage Tower. Using two 7131 Storage Towers, you can mirror data to provide low-cost backup to protect critical data.

The 7131 Storage Tower offers the following advantages over other data storage devices:

- Choice of media
- Easy upgrade and expandability

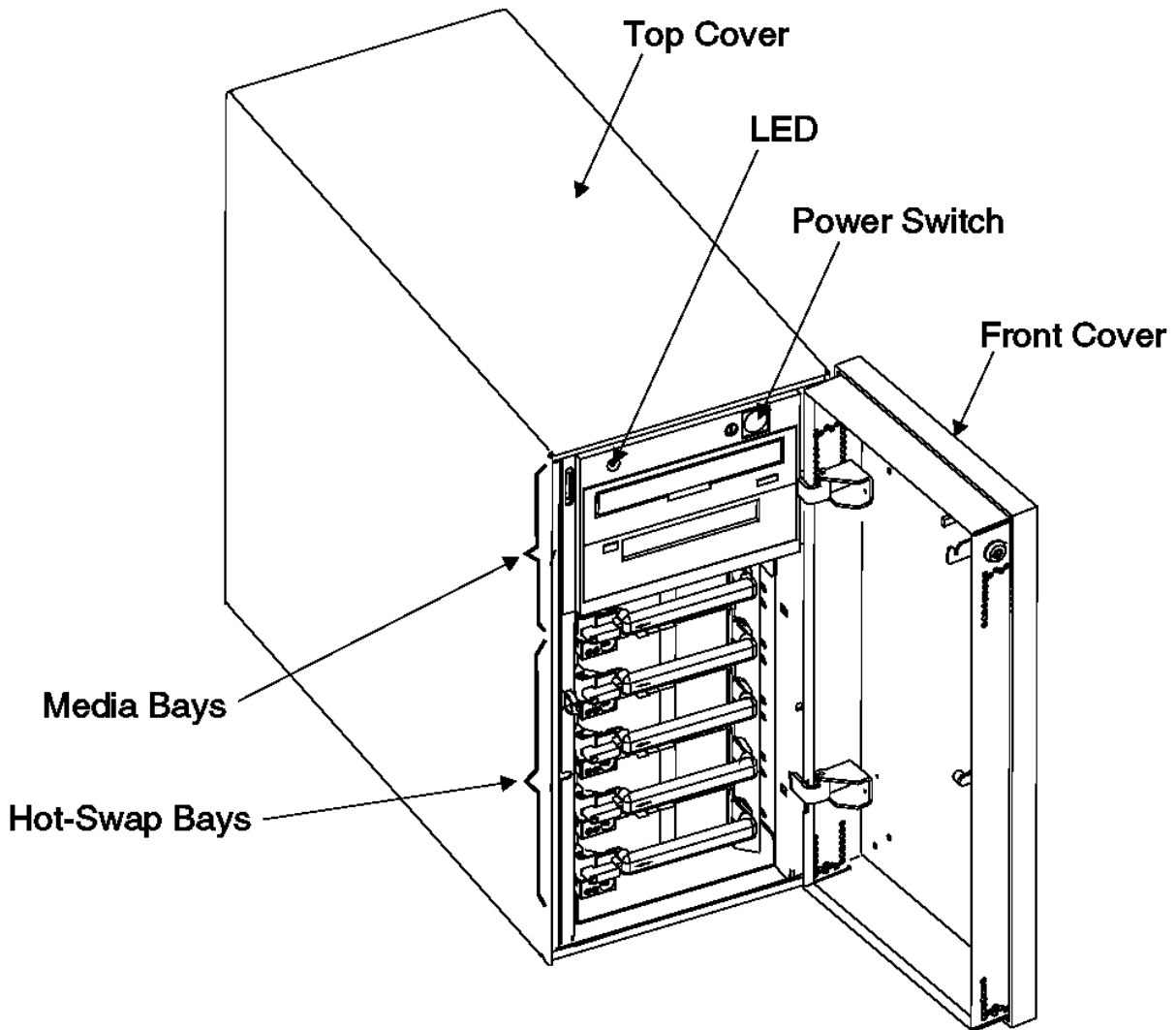
Subtopics

- 1.1.1 Choice of Media
- 1.1.2 Easy Upgrade
- 1.1.3 Hot-Swap Bay Options
- 1.1.4 Media Bay Options

1.1.1 Choice of Media

Each of the 2 media bays can have one of several manual-plug devices installed. Each of the 5 hot-swap bays can contain a hard disk drive from the available choices.

Figure 1-2 shows the 7131 Storage Tower with the front cover open giving a view of the bays and the control panel. The control panel consists of the power switch and a light-emitting diode (LED).



A 5006562N

Figure 1-2. 7131 Storage Tower Interior View

1.1.2 Easy Upgrade

The 7131 Storage Tower has a minimum configuration of 2 hot-swap hard disk drives installed in the hot-swap bays. As the user's requirements change, you can expand your storage capacity or upgrade to higher performing devices by installing any of the options listed in Table 1-2 and Table 1-1.

As a further upgrade, a single-ended to differential (SE/DIFF) card allows you to attach a longer system SCSI cable, an additional host system, or an additional 7131 Storage Tower. The SE/DIFF card must be installed by your IBM service representative.

Instructions for upgrading your 7131 Storage Tower are in Chapter 5, "Upgrading the 7131 SCSI Multi-Storage Tower."

1.1.3 Hot-Swap Bay Options

Table 1-1 lists the hot-swap hard disk drives you can install in the hot-swap bays. All hot-swap hard disk drives are inserted into the 7131 Storage Tower backplane.

Table 1-1. Hot-Swap Hard Disk Drive Options		
Feature	Disk Drive	Capacity
3084	16-bit disk drive	4.5 GB
3083	16-bit disk drive	2.2 GB
3082	16-bit disk drive	1.1 GB

1.1.4 Media Bay Options

Table 1-2 lists the media drives you can install in the media bays. All media drives are manually cabled.

Table 1-2. Media Bay Options, Manual-Plug Devices		
Feature	Media	Capacity
3034	16-bit disk drive(1)	4.5GB
3033	16-bit disk drive	2.2GB
3032	16-bit disk drive	1.1GB
6142	4 mm tape drive	4,0GB
6147	8 mm tape drive	5.0GB
2616	CD-ROM drive	600MB

Note:

- For better cooling, it is recommended that this disk drive be installed in the lower (bay 5) media bay.

Two types of 8-bit 4mm manual-plug tape drive assemblies can be used in the 7131 Storage Tower. They can be identified by the SCSI signal cable connector on the rear of the drive assembly. When viewing the rear of drive assembly type 1, the SCSI signal cable connector is located on the top of the rear face. When viewing the rear of drive assembly type 2, the SCSI signal cable connector is located on the bottom of the rear face. See Figure 1-3 in topic 1.1.4.1 and Figure 1-4 in topic 1.1.4.2 for illustrations of the two drive types.

Subtopics

1.1.4.1 Drive Assembly Rear View - Drive Type 1

1.1.4.2 Drive Assembly Rear View - Drive Type 2

1.1.4.1 Drive Assembly Rear View - Drive Type 1

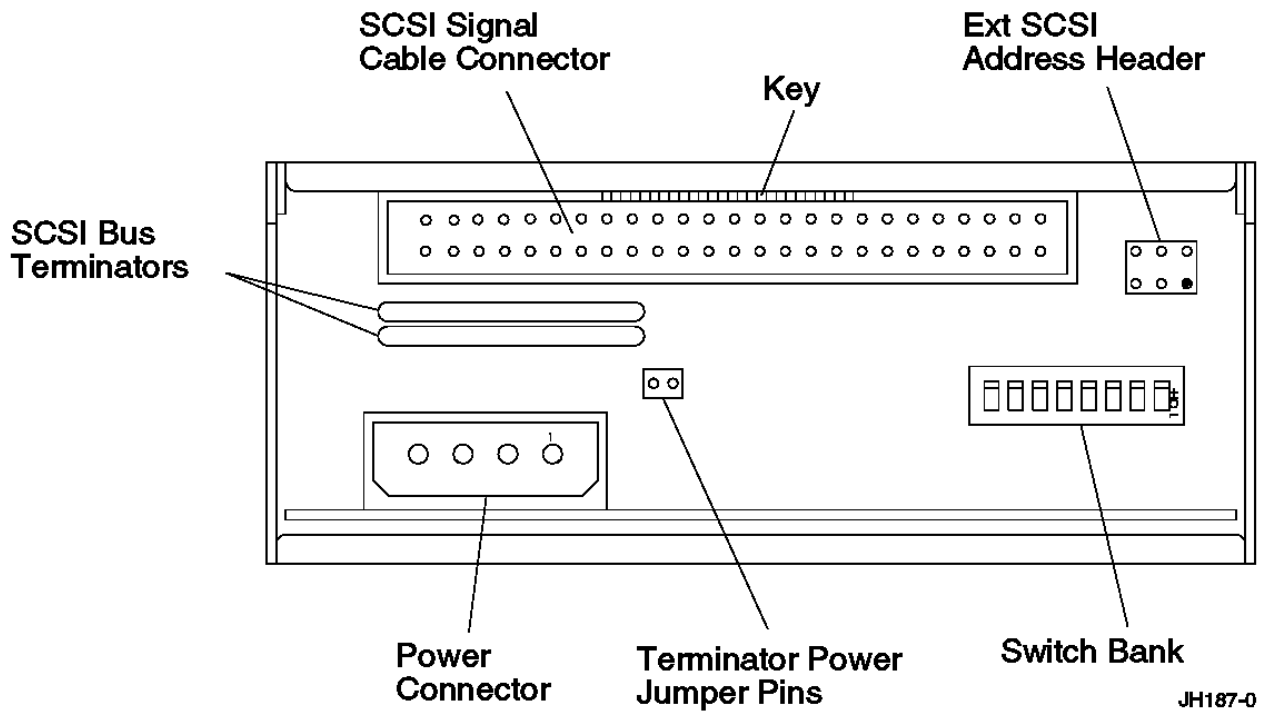


Figure 1-3. Drive Type 1 - SCSI Signal Connector at Top

1.1.4.2 Drive Assembly Rear View - Drive Type 2

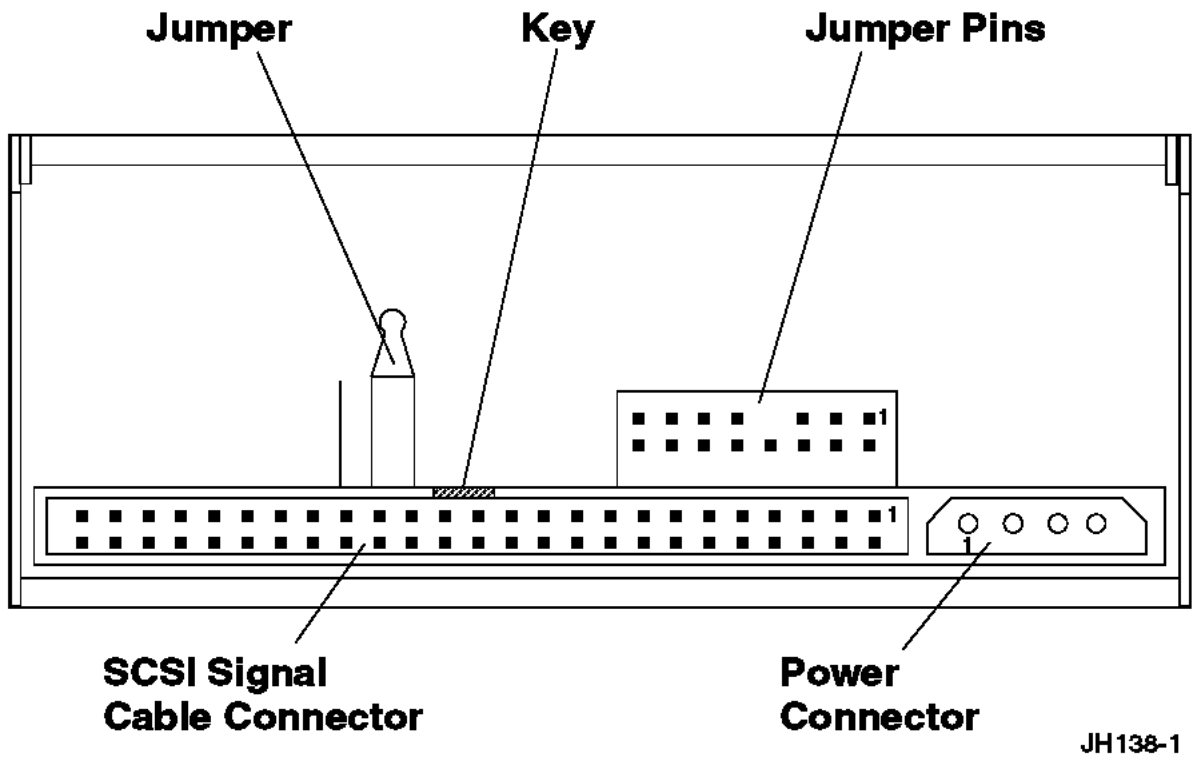


Figure 1-4. Drive Type 2 - SCSI Signal Connector at Bottom

1.2 *Operating Environment*

This section describes the physical specifications for the 7131 Storage Tower and the requirements for the operating environment.

Subtopics

- 1.2.1 Physical Specifications
- 1.2.2 Software Requirements
- 1.2.3 Line Cord Requirements

1.2.1 *Physical Specifications*

Attention: If you are installing more than one 7131 Storage Tower, you must leave a minimum space of 2.5 centimeters (1 inch) between them, and 15 centimeters (6 inches) in the back, to meet cooling requirements.

Subtopics

1.2.1.1 Dimensions

1.2.1.2 Weight

1.2.1.3 Power

1.2.1.4 Temperature Requirements

1.2.1.5 Noise Level

1.2.1.1 *Dimensions*

Height	407 mm (16.0 inches)
Depth	483 mm (19.0 inches)
Width	197 mm (7.75 inches)

1.2.1.2 *Weight*

Minimum configuration (2 devices) 20 kg (44 lbs)

1.2.1.3 Power

	115 V AC	230 V AC
kV-A	0.76	0.96
Range	90 to 137 V AC	180 to 265 V AC
Frequency	47 to 63 Hz	47 to 63 Hz
Watts	378	480
Power factor	0.5 minimum	0.5 minimum
Maximum altitude	2135 m (7000 ft)	2135 m (7000 ft)

1.2.1.4 *Temperature Requirements*

Operating 16 to 32°C (60.8 to 89.6°F)

Relative Humidity Requirements

Operating 20 to 80%

Wet Bulb Temperature Requirements

Operating 23°C (73.4 °F maximum)

1.2.1.5 Noise Level

LwAu (idling, 5 drives) 5.6 Bels
LwAu (operating, 5 drives) 6.0 Bels

1.2.2 *Software Requirements*

The 7131 Storage Tower is supported on AIX 3.2.5 with additional PTFs or on AIX Version 4.1.3 and later releases.

1.2.3 Line Cord Requirements

See Appendix A, "Line Cord Requirements" in topic A.0 for the line cord requirements for your country.

2.0 Chapter 2. Preparing for Installation

The procedures and guidelines in this chapter help you to prepare for installation and to verify the safe condition of a 7131 Storage Tower:

- Gathering tools and information
- Checking the electrical outlets
- Checking the inventory
- Checking the external machine
- Checking the internal machine

Subtopics

- 2.1 Gathering Tools and Information
- 2.2 Checking the Electrical Outlets
- 2.3 Checking the Inventory
- 2.4 Checking the External Machine
- 2.5 Checking the Internal Machine

2.1 Gathering Tools and Information

Before you begin installation, be sure you have the tools, publications and information listed in the following paragraphs:

Tools: The following tools may be required:

- Screw driver, flat head
- Screw driver, phillips head

Publications and Information

- External Devices Safety Information, SA26-7003*
- Your system management or system hardware publications

You need the following information from these publications for installing an external SCSI device:

- Location where you will connect the SCSI cable on the system
- Controlled shutdown and start up procedures for your system

2.2 *Checking the Electrical Outlets*

DANGER

```
+-----+
| An electrical outlet that is not correctly wired could place hazardous |
| voltage on metal parts of the system or the products that attach to   |
| the system. It is the customer's responsibility to ensure that the     |
| outlet is correctly wired and grounded to prevent an electrical shock.  |
| (RSFTD201)                                                              |
+-----+
```

Verify that wiring and grounding of the electrical outlets you use have been checked by a licensed electrician.

2.3 Checking the Inventory

Verify that all items on your order were received.

If you observe shipping damage, do not install the 7131 Storage Tower without IBM approval. Report all observed damage or missing items immediately to your IBM service representative.

2.4 Checking the External Machine

Perform the external machine check:

1. CAUTION:

The weight of this part or unit is between 18 and 32 kilograms (39.7 and 70.5 pounds). It takes two persons to safely lift this part or unit. (RSFTC204)

See the weight safety label (Figure 2-1) on the back of your 7131 Storage Tower.

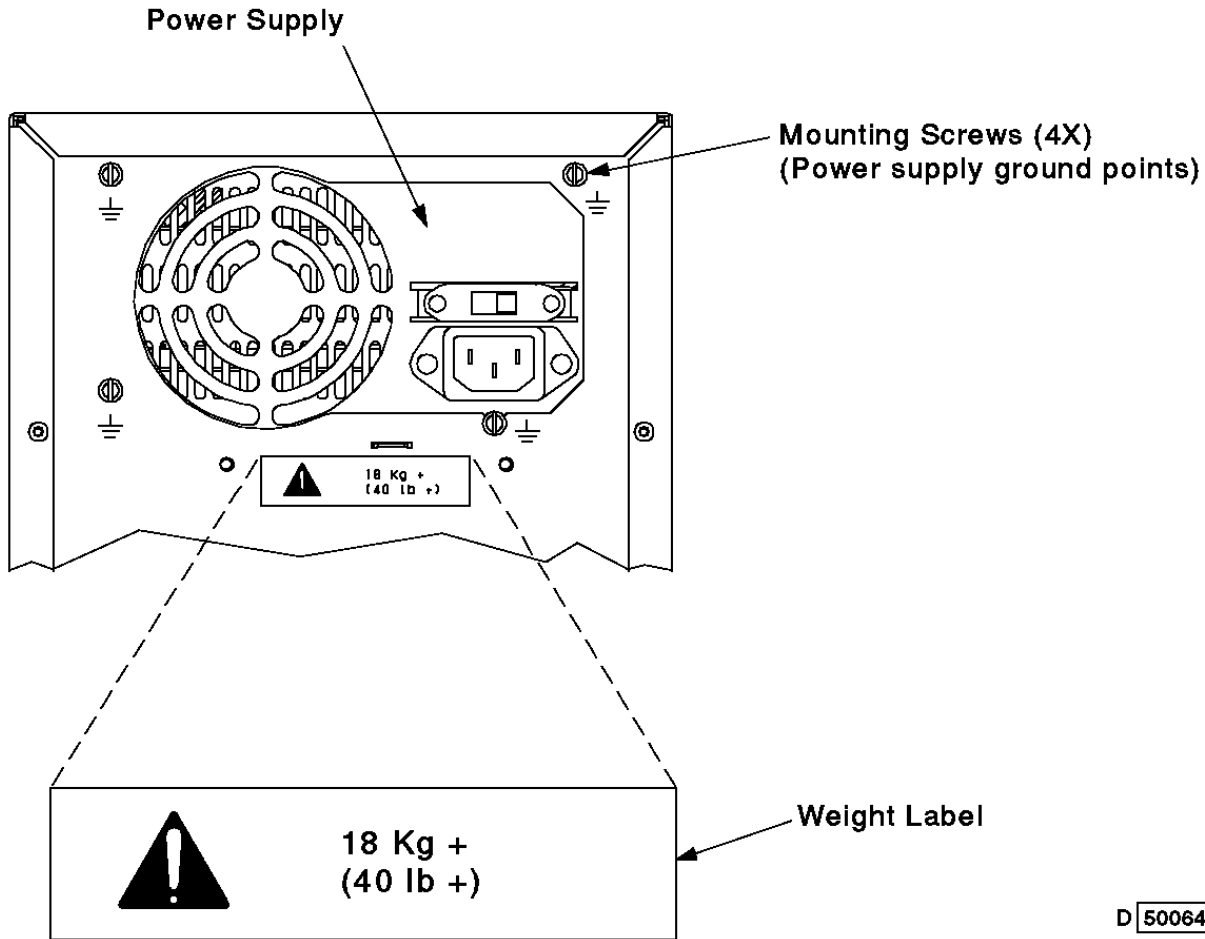


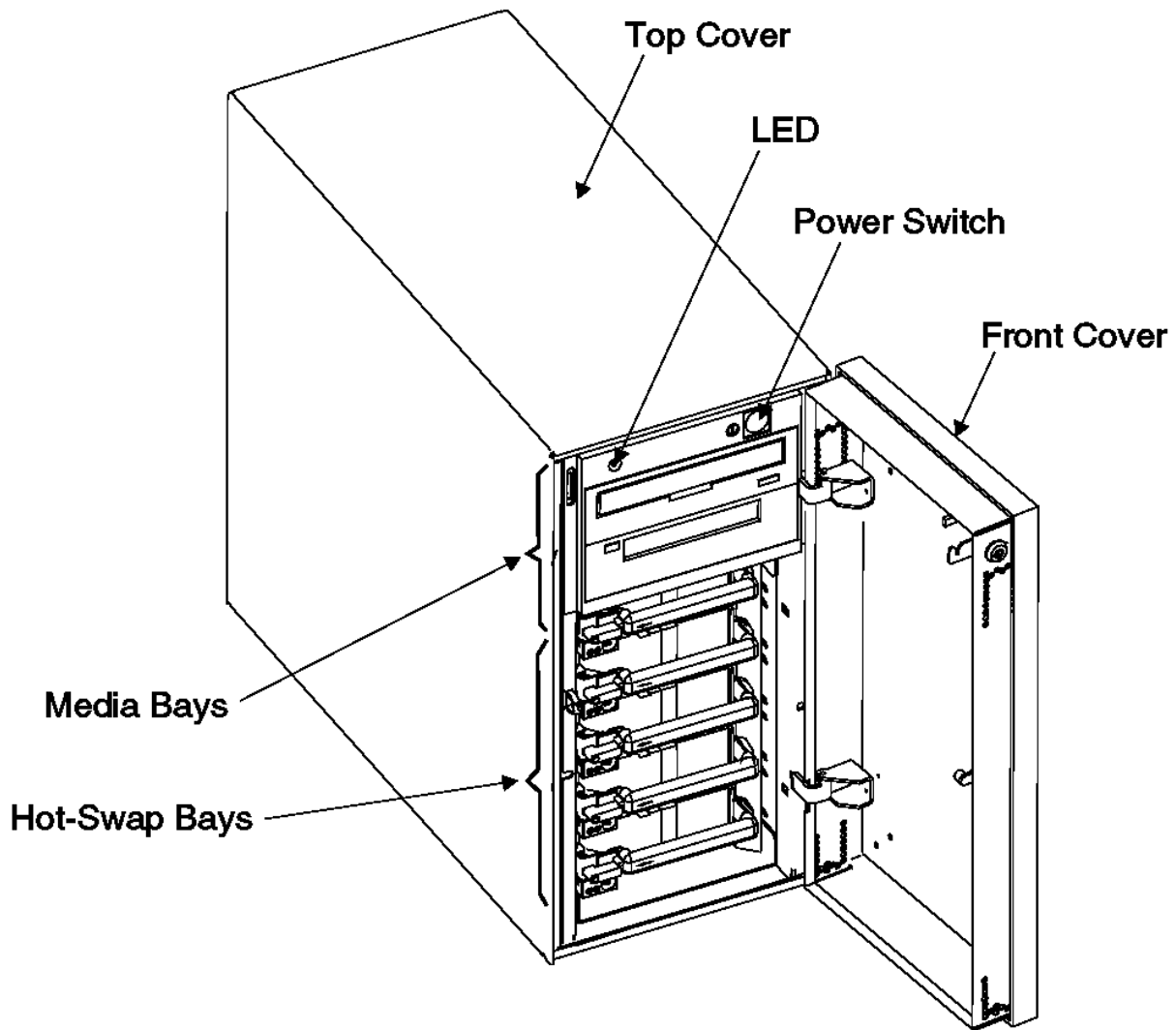
Figure 2-1. View of Weight Safety Label

2. Check the 7131 Storage Tower for loose or broken feet.
3. Ensure that all latches and hinges are in good operating condition.
4. Report any loose, broken, or missing parts immediately to your IBM representative.

2.5 Checking the Internal Machine

Perform the internal machine check:

1. Open the front cover (Figure 2-2).



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Figure 2-2. Front View of an Open 7131 Storage Tower

2. Verify that the 7131 Storage Tower has all the features you specified.
3. Check for any obvious mechanical problems, such as loose parts.
4. Notify your IBM representative immediately of any problems.

3.0 Chapter 3. Installing the 7131 Storage Tower

This chapter includes guidelines for:

- Placing the 7131 Storage Tower
- Setting the address jumper for a second 7131 Storage Tower
- Shutting down the system
- Connecting the SCSI signal cable
- Setting the voltage selection switch
- Connecting the line cord
- Powering on the 7131 Storage Tower
- Verifying 7131 Storage Tower installation

The last section in this chapter describes guidelines for relocating the 7131 Storage Tower.

Observe all safety notices when installing or relocating a 7131 Storage Tower. For a translation of a safety notice, see the safety notice with a matching reference number, for example (RSFTD201), in *External Devices Safety Information*, SA26-7003.

Subtopics

- 3.1 Placing the 7131 Storage Tower
- 3.2 Setting the Address Jumper for a Second 7131 Storage Tower
- 3.3 Shutting Down the System
- 3.4 Connecting the SCSI Signal Cable
- 3.5 Setting the Voltage Selection Switch
- 3.6 Connecting the Line Cord
- 3.7 Powering On the 7131 Storage Tower
- 3.8 Verifying 7131 Storage Tower Installation
- 3.9 Relocating the 7131 Storage Tower

3.1 *Placing the 7131 Storage Tower*

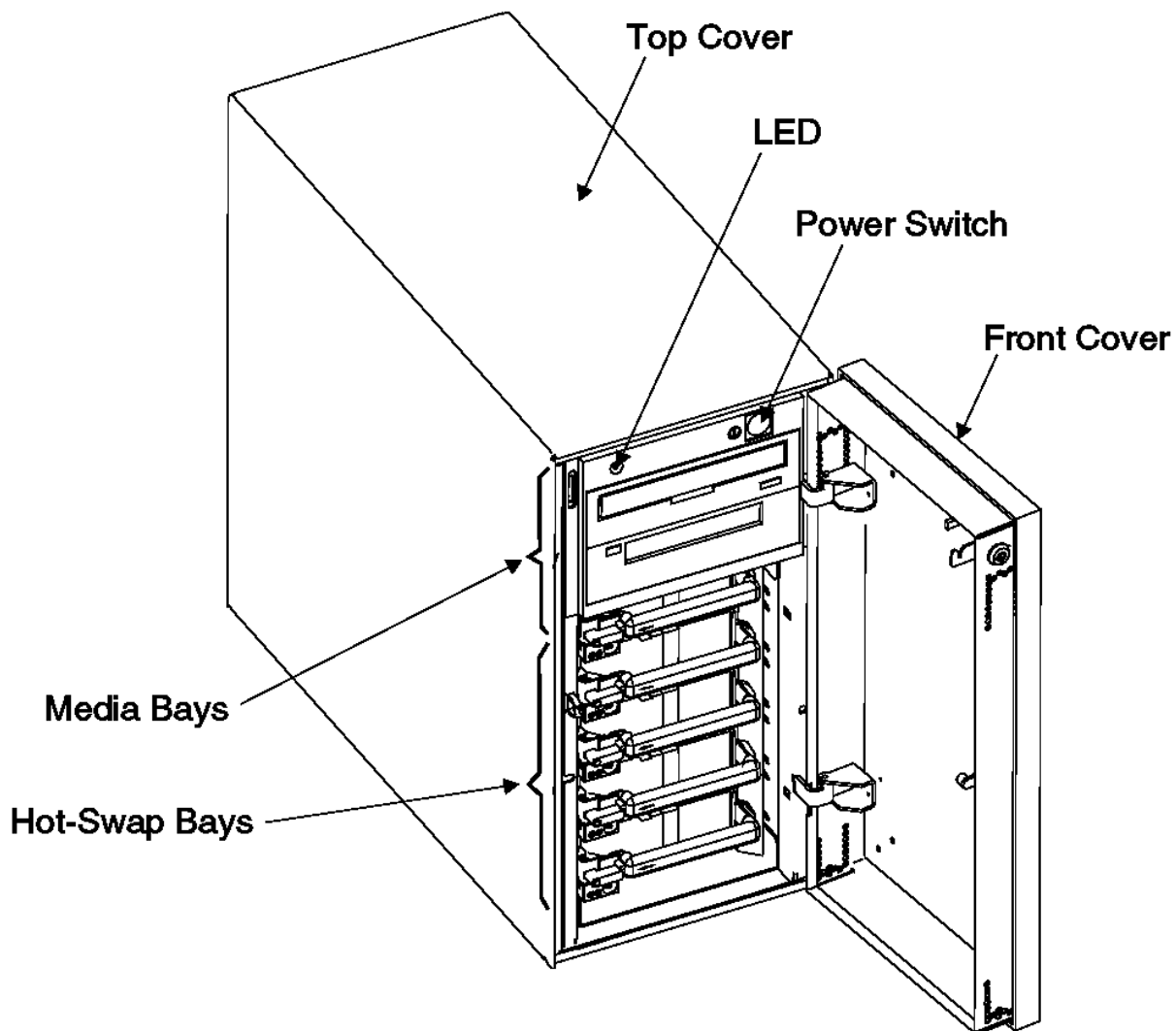
Place the 7131 Storage Tower in a location that is convenient for your system. The only restrictions are the length of the power cords and the SCSI signal cable connecting the 7131 Storage Tower to the system.

1. **Attention:** Take reasonable care to prevent damage to the 7131 Storage Tower. Avoid dropping or bumping it.
2. **CAUTION:**
The weight of this part or unit is between 18 and 32 kilograms (39.7 and 70.5 pounds). It takes two persons to safely lift this part or unit. (RSFTC204)
3. Allow adequate clearance:
 - a. Ensure that the 7131 Storage Tower has correct airflow for cooling. Each 7131 Storage Tower should be separated from the system and other equipment (including additional 7131 Storage Towers) by a minimum of 2.5 centimeters (1 inch).
 - b. Allow 2.5 centimeters (1 inch) of clearance on the hinge side for opening the cover.
 - c. Because the top cover is lifted vertically for service access, we recommend that you do not place the 7131 Storage Tower under a desk.
 - d. Allow 15 centimeters (6 inches) of clearance at the rear for the SCSI cable and the line cord.

3.2 Setting the Address Jumper for a Second 7131 Storage Tower

If you are installing a second 7131 Storage Tower:

1. Open the front cover (see Figure 3-1).



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Figure 3-1. The 7131 Storage Tower Front Cover

2. DANGER

 | To prevent a possible electrical shock from touching two surfaces |
 | with different electrical grounds, use one hand, when possible, to |
connect or disconnect signal cables. (RSFTD004)

3. Verify that the 7131 Storage Tower line cord is unplugged and the SCSI cable is not connected.
4. Remove the 4 screws that fasten the top cover to the 7131 Storage Tower (see Figure 3-2).
5. Lift and remove the top cover from the 7131 Storage Tower.

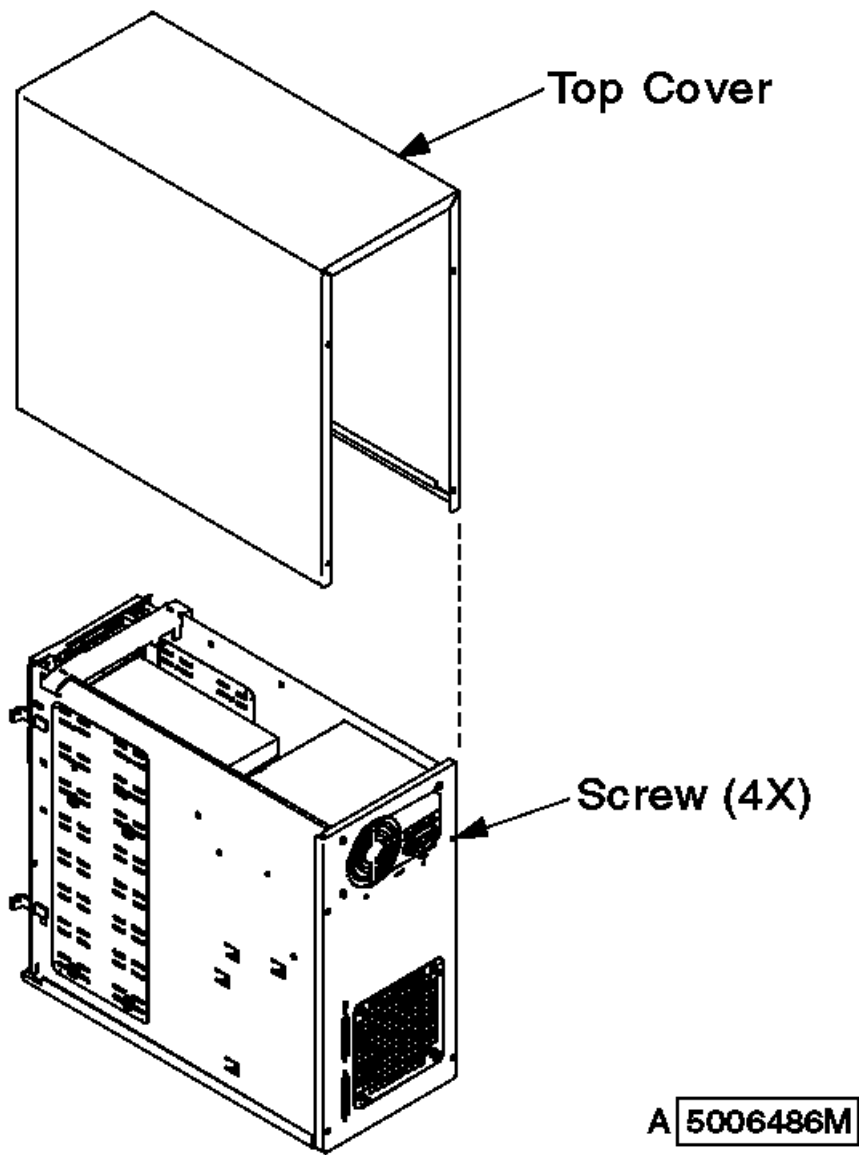


Figure 3-2. The 7131 Storage Tower Top Cover

6. Set the jumper on the SE/DIFF card (see Figure 3-3). This translates the addresses in the second 7131 Storage Tower attached to the system from 0 through 6 to 7 through 13.

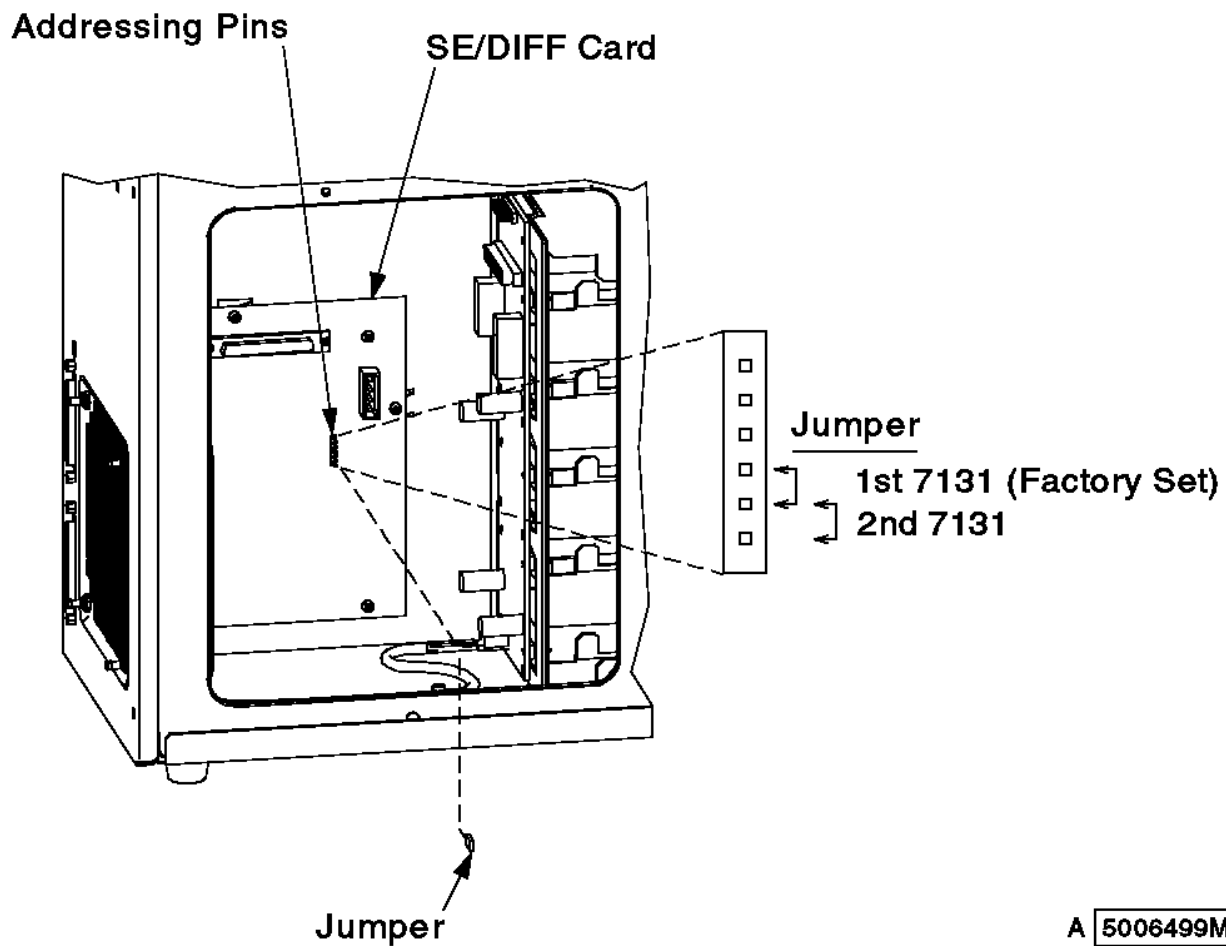


Figure 3-3. Setting the SCSI Address

7. Put the top cover on the 7131 Storage Tower (see Figure 3-2).
8. Install and tighten the 4 screws to fasten the top cover to the 7131 Storage Tower.
9. Close the front cover (see Figure 3-1).

3.3 *Shutting Down the System*

1. **Attention:** Do not attach the 7131 Storage Tower to a host system that is powered on and functioning. This could cause damage to the 7131 Storage Tower, your system, or both.
2. Perform a controlled shutdown of the system, according to instructions from your system publications.
3. Perform a system power off.

3.4 *Connecting the SCSI Signal Cable*

This section describes the procedures for connecting the SCSI signal cable:

- Connecting a 7131 Storage Tower with single-ended SCSI. This base configuration consists of one 7131 Storage Tower connected to one system; no SE/DIFF card is required.
- Connecting a 7131 Storage Tower with differential SCSI option. These configurations can consist of one 7131 Storage Tower connected to one system, one 7131 Storage Tower connected to two systems, or two 7131 Storage Towers connected to one or two systems; a SE/DIFF card is required.

Subtopics

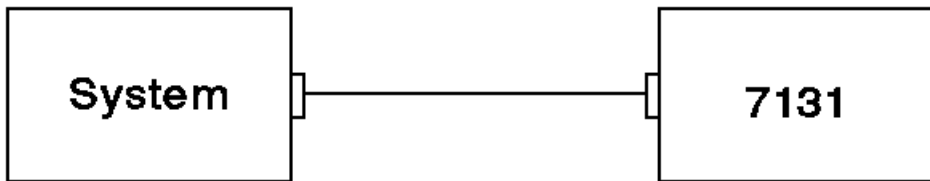
3.4.1 Connecting a 7131 Storage Tower with a Single-Ended SCSI Cable

3.4.2 Connecting a 7131 Storage Tower with a Differential SCSI Option

3.4.1 Connecting a 7131 Storage Tower with a Single-Ended SCSI Cable

Use the following procedure to connect a 7131 Storage Tower to one system (Figure 3-4).

Note: A single-ended SCSI connection does not require a terminator.



5006565L

Figure 3-4. One 7131 Storage Tower Connected to One System (Single-Ended SCSI)

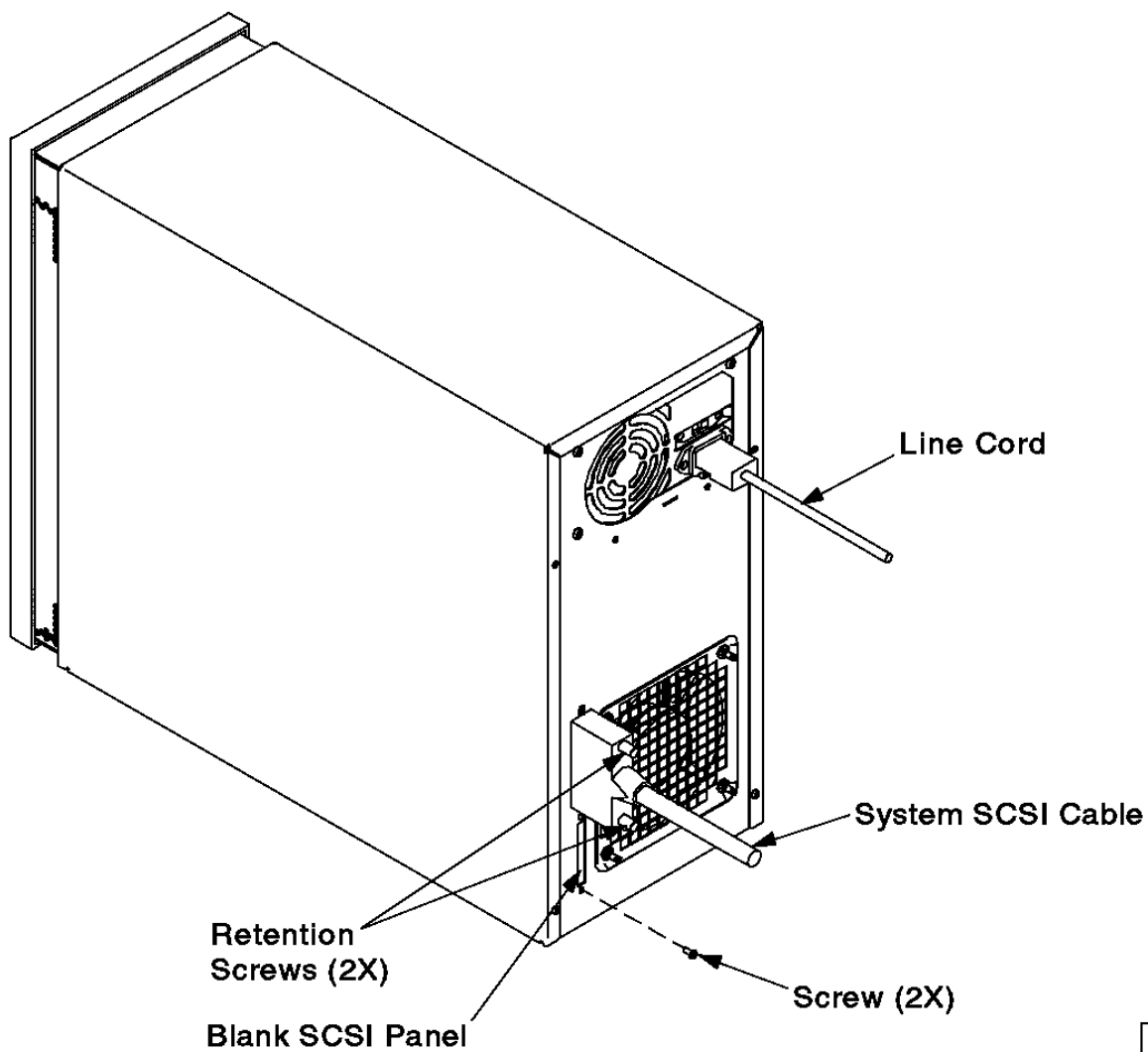
1. DANGER

```
+-----+
| To prevent a possible electrical shock during an electrical storm, |
| do not connect or disconnect cables or station protectors for     |
| communications lines, display stations, printers, or telephones.  |
| (RSFTD003)                                                         |
+-----+
```

DANGER

```
+-----+
| To prevent a possible electrical shock from touching two surfaces |
| with different electrical grounds, use one hand, when possible, to |
| connect or disconnect signal cables. (RSFTD004)                   |
+-----+
```

2. Connect the SCSI cable to the back of the 7131 Storage Tower (Figure 3-5).



5006564N

Figure 3-5. Rear View of the 7131 Storage Tower

3. Secure the cable by tightening the screws on the SCSI cable connector.
4. Connect the SCSI cable to the system (refer to your system publications).
5. Secure the cable by tightening the screws on the SCSI cable connector.

3.4.2 *Connecting a 7131 Storage Tower with a Differential SCSI Option*

The differential SCSI option can consist of a 7131 Storage Tower connected to one or two systems, or two 7131 Storage Towers connected to one or two systems

Subtopics

3.4.2.1 Connecting One 7131 Storage Tower to One System

3.4.2.2 Connecting One 7131 Storage Tower to Two Systems

3.4.2.3 Connecting Two 7131 Storage Towers to One System

3.4.2.4 Connecting Two 7131 Storage Towers to Two Systems

3.4.2.1 Connecting One 7131 Storage Tower to One System

Use the following procedure to connect one 7131 Storage Tower to one system (see Figure 3-6).

Note: This configuration requires a SE/DIFF card and a terminator.

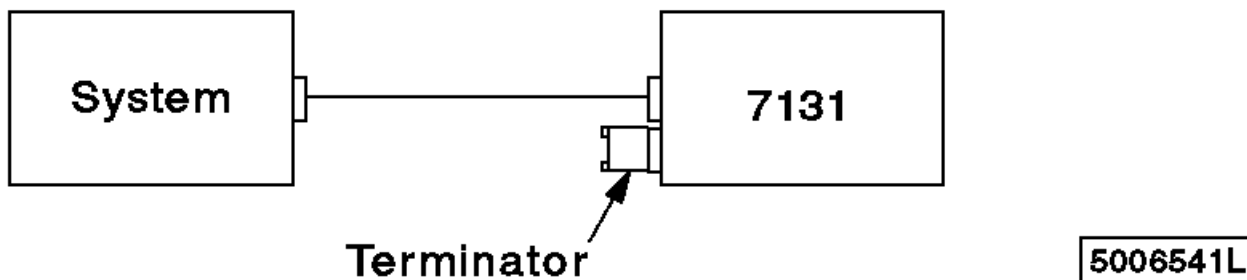


Figure 3-6. One 7131 Storage Tower Connected to One System

1. DANGER

```

+-----+
| To prevent a possible electrical shock during an electrical storm, |
| do not connect or disconnect cables or station protectors for     |
| communications lines, display stations, printers, or telephones.   |
| (RSFTD003)                                                         |
+-----+

```

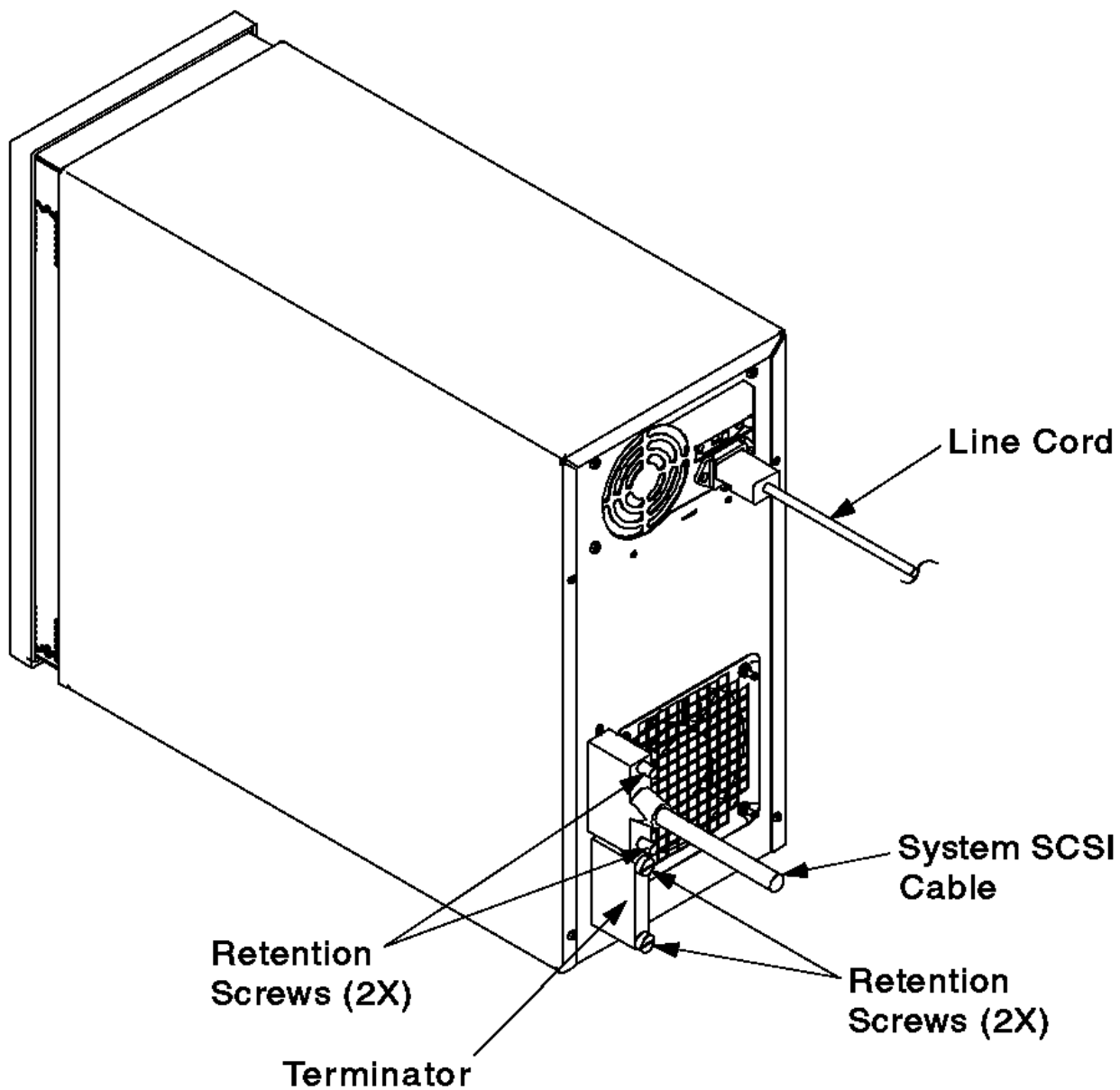
2. DANGER

```

+-----+
| To prevent a possible electrical shock from touching two surfaces |
| with different electrical grounds, use one hand, when possible, to |
| connect or disconnect signal cables. (RSFTD004)                   |
+-----+

```

3. Connect the SCSI cable to the back of the 7131 Storage Tower (see Figure 3-7).



5006567N

Figure 3-7. View of the 7131 Storage Tower SCSI Terminator

4. Secure the cable by tightening the screws on the cable connector.
5. Connect the SCSI terminator to the back of the 7131 Storage Tower (see Figure 3-7).
6. Secure the terminator by tightening the screws on the connector.
7. Connect the SCSI cable to the system (refer to your system publications).
8. Secure the cable by tightening the screws on the cable connector.

3.4.2.2 Connecting One 7131 Storage Tower to Two Systems

Use the following procedure to connect one 7131 Storage Tower to two host systems (see Figure 3-8).

Note: This configuration requires an SE/DIFF card and two terminators. A SCSI Y-cable is also required for each system.

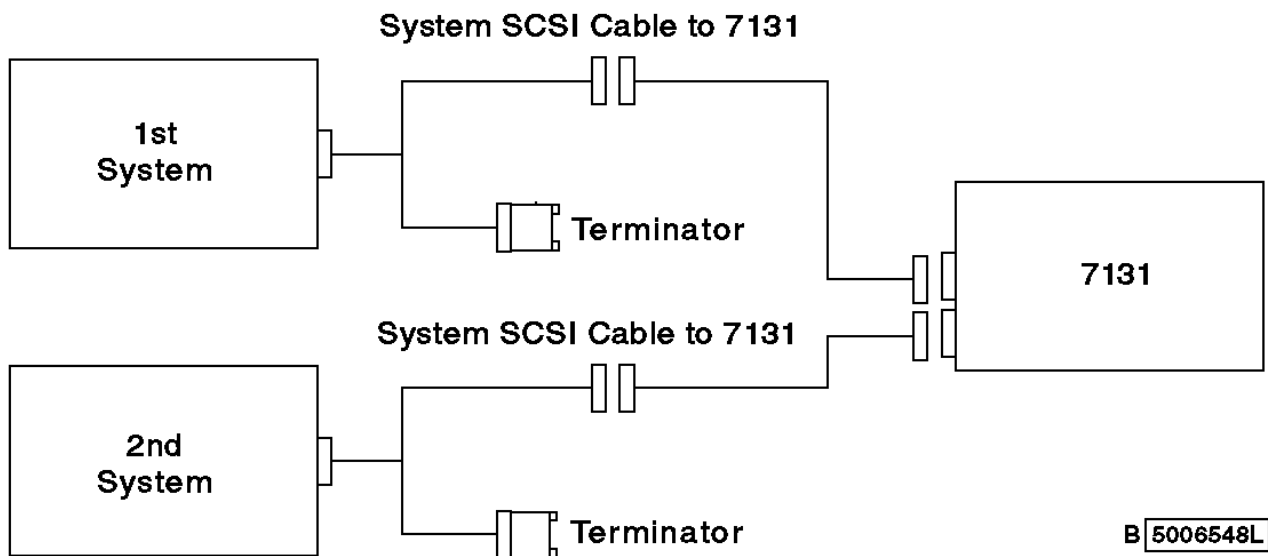


Figure 3-8. One 7131 Storage Tower Connected to Two Systems

1. DANGER

```

+-----+
| To prevent a possible electrical shock during an electrical storm, |
| do not connect or disconnect cables or station protectors for    |
| communications lines, display stations, printers, or telephones. |
| (RSFTD003)                                                       |
+-----+

```

2. DANGER

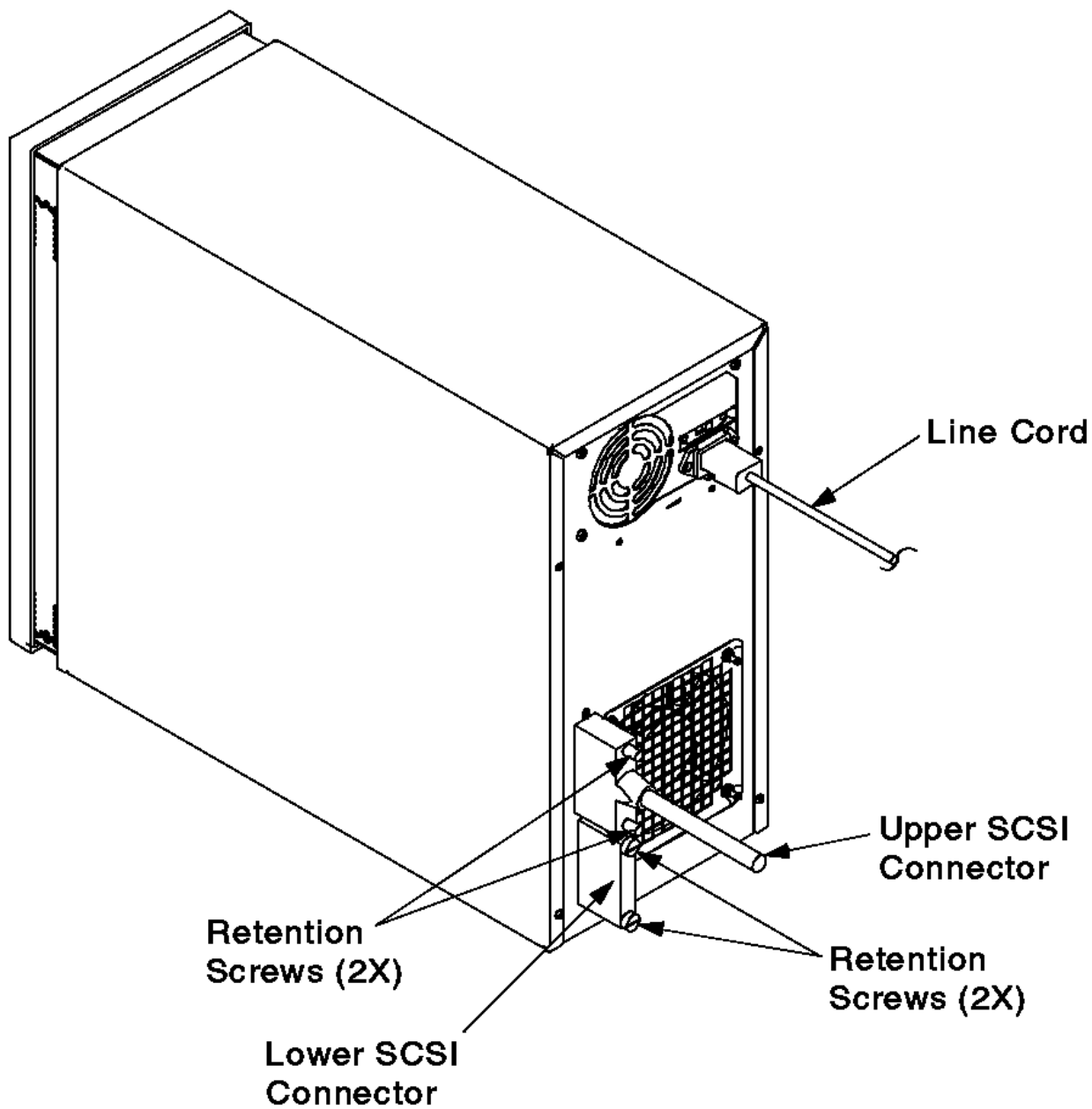
```

+-----+
| To prevent a possible electrical shock from touching two surfaces |
| with different electrical grounds, use one hand, when possible, to |
| connect or disconnect signal cables. (RSFTD004)                 |
+-----+

```

3. Connect two SCSI cables to the back of the 7131 Storage Tower (see Figure 3-9).

4. Secure the cable by tightening the screws on the cable connector.



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Figure 3-9. SCSI Cable Connections

5. Connect each SCSI cable to one end of each SCSI Y-cable.
6. Secure the cables by tightening the screws on each SCSI cable connector.
7. Connect a SCSI terminator to the remaining end of each SCSI Y-cable.
8. Secure the terminators by tightening the screws on each terminator.
9. Connect the SCSI Y-cables to the system; refer to your system publications
10. Secure the cables by tightening the screws on each SCSI Y-cable connector.

3.4.2.3 Connecting Two 7131 Storage Towers to One System

Use the following procedure to connect two 7131 Storage Towers to one system (see Figure 3-10).

Note: This configuration requires a SE/DIFF card and a terminator for each 7131 Storage Tower.

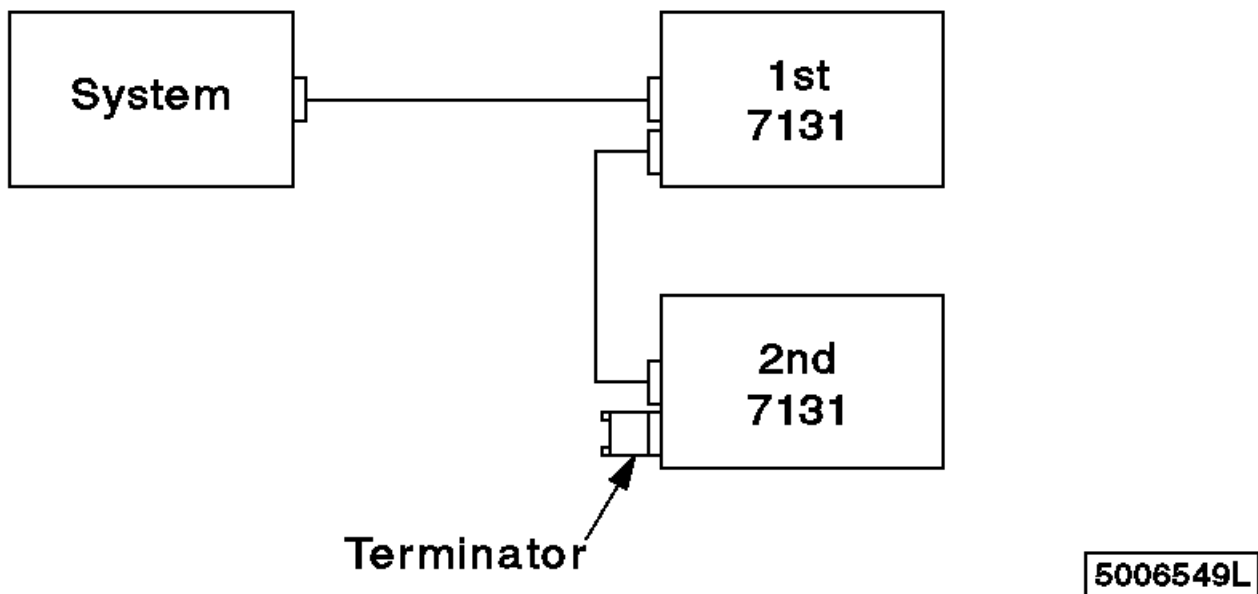


Figure 3-10. Two 7131 Storage Towers Connected to One System

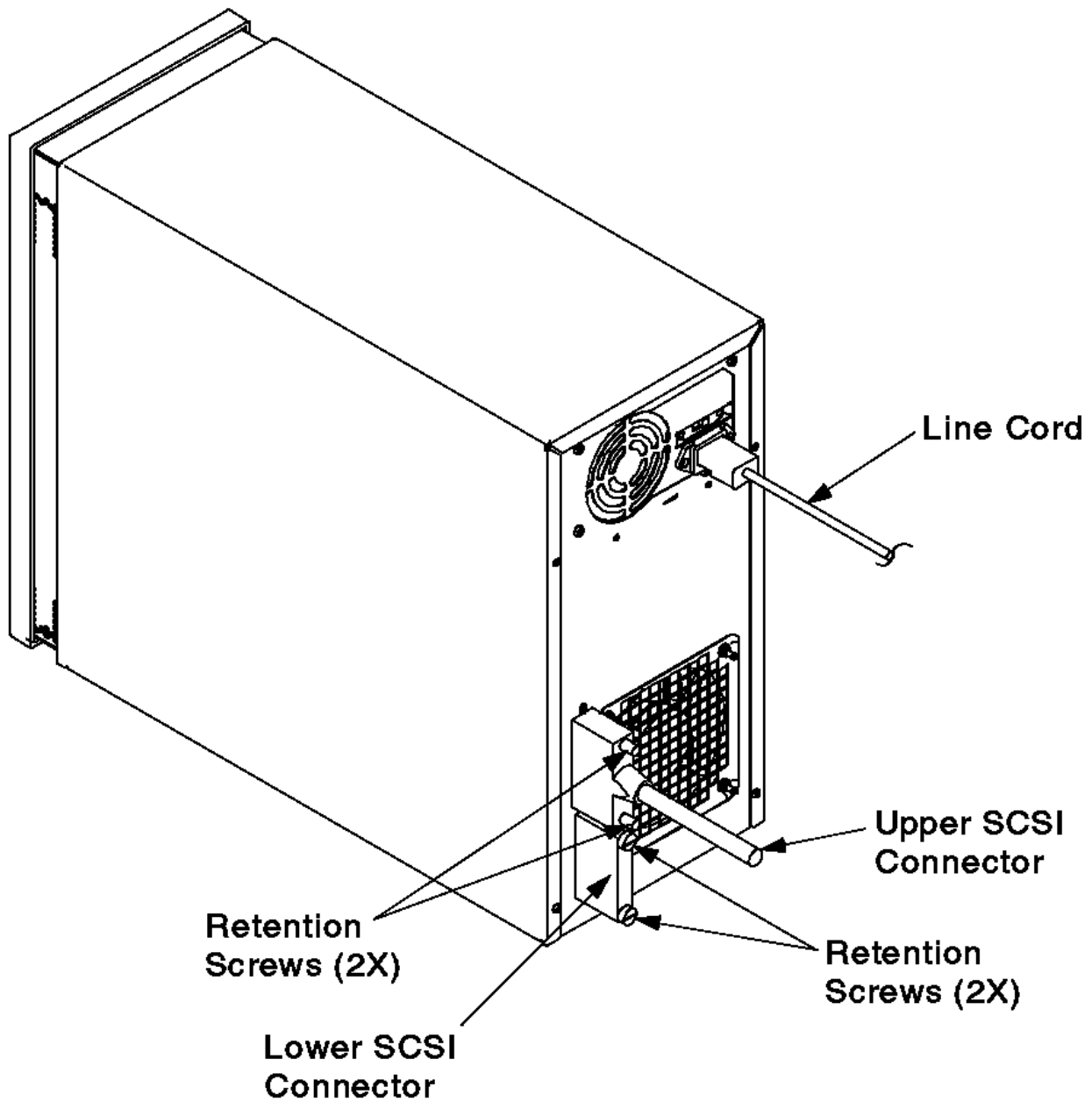
1. DANGER

To prevent a possible electrical shock during an electrical storm, do not connect or disconnect cables or station protectors for communications lines, display stations, printers, or telephones. (RSFTD003)

2. DANGER

To prevent a possible electrical shock from touching two surfaces with different electrical grounds, use one hand, when possible, to connect or disconnect signal cables. (RSFTD004)

3. Set the SE/DIFF address jumper on the second 7131 Storage Tower (see "Setting the Address Jumper for a Second 7131 Storage Tower" in topic 3.2).
4. Connect the tower-to-tower SCSI cable to the first 7131 Storage Tower, in the lower SCSI connector (see Figure 3-11).
5. Connect the system SCSI cable to the first 7131 Storage Tower, in the upper SCSI connector.



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Figure 3-11. Rear View of the 7131 Storage Tower with Upper and Lower SCSI Connectors (Second 7131 Storage Tower)

6. Install the terminator in the second 7131 Storage Tower in the lower SCSI connector.
7. Connect the tower-to-tower SCSI cable from the first 7131 Storage Tower to the second 7131 Storage Tower.
8. Secure all connections by tightening the screws on the connectors.
9. Connect the SCSI cable from the first 7131 Storage Tower to the system (refer to your system publications).
10. Secure the cable by tightening the screws on the cable connector.

3.4.2.4 Connecting Two 7131 Storage Towers to Two Systems

Use the following procedure to connect two 7131 Storage Towers to two systems (Figure 3-12).

Note: This configuration requires a SE/DIFF card and a terminator for each 7131 Storage Tower. A SCSI Y-cable is also required for each system.

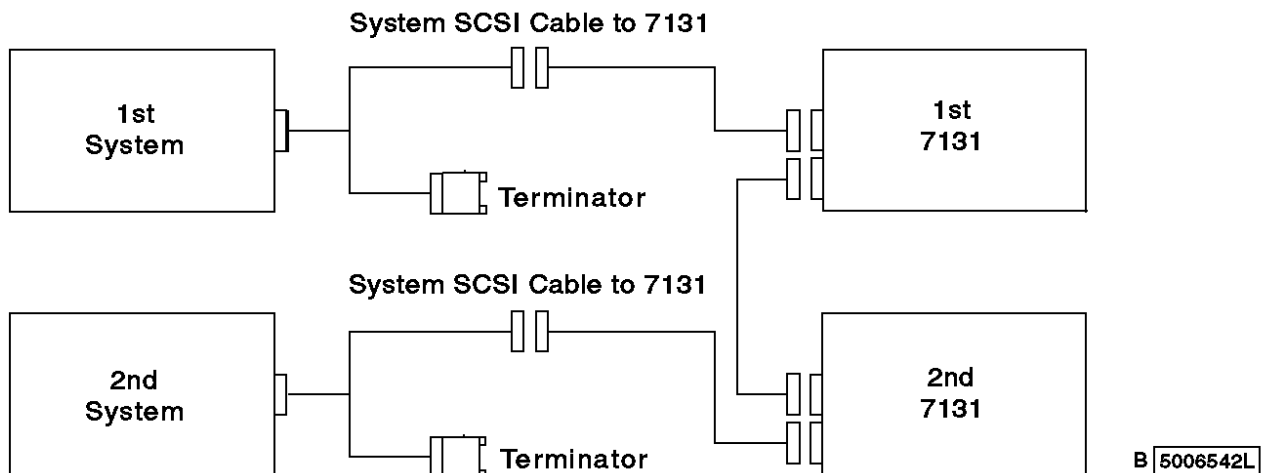


Figure 3-12. Two 7131 Storage Towers Connected to Two Systems

1. DANGER

```

+-----+
| To prevent a possible electrical shock during an electrical storm, |
| do not connect or disconnect cables or station protectors for     |
| communications lines, display stations, printers, or telephones.  |
| (RSFTD003)                                                         |
+-----+

```

2. DANGER

```

+-----+
| To prevent a possible electrical shock from touching two surfaces |
| with different electrical grounds, use one hand, when possible, to |
| connect or disconnect signal cables. (RSFTD004)                   |
+-----+

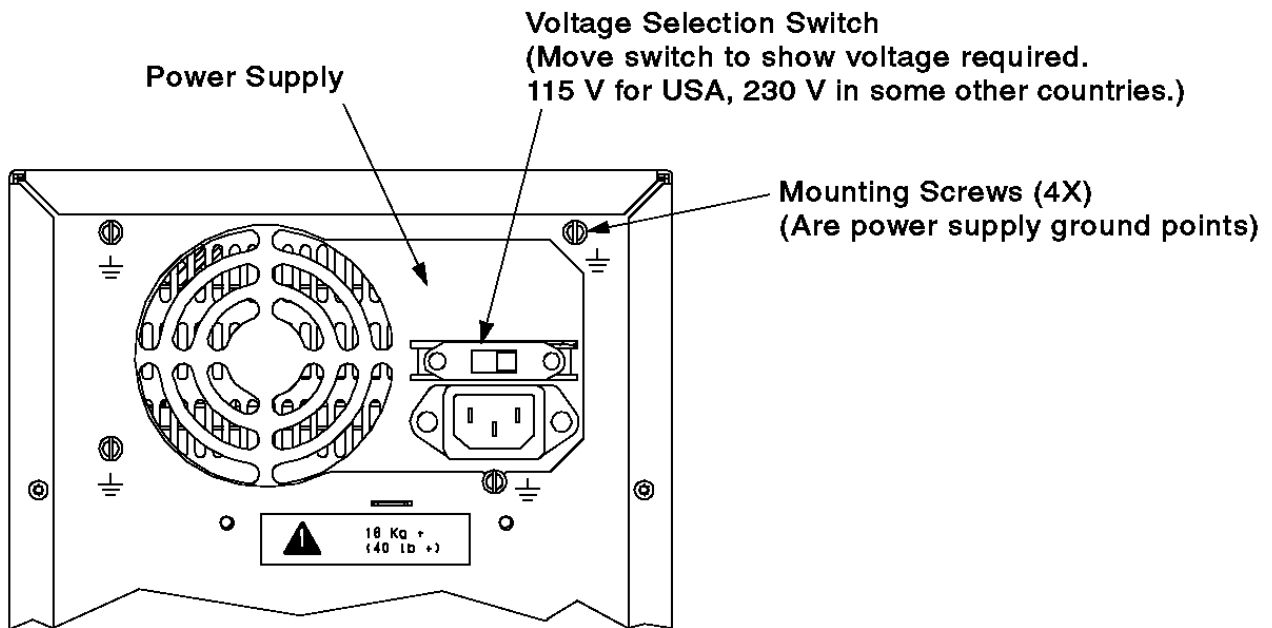
```

3. Set the SE/DIFF address jumper on the second 7131 Storage Tower; see "Setting the Address Jumper for a Second 7131 Storage Tower" in topic 3.2.
4. Connect a tower-to-tower SCSI cable to the lower SCSI connector of the first 7131 Storage Tower.
5. Connect a system SCSI cable to the upper SCSI connector of the first 7131 Storage Tower.
6. Connect a system SCSI cable to the lower SCSI connector of the second 7131 Storage Tower.
7. Connect the tower-to-tower SCSI cable from the first 7131 Storage Tower to the second 7131 Storage Tower (see Figure 3-12).
8. Secure the cables by tightening the screws on the cable connectors.
9. Connect a SCSI cable from each 7131 Storage Tower to one end of each SCSI Y-cable.
10. Secure the cables by tightening the screws on each SCSI cable connector.
11. Connect a SCSI terminator to the remaining end of each SCSI Y-cable.
12. Secure the terminators by tightening the screws on each terminator.
13. Connect a SCSI Y-cable from the first 7131 Storage Tower to the first system, and connect a SCSI Y-cable from the second 7131 Storage Tower to the second system. See your system publications.
14. Secure the cables by tightening the screws on each SCSI Y-cable connector.

3.5 Setting the Voltage Selection Switch

The voltage selection switch is located on the back of the 7131 Storage Tower (see Figure 3-13).

1. **Attention:** Do not connect the line cord until the voltage selection switch is properly set, or the power supply could be damaged.
2. Move the switch to the 115V setting if appropriate for your application.
3. Move the switch to the 230V setting if appropriate for your application.



5006520M

Figure 3-13. Voltage Selection Switch

3.6 Connecting the Line Cord

Use the following procedure to connect the line cord:

1. DANGER

An electrical outlet that is not correctly wired could place hazardous voltage on metal parts of the system or the products that attach to the system. It is the customer's responsibility to ensure that the outlet is correctly wired and grounded to prevent an electrical shock. (RSFTD201)

2. Connect the line cord to the back of the 7131 Storage Tower (Figure 3-14).

The 7131 Storage Tower is designed to be connected to multiple power systems, including an impedance terminated (IT) power system.

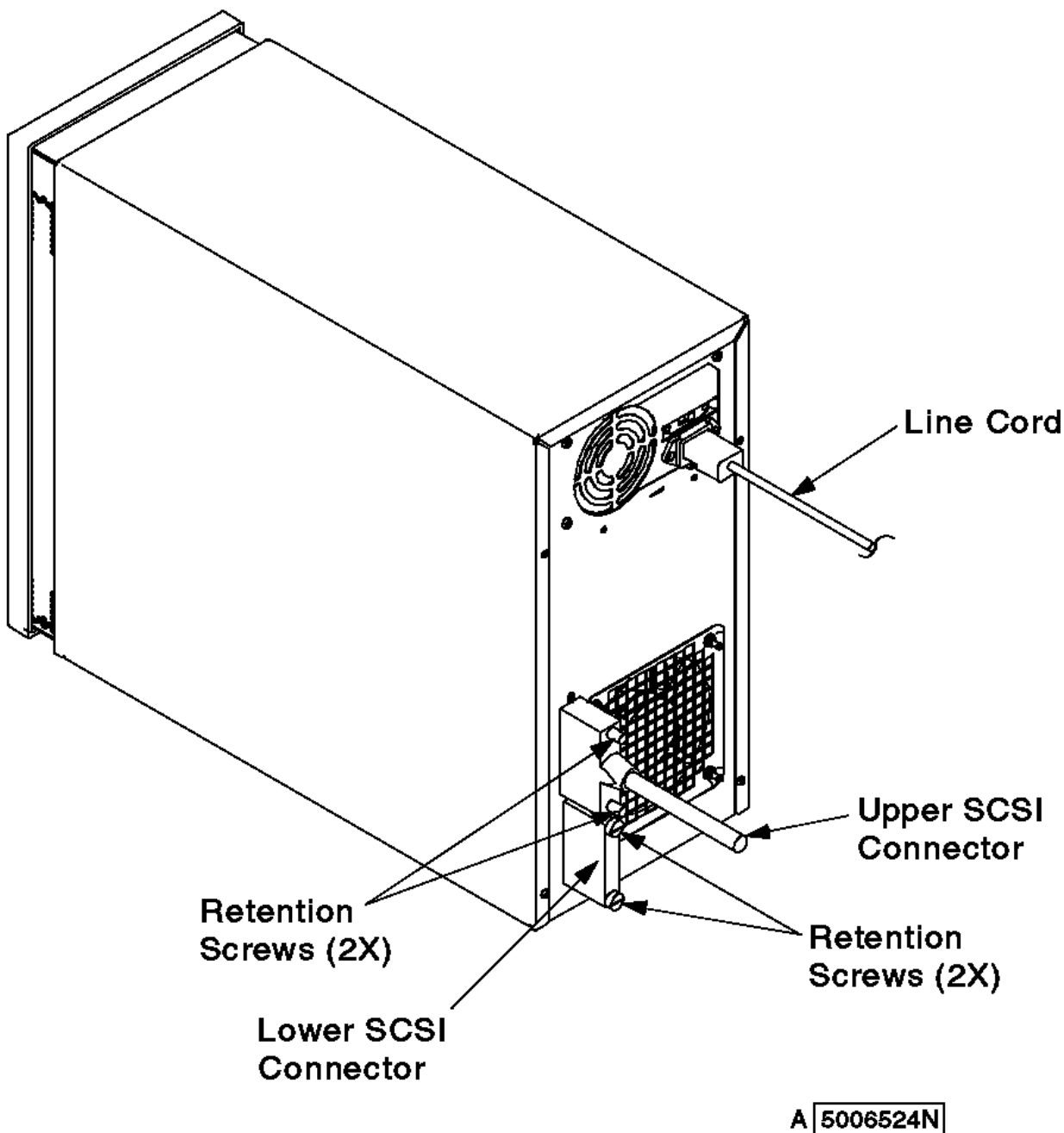


Figure 3-14. Line Cord Connection

3. Check the line cord. Replace it if any of the following conditions apply:

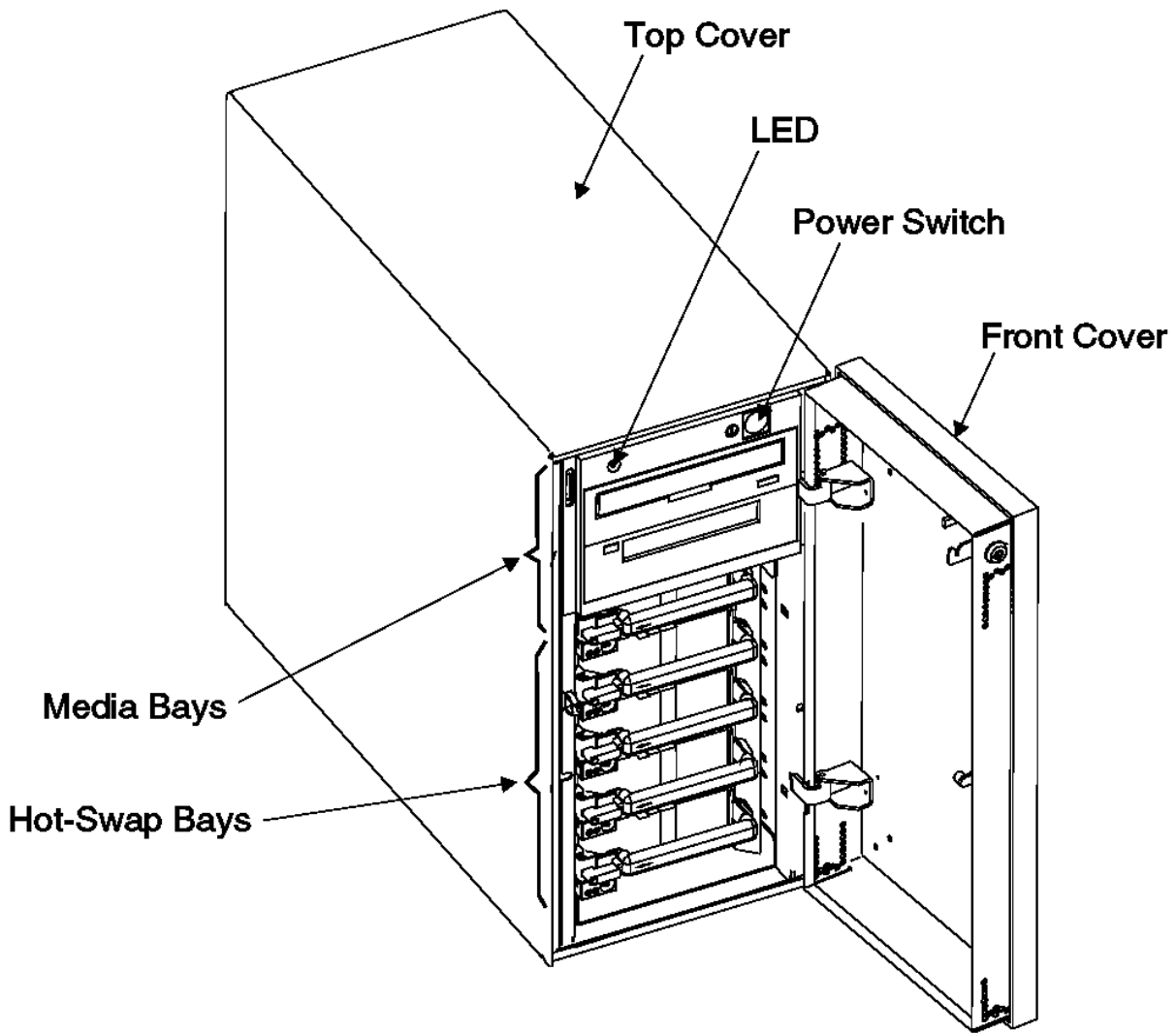
- Cracked or damaged insulation or pins
- Cracked or damaged plug
- Line cord has been modified; the line cord should be a single molded piece

4. Plug the 7131 Storage Tower line cord into an electrical outlet.

3.7 Powering On the 7131 Storage Tower

Use the following procedure to power on the 7131 Storage Tower:

1. Open the front cover of the 7131 Storage Tower (Figure 3-15)
2. Press the power switch on the control panel to power on the 7131 Storage Tower.
3. If the LED is on, 7131 Storage Tower installation and setup are complete.



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Figure 3-15. 7131 Storage Tower Power-On Switch

3.8 Verifying 7131 Storage Tower Installation

Use the following procedure to verify 7131 Storage Tower installation:

1. Ensure that the 7131 Storage Tower has been configured correctly on the system--consult your system publications.
2. Run diagnostics on your system for SCSI devices to verify that the installation of the 7131 Storage Tower was successful--consult your system books.
3. Store your 7131 Storage Tower publications with your system publications, as you will need both during future upgrades.

3.9 Relocating the 7131 Storage Tower

1. DANGER

```
+-----+
| To prevent a possible electrical shock when adding or removing any |
| devices to or from the system, ensure that the power cords for   |
| those devices are unplugged before the signal cables are connected |
| or disconnected.  If possible, disconnect all power cords from the |
| existing system before you add or remove a device.  (RSFTD203)    |
+-----+
```

CAUTION:

The weight of this part or unit is between 18 and 32 kilograms (39.7 and 70.5 pounds). It takes two persons to safely lift this part or unit. (RSFTC204)

2. **Attention:** Damage as a result of improper handling during the relocation of a 7131 Storage Tower may result in loss of data or possibly a system fault.
3. Logically remove all 7131 Storage Tower devices from your system configuration; refer to your system publications on how to remove devices from your system configuration.
4. Perform a controlled system shutdown.
5. Power off the 7131 Storage Tower.
6. Disconnect the power cord from the 7131 Storage Tower.
7. Move the 7131 Storage Tower to the desired location.

Subtopics

- 3.9.1 Disconnecting the SCSI Signal Cable and SCSI Terminator

3.9.1 Disconnecting the SCSI Signal Cable and SCSI Terminator

1. DANGER

```
+-----+
| To prevent a possible electrical shock during an electrical storm, |
| do not connect or disconnect cables or station protectors for      |
| communications lines, display stations, printers, or telephones.   |
| (RSFTD003)                                                           |
+-----+
```

DANGER

```
+-----+
| To prevent a possible electrical shock from touching two surfaces  |
| with different electrical grounds, use one hand, when possible, to |
| connect or disconnect signal cables. (RSFTD004)                   |
+-----+
```

2. **Attention:** When SCSI signal cables are connected to a system, they must also be connected to a 7131 Storage Tower. Do not leave the signal cable connected to the system if the 7131 Storage Tower has been removed.
3. Loosen the screws from the SCSI cable connector on the back of the 7131 Storage Tower.
4. Disconnect the SCSI cables.
5. Loosen the screws from the terminator, if installed, and disconnect it.

4.0 Chapter 4. Using the 7131 SCSI Multi-Storage Tower

This chapter describes the guidelines for using the 7131 Storage Tower:

- Powering on and off
- Operating a tape drive
- Operating a CD-ROM drive

Subtopics

4.1 Powering the 7131 Storage Tower On and Off

4.2 Operating a Tape Drive

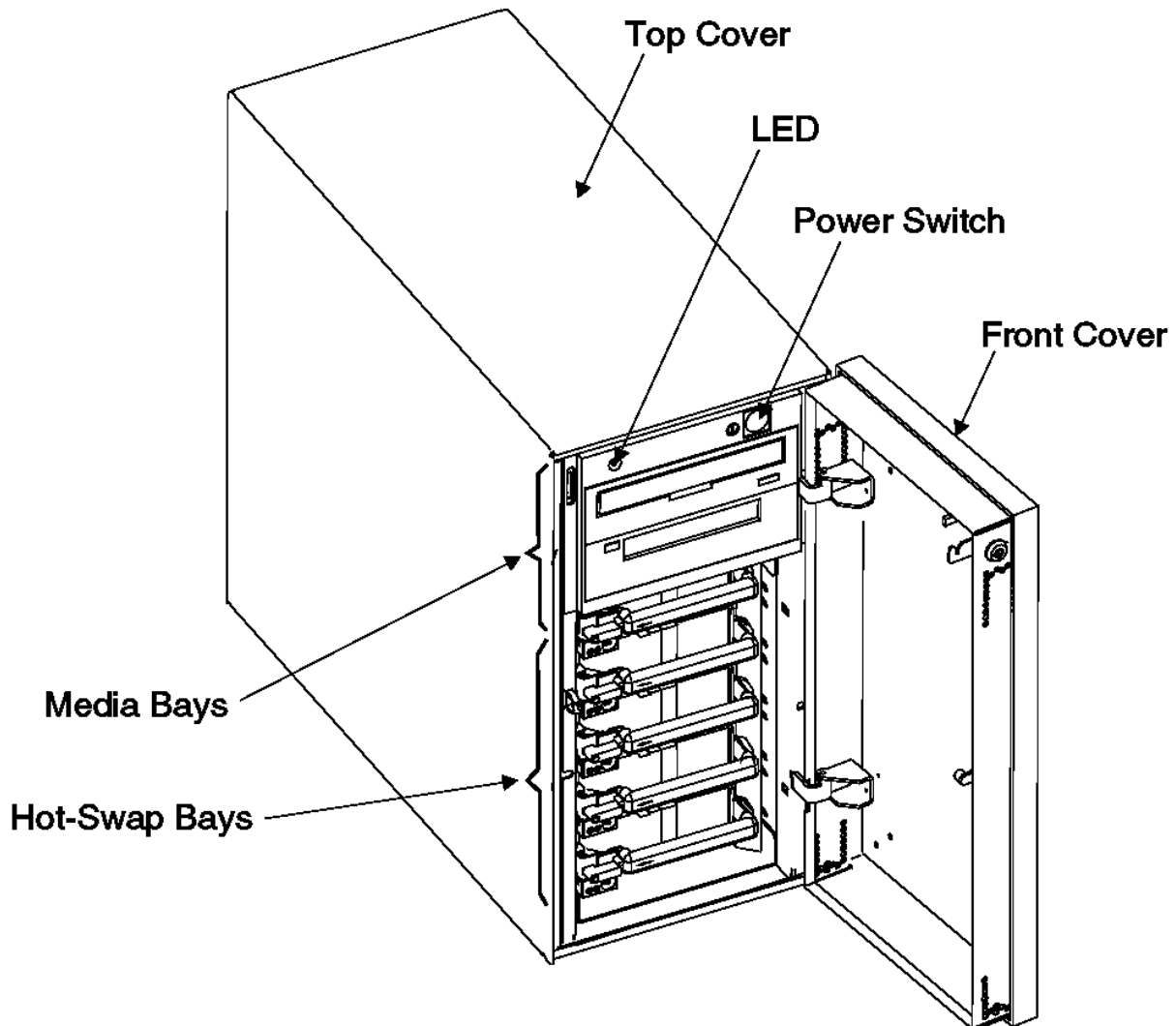
4.3 Operating a CD-ROM Drive

4.1 Powering the 7131 Storage Tower On and Off

Switch the power to the 7131 Storage Tower on or off using the following instructions:

Powering On the 7131 Storage Tower

1. Open the front cover of the 7131 Storage Tower (see Figure 4-1).
2. Press the power switch on the control panel. The green LED will illuminate when the power is on.



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Figure 4-1. 7131 Storage Tower Power On Switch, LED

Powering Off the 7131 Storage Tower

1. Press the power switch. The green LED will go off when the power is off (see Figure 4-1).
2. Close the front cover of the 7131 Storage Tower.

4.2 *Operating a Tape Drive*

Figure 4-2 in topic 4.2.1 shows an example of a tape drive that you can install in either media bay of the 7131 Storage Tower.

Subtopics

4.2.1 Loading a Tape Cartridge

4.2.2 Unloading a Tape Cartridge

4.2.3 Cleaning the Tape Drive Heads

4.2.1 Loading a Tape Cartridge

Use the following procedure to load a tape cartridge:

1. Ensure that the tape drive is on and ready to accept a tape cartridge

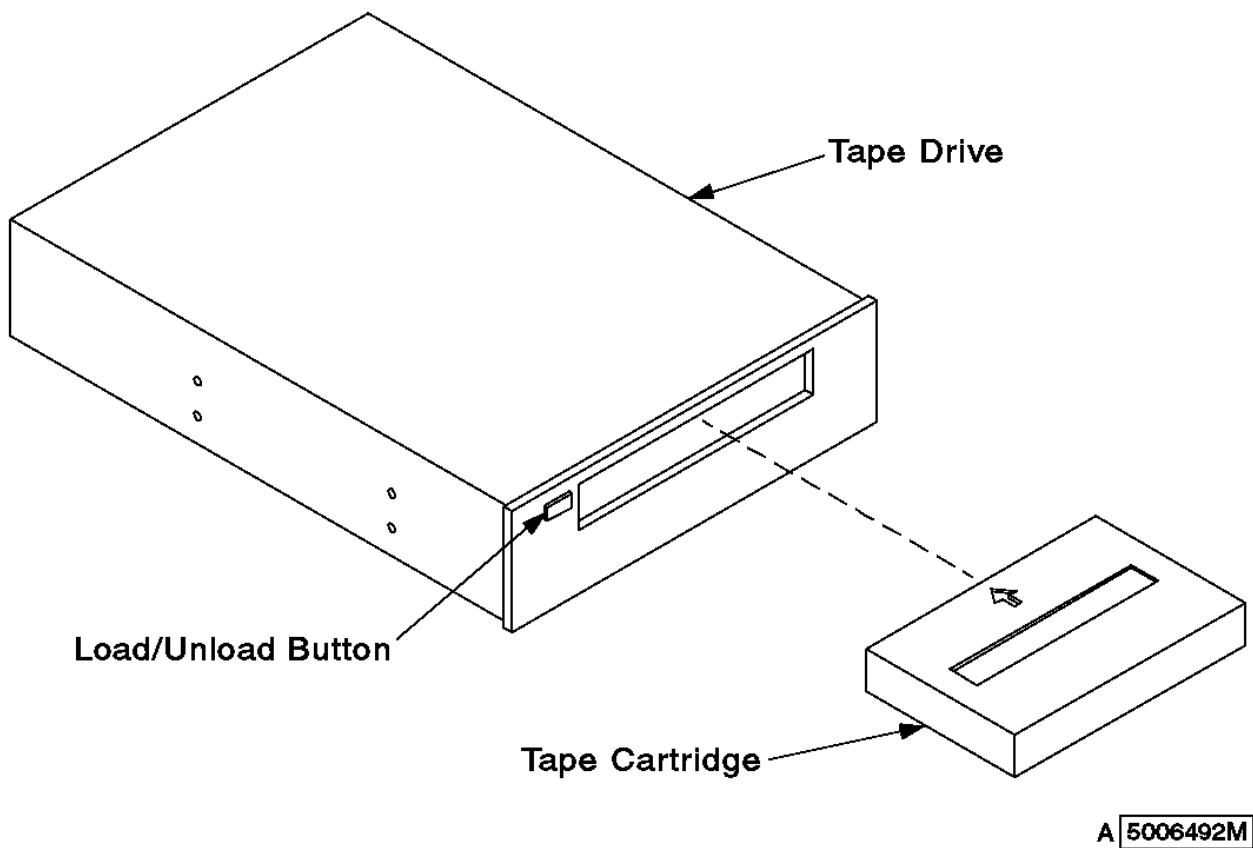


Figure 4-2. Loading a Tape Cartridge into a Tape Drive

2. Push the cartridge into the drive.
3. The green status light comes on, and the drive performs self-tests for approximately 25 seconds.

4.2.2 Unloading a Tape Cartridge

Use the following procedure to unload a tape cartridge:

1. Press the unload button. The green status light goes out, the drive rewinds the tape, and the door opens. This action takes between 18 seconds and 3 minutes, depending on the position of the tape when rewind begins.
2. Remove the cartridge.

4.2.3 *Cleaning the Tape Drive Heads*

To prevent data loss, clean the read/write heads every 30 hours of tape motion (30GB of data transfer).

Note: Clean the heads more frequently if the drive environment is dusty or humid.

1. Perform the steps in "Loading a Tape Cartridge" in topic 4.2.1, inserting a non-abrasive cleaning cartridge into the drive.
2. If the tape drive does not unload the cleaning cartridge after 30 seconds, push the unload button and remove the cleaning cartridge.

4.3 Operating a CD-ROM Drive

Figure 4-3 in topic 4.3.1 shows an example of a CD-ROM drive that you can install in either media bay of the 7131 Storage Tower.

Subtopics

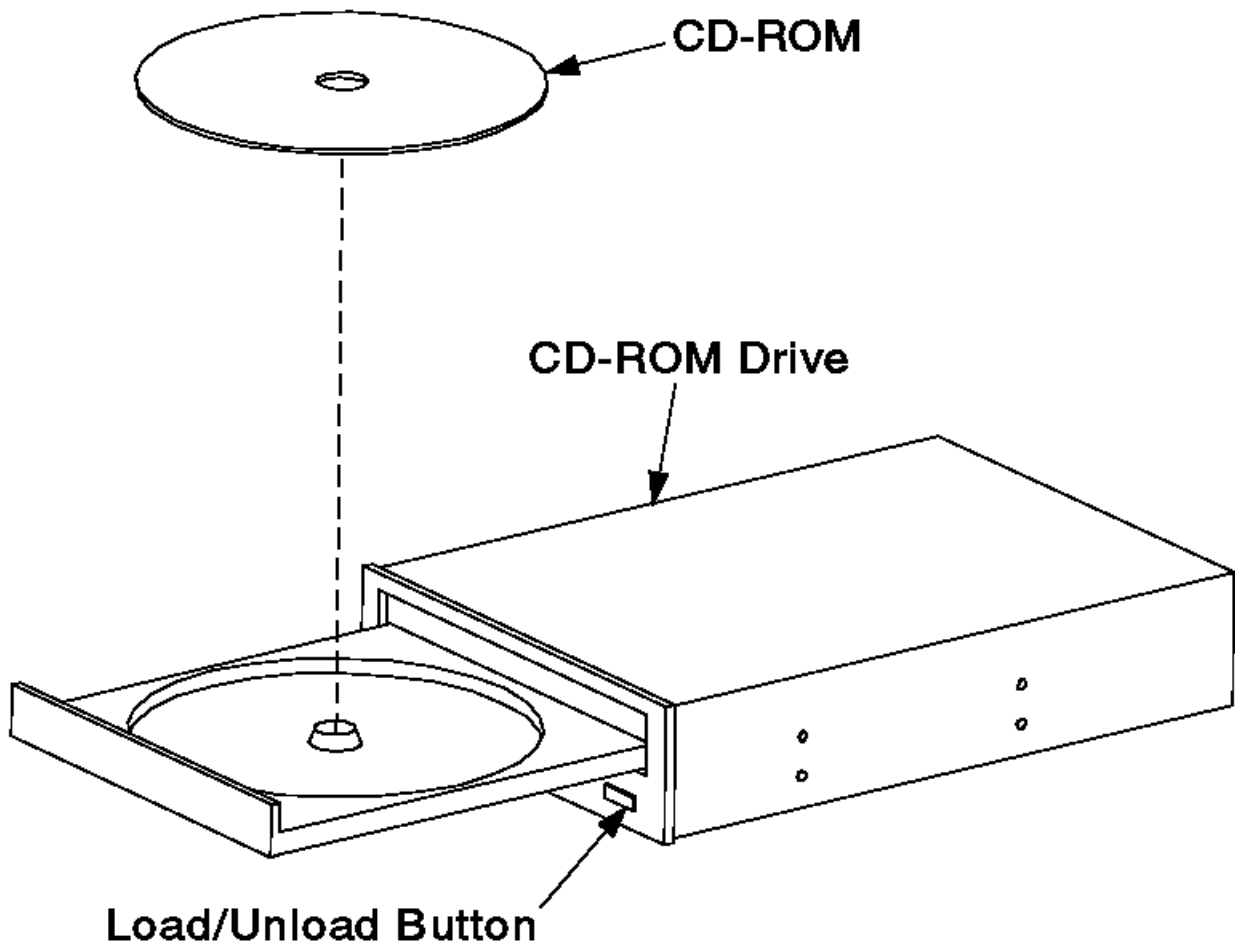
4.3.1 Loading a Compact Disc

4.3.2 Unloading a Compact Disc

4.3.1 Loading a Compact Disc

Use the following procedure to load the compact disc:

1. Press the unload button to open the disk tray on the drive.
2. Place the compact disc onto the disk tray.
3. Press the load button to close the disk tray on the drive.



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Figure 4-3. Loading a Compact Disc into a CD-ROM Drive

4. The green status light comes on, and the drive performs self-tests for approximately 25 seconds.

4.3.2 Unloading a Compact Disc

Use the following procedure to unload the compact disc:

1. Press and hold the unload button for approximately 2 seconds. The drive pushes the disk partially out of the opening.
2. Pull the disk out of the drive.

This chapter describes the instructions for upgrading your 7131 Storage Tower.

- Handling ESD sensitive parts
- Setting addresses and connecting SCSI cables
- Removing a device from a media bay
- Installing a device in a media bay
- Removing a device from a hot-swap bay
- Installing a device in a hot-swap bay

Refer to your system publications to prepare the system for device removal or replacement.

For all manual-plug devices listed in Table 5-1 follow the instructions in "Removing and Installing Devices in the Media Bays" in topic 5.3.

Table 5-1. Media Bay Options		
Feature	Media	Capacity
3034	Manual-Plug hard disk drive (1)	4.5GB
3033	Manual-Plug hard disk drive	2.2GB
3032	Manual-Plug hard disk drive	1.1GB
6142	Manual-Plug 4 mm tape drive	4.0GB
6147	Manual-Plug 8 mm tape drive	5.0GB
2616	Manual-Plug CD-ROM drive	600MB

Note:

- If the 4.5GB hard disk drive is installed with any other media bay feature, it is recommend that you install the 4.5GB hard disk drive in the lower (address 5) media bay for better cooling.

For all hot-swap hard disk drives listed in Table 5-2 follow the instructions in "Removing and Installing Hot-Swap Hard Disk Drives" in topic 5.4, for removing and installing devices in the hot-swap bays. These devices are plugged into the backplane of the 7131 Storage Tower.

Table 5-2. Hot-Swap Hard Disk Drive Options		
Feature	Hot-Swap Hard Disk Drive	Capacity
3084	Hot-Swap Hard Disk Drive	4.5GB
3083	Hot-Swap Hard Disk Drive	2.2GB
3082	Hot-Swap Hard Disk Drive	1.1GB

Subtopics

- 5.1 Handling Electrostatic Discharge-Sensitive Parts
- 5.2 Setting Addresses and Connecting SCSI Cables
- 5.3 Removing and Installing Devices in the Media Bays
- 5.4 Removing and Installing Hot-Swap Hard Disk Drives

5.1 Handling Electrostatic Discharge-Sensitive Parts

Take the following precautions when handling 7131 Storage Tower parts:

1. **Attention:** The drives, backplane, and SE/DIFF card can be damaged by electrostatic discharge (ESD). ESD-sensitive parts are wrapped in antistatic bags to prevent damage. Handle the ESD-sensitive parts carefully to prevent permanent damage.
2. Do not remove the ESD-sensitive part from the antistatic bag (see Figure 5-1) until you are ready to install it.

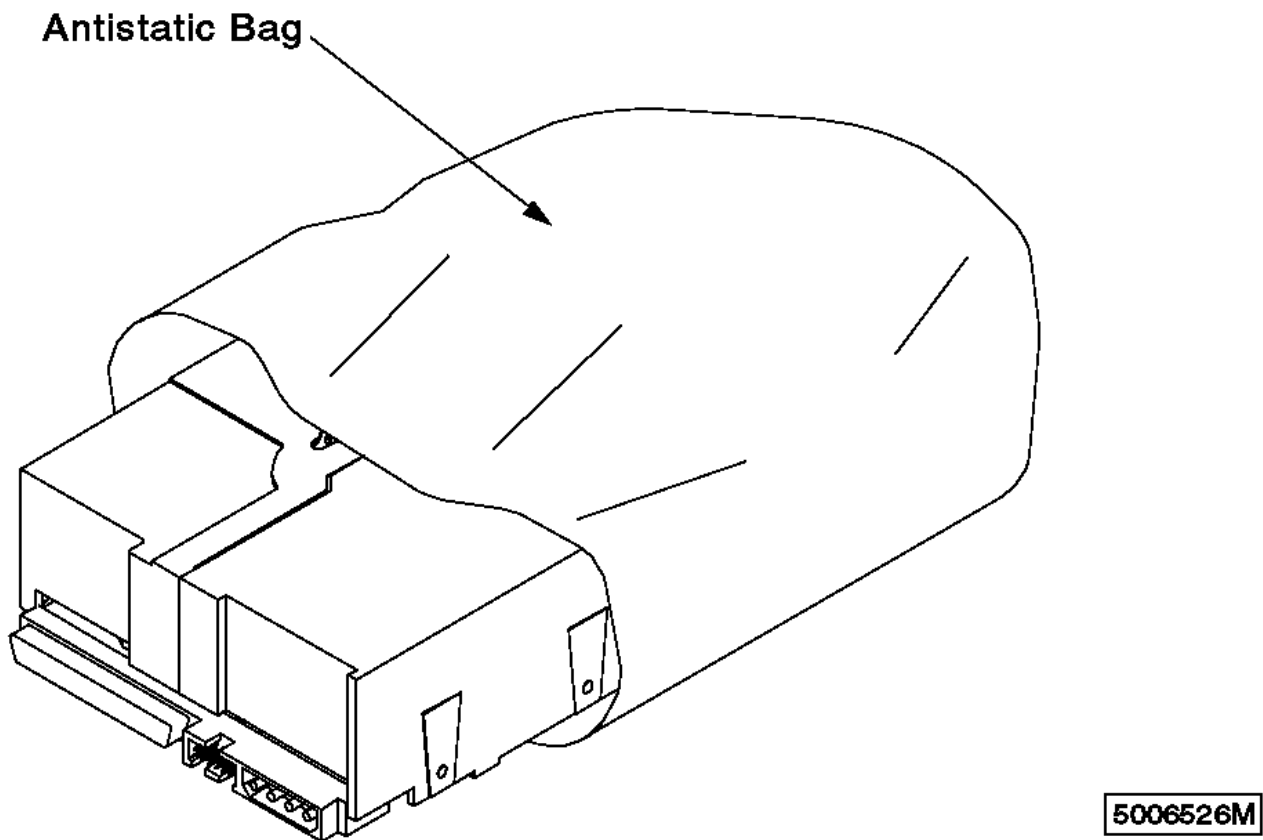


Figure 5-1. Antistatic Bag

3. Do not place any ESD-sensitive parts on the machine cover or on a metal table. Large metal objects can become discharge paths if they are not grounded. If you must set aside an ESD-sensitive part, first place it into an antistatic bag.
4. Be very careful when you work with ESD-sensitive parts in cold weather, as low humidity and heating increase static electricity.
5. When either end of a SCSI cable is unconnected to a device, the pins on the SCSI signal cable are exposed and must not be touched.

5.2 Setting Addresses and Connecting SCSI Cables

This section describes the procedures for setting the addresses for the manual-plug devices to be installed in the 2 media bays. The hot-swap hard disk drive addresses are set automatically by the backplane.

Because you may be upgrading to a more complex configuration with two systems or two 7131 Storage Towers, guidelines are also included for connecting the SCSI cables.

Subtopics

5.2.1 Setting Address Switches and Pins for the Manual-Plug Devices

5.2.2 Connecting a 7131 Storage Tower with a Single-Ended SCSI

5.2.3 Connecting a 7131 Storage Tower with a Differential SCSI Option

5.2.1 Setting Address Switches and Pins for the Manual-Plug Devices

Set the address switches and pins for the manual-plug devices before installing them in the media bays. The addresses vary with the location of the devices in the 7131 Storage Tower (see Figure 5-2).

The information in Figure 5-2 is on a label on the inside of the 7131 Storage Tower front cover.

Note: If you are installing a second 7131 Storage Tower, the SE/DIFF card automatically translates the device addresses. For example, if you install a device in the lower media bay of a second 7131 Storage Tower, set the address to 5. The SE/DIFF card translates this to address 13. See "Setting the Address Jumper for a Second 7131 Storage Tower" in topic 3.2 for more information.

Device Address			
1 Tower 1 System	1 Tower 2 Systems	2 Towers and 1 or 2 Systems	
6	Not Available	Not Available	Not Available
5	5	5	13
4	4	4	12
3	3	3	11
2	2	2	10
1	1	1	9
0	0	0	8

5006539P

Figure 5-2. Device Addresses

Subtopics

- 5.2.1.1 Setting the Address for a Manual-Plug Disk Drive
- 5.2.1.2 Setting the Address for a Manual-Plug 8mm Tape Drive
- 5.2.1.3 Setting the Address for a Manual-Plug 4mm Tape Drive
- 5.2.1.4 Setting the Address for a Manual-Plug CD-ROM

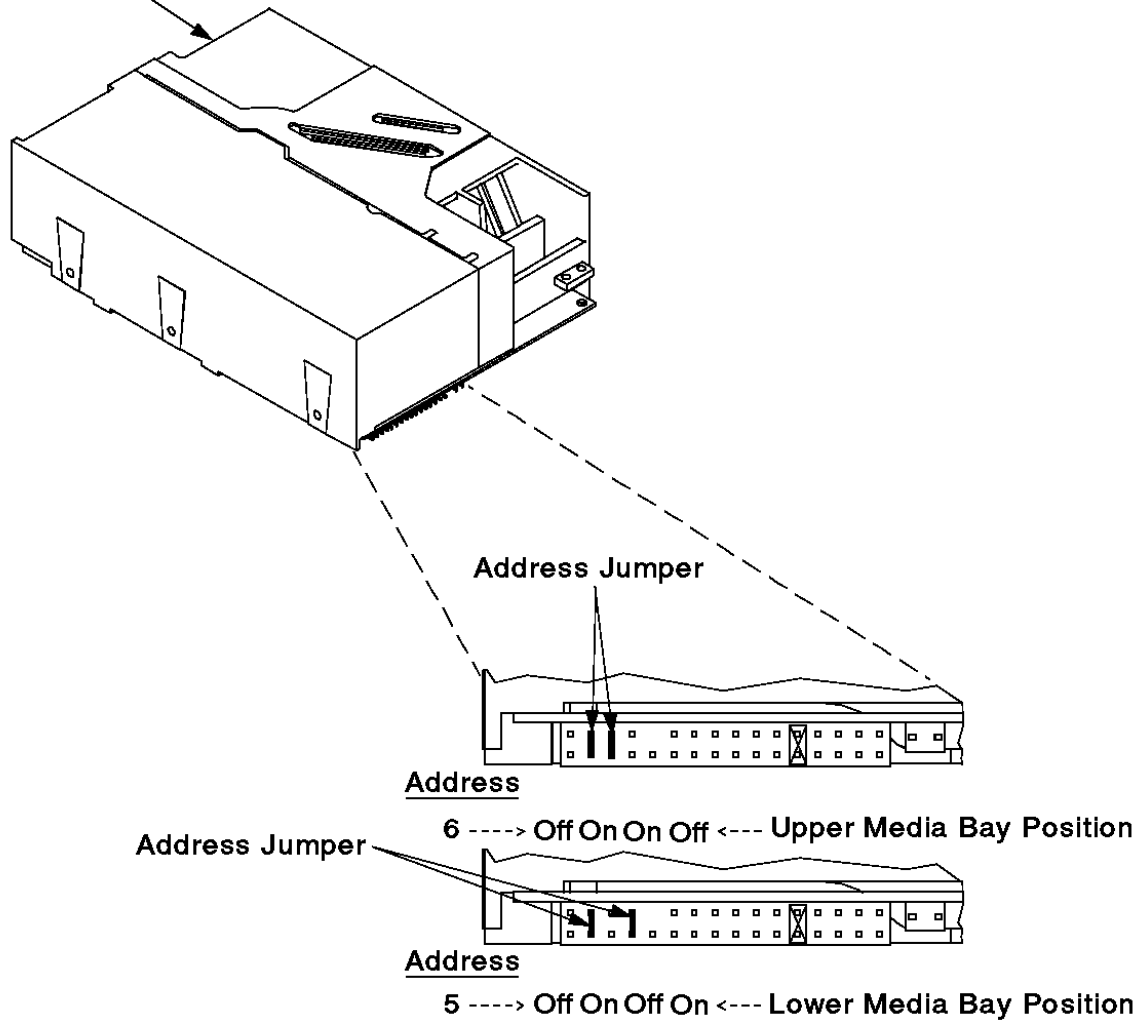
5.2.1.1 *Setting the Address for a Manual-Plug Disk Drive*

Attention: Follow all ESD-sensitive parts procedures while performing these instructions. For ESD information, see "Handling Electrostatic Discharge-Sensitive Parts" in topic 5.1.

Set the address for a 4.5GB, 2.2GB, or 1.1GB hard disk drive (Figure 5-3)

Note: If the 4.5GB hard disk drive is installed with any other media bay feature, we recommend that for better cooling, you install the 4.5GB hard disk drive in the lower of the media bays (address 5).

Manual-Plug
Hard Disk Drive



B 5006528P

Figure 5-3. Address Settings for the Hard Disk Drives

5.2.1.2 Setting the Address for a Manual-Plug 8mm Tape Drive

Attention: Follow all ESD-sensitive parts procedures while performing these instructions. For ESD information, see "Handling Electrostatic Discharge-Sensitive Parts" in topic 5.1.

Set the address for the 8-mm tape drive (see Figure 5-4).

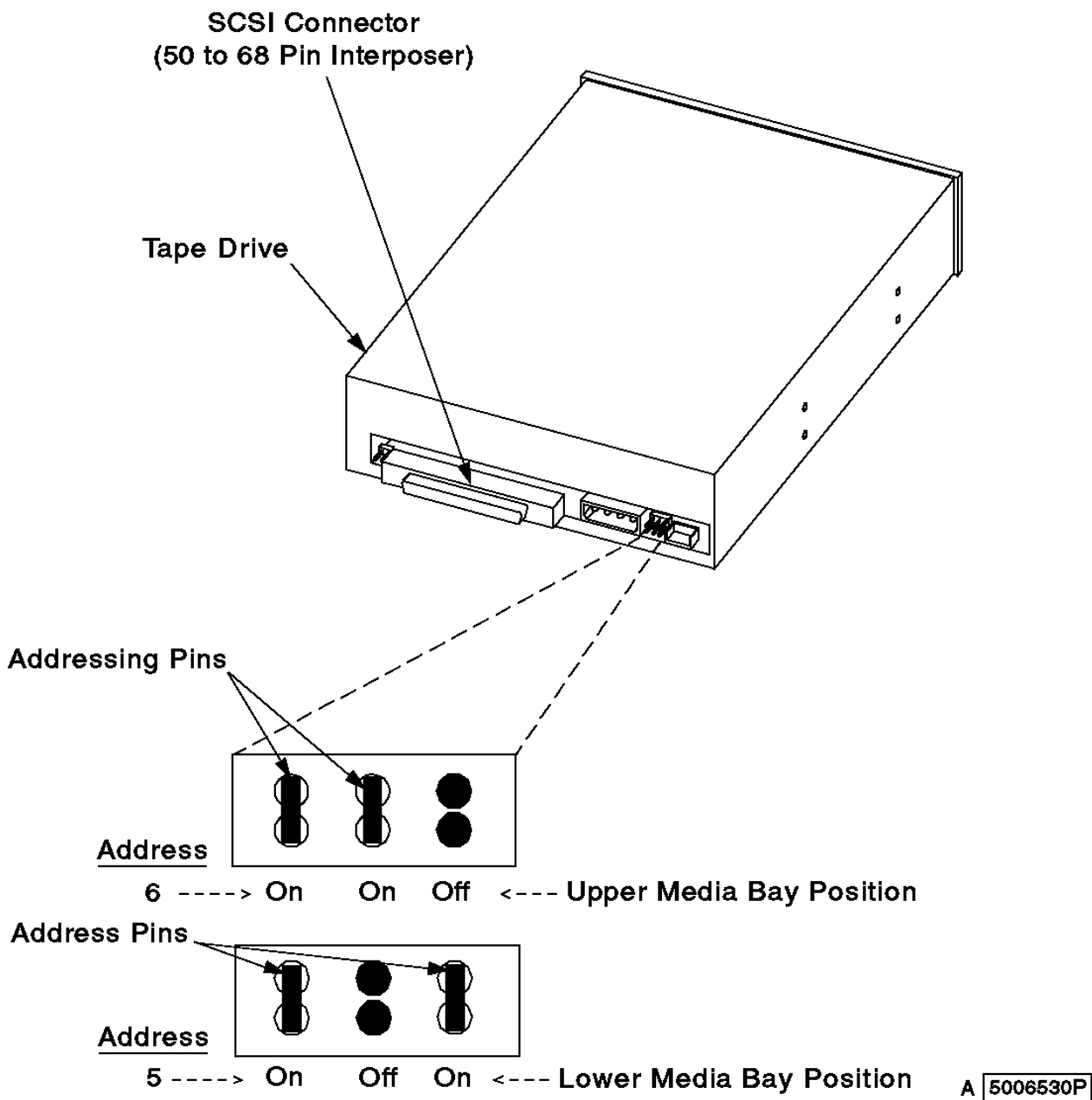


Figure 5-4. Address Settings for 8mm Tape Drive

5.2.1.3 *Setting the Address for a Manual-Plug 4mm Tape Drive*

Attention: Follow all ESD-sensitive parts procedures while performing these instructions. For ESD information, see "Handling Electrostatic Discharge-Sensitive Parts" in topic 5.1.

1. Determine which type of manual-plug tape drive you are installing (see "Media Bay Options" in topic 1.1.4).

If you are installing a 8-bit 4mm manual-plug tape drive type 1, continue with step 2.

If you are installing a 8-bit 4mm manual-plug tape drive type 2, go to step 5.

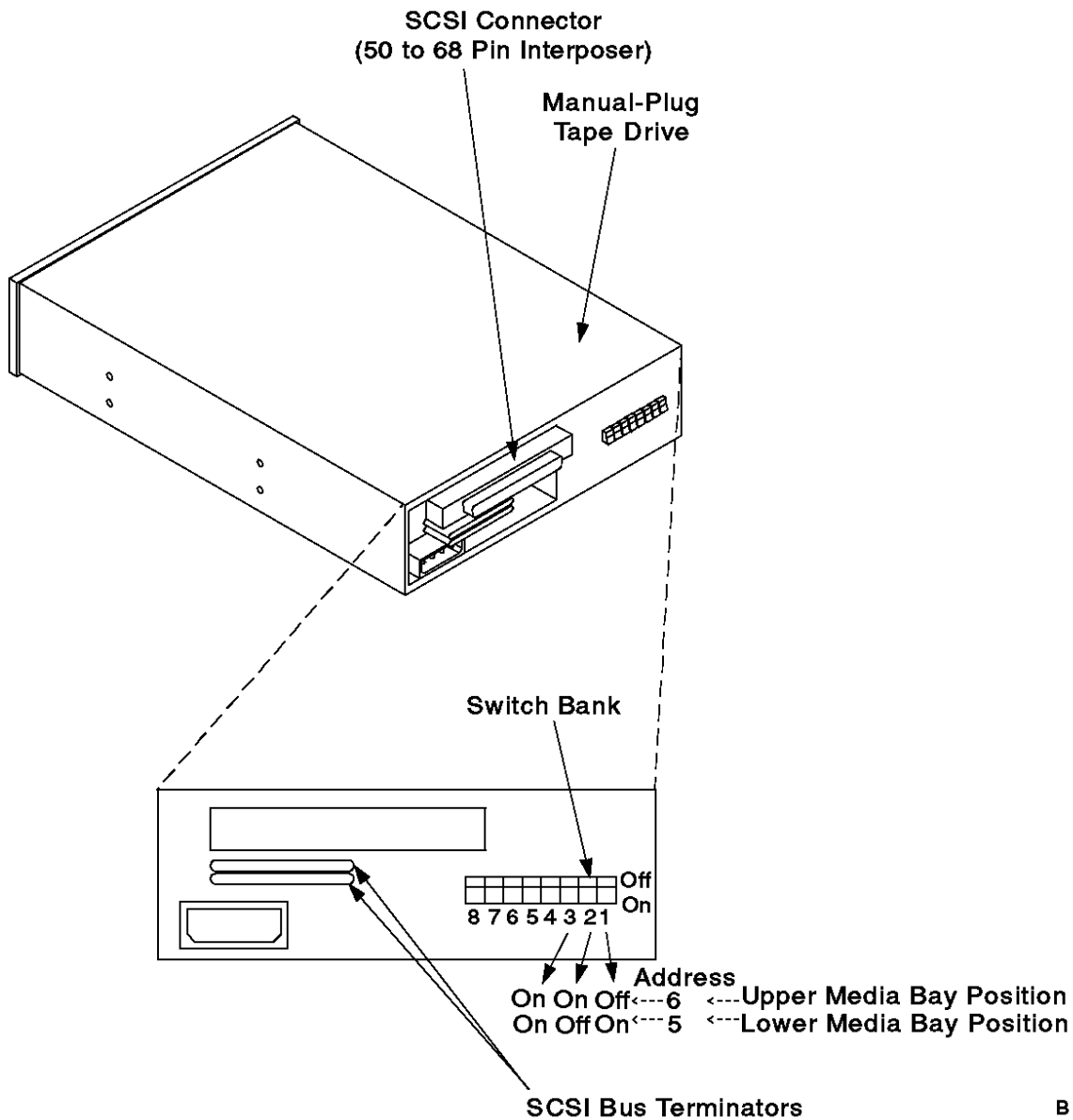
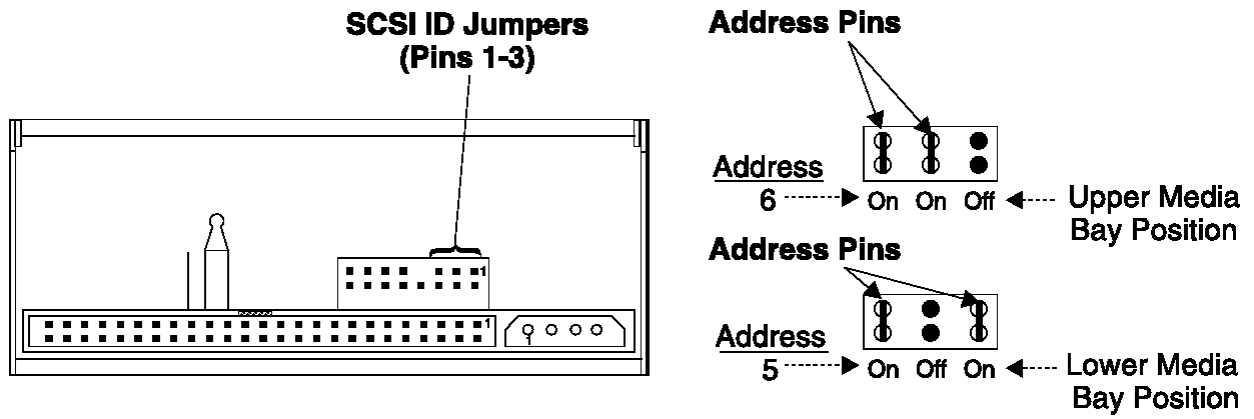


Figure 5-5. 8-Bit 4mm Manual-Plug Tape Drive Type 1 Address Setting

2. Remove the SCSI bus terminators, if they are installed (see Figure 5-5).
3. Set the address on the manual-plug tape drive, before installing in the media bay, by moving switches on the switch bank. See Figure 5-5 for the 8-bit 4mm manual-plug tape drive address setting.
4. Return to the procedure that sent you here.
5. Remove the SCSI bus terminator jumpers (pins 6 and 8).
6. Use the address pin jumpers provided with the tape drive to connect the upper and lower pins that correspond to the SCSI ID you want to use (see Figure 5-6 below).



JH191-0

Figure 5-6. 8-Bit 4mm Manual-Plug Tape Drive Type 2 Address Setting

7. Return to the procedure that sent you here.

5.2.1.4 Setting the Address for a Manual-Plug CD-ROM

Attention: Follow all ESD-sensitive parts procedures while performing these instructions. For ESD information, see "Handling Electrostatic Discharge-Sensitive Parts" in topic 5.1.

Set the address for the CD-ROM assembly (see Figure 5-7)

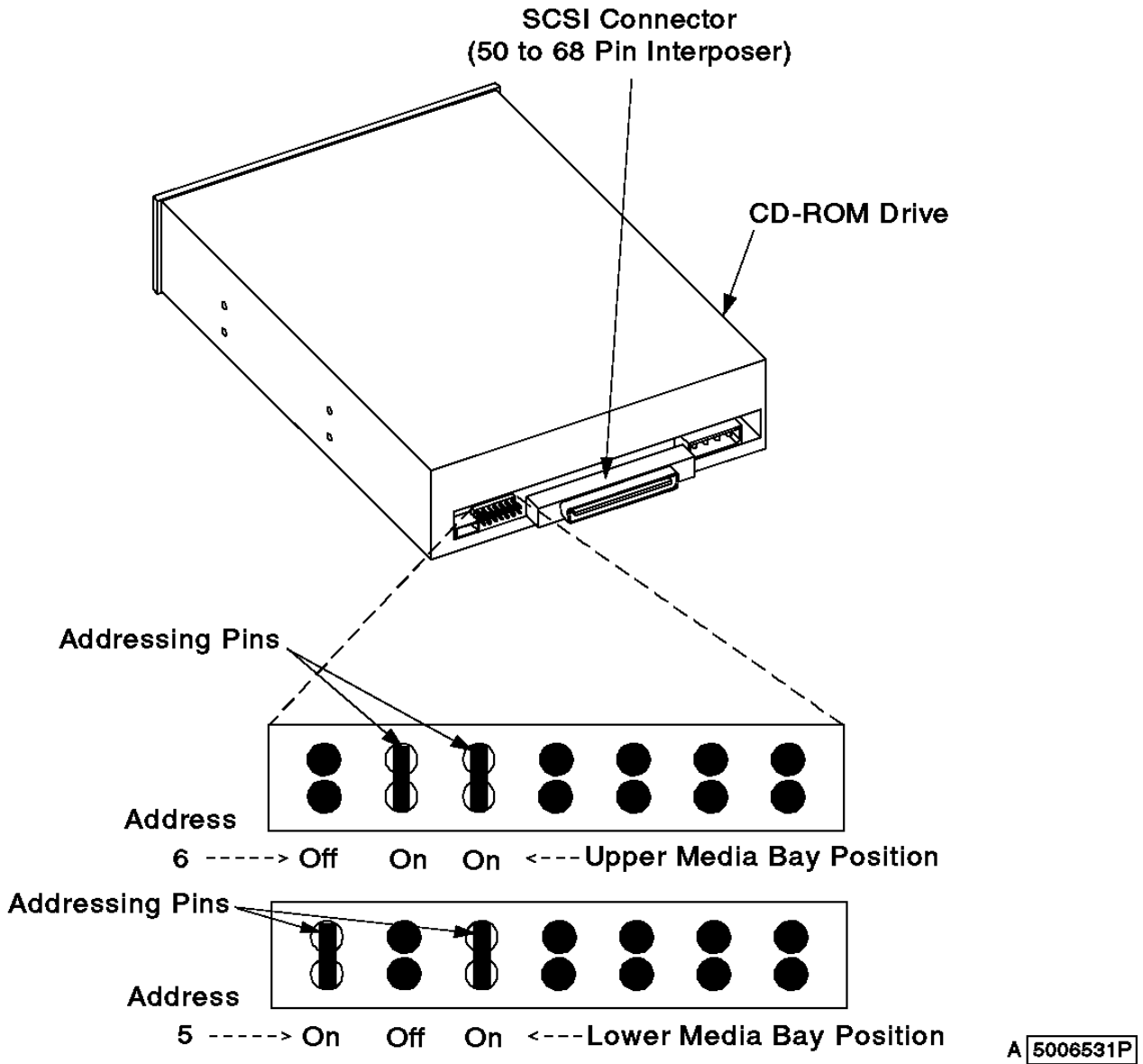
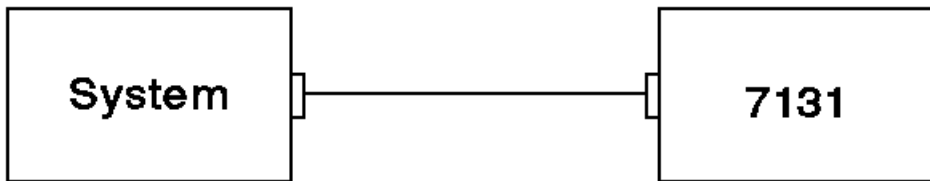


Figure 5-7. Address Settings for the CD-ROM Drive

5.2.2 Connecting a 7131 Storage Tower with a Single-Ended SCSI

This base configuration consists of one 7131 Storage Tower connected to one system. No SE/DIFF card is required.

Connect a 7131 Storage Tower to 1 system (Figure 5-8).



5006565L

Figure 5-8. One 7131 Storage Tower Connected to One System (Single-Ended SCSI)

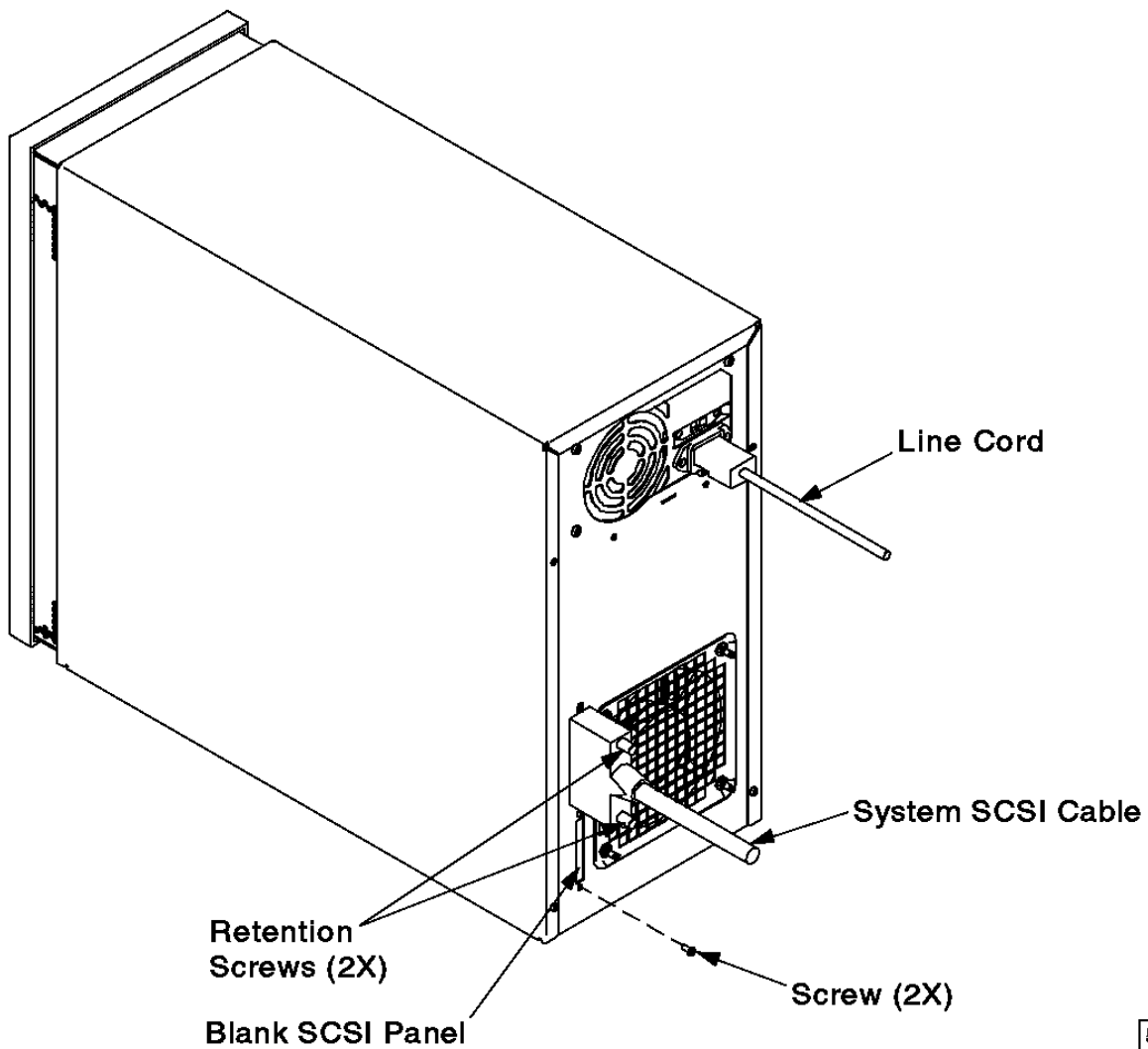
1. DANGER

```
+-----+
| To prevent a possible electrical shock during an electrical storm, |
| do not connect or disconnect cables or station protectors for    |
| communications lines, display stations, printers, or telephones. |
| (RSFTD003)                                                         |
+-----+
```

2. DANGER

```
+-----+
| To prevent a possible electrical shock from touching two surfaces |
| with different electrical grounds, use one hand, when possible, to |
| connect or disconnect signal cables. (RSFTD004)                   |
+-----+
```

3. You can install a total of 7 devices.
4. Use device addresses 0 through 6.
5. Connect the SCSI cable to the back of the 7131 Storage Tower (see Figure 5-9).



5006564N

Figure 5-9. Rear View of the 7131 Storage Tower

6. Secure the cable by tightening the screws on the 7131 Storage Tower connector.
7. Connect the SCSI cable to the system (refer to your system publications).

5.2.3 *Connecting a 7131 Storage Tower with a Differential SCSI Option*

The differential SCSI option can consist of a 7131 Storage Tower connected to one or two systems, or two 7131 Storage Towers connected to one or two hosts. An SE/DIFF card is required for all of these configurations.

Subtopics

5.2.3.1 Connecting One 7131 Storage Tower to One System

5.2.3.2 Connecting One 7131 Storage Tower to Two Systems

5.2.3.3 Connecting Two 7131 Storage Towers to One System

5.2.3.4 Connecting Two 7131 Storage Towers to Two Systems

5.2.3.1 Connecting One 7131 Storage Tower to One System

Use the following procedure to connect one 7131 Storage Tower to one system (see Figure 5-10).

Note: This configuration requires an SE/DIFF card and a terminator.

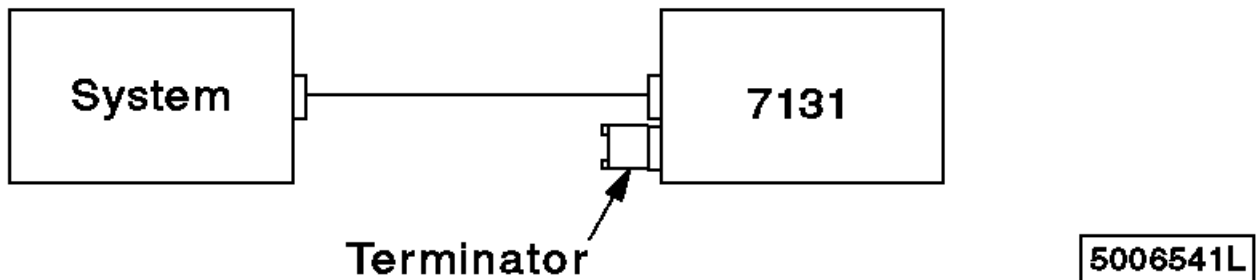


Figure 5-10. One 7131 Storage Tower Connected to One System

1. DANGER

```

+-----+
| To prevent a possible electrical shock during an electrical storm, |
| do not connect or disconnect cables or station protectors for    |
| communications lines, display stations, printers, or telephones.  |
| (RSFTD003)                                                         |
+-----+

```

2. DANGER

```

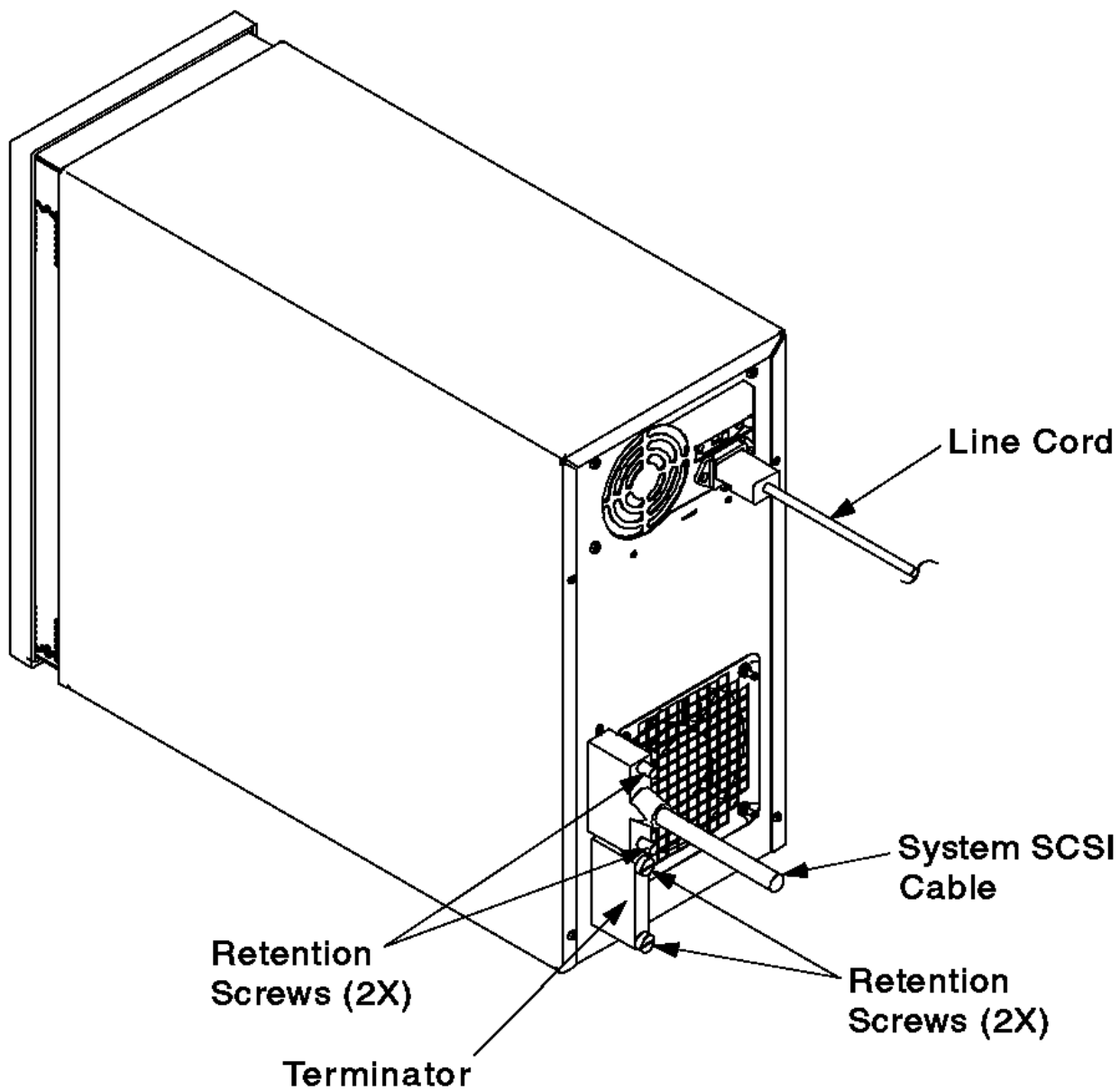
+-----+
| To prevent a possible electrical shock from touching two surfaces |
| with different electrical grounds, use one hand, when possible, to |
| connect or disconnect signal cables. (RSFTD004)                   |
+-----+

```

3. You can install a total of 7 devices

4. Use device addresses 0 through 6 (see Figure 5-11).

5. Connect the SCSI cable to the back of the 7131 Storage Tower (see Figure 5-11).



5006567N

Figure 5-11. View of the 7131 Storage Tower SCSI Terminator

6. Secure the cable by tightening the screws on the cable connector.
7. Connect the SCSI terminator to the back of the 7131 Storage Tower (see Figure 5-11).
8. Secure the terminator by tightening the screws on the connector.
9. Connect the SCSI cable to the system (refer to your system publications).

5.2.3.2 Connecting One 7131 Storage Tower to Two Systems

Use the following procedure to connect one 7131 Storage Tower to two systems (see Figure 5-12).

Note: This configuration requires an SE/DIFF card and two terminators. A SCSI Y-cable is also required for each system.

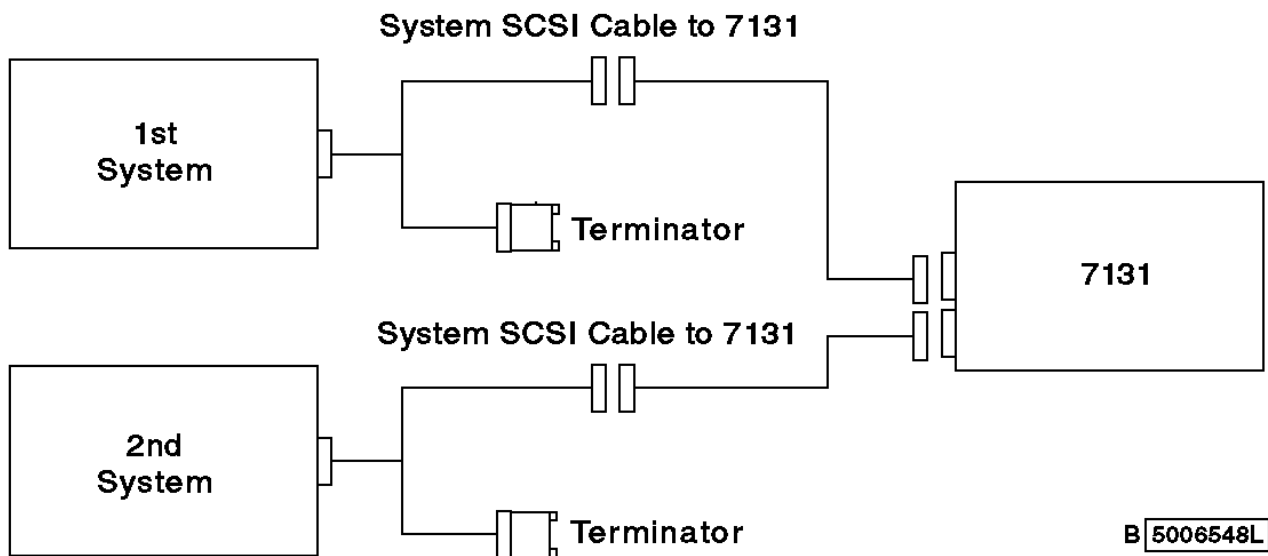


Figure 5-12. One 7131 Storage Tower Connected to Two Systems

1. DANGER

To prevent a possible electrical shock during an electrical storm, do not connect or disconnect cables or station protectors for communications lines, display stations, printers, or telephones. (RSFTD003)

2. DANGER

To prevent a possible electrical shock from touching two surfaces with different electrical grounds, use one hand, when possible, to connect or disconnect signal cables. (RSFTD004)

3. If you link one 7131 Storage Tower in a two-system configuration, you can install a total of 6 devices.
4. Do not use device Address 6 (see Figure 5-2 in topic 5.2.1).
5. Set the second system adapter to address (I.D.) 6.
6. Connect two SCSI cables to the 7131 Storage Tower.
7. Connect the SCSI cables to one end of each SCSI Y-cable.
8. Secure the cables by tightening the screws on each SCSI cable connector.
9. Connect a SCSI terminator to the remaining end of each SCSI Y-cable.
10. Secure the terminators by tightening the screws on each terminator.
11. Connect the SCSI Y-cables to the system; refer to your system publications
12. Secure the cables by tightening the screws on each SCSI cable connector.

5.2.3.3 Connecting Two 7131 Storage Towers to One System

Use the following procedure to Connect two 7131 Storage Towers to one system (Figure 5-13).

Note: This configuration requires an SE/DIFF card and a terminator for the second 7131 Storage Tower.

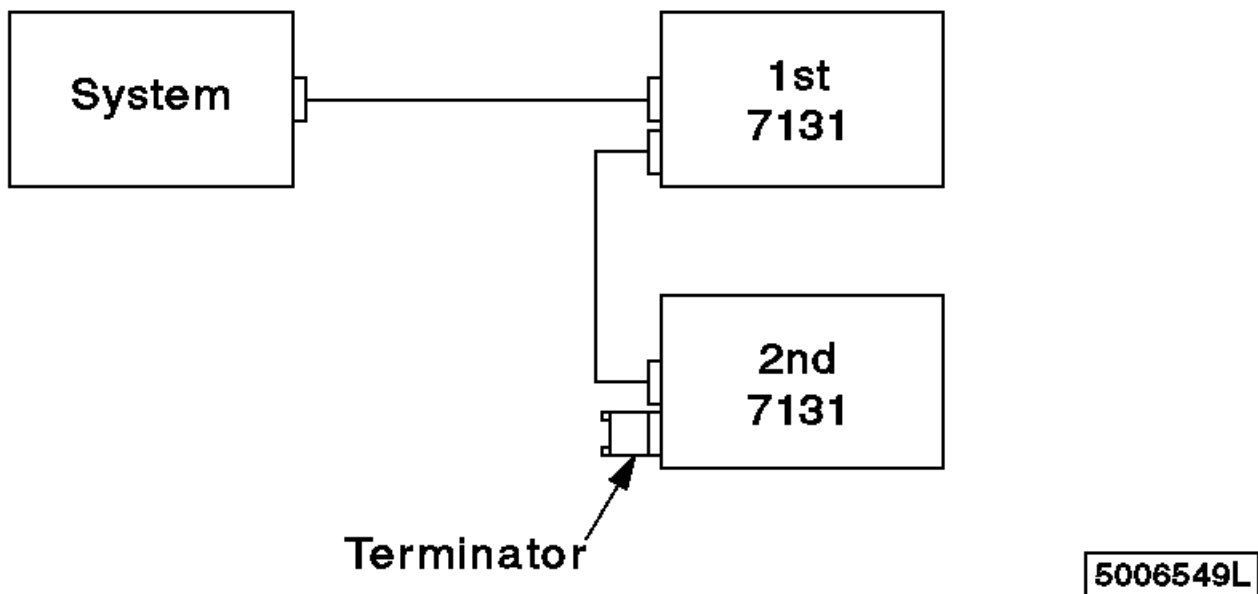


Figure 5-13. Two 7131 Storage Towers Connected to One System

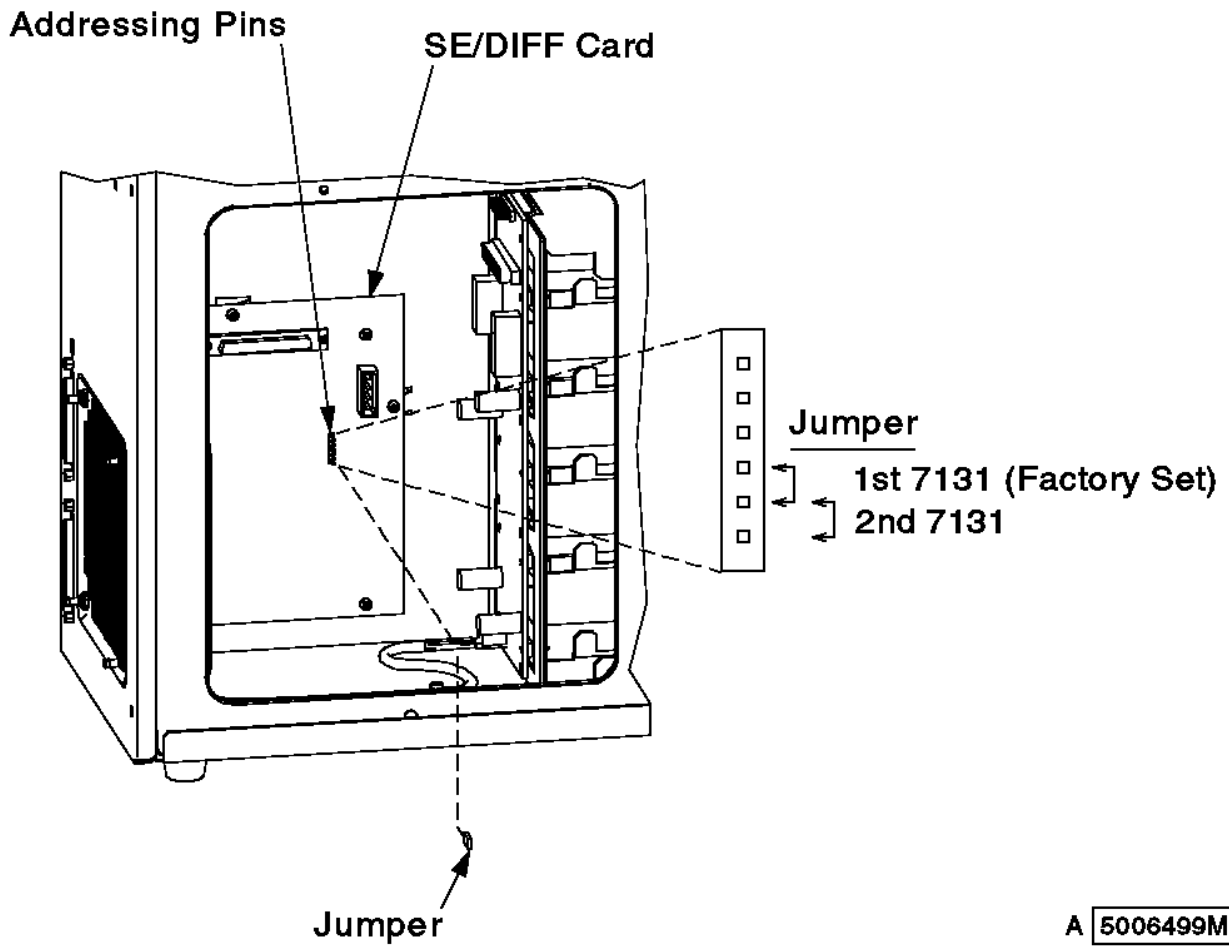
1. DANGER

To prevent a possible electrical shock during an electrical storm, do not connect or disconnect cables or station protectors for communications lines, display stations, printers, or telephones. (RSFTD003)

2. DANGER

To prevent a possible electrical shock from touching two surfaces with different electrical grounds, use one hand, when possible, to connect or disconnect signal cables. (RSFTD004)

3. If you link two 7131 Storage Towers in a one system configuration, you can install a total of 12 devices (6 devices in each 7131 Storage Tower).
4. Use device addresses 0 to 5 on the first 7131 Storage Tower; do not use device address 6 (see Figure 5-2 in topic 5.2.1).
5. Use device addresses 8 to 13 on the second 7131 Storage Tower; do not use device address 14 (see Figure 5-2 in topic 5.2.1).
6. Set the address on the SE/DIFF card in the second 7131 Storage Tower; see Figure 5-14.



A 5006499M

Figure 5-14. Setting the SCSI Address

7. Set the second system adapter to address (I.D.) 6.
8. Connect the tower-to-tower SCSI cable to the first 7131 Storage Tower, in the lower SCSI connector (see Figure 5-15).
9. Connect the system SCSI cable to the first 7131 Storage Tower, in the upper SCSI connector (see Figure 5-15).

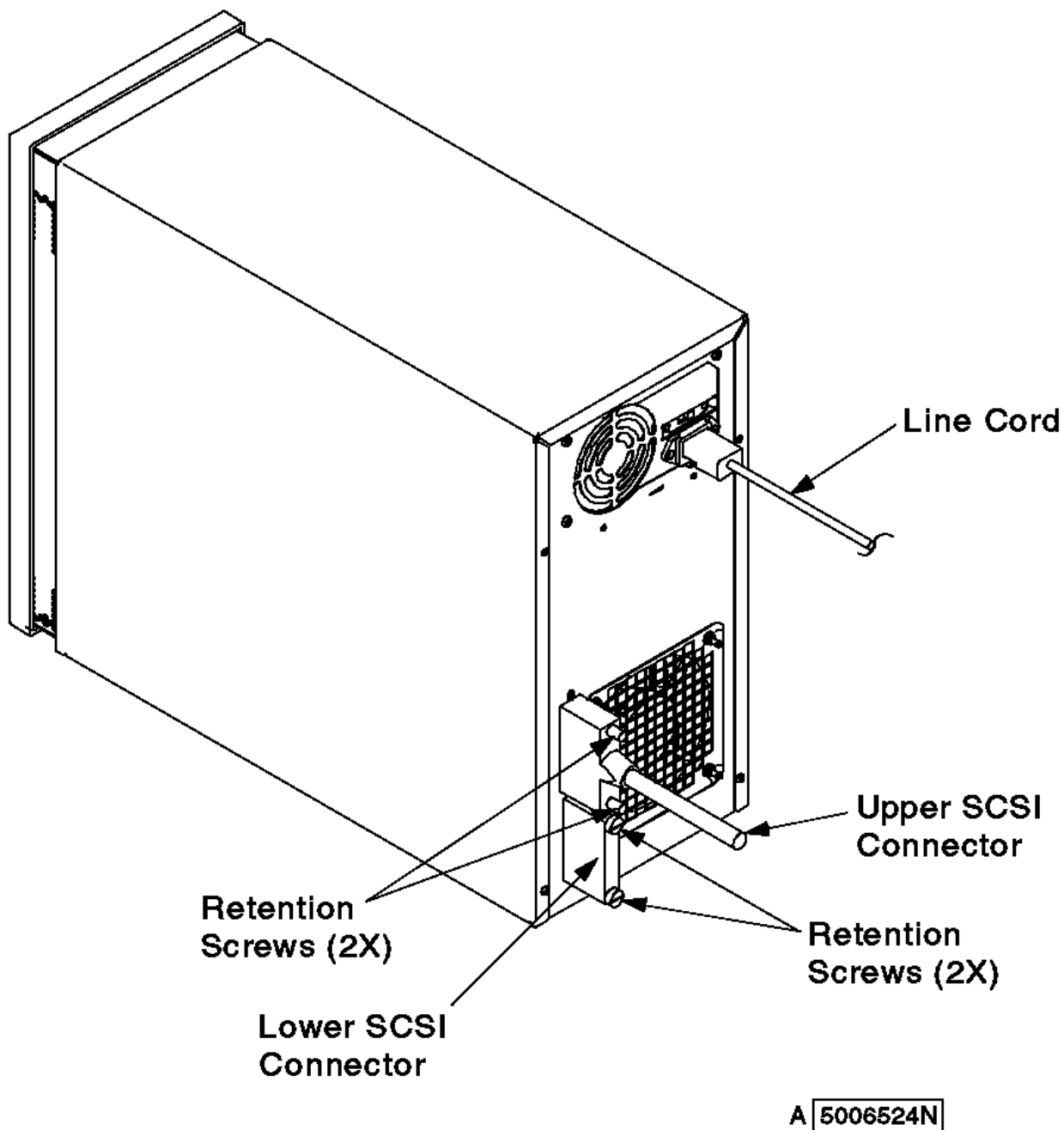


Figure 5-15. Rear View of the 7131 Storage Tower with Upper and Lower SCSI Connectors

10. Install the terminator in the second 7131 Storage Tower in the lower SCSI connector.
11. Connect the tower-to-tower SCSI cable from the first 7131 Storage Tower to the second 7131 Storage Tower
12. Secure all connections by tightening the screws on the connectors.
13. Connect the SCSI cable from the first 7131 Storage Tower to the system; refer to your system publications.

5.2.3.4 Connecting Two 7131 Storage Towers to Two Systems

Connect two 7131 Storage Towers to two systems (Figure 5-16).

Note: This configuration requires an SE/DIFF card and a terminator for each 7131 Storage Tower. A SCSI Y-cable is also required for each system.

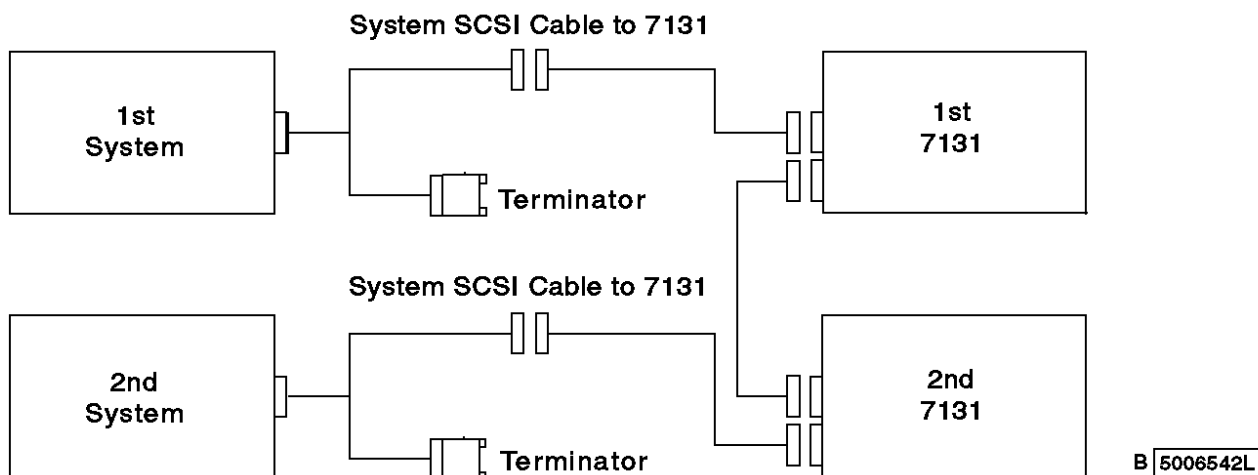


Figure 5-16. Two 7131 Storage Towers Connected to Two Systems

1. DANGER

```

+-----+
| To prevent a possible electrical shock from touching two surfaces |
| with different electrical grounds, use one hand, when possible, to |
| connect or disconnect signal cables. (RSFTD004)                   |
+-----+

```

2. If you link two 7131 Storage Towers in a two system configuration, you can install a total of 12 devices (6 devices in each 7131 Storage Tower).
3. Use addresses 0 to 5 on the first 7131 Storage Tower; do not use Address 6 (see Figure 5-2 in topic 5.2.1).
4. Use addresses 8 to 13 on the second 7131 Storage Tower; do not use Address 14. (see Figure 5-2 in topic 5.2.1).
5. Set the address on SE/DIFF card in the second 7131 Storage Tower; see Figure 5-14 in topic 5.2.3.3.
6. Set the second system adapter to address (I.D.) 6.
7. Connect the tower-to-tower SCSI cable to the first 7131 Storage Tower, in the lower SCSI connector (see Figure 5-16).
8. Connect the system SCSI cable to the first 7131 Storage Tower, in the upper SCSI connector (see Figure 5-16).
9. Connect a system SCSI cable to the second 7131 Storage Tower in the lower SCSI connector (see Figure 5-16).
10. Connect the SCSI tower-to-tower cable from the first 7131 Storage Tower to the second 7131 Storage Tower.
11. Connect the SCSI cables to one end of each SCSI Y-cable.
12. Secure the cables by tightening the screws on each SCSI cable connector.
13. Connect a SCSI terminator to the remaining end of each SCSI Y-cable.
14. Secure the terminators by tightening the screws on each terminator.
15. Connect the SCSI Y-cables to the systems; refer to your system publications
16. Secure the cables by tightening the screws on each SCSI Y-cable connector.

5.3 *Removing and Installing Devices in the Media Bays*

This section gives the procedures for removing and installing devices in the media bays.

Subtopics

5.3.1 Opening the 7131 Storage Tower

5.3.2 Closing the 7131 Storage Tower

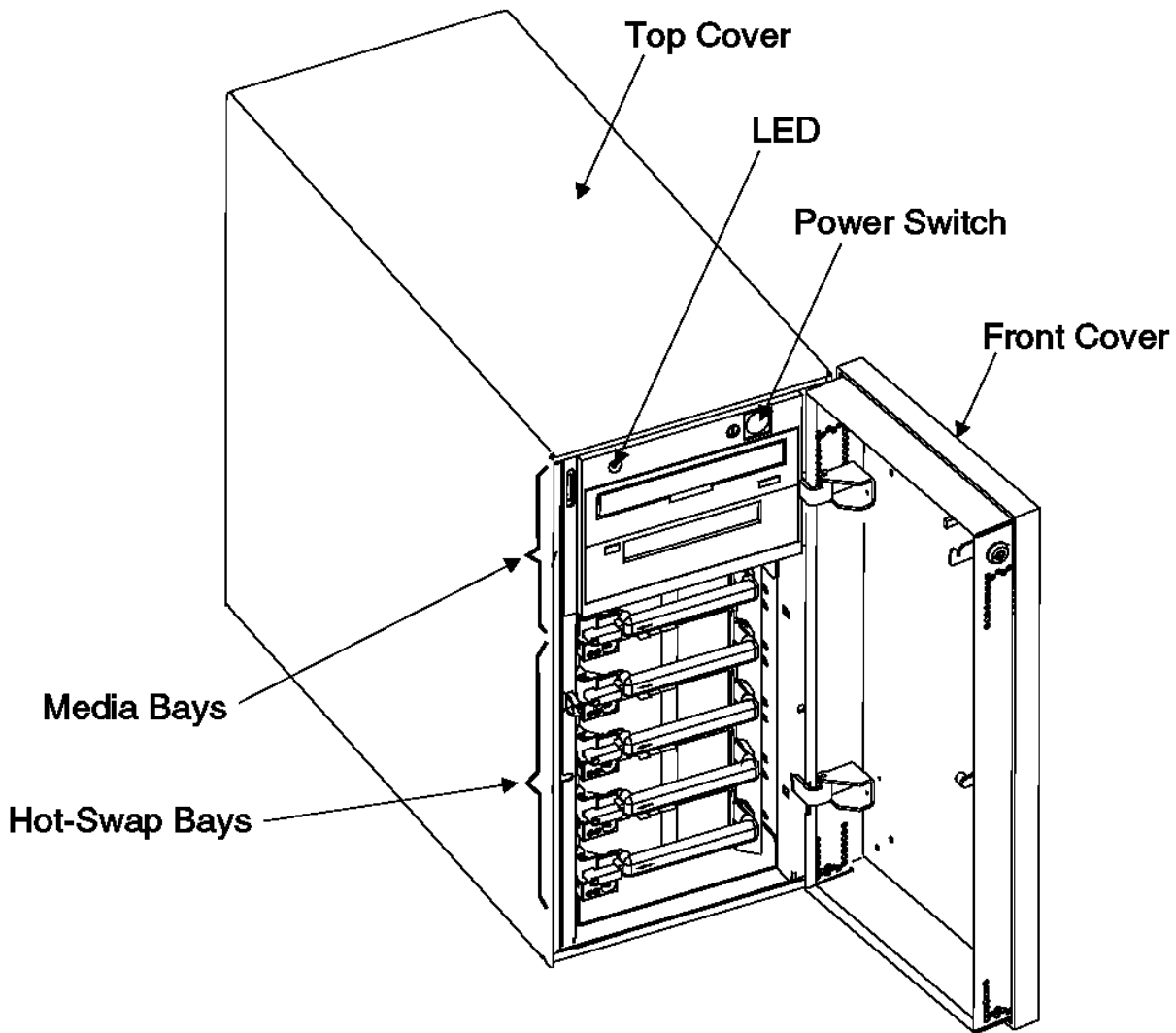
5.3.3 Removing a Device from the Media Bays

5.3.4 Installing Devices in the Media Bays

5.3.1 Opening the 7131 Storage Tower

Open the 7131 Storage Tower:

1. Open the front cover (see Figure 5-17).



A 5006562N

Figure 5-17. The 7131 Storage Tower Front Cover

2. Press the power switch to power off the 7131 Storage Tower. The green LED will go off when the power is off.

3. DANGER

| An electrical outlet that is not correctly wired could place
| hazardous voltage on metal parts of the system or the products
| that attach to the system. It is the customer's responsibility to
| ensure that the outlet is correctly wired and grounded to prevent
an electrical shock. (RSFTD201)

4. Disconnect the line cord from the power source.
5. Remove the 4 screws that fasten the top cover to the 7131 Storage Tower.
6. Lift and remove the top cover from the 7131 Storage Tower (see Figure 5-18).

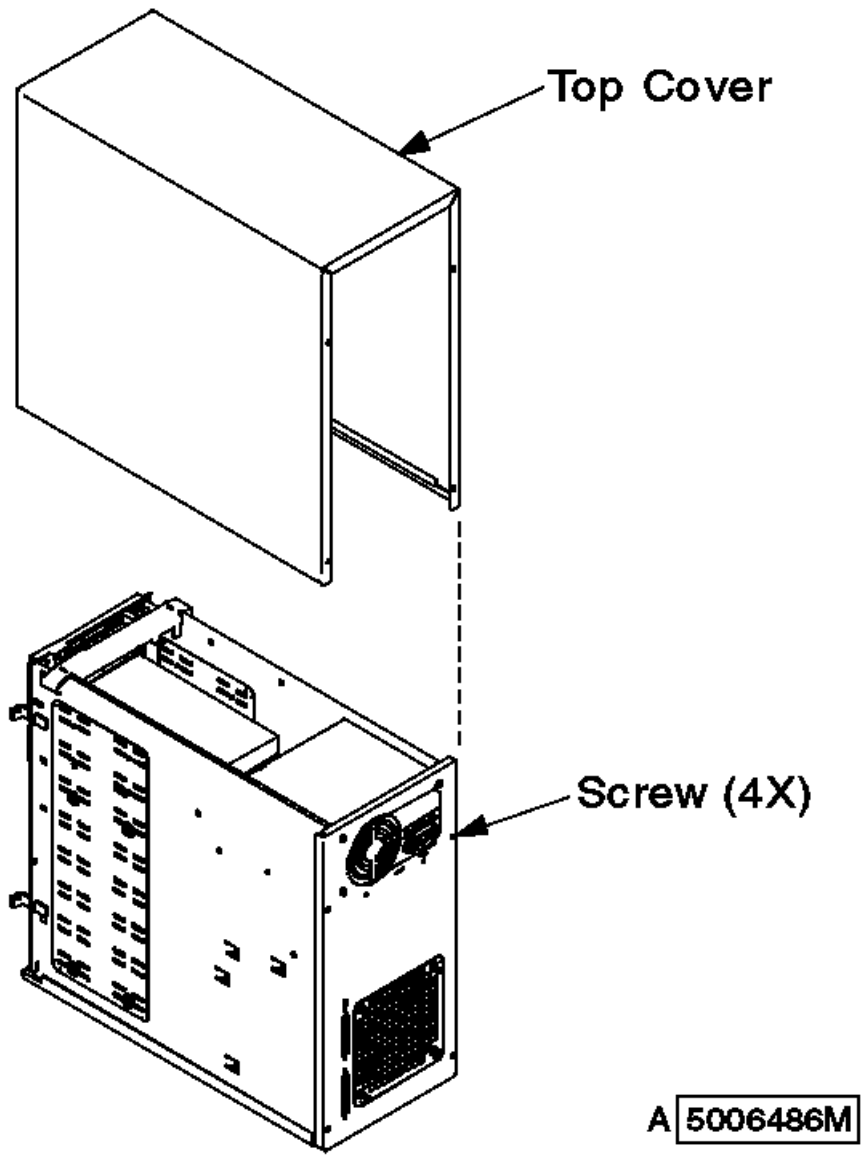


Figure 5-18. The 7131 Storage Tower Top Cover

5.3.2 Closing the 7131 Storage Tower

Use the following procedure to close the 7131 Storage Tower:

1. Put the top cover on the 7131 Storage Tower (see Figure 5-18 in topic 5.3.1).
2. Install and tighten the 4 screws to fasten the top cover to the 7131 Storage Tower.
3. DANGER

```
+-----+
| An electrical outlet that is not correctly wired could place |
| hazardous voltage on metal parts of the system or the products |
| that attach to the system. It is the customer's responsibility to |
| ensure that the outlet is correctly wired and grounded to prevent |
| an electrical shock. (RSFTD201) |
+-----+
```

4. Connect the line cord to the power source.
5. Press the power switch to power on the 7131 Storage Tower. The green LED will illuminate (see Figure 5-17 in topic 5.3.1).
6. Close the front cover.

5.3.3 Removing a Device from the Media Bays

Use the following procedure when removing a device from a media bay:

1. Ensure that no partition on a hard disk drive, tape, or CD-ROM drive is open for read or write access. For example, verify that:
 - a. No file system is mounted on a partition on the drive.
 - b. No file system is being dumped.
 - c. No partitions are members of virtual partitions.
2. Refer to your system publications to prepare the system for device removal.
3. Open the 7131 Storage Tower, following the instructions in "Opening the 7131 Storage Tower" in topic 5.3.1.
4. Disconnect the power connector from the drives (see Figure 5-19).

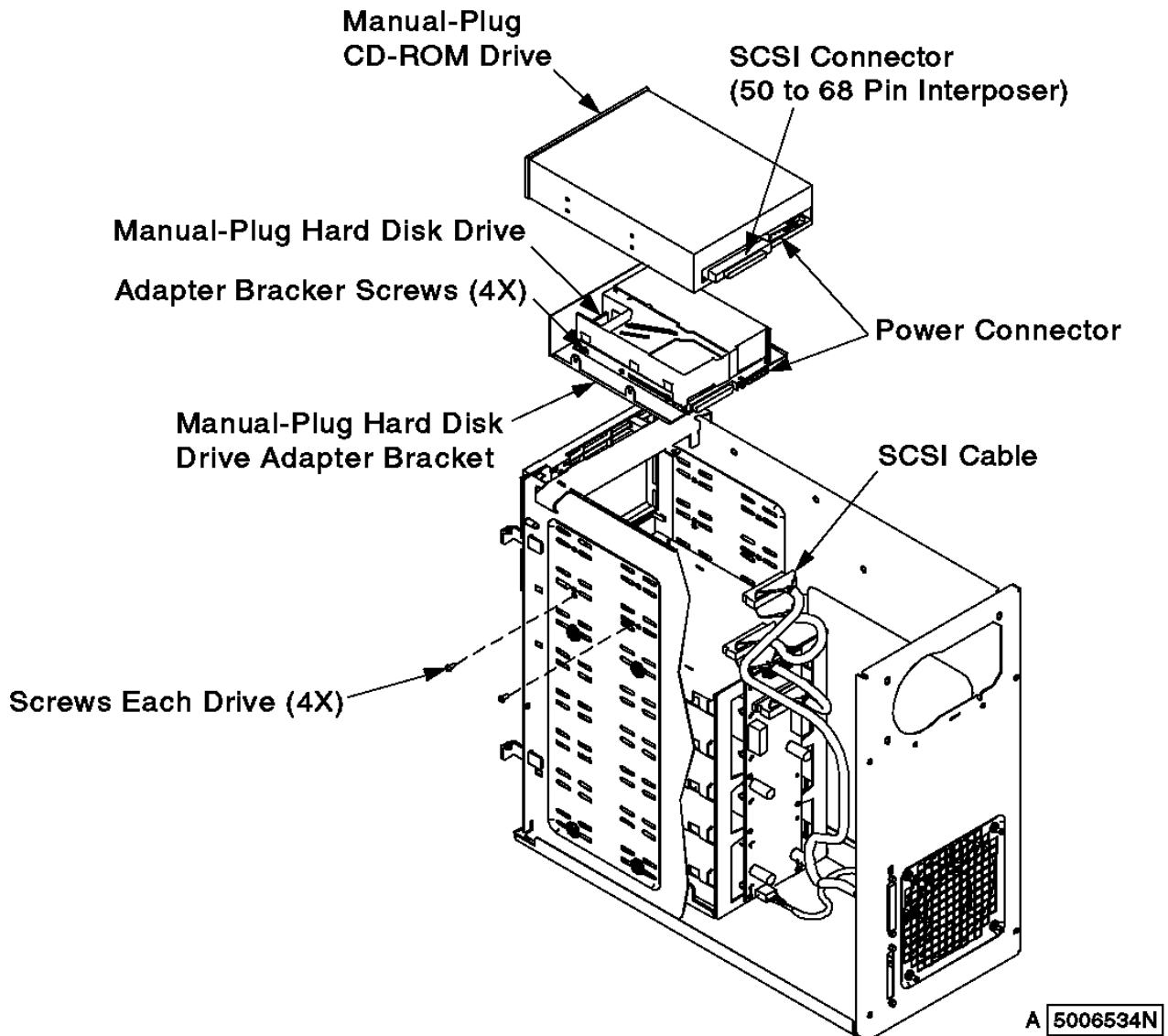


Figure 5-19. SCSI Cable Connections and Screw Locations for Manual-Plug Devices

5. Disconnect the SCSI cable from the drives:
 - a. Disconnect the SCSI cable from the hard disk drive (see Figure 5-19).
 - b. Disconnect the SCSI cable and the interposer from the tape drive.
 - c. Disconnect the SCSI cable and the interposer from the CD-ROM drive (see Figure 5-19).
6. Remove the screws that attach the drives in the bay (see Figure 5-19).
7. Continue with step 8a for hard disk drives, and step 9 for all other devices.
8. Remove the hard disk drive:

- a. Pull off the blank panel covering the hard disk drive (fastened by clips).
- b. Slide the hard disk drive on the adapter bracket out of the media bay.
- c. If you are not installing another device in this bay, reinstall the blank panel.
- d. Remove the 4 screws on the sides of the adapter bracket that mount the hard disk drive (Figure 5-20) then continue with step 10.

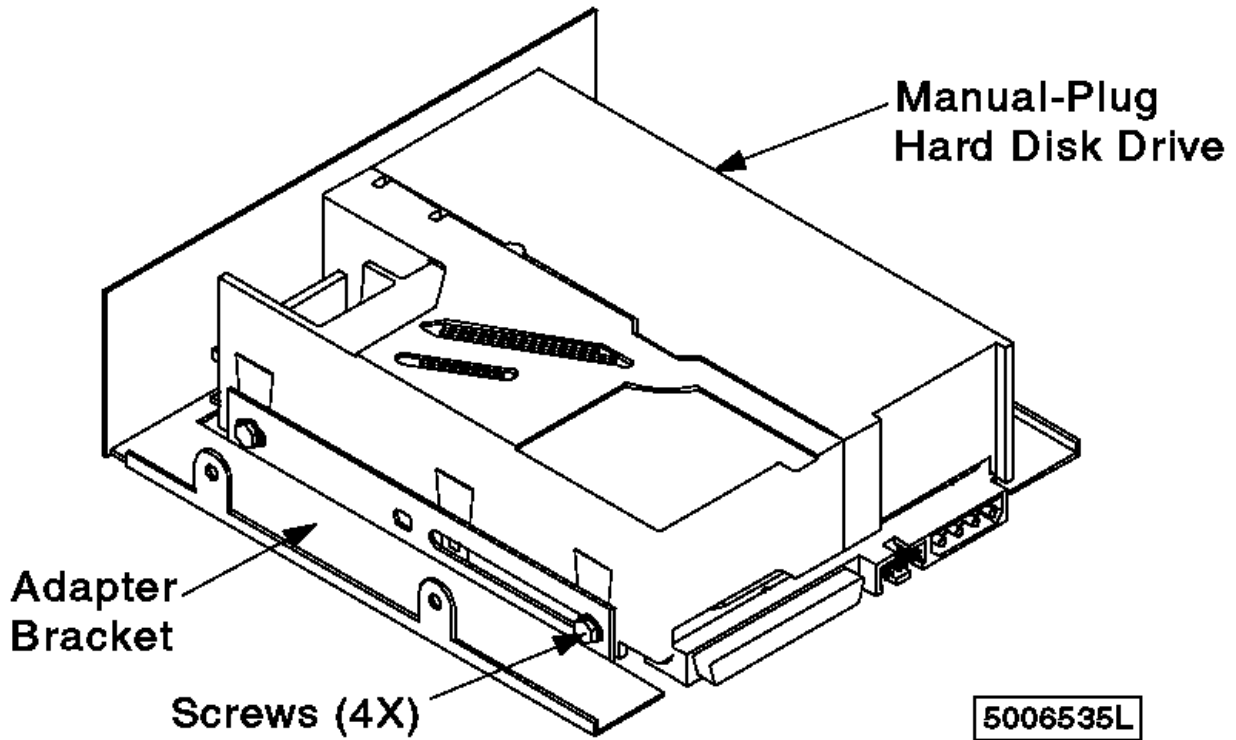


Figure 5-20. Hard Disk Drive Adapter Bracket

9. Slide the tape or CD-ROM drive out of the media bay.
10. Place the device in an anti-static bag if it is to be reused (see instructions in "Handling Electrostatic Discharge-Sensitive Parts" in topic 5.1).
11. Close the top cover on the 7131 Storage Tower, following instructions in "Closing the 7131 Storage Tower" in topic 5.3.2.
12. Press the power switch. The green LED will illuminate.
13. Close the front cover on the 7131 Storage Tower, following instructions in "Closing the 7131 Storage Tower" in topic 5.3.2.

5.3.4 Installing Devices in the Media Bays

This procedure describes how to install a hard disk drive, tape drive, or CD-ROM drive in an empty media bay.

1. **Attention:** Follow all ESD-sensitive parts procedures while performing this procedure (for ESD information, see "Handling Electrostatic Discharge-Sensitive Parts" in topic 5.1):
2. Determine which device you are installing in the media bay.
3. **Attention:** A new device might need time to acclimate to its new environment:

When you install a device into an operating environment from an environment whose temperature is outside the specified operating range (see "Operating Environment" in topic 1.2), do not use that drive for at least 3 hours.

This delay allows the device to acclimate to the operating environment.

4. Remove the device from any shipping packaging, but leave it in its sealed plastic bag (if present) to prevent condensation forming.
5. After 3 hours, remove the device from the antistatic bag.
6. Set the internal address of the device you are installing; see "Setting Addresses and Connecting SCSI Cables" in topic 5.2.
7. Open the front cover, following instructions in "Opening the 7131 Storage Tower" in topic 5.3.1. Continue with step 8 for hard disk drives and step 9 for all tape and CD-ROM drives.
8. If the new hard disk drive is not already installed on an adapter bracket, put it on an adapter bracket:
 - a. Install and tighten the 4 screws on the sides of the adapter bracket to mount the hard disk drive (Figure 5-21).

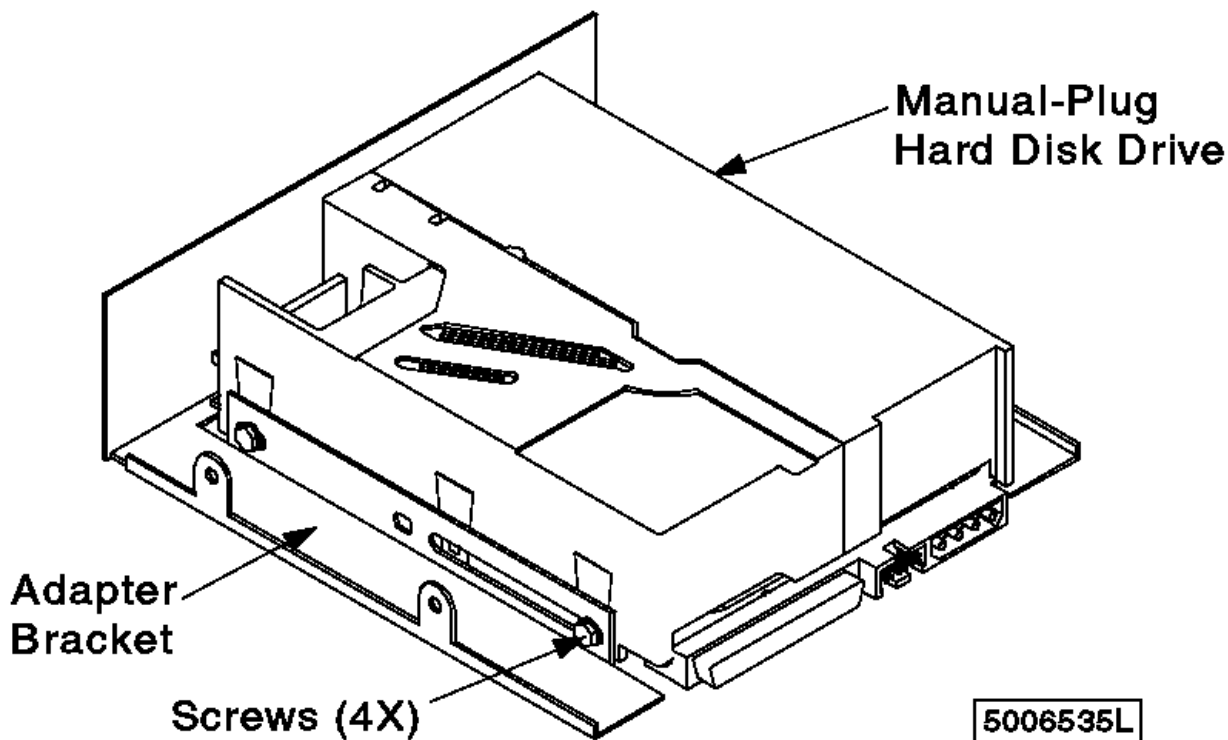


Figure 5-21. Hard Disk Drive Adapter Bracket

- b. Slide the hard disk drive on the bracket into the media bay, then continue with step 10.
9. Slide the tape or CD-ROM drive into the media bay.
10. Connect the SCSI cable and the power connector to the hard disk drive and the CD-ROM and tape drives (Figure 5-22).

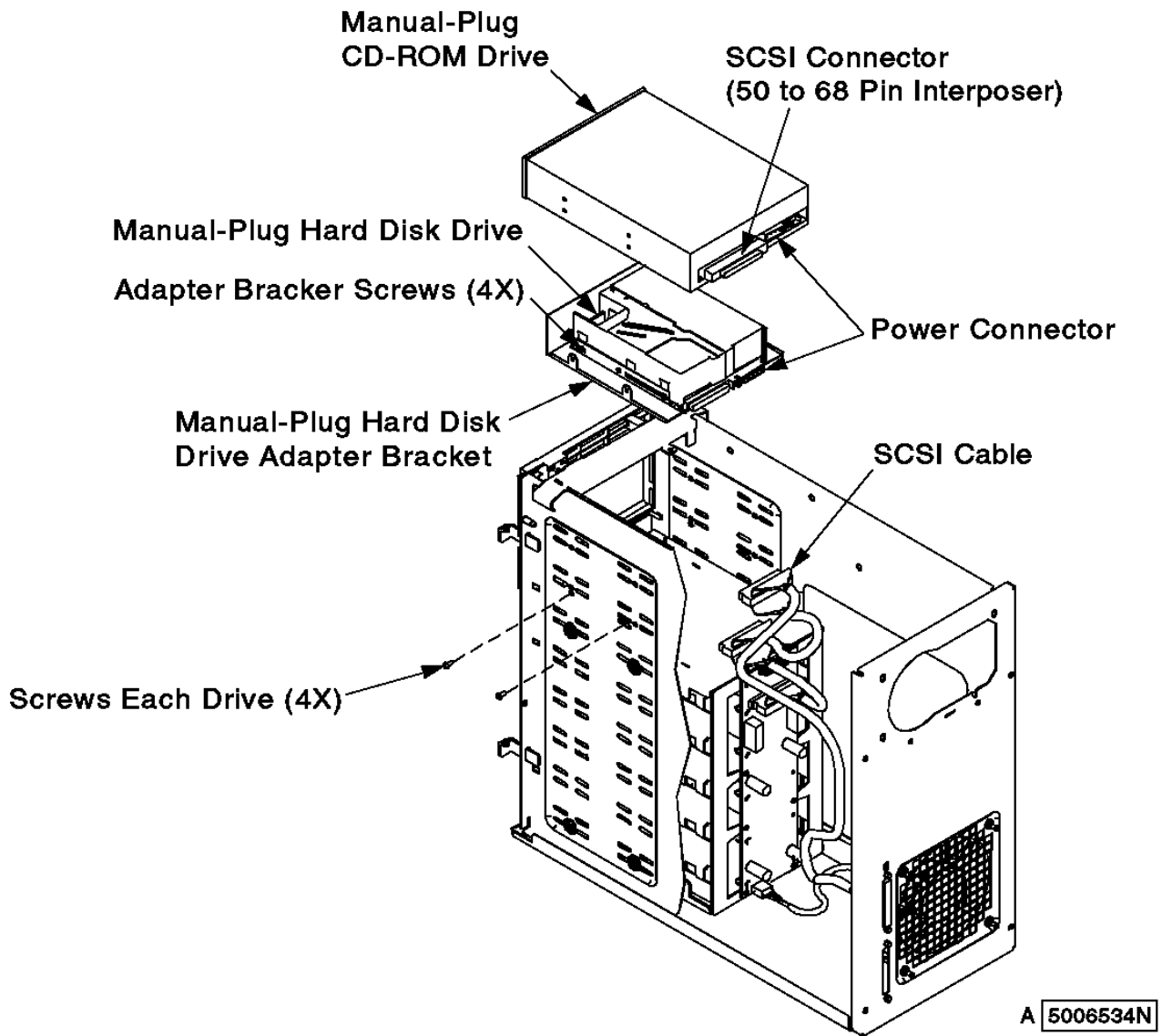


Figure 5-22. SCSI Cable Connections and Screw Locations for Manual-Plug Devices

11. Install and tighten the 4 screws on the sides of the media bay.
12. Close the top cover on the 7131 Storage Tower following instructions in "Closing the 7131 Storage Tower" in topic 5.3.2.
13. Press the power switch; LED is on.
14. Close the front cover on the 7131 Storage Tower following instructions in "Closing the 7131 Storage Tower" in topic 5.3.2.

5.4 *Removing and Installing Hot-Swap Hard Disk Drives*

This section gives the instructions for removing and installing hot-swap hard disk drives in the hot-swap bays.

Refer to your system publications to prepare the system for device removal or replacement.

Subtopics

5.4.1 Removing Hot-Swap Hard Disk Drives from the Hot-Swap Bays

5.4.2 Installing Hot-Swap Hard Disk Drives in the Hot-Swap Bays

5.4.1 Removing Hot-Swap Hard Disk Drives from the Hot-Swap Bays

This procedure describes how to remove hot-swap hard disk drives from a hot-swap bay when the system and the 7131 Storage Tower are powered on.

If you remove a hot-swap hard disk drive when the system or 7131 Storage Tower power is off, steps 4 and 5 do not apply.

1. **Attention:** Follow all ESD-sensitive parts procedures while performing these procedure. For ESD information, see "Handling Electrostatic Discharge-Sensitive Parts" in topic 5.1.
2. Open the front cover, following instructions in "Opening the 7131 Storage Tower" in topic 5.3.1.
3. **Attention:** Physically removing a hot-swap hard disk drive from the 7131 Storage Tower before it has been removed from system configuration, may cause irrecoverable data corruption.
4. Verify that the device has been removed from system configuration. The yellow LED on the hot-swap hard disk drive should be off.
5. Press the power switch on the hot-swap hard disk drive. Observe the green LED flash (see Figure 5-23)
6. Move the latch down on the hot-swap hard disk drive (see Figure 5-23).



Figure 5-23. The Hot-Swap Hard Disk Drives and the Hot-Swap Bays

7. Pull the hot-swap hard disk drive out of the hot-swap bay, keeping it straight to prevent damage.
8. Place the hot-swap hard disk drive in an antistatic bag if you are going to reuse it.
9. Close the front cover.

5.4.2 Installing Hot-Swap Hard Disk Drives in the Hot-Swap Bays

This procedure describes how to install hot-swap hard disk drives in a hot-swap bay.

Attention: Follow all ESD-sensitive parts procedures while performing these procedure. For ESD information, see "Handling Electrostatic Discharge-Sensitive Parts" in topic 5.1.

1. **Attention:** A replacement device might need time to acclimate to its new environment:
2. When you install a device into an operating environment from an environment whose temperature is outside the specified operating range (see "Operating Environment" in topic 1.2), do not use that device for at least 3 hours.

This delay allows the drive to acclimate to the operating environment.

3. Remove the new hot-swap hard disk drive from any shipping packaging, but leave it in its sealed plastic bag (if present) to prevent condensation forming.

After 3 hours, remove the hot-swap hard disk drive from its antistatic bag.

4. Open the front cover, following instructions in "Opening the 7131 Storage Tower" in topic 5.3.1.
5. Remove the hot-swap hard disk drive from the antistatic bag.
6. Move the latch down on the new hot-swap hard disk drive, then slide it into the hot-swap bay(Figure 5-24).

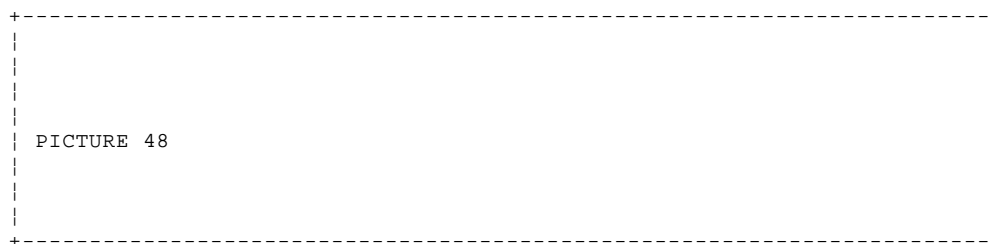


Figure 5-24. The Hot-Swap Hard Disk Drives and the Hot-Swap Bays

7. Press the hot-swap hard disk drive firmly to seat it on the backplane.
8. Move the latch up on the hot-swap hard disk drive. Pull slightly to ensure that the latch is engaged.
9. Verify that the front of all the hot-swap hard disk drives are aligned.
10. Verify that the green LED to the hot-swap hard disk drive is on; light is steady, not flashing.
11. Configure the device on the system; see your system publications.
12. Close the front cover.

A.0 Appendix A. Line Cord Requirements

To avoid electrical shock, a line cord with a grounded attachment plug is provided. Use only properly grounded outlets.

Line Cords used in the United States and Canada are listed by Underwriter's Laboratories (UL**) and certified by the Canadian Standards Association (CSA**). These line cords consist of:

- Electrical line cords, type SVT or SJT
- Attachment plugs complying with National Electrical Manufacturers Association (NEMA) 5-15P.

For 115 V operation, use a UL-listed cable set consisting of a minimum 18 AWG, type SVT or SJT 3 conductor cable that is a maximum of 15 feet in length, and a parallel blade, grounding-type attachment plug rated at 15 A, 125 V.

For 230 V operation in the United States, use a UL-listed cable set consisting of a minimum 18 AWG, type SVT or SJT 3 conductor cable that is a maximum of 15 feet in length, and a tandem blade, grounding-type attachment plug rated at 15 A, 250 B.

- Appliance couplets complying with International Electrotechnical Commission (IEC) Standard 320, Sheet C13

Line cords used in other countries consist of:

- Electrical line cord, type HD21
- Attachment plugs approved by the appropriate testing organization for the specific countries where they are used

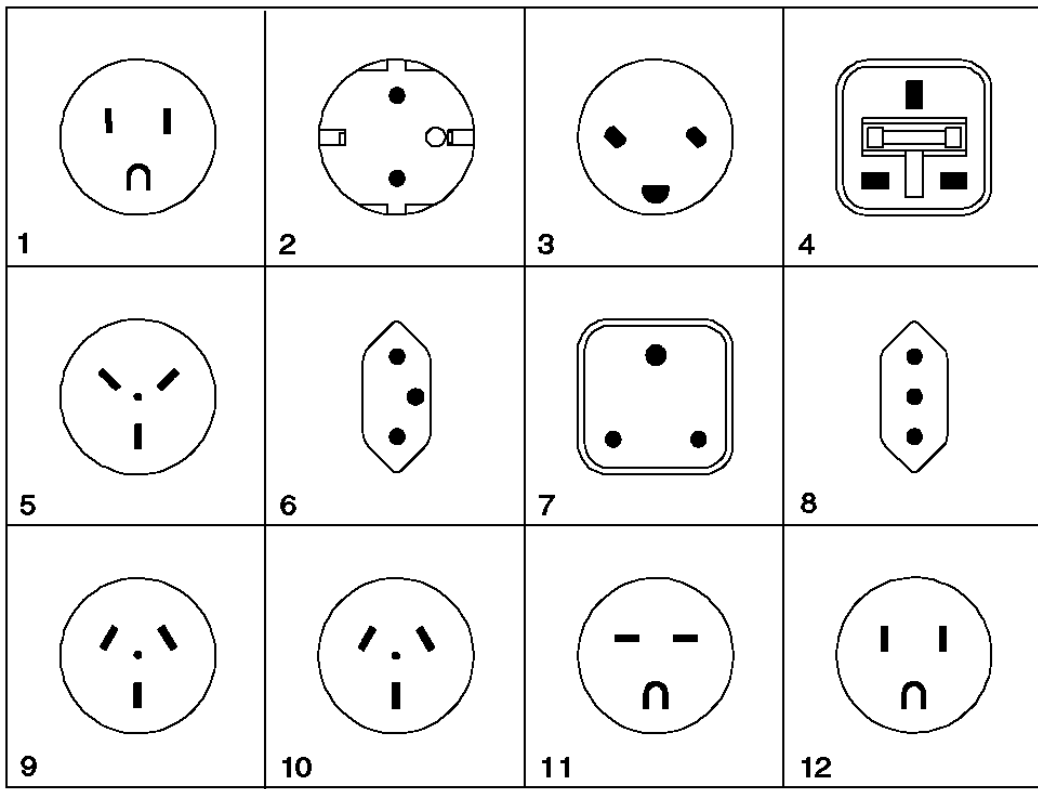
For units set at 230 V (outside of the United States), use a cable set consisting of a minimum 18 AWG cable and a grounding-type attachment plug rated at 15A, 250 V. The cable set should have the appropriate safety approvals for the country in which the equipment will be installed and should be marked "HAR".

Table A-1 lists the line cord part number, the country where the line cord can be used, and an index number to be matched with the receptacle illustrations shown in Figure A-1. Contact your IBM representative if your 7131 Storage Tower disk drive line cord does not match this information.

Table A-1. Line Cord and Country Matrix			
Feature	Line Cord		
Code	Part Number	Country	Index
9800	6952300	2.7M, 9-Foot Line Cord, United States and Canada: 110 V to 127 V 60 HZ Antilles, Balarrus, Barbados, Bermuda, Bolivia, Brazil, Canada, Cayman Islands, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Guyana, Haiti, Honduras, Jamaica, Japan, Korea (South), Liberia, Mexico, Netherlands, Nicaragua, Panama, Peru, Philippines, Saudi Arabia, Suriname, Taiwan, Trinidad (West Indies), United States, 110 V	1
9820	13F9979	2.9M, 9-Foot Line Cord, France, 220 V to 240 V 50 HZ Afghanistan, Algeria, Andorra, Angola, Austria, Belgium, Benin, Bulgaria, Burkina Faso, Burundi, Cameroon, Central African Rep, Chad, Dzech Republic, Egypt, Finland, France, French Guiana, Germany, Greece, Guinea, Hungary, Iceland, Indonesia, Iran, Ivory Coast, Jordan, Lebanon, Luxembourg, Macau, Malagasy, Mali, Martinique, Mauritania, Mauritanian, Monaco, Morocco, Mozambique, Netherlands, New Caledonia, Niger, Norway, Poland, Portugal, Romania, Senegal, Slovakia, Spain, Sudan, Sweden, Syria, Togo, Tunisia, Turkey, former USSR, Vietnam, former Yugoslavia, Zaire, Zimbabwe	2
9821	13F9997	2.7M, 9-Foot Line Cord, Denmark, 220 V to 250 V 60 HZ	3

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Appendix A. Line Cord Requirements

9825	14F0033	2.7M, 9-Foot Line Cord, United Kingdom, 220 V to 240 V 60 HZ Antigua, Bahrain, Brunei, Channel Islands, Cyprus, Dubai, Fiji, Ghana, Hong Kong, India, Iraq, Ireland, Kenya, Kuwait, Malawi, Malaysia, Malta, Nepal, Nigeria, Polynesia, Qatar, Sierra Leone, Singapore, Tanzania, Uganda, United Kingdom, Yemen, Zambia	4
9827	14F0087	2.7M, 9-Foot Line Cord, Israel, 230 V to 240 V 50 HZ	5
9828	14F0051	2.7M, 9-Foot Line Cord, Switzerland, 200 V to 220 V 50 HZ Liechtenstein, Switzerland	6
9829	14F0015	2.7M, 9-Foot Line Cord, South Africa, 220 V to 240 V 50 HZ Bangladesh, Burma, Pakistan, South Africa, Sri Lanka	7
9830	14F0069	2.7M, 9-Foot Line Cord, Italy, 200 V to 250 V 50 HZ Chile, Ethiopia, Italy, Libya, Somalia	8
9831	13F9940	2.7M, 9-Foot Line Cord, Australia, 200 V to 240 V 50 HZ Argentina, Australia, China (PRC), New Zealand, Papua New Guinea, Paraguay, Western Samoa	9
9834	6952291	2.7M, 9-Foot Line Cord, Uruguay, 200 V to 220 V 50 HZ	10
9933	1838574	2.7M, 9-Foot Line Cord, United States and Canada, 220 V to 240 V 60 HZ Antilles, Balarrus, Barbados, Bermuda, Bolivia, Brazil, Canada, Cayman Islands, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Guyana, Haiti, Honduras, Jamaica, Japan, Korea (South), Liberia, Mexico, Netherlands, Nicaragua, Panama, Peru, Philippines, Saudi Arabia, Suriname, Taiwan, Trinidad (West Indies), United States: 220 V	11
9986	6952301	1.8M, 6-Foot Line Cord, United States and Canada: 115 V to 127 V 60 HZ	12



A 5006537M

Figure A-1. Receptacles

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