

7207 Model 122 4GB External SLR5
Quarter-Inch Cartridge Tape Drive



Setup, Operator, and Service Guide

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Quarter-Inch Cartridge Tape Drive



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Note!

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First Edition (October 1998)

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When using this product, observe the danger, caution, and attention notices contained in this guide. Each danger and caution notice contains a reference number (72XXDxxx or 72XXCxxx). Use the reference number to check the translation in *External Devices Safety Information*, SA26-7003.

Examples of danger, caution, and attention notices follow.

Danger Notices

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

The following is a sample danger notice:



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.
(72XXD201)

Caution Notices

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



CAUTION:

Do not attempt to use the handle on the module to lift the entire device (module and enclosure) as a unit. First remove the module; then, use two hands to lift the enclosure. (72XXC356)

Attention Notices

An attention notice indicates the possibility of damage to a program, device, or system, or to data. The following is a sample attention notice:

Attention: Do not operate the 7207 Tape Drive in a poor air-quality environment. If your environment contains an excessive amount of particulates, contact your service representative for more information.

End of Life (EOL) Plan

This box is a purchased unit. Therefore, it is the sole responsibility of the purchaser to dispose of it in accordance with local laws and regulations at the time of disposal.

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

Electronic Emission Notices

The following statement applies to this IBM product. The statement for other IBM products intended for use with this product will appear in their accompanying manuals.

7207 Model 122 4GB External SLR5 Quarter-Inch Cartridge Tape Drive

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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:

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- Increase the separation between the equipment and receiver.
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- Consult an IBM authorized dealer or service representative for help.

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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.

Responsible Party:

International Business Machines Corporation
Old Orchard Road
Armonk, NY 10504
Telephone: 1-919-543-2193

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

Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

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A declaration of Conformity with the requirements of the Directive has been signed by IBM SEMEA S.p.A., Via Tolmezzo, 15, Milano, Italy.

This product satisfies the Class B limits of EN55022.

Japanese Voluntary Control Council for Interference (VCCI) Statement

This product is a Class B Information Technology Equipment and conforms to the standards set by the Voluntary Control Council for Interference by Information Technology Equipment (VCCI). This product is aimed to be used in a domestic environment. When used near a radio or TV receiver, it may become the cause of radio interference. Read the instructions for correct handling.

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About This Guide

This guide describes how to install and use the 7207 Model 122 4GB External SLR5 Quarter-Inch Cartridge Tape Drive. It contains the following chapters:

Chapter 1, "General Information," describes the 7207 Tape Drive, gives the system requirement, and lists hardware specifications.

Chapter 2, "Setting Up the 7207 Tape Drive," tells how to install the 7207 Tape Drive.

Chapter 3, "Using the 7207 Tape Drive," describes the operator controls and indicator lights on the 7207 Tape Drive. It also tells how to load and unload a tape cartridge, how to retension the tape, and how to clean the tape drive.

Chapter 4, "Using the Media," describes the type of tape cartridges to use in the 7207 Tape Drive, as well as the compatibility of various data cartridges. It also tells how to handle the cartridges, how to set the write-protect switch, and how to order additional cartridges.

Chapter 5, "Performing Service on the 7207 Tape Drive," gives instructions about conducting a safety inspection and provides the maintenance analysis procedures (MAPs) required to service the 7207 Tape Drive.

Chapter 6, "Moving the 7207 Tape Drive," tells how to move the 7207 Tape Drive after it has been installed.

Chapter 7, "Parts List," provides a list of the parts that are necessary to service the 7207 Tape Drive.

The appendix, "Power Cables," provides power cable information for different countries.

Store this guide with your system manuals.

Related Publications

- *External Devices Safety Information*, SA26-7003, provides translations of danger and caution notices.
- *AIX System Management Guide: Operating System and Devices*, SC23-2525, provides information about how to manage the AIX operating system.

Chapter 1. General Information

The 7207 Model 122 4GB External SLR5 Quarter-Inch Cartridge Tape Drive (referred to hereafter as the 7207-122 Tape Drive) is an external storage device that connects to the IBM RS/6000 and provides additional data storage capability. The 7207-122 Tape Drive includes hardware data compression, which enables increased storage capacity and data rate.

The 7207-122 Tape Drive features:

- Capacity of 4GB per cartridge (8GB at 2:1 data compression)¹
- Sustained data rate of 380 000 bits per second (760 000 bits per second with 2:1 compression)²

Figure 1 shows the front view of the 7207-122 Tape Drive.

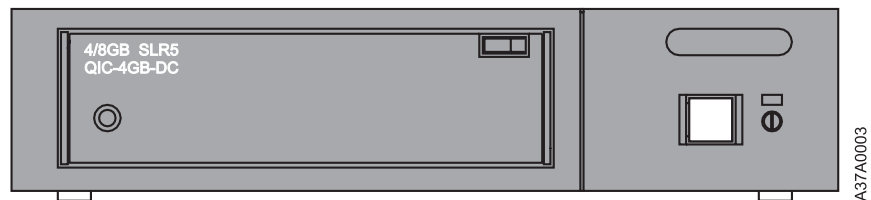


Figure 1. Front View of the 7207 Model 122 4GB External SLR5 Quarter-Inch Cartridge Tape Drive

The 7207-122 Tape Drive uses single-track linear recording (SLR5) tape drive technology, and reads and writes to tape cartridges that are compatible with the following recording standards defined by Quarter-Inch Cartridge Drive Standards, Inc. (QIC):

QIC-4GB-DC (SLR5 Native Format)	QIC-525-DC
QIC-2GB-DC	QIC-150-DC
QIC-1000-DC	QIC-120-DC

A list of compatible tape cartridges and the specific recording standards to which they are formatted is shown in “Data Cartridge Compatibility” on page 20.

The 7207-122 Tape Drive attaches to any system that uses a single-ended interface which meets the following standards of the American National Standards Institute (ANSI):

- X3.131-1994, Small Computer System Interface-2 (SCSI-2)
- X3T10/855D Revision 15A, Small Computer System Interface-3 (SCSI-3) Parallel Interface

With the proper cables, you can attach the 7207-122 Tape Drive to a wide or narrow SCSI bus (for a list of applicable cables, see Chapter 7, “Parts List” on page 39). You do not need to acquire special device drivers. The 7207-122 Tape Drive uses the native self-configuring AIX SCSI device driver.

¹ 1GB = one gigabyte or 1 000 000 000 bytes

² 1KB = one kilobyte or 1000 bytes

System Requirement

The system requirement for the 7207-122 Tape Drive is to use only a supported RS/6000 processor or adapter, with an AIX operating system at level:

- 4.1.5 (with fixes as described in Authorized Program Analysis Report (APAR) #IX69941)
- 4.2.0 (with fixes as described in APAR #IX69950)
- 4.2.1 or later
- 4.3.0 or later

For a list of supported processors and adapters, contact your IBM marketing representative or business partner.

Specifications

<i>Figure 2. Specifications for the 7207-122 Tape Drive</i>		
Physical Specifications		
Width	250 mm (9.8 in.)	
Depth	275 mm (10.8 in.)	
Height	55 mm (2.2 in.)	
Weight	3.4 kg (7 lb 8 oz)	
Power Specifications		
kVA	0.030 @ 120 V ac	
V ac	100 to 125, or 200 to 240	
Hertz	50 to 60 Hz	
Btu Average (watts)	76 Btu/hr (22 watts)	
Power Factor	0.3 to 0.6	
Other Specifications		
Maximum Altitude	2135 m (7000 ft)	
Recommended Environment		
Environmental Factor	Operating	Non-operating
Temperature	5 to 45°C (41 to 113°F)	-40 to 60°C (-40 to 140°F)
Relative Humidity (noncondensing)	8 to 80%	10 to 90%
Wet Bulb Temperature	26°C (79°F)	29°C (84°F)
Note: The operating limits include media. The non-operating limits do not include media. For media non-operating limits, see "Operating and Non-operating Environments" on page 20.		

Chapter 2. Setting Up the 7207 Tape Drive

This chapter provides step-by-step instructions on how to properly install the 7207-122 Tape Drive.

Note: If you need assistance with the installation, contact your trained service personnel.



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. (72XXD203)

Before installing the 7207-122 Tape Drive, let it acclimate to the operating environment for as long as it has been away from the environment or for 24 hours, whichever is less.

Attention: The 7207-122 Tape Drive is a precision device that requires reasonable care in handling to prevent data loss or permanent damage to the device. Avoid bumping or dropping the 7207-122 Tape Drive.

To unpack the 7207-122 Tape Drive, simply remove the packing material from the box it was shipped in.

Performing the Installation

To install the 7207-122 Tape Drive, complete the following steps.

Step 1. Using the Inventory Checklist

Make sure that you received the following items:

- ___ Power cable (for the appropriate cable see the appendix, "Power Cables," on page 41)
- ___ The *External Devices Warranty Information* (U.S., Canada, and Puerto Rico only)
- ___ The *7207 Model 122 4GB External SLR5 Quarter-Inch Cartridge Tape Drive Setup, Operator, and Service Guide* (this guide)
- ___ The *External Devices Safety Information* manual
- ___ One of the following:
 - A system-to-device SCSI bus (signal) cable and a terminator (if the 7207-122 Tape Drive is the only device connected to the RS/6000)
 - A device-to-device SCSI bus (signal) cable (if the 7207-122 Tape Drive connects to another SCSI device)

- ___ Media kit that includes:
 - SLR5-4GB data cartridge (conforms to the QIC-4GB-DC drive standard)
 - SLR5-4GBSL test cartridge
 - Cleaning cartridge

Step 2. Checking the Electrical Outlets

- ___ Make sure that the electrical outlets that you use are properly grounded.

Step 3. Running the Self Test

Run the self test to determine whether the 7207-122 Tape Drive is functioning properly. To run the test:

- ___ 1. If the 7207-122 Tape Drive is installed, remove it by performing steps 1-12 in Chapter 6, "Moving the 7207 Tape Drive" on page 37.
 - Note:** Make sure that the SCSI cable and terminator are not attached to the 7207-122 Tape Drive (or the self test may not function properly).
- ___ 2. Set the SCSI address switch to 9 (see "Step 5. Setting the SCSI Address" on page 6).
- ___ 3. Attach the power cable to the 7207-122 Tape Drive, then plug it into an electrical outlet. Make sure that the power to the tape drive is off.
- ___ 4. Load the SLR5-4GBSL test cartridge into the 7207-122 Tape Drive (see "Loading Tape Cartridges" on page 14).
 - Note:** Use only the IBM test cartridge, part number 59H3661. Use of any other test cartridge could cause erroneous test results or lengthen the time needed to complete the test.
- ___ 5. Press the 7207-122 Tape Drive power switch to turn on the power.

After approximately 5 minutes, the status light does one of the following:

- Flashes green to indicate the completion of a successful self test. Unload the test cartridge and press the 7207-122 Tape Drive power switch to turn off the power. Store the test cartridge in a safe location (you may need it for future diagnostics), then go to step "Step 4. Determining the SCSI Address" on page 5.
- Flashes red to indicate an error. Replace the 7207-122 Tape Drive.

Step 4. Determining the SCSI Address

The 7207-122 Tape Drive can only be set to SCSI addresses 0-7. (Addresses 8 and 9 are selectable options, but should not be used in normal operation or errors will result; address 8 is invalid and address 9 starts the drive self test described in the preceding step.)

Before you install the 7207-122 Tape Drive, you must find a SCSI address that is not an address being used by another device. To find an unused SCSI address, you must:

- Identify the name and the port of the RS/6000 SCSI I/O controller that you want to attach to
- Identify the SCSI address of that SCSI I/O controller
- Identify the SCSI addresses of other devices connected to that SCSI I/O controller

Note: If you attach to a wide bus, SCSI addresses 0-15 are available but only 0-7 can be used as an address for this tape unit. Even though the 7207-122 Tape Drive uses only the range of addresses for a narrow bus, it is designed to not impact the function of the other devices on the wide bus; they still negotiate a wide attachment and run at appropriate data rates.

1. To identify the name and the port of an RS/6000 SCSI I/O controller that you want to attach to, at the system prompt type `lsdev -C | grep scsi` and press Enter. A list of controllers display in the following format. The names appear in the first column (for example, `scsi0` and `scsi2`). The ports appear in the third column and in the fourth position (highlighted as follows):

Note: Column headings are for reference only; they do not appear on the screen.

<u>Column 1</u>	<u>Column 2</u>	<u>Column 3</u>	<u>Column 4</u>
<code>scsi0</code>	Available	<code>00-00-05</code>	Standard SCSI I/O Controller
<code>scsi2</code>	Available	<code>00-02</code>	SCSI I/O Controller

Note the name and port of the SCSI I/O controller that you want to attach to (for example, the `scsi2` controller on port 2).

2. To determine the SCSI address of the SCSI I/O controller that you noted in the previous step, type `lsattr -El scsix | grep id` (where `x` equals the last character in the name of the SCSI I/O controller) and press Enter. The address of the SCSI I/O controller displays in the following format:

```
id    7    Adapter card SCSI I    True
```

Note the address of the SCSI I/O controller (in this case, 7).

- 3. To identify the SCSI addresses used by all other devices, type `lsdev -Cs scsi` and press Enter. A list of devices appears in the following format. In the fourth position of the third column, locate all instances of the port that you chose in step 1 on page 5. (The list may contain multiple instances of a port. In the following example, for port 2 (identified in step 1 on page 5) there are three instances.) The addresses of the other SCSI devices appear in the seventh position (highlighted in the example that follows):

Column 1	Column 2	Column 3	Column 4
hdisk0	Available	00-00-0S-0,0	2.0GB SCSI Disk Drive
hdisk1	Available	00-02-01-2,0	4.5GB 16 Bit SCSI Disk Drive
hdisk2	Available	00-02-01-3,0	SCSI Disk Drive
rmt0	Available	00-02-01-4,0	SCSI 8mm Tape Drive

For the port chosen in step 1 on page 5, note the addresses of the other SCSI devices attached to the RS/6000 (in this case, for port 2, the addresses are 2, 3, and 4).

- 4. Determine an unused SCSI address for the 7207-122 Tape Drive (in this case, 0 1, 5, or 6, because 7 was used by the SCSI I/O controller and 2, 3, and 4 are used by other devices).

Step 5. Setting the SCSI Address

The SCSI address is a unique address that identifies the 7207-122 Tape Drive to your system unit. Use the SCSI address switch to set the SCSI address of the 7207-122 Tape Drive. The switch (**1** in Figure 3) is located on the rear of the 7207 Tape Drive. Figure 3 also shows the two 68-pin, wide SCSI bus cable connectors **2**, the cooling fan **3**, and the power cable connector **4**.

Note: Set the device at the highest available address. Do not exceed address 7, and do not select a SCSI address that is already in use (refer to “Step 4. Determining the SCSI Address” on page 5).

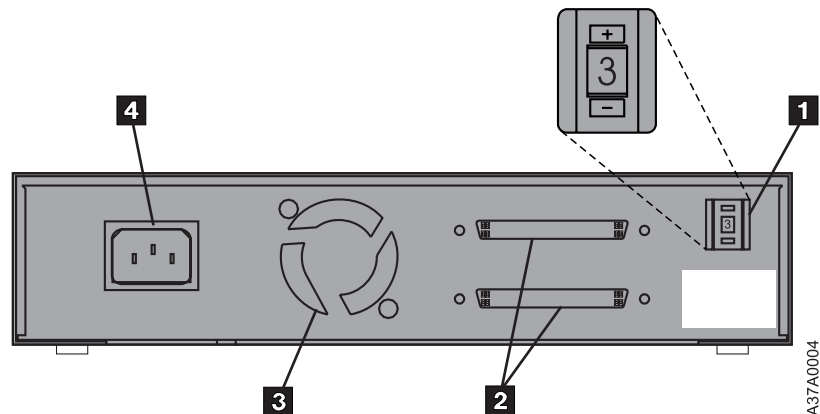


Figure 3. Rear View of the 7207-122 Tape Drive

To set the SCSI address, press the + or – push button to access the address that you have previously determined in “Step 4. Determining the SCSI Address” on page 5.

Step 6. Placing the 7207 Tape Drive

The 7207-122 Tape Drive can be located anywhere that is convenient to your system unit. The only restrictions are the length of the power cord and the SCSI cable. Recommended locations are:

- In a clean, dirt-free environment
- Away from the floor
- In a horizontal position
- Where the tape cartridge can be easily inserted

To place the 7207-122 Tape Drive:

- ___ 1. Set the 7207-122 Tape Drive in the preferred location.
- ___ 2. Connect the power cable to the 7207-122 Tape Drive. **(Do not plug it into the electrical outlet at this time.)**

The external devices that attach to the system unit can be stacked. When stacking devices, do not place more than 30 pounds on top of the 7207 Tape Drive.

Step 7. Performing a System Shutdown

Attention: Do not attach the 7207-122 Tape Drive to an RS/6000 system unit that is powered on. This can damage the 7207 Tape Drive, the system unit, or both.

To perform a system shutdown of the RS/6000:

Note: Before doing a controlled shutdown of the system unit, notify other users who may be using the system.

- ___ 1. If it is on, do a controlled fast shutdown of the system unit by typing shutdown -F from the system console. (You must have root authority to perform the shutdown; see your system administrator.) Depending on your system configuration, the shutdown may take several minutes.
- ___ 2. When the message `Hal t C ompl eted` displays on the system console, turn off the power to the system unit.
- ___ 3. Turn off the power to all external devices connected to the system unit.
- ___ 4. Unplug the power cables to all external devices from their electrical outlets.
- ___ 5. Unplug the system unit power cable from the electrical outlet.

Step 8. Connecting the SCSI Bus Cable

To connect the SCSI bus cable:

- ___ 1. If installed, remove the connector covers.
- ___ 2. On the rear of the 7207-122 Tape Drive (**1** in Figure 4), attach the device connector end of the SCSI bus cable **2** to one of the SCSI connectors **3**.
- ___ 3. Make sure that the connector is fully engaged.
- ___ 4. Secure the cable to the 7207-122 Tape Drive with the thumbscrews **4** provided on the cable.

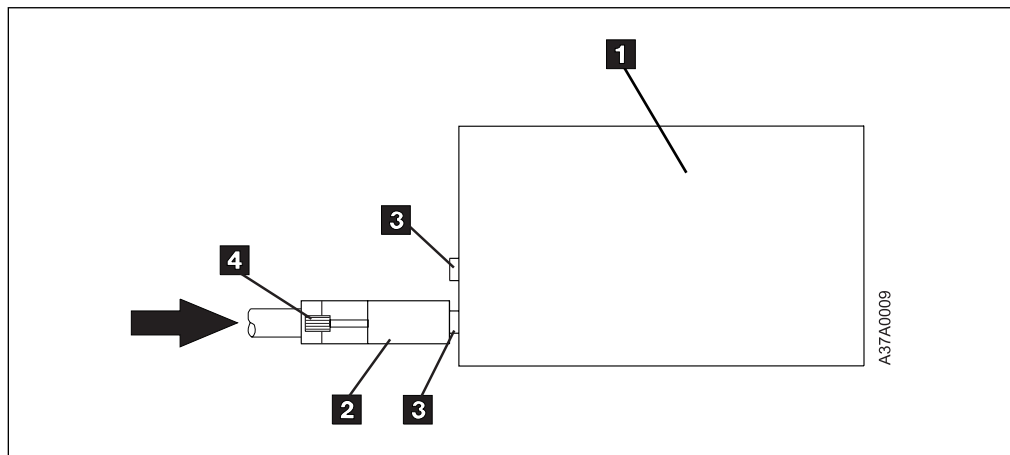


Figure 4. Connecting the SCSI Bus Cable to the 7207-122 Tape Drive. The view is from the side.

- ___ 5. Connect the other end of the SCSI bus cable as follows:
 - If the 7207-122 Tape Drive is the only device attached to the system, connect the cable to the RS/6000 (see Figure 5 on page 9).
 - If the 7207-122 Tape Drive is part of a multiple-device configuration, connect the cable to the next device (see Figure 6 on page 9).
 - If the 7207-122 Tape Drive is installed in the middle of a narrow bus, two 68-pin-to-50-pin device-to-device cables will be required, one for each device on either side of the 7207-122 Tape Drive.

Step 9. Installing the SCSI Bus Terminator

Make sure to install a terminator on the last device in the configuration.

— To install the SCSI terminator, align it with the unused SCSI connector on the 7207-122 Tape Drive and push in until the terminator is seated. Secure the terminator with the thumbscrews.

- If the 7207-122 Tape Drive (**1** in Figure 5) is the only SCSI device attached to the RS/6000 **2**, install the terminator **3** on one of the dual connectors **4**.

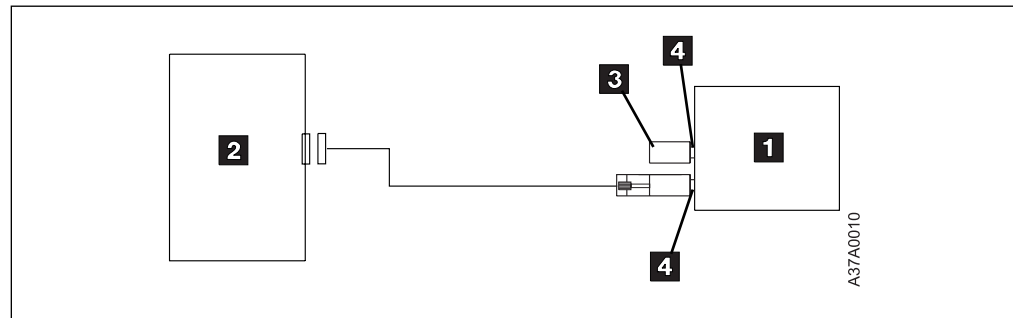


Figure 5. Example of Attaching One SCSI Device to the System Unit. The view is from the side. The thumbscrews on the connector are not shown.

- If there is more than one device (**1** in Figure 6) attached to the RS/6000 **2**, move the terminator **3** to the last device.

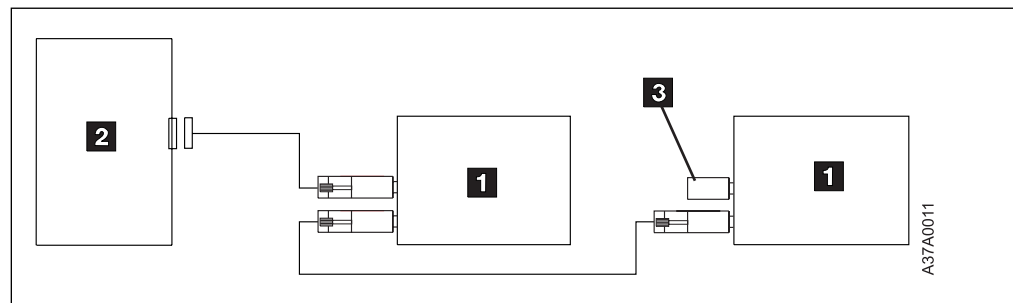


Figure 6. Example of Attaching Multiple SCSI Devices to the System Unit

Notes:

1. The terminator and the SCSI bus cable can be connected to either the top or bottom SCSI connector on the 7207-122 Tape Drive.
2. Only one external terminator is required to terminate the SCSI bus. You do not need to use the terminator shipped with the 7207-122 Tape Drive if you already have an IBM-approved terminator installed at the end of your SCSI bus.
3. If the 7207-122 Tape Drive is installed at the end of a narrow bus, do not use the existing narrow terminator. Instead, use the 68-pin terminator that is supplied with the device-to-device cable.

Step 10. Connecting the Power Cables

To connect the power cables:

- ___ 1. Ensure that the 7207-122 Tape Drive power cable is securely attached to the tape drive.
- ___ 2. Plug the 7207-122 Tape Drive power cable into an electrical outlet.
- ___ 3. Plug the power cables for all external devices and the system unit into electrical outlets.
- ___ 4. Turn on the power to all of the external devices.
- ___ 5. Review the information in “Indicator Lights” on page 13. Then watch for the power-on light to come on and stay on after you turn on the power to the 7207-122 Tape Drive.
- ___ 6. Turn on the power to the system unit (RS/6000). The RS/6000 automatically adds the 7207-122 Tape Drive to its system configuration.

Step 11. Performing the Checkout Procedure

To perform the 7207-122 Tape Drive checkout procedure:

- ___ 1. Verify that the 7207-122 Tape Drive has been configured to the RS/6000 operating system by doing the following:
 - a. If not already logged on, log into the RS/6000 (AIX operating system).
Note: You must have root authority to install or remove the 7207-122 Tape Drive from the system. To obtain root authority, see your system administrator.
 - b. At the system prompt, type `lsdev -Cs scsi` and press Enter. The command lists all of the SCSI devices that are connected to the RS/6000. Figure 7 shows an example of the screen that displays. The screen lists:

- 1** Device name
- 2** Device status
- 3** SCSI adapter slot number (the 4th digit)
- 4** Description of the SCSI device
- 5** SCSI address (begins with 7th digit)

```
1 2 3 4
hdisk0 Available 00-00-0S-0,0 2.0GB SCSI Disk Drive
hdisk1 Available 00-02-01-2,0 4.5GB 16 Bit SCSI Disk Drive
hdisk2 Available 00-02-01-3,0 SCSI Disk Drive
rmt0 Available 00-02-01-4,0 SCSI 8mm Tape Drive
rmt1 Available 00-02-01-5,0 SCSI 1/4-Inch Tape Drive
A37A0007
```

Figure 7. Screen Display of SCSI Devices Attached to the RS/6000

- c. From the list of SCSI devices, identify the 7207-122 Tape Drive (listed as the SCSI 1/4-Inch Tape Drive):
- If the status of the 7207-122 Tape Drive is displayed as *Available*, the device has successfully been configured.
 - If the status is not displayed as *Available*, see “Maintenance Analysis Procedures” on page 30. For more information about configuring the 7207-122 Tape Drive to the system software, see your AIX or RS/6000 manuals.
- d. This completes the 7207-122 Tape Drive installation.

Store the test cartridge and the cleaning cartridge for future use. Store all 7207-122 Tape Drive publications with your system manuals.

Chapter 3. Using the 7207 Tape Drive

This chapter describes the operator controls and indicator lights on the 7207-122 Tape Drive. It also gives instructions for loading and unloading a tape cartridge, and tells how to clean the tape drive.

Figure 8 shows the front view of the 7207-122 Tape Drive.

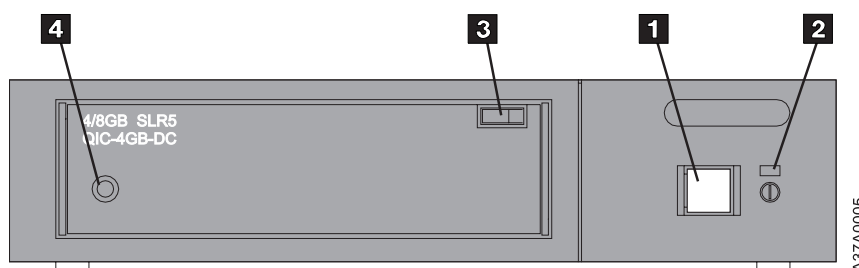


Figure 8. Front View of the 7207-122 Tape Drive

Operator Controls

The 7207-122 Tape Drive has the following operator controls.

Power Switch

The power switch (**1** in Figure 8) is a momentary push button switch that enables the power to be turned on or off. When the 7207-122 Tape Drive is on, the power-on light **2** is on.

Note: The $\text{\textcircled{1}}$ symbol located next to the power switch is an International Organization for Standardization (ISO) symbol for a push button switch.

Unload Button

Press the unload button **3** to open the tape drive door. Pull the door down to load or unload a tape cartridge.

Attention: If you press the unload button during operation, the 7207-122 Tape Drive ends the current job.

Indicator Lights

The 7207-122 Tape Drive has the following indicator lights.

Power-On Light

When the 7207-122 Tape Drive is turned on, the power-on light **2** comes on and stays on.

Status Light

The status light **4** on the 7207-122 Tape Drive can turn two colors:

Green The light is solid when the drive is operating the tape cartridge; it flashes during the cleaning cycle.

Amber The light is solid when the tape drive experiences a hardware fault condition that may or may not be recoverable. The drive will not respond to other commands until the fault is cleared. To clear the fault, turn the 7207-122 Tape Drive off, then on again:

- If the amber light is not on, the fault was cleared and the tape drive can be used again.

Note: Always clean the tape drive after clearing a fault and before proceeding with further use.

- If the amber light is still on and is solid, refer to Chapter 5, “Performing Service on the 7207 Tape Drive” on page 27.

The light flashes when the cleaning cartridge has expired, or when the tape runs off the end of the cartridge or breaks. Replace the cleaning cartridge or the data cartridge. If the light continues to flash with a data cartridge loaded, there may be a problem with the tape drive. Refer to Chapter 5, “Performing Service on the 7207 Tape Drive” on page 27.

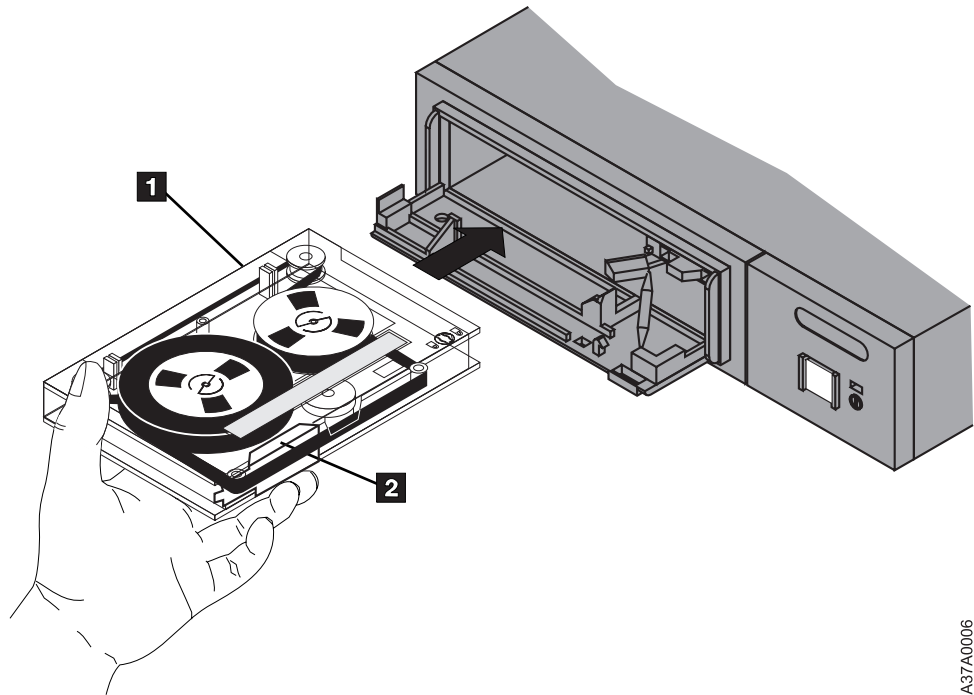
Loading Tape Cartridges

To load a tape cartridge, do the following. For information about the type of media to use, refer to Chapter 4, “Using the Media” on page 19.

1. Make sure that the power is on to the 7207-122 Tape Drive (the power-on light should be on).
2. Press the unload button. The tape drive door opens.
3. Pull the door down so there is sufficient clearance to load the tape cartridge.
4. Grasp the cartridge (**1** in Figure 9 on page 15) so that the clear, plastic cover faces up and the cartridge door **2** is on the right.

Note: See “Setting the Write-Protect Switch” on page 24 to make sure that the write-protect switch is properly set.

5. Slide the cartridge into the tape load compartment and close the door.



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Figure 9. Loading a Tape Cartridge into the 7207-122 Tape Drive

After you have loaded the tape cartridge and closed the door, the tape automatically winds to the beginning.

Attention: Do not attempt to remove a tape cartridge while the tape is in motion. You could cause an error and potentially damage the tape or the drive.

Retensioning the Tape

A tape cartridge in the 7207-122 Tape Drive works best when its tape is operated as a streaming tape. If the tape has been used in streaming operations, retensioning is not necessary. If the tape has been used in many start-and-stop operations (non-streaming), retension it after approximately every 30 minutes of this type of operation.

If the power is on to the 7207-122 Tape Drive when you insert a tape cartridge, the drive immediately retensions the tape. This is the default setting. AIX system commands may be used to change the default setting. For more information, refer to your system documentation.

The tape drive becomes ready before the retension pass and will accept commands from the host. If you send a command to the drive that requires tape motion during the retension cycle, the command is executed after the retension cycle is completed.

Unloading Tape Cartridges

To unload a tape cartridge, press the unload button. The 7207-122 Tape Drive door opens. Pull the door down so there is sufficient clearance to remove the tape cartridge.

Cleaning the Tape Drive

Clean the 7207-122 Tape Drive:

- After every eight hours of tape motion
- If using new data cartridges, after every two hours of operation

Note: A new data cartridge is one that has not been fully written one time, or has not been exercised for the number of passes it takes to write one time.

- Whenever read or write errors occur

If you encounter media errors while operating the tape drive in a humid or contaminated environment, increase the cleaning frequency. You may clean the tape drive as often as after every tape load without adverse effects to the drive.

Attention: When cleaning the tape drive, use only the IBM-approved cleaning cartridge, part number 46G2674. Any other cleaning cartridge may damage the drive.

If contamination is allowed to accumulate, the drive will have to perform more rewrites and rereads, which results in slower performance of the system. Also, contamination can cause data loss, and may be prevented by regularly scheduled cleaning of the drive.

To clean the 7207-122 Tape Drive:

1. Make sure that the power is on to the 7207-122 Tape Drive (the power-on light should be on).
2. Press the unload button (**3** in Figure 8 on page 13). The tape drive door opens.
3. Pull the door down so there is sufficient clearance to load the cleaning cartridge.

Attention: Check to see if the white cleaning filament is visible behind the cartridge door (**2** in Figure 9 on page 15). If it is not, the cleaning cartridge has reached the end of its useful life and must be replaced.

4. Grasp the cartridge so that the label faces up and the cartridge door is on the right.
5. Slide the cartridge into the tape load compartment and close the door.

After you have inserted the cleaning cartridge into the 7207-122 Tape Drive, the remainder of the cleaning process is automatic and takes approximately 10-12 seconds. During the cleaning operation, the status light flashes green. When the cleaning is finished, the status light turns off.

Chapter 4. Using the Media

This chapter describes the types of tape cartridges to use with the 7207 Model 122 4GB External SLR5 Quarter-Inch Cartridge Tape Drive. It gives guidelines for their usage, defines recommended storage and shipping environments, lists data cartridge compatibility, and describes variables that affect tape cartridge efficiency. It also tells how to set the write-protect switch.

Types of Tape Cartridges

The 7207-122 Tape Drive is shipped with a media kit that contains the following cartridges.

Data Cartridge

Use the SLR5-4GB quarter-inch data cartridge to save or restore programs or data. For a list of compatible data cartridges, see “Data Cartridge Compatibility” on page 20.

Test Cartridge

Use the specially labeled SLR5-4GBSL test tape cartridge to perform diagnostic procedures on the drive. Do not use it to save or restore programs or data.

Cleaning Cartridge

Use the specially labeled cleaning cartridge to clean the 7207-122 Tape Drive. For instructions about how to clean the 7207-122 Tape Drive see “Cleaning the Tape Drive” on page 16.

To order additional cartridges, refer to “Ordering Tape Cartridges” on page 24.

Data Cartridge Usage and Erasure

Do not touch the tape material in the data cartridge. Any substance transferred to the tape by touching could cause loss of data.

Do not use worn or noisy cartridges. If a cartridge generates frequent read or write errors, replace the cartridge.

The 7207-122 Tape Drive erases previously used tapes as it overwrites them. The tape drive overwrites from the beginning of the tape or it can append to the end of existing data.

Data cartridges that contain the QIC-4GB-DC (and below) format may be bulk erased. To properly erase a QIC-4GB-DC data cartridge with a bulk eraser device, the erasure coercivity rating must be 3000 oersted minimum.

Operating and Non-operating Environments

Before using a tape cartridge, let it acclimate to the operating environment for as long as it has been away from the environment or for 24 hours, whichever is less. (To determine the appropriate operating environment, see “Specifications” on page 2.)

Acclimation is necessary for any data cartridge exposed to a different humidity environment or to temperature changes of 11°C (20°F) or more.

The recommended non-operating environment for SLR5-4GB quarter-inch data cartridges is shown in Figure 10.

Figure 10. Recommended Non-operating Environment for SLR5-4GB Quarter-Inch Data Cartridges

Environmental Factor	Non-operating Environment
Temperature	-5 to 45°C (23 to 113°F)
Relative Humidity (noncondensing)	8 to 80%
Wet Bulb Temperature	26°C (79°F)

Whenever possible, it is recommended that you store the cartridge in the following room-environment conditions:

- Temperature of 20°C, ±5°C (68°F, ±9°F)
- Relative humidity of 50% (±20%)

Data Cartridge Compatibility

The 7207 Model 122 4GB External SLR5 Quarter-Inch Cartridge Tape Drive reads and writes to data cartridges that are compatible with the recording formats listed on page 1. These recording formats are defined by Quarter-Inch Cartridge Drive Standards, Inc. (QIC). Figure 11 lists data cartridges that support these formats and can be used by the 7207-122 Tape Drive.

Figure 11. Data Tape Cartridges Compatible with the 7207-122 Tape Drive

Data Cartridge Type	Recording Formats					
	QIC-4GB	QIC-2GB	QIC-1000	QIC-525	QIC-150	QIC-120
DC5010-DC (MLR1)	No	No	No	No	No	No
SLR5-4GB	R/W	No	No	No	No	No
DC9250	No	R/W	No	No	No	No
DC9200	No	R/W	No	No	No	No
DC9120	No	No	R/W	No	No	No
DC9100	No	No	R/W	No	No	No
DC6525	No	No	No	R/W	R/W	R/W
DC6320	No	No	No	R/W	R/W	R/W
DC6080	No	No	No	R/W	R/W	R/W
DC6250	No	No	No	No	R/W	R/W
DC6150	No	No	No	No	R/W	R/W
DC6037	No	No	No	No	R/W	R/W
DC600A	No	No	No	No	No	R
DC615A	No	No	No	No	No	R

Notes:

1. R/W = Read and write compatible
2. R = Read only
3. No = This format cannot be written on this cartridge by the 7207-122 Tape Drive

To change the type of QIC format written by the 7207-122 Tape Drive, you must configure your RS/6000 to the density setting for that format. Figure 12 on page 22 lists the QIC formats and their density settings, as well as corresponding data cartridge capacities.

When configuring the RS/6000, use the System Management Interface Tool (SMIT). For more information about configuring QIC format settings and using SMIT, see the *AIX System Management Guide: Operating System and Devices*.

Attention: Cartridges written in QIC-4GB format or QIC-2GB compressed format cannot be read on the 7207 13GB Quarter-Inch Tape Drive Model 315. The QIC-2GB uncompressed format (density setting 34) is the recommended format for interchange with the 7207-315 Tape Drive.

Figure 12. Density Settings for QIC Data Cartridge Recording Formats

QIC Format	Density Setting	Cartridge Capacity (see Note)
QIC-4GB-DC (compressed)	166	8GB (with 2:1 compression)
QIC-4GB-DC	38	4GB
QIC-2GB-DC (compressed)	162	5GB (with 2:1 compression)
QIC-2GB-DC	34	2.5GB
QIC-1000-DC	21	1.2GB
QIC-525-DC	17	525MB
QIC-150-DC	16	250MB
QIC-120-DC	15	125MB

Notes:

1. Capacity varies, depending on the specific cartridge that you select.
2. 1MB = one megabyte or 1 000 000 bytes.

Technical Notes about Using SMIT

Handling Compression

You cannot turn compression on and off in SMIT. The default setting is off, with no option to turn it on. However, you can make compression available for the QIC-4GB-DC and QIC-2GB-DC formats by selecting the proper density options. Density 166 is the default density, and is the QIC-4GB-DC format operating with data compression on. With 2:1 compression, the cartridge capacity is 8GB and the data rate is 760 000 bits per second. If you select density 38, the QIC-4GB-DC format writes in uncompressed mode.

Compression is handled in a similar fashion for the QIC-2GB-DC format. If you select density 162, the format writes with compression on. If you select density 34, the format writes with compression off.

Restrictions on Block Size

SMIT allows you to select block size. Only certain block size selections are valid for the 7207-122 Tape Drive. Valid block sizes depend on the format written, which you control by the density setting. Figure 13 defines the block size restrictions.

Figure 13. Block Size Restrictions for the 7207-122 Tape Drive

Format	Allowed Block Sizes (in bytes) (see Notes)		
	0	512	1024
QIC-4GB-DC	Yes	Yes	Yes
QIC-2GB-DC	Yes	Yes	Yes
QIC-1000-DC	Yes	Yes	Yes
QIC-525-DC	Yes	Yes	Yes
QIC-150-DC	Yes	Yes	No
QIC-120-DC	Yes	Yes	No

Notes:

1. To select the variable block mode, set the block size to 0 (the maximum allowable variable block size is 32 768 bytes).
2. Use of block sizes other than those described above will not cause an error while using SMIT, but will result in an error when you attempt to write with the 7207-122 Tape Drive.
3. If you attempt a read operation with a block size other than the one written on the tape cartridge, an illegal length error may result.



Tape Cartridge Efficiency

Tape cartridge efficiency refers to the amount of data that can be stored on a tape cartridge and the rate at which the data can be read from the tape. The following variables affect the amount of data that can be stored on a SLR5-4GB quarter-inch tape cartridge:

- Mode of operation (streaming or nonstreaming)
- Size of the data file
- Number of file marks (empty physical blocks on a tape) per file
- Variable postambles and preambles (separators between physical blocks on a tape)
- Type of format (QIC-4GB-DC, QIC-2GB-DC, QIC-1000-DC, QIC-525-DC, QIC-150-DC, or QIC-120-DC)
- Compressibility of data (if running with compression on)

Setting the Write-Protect Switch

The position of the write-protect switch on the SLR5-4GB quarter-inch tape cartridge determines when you can write to the tape (see Figure 15 on page 25).

- When the switch is set to  data cannot be written to the tape.
- When the switch is set to  data can be written to and read from the tape.

To set the switch, insert a small screwdriver into the arrow and gently turn it to the desired position. The arrow must face one of the two directions shown in Figure 15 on page 25; do not leave it in any other position.

Ordering Tape Cartridges

Figure 14 lists the tape cartridges that you can order for the 7207 Model 122 4GB External SLR5 Quarter-Inch Cartridge Tape Drive. To order cartridges in the United States and Canada, call 1-888-IBM-MEDIA. To order cartridges in other locations, contact your local provider of IBM storage products.

Figure 14. Tape Cartridges for the 7207-122 Tape Drive

IBM Part Number	Type of Cartridge	Capacity
59H3660	SLR5-4GB Data Cartridge	4GB (8GB with 2:1 compression)
16G8436	DC9250 Data Cartridge	2.5GB (5GB with 2:1 compression)
21F8730	DC9120 Data Cartridge	1.2GB
21F8697	DC6525 Data Cartridge	525MB
21F8583	DC6320 Data Cartridge	320MB
21F8578	DC6150 Data Cartridge	150MB
59H3661	SLR5-4GBSL Test Cartridge	Not applicable
46G2674	Cleaning Cartridge	Not applicable

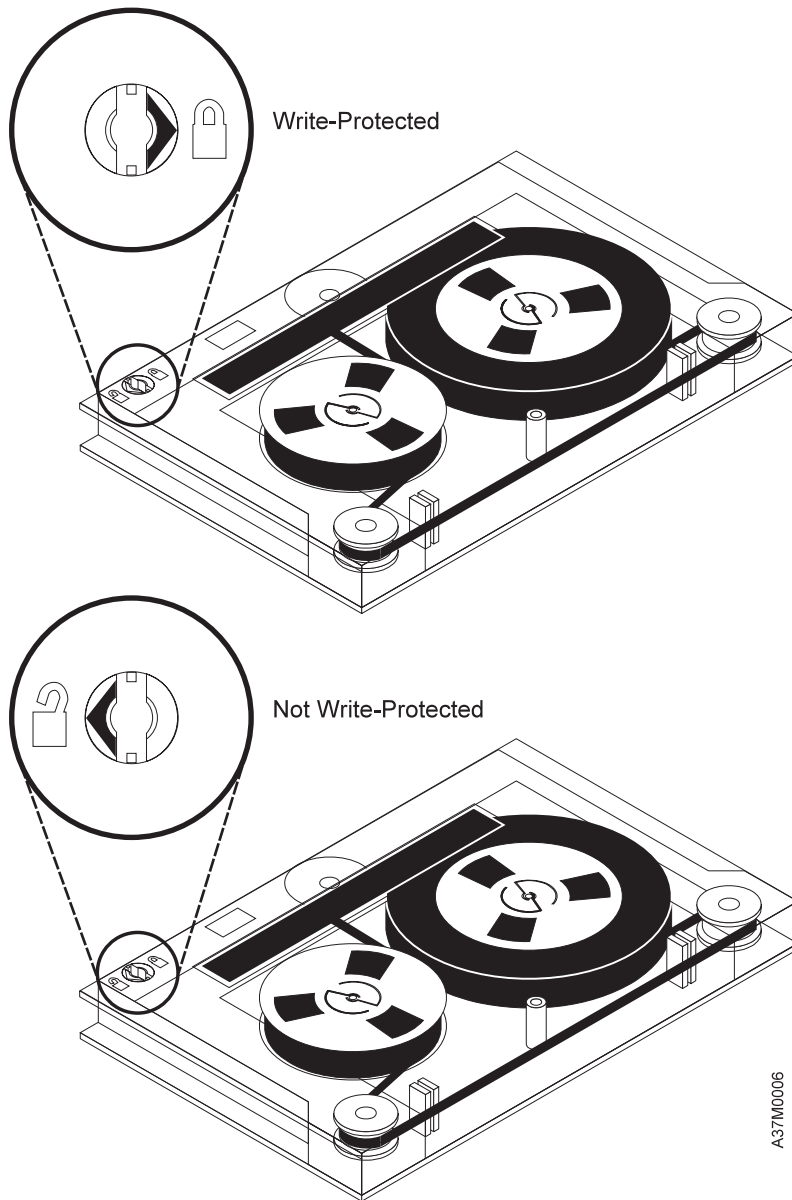


Figure 15. Setting the Write-Protect Switch

Chapter 5. Performing Service on the 7207 Tape Drive

This chapter provides service procedures that qualified service personnel may use during problem isolation. It includes safety inspection procedures to identify unsafe conditions, and maintenance analysis procedures to isolate a problem with the operation of the 7207-122 Tape Drive. When performing service on the 7207-122 Tape Drive, make sure to identify unsafe conditions before proceeding with problem isolation and repair.

To obtain service for IBM hardware at any time during the problem isolation process, call 1-800-IBM-SERV.

Observe the following safety notices when performing a safety inspection or maintenance analysis on the 7207-122 Tape Drive.



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. (72XXD004)

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. (72XXD203)

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. (72XXD201)

Safety Inspection Procedures

Use the following procedures to identify unsafe conditions. Be cautious of potential safety hazards not covered by the procedures.

Figure 16 shows the components to review during the service inspection.

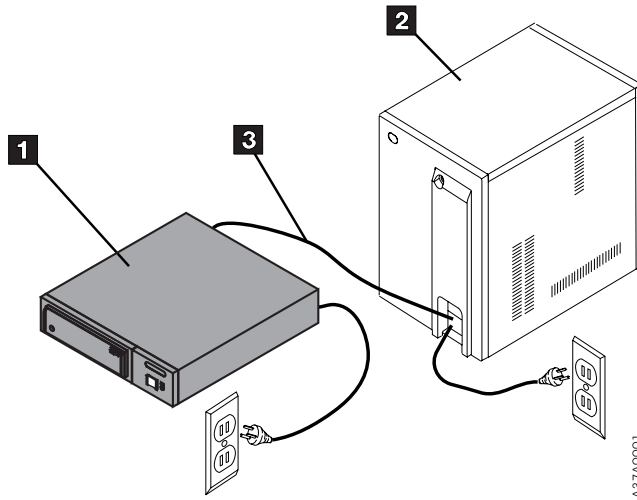


Figure 16. Safety Inspection

Perform the following safety checks.

1. Do a controlled system shutdown. Refer to the instructions in Chapter 2, "Setting Up the 7207 Tape Drive."
2. Turn off the power to the 7207-122 Tape Drive (**1** in Figure 16).
3. Unplug the 7207-122 Tape Drive external power cable from the electrical outlet.
4. Turn off the power to the system unit **2**.
5. Unplug the system unit power cable from the electrical outlet.
6. Check the 7207-122 Tape Drive external power cable for damage.
7. Check the 7207-122 Tape Drive external SCSI bus (signal) cable **3** for damage.
8. Check the SCSI bus terminator for damage.
9. Check the covers for sharp edges, damage, or alterations that expose the internal parts of the 7207-122 Tape Drive.
10. Check the covers for proper fit. They should be in place and secure.
11. Check the product label on the bottom of the 7207-122 Tape Drive to make sure it matches the voltage at your outlet.
12. Check the voltage level at the outlet and also check for proper grounding (see Figure 17 on page 29).

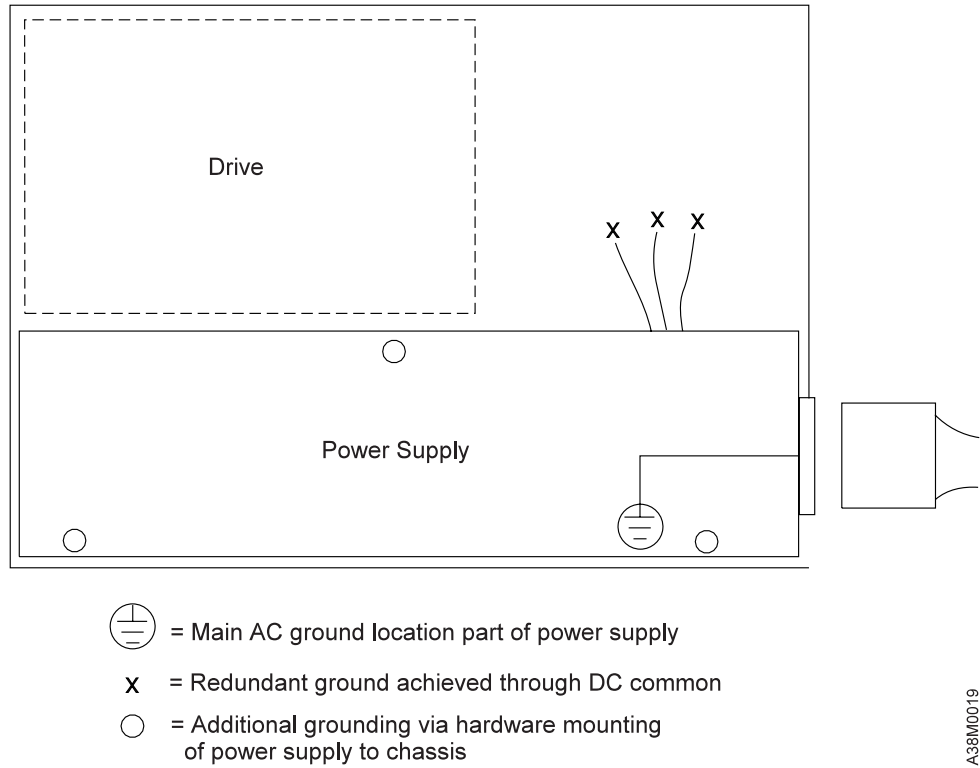


Figure 17. AC Grounding Diagram (50 Hz and 60 Hz)

13. With the external power cable connected to the 7207-122 Tape Drive, check to ensure that 1.0 ohm or less resistance exists between the ground lug on the external power cable plug and the metal frame. See Figure 18.

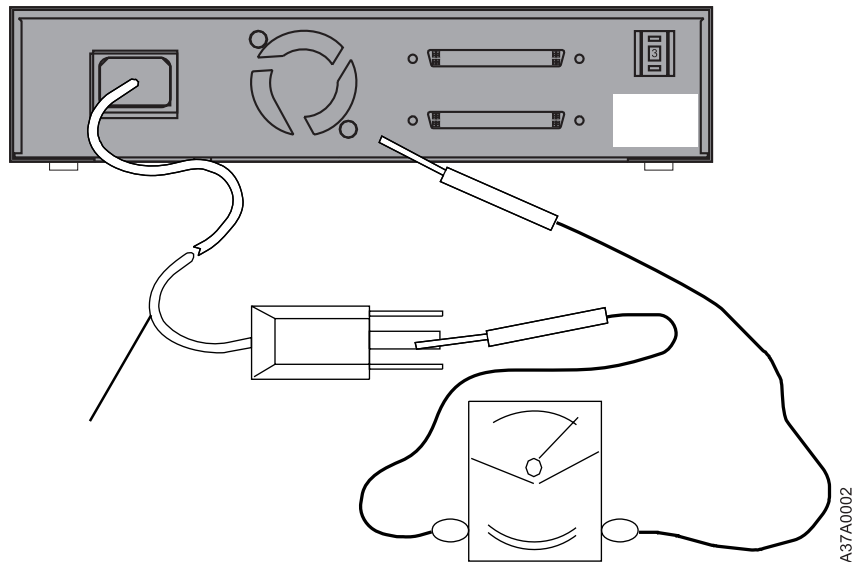
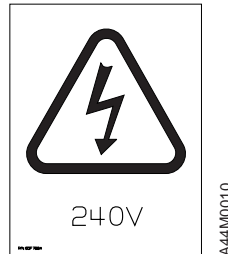


Figure 18. Safety Inspection - Rear View of the 7207-122 Tape Drive

Note: Use an analog meter to measure grounding resistance; do not use a digital multimeter.

14. If the 7207-122 Tape Drive passes the test in the previous steps, plug its external power cable into the electrical outlet. If the 7207-122 Tape Drive does not pass the test, see “Maintenance Analysis Procedures” on page 30 for more information. If problems persist, contact your service representative.

Note: Safety Information Label, Part Number 85F7884, located on top of the power supply under the top cover, shows the following symbol:



This symbol indicates a hazard arising from dangerous voltage inside. Do not open.

Maintenance Analysis Procedures

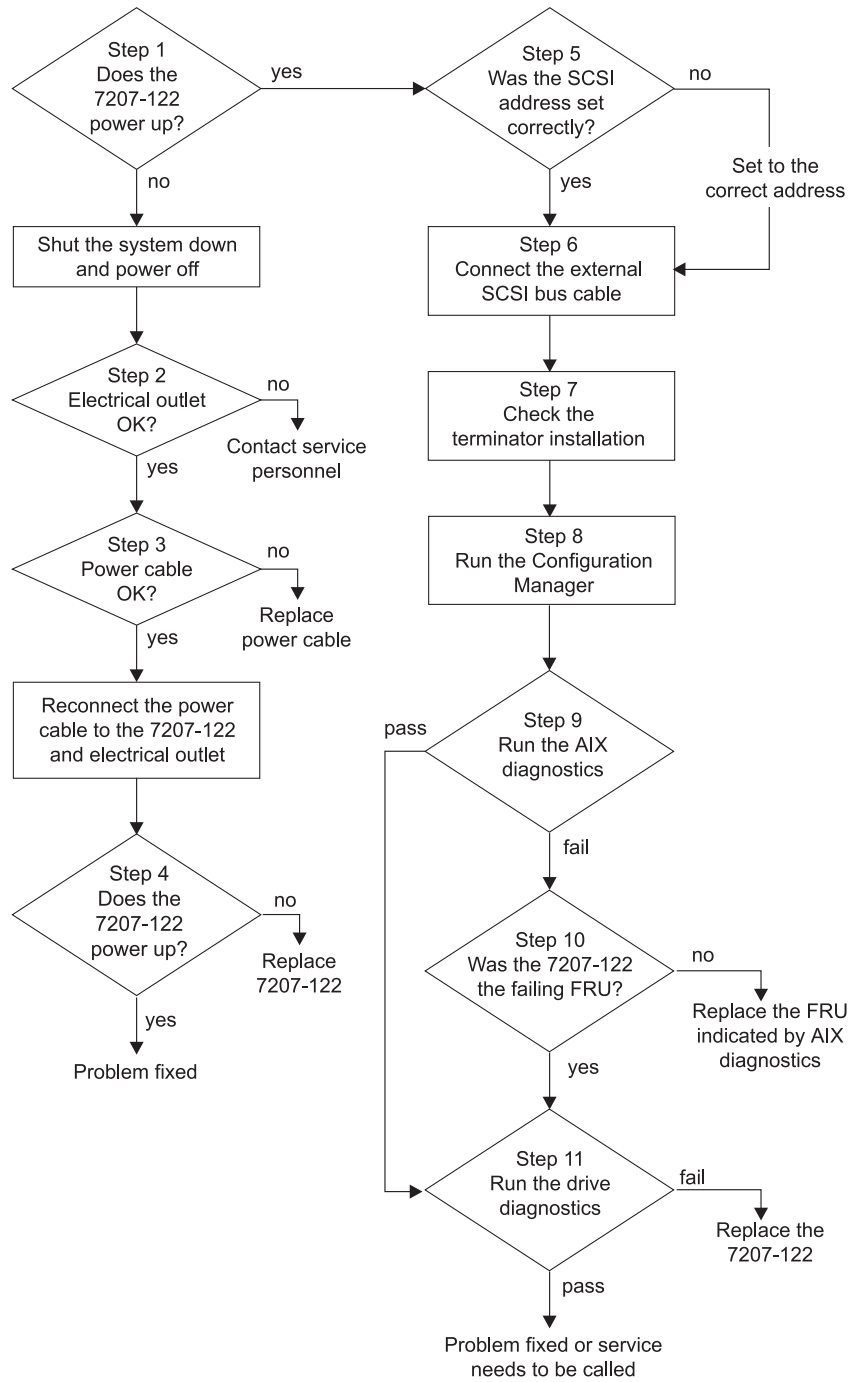
Maintenance analysis procedures (MAPs) are used to check the:

Power cable	SCSI cable	Terminator
SCSI address	Configuration	Drive

If a problem is detected, the procedure isolates the problem to the failing unit, such as the tape drive, SCSI cable, or terminator. To correct the problem, remove the 7207-122 Tape Drive from the host system and contact your IBM service representative. For instructions on removing the 7207-122 Tape Drive, see Chapter 6, “Moving the 7207 Tape Drive” on page 37.

Attention: If the 7207-122 Tape Drive is isolated as the FRU that needs replacement, replace the entire unit. Do not attempt to open the unit for repairs; opening the 7207-122 Tape Drive may void your warranty.

Figure 19 on page 31 provides a flowchart to be used as a guide to the MAPs. For detailed instructions on how to perform each procedure safely and correctly, refer to the steps in this chapter.



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Figure 19. Flowchart of the Maintenance Analysis Procedures (MAPs)

Step 1

This step verifies whether the power and the fan operate properly.

1. Make sure that the 7207-122 Tape Drive power cable is plugged into an electrical outlet.
2. Make sure that the 7207-122 Tape Drive power is on by checking that:
 - The power-on light is on.
 - There is airflow from the fan at the rear of the unit.

Is the power-on light on and is there airflow from the fan?

NO While watching for the power-on light to come on, press the power switch. Repeat this procedure several times. If the power-on light fails to come on or there is no airflow from the fan, go to Step 2.

YES Go to Step 5.

Step 2

This step tests the voltage at the electrical outlet.

1. Do a controlled system shutdown (refer to the instructions in Chapter 2, "Setting Up the 7207 Tape Drive," on page 3).
2. Press the 7207-122 Tape Drive power switch to turn off the power.
3. Unplug the 7207-122 Tape Drive power cable from the electrical outlet and from the 7207-122 Tape Drive.
4. Measure the voltage at the electrical outlet.

Is the voltage from the electrical outlet correct?

NO Contact your service personnel for further instructions.

YES Go to Step 3.

Step 3

This step determines whether the power cable is functional.

Make sure that all of the conductors in the power cable have continuity, and that there are no short circuits.

Does the power cable have continuity and are there no short circuits?

NO Replace the power cable, then go to Step 1.

YES Go to Step 4.

Step 4

This step verifies whether the power and the fan operate properly.

1. Plug the power cable into the 7207-122 Tape Drive and into the electrical outlet.
2. Make sure that the 7207-122 Tape Drive power is on by checking that:
 - The power-on light is on.
 - There is airflow from the fan at the rear of the unit.

Does the power-on light come on and stay on?

NO Replace the 7207-122 Tape Drive.

YES Go to Step 5.

Step 5

This step checks whether the SCSI address is set correctly.

Is the SCSI address set correctly?

NO Set the SCSI address switch to the proper address, then go to Step 6. To set the SCSI address switch, see the instructions in “Step 5. Setting the SCSI Address” on page 6.

YES Go to Step 6.

Step 6

This step ensures that the connection of the external SCSI bus cable is proper.

Ensure that the SCSI bus cable is properly connected to both the RS/6000 and to the 7207-122 Tape Drive.

Is the SCSI bus cable properly connected to the RS/6000 and to the 7207-122 Tape Drive?

NO Plug the SCSI bus cable into the RS/6000 and into the 7207-122 Tape Drive. Then go to Step 7.

YES Go to Step 7.

Step 7

This step ensures that the terminator connection is proper.

Ensure that the terminator is properly connected to the last device on the SCSI bus.

Is the terminator properly connected to the last device on the SCSI bus?

NO Ensure that the terminator is properly connected to the last device on the SCSI bus, then go to Step 8.

YES Go to Step 8.

Step 8

This step verifies that the 7207-122 Tape Drive has been properly configured to the RS/6000.

1. Clean the tape drive. See “Cleaning the Tape Drive” on page 16.
2. At the system prompt, type `cfgmgr` to configure the 7207-122 Tape Drive and make its status Available.

To ensure that the 7207-122 Tape Drive has been correctly configured to the RS/6000, see Chapter 2, “Setting Up the 7207 Tape Drive,” on page 3.

Is the 7207-122 Tape Drive properly configured to the RS/6000?

- NO** Go to Step 9.
YES Go to Step 9.

Step 9

This step runs the AIX diagnostics to determine the problem.

Run the diagnostics on the 7207-122 Tape Drive. Have the test cartridge (part number 59H3661) available for when the diagnostics prompt you to load the cartridge. For instructions on running diagnostics, refer to your AIX manuals.

Do all of the diagnostic routines pass?

- NO** Go to Step 10.
YES Go to Step 11.

Step 10

This step determines whether it is necessary to run the 7207-122 Tape Drive self test.

Did the AIX diagnostics isolate the 7207-122 Tape Drive as the failing FRU?

- NO** Replace the FRU that was isolated by the diagnostics and identified by the service request number.
YES Go to Step 11.

Step 11

This step runs the 7207-122 Tape Drive self test to determine the problem.

1. If the 7207-122 Tape Drive is installed, remove it by performing steps 1-12 in Chapter 6, “Moving the 7207 Tape Drive” on page 37.
Note: Make sure that the SCSI cable and terminator are not attached to the 7207-122 Tape Drive (or the self test may not function properly).
2. Attach the power cable to the 7207-122 Tape Drive, then plug it into an electrical outlet. Make sure that the power to the tape drive is off.
3. Set the address switch to 9 (see “Step 5. Setting the SCSI Address” on page 6).

4. Load the SLR5-4GBSL test cartridge into the 7207-122 Tape Drive (see “Loading Tape Cartridges” on page 14).

Note: Use only the IBM test cartridge, part number 59H3661. Use of any other test cartridge could cause erroneous test results or lengthen the time needed to complete the test.

5. Press the 7207-122 Tape Drive power switch to turn on the power.

After approximately 5 minutes, the status light does one of the following:

- Flashes red to indicate an error
- Flashes green to indicate the completion of a successful self test

Did the 7207-122 Tape Drive self test terminate with a flashing green status light?

NO

Replace the 7207 Tape Drive.

Note: If the 7207-122 Tape Drive is the FRU that was isolated by the diagnostics and has recently been replaced because of a similar problem, contact your service personnel.

YES

The problem is either fixed or has not been isolated by the self test. A more in-depth analysis may be required. Contact your next level of service support.

Chapter 6. Moving the 7207 Tape Drive



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. (72XXD203)

Attention: Damage as a result of improper handling may void your equipment warranty.

Move Checklist

When moving the 7207-122 Tape Drive, perform the following steps:

Attention: Failure to perform the following steps in sequence before you add or delete a device may result in data loss or system failure.

- 1. If loaded, remove the tape cartridge from the drive by pressing the unload button while the 7207-122 Tape Drive power is on.
- 2. Remove the 7207-122 Tape Drive from the system configuration (for instructions, refer to your system manuals).

Attention: Failure to inform the operating system before you add or delete a device may result in data loss or a system fault.

- 3. If it is on, do a controlled shutdown of the system unit. Refer to “Step 7. Performing a System Shutdown” on page 7.
- 4. Turn off the power to the 7207-122 Tape Drive.
- 5. Turn off the power to all external devices attached to the system.
- 6. Turn off the power to the system unit.
- 7. Unplug the power cable for the 7207-122 Tape Drive from the electrical outlet.

Attention: When SCSI bus (signal) cables are connected to a system unit, they must also be connected to a device. Do not leave the SCSI bus cable connected to the system if the device for that cable has been removed.

- 8. Unplug the system unit power cable from the electrical outlet.
- 9. Disconnect the SCSI bus cable from the system unit.
- 10. Disconnect the SCSI bus cable from the 7207-122 Tape Drive.
- 11. Move the 7207-122 Tape Drive and place it in the new location.
- 12. Ensure that the terminator is on the last device on the SCSI bus (see “Step 9. Installing the SCSI Bus Terminator” on page 9).

- ___ 13. Reinstall the 7207-122 Tape Drive (see Chapter 2, "Setting Up the 7207 Tape Drive" on page 3).

Chapter 7. Parts List

The following is a list of parts that are needed to service the 7207 Model 122 4GB External SLR5 Quarter-Inch Cartridge Tape Drive.

Part Number	Units	Description
59H4434	1	Complete tape drive assembly (with drive)
06H6036	1	System-to-device SCSI bus cable, 1.0 meter (3 feet) (for fast/wide, differential PCI adapter; HD68 to HD68 connectors). This cable can be used for a device-to-device attachment, if a long cable is required.
52G9921	1	Device-to-device SCSI bus cable, 0.3 meter (1 foot) (HD68 to HD68 (wide bus) connectors)
52G9501	1	System-to-device SCSI bus cable, 1.5 meter (5 feet) (for fast/wide, single-ended adapter; CC68 to HD68 connectors)
59H2891	1	System-to-device SCSI bus cable, 1.0 meter (3 feet) (for narrow, single-ended adapter; HD50 to HD68 connectors)
06H6037	1	Device-to-device SCSI bus cable, 1.0 meter (3 feet) (for narrow, single-ended device; LD50 to HD68 connectors)
52G9907	1	Terminator, SCSI-2 fast/wide single-ended
59H3660	1	SLR5-4GB data cartridge, 457 meters (1500 feet)
59H3661	1	SLR5-4GBSL test cartridge, 47 meters (155 feet)
46G2674	1	Cleaning cartridge

Appendix. Power Cables



To avoid electrical shock, a power cable with a grounded attachment plug has been provided. Use only properly grounded outlets.

Power cables used in the United States and Canada are listed by Underwriter's Laboratories (UL) and certified by the Canadian Standards Association (CSA). The power cables consist of:

- Electrical cables, type SVT or SJT.
- Attachment plugs complying with National Electrical Manufacturers Association (NEMA) 5-15P, that is:

“For 115 V operation use a UL Listed Cable Set consisting of a minimum 18 AWG, Type SVT or SJT three conductor cable 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 three conductor cable a maximum of 15 feet in length, and a tandem blade, grounding type attachment plug rated at 15 A, 250 V.”

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

Power cables used in other countries consist of:

- Electrical cables, 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 U. S.): Use a Cable Set consisting of a minimum 18 AWG cable and grounding type attachment plug rated 15 A, 250 V. The Cable Set should have the appropriate safety approvals for the country in which the equipment is to be installed and marked 'HAR'.”

Figure 20 lists the power cable part number, the country where the power cable can be used, and an index number to be matched with the receptacles shown in Figure 21 on page 43. If your power cable does not match this information, contact your local dealer.

Figure 20. Power Cable Information

Part Number	Country	Index
1838574 Japan	Bahamas, Barbados, Bolivia, Brazil, Canada, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Guyana, Haiti, Honduras, Jamaica, Japan, Netherlands Antilles, Panama, Peru, Philippines, Taiwan, Thailand, Tobago, Trinidad, U.S.A. (except Chicago), Venezuela	1
6952300 US/Canada	Bahamas, Barbados, Bermuda, Bolivia, Brazil, Canada, Cayman Islands, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Guyana, Haiti, Honduras, Jamaica, Japan, Korea (South), Mexico, Netherlands Antilles, Nicaragua, Panama, Peru, Philippines, Puerto Rico, Saudi Arabia, Suriname, Taiwan, Trinidad, U.S.A. (except Chicago), Venezuela	2
6952301 6 ft Chicago	Chicago, U.S.A.	2
13F9940 Australia	Argentina, Australia, New Zealand, Uruguay	3
13F9979 France	Abu Dhabi, Austria, Belgium, Bulgaria, Botswana, Egypt, Finland, France, Germany, Greece, Iceland, Indonesia, Korea (South), Lebanon, Luxembourg, Macau, Netherlands, Norway, Portugal, Saudi Arabia, Spain, Sudan, Sweden, Turkey, Yugoslavia	4
13F9997 Denmark	Denmark	5
14F0015 South Africa	Bangladesh, Burma, Pakistan, South Africa, Sri Lanka	6
14F0033 United Kingdom	Bahrain, Bermuda, Brunei, Channel Islands, Cyprus, Ghana, Hong Kong, India, Iraq, Ireland, Jordan, Kenya, Kuwait, Malawi, Malaysia, Nigeria, Oman, People's Republic of China, Qatar, Sierra Leone, Singapore, Tanzania, Uganda, United Arab Emirates (Dubai), United Kingdom, Zambia	7
14F0051 Switzerland	Liechtenstein, Switzerland	8
14F0069 Italy	Chile, Ethiopia, Italy	9
14F0087 Israel	Israel	10
6952291 Colombia	Colombia, Paraguay	11

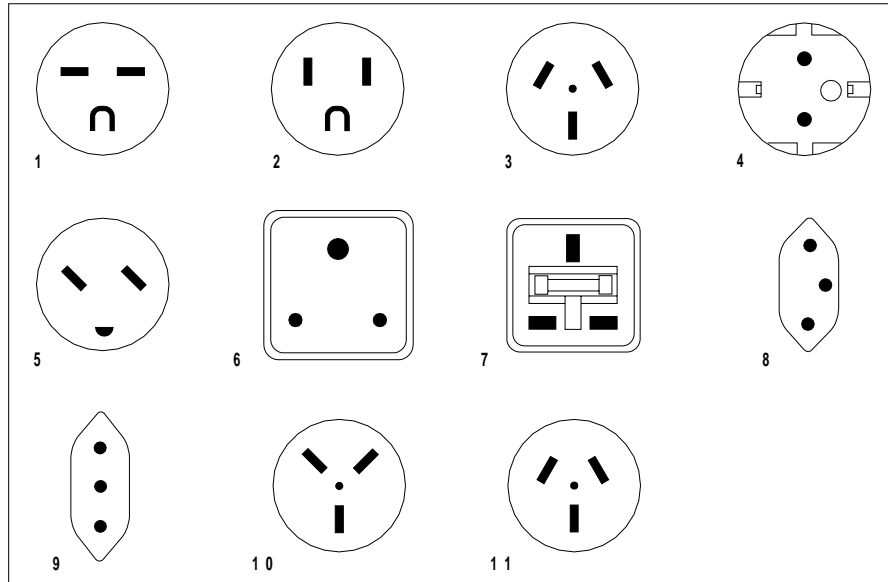


Figure 21. Types of Receptacles

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Quarter-Inch Cartridge Tape Drive
Setup, Operator, and Service Guide
Publication No. SA37-0400-00**

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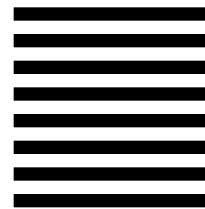
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